

**Electro-Voice®**  
a gulton company

## Model TK60 Line Matching Transformer Kit

### SPECIFICATIONS

**Frequency Response:**

35 – 20,000 Hz  $\pm$  2 dB

**Insertion Loss:**

1.0 dB

**Secondary Impedance (speaker):**

8 ohms

**Wattage Rating of Primary Taps:**

7.5, 15, 30, 60 watts

**Dimensions:**

95 mm (3.75 in.) high

146 mm (5.75 in.) wide

78 mm (3.06 in.) deep

**Net Weight:**

.91 kg (2 lb)

**Shipping Weight:**

1.3 kg (2 lb 14 oz)

### DESCRIPTION

The TK60 transformer Kit has been designed as a convenient option to allow efficient matching of the Electro-Voice PI100 and FR12-2 speaker systems in virtually any sound distribution application using 25-volt or 70.7-volt lines.

The TK60 transformer kit features less than 1 dB insertion loss for best utilization of amplifier power and driver efficiency. Frequency response is uniform,  $\pm$  2 dB from 35 to 20,000 Hz, so that sound quality does not change when transformers are used. By utilizing the latest transformer design techniques, each unit is conservatively rated for its respective power handling capacity. Distortion at full rated power is less than .1%.

### ADVANTAGES OF 25- AND 70.7 VOLT OPERATION

In the case of long speaker lead lengths, advantages may be gained by using 25- or 70.7-volt line matching systems. By choosing the 70.7-volt system, with its relatively high impedance lines (well above nominal speaker impedance), power losses in long speaker lines are vastly reduced. This can mean a substantial saving in amplifier cost. Smaller wire can also be used without excessive power loss.

Because the TK60 transformer kit has various wattage taps, the amount of power being fed to any speaker or group of speakers can be adjusted easily without the use of resistive networks that "soak up" power and reduce the efficiency of the system. In addition, a more powerful amplifier can be substituted at any time for the existing amplifier without upsetting the loudness balance between various speakers. Additional speakers can be added or wattage taps can be increased, up to the rated amplifier output, without affecting the loudness of the speakers already installed.

The same advantages apply to 25-volt line operation except that line losses are increased considerably due to the greater current flow. Note that in some localities building codes permit 25-volt lines to be run without conduit, while 70-volt lines must have this costly additional protection. Thus, a 25-volt system may prove to be the more economical approach even though additional amplifier power or larger gauge cable is required.

For additional information about dual voltage operation, see "Electro-Voice Guide to Commercial Sound Reinforcement and Public Address Systems" available without charge by writing to Electro-Voice, Inc., Advertising Department, 600 Cecil Street, Buchanan, Michigan 49107.

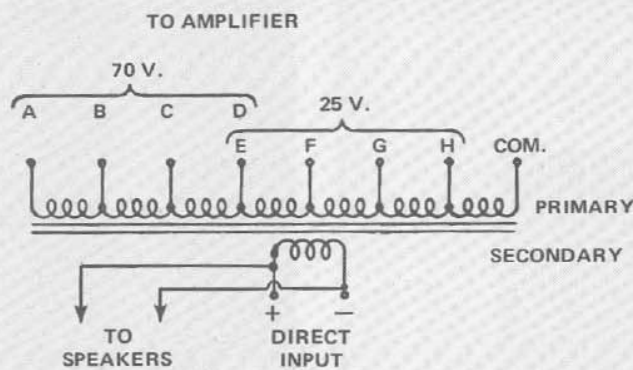


FIGURE 1 – Schematic

Primary Tap (see Fig. 1)	Line Voltage	TK60	
		Watts	Ohms
A	70.7	7.5	667
B	70.7	15	333
C	70.7	30	166
D	70.7	60	83
E	25	7.5	83
F	25	15	41
G	25	30	20
H	25	60	10

FIGURE 2 – Rating of Primary Taps

#### MOUNTING

The TK60 transformer kit installs in place of the standard input panel. Simply remove the screws holding the original input panel, lift the panel from the enclosure and disconnect the speaker leads from the input terminals (observing the polarity). Resolder the speaker leads to the "8" and "SPKR COM" terminals of the TK60 (again observing polarity). Install the TK60 into the rear of the enclosure and tighten the mounting screws.

#### SELECTING TRANSFORMER TAPS

After choosing between 25- and 70-volt operation, selecting the proper transformer tap is relatively simple. First, determine the maximum power

in watts needed at each speaker location. Choose a transformer tap at (or immediately above) this wattage (see Figures 1 and 2). Next, add the individual wattages required at all speakers and select an amplifier having a rating equal to or exceeding the total wattage required. All transformer primaries should be connected in parallel to the output of this amplifier with the amplifier connected to the common terminal and the indicated primary tap.

Selecting the 15-watt transformer tap, for example, means only that, at full rated amplifier output, the speaker will receive the full fifteen watts. If the volume control on the amplifier is

turned down, each speaker will get a proportional amount of power, so that the system balance will not change.

It is suggested that, when computing amplifier wattage requirements for a system, a generous "safety margin" in terms of wattage be included, so that the system need not be operated continuously at its full rated output. This will allow reserve power if ambient noise levels should rise and accommodate minor discrepancies in efficiency of any of the components.

It may be helpful to consider the wattage taps on the transformer in terms of percentage of available power from the amplifier. A 30-watt tap being fed from a 60-watt amplifier would receive half of the available power, while a 5-watt tap would get only 8.5% of the power.

#### WARRANTY (Limited) –

Electro-Voice Reinforcement & Public Address Loudspeakers and accessories are guaranteed for five years from date of original purchase against malfunction due to defects in workmanship and materials. If such malfunction occurs, unit will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not cover finish or appearance items or malfunction due to abuse or operation at other than specified conditions. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee.

For correct shipping address and instructions on return of Electro-Voice products for repair and locations of authorized service agencies, please write: Service Dept., Electro-Voice Inc., 600 Cecil Street, Buchanan, Michigan 49107 (Phone: 616/695-6831), or Electro-Voice West, 8234 Doe Ave., P.O. Box 3297, Visalia, CA 93277 (Phone: 209/651-7777).

Electro-Voice also maintains complete facilities for non-warranty service.

Specifications subject to change without notice.