# OPERATING INSTRUCTIONS
# PETERSON STROBE TUNER MODEL 700

## PREPARATION FOR USE

Remove the power cord from inside of the cover and plug into an A.C. outlet supplying 105-125 volts 50/60 cycle alternating current.

CAUTION: If this instrument is connected to any other source of power than mentioned above, damage may occur to the instrument. (Export models require 220-240 volts, 50/60 cycle current).

The ON/OFF switch is located on the left hand side of the front panel. Sliding this switch up will turn on the power. The strobe lights behind the strobe disc will light immediately and the strobe disc will begin to turn.

Since Peterson Strobe Tuner uses all solid state circuitry and does not have any tubes to warm up, it is possible to begin tuning immediately. For maximum accuracy it is best to allow the instrument to run for a few minutes. This is particularly important if it has been subjected to extreme temperatures, either hot or cold.

## DESCRIPTION & OPERATION OF THE MODEL 700 VERNIER CONTROL

The Vernier Control is located at the right hand side of the front panel. The purpose of this control is to enable you to raise or lower the reference pitch of the instrument from the standard of A-440 Hz. Rotating this control down lowers the pitch, (flattens) and rotating it up raises the pitch (sharpens). The most commonly used pitch, A-440, is located at the center position. This control is calibrated in hundredths of a semitone, (commonly called "cents"). If the control is moved one division on the scale, the pitch will have been raised (or lowered) 1/100th of the distance between adjacent semitones. If for example, the Note Selector was turned to the note "E" and the Vernier Control was set to 25 cents sharp, the pitch of the instrument would be raised 1/4 of the distance between E and F. Thus it is possible to tune to any frequency in the entire eight octave range of the instrument. Moving the Vernier Control does not affect the temperament accuracy.

## NOTE SELECTION (FRONT PANEL)

To set the note, simply push one of the buttons just to the left of the Vernier Dial. Pushing the top button will switch the notes up the scale until you release the button. Pushing the lower button will switch the notes down the scale in the same manner. As the note is switched, it will light on the front panel, the upper case letter being in the key of C and lower case letters transposing for Eb, Bb, and F instruments.

## FOOT PEDAL (OPTIONAL)

Plug the foot pedal into the lower right hand side of the front panel. This will not disengage the front panel switches. They may be used at the same time. Pushing the left hand side of the foot pedal will switch the notes down the scale; pushing the right side of the pedal will switch the notes up the scale.

## SCANNING

Hold either the front panel switches or the foot pedal in the up or down position. The tuner will automatically scan the notes at a speed selected by the scanning speed selector, located at the lower center.

## THE STROBE DISC

The sharp and flat signs located above the Strobe Disc window indicate the direction the strobe pattern will appear to be rotating if the note sounding is sharp or flat. If the pattern rotates clockwise, the note is sharp; if counter-clockwise, it is flat. The more off pitch the note is, the faster the pattern will rotate.

The numbers along the strobe window indicate the octave bands. The octave including A=440Hz has been indicated on either side of the strobe window (A octave 3=440 Hz). A red transparent filter is used in front of the Strobe Disc to reduce the effects of glare from ambient light. This improves the overall clarity of the strobe image. The range of frequencies the Model 700 will tune are listed as follows:

| Octave note | | Note | |
|---|---|---|---|
| 0 - C | 32.703 Hz | B | 61.735 Hz |
| 1 - C | 36.406 Hz | B | 123.471 Hz |
| 2 - C | 130.813 Hz | B | 246.942 Hz |
| 3 - C | 261.626 Hz | B | 493.883 Hz |
| 4 - C | 523.521 Hz | B | 987.767 Hz |
| 5 - C | 1046.502 Hz | B | 1975.533 Hz |
| 6 - C | 2093.005 Hz | B | 3951.066 Hz |
| 7 - C | 4186.009 Hz | B | 7902.133 Hz |

C - 3 (261.626 Hz) is middle C on a piano.

## IMAGE CLARIFIER

The Image Clarifier switch is located lower center. The circuitry controlled by this switch is incorporated in the instrument for easier tuning of pianos, chimes and other instruments in which the upper partials may not be in tune with the fundamental.

It is characteristic of the tone produced by strings, that the overtones (harmonics) are frequently not integrally related to fundamental frequency, or to each other. This is true to some degree in all pianos, but is more apparent in small pianos with very short bass strings. The Image Clarifier is a sharp cut-off filter which eliminates the upper partials from the display on the Strobe Disc so the lower partials are more clearly displayed. In general, the "LO" should be used when tuning the bass strings up to about middle "C". The "HI" position should be used above this point. Each person tuning will use this feature a little differently so it is best to try several cross-over points and determine which one best suits your tuning style.

CAUTION: If a piano note is tuned on the "LO" position and later checked on the "HI" position, there will in all probability, be a sharp indication on the strobe pattern. This is because the upper partials are indeed sharp. It should be emphasized that this is not a defect in the tuner, but the tuner is accurately displaying the harmonic components that the string is actually producing.

## CONTRAST CONTROL

The contrast Control is located just to the right and below the strobe window. The purpose of this control is to vary the contrast of the image present in the strobe window. By using this control in conjunction with the Image Clarifier Switch, improved contrast can be obtained. Usually under normal conditions with the Image Clarifier in the "HI" position, the contrast will be best with this control rotated in the clockwise direction. This would apply to the upper ranges of the keyboard above middle "". By switching the Image Clarifier to the "LO" position, and rotating the control counterclockwise (to the left), improved contrast may be obtained in the bass range of the keyboard below middle "C". The results may vary with different types of tones being tuned.

## MICROPHONE

The built-in condenser microphone, or an external microphone can be used. The tuner is supplied with a standard 1/4" jack of monaural type. This is located in the lower right-hand corner. The preamp design is such that the tuner will respond well to both high and low impedance sources. The internal microphone is disconnected when a plug is inserted into the jack. This allows the user to plug a guitar or similar electronic instrument, directly into the tuner without interference from background noise, as may be experienced with a microphone.

## SPECIFICATIONS

RANGE: Eight octaves of the equi-tempered chromatic scale from c-32.703 Hz (C.P.S.) through

B-7902.128 Hz (C.P.S.)

ACCURACY: Temperament guaranteed to be within 1/3 of 1/100 of a semitone (1/3 of a cent or 0.02%).

ELECTRICAL SPECIFICATIONS: Operates on a 105-125 Volts A.C., 50/60 Hz. (Export Model 700E operates on 220-240 Volts 50/60 Hz). Power consumption 18 Watts, 25 Transistors, 61 Diodes, 18 Integrated Circuits, sensitive built in condenser microphone.

CONTROLS: Power On-Off Switch, Note Selector, Vernier Pitch Control, Contrast Control, Image Clarifier Control, Scan Speed Control.

CASE SIZE: Dimensions are 5-1/4" x 13-5/8" x 9" (13.3 cm x 34.6 cm x 22.86 cm). Case is covered with black Moroccan grain leatherette, cover is detachable, or may be used as a stand. Cover also provides storage for line cord, accessories or other tools.

NET WEIGHT: 13 Pounds (5.9 kg).

SHIPPING WEIGHT: 15 Pounds (6.8 kg).

## GUARANTEE

All Peterson tuners are guaranteed for a period of one year from date of purchase. Any tuner that is returned to the factory prepaid within this period will be repaired free of charge, if, in our opinion, it is defective in material or workmanship. Instruments that require repairs due to accidental damage, abuse, or operation on power sources other than those specified, will be repaired and charged for at current rates.

## RETURNING AN INSTRUMENT

Should it be necessary to retun an instrument to the factory, please observe the following instructions.

Use a shipping carton that will allow at least 2" of packing material around the entire instrument. Crumpled newspaper works very well for packing. Mark the carton "FRAGILE, Delicate Instrument".

Be sure to enclose a leter which describes the difficulty you have experienced and your return address.

Ship the instrument Prepaid to

PETERSON ELECTRO-MUSICAL PRODUCTS
11601 South Mayfield Ave.

Alsip, IL 60803-2476

If possible, avoid shipping via Railway Express. Express shipments rarely arrive in less than two weeks. We suggest shipping via United Parcel Service where available, or Parcel Post Special Handling, Insured.