OPERATING INSTRUCTIONS AND WARRANTY

# THE FISHER

## MPX-100

UNIVERSAL

**Stereophonic Multiplex Adaptor**

PRICE $1.00

WORLD LEADER IN HIGH FIDELITY

# Congratulations!

With your purchase of a FISHER instrument you have completed a chain of events that began many months ago, in our research laboratories. For it is there that the basic concept of the equipment you have just acquired came into being—its appearance, its functions, its quality of performance, its convenience of use.

But the end step—your purchase—is merely a beginning. A door has now opened, for you and your family, on virtually unlimited years of musical enjoyment. Recognizing that one of the keys to pleasurable ownership is reliability, we have designed this instrument to give long and trouble-free service. In fact, instruments we made over twenty-three years ago are still in use today.

Remember always that we want this equipment to give you the best performance of which it is capable. Should you at any time need our assistance toward that objective, please write me personally.

## AN IMPORTANT SUGGESTION

Many hours have been spent by our engineers and technical writers to create this instruction book for your guidance and enjoyment. If you want the *most* out of your FISHER, there is only one way to obtain it. With the equipment before you, please read this booklet carefully. It will be time well spent!

Avery Fisher

*Founder and President*

## Fisher Firsts – Milestones In the History of High Fidelity Reproduction

**1937** First high-fidelity sound systems featuring a beam-power amplifier, inverse feedback, acoustic speaker compartments (infinite baffle and bass reflex) and magnetic cartridges.
**1937** First exclusively high fidelity TRF tuner, featuring broad-tuning 20,000 cycle fidelity.
**1937** First two-unit high fidelity system with separate speaker enclosure.
**1938** First coaxial speaker system.
**1938** First high fidelity tuner with amplified AVC.
**1939** First Dynamic Range Expander.
**1939** First 3-Way Speaker in a high fidelity system.
**1939** First Center-of-Channel Tuning indicator.
**1945** First Preamplifier-Equalizer with selective phonograph equalization.
**1948** First Dynamic Range Expander with feedback.
**1949** First FM-AM Tuner with variable AFC.
**1952** First 50-Watt, all-triode amplifier.
**1952** First self-powered Master Audio Control.
**1953** First self-powered, electronic sharp-cut-off filter system for high fidelity use.
**1953** First Universal Horn-Type Speaker Enclosure for any room location and any speaker.
**1953** First FM-AM Receiver with a Cascode Front End.
**1954** First low-cost electronic Mixer-Fader.
**1954** First moderately-priced, professional FM Tuner with TWO meters.
**1955** First Peak Power Indicator in high fidelity.
**1955** First Master Audio Control Chassis with five-position mixing facilities.
**1955** First correctly equalized, direct tape-head master audio controls and self-powered preamplifier.
**1956** First to use Power Monitor in a home amplifier.
**1956** First All-Transistorized Preamplifier-Equalizer.
**1956** First dual dynamic limiters in an FM tuner for home use.
**1956** First Performance Monitor in a high quality amplifier for home use.
**1956** First FM-AM tuner with TWO meters.
**1956** First complete graphic response curve indicator for bass and treble.
**1957** First Golden Cascode FM Tuner.
**1957** First MicroRay Tuning Indicator.
**1958** First Stereophonic Radio-Phonograph with Magnetic Stereo Cartridge.
**1959** First high-quality Stereo Remote Control System.
**1959** First complete Stereophonic FM-AM Receiver (FM-AM tuner, audio control, 40-watt amplifier).
**1959** First high-compliance plus high-efficiency free-piston speaker system.
**1960** First to use MicroRay for FM tuning and as a Recording Audio Level Indicator.
**1960** First complete stereo FM-AM receiver with 60-watt power amplifier and new 7591 output tubes.
**1960** Smithsonian Institution, Washington, D.C., accepts for its collection America's first commercially manufactured high fidelity radio-phonograph, made by Avery Fisher in 1937.
**1960** First reverberation device, for use in high fidelity equipment — The Fisher Dynamic Spacexpander.
**1960** First stereo tuner with MicroTune.
**1960** First FM tuner with six IF stages.
**1960** First FM tuner with five limiters.
**1960** First front panel antenna selector switch, 72-300 ohm, Local-Distant positions.

# THE FISHER MPX-100

**UNIVERSAL**

## Stereophonic Multiplex Adaptor

THE FISHER *MPX-100* is designed to adapt your FM-AM or FM tuner to receive multiplex broadcasts in full stereophonic sound. The experience gained from years of leadership in the design and manufacture of FM tuners has been applied to the design of the *MPX-100* and has made it the *best performing* and *most convenient* multiplex adaptor in existence. The exclusive FISHER STEREO BEACON is *automatically* illuminated when you tune to a multiplex program and turns off as soon as the station reverts to ordinary monophonic transmission. At the same time, the FISHER Automatic Switching System senses whether the program transmitted is stereo or monophonic and switches the *MPX-100* into the proper operating mode, thus making it unnecessary to switch back and forth between stereo and mono on your adaptor. Feedthrough connections for all types of tuners are provided, even when the *MPX-100* is turned off. Two separate noise filters can be operated by a single front panel switch. One filter affects the noise in the subcarrier only, thus providing full frequency response; the other filter is designed to provide a steep roll-off above 8 kc for reception of multiplex signals under more difficult conditions. Most important of all are the careful attention to every detail of manufacture and the top-quality parts which have given FISHER products a world-wide reputation for remarkable durability and outstanding reliability.

## INITIAL ADJUSTMENTS

ALL FISHER tuners and receivers will give excellent results when used with the *MPX-100*. Your MPX-100 has also been designed to operate with any tuner or receiver employing either a ratio detector or a discriminator to demodulate the FM signal. Naturally, a multiplex adaptor designed to operate perfectly with such a wide variety of tuners must be provided with special controls. As a result of careful design and the use of precision parts, however, it was possible to reduce the number of controls on the *MPX-100* to only three: the Separation control on the rear panel, and the Output Level controls also on the rear. The Separation control must be adjusted to provide the maximum degree of stereo separation between channels for each particular model tuner. In addition, two MPX input jacks are provided on the rear panel, one to match tuners with low level outputs and the other to match those with high outputs. These adjustments need be made only once, when installing the *MPX-100*.

Consult the Installation Guide on page 3 for the correct MPX input jack and Separation control setting for your tuner. If your model tuner is not listed, determine whether it employs a balanced ratio detector, unbalanced ratio detector, or discriminator.

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## Ratio Detector Tuners

The MPX output jack of all ratio detector tuners should be connected to the LOW LEVEL input jack on the rear panel of the *MPX-100*. The Separation control on the *MPX-100* should be set at 3 for unbalanced ratio detectors and at 4 for balanced ratio detectors.

## Discriminator Tuners

The Separation control of the *MPX-100* should be set at 4.5 for all discriminator tuners. If the maximum output of the discriminator (at the MPX output jack) is above 1.5 volts, connect the MPX output of your tuner to the HIGH LEVEL input jack on the rear panel of the *MPX-100*. If the maximum output is below 1.5 volts, connect the MPX output of your tuner to the LOW LEVEL jack.

NOTE: If your instruction manual does not contain this information, you may have to contact your dealer or the manufacturer. If you find it impossible to determine the maximum discriminator output of your tuner, use the HIGH LEVEL jack initially. Change to the LOW LEVEL jack if the STEREO BEACON fails to light during a multiplex transmission from a weak station.

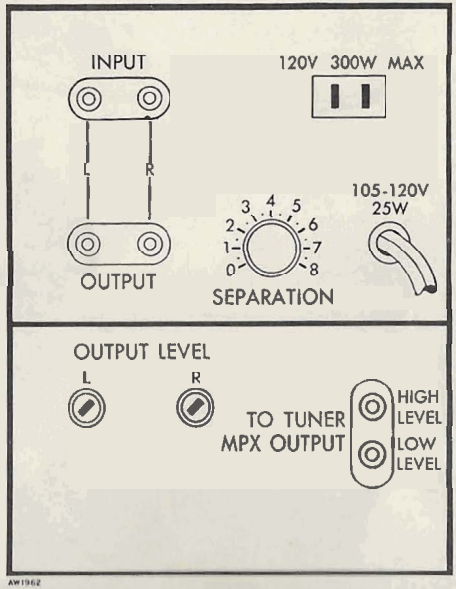


Figure 1. Rear panel of the MPX-100

# INSTALLATION GUIDE

| TUNER MODEL | SET SEPARATION CONTROL AT: | CONNECT TUNER MPX OUTPUT TO JACK MARKED |
|---|---|---|
| **Fisher** | | |
| FM-40 | 4 | LOW LEVEL |
| FM-50 | 4 | LOW LEVEL |
| FM-90(X) | 4 | LOW LEVEL |
| FM-100 | 4 | LOW LEVEL |
| FM-200 | 4 | LOW LEVEL |
| 90-R | 4 | LOW LEVEL |
| 90-T* | 4 | LOW LEVEL |
| 100-R | 4 | LOW LEVEL |
| 100-T | 4 | LOW LEVEL |
| 101-R | 3 | LOW LEVEL |
| 202-R | 4 | LOW LEVEL |
| 202-T* | 4 | LOW LEVEL |
| TA-500* | 4 | LOW LEVEL |
| 500-S | 4 | LOW LEVEL |
| 600 (Serial No. below 49999) | 3 | LOW LEVEL |
| 600 (Serial No. above 50000) | 4 | LOW LEVEL |
| 800 | 4 | LOW LEVEL |
| 50-R** | 4.5 | HIGH LEVEL |
| 70-RT** | 4.5 | HIGH LEVEL |
| 80-R*** | 4.5 | HIGH LEVEL |
| 80-T*** | 4.5 | HIGH LEVEL |
| FM-80** | 4.5 | HIGH LEVEL |
| **Altec-Lansing** | | |
| 306-A | 4.5 | HIGH LEVEL |
| **Bell** | | |
| 670 | 4 | LOW LEVEL |
| 2421 | 4.5 | HIGH LEVEL |
| 2425 | 4.5 | HIGH LEVEL |
| 2441 | 4 | LOW LEVEL |
| 3070 | 4 | LOW LEVEL |
| **Bogen** | | |
| 3RB-40 | 4.5 | HIGH LEVEL |
| SRB20 | 4.5 | HIGH LEVEL |
| ST442 | 4.5 | HIGH LEVEL |
| ST662 | 4 | LOW LEVEL |
| STP52 | 4.5 | HIGH LEVEL |
| **Grommes** | | |
| 102GT | 4.5 | HIGH LEVEL |
| 103GT | 3 | LOW LEVEL |
| 120GAT | 4.5 | HIGH LEVEL |
| GRT-3 | 4.5 | HIGH LEVEL |
| **Harman-Kardon** | | |
| TA-260 (Festival II) | 4.5 | HIGH LEVEL |
| TA-224 (Recital) | 4.5 | HIGH LEVEL |
| T-230 (Sonnet) | 4.5 | HIGH LEVEL |
| T-220 (Aria) | 4.5 | HIGH LEVEL |
| ST-360A (Madrigal) | 4.5 | HIGH LEVEL |
| FA-10 (Sonata) | 4.5 | HIGH LEVEL |
| F-10 (Tempo) | 4.5 | HIGH LEVEL |
| Citation III | 3 | LOW LEVEL |
| F500 | 3 | LOW LEVEL |
| **Karg** | | |
| CT-3 | 4.5 | HIGH LEVEL |
| **McIntosh** | | |
| MR-55 | 4 | LOW LEVEL |

**Requires additional stereo amplifier.*

***Multiplex output jack must be added. See page 8 for instructions.*

****Multiplex output jack must be added to early production models. See page 8 for instructions.*

| TUNER MODEL | SET SEPARATION CONTROL AT: | CONNECT TUNER MPX OUTPUT TO JACK MARKED |
|---|---|---|
| **Pilot** | | |
| 602 | 4.5 | HIGH LEVEL |
| 654 | 4.5 | LOW LEVEL |
| **Realistic** | | |
| 40-T | 4.5 | HIGH LEVEL |
| **Scott** | | |
| All models | 3 | LOW LEVEL |
| **Sherwood** | | |
| S-2000 | 4.5 | HIGH LEVEL |
| S-2200 | 4.5 | HIGH LEVEL |
| S-3000 | 4.5 | HIGH LEVEL |
| S-7000 | 4.5 | HIGH LEVEL |



## FM MULTIPLEX STEREO

FM BROADCASTING has a frequency range far in excess of the normal hearing range. For example, Fisher wide-band tuners have a frequency range which extends to 100 kc, while the normal hearing range does not exceed 17 kc. This extra "space" in the frequency response has now been put into service for the transmission of a second and third signal simultaneously with the main carrier. The third (and highest) signal is used in commercial applications (for background music) and will not be received on home high fidelity equipment. The other two signals, however, are used for the reception of stereo programs. During multiplex broadcasts, the main carrier, which can be picked up by any FM tuner or receiver, contains the sum or blended signal from both stereo channels (left plus right). The second, supersonic signal contains the information necessary for stereo. This system makes it possible for an ordinary FM set to receive a fully balanced monophonic program during multiplex transmission. At the same time, however, the circuits of the *MPX-100* separate the two stereo channels, thus providing you with all the added benefits of full stereo sound.

Because FM multiplex requires new equipment and new techniques at FM broadcasting stations, it is to be expected that not all programs will be of the same high technical calibre during the first few months. Such occasional problems as may arise initially will no doubt be solved quickly, as the stations gain experience with the new procedures. It is important to keep in mind, however, that the stereo subcarrier is inherently more noisy than the main carrier. In order to receive weak or distant stations with acceptably low noise levels, you may find it necessary to change to an antenna with higher gain, or to relocate your present antenna in a more favorable position.

If you have difficulty in receiving weak stations, the following measures should be taken:

1—*Reverse the antenna leads.*

2—*Reposition the FM Antenna.* If you are using a folded dipole antenna, rotate it horizontally about its axis to determine the orientation which produces a null or minimum received signal as indicated on the tuning meter or tuning eye. Then rotate the antenna 90 degrees for the best position. The antenna should be as high as possible, horizontal and away from all large metal objects and electrical wiring. It may also be necessary to relocate the antenna to achieve a usable signal. Indoor antennas, especially in metal frame buildings, will give improved results when located close to outside windows.

3—*Change to Rooftop Antenna.* In extreme cases, where an indoor antenna was used for monophonic reception, it may be necessary to change to an outdoor, rooftop antenna, or even a highly directional yagi antenna. Directional antennas should be rotated for maximum received signal strength.

Although the problems inherent in FM multiplex have been stressed, it is not expected that they will arise very frequently. In general, they can be solved simply by increasing the strength of the received signal (and removing the distortion caused by multipath transmission) through a change in the antenna system.

# GENERAL INSTALLATION AND OPERATION INSTRUCTIONS

THE *MPX-100* operates on *AC only* at 105-120 volts. One three-foot cable and two four-foot cables are included to make connections to associated equipment. Any additional connections should be made with the same type of cable. Be sure to use the three-foot cable for the connection from the MPX output jack on your tuner since longer cable lengths will cause some loss of the higher frequencies. Both *MPX-100* outputs are low-impedance anode followers, permitting cable lengths up to 10 feet between the *MPX-100* and your amplifier. We recommend that you keep the *MPX-100* right beside your tuner (but away from power transformers) for ease of operation and best performance.

**NOTE:** Left (or L) designation corresponds to Channel A; Right (or R) corresponds to Channel B.

## Installation

### WITH FM-AM STEREO TUNERS:

1—Connect the FM output of the tuner to the L INPUT jack on the *MPX-100*. (See Figure 1.)

2—Connect the AM output of the tuner to the R INPUT jack on the *MPX-100*.

3—The tuner MPX output jack should be connected to either the LOW LEVEL or HIGH LEVEL jack on the rear panel of the *MPX-100*. Refer to the table on page 3 (or consult the manufacturer of your tuner) to determine the jack which should be used for this connection. *Be sure to use the three-foot cable supplied with the MPX-100.*

4—Connect the L (left) and R (right) outputs on the *MPX-100* to the corresponding Tuner input jacks on your stereo amplifier.

5—Connect the power cable of the tuner to the auxiliary power outlet on the rear panel of the *MPX-100*, and connect the power cable of the *MPX-100* to an auxiliary outlet on your stereo amplifier. (If your tuner has an available auxiliary power outlet, an alternate arrangement would be to connect the *MPX-100* to it, and connect the tuner to the amplifier.)

### WITH FM TUNERS:

1—The tuner MPX output jack should be connected to either the LOW LEVEL or HIGH LEVEL jack on the rear panel of the *MPX-100*. Refer to the table on page 3 (or consult the manufacturer of your tuner) to determine the jack which should be used for this connection. *Be sure to use the three-foot cable supplied with the MPX-100.*

2—If you wish to use the feedthrough facilities of the *MPX-100*, connect a cable between the Main output of the tuner and the L INPUT jack of the adaptor. Then connect the RCRDR output of the tuner (or other output with the *same volume level*) to the R INPUT jack. If your tuner does not have two identical outputs, a "Y" connector may be obtained from your dealer for this connection. One plug of the "Y" connector is attached to the main output of your tuner and the other two plugs are inserted in the L and R INPUT jacks.

3—Follow steps 4 and 5 for FM-AM stereo tuners.

### WITH FM-AM MONOPHONIC TUNERS:

1—The tuner MPX output jack should be connected to either the LOW LEVEL or HIGH LEVEL jack on the rear panel of the *MPX-100*. Refer to the table on page 3 (or consult the manufacturer of your tuner) to determine the jack which should be used for this connection. *Be sure to use the three-foot cable supplied with the MPX-100.*

2—Connect the Main tuner output to the L INPUT jack on the *MPX-100*. If an additional output jack (with the *same level* output) is provided on the tuner, you may wish to connect it to the R INPUT jack of the *MPX-100* in order to avoid the necessity of switching between monophonic and stereo modes on your amplifier.

3—Follow steps 4 and 5 for FM-AM stereo tuners.

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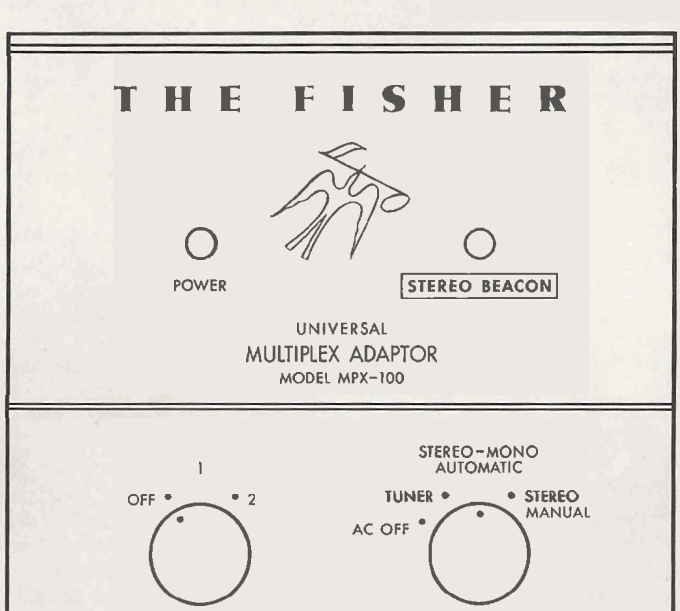


**Figure 2. Front panel of the MPX-100**

## Operation

**INDICATOR LIGHTS:** The red Power jewel on the front panel glows when power to the *MPX-100* is turned on. The green Stereo Beacon automatically signals whenever the station tuned to is broadcasting an FM stereo program. It will remain off during monophonic programs.

**SELECTOR SWITCH:** The Selector switch has four positions:

**AC Off:** Power to the *MPX-100* is turned off, but feedthrough connections are provided from the tuner to the amplifier for monophonic FM, AM or stereo FM-AM programs. You will find this position particularly useful when listening to such programs for prolonged periods of time. When switching from AC OFF to another position of the Selector switch, it should be kept in mind that there will be a delay of approximately 30 seconds, due to necessary tube warmup, before the *MPX-100* will begin to operate.

**Tuner:** In addition to providing the same feedthrough connections from the tuner to the amplifier, this position places the Stereo Beacon in operation. In the same manner as the AC OFF position, the tuner signal passes directly through the *MPX-100*, completely unaffected by the adaptor's internal circuitry. FM-AM stereo and FM or AM monophonic programs may be heard directly from the tuner with the Selector in this position. Whenever a multiplex FM stereo program is broadcast, the Stereo Beacon will automatically light. However, FM multiplex programs cannot be received stereophonically in the TUNER position, nor will the Automatic Switching feature operate.

**Stereo-Mono Automatic:** This position is used for normal reception of FM multiplex broadcasts in stereo sound, and, due to the FISHER Automatic Switching System, may also be used for reception of monophonic FM broadcasts. The Stereo Beacon will light whenever a multiplex program comes on the air, and the *MPX-100* will automatically switch into the stereo mode. When the station reverts to monophonic operation, the *MPX-100* will automatically switch to the monophonic mode and the monophonic signal will appear at both outputs of the adaptor. At the same time, the Stereo Beacon will be turned off. This feature makes manual switching completely unnecessary

when an FM station alternates between monophonic and stereo selections. The mode selector of your amplifier should be left in the Stereo position for *both* types of broadcast. If you live in a fringe area and experience difficulty in receiving a particular program stereophonically, due to the high noise level, you may receive the program monophonically by switching to TUNER or AC OFF. Since monophonic reception is inherently less affected by background noise, the program may be more enjoyable when this is done.

**Stereo Manual:** This position should be used only during an FM multiplex broadcast, when you wish to disable the Automatic Switching System of the *MPX-100*. Although the Stereo Beacon will operate as normally, the adaptor will *not* switch to the monophonic mode when a monophonic program is broadcast. Under extremely rare circumstances, the background noise may interfere with normal operation of the Automatic Switching circuits of the *MPX-100* (with the Selector at STEREO-MONO AUTOMATIC). In this case, you can receive the program stereophonically by turning the Selector to STEREO MANUAL, or monophonically by turning to TUNER or AC OFF.

**NOISE FILTER SWITCH:** The three positions of this switch perform the following functions:

**Off:** This position is used for normal reception of both monophonic and multiplex stereo FM programs.

**1:** This position should be used only on multiplex programs, when the noise level is higher than normal. Since this filter cancels noise only in the stereo subcarrier (which is inherently noisier than the main carrier), you will hear no difference in the frequency range of the music, although stereo separation at the higher frequencies will be somewhat diminished.

**2:** This filter, which provides a steep roll-off above 8 kc, operates in the same manner as the High or Scratch filter on your amplifier. To suppress noise on a muliplex program, try position 1 first. If more noise suppression is desired, turn the Selector to position 2. This filter is also quite effective in eliminating noise on monophonic FM programs, if the Selector is in the STEREO-MONO AUTOMATIC position.

**LEVEL SETS:** Two level sets are located on the rear panel for adjustment of the sound level on both channels of the *MPX-100*. These level sets should be adjusted so that no difference in volume is heard when switching between *Tuner* and *FM Stereo*. The volume level on the feedthrough positions *(AC Off* and *Tuner)* is not affected by the level sets.

## INSTRUCTIONS FOR OWNERS OF FISHER TUNERS AND RECEIVERS

**NOTE:** Left (or L) designation corresponds to Channel A; Right (or R) corresponds to Channel B.

**FM-40, FM-50, FM-90(X), 90-R, FM-100, FM-200, 202-R, 100-R:** Follow the appropriate instructions given in the preceding section. Both MAIN and REC outputs should be connected to the *MPX-100*.



### 600 and 800

1—Connect the MPX output of the receiver to the LOW LEVEL jack of the *MPX-100*. Use the 3-foot cable supplied.

2—Connect the L and R OUTPUTS of the adaptor to the MPX Channel A and Channel B inputs of the *600* or *800*.

3—Turn both level sets on the receiver marked MPX A and MPX B to the maximum clockwise position.

4—To listen to FM, AM and FM-AM, operate as usual. To listen to MPX stereo: Turn the Selector switch to FM-MPX position; Mono-Stereo switch to STEREO, and *MPX-100* Selector switch to STEREO-MONO AUTOMATIC.

### 500-S

1—Connect the MPX output on the receiver to the LOW LEVEL jack of the *MPX-100*. Use the 3-foot cable supplied.

2—Connect the L and R outputs of the *MPX-100* to the MPX Channel A and Channel B inputs of the *500-S*.

3—To listen to FM, AM or FM-AM, operate as usual. To listen to MPX stereo: Turn the *500-S* Selector switch to MPX and the Selector switch on the *MPX-100* to STEREO-MONO AUTOMATIC. This arrangement will also permit reception of monophonic FM.

## 100-T

1—Connect the MPX output on the tuner to the LOW LEVEL jack of the *MPX-100*. Use the 3-foot cable supplied.

2—Connect the L and R OUTPUTS to the Channel A and B AUX inputs of the *100-T*.

3—Tune as normal to the FM station desired (Selector switch in FM position) and then switch to AUX STEREO to listen to multiplex stereo or monophonic FM programs *through* the *MPX-100*. Monophonic FM programs may be heard *directly* by switching to the FM position on the *100-T*.



## 202-T

1—Connect the MPX output on the tuner to the LOW LEVEL jack of the *MPX-100*. Use the 3-foot cable supplied.

2—Connect the L and R outputs to the Channel A and B AUX inputs of the *202-T*.

3—To listen to multiplex stereo, tune as normal to the desired station (Selector in TUNER position); then turn the Selector to AUX and the Mono-Stereo switch to STEREO. For monophonic FM broadcasts, operate as usual.

## 101-R

1—If you do not wish to listen to FM-AM *stereo* broadcasts, connect both MON outputs on the *101-R* to the L and R inputs on the *MPX-100*, and the MPX output to the jack on the adaptor marked LOW LEVEL. Then connect the L and R OUTPUT jacks of the *MPX-100* to the corresponding Tuner inputs on your amplifier.

2—If FM-AM stereo programs are broadcast in your area, connect the STEREO FM output on the *101-R* to the L input on the adaptor, the STEREO AM output to the adaptor R input and the MPX output on the *101-R* to the adaptor jack marked LOW LEVEL. Then connect the L and R OUTPUT jacks of the *MPX-100* to the corresponding Tuner inputs on your amplifier.

3—The first installation method enables you to choose FM, AM or FM stereo multiplex. The Mode Selector on your amplifier should be left in the Stereo position for all three types of broadcast. The Selector on the *MPX-100* should be in the STEREO-MONO AUTOMATIC position for multiplex programs.

4—The second installation method permits reception of FM, AM, FM-AM stereo and FM multiplex stereo. For FM reception: turn the amplifier Mode Selector to Channel A, the *MPX-100* Selector to TUNER and the tuner Selector to FM-AM. For AM reception: turn the amplifier Mode Selector to Channel B, the *MPX-100* Selector to TUNER and the tuner Selector to FM-AM. Use the same settings for FM-AM stereo, with one exception: the amplifier Mode Selector should be in the STEREO position. For FM multiplex stereo, turn the *MPX-100* Selector to STEREO-MONO AUTOMATIC.

## 90-T

1—Connect the MPX output of the *90-T* to the LOW LEVEL jack on the adaptor. Then connect the RCRDR output of the tuner to the L input of the *MPX-100*.

2—Connect the L and R outputs of the *MPX-100* to the corresponding amplifier inputs marked TUNER.

3—Monophonic FM or stereo multiplex FM can both be received by leaving the *MPX-100* Selector in the STEREO-MONO AUTOMATIC position and the amplifier Mode Selector in the STEREO position. For AM reception, turn the amplifier Mode Selector to Channel A.

## 50-R, 70-RT, 80-R, 80-T, FM-80

Although Models FM-80, 50-R and 70-RT, and early production models of the 80-R and 80-T are not equipped with multiplex output jacks, these tuners can easily be adapted for multiplex by adding a standard RETMA phono jack to the chassis close to the 6AL5 tube socket. This jack is connected through a .01 mfd, 250V capacitor to

Pin 5 of the 6AL5 tube on the 50-R and 70-RT and Pin 1 of the 6AL5 tube on the 80-R, 80-T and FM-80. The 3-foot cable supplied with the *MPX-100* should be used to connect this jack to the jack on the *MPX-100* marked HIGH LEVEL. Feedthrough connections should be made from the main outputs of these units to the L and R INPUT jacks on the *MPX-100*.

### Custom Electra (E-44)

1—Connect the MPX output of the *Custom Electra* to the LOW LEVEL jack on the *MPX-100*. Then connect the L and R outputs of the *MPX-100* to the AUX STEREO inputs on the *Electra*.

2—To listen to monophonic FM, AM or stereo FM-AM, operate as usual. To listen to stereo FM multiplex: turn the *Electra* Selector switch to AUX STEREO, and the *MPX-100* Selector to STEREO-MONO AUTOMATIC.

### Philharmonic (P-22)

1—Connect the MPX output of the *Philharmonic* to the LOW LEVEL jack on the *MPX-100*. Then connect the L and R outputs of the *MPX-100* to the AUX A and B inputs on the *Philharmonic*.

2—To listen to FM or AM, operate as usual. For stereo FM multiplex, turn the Philharmonic Selector switch to AUX STEREO, and the *MPX-100* Selector to STEREO-MONO AUTOMATIC.

### Statesman (1010)

Follow instructions for the *202-T*.

### Coronet (C-55 and C-55A)

Follow instructions for the *100-T*.

### Coronet (C-55B)

Follow instructions for the *500-S*.

### Executive (880)

Follow instructions for the *101-R*. (Serial numbers above 60000 follow instructions for *100-R*).

### President (6000)

Follow instructions for the *101-R*.

## CUSTOM MOUNTING INSTRUCTIONS

THE 40-U Custom Cabinet (in oiled walnut), specially designed to accommodate the *MPX-100*, is available from your FISHER dealer. The *MPX-100* may also be mounted in your own custom cabinet. This is done by making a cutout in the front panel of your cabinet, 4½ inches high by 4-7/16 inches wide, and providing a shelf flush with the bottom edge of the cutout for mounting the *MPX-100*. The front panel height and overhang of the *MPX-100* is identical to the current line of Fisher receivers and tuners.

### At Your Service



It is our desire that your FISHER equipment operate to your complete satisfaction. We solicit your correspondence on any special problems that may arise. After you have had an opportunity to familiarize yourself with THE FISHER, we would appreciate hearing from you on how it is meeting your requirements.

### Your Fisher Dealer

Be sure to consult your FISHER dealer promptly if any defect is indicated. He stands ready to assist you at any time.

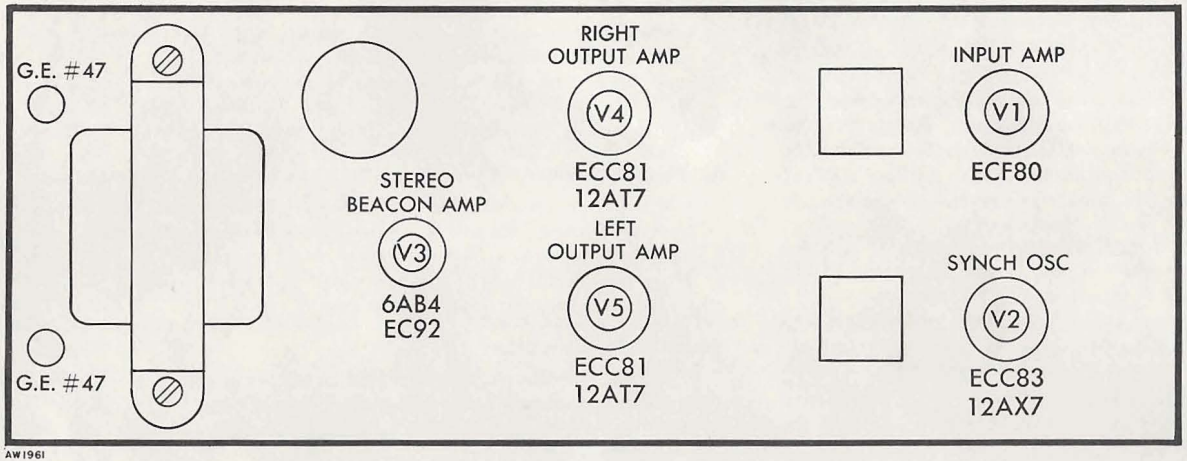


**Figure 3. Tube layout of the MPX-100**

# TECHNICAL SPECIFICATIONS

| | |
|---|---|
| **Frequency Response (covers full transmitted signal)** | 20—15,000 cps ± 2 db |
| **Stereo Separation (at 1 kc)** | Better than 35 db |
| **Sensitivity (Minimum 19 kc required input)** | 15 millivolts |
| **Maximum Allowable Input (100% modulation)** | |
| **Low Level Input** | 2 volts |
| **High Level Input** | 8 volts |
| **Gain** | 16 db |
| **Harmonic Distortion (2 volts output, 1 kc)** | Less than 0.5% |
| **Hum and Noise (Below 2 volts output)** | Better than 70 db |
| **Input Impedance** | 15 megohms |
| **Output Impedance** | 3000 ohms |
| **Power Consumption (105-120 volts, 50/60 cycles)** | 25 watts |

# LOGGING CHART

| STATION | MPX | LOGGING SCALE NUMBER | STATION | MPX | LOGGING SCALE NUMBER |
|---|---|---|---|---|---|
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NOTE: This chart may be used as a handy guide for quick tuning to the stations in your area.

# Warranty To Owner

**THE FISHER** equipment you purchased was carefully tested and inspected before leaving our laboratories. If properly installed and operated in accordance with the instructions furnished, it should give you the finest results of which it is capable. This equipment is unconditionally guaranteed against all defects in material and workmanship for ninety days from date of sale to the original purchaser. Any part of the equipment which under normal installation and use, discloses such a defect, will be adjusted or replaced by the dealer from whom purchased. This guarantee is void if the equipment has been altered, or if the purchaser has failed to return the Warranty Card *within 10 days.*

**FOR WARRANTY SERVICE, CONSULT YOUR DEALER**

Please complete and return this

## WARRANTY CARD

PLEASE PRINT

| USER'S LAST NAME | FIRST NAME | INITIAL |
|---|---|---|
| | | |

| USER'S HOME ADDRESS |
|---|
| |

| CITY | STATE |
|---|---|
| | |

| DATE OF PURCHASE | MODEL NO. | SERIAL NO. |
|---|---|---|
| • • | | |

Name of Dealer _____

City _____ State _____

I heard of the FISHER through ☐ Friend ☐ Dealer ☐ Advertising

If purchased because of advertising, please give name of publication: _____

I chose THE FISHER because: _____

_____

What I think of my FISHER equipment: _____

_____

I also own these additional hi-fi units and speakers: _____

_____

Please send copies of your literature to:

Name _____

Address _____

**WARRANTY VOID UNLESS COMPLETED AND RETURNED WITHIN 10 DAYS AFTER DATE OF PURCHASE**

Postage Will be Paid by Addressee

BUSINESS REPLY CARD

FIRST CLASS PERMIT No. 45377, NEW YORK, N. Y.

No Postage Stamp Necessary If Mailed in the United States

FISHER RADIO CORPORATION

21-21 44th Drive

Long Island City 1, N. Y.

## The Man Behind the Product

AVERY FISHER
*Founder and President,*
*Fisher Radio Corporation*

TWENTY-FOUR YEARS AGO, Avery Fisher introduced America's first high fidelity radio-phonograph. That instrument attained instant recognition, for it opened a new era in the faithful reproduction of records and broadcasts. Some of its features were so basic that they are used in all high fidelity equipment to this day. One of these models is now in the permanent collection of the Smithsonian Institution as an example of the earliest high fidelity instruments commercially available in this country.

The engineering achievements of Avery Fisher and the world-wide reputation of his products have been the subject of descriptive and biographical articles in *Fortune, Time, Pageant, The New York Times, Life, Coronet, High Fidelity, Esquire, The Atlantic,* and other publications. Benefit concerts for the National Symphony Orchestra in Washington and the Philadelphia Orchestra, demonstrating recording techniques, and the great advances in the art of music reproduction, used FISHER high fidelity instruments both for recording and playback, to the enthralled audiences. FISHER equipment formed the key part of the high fidelity demonstration at the American National Exposition in Moscow, July 1959. FISHER FM and FM-AM tuners are the most widely used by broadcast stations for monitoring and relay work, and by research organizations—under conditions where absolute reliability and maximum sensitivity are a 'must.'

The FISHER instrument you have just purchased was designed to give you many years of pride and enjoyment. If you should desire information or assistance on the installation or performance of your FISHER, please write directly to Avery Fisher, President, Fisher Radio Corporation, Long Island City 1, New York.

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