



## INSTRUCTIONS FOR

# Recording Filter

## MI-4916-A

### DESCRIPTION

#### General

The MI-4916-A Recording Filter is designed to be used in the input circuit of a recording amplifier, such as any of the BA-4 Series, to obtain an overall frequency-response characteristic (when driving the MI-11850-C or MI-4887 Recording Head) suitable for making recordings with orthacoustic frequency response. Refer to figure 4. This filter may also be employed with the MI-11853 Recording Head.

#### Circuit

The MI-4916-A Recording Filter consists of two parallel resonant circuits wired in series and assembled on a mounting base. A terminal board for making the input and output connections is installed at one end of the base. No adjustments are provided.

#### Application

Some typical recording setups are shown in figure 5. The overall frequency response curve for these circuits is illustrated graphically in figure 4. The

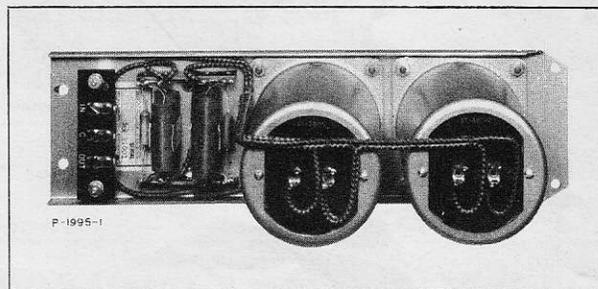


Figure 1—View of MI-4916-A Recording Filter

filter shifts the cross-over point of the cutter head from approximately 1,000 cps down to about 500 cps, and provides a smooth increase in high-frequency response.

### INSTALLATION

#### Mounting

The MI-4916-A Recording Filter is designed for mounting on the Type 36-A or 36-B Shelf Assemblies. The tapered end of the unit slides under the lip at the front of the shelf and the end at the rear

### TECHNICAL DATA

#### Input

250 ohms, unbalanced  
600 ohms, unbalanced

#### Input Level

-40 dbm\* to +20 dbm\*

#### Output

250 ohms, unbalanced  
600 ohms, unbalanced

#### Insertion Loss

16 db at 400 cps when operating from a 600-ohm source into a 250-ohm load  
10.5 db at 400 cps when operating from a 600-ohm source into a 600-ohm load

\* dbm—decibel level referred to 1 milliwatt.

#### Frequency Response

Refer to figure 3 and figure 4.

#### Noise Level

The total noise level measured with 250 ohms across the input terminals is more than 128 db below the maximum input level of +20 dbm\*

#### Mounting

Shelf mounting in the Type 36-A, 36-B or BR-2A Shelf Assembly

#### Dimensions and Weight

Width— $3\frac{1}{16}$  inches  
Depth— $12\frac{3}{8}$  inches  
Height— $4\frac{3}{4}$  inches  
Weight— $6\frac{1}{2}$  pounds  
Finish—Gray Lacquer

LS/43

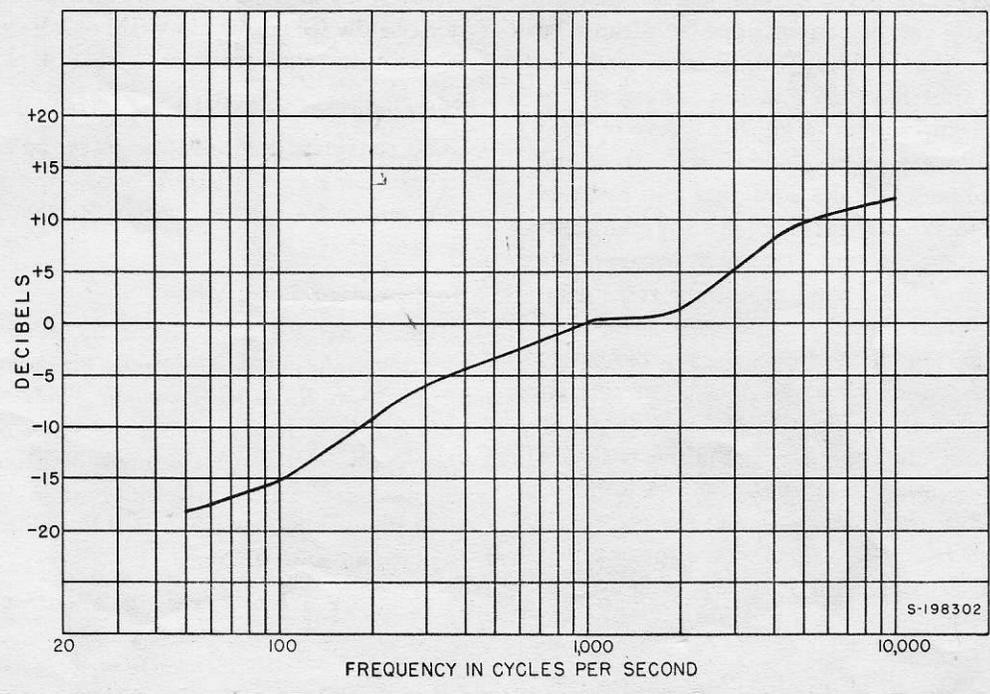


Figure 4—Typical Overall Frequency Response of Recording Setup

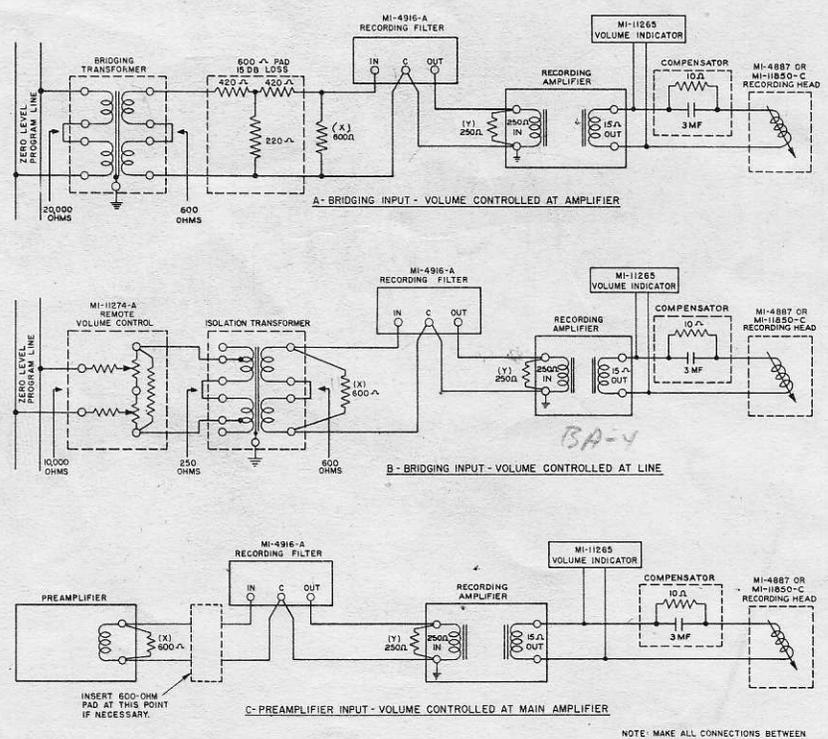


Figure 5—Recommended Recording Setups

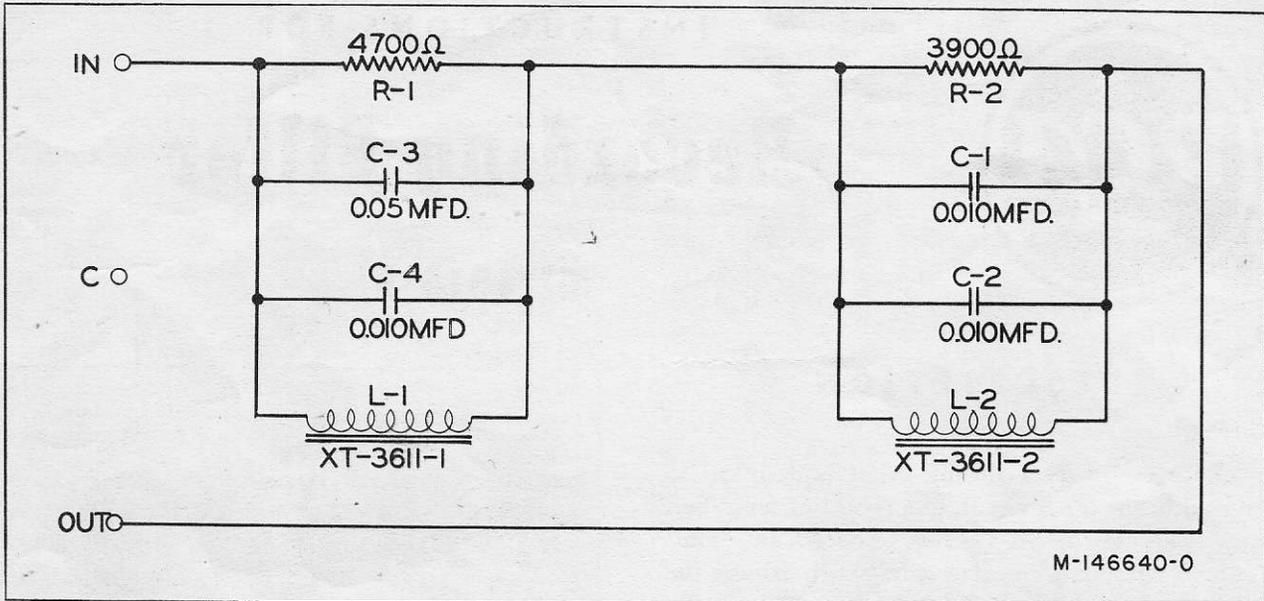


Figure 2—Schematic Diagram of MI-4916-A Recording Filter

of the shelf is secured with the two screws and nuts provided. The two holes in the filter base are spaced to match the shelf mounting holes.

Make sure that the filter is located as far as possible from power transformers or high-level audio transformers.

**Circuits**

In use the filter is connected in the input circuit ahead of the amplifier as shown in figures 5A, 5B and 5C. If the input source is a program channel, the setup illustrated in figures 5A and 5B will give good results. If it is desirable to match the program

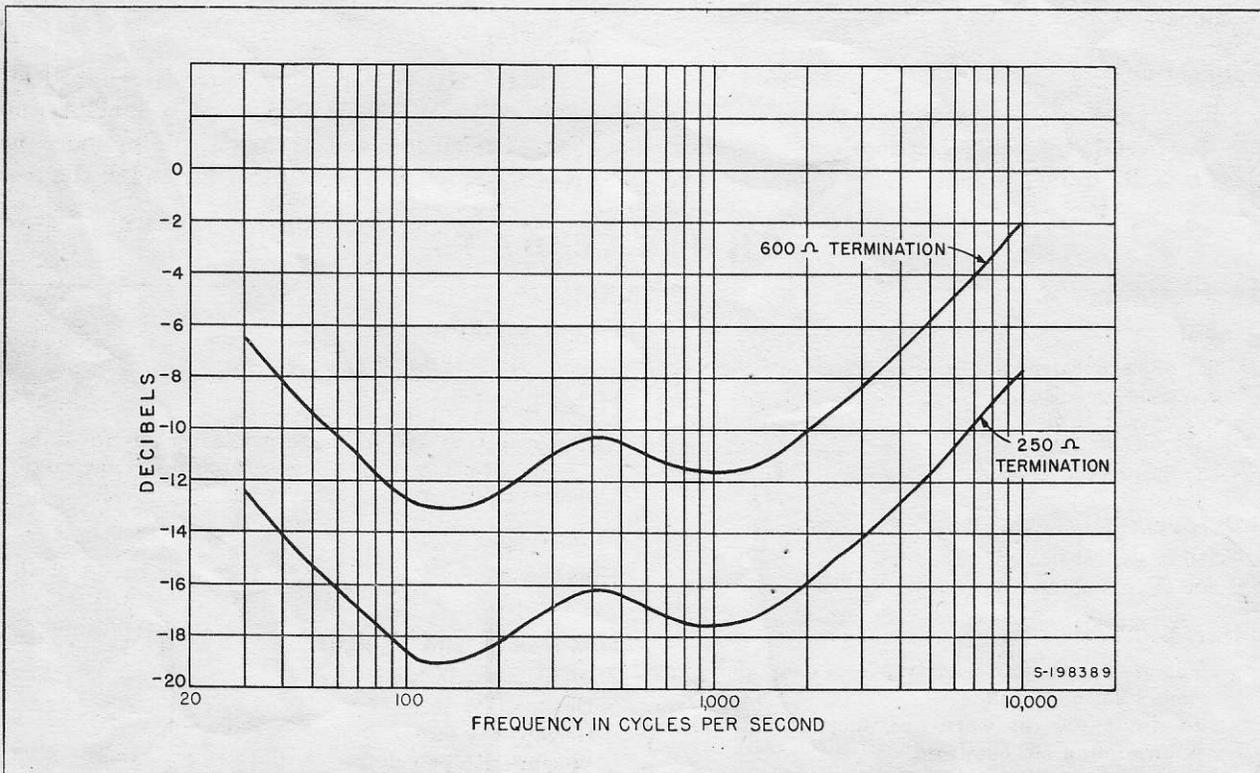


Figure 3—Frequency Response of MI-4916-A Recording Filter, 600-ohm Source

channel into the recording setup, an arrangement similar to figure 5A may be used, except that an isolation transformer of correct impedance must be substituted for the bridging transformer, and the 600-ohm pad must have a 25-db loss instead of 15-db loss. The setup shown in figure 5C may be used when recordings are to be made directly from the studio microphones. Make sure that the resistors marked X and Y are included at the positions shown, since these prevent resonance between the recording filter and the windings of the transformers. It is important that the output-volume level of the preamplifier be kept down to approximately -30 dbm so that the first stage of the amplifier is not overloaded on the peaks. This may require the insertion of a 600-ohm pad similar to the one shown in figure 5A, immediately after the preamplifier. When the pad is used make sure that the resistor X is disconnected from the output of the preamplifier and connected after the pad as shown in figure 5A.

#### Connections

Connect the incoming line to the filter terminals marked IN and C. Connect the outgoing line to the terminals marked OUT and C. Connect a grounding wire to the terminal under the mounting nut at one end of the terminal-board assembly. Refer to figures 1, 2 and 6.

Use shielded twisted pair for input and output connections to the MI-4916-A Recording Filter. Do not run the leads laced in with, or adjacent to, high-level audio or a-c leads.

#### Conversion of MI-4916 to MI-4916-A

To convert the MI-4916 to have the same characteristics as the MI-4916-A, shunt the resistor R-2 used on the former unit with a 10,000-ohm, 1/2-watt resistor.

#### Replacement Parts

The following parts list is included to provide identification when ordering replacement parts. Order from *RCA Replacement Parts Department, Camden, New Jersey*, giving the *Stock Number* and *Description* of the parts wanted. Replacement parts supplied may be slightly different in form or size from the original parts but will be completely interchangeable with them.

#### LIST OF PARTS

Symbol	Description	Stock No.
C-1, -2	Capacitor, 0.01 mf, 1000 v	70652
C-3	Capacitor, 0.05 mf, 400 v	70615
C-4	Capacitor, 0.1 mf, 400 v	70617
L-1	Reactor, 10 hy	43691
L-2	Reactor, 1.3 hy	43692
R-1	Resistor, 4,700 ohms, 1/2 watt	30494
R-2	Resistor, 3,900 ohms, 1/2 watt	30694

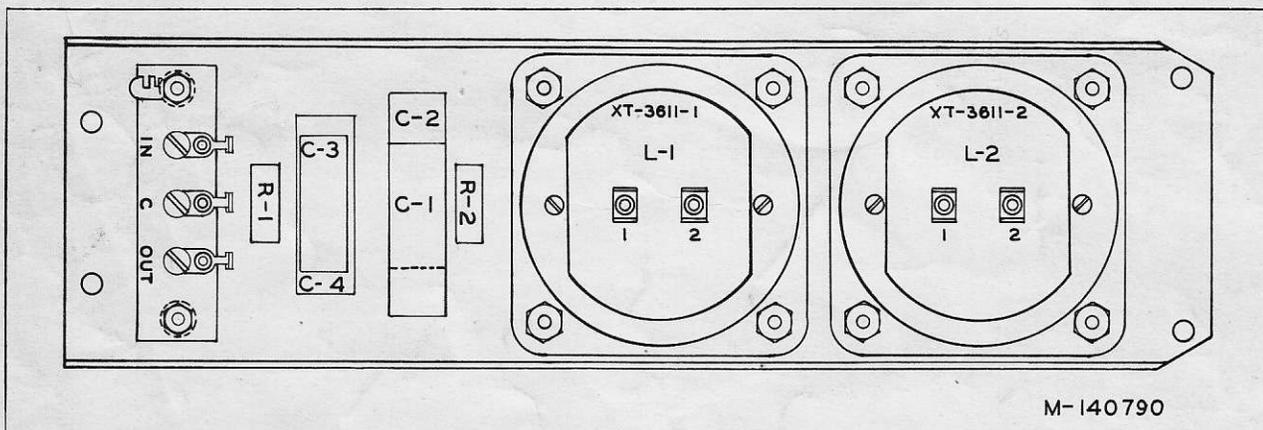


Figure 6—Parts Location Diagram

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