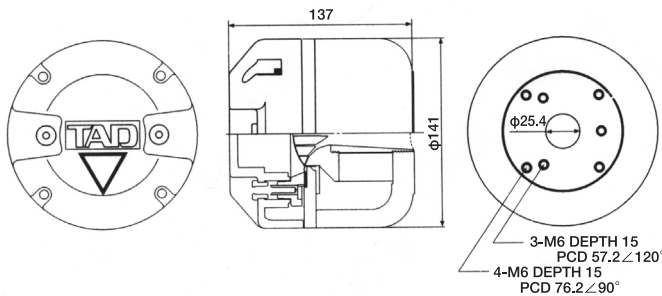


HIGH FREQUENCY DRIVER

INSTRUCTION MANUAL

SPECIFICATIONS



Nominal impedance	8 ohms
Frequency response	800-22,000 Hz (with 700 Hz cut-off horn mounted)
Voice coil diameter	48 mm (2 in.)
Equalization system	Triple-slit rear type
Throat connection diameter	25.4 mm (1 in.)
Mounting pitch	76.2 mm (3 in.) for 2 or 4 holes 57.2 mm (2-1/4 in.) (for 3 holes)
Rated input	10 W } For crossover frequency
Maximum input	40 W } at 800 Hz, -12 dB/oct.
Output sound pressure level	111 dB/W [Measured at 1m distance using dispersion angle 60° horn. (Depth 190 mm)]
Crossover frequency	800 Hz or higher (-12 dB/oct)
Total magnetic flux	74,200 Mx
Magnetic flux density	19,500 G
Dimensions (diam. \times depth)	141 \times 137 mm (5-9/16 \times 5-3/8 in.)
Weight	6.9 kg (15 lb 5 oz)
Accessories	Hexagonal bolts (M6 \times 20 mm) \times 4 Flat washers \times 4 Instruction manual \times 1 Terminal tips \times 2

NOTE:
Specifications and features are subject to change without notice due to improvements.

FEATURES

Pure Beryllium Diaphragm

One of the main features of the TD-2002 high-frequency driver is a 48 mm diameter beryllium diaphragm, formed with high purity by special vacuum evaporation technology. It is well known that beryllium is a very hard and light meta. Also, the speed at which sound travels through beryllium is high, making it an ideal material for the diaphragms of high-frequency loudspeakers. As the weight of the diaphragm is only 0.13 g or less, the high range resonance frequencies have been extended beyond the audible frequency limit, the frequency response is flat, and the definition and transient responses are excellent.

Newly Developed 3-slit Phasing Plug

One of the elements providing the excellent frequency response of the TD-2002 is the 3-slit phasing plug machined with extreme precision. The shape of the plug, precision-matched from the diaphragm circumference to the phase, has especially improved the sound reproduction capacity in the high frequency range.

Powerful Internal Magnetic Circuit Using an Alnico Magnet

The powerful internal magnetic circuit using an alnico magnet has a pole and top plate made of pure iron and a ductile cast iron yoke in a precision assembly, with a total magnetic flux of 74,200 Mx and a magnetic flux density of 19,500 G. Furthermore, an oxygen-free copper shortening ring on the center pole effectively prevents impedance increases in the high frequency range. As the result, a frequency responses with low distortion is obtained to an extremely high frequency range, and the magnetic influence to the outside is negligible.

Rear Compression System for Elimination of Parasitic Resonance

A rear compression system is used to eliminate resonance at the surround and bad influence for the response characteristic of the phase distortion. The horn throat is arranged inside the magnetic circuit, the diaphragm is fixed to the rear, and the sound from the inside of the diaphragm dome is used.

By careful analysis of the cavity resonance at the surround and in the magnetic circuit, parasitic resonance has been reduced for all ranges and a rather flat frequency response has been obtained. At the same time, attention also has been paid to mechanical resonance, and all parts have been provided with sufficient strength. As the result, a natural sound with extremely high definition has been obtained.

Input Terminals with a new Construction

Input terminals with a completely new construction have been developed and installed. This construction permits direct connection of the lead wires from the outside to the diaphragm assembly, and it completely eliminates the distortion voltage induced conventionally in the lead wires inside the back cover. As the result, faithful playback of the input signal can be executed down to minute input without coloring.

Aluminum Edgewise Voice Coil

By employing an aluminum edgewise voice coil covered with alumite insulating material, the conductor area in the electromagnetic circuit is increased, thereby improving conversion efficiency. A heat-proof voice coil bobbin is also employed to improve stability and reliability.

PRECAUTIONS

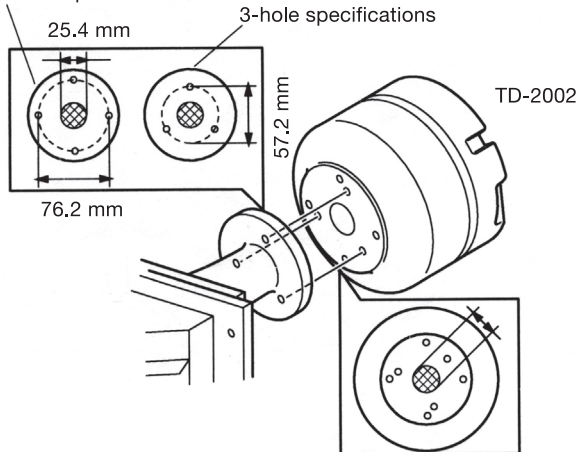
- Since this unit is quite heavy 6.9 kg (15 lb 5 oz), take extra care when handling.
- The horn must be mounted to the driver unit prior to applying any input signals. If signals are applied to the driver unit by itself, the diaphragm will be in danger of rupture when amplitude is increased, because in audio terms, the diaphragm is practically non-loaded (without the horn). Nor should signals be applied directly bypassing the crossover network (low-cut filter).
- When using a sine wave input signal to check operational sound, observe the following:
When applied via crossover network
Use sine wave input signal of voltages below 2.8 V (1 W), and frequencies above 600 Hz.
When applied directly without crossover network
Use a sine wave input signal of voltage below 0.9 V (0.1 W), and frequencies above 200 Hz.

CONNECTIONS:

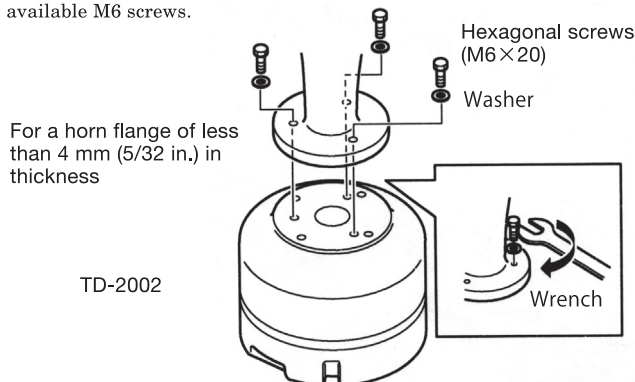
Solder the accessory terminal tips to speaker cable and connect by inserting ⊕ into the red hole and ⊖ into the black hole.

HORN MOUNTING

- Use a horn throat diameter of 25.4 mm (1 in.) throat diameter.
- Make the mounting pitch 76.2 mm (3 in.) when only 4 mounting screws are used, and 57.2 mm (2-1/4 in.) when 3 mounting screws are used.



Use the accessory hexagonal screws (M6×20) and flat washers, making sure that each is secured firmly. Note that incorrect horn mounting may well result in deterioration of the frequency response, and the generation of distortion. For a horn flange of less than 4 mm (5/32 in.) in thickness, the screws furnished with the unit cannot be used; use commercially available M6 screws.

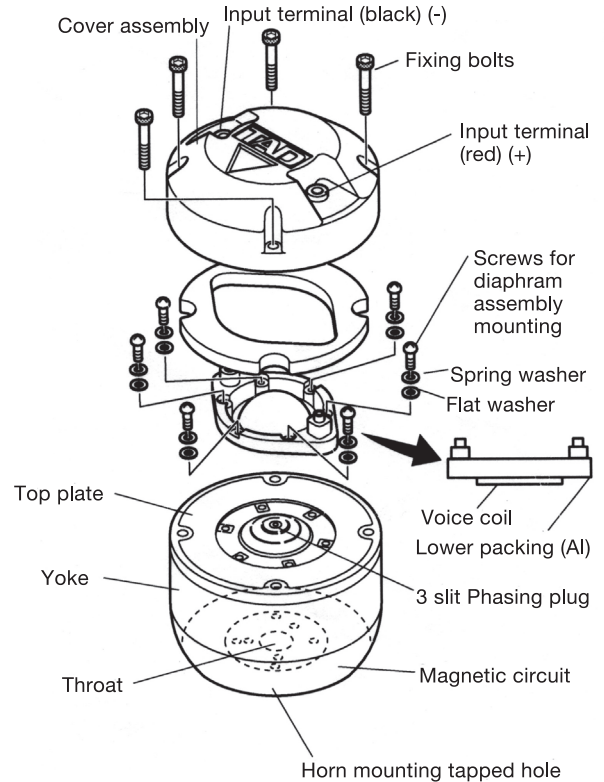


CROSSOVER FREQUENCY AND MAXIMUM INPUT POWER

The crossover frequency of the TD-2002 is 800 Hz. When using this unit in a multi-way speaker system, use a crossover frequency of 800 Hz or higher, and a network of cut-off slope of at least 12 dB/oct. These values are determined by the diaphragm vibration amplitude at maximum input. If networks of lower crossover frequencies are to be used, musical program input power will be decreased as shown in the following table.

Crossover Frequency (fc):Hz	800	700	600
Musical Program input power:W	40	30	20

Exploded Diagram of the TD-2002



*Replacement diaphragm assemblies SXV1005 are also available.

Cautions at the Time of Diaphragm Assembly Exchange

- At the time of cover removal, pull out all mounting hexagonal bolts.
- The cover can be removed by inserting a flat screwdriver etc. at the part where its side is in contact with the top plate.
- The diaphragm assembly has no protective net. Accordingly, take care not to drop objects or the mounting bolts onto the diaphragm after removal of the cover, as this can cause breakage.
- Use a cross-slot screwdriver with a non-magnetic bit for removal and installation of the diaphragm assembly. Otherwise, the screwdriver may be pulled by the magnetic force and may damage the diaphragm assembly. Use special caution during screw removal and installation.
- At the time of installation of the diaphragm assembly, special care is required to prevent contact of the voice coil with the magnetic circuit, as this can cause faulty operation. Tighten all mounting screws with equal force.
- Install the cover with correct directionality for diaphragm mounting ring and cover.

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TAD Technical Audio Devices

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