

Professional TONE ARM

... for use with quality high fidelity phono cartridges - monophonic or stereo.

Specifications:

| Dimensions | MODEL M232 | | MODEL M236 | |
|-------------------------------|-----------------------|-------|----------------------------------|-------|
| | Inches | mm | Inches | mm |
| Overall Length | 12 $\frac{11}{16}$ | 322.3 | 14 $\frac{1}{2}$ | 368.3 |
| Base Diameter | 2 $\frac{11}{16}$ | 68.3 | 2 $\frac{11}{16}$ | 68.3 |
| Range of Height of Adjustment | Up to 2 $\frac{1}{4}$ | 57.2 | Up to 2 $\frac{1}{4}$ | 57.2 |
| Arm Pivot to Turntable Center | 8 $\frac{3}{4}$ | 209.6 | 10 $\frac{10}{16}$ | 261.5 |
| Weight | 1 lb. (453.6 gr.) | | 1 $\frac{1}{8}$ lbs. (510.3 gr.) | |

General: Models M232 and M236 "Professional" Stereo Tone Arms reflect the high quality and scientific design needed for superior reproduction of monophonic and stereophonic phonograph records. The Model M236 is recommended for studio and professional use and is capable of playing records up to 16" (40 cm) in diameter. The Model M232 is similar to Model M236, but is intended for use with equipment where space is limited. It is designed to play records up to 12" (30 cm) in diameter.

The Models M232 and M236 "Professional" Stereo Tone Arms permit the use of lower tracking forces for which the latest cartridges are designed. The tone arms can be precision balanced and are so designed that a highly accurate adjustment of the tracking force can be made visually.

Other Features:

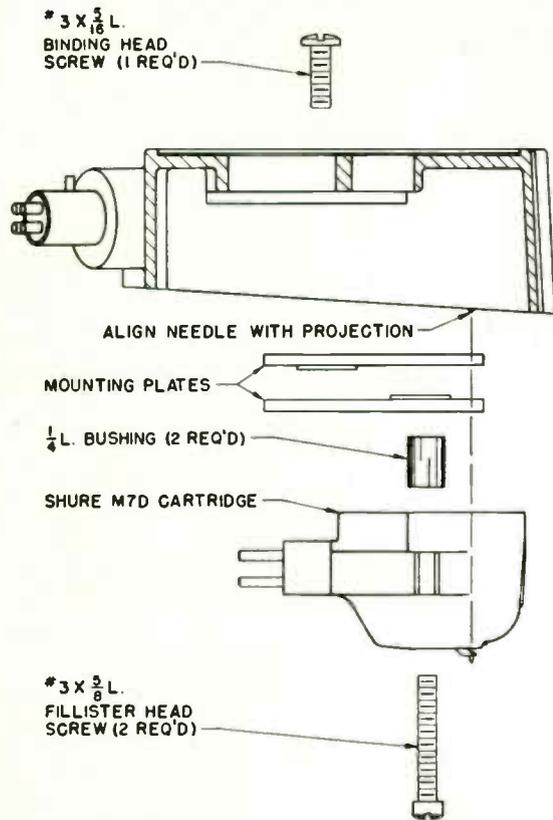
- A. All cartridges can be adjusted for correct "overhang" to insure optimum tracking.
- B. The arm can be completely installed from the top side of the motorboard.
- C. The plug-in head is rigidly locked in place, but very easily removed when necessary.
- D. Precision ball bearings are used throughout on all pivot surfaces.
- E. A plug-in cable is supplied for convenient connections to the preamplifier.

Cartridge Installation: The Models M232 and M236 Stereo Tone Arms have been designed to provide superior performance with Shure Cartridges and to permit maximum performance from other types and makes. Figure A shows a typical installation using the Shure M7D Stereo Custom Dynetic phonograph cartridge.

All screws, nuts, and washers indicated are American Standards.

The following steps are recommended in installing a cartridge.

1. Remove the plug-in head by loosening the knurled lock nut. See Figure B.
2. Assemble spacers and mounting plates to the cartridge. (See supplementary data sheet for mounting plates, spacers and screws to be used).



3. Slip pin-jacks onto cartridge terminals. (See electrical connections). Mount cartridge assembly into the plug-in head using the #3x $\frac{5}{16}$ " machine screw.
4. Slide cartridge assembly to align the needle tip even with the small projections on the underneath side head. This alignment insures maximum tracking effectiveness.

Cartridges of varying sizes and weights require different mounting hardware. See tabulated list in supplementary data sheet for correct type and quantity of mounting plates, spacers, and mounting screws (which are provided).

Hardware Included in Package:

- 1 Washer #5
- 2 Hex Nut #5
- 3 Washer #8.
- 3 Hex Nut #8-32.
- 1 S.S.B.H.M. Screw #3x $\frac{5}{16}$ ".
- 3 Flat Hd. Mach. Screw #8x $1\frac{1}{4}$ ".
- 2 Fil. Hd. Mach. Screw #3x $\frac{3}{8}$ " (Short).
- 2 Fil. Hd. Mach. Screw #3x $\frac{5}{8}$ " (Long).
- 1 Nut #3-48.
- 3 Flat Hd. Wood Screw #8x $\frac{3}{4}$ " L.
- 1 Set Screw (Assembled in Base).

- 2 Spacer (High).
- 2 Spacer (Low).
- 2 Slide.
- 1 Disc.
- 1 Cable.

Arm Installation: The Models M232 and M236 "Professional" Stereo Tone Arms are designed to be completely installed from the top of the motorboard. The arms may be mounted in any convenient place on the motorboard. For optimum tracking angle the arm is mounted with the needle tip (or projection on tone arm head) passing .597 inches (15.2 mm) for the M232 and .705 inches (17.9 mm) for the M236 beyond the center pin of the turntable.

To facilitate correct installation, the printed box may be used to locate the mounting hole for the pivot post. The semi-perforated holes in the template are carefully positioned for proper mounting. An additional hole is provided in the top of the box to insure that the pencil or scriber will be perpendicular to the mounting base.

The following steps are recommended in installing the Models M232 and M236, "Professional" Tone Arms. See Figure B.

1. Carefully force proper template hole over the turntable center. Using the turntable center as a pivot point, swing the template to locate the center of the mounting hole.
2. Drill $\frac{7}{16}$ " (17.5 mm) diameter hole at the spot selected.
3. Locate the base accurately over the $\frac{1}{8}$ " (17.5 mm) hole and mark the location of the three mounting holes. If the motorboard is made of wood, drill three starting holes for the wood screws. If the motorboard is made of metal, drill three through holes approximately $\frac{1}{16}$ " (4.8mm) in diameter.
4. Fasten the base securely, using wood screws or machine screws, nuts and washers provided. Place aluminum disc in recess in base.
5. Plug in tone arm head holding cartridge.
6. Mount the tone arm by inserting the pivot post through the center of the mounting base. Tighten set screw in mounting base to hold the arm approximately at the correct height.
7. Install arm rest.

NOTE: The arm rest is designed for adjustable height and consists of an arm rest assembly, a base, two #5 hex nuts and a washer. (See Figure D.)

- A. Locate and drill the mounting hole for the arm rest.
- B. Assemble one #5 hex nut to the arm rest assembly. Locate nut about half way up the threaded rod.
- C. Insert arm rest assembly into the base and seat the hex nut in the cavity provided.
- D. Place arm rest assembly and base through the mounting hole and fasten loosely in place using the #5 washer and the other #5 hex nut.

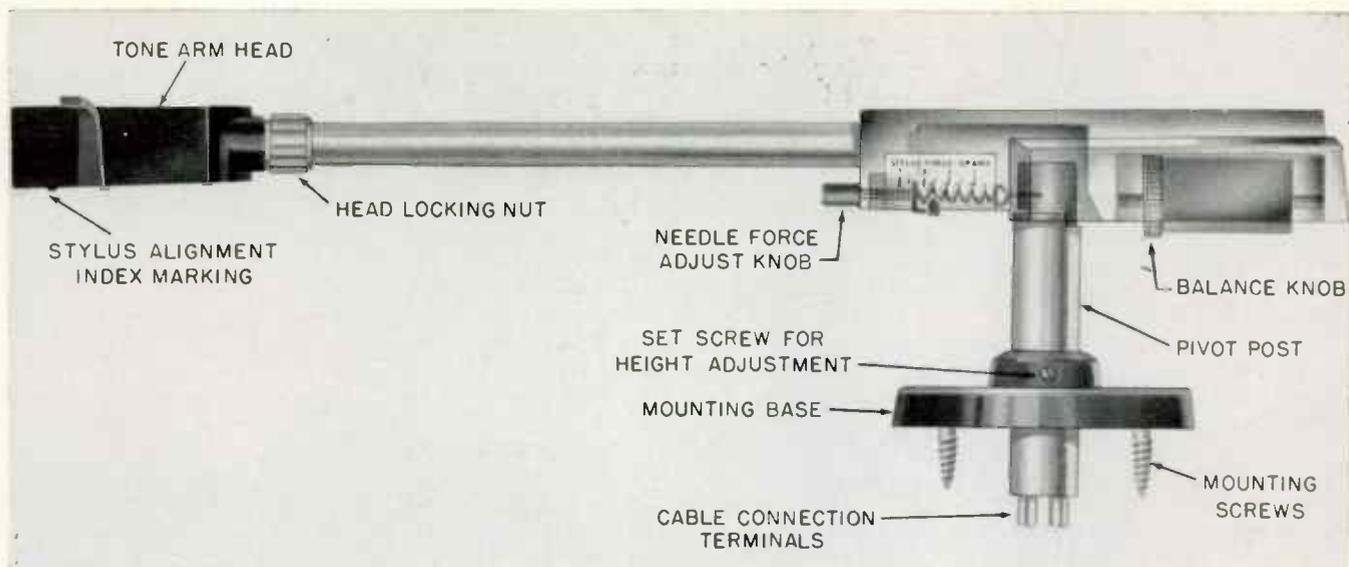


FIGURE B

- E. Adjust the height of the arm rest by rotating the arm rest assembly. Tighten hex nut, with washer, to lock arm rest to desired height.
8. Balance the tone arm. The tone arm head with cartridge installed must be in place during this operation.
- Pull the needle force adjustment knob forward and slip downward until the knob is completely disengaged from its recess in order to relieve spring tension.
 - Adjust balance knob with the arm in a horizontal position. The arm should remain parallel to the turntable with no tendency for the tone arm head to move upward or downward.
 - Slip needle force adjust knob back into its recess and turn needle force adjust knob to the tracking pressure recommended for the specific cartridge installed in the tone arm head.
 - After balancing the tone arm, the balancing knob should not be disturbed or the carefully calibrated stylus force gauge will be inaccurate.

NOTE: The tone arm should be rebalanced in accordance with the above steps if the tone arm head or cartridge is changed.

Caution: Make certain turntable is not revolving before proceeding with steps 9 and 10.

- Swing arm over entire playing area to check if the lateral stops are in the right position. If the arm will not swing over the entire playing surface, loosen set screw in the base and rotate pivot post until a full record can be played without the arm hitting a stop. The stops are used to prevent complete rotation of the arm.
- Loosen set screw in the base and adjust height of the tone arm until the tubular part of the arm is parallel to the record surface when the stylus of the cartridge is resting on the record surface. Tighten set screw in the mounting base.

Electrical Connections: The leads in the tone arm are terminated in a four pin terminal board at the

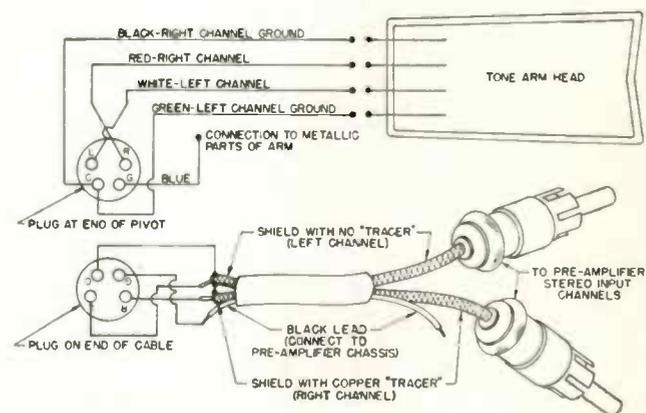


FIGURE C

end of the pivot post. A cable and plug assembly is supplied to be plugged into the end of the pivot post. This eliminates the need for mounting a separate terminal strip. Figure C shows the internal wiring of the phono arm and of the cable and plug assembly.

For Stereo reproduction, the white lead (at the tone arm head) and its ground connection green lead—represent the left channel. The red lead and its ground connection—black lead—represent the right channel.

At the pivot post, the white lead is connected to pin L; the red lead is connected to pin R; the green and black leads are connected to pin C. The metal parts of the arm are connected to pin G.

The cable and plug assembly (as supplied) is especially designed to connect the Models M232 and M236 Stereo "Professional" Tone Arms. The cable is a 4 foot (1.2m), low capacity, two conductor shielded cable with a third unshielded lead beneath the jacket. The molded plugs for connecting the cable to the amplifier are coded "R" for right channel and "L" for left channel.

The shielded conductor with the copper tracer should be connected to the right channel (plug coded "R") input of the pre-amplifier. The shielded conductor with NO tracer in the shield should be connected to the left channel (plug coded "L") input of the pre-amplifier. The unshielded black lead of the cable is used to connect the metal parts of the tone arm to the pre-amplifier chassis and turntable ground.

For Monaural reproduction using a monaural cartridge with a monaural system, use either the right channel pair of leads (red and black) or the left channel pair of leads (white and green). The unused leads should be insulated and placed out of the way. The metal parts of the arm should be connected to the pre-amplifier chassis and turntable ground.

For Monaural reproduction using a monaural cartridge with a stereo system, the red and white leads (at the tone arm head) should be connected to the "hot" terminal of the monaural cartridge and the green and black leads should be connected to the "ground" terminal of the cartridge.

For reproduction of stereo or monaural records using a stereo cartridge into a monaural system, connect the stereo cartridge into tone arm head as per previous instructions. See "Electrical Connections"; then connect both phono plugs to the input of the monaural amplifier. This can be easily accomplished by use of an audio Y connector which connects two inputs together for a single input amplifier.

Guarantee: Each Stereo Tone Arm is guaranteed to be free from electrical and mechanical defects for one year from the date of shipment from the factory, provided all instructions are complied with fully.

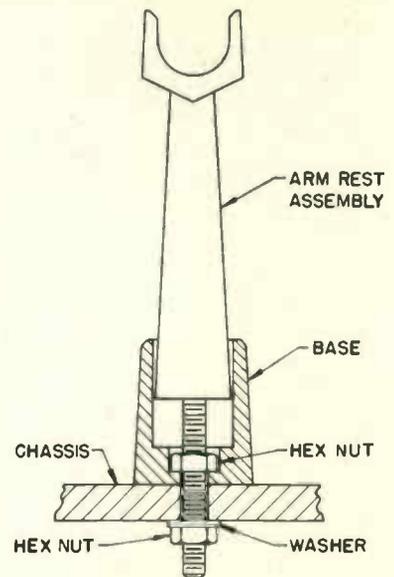


FIGURE D

SHURE

The Mark of Quality