

## **AM-FM-STEREO RADIO**



# **OWNER'S MANUAL**

and some facts about radio performance in automobiles

## **OWNER'S MANUAL**

#### **General Information**

This AM-FM-Stereo Radio has been specifically designed for your Volvo. Like your Volvo, it is a dependable, high-quality unit. To enjoy great sound from it, please read the operating instructions carefully.



#### **Operating Instructions**

#### 1. SWITCH AND VOLUME CONTROL

The outer left-hand knob is a combined switch and volume control.

#### 2. MANUAL TUNING

Select the desired wave band (FM or AM) by pushing in one of the AM or FM buttons. Tune in by rotating the outer right-hand knob until the desired station is obtained. Make sure that you tune in exactly as otherwise you will get poor tone quality and interference.

#### 3. TONE CONTROL

Turn the inner left-hand knob clockwise to emphasize a clear sound, counterclockwise to emphasize a soft low tone. Use low tone when radio interference is strong.

#### 4. PUSH-BUTTON TUNING

You engage the AM-band by depressing one of the AMbuttons and the FM-band by depressing one of the FMbuttons. After the push buttons have been set up, you get the desired pre-set station automatically by depressing the relevant button firmly.

#### 5. SETTING PUSH BUTTONS

- After selecting the wave band, unlock the first button by pulling it out.
- b. Carefully tune in the station desired with the manual tuning knob. Tune in exactly.
- c. Lock the station by firmly depressing the button.
- d. Follow the above procedure on the remaining four buttons.

#### 6. MONO-STEREO SWITCH

Turn this knob counterclockwise to enjoy stereo broadcasting automatically. Stereo indicator lamp turns on when listening to stereo stations. When stereo reception becomes uncomfortable (i.e. indicator lamp starts blinking) turn the knob clockwise.

#### 7. BALANCE CONTROL

Turn this knob (same as volume control), with pulling, to left or right to shift the center of the sound as desired.



#### **General Notes**

#### 1. FUSE

A spare fuse part No. 600134-1 can be obtained from your Volvo dealer.

#### 2. REAR SPEAKER

Optional rear speaker kit with fader control is available from your Volvo dealer under part number 1128713-3.

#### 3. EXTERNAL ANTENNA

To obtain optimum reception of radio broadcast a Volvo mast antenna should be used in conjunction with this Volvo radio.

#### Warranty

Volvo-Radios are warranted for 12 months from the date of purchase and/or installation. The warranty covers the repair or exchange of any radio component or material. If service becomes necessary, contact your nearest Volvo dealer.

#### **General specifications:**

1. Circuitry: Superheterodyne with R.F. amplifier 2. Receiving frequency: FM 87.5~ 108 MHz AM 515~ 1620 KHz

- 3. Output:6W + 6W4. Output impedance:4 ohms5. Power supply:12V nega6. Consumption:Max. 22W
- 7. Transistors: 8. Dimensions:

4 ohms 12V negative ground Max. 22W (1.6 amp.) 8 transistors, 10 diodes & 4 IC Width 175 mm Height 43 mm Depth 130 mm

Weight:

3.2 lbs. (1.5 kg)

### SOME FACTS ABOUT RADIO PERFORMANCE IN AUTOMOBI-LES

The information below will give you some understanding of the differences in radio reception between home equipment and car radios in a moving vehicle.



#### Performance of Signal Transmission

FM-RECEPTION — Shorter distance, does not follow curvature of earth and is not reflected by upper atmosphere.

AM-RECEPTION — Long distance, follows curvature of earth and is reflected by upper atmosphere.



FADING — Fading is not usually a problem with AM because of its long distance reception capability. FM, on the other hand, is limited to line-of-sight reception (25 to 40 miles) under average conditions of terrain and transmitted power. The area of good FM stereo reception may be even slightly less than that of regular FM because of stronger signal requirements. Reception behind hills may be noisy (hissing, popping, etc.) — sometimes called flutter or picket fencing.

METROPOLITAN RECEPTION — Transmitted FM signals are easily reflected by solid objects such as buildings. This is why FM can be received under bridges and between tall buildings, whereas AM reception under the same conditions would either be reduced or non-existent altogether.

MULTIPATH RECEPTION — The fact that FM can be received quite well between tall buildings can, unfortunately, cause a detrimental side effect, namely multipath reception. It is caused by a direct signal and a reflected one arriving at the vehicle's antenna causing distortion, partial or complete loss of the station.

This is mostly encountered in downtown areas.

#### FM FADING



#### MULTIPATH RECEPTION



#### **AM** Interference

INTERFERENCE AND IGNITION NOISE — AM-reception is susceptible to certain types of electrical interference. These include power lines, thunderstorms, and other situations where electrical charges in the air cause disturbances resulting in buzzing and static. AM, however, does not usually suffer from ignition interference of nearby vehicles because suppression equipment installed on the vehicle prevents ignition noise in the radio.

#### **FM Interference**

IGNITION NOISE INTERFERENCE — FM does not usually suffer from the electrical disturbances that can affect an AM receiver. FM, however, is slightly sensitive to ignition noise generated by engines of adjacent vehicles, especially those not containing radio suppression equipment. This ignition noise is more prevalent when listening to a weaker station while driving in heavy traffic. The noise will also occur if the radio is tuned off-station slightly; to improve reception, make sure the radio is tuned for minimum noise.

OTHER FM INTERFERENCE — Occasionally, when listening to a station while driving in the vicinity of another station, especially a strong one, the possibility of receiving both stations simultaneously can exist. The phenomenon is called adjacent channel interference or cross modulation.

#### **FM Stereo Reception**

FM stereo reception is much more complex than regular FM, which apparently can increase the frequency of the abovementioned phenomena. Besides this, due to stronger signal requirements, the distance reception capability is more limited.

We hope the above information will contribute to your understanding of the challenges associated with AM, FM and, especially FM-stereo radio transmission. You have seen that the conditions for undisturbed operation of your radio are not always ideal — but we still believe that when they are, beautiful reception is worth some inconvenience at other times. AM - SUSCEPTIBLE TO POWER LINE NOISE



FM - IGNITION NOISE INTERFERENCE





FM TRANSMITTER NO. 1

FM TRANSMITTER NO. 2



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