

# TEECO

## MODEL MXR290 STEREO MULTIPLEX RECEIVER

### INSTRUCTION MANUAL

**BE SURE TO KEEP THIS INSTRUCTION BOOKLET AVAILABLE FOR READY REFERENCE**

### GENERAL DESCRIPTION

Model MXR 290 Stereo Multiplex Receiver is a complete high fidelity stereo system with an AM Tuner, FM Multiplex Tuner, and two separate 15-watt power amplifiers. The FM portion is complete with AFC, and when used with the self-contained multiplex section provides authentic high fidelity stereo performance. The FM portion may also be used for monaural reception as desired.

The High Fidelity Stereo Amplifier section is complete with dual stereo pre-amplifiers and two separate 15 watt power amplifiers, and can be used with a magnetic cartridge, a tape head, ceramic or crystal cartridge, or other auxiliary equipment. The unit has been designed to operate from two separate signal input sources, or if desired, can be used as a 30 watt monophonic amplifier by connecting both inputs in parallel and having the output fed to both speakers.

The Stereo amplifier section is provided with the Tape Monitor feature, which permits a tape recorder to play back the recording the instant it is being taped from the air when the recorder has a third tape head and preamplifier.

The VOLUME control operates both channels simultaneously. The BALANCE control balances the output of both channels so that the volume of one speaker may be raised or lowered with respect to the other. Separate TREBLE and BASS controls operate both stereo channels simultaneously.

The unit has a Function Selector switch which selects tape or phono input, radio tuner, or other auxiliary equipment.

A Radio Program selector switch is provided to select AM, FM monaural, or FM stereo multiplex programs.

### UNPACKING:

The unit is to be removed carefully from the carton and inspected for any possible damage in transit. If there is any evidence of any damage which might have occurred in shipment, notify your dealer at once, or the transportation company which delivered it. Claims for damage sustained in transit must be made upon the Carrier. Save all packing material for inspection by the claim agent who will furnish you with the proper forms and will also, give you the necessary instructions for filing a claim. In addition to the Unit, there should be included in the carton the following:

1. INSTRUCTION BOOKLET
2. WARRANTY CARD

To insure proper servicing and to protect your rights under the warranty, be sure to fill in the warranty registration card without delay and mail to the factory.

### WARRANTY

Your Teeco unit has been very carefully inspected and tested at the factory and normally should require no service other than a semi-annual check of the tubes. Each unit is warranted to be free from defects in material and workmanship under normal use and service for a period of 90 days from date of delivery to the original purchaser. If any unit appears to be defective, the factory will repair any unit returned within said 90 days, providing all transportation charges are pre-paid, and which our examination shall disclose to our satisfaction to be defective.

This Warranty does not include free labor, nor is it applicable to any unit which shall have been subject to accident, tampered with, mis-used, abused, or altered in any manner whatsoever. Further, this Warranty shall not apply to any unit which has been connected improperly.

It is recommended that any unit on which service is required, be processed through your dealer wherever possible.

This Warranty is expressly in lieu of all other Warranties, expressed or implied, and of all other obligations or liabilities on our part. We neither assume nor authorize any other person to assume for us any other liability in connection with the products manufactured by Trutone Electronics, Inc.

### INSTALLATION

Because of its attractive appearance, Model MXR290 Stereo Receiver may be placed on a table or a book shelf. Altho the unit has ample vents for normal ventilation, sufficient space should be allowed around it to permit free air flow.

Do not put books or other objects on top of the Receiver as this would reduce the ventilation and result in reducing the life of the components and tubes.

The front panel has been designed for easy custom installation in a cabinet if desired.

If installed in a cabinet, the cover is to be removed, and ample ventilation must be allowed around the unit.

Plug the AC line cord in any outlet furnishing 105 to 120 volt, 60 cycle AC.

Two AC receptacles are located on the rear of the chassis to supply power to other components such as phono-graph motor, etc. The auxiliary equipment connected into the AC Receptacle is controlled by the On and Off switch so that turning off the amplifier, turns off all equipment.

The Antenna loopstick located at the rear of the chassis should be bent outward for best AM reception. DO NOT USE AS A HANDLE.

### CONNECTIONS

All connections are made at the rear of the amplifier.

**SPEAKERS:** Two speakers are to be used for stereo operation. Connections on the rear of the unit permit the use of either a 4, 8, or 16 ohm voice coil impedance. Any ordinary insulated wire, such as parallel lamp cord, is suitable for hooking up the speakers to the amplifier. Connect one lead from each speaker to the terminal marked "O" on the Terminal Strip and the other end of the speaker lead to the terminal that is closest to matching the impedance of the speaker that is being used. Connect one speaker to LEFT SPEAKER and the other to RIGHT SPEAKER.

DO NOT TURN ON THE RECEIVER UNTIL THE SPEAKERS FOR LEFT SPEAKER AND RIGHT SPEAKER HAVE BEEN CONNECTED TO THE TERMINAL STRIPS, AS POSSIBLE DAMAGE TO THE EQUIPMENT MAY OCCUR.

For connecting record players, tape recorders, or other auxiliary equipment, use shielded patch cord leads with a phono plug properly connected.

**STEREO PHONOGRAPH MAGNETIC CARTRIDGE (Low Level):** Connect the two leads from the cartridge to the jacks marked MAG-PHONO-LEFT and RIGHT.

**STEREO PHONOGRAPH CERAMIC OR CRYSTAL CARTRIDGE:** Connect the two leads from the cartridge to the jacks marked CER-PHONO-LEFT and RIGHT.

**STEREO TAPE PLAYER:** When using a low level magnetic tape head, plug the output leads into the two jacks marked TAPE-LEFT and RIGHT. This permits the playback head to operate through a built-in equalized preamplifier.

With a stereo tape playback unit that has built in pre-amplifiers, connect the two leads to the jacks marked AUX-LEFT and RIGHT.

When a monaural phono cartridge, tape head, or recording playback unit is used instead of stereo, a "Y" jumper cord connector must be used so that the sound will come from both speakers. The bottom of the "Y" is connected to the phono cartridge and the other two junctions connect to left and right inputs.

The amplifier section can be used to make stereo tape recordings as you are listening to a stereo program on FM by merely connecting tape recorder to jacks marked TAPE OUT LEFT and RIGHT.

TAPE MONITOR INPUTS are provided in the rear of chassis and a monitor switch is provided on the front panel. This arrangement permits you to listen to the program material being recorded on your tape the instant it is being recorded, so that you may evaluate its quality. The tape recorder must have the provision for a third tape head and preamplifier to take advantage of the above function. With recorders of this type the TAPE OUT jacks on the rear of the receiver are connected to the recording pre-amplifier jacks on the tape recorder, and the TAPE MONITOR jacks on the rear of the receiver are connected to the playback pre-amplifier jacks of the tape recorder.

### OPERATION OF MODEL 290 STEREO MULTIPLEX RECEIVER

On the front panel of Model MXR290 are located a tuning control, a function selector switch, a radio program selector switch, a volume control, a speaker balance control, a bass control, a treble control, a power off-on switch, a tape monitor switch, a tape-phono equalization selector switch, and an AFC off-on switch.

**For AM MONAURAL RECEPTION:** Turn the Function Selector switch to the "Tuner" position, and the Radio Program selector switch to the "AM" position. The AFC switch is inoperative when playing AM programs. The program will be reproduced by both the left and right speakers thereby providing greater presence of sound.

**For FM MONAURAL RECEPTION:** Turn the Function Selector switch to the "Tuner" position, and the Radio Program selector switch to the "FM" position. The program will be reproduced by both the left and right speakers thereby providing greater presence of sound.

It is suggested that the Program Selector switch always be set in the FM position when listening to FM monaural programs. This will avoid objectionable background noises which occur in certain areas if the switch is left on the FM-MPX position.

AFC refers to "Automatic Frequency Control", and is an electronic means of keeping the tuner properly tuned to the F.M. broadcasting station. Even if the Tuner Pointer is not in the exact center of the channel, the AFC will automatically pull in the signal to the proper point. However, in tuning in a weak station adjacent to a stronger one, if the AFC is in operation position, it may "lock on the stronger signal". It is for this reason that a means has been provided for disabling the AFC. This is accomplished by using the AFC slide switch at the right on the front panel.

For normal operation, the AFC slide switch should be placed at the "on" position. For very precise tuning or for tuning a weak station next to a powerful station on FM, it is suggested that the switch be placed in the "off" position until the station is received the loudest. The switch is then to be moved to the "on" position and the station will be properly tuned and locked in position. The same procedure is very important especially when tuning in stereo multiplex programs so as to obtain maximum stereo separation.

**For FM STEREO MULTIPLEX RECEPTION:** Turn the Function Selector switch to the "Tuner" position, and the Radio Program selector switch to the "FM-MPX" position.

When a station broadcasting a stereo multiplex program is tuned in, the stereo station indicator light at the right of the dial scale will glow.

**PLEASE NOTE:** *The stereo station indicator light* will sometimes glow on stereo stations even when they are broadcasting monaural programs. This light will also flicker on some stations when the tuner is operating in a noisy location, or when the broadcasting station has strong audio "peaks", or when tuning from station to station. The light will remain constant only when a stereo station is correctly tuned in.

Stereo Reception may be improved in poor locations with an outside antenna.

**For REPRODUCTION FROM TAPE HEAD:** Turn the Function Selector switch to "Tape-Phono" position, and set the "Equalization" slide switch to the "Tape" position.

**For REPRODUCTION FROM PHONO CARTRIDGE:** Turn the Function Selector switch to the "Tape-Phono" position, and set the "Equalization" slide switch to the "Phono" position.

**For REPRODUCTION FROM OTHER DEVICES:** Turn the Function Selector switch to "AUX" position (when said device has been plugged into the "AUX" jacks on the rear of the chassis.)

**VOLUME CONTROL:** The "Volume" control adjusts the volume of both audio channels simultaneously.

**BALANCE CONTROL:** The "Balance" control balances the output of both channels so that the volume of one speaker may be raised or lowered with respect to the other.

**TONE CONTROLS:** The "Bass" and "Treble" controls are to be set in a vertical position for flat response. These controls can either boost or reduce the bass and treble of the stereo system. The bass and treble controls should be adjusted to suit the listener to compensate for room and speaker characteristics.

**TAPE MONITOR:** The "Tape Monitor" slide switch is always set to the "Off" position unless the MXR290 tuner section is used to furnish the program being taped and at the same time play back the same program through the amplifier section. Only in the latter case is the "Tape Monitor" switch set to the "On" position.

### ADJUSTMENTS

When Model MXR290 is installed, it is seldom necessary to make any service adjustments as all controls have been pre-set at the factory. However, if it should be necessary to adjust for correct channel separation, proceed as follows. Turn the Balance control on the front panel to the center position. Turn the control with the slotted shaft located on the rear of the chassis to the extreme left (counter-clockwise) position. Tune in an FM stereo multiplex program; rotate the control with the slotted shaft toward the right until the best stereophonic blend is obtained.

In isolated cases a "motorboating" or "putt-putt" sound may be heard when listening to a stereo multiplex program. This indicates that the oscillator coil is slightly out of synchronization. To correct this condition it is necessary to adjust the unit as follows. Turn the Balance control on the front panel to the center position. Turn the control with the slotted shaft on the rear of the chassis, to the extreme left (counter-clockwise) position. Adjust the oscillator coil on the extreme left at the rear of the receiver (adjacent to the ANT-GND terminal) with a non-metallic screwdriver. Turn slightly to right or left for maximum and clearest sound. Reset the control with the slotted shaft on the rear of the panel, to the point of best stereo blend.

If when using an inside antenna a "motorboating" or "putt-putt" sound is heard on one or more stereo programs whereas on others the programs are clear, it will be necessary to use an outside antenna so that all stations broadcasting stereo multiplex are heard clearly.

The use of an outside antenna is recommended for best results at all times.



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