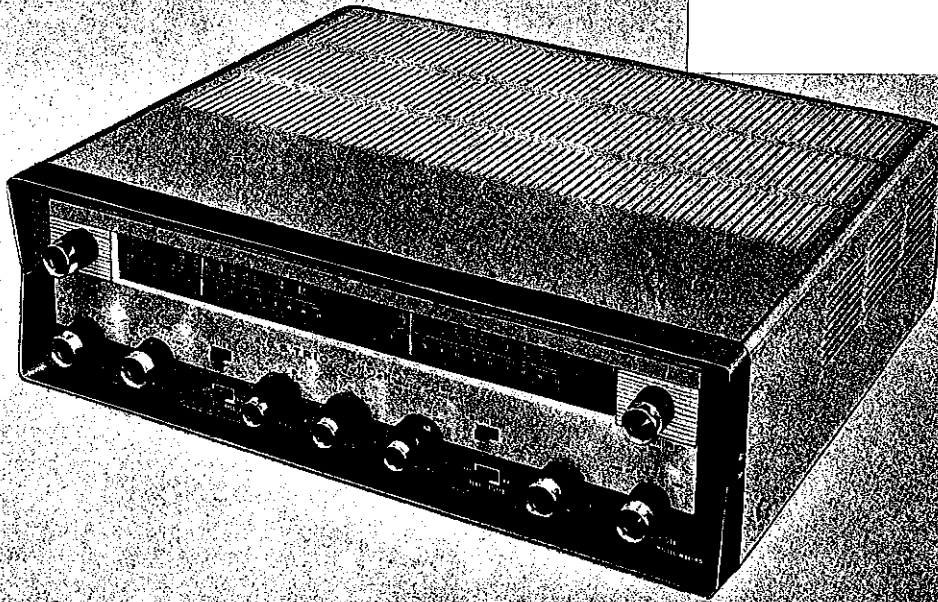


TRIO



FM-AM

STEREO

RECEIVER

MEL-40

AMERICAN GENERAL SUPPLY OF CANADA, LTD.
7000 PARK AVENUE, MONTREAL QUEBEC, CANADA

Operating Manual



A.G.S. TRIO PRODUCTS

MODEL MEL-40

40 WATT FM-AM STEREO RECEIVER

The MEL-40 is a deluxe FM-AM Stereo Receiver, combining AM & FM tuners, pre-amplifiers, and powerful dual 20-watt amplifiers in a single attractive unit.

The unit has inputs for all other stereo or monophonic program sources-record players, tape recorders, etc. Equipped with individual bass, treble and volume controls for each channel, the MEL-40 has every advanced stereo feature necessary for the finest music reproduction.

Before attempting to operate the receiver, read the instructions provided herewith very carefully. This will enable you to obtain the very best performance from this **REMARKABLE** Unit!

SPECIFICATIONS

TUNER: Harmonic Distortion: 0.7% on FM for 100% modulation. FM Frequency Response: 20-20,000 cps $\pm 1/2$ DB.
FM Sensitivity: 1.5 UV for 20 DB quieting.
Hum Level: -60 DB. Image Rejection: FM—50 DB.

AMPLIFIER: Hum Level: -65 DB below full output for low level -75 DB for high level.

Power output 20 W per channel. 0.7% H.D.

Sensitivity: mag. phono 2.0 MV at full output, aux 0.32 at full output, crystal input 55 MV at full output.

Tone Control: ± 12 DB @ 50 cps (bass) ± 12 DB @ 10,000 cps (treble.)

Frequency Response: ± 1 DB 20-30,000 cps.

Loudness Control: + 10 DB @ 50 cps.

Output Impedance: 8 & 16 ohms switch selected.

Input Impedance: 47 K phono; 0.22 meg (high level).

Rumble Filter: -14 DB @ 30 cps. Scratch Filter: -9 DB @ 10,000 cps.

Channel Separation: better than 50 DB @ 1000 cps.

INSTALLATION

Because of the heat generated by the unit, provision must be made for proper ventilation, allowing sufficient space around the unit to permit free air flow at all times. Do not place any objects on top of the receiver which will restrict ventilation and heat dissipation. Failure to observe these precautions will result in sharply reduced component and tube life.

CONNECTIONS

POWER: The receiver is designed to operate on 105 to 125 volts AC, 50-60 cps. The AC outlet on the rear of the chassis is unaffected by the power switch and may be used to power another component.

AM ANTENNA: The built-in ferrite loopstick is adequate for reception of local AM broadcasts. In fringe or high noise areas, a regular outside antenna should be used and connected to the terminal designated AM.

In using the ferrite loopstick, it should be swung away from the chassis for maximum pickup.

FM ANTENNA: In areas where a fairly high signal level is available, simply connect one end of a 48-inch length of insulated wire to the FM terminal, leaving the other end free and extended in a manner which will provide optimum reception of the desired station. A regular indoor FM antenna may be used by connecting to the terminal FM and G. For poor reception areas, a properly installed outdoor antenna may have to be used for best results.

CONNECTIONS TO ASSOCIATED EQUIPMENT

Important: Never operate the receiver without first connecting a speaker to each output. Connect the left-hand speaker to the left speaker terminals and the right-hand speaker to its proper terminals. Identical speakers should be used for best results. Set the IMP SELECT switch to either 8 or 16 ohms, whichever is closest to the impedance of the speaker used. For speaker operation the SPEAKER switch must be in the ON position.

STEREO HEADPHONES: The MEL-40 has provision for stereophonic headphone listening. Simply connect the headphones to the proper jack at the rear and set the SPEAKER switch in the OFF position.

CAUTION: Never leave the SPEAKER switch in the "off" position if the headphones are not connected, or in the "on" position if the speakers are not connected. Failure to observe this warning may result in damage to the output circuits.

STEREO RECORD PLAYERS: The two shielded cables connected to your record player should be terminated with RCA type phono plugs and should not exceed 10 feet in length to avoid loss of high frequencies.

Low Level Phono Inputs—Inputs from low level Magnetic or variable reluctance (constant velocity type) cartridges should be connected to the jacks designated "MAG."

High level Phono Inputs—Inputs from "constant-amplitude" phono cartridges such as crystal and ceramic types should be connected to the jacks designated "XTAL."

TAPE RECORDERS: Outputs of stereo tape recorders having their own preamplifiers should be connected (by means of shielded cables and phono plugs) to the high level input jacks labelled "AUX: To avoid overloading the MEL-40, use the level controls available at the tape pre-amp. For

recording purposes, use the output at the "TAPE REC." jacks, which should be connected to the tape recorder input by means of shielded cables. Listening to the original program material is still possible, adjustment of the tone or volume controls having no effect on the signal at these jacks (TAPE REC.)

FM MULTIPLEX ADAPTERS: Provision has been made for connection and use of a multiplex adapter where FM multiplex broadcasting is available. Simply connect the jack designated MPX OUT to the input of the adapter and the two outputs from the adapter to the left and right jacks designated MPX IN.

EXTERNAL FM: The FM OUT. jack on the rear may be connected to an external amplifier and speaker.

CONTROLS AND THEIR FUNCTIONS

SELECTOR: This switch is used to select the program source as follows:

FM MPX—This position is only used in conjunction with a multiplex adapter for the reception of multiplex FM signals. The output of the FM tuner section is connected to the jack designated MPX OUT and decoded signals fed into the MPX IN jacks from a multiplex adapter are selected for reproduction through the dual amplifiers.

FM-AM—This position selects the outputs of both FM and AM tuners simultaneously.

PHONO—This position selects sources connected to both the MAG and XTAL input jacks and it is therefore not desirable to have both pairs of jacks connected at the same time. In both this and the AUX position, the tuner sections are inoperative.

AUX—This position selects any sources connected to the AUX input jacks.

MODE This switch determines the manner in which program sources (previously selected by the SELECTOR switch) will go through the amplifier section of the MEL-40.

Left (FM)—In this position, external program sources connected to the left input jacks are reproduced through the left channel and speaker. If selector switch is set to FM-AM, FM programs are reproduced through the left channel and speaker.

Right (AM)—In this position, external program sources connected to the right input jacks are reproduced through the right channel and speaker. If the selector switch is set to FM-AM, AM programs are reproduced through the right channel and speaker.

STEREO—This position provides stereophonic reproduction of all stereo program sources.

REV—This position effectively reverses the positions of the two speakers.

BASS AND TREBLE: These two dual concentric controls provide separate tone control for each channel. In the vertical position (12 o'clock), response of the amplifier is flat. The "panel" knobs control the right channel, the small "outer" knobs the left channel.

BLEND: In the extreme counter-clockwise position (Stereo) complete channel separation is obtained. Turning the control clockwise gradually reduces the amount of separation, until in the fully clockwise position, both channels are fully mixed, with a resultant monophonic output. This control is mainly used to eliminate exaggerated channel separation found in some stereo source material, or to compensate for speakers that have been installed too far apart. Advancing the BLEND control to the MON position also permits a single program source connected to either the right or left channel to be reproduced through both speakers.

NOTE: The signals at the TAPE REC jacks are completely independent of this mixing feature which takes place in a succeeding stage in the amplifier.

VOLUME: This is a dual concentric clutch-operated control which acts as an independent volume control for each channel when unclutched, or as a master control for both channels when clutched. To unclutch the controls, simply pull the small outer knob outward until a "snap" is heard. Each knob may then be operated individually.

AM BANDWIDTH: Power OFF—Power to the complete unit is turned off. In the other two positions, power is supplied to the receiver.

Sharp—In this position, the AM bandwidth is narrowed, reducing noise (whistle) and neighboring channel interference. Because fidelity is reduced, this position should not be used unless the interference causes excessive noise.

Broad—This is the normal position for AM reproduction, permitting the full bandwidth to be used.

SCRATCH FILTER: This switch inserts a high frequency filter into the circuit to effectively reduce the noise from old or worn records with a minimum effect on the treble range of the program material.

RUMBLE FILTER: This switch inserts a low frequency filter into the circuit that effectively reduces the rumble from a noisy turntable or changer with a minimum effect on program material.

LOUDNESS: This switch provides the frequency response changes (bass and treble boost) required by the ear at low listening levels, and permits the VOLUME control to function as a compensated loudness control.

PHASE: This switch (located at the rear) is used to ensure correct Phasing of the Loudspeakers. Additionally, the program material itself may have a phase reversal due to incorrect recording or duplicating. (See "Phasing of loudspeakers")

AFC: The FM tuner section incorporates an effective AFC (Automatic Frequency Control) circuit which insures proper tuning even if the manual tuning has not been accurately carried out. This means that the tuner will "lock-in" stations when the dial setting is close to the desired station. In addition, AFC will counteract any tendency on the part of the tuner to drift away from the frequency you are tuned to, and thus prevent the need for manual retuning. To more fully understand the function of the AFC circuit, set the AFC switch to OFF and tune in a strong FM station. The middle clean-sound point is the proper tuning position. Notice the distortion and noise on either side of this point. Now tune to one of these off-tune points of distortion and then set the AFC switch to ON. You will notice that the sound clears up and that the tuning meter will now register proper tuning as if the receiver has been manually tuned. This retuning has been carried out automatically by the operation of the AFC circuit which restores the tuning electrically to the center of the station channel. Nevertheless, AFC should not be used in place of inaccurate or hurried initial tuning. Station tuning must be carried out with the AFC control in its OFF position, carefully tuning for maximum deflection on the tuning meter. Thereafter, AFC may be applied to counteract any slight drifting that may occur.

Certain conditions may prevail however, which make the use of AFC undesirable. For example, applying AFC when tuning in a weak station which is adjacent to a strong one may cause the tuning to be pulled towards the stronger station. For optimum reception of a weak station which is adjacent to a strong one, the AFC switch should therefore be left in the OFF position.

FM TUNING: This control is used to tune in the desired FM station. Always tune for maximum upward deflection of the tuning meter, with the AFC switch OFF. After desired selection, AFC may then be turned on.

AM TUNING: This control is used to tune in the desired AM station. Always tune for maximum upward deflection of the AM tuning meter.

OPERATING INSTRUCTIONS

Before attempting to operate your MEL-40 make sure you have connected your loudspeakers and check connections to other associated equipment. Initially, all slide switches should be placed in OFF position, concentric BASS and TREBLE controls to their midposition, BLEND control to STEREO. Unclutch the VOLUME controls by pulling out the small outer knob and then set both controls to minimum.

FM-AM STEREO OPERATION: To power the receiver, set AM BANDWIDTH switch to BROAD. Tune in AM station which provides one channel of the FM-AM stereo broadcast as follows: Set SELECTOR switch to FM-AM, MODE switch to STEREO. Adjust volume to desired level with large panel knob (VOLUME-RIGHT). Tune in AM station. Tuning is correct when AM indicator needle reaches its maximum upward deflection. As the tuning is moved away from the correct frequency, the needle will begin to fall again. The amount of deflection will depend on the strength of the station. Reduce right volume control.

Tune in FM station which provides the other channel of the FM-AM stereo broadcast as follows: Adjust volume to desired level with small outer knob (VOLUME-LEFT). Tune in FM station. Tuning is correct when FM indicator needle reaches its maximum upward deflection. The amount of deflection will depend on the strength of the station. Having tuned in both stations correctly, increase right (AM) volume control to match volume level of left (FM) channel. The FM broadcast will be heard through the left speaker and the AM broadcast through the right speaker. For best stereophonic results, the tonal quality and volume of each program should be approximately equal. If necessary, make adjustments with the individual BASS, TREBLE, and VOLUME controls. (See BALANCE CHANNELS.)

FM or AM MONOPHONIC OPERATION: Set SELECTOR switch to FM-AM and MODE switch to either LEFT (FM) or RIGHT (AM), whichever type of program is desired. The program source selected will be reproduced through both speakers when the BLEND control is turned to MON. The volume level of each speaker can be adjusted separately.

FM MULTIPLEX OPERATION: Connect the multiplex adapter as indicated under "Connections to Associated Equipment". Set SELECTOR TO FM MPX and MODE switch to STEREO. Tune in FM station providing multiplex broadcasts. One channel of the stereo broadcast will be fed to each amplifier.

PHONO OPERATION: Stereo—Set SELECTOR to PHONO, MODE switch to STEREO, and BLEND control to STEREO. Adjust all other controls as necessary for proper stereo operation.

Monophonic Record Players—Set SELECTOR to PHONO, and MODE switch to either LEFT (AM) or RIGHT (FM) depending on whether the record player is connected to the left or right phono input jacks. Set BLEND control to MON.

PHASING OF THE LOUDSPEAKERS: Correct phasing is important in a stereophonic system. If the speakers are out of phase, they will work in opposition to each other and there will be a noticeable loss of low frequencies. Use the following procedure to make this adjustment.

1. Set the SELECTOR to PHONO, all slide switches off, MODE to STEREO and BLEND control to MON.

2. Play a monophonic record containing heavy bass passages and adjust each of the concentric volume controls for approximately equal output from both speakers.
3. Set the PHASE switch first to one position, then to the other listening carefully to the bass tones in each position. Leave the switch in the position where the greatest amount of bass is heard in the general area between the two speakers.

BALANCING CHANNELS: For best stereophonic performance, both channels of sound should be equal in output or "balanced". The procedure outlined below describes the method used to balance a Stereo Phono system.

1. Set the SELECTOR to PHONO, MODE switch to STEREO, and BLEND to MON. Unclutch the volume controls to permit individual adjustment.
2. Playing a monophonic record, adjust each of the volume controls for equal sound output from the speakers. When the outputs are equal in phase, sound will appear to be coming from an area centered between the two speakers (if they are spaced approximately 6-8 feet apart.)
3. Set the MODE and BLEND controls to STEREO. The system will now provide correctly balanced stereo sound from a stereo record. Re-clutch the volume controls. The Volume control may now be used as a master volume control.

REDUCING HUM: The hum balance control at the rear of the chassis will enable you to minimize any hum that may originate from the unit during normal operation. The procedure outlined below should be carried out with a turntable connected to the unit.

1. With the pick-up arm at rest, set SELECTOR to PHONO, VOLUME controls to maximum, BASS and TREBLE to their "flat" position, and all other switches set for normal stereo operation.
2. Using a screwdriver, adjust the control for minimum hum from both speakers.

AC LINE CORDS: As a general means of reducing hum, the following procedure should be carried out.

1. Turn on all the equipment connected to the unit.
2. Reverse the AC plug from the unit to determine which position produces least hum.
3. Repeat this procedure with the rest of the associated equipment, using the SELECTOR switch to select the component being tested.

Making a single ground connection between the receiver and a ground point may further reduce hum. The ground wire should be taken to a point as close to the input jacks as possible.

FUSE: The MEL-40 is protected with a 2 ampere fuse in the AC primary. Replacing with a fuse of higher rating will not protect the unit and may result in severe damage.

SERVICE

When operated correctly and connections are carefully made, the MEL-40 will require very little service other than normal tube replacement.

Make sure to register your MEL-40 for warranty by completing and mailing the enclosed guarantee card.

SCHEMATIC DIAGRAM

MODEL MEL-40

