

MT-1200

MULTI TEMPERAMENT TUNER
Owner's Manual

KORG

④ ⑤

Important Precautions

Location

To prevent malfunctions, do not expose the unit to:

- direct sunlight
- temperature or humidity extremes
- sand or dust
- strong magnetism

Handle gently!

Use of excessive force on switches, or dropping the unit may result in malfunction.

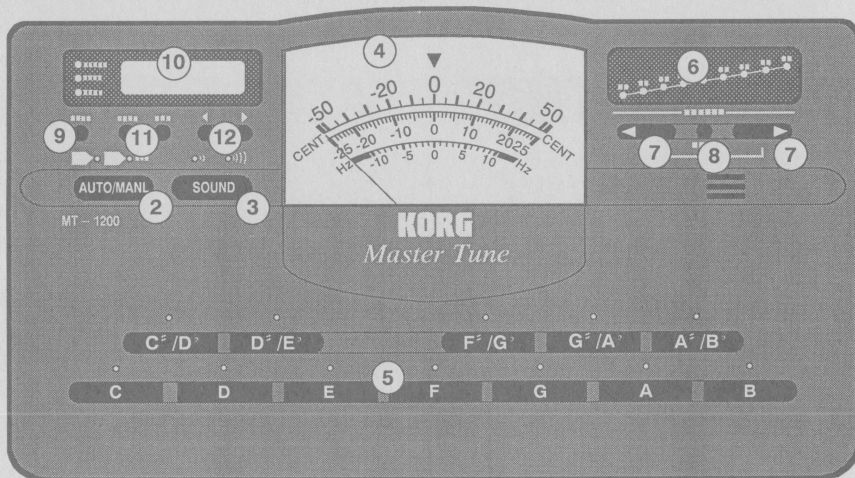
Cleaning exterior surfaces

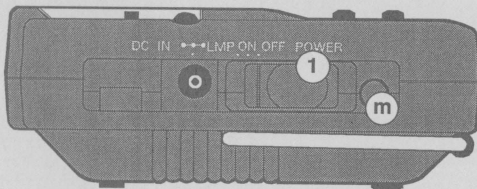
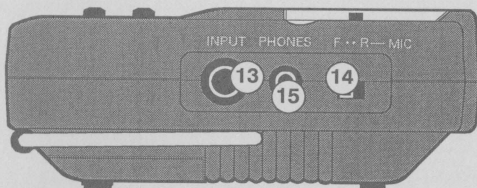
Wipe the exterior lightly with a clean, dry, soft cloth to remove dust and dirt. Never use benzine, paint thinner, or other strong solvents, rubbing compounds, or flammable polishing agents.

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Features and Modes





① **POWER switch**

OFF: Select to turn off the power.

ON: Select to turn on the power.

LMP: Select for meter illumination when power is on.

② **AUTO/MANL (METER) button:**

Press to select the Meter mode. Use to select the AUTO mode or MANUAL mode (AUTO= ± 50 -cent mode/MANUAL= ± 50 -cent mode, ± 25 -cent mode).

③ **SOUND button:** Press to select the SOUND mode. Used to select between the SOFT and LOUD settings (SOFT/LOUD).

④ **Meter**

Indicates the pitch of the input instrument.

⑤ **NOTE buttons**

Press to select the note to be tuned.

⑥ **OCTAVE indicator**

Indicates the octave of the note to be tuned.

⑦ **◀/▶ buttons**

Press to raise or lower the octave of the guide note and the octave number in the Instrument Program mode.

⑧ **INST button**

Press to switch between the NORMAL SELECT mode and the INST mode when selecting the note to be tuned.

⑨ **MODE button**

Use to select the Calibration Selection, Temperament Selection, or Instrument Program mode.

⑩ **Four-digit LED display**

Indicates the calibration value, temperament number, and channel number.

⑪ **CLEAR/SET buttons**

Press in the Temperament Selection or Instrument Program mode to erase (CLEAR button) or write data (SET button).

⑫ UP/DOWN buttons

Press to specify a numeric value in the Calibration Selection, Temperament Selection, or Instrument Program modes.

⑬ INPUT jack

Use to input from an electric guitar or electronic musical instrument. When connected, the built-in microphone is deactivated.

⑭ MIC FRONT/REAR switch

Use to switch between the front and rear built-in microphones. Set to REAR when the meter is stood up with the rear panel towards a sound source located in front of you.

⑮ PHONES jack

Use to connect an amplifier or headphone to monitor the output from the guide oscillator in the SOUND mode.

Ⓜ Adjustment Screw

To ensure tuning accuracy, adjust this screw to zero a meter pointer that has moved off Meter center as follows:

1. Turn on the POWER switch.
 2. Press the SOUND button once.
 3. Insert a Phillips (+) or slotted (-) screwdriver into the meter adjustment screw slot and turn it until the pointer is zeroed.
- ☞ Perform this adjustment with the MT-1200 laid flat on a stable surface.

Basic Tuning Information

1. The Cent Indication

The cent is the smallest unit of relative pitch.

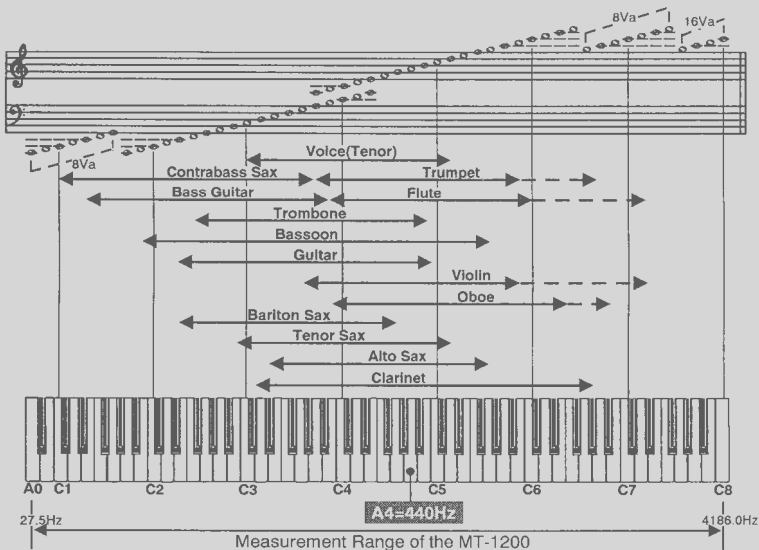
100 cents is equal to a semitone and 1,200 cents, an octave.

2. Standard Pitch and Calibration Function

Middle A on the piano ($A_4=440$ Hz) is used as standard pitch for tuning instruments. This standard pitch varies slightly in different places and times. A slightly higher pitch ($A_4=441$ -

444 Hz) has become prevalent in recent years. A standard pitch of 390 - 470 Hz can be set on the MT-1200 in 0.1 - Hz increments (setting the standard pitch is called "calibration").

3. Sound Range of Various Instruments and Measurement Range of the MT- 1200



Tuning by Meter

(METER MODE)

Auto Tuning

- ① Turn on the power. The display will show the calibration value and temperament number for about 1 second.



440.0 → 1C

If you specify a 0-cent note other than A in TEMPERAMENT SELECT MODE, the 0-cent note indication will be displayed on the four digit LED display. (See "Setting the Temperament" on page 18.)



442.0 → 2C → C-0

② For an electric guitar or electronic musical instrument, connect the instrument directly to the INPUT jack of the MT- 1200.

For other types of instruments, place the instrument near the built- in microphone of the MT- 1200.

③ Play a single note on the instrument. If it is a wind instrument, try to play it without vibrato. The MT- 1200 will automatically detect the note and display the closest detected note.

④ When the note to be tuned is the same as the one displayed, adjust the pitch until the meter's pointer is centered. When the note to be tuned differs from the one displayed, adjust the pitch on the instrument until the appropriate note is displayed, then adjust the pitch until the meter's pointer is centered.

NOTE: It may be difficult to tune some notes with multiple harmonics. In such cases, change the loudness of the instrument, then attempt tuning.

Manual Tuning

- ① Turn on the power.
- ② For an electric guitar or electronic musical instrument, connect the instrument directly to the INPUT jack of the MT-1200.

For other types of instruments, place the instrument near the built-in microphone of the MT-1200.

- ③ Press the AUTO/MANL (METER) button to select the MANUAL mode.
- ④ Press the NOTE button until the note to be tuned is displayed. When the power is first turned on, the previously tuned note and octave

are displayed. Press the ◀ button to lower octave and the ▶ button to raise it (i.e., pressing the ◀ button twice lowers the note two octaves).

- ⑤ Play a single note on the instrument. If it is a wind instrument, try to play it without vibrato.
- ⑥ Adjust the pitch until the meter's pointer is centered.
- ⑦ For a string instrument, repeat steps ④ through ⑥ for each string.

NOTE: It may be difficult to tune some notes with

multiple harmonics. In such cases, change the loudness or octave of the instrument, then attempt tuning.

○ **± 50 - CENT MODE and ± 25 - CENT MODE**

When the power is first turned on, the MT- 1200 is in the AUTO mode (± 50 - cent mode). Pressing the AUTO/MANL button changes the unit to the MANUAL mode, and the difference

between the standard pitch and the instrument pitch is indicated on the upper scale on the meter (± 50 - cent mode). For more precise tuning, press the AUTO/MANL button again to select the ± 25 - cent mode and adjust the pitch. In this mode, the lower scale is used. The current mode is indicated by the LED above the AUTO/MANL button, with a red LED indicating the ± 50 - cent mode and a green LED indicating the ± 25 - cent mode.

Tuning by Guide Note

(SOUND MODE)

Note: If you do not use the built-in speaker of the MT-1200, connect an external amplifier or headphones to the PHONES jack on the MT-1200's.

- ① Turn on the MT-1200.
- ② Turn on the amplifier, making sure the volume control is turned all the way down.
- ③ Press the SOUND button to select the SOUND mode.

④ Press the desired NOTE button to display the note to be tuned. Turn up the volume of the amplifier until the note is audible (to change octaves, press the ◀ or ▶ button).

- The output range is four octaves between C2 and B5.

⑤ While listening to the guide note selected in step ④, tune your instrument.

⑥ Perform steps ③ through ⑤ of "Tuning by Meter" for fine tuning.

○ **SOFT and LOUD Settings**

The SOUND mode of the MT- 1200 allows for SOFT and LOUD settings.

Selecting the LOUD setting results in a higher output level for the guide note. The current setting selection is indicated by an LED above the SOUND button.



○ **Tips for Efficient Tuning**

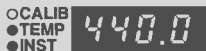
For accurate and quick tuning of an instrument that is extremely out of tune, first tune it roughly using the guide note in the SOUND mode, then fine- tune it using the meter in the METER mode.

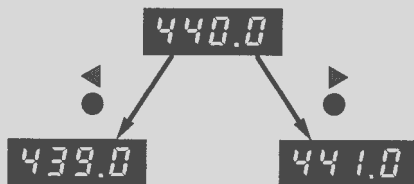
- Press the AUTO/MANL button to change from the SOUND mode to the METER mode.
- When the power is first turned on, the MT- 1200 is in the AUTO mode.

Calibration Procedure

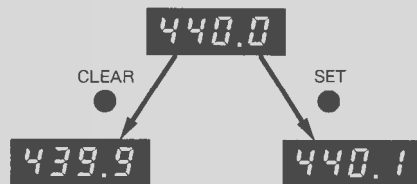
(Setting the Standard Pitch)

- ① Turn on the power.
 - ② Press the MODE button located under the four-digit LED display.
 - ③ An LED indicating "CALIB" will light above the Mode button and the calibration value will be indicated on the four-digit LED display.
 - ④ Press the UP/DOWN buttons to set the standard pitch. The setting range is 390 to 470 Hz in 1-Hz increments. Pressing the UP button increases the pitch by 1 Hz; pressing the DOWN button lowers it by 1 Hz.
- In the METER mode, you can calibrate while tuning. In the SOUND mode, you can calibrate while monitoring the guide note.





Holding the button down raises or lowers the pitch continuously. Pressing the SET button raises the pitch by 0.1 Hz; pressing the CLEAR button lowers it by 0.1 Hz. Holding down either the SET or CLEAR button, however, does not cause a continuous rise or decrease in the pitch.



- ⑤ After setting your calibration, press the MODE button three times to return to the METER/SOUND mode.

Setting the Temperament

(TEMPERAMENT SELECT MODE)

The MT - 1200 comes with a variety of pre-programmed temperament settings which can be selected to tune your instrument.

- ① Press the MODE button located under the four - digit LED display until the LED indicating "TEMP" lights up.



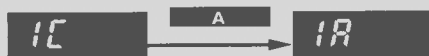
- ② The Temperament number will be displayed on the four - digit LED display.

Temperaments

TEMPER No.	Temperament	Modulation	Stretch	0 CENT
1	Equal Temperament	○	○	○
2	Just Intonation(major pitch)	○	○	○
3	Just Intonation(minor pitch)	○	○	○
4	Mean - tone	○	○	○
5	Pythagorean	○	○	○
6	Werkmeister III	○	○	○
7	Kirnberger III	○	○	○
8	Vallotti & Young	○	○	○
9	Programmable(octave)	—	○	—
0	Programmable(88notes)	—	—	—

Note: In equal temperament, modulation occurs in units of equal value.

※ In the case of temperaments marked with an "○" in the modulation column, the NOTE button may be used to select the pitch to be modulated.

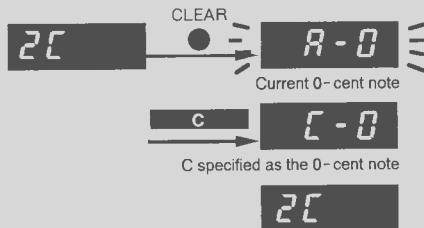


※ In the case of temperaments marked with an "○" in the stretch column, the SET button may be used to select three different stretches with ascending levels of contrast (3 being the highest) between the high and low pitches in the high and low ranges to produce more natural-sounding pitches. Pressing the SET button changes the stretch setting in the following order:

none - 1 - 2 - 3 - none



※ In the case of temperament marked "○" in the 0-cent column, pitches can be adjusted to ± 0 cent for any standard note.



Reverts to previous indication after setting.

Notes specified as the 0-cent note are unaffected by changes on the key note or TEMPE number. (See data on page 33 the supplement.)

- ③ Use the UP/DOWN buttons to change the selection. After selecting a temperament number between 1 and 8, press a NOTE button to select the pitch. By returning to the METER or SOUND mode (by pressing the MODE button twice) afterwards, you can tune your instrument in the selected key.



Changing the temperament number cancels the selected stretch, and causes the note to change to C.

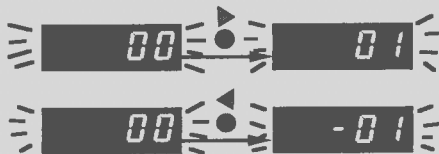
- ④ Selecting temperament number 9 or 0 in step ③ allows you to record your custom

temperaments (TEMP. PROGRAM MODE). This is useful for tuning folk instruments. When you select a note with a NOTE button, the difference between the selected note and the equal temperament tuning in cents will flash on the four-digitLED display.

- ※ Once you have completed settings for one octave for TEMPE No. 9, the MT-1200 will automatically set the same temperaments for all other octaves. In the case of temperament number 0, you can set the temperament to each of the 88 tunings from A0 to C8.



- ⑤ Pressing the UP button raises the tuning of the specified note by one cent based on the equal temperament tuning; pressing the DOWN button lowers it by one cent.



- ⑥ To set the specified note, press the SET button. Otherwise, pressing another note button will clear the previous note with the new note. When the SET button is pressed, the note and cent indication will turn off, and TEMPE. NO. 9 or 0 will light up. To record another note, repeat steps ⑤ and ⑥.

- ⑦ When all settings have been completed, press the MODE button twice to return to the METER or SOUND mode. You can now tune your instrument with the recorded temperaments.

- ※ To erase your custom temperaments (TEMPE No.9 or 0), press the CLEAR button. "CLEA" will flash on the four-digit LED display. Next, press the SET button. All notes will be reset to ± 0 cent. Make sure to press the SET button, as any other button will not affect the recorded notes.



Setting by Instrument

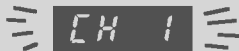
(INSTRUMENT PROGRAM MODE)

The Instrument Program mode allows you to use the MT-1200 to store the pitches you normally use for tuning your instrument. For example, you can store G, D, A and E for the first through fourth strings of a violin, thus eliminating the need to specify each pitch with the NOTE or ◀/▶ buttons each time you tune your instrument. In this mode, pressing the INST button, then the ◀/▶ buttons allows you to call up the stored notes and octave numbers in sequence for tuning. A total of 15 pitches may be stored in memory.

- ① Press the MODE button located under the four-digit LED display until the LED for "INST" lights up.



- ② The channel number (CH No.) will flash on the four-digit LED display.



The channel number is the number of the pitch used for tuning.

- ☞ For example, you can program G in No. 1, D in No. 2, A in No. 3 and E in No. 4 for the four strings of a violin. Afterwards, you can call up

the notes in sequence to tune your strings.

③ By pressing the NOTE button and ◀ / ▶ buttons, specify the pitch and octave to be assigned to the channel number.

④ Press the SET button. The MT-1200 will register the note to the specified channel number, then display the next channel number. Repeat steps ③ and ④ as often as necessary to store further pitches. Press the UP/DOWN buttons to change the channel number.

⑤ After all the necessary channel numbers have been programmed, press the INST button once to return to the METER or SOUND mode.

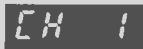
NOTE 1: Pressing the CLEAR button will cause “CLEA” to flash on the four-digit LED display. If the SET button is pressed at this time, all currently stored pitches are erased and “CH-1” flashes on the display. Make sure to press the SET button as any other button will not affect the stored pitches.



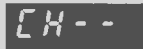
NOTE 2: Only notes and octaves can be stored in this mode, and the current calibration and tuning settings are saved in memory even if the power is turned off.

Instrument Tuning Submode

Once the desired pitches have been stored, they may be called up to tune your instrument. Press the INST button while the MT-1200 is in INST mode. CH 1 will be shown on the four-digit LED display, and the note and octave for the displayed channel number are indicated by LED. Other stored channel numbers can be called up by pressing the ◀/▶ buttons.

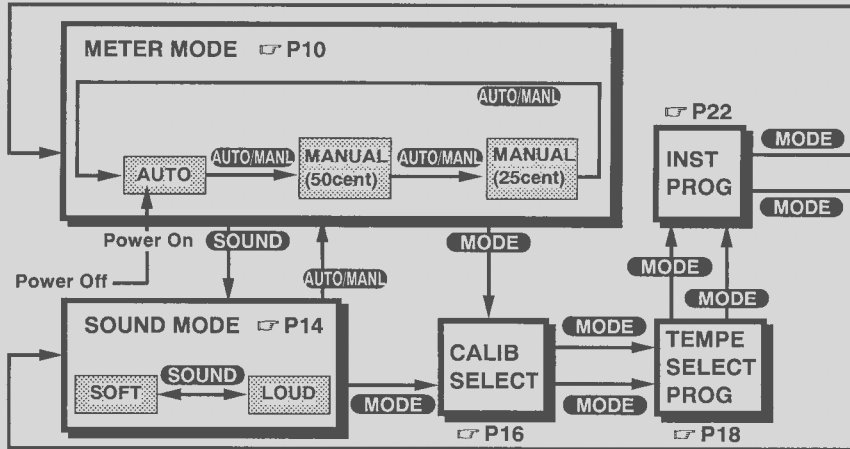


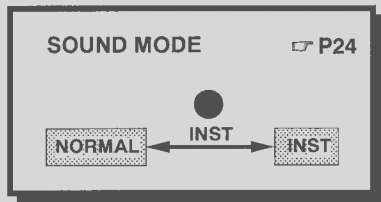
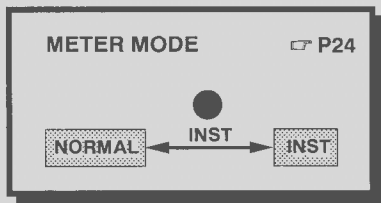
※ When no pitch has been stored, the channel number is displayed in the four-digit LED display as shown below. After storing a pitch in the Instrument Program Mode, it can be used in the Tuning Submode to tune your instrument.



※ Press the INST button to cancel the Instrument Tuning Submode and return to the METER/SOUND Mode.

Mode Diagram





Buck – up Memory

The following settings in the various MT- 1200 modes are saved in memory, even if the power is turned off.

- Calibration setting
- Temperament number
- Temperament program data (TEMPE Nos. 9 and 0)
- 0 Cent Note
- Instrument program data
- SOFT and LOUD settings in the Sound mode
- Notes and octaves (in both the METER and SOUND modes)

Battery Replacement

When batteries become weak during use, the four - digit LED display will start blinking.



Although the unit will continue to function, accurate tuning may not be maintained. Should this take place, promptly replace the batteries.

※ Batteries also provide power for memory back-up. Thus memory resets to the factory- preset values when:

- the batteries are removed from the unit. (However, the data stored in memory will be saved if an AC adaptor is used).
- batteries have been consumed.
- the AC adaptor is disconnected from the AC outlet while connected to the unit.

Factory - Preset Values

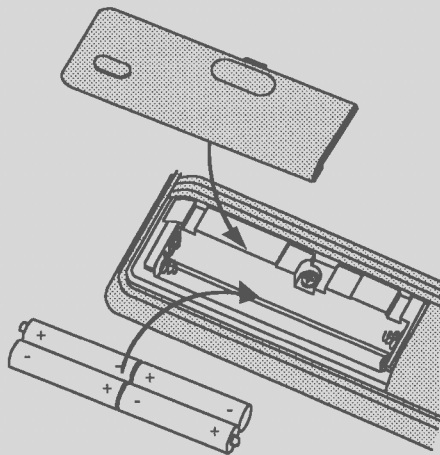
Calibration value:A4=440 Hz

Octave:0

Note: A

TEMPE No.: 1

TEMPE No.9 or 0: unprogrammed



How to Replace the Batteries

- ① Obtain four new AAA - batteries. To maintain the contents of memory, use the AC adaptor to connect the unit with an AC outlet.
- ② Remove the battery case cover.
- ③ Remove the rundown batteries.
- ④ Install new batteries. Make sure that they are in place according to the polarity markings. Otherwise, malfunction may occur.

NOTE:

- Always replace all the batteries at the same time. Mixing used and new batteries can cause a malfunction and leakage of battery fluid.

- To prevent damage by battery leakage, it is recommended that the batteries be removed if the unit is not to be used for a long period of time.
- Continuous illumination of the meter lamp will quickly run down the batteries. To avoid this turn it off when it is not necessary.

Specifications

Meter Modes:Auto mode(± 50 - cent mode); Manual mode(± 50 & ± 25 - cent modes), Sound

Modes:Calibration Selection, Temperament Selection (8 presettings/2 user's programs), Instrument Program

Scales:12 - Note Temper - ament Scale, Just Intonation (major/ minor), Mean - tone,Pythagorean, Werckmeister III, Kirnberger, Vallotti & Young, Programmable $\times 2$

Meter:Cent Indication (- 50 to +50 cent)

Measurement Range:AUTO:A0 (27.5 Hz) to C8 (4186.0 Hz), MANUAL:A0 (27.5 Hz) to B0 (30.8 Hz) (Sensitive to multiple harmonics) C1 (32.7 Hz) to C8 (4186.0 Hz) (Sensitive to ground notes)

88 notes/ (when A4=440 Hz)

Measurement Precision:Within ± 1 cent (excluding meter friction)

Guide Tone Oscillator (in SOUND mode):

C2 (65.4 Hz) to B5 (987.77 Hz), 4 octaves (when A4=440 Hz)

Calibration Range:A4=390.0 to 470 Hz (in 0.1 - Hz steps)

Jacks:INPUT, PHONES jack

Power Requirements:AAA - batteries ($\times 4$), AC adaptor (DC 6V)

Battery Life: 15 hours in AUTO Mode

Dimensions:184 (W) \times 100 (D) \times 35 (H) mm

Weight:400 g (with batteries)

Supplied Accessories:AAA - batteries $\times 4$, carrying case

Optional Accessories: AC adaptor, Goose - neck stand

*Specifications are subject to change without notice.

Supplement

TEMPERAMENTS' DATA

unit: cents in key of C, 0 – cent note=A

TEMPERAMENT	C	•	D	•	E	F	•	G	•	A	•	B
1.Equal Temperament	0	0	0	0	0	0	0	0	0	0	0	0
2.Just Intonation(major pitch)	+16	-14	+20	+31	+2	+14	-16	+18	-12	0	+33	+4
3.Just intonation(minor pitch)	+16	+49	+20	+32	+2	+14	+47	+18	+30	0	+34	+4
4.Mean- tone	+10	-14	+3	+20	-3	+14	-10	+7	-17	0	+17	-7
5.Pythagorean	-6	+8	-2	-12	+2	-8	+6	-4	+10	0	-10	+4
6.Werkmeister III	+12	+2	+4	+6	+2	+10	0	+8	+4	0	+8	+4
7.Kirnberger III	+10	+1	+3	+4	-3	+8	+1	+7	+2	0	+6	-2
8.Vallotti & Young	+6	0	+2	+4	-2	+8	-2	+4	+2	0	+6	-4

MODULATION (Shown here is an example of key modulation from C to D in the Vallotti & Young temperament.)

unit: cents
0 – cent note=A

The programmed temperament is first shifted from C to D.

8c	C	•	D	•	E	F	•	G	•	A	•	B
	+6	0	+2	+4	-2	+8	-2	+4	+2	0	+6	-4

The modulation ends when 4 cents are subtracted from the total value to automatically achieve ± 0 in the standard pitch of A.

	C	•	D	•	E	F	•	G	•	A	•	B
	+6	-4	+6	0	+2	+4	-2	+8	-2	+4	+2	0

8d	C	•	D	•	E	F	•	G	•	A	•	B
	+2	-8	+2	-4	-2	0	-6	+4	-6	0	-2	-4

0-cent note specification

(Shown below is an example of kye modulation from a 0-cent note of A to a 0-cent note of C in the just intonation of C.)

unit: cents in key of 2C, 0-cent note=A

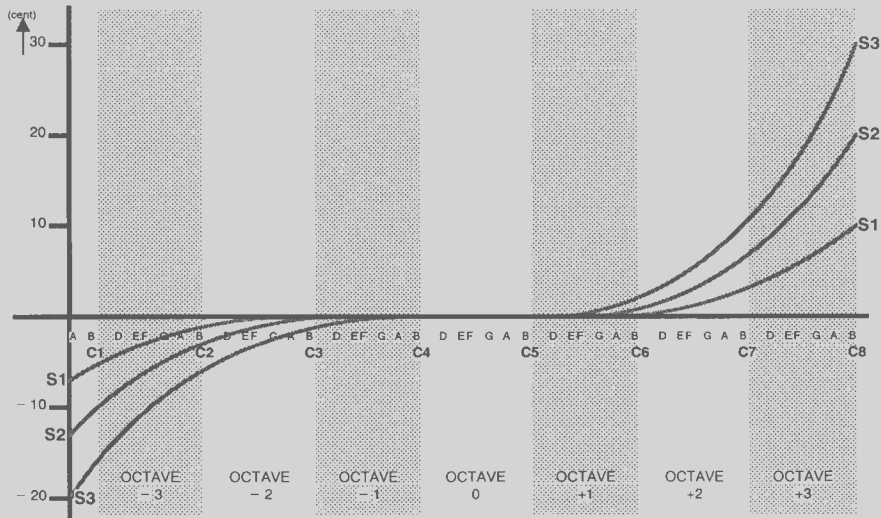
2c	C	•	D	•	E	F	•	G	•	A	•	B
	+16	-14	+20	+31	+2	+14	-16	+18	-12	0	+33	+4

The modulation subtracts 16 cents from the total value to achieve ± 0 in the standard pitch of C.

unit: cents in key of 2C, 0-cent note=C

2c	C	•	D	•	E	F	•	G	•	A	•	B
	0	-30	+4	+15	-14	-2	-32	+2	-28	-16	+17	-12

STRETCH



NOTICE

KORG products are manufactured under strict specifications and voltages required by each country. These products are warranted by the KORG distributor only in each country. Any KORG product not sold with a warranty card or carrying a serial number disqualifies the product sold from the manufacturer's/distributor's warranty and liability. This requirement is for your own protection and safety.

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