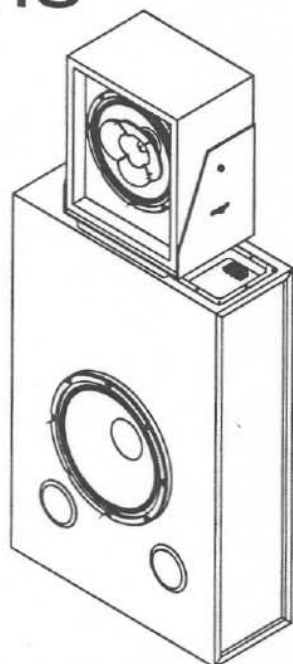


# EV Cinema Systems



## TS993C

### Behind Screen System

- Three-way design for use in small to medium rooms
- Compact design, only 10 inches deep overall - allows for more seating
- 90°x90° coverage pattern appropriate for stadium seating in smaller rooms
- Includes mid-high passive crossover for bi-amped operation
- Shipped sub-assembled for easy installation

#### Description

The TS-993C 3-way behind screen system consists of a High-pack Sub Assembly mid/hi frequency unit mounted on top of a TL15-1ES low-frequency speaker system. The two piece construction allows for easy installation using only four 1/4-20 bolts. The High-pack Sub Assembly uses a newly design coaxial speaker, purposely developed for cinema, to give smooth mid-frequency signal response while providing a 90°x90° high-frequency pattern. The TL15-1ES low-frequency speaker use the DL15MT high excursion speaker which offers greater speaker durability for long term peak power demands. The combination of the two units gives the small to medium cinema theaters with limited behind screen space, greater intelligibility, offered by its dynamic 3-way performance.

#### Uniform Limited Warranty Statement

Electro-Voice products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase.

If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid. **Exclusions and Limitations:** The Limited Warranty does not apply to: (a) exterior finish or appearance; (b)

certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than Electro-Voice Service or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to EVI Audio Service or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. A list of authorized service representatives is available from Electro-Voice Service at 600 Cecil Street, Buchanan, MI 49107 (800/234-6831 or FAX 616/695-4743). **Incidental and Con-**

**sequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Electro-Voice shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use.

Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**Electro-Voice Accessories** are guaranteed against malfunction due to defects in materials or workmanship for a period of one (1) year from the date of original purchase. Additional details are included in the Uniform Limited Warranty statement.

For warranty repair, service information, or a listing of the repair facilities nearest you, contact the service repair department at: 616/695-6831 or 800/685-2606.

**For technical assistance,** contact Technical Support at 800/234-6831 or 616/695-6831, M-F, 8:00 a.m. to 5:00 p.m. Eastern Standard time. Specifications subject to change without notice.

## TS993C Behind Screen System

### Architects' and Engineers' Specifications

The TS-993C shall consist of two parts, a High-pack Sub Assembly and a TL15-1ES low-frequency speaker system High-pack Sub Assembly High-Pack Kit shall consist of one 12 inch (30.48 cm) Duplex-type loudspeaker. The loudspeaker features a single 1 in. (2.54cm) high frequency compression driver coaxially mounted to the 12" loudspeaker, using a 90° x 90° coverage pattern horn. The system shall meet the following criteria: Power handling of the shall be 250 watts of bandwidth pink noise with 6dB SPL crest factor. Frequency response shall be smooth and uniformly usable from 60 Hz to 20 kHz. Pressure sensitivity shall be 97dB SPL when measured at one meter on axis with one watt of pink noise. The loudspeaker shall be enclosed in a nonvented 1/2" V-folded black wood-grain vinyl clad particle board enclosure. Suspended on a black crinkled finished U-shaped steel adjustable bracket Mounted on a black painted MDF (medium density fiberboard)

mount board, the bracket will allow the speaker to be adjusted vertically +/- 12° and horizontally +/- 30°. The mounting board will allow for quick installation if the High-Pack Kit and smooth horizontal adjustments.

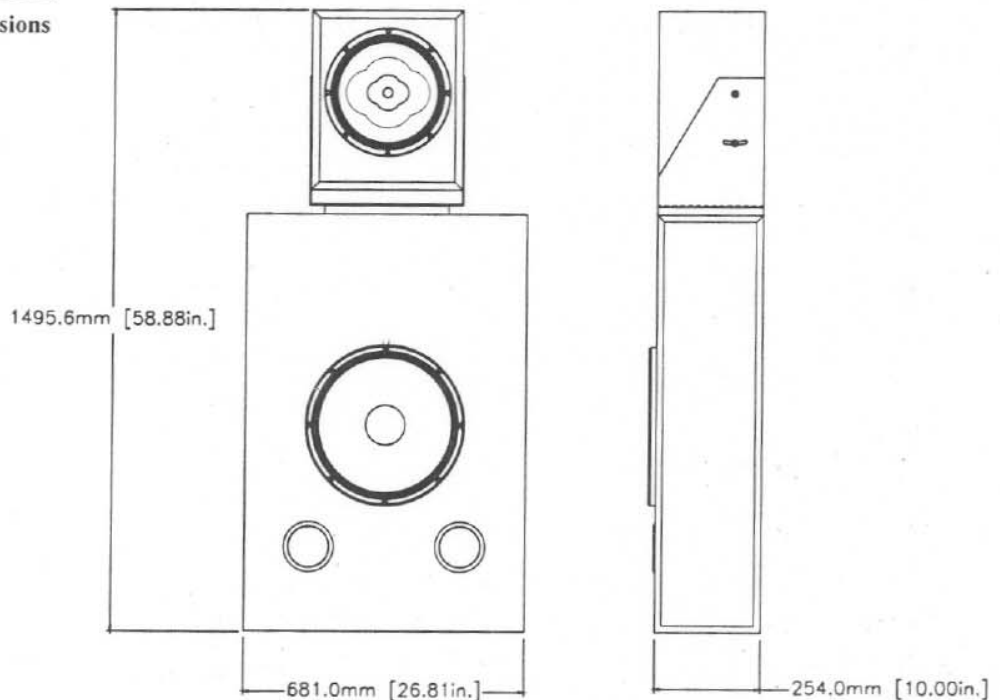
The TL15-1ES loudspeaker system shall be a low-frequency bass-reflex design A 381mm (15in.) woofer shall be front mounted in a 133-liter (4.7ft<sup>3</sup>) enclosure. the woofer will be an Electro-Voice DL15MT with a long term noise power capacity of 400 watts per EIA RS-426-A 1980. The system will meet the following criteria: axial frequency response from 38 to 2,000 Hz; sensitivity of 96 dB at 1 watt/1 meter; impedance of 8 ohms nominal and 6.9 ohms minimal; dispersion of 130° x 140° at 500 Hz. the system shall be capable of producing average sound levels in excess of 121 dB in the long term, and short-term peaks of 127 dB.

The black wood grain vinyl laminated enclosure, constructed of groove folded 19-mm (0.75 in.) particle board. the enclosure shall contain sound-absorbing glass wool. the connection shall be

#10 screw terminals on barrier strip. The dimension shall be 1.004mm (39.50) tall, 680 mm (26.75 in.) wide, and 254 mm (10.00 in.) deep. Net weight shall be 33.6Kg (74 lb.)

The loudspeaker shall be the Electro-Voice TL15-1ES.

Figure 1—TS993C System Dimensions



## TS993C Behind Screen System

### Mounting Instructions Refer to Figure 3 for the following steps.

1. Remove four screws on top of the TL15-1ES, the two closest the input panel and the two screws farthest away from the input panel.
2. Remove the two screws from the vertical adjustment slot, one on each side of the High-pack Sub Assembly.
3. Loosen the two vertical pivot screws on either side of the bracket. Pivot the speaker back and forward (as shown in figure 3), so the speaker face upward to allow access to the four mounting through holes, then retighten the pivot screws.
4. Place the High-pack Sub Assembly on top of the TL15-1ES, centering the four large through holes over the four vacant holes on top of the TL15-1ES. Insert and tighten the four bolts you removed earlier from the TL15-1ES.
5. Once secure, loosen the horizontal pivot and adjustment screws (see figure 4) position the speaker for the desired horizontal angle and retighten screws.
6. Now loosen the two vertical pivot screws

and rotate the High-pack Sub Assembly forward and down, realigning the vertical adjustment slot with the adjustment screw hole, and replace the bolts removed earlier, making sure the nylon washer is properly positioned. (see figure 3)

7. Adjust the High-pack Sub Assembly to the desired vertical angle and tighten all screws sufficiently so that the speaker does not inadvertently rotate.

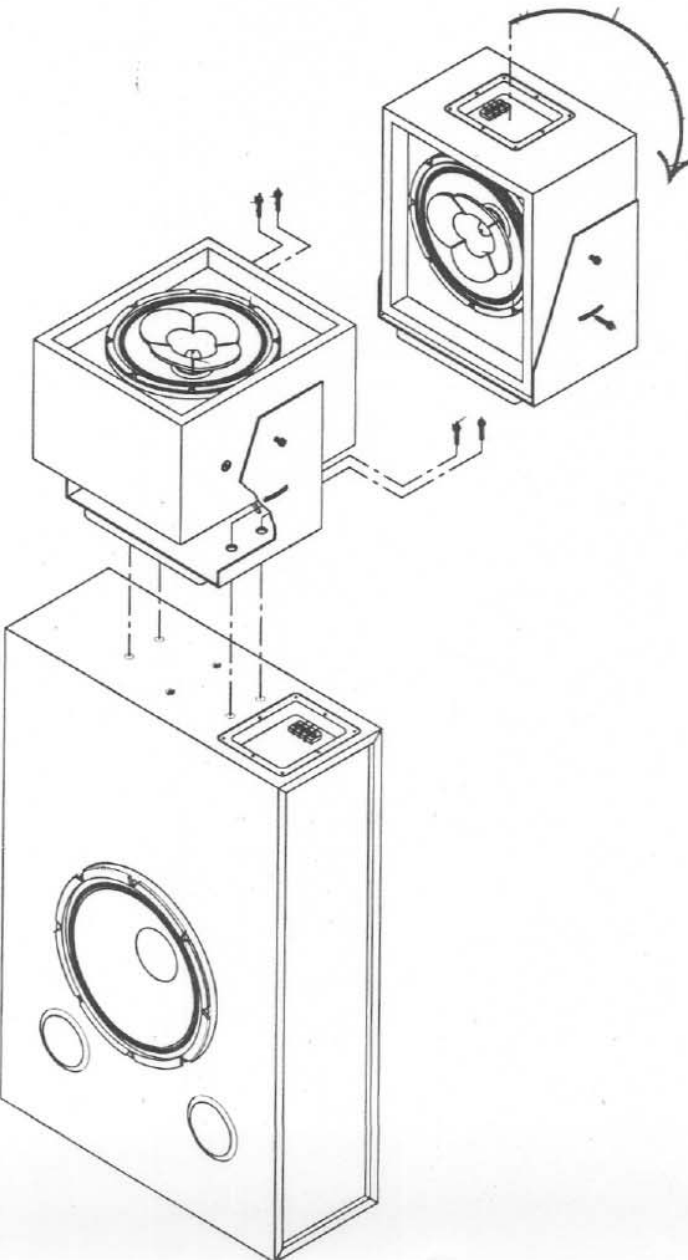
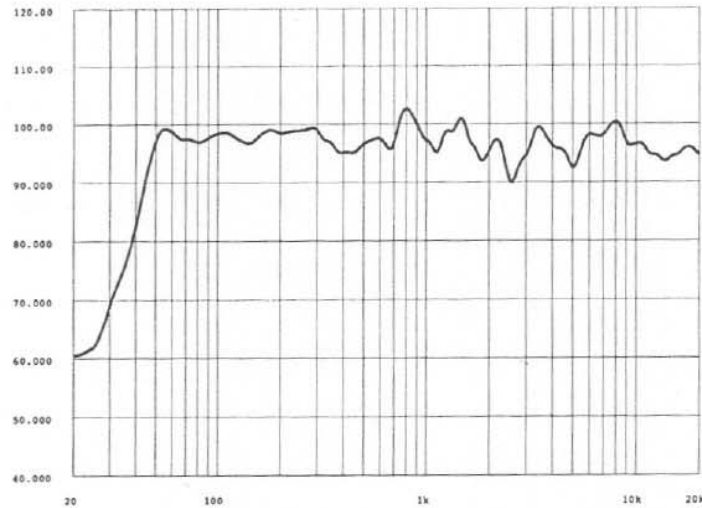


Figure 3—Mounting the High-pack Sub Assembly to the TL15-1ES

# TS993C Behind Screen System

TS993C Behind Screen System

**Figure 2 TS993C System Typical Frequency Response with DX34A LF/MF presets and MF/HF crossover unit: Swept sine-wave input, under anechoic environment, normalized response, from 4 volts at 500hz at 10 feet, with the microphone axis coincident midway between the low frequency speaker and mid/high frequency speaker**



## Specifications

### Frequency response:

40 Hz- 20,000 Hz (figure 2)

### System Impedance:

LF 8 ohms Nominal

MF/HF 8 ohms Nominal

### Power Handling:

#### Low frequency:

400 watts (1,600 watts peak)

#### Mid/Hi frequency crossover:

250 watts (1,000 watts peak)

### Nominal Directivity:

Horizontal: 90°

Vertical: 90°

### Sound Pressure at 1Watt 1Meter Input: (see figure 2)

LF/MF/HF 40 to 20,000 Hz (Average)  
98 dB

### Crossover Frequency:

LF/MF 380 Hz

(24dB-per-octave Linkwitz-Riley)

Passive Mid/High crossover Freq.

2000 Hz

### High pack High-pack Sub Assembly Mounting:

Four 19-mm (0.75-in.) diameter holes, 2 left and 2 right allowing High-pack Sub Assembly Bracket and mounting board to attach securely.

### Material:

Low frequency enclosure is V-folded black wood grain vinyl-clad particle board

Mid/Hi frequency enclosure is a V-folded black wood-grain vinyl laminated particle board

### Input Connectors:

#10 screw terminals for bass, and

mid / high frequency speakers

### Dimensions,

#### Bass:

Height: (100cm) 39.5 in

Width: (68.0 cm) 26.75 in.

Depth: (25.4 cm) 10.00 in.

Weight: (33.6kg) 74 lb

Shipping Weight: (37.3 kg) 82 lb

#### Mid Bass/High Frequency:

Height: (46.7cm) 18.39 in.

Width: (37.8 cm) 14.9 in.

Depth: (25.4 cm) 10.00 in.

Weight: (22.9 kg) 50.5 lb

Shipping Weight: (26.6 kg) 58.6 lb

#### Total System Dimensions:

Height: (149.56 cm) 58.88 in.

Width: (68.1 cm) 26.81 in.

Depth: (25.4cm) 10.00 in.

Weight: (56.5 kg) 124.5 lb

Shipping Weight: (63.9 kg) 140.6 lb

## Notes on Measurement Conditions

1. Band-limited pink noise signal, one watt calculated using  $E^2/Z_{min}$  3.16-meter measurement distance referred to one meter.
2. On-axis, one watt calculated using  $E^2/Z_{min}$  3.16-meter measurement distance referred to one meter, low frequencies corrected for anechoic-chamber error.

3. This system rating is patterned after the ANSI/EIA RS-426-A method where the test signal is pink noise with a 6-dB crest factor over the bandwidth of the system, with power calculated using  $E^2/R_e \times 1.15$ , for 8 hours.
4. This measurement made under the same conditions as pressure sensitivity, and takes into account any power-compression

effects due to nonlinearities in the system.

5. The distortion at any given frequency may be found by graphically taking the difference between the fundamental and harmonic, and adding the number of decibels which the harmonic has been raised on the graph and apply the formula: percent distortion =  $100 \times 10^{(-\text{difference in dB}/20)}$

# Electro-Voice®

600 Cecil Street, Buchanan, MI 49107

616/695-6831, 616/695-1304 Fax

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