SAAB

Audio Equipment Manual – 1987

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Preface

The sophisticated, high-performance, Saab/Clarion audio system in your car features a completely new design. It provides a higher level of operating convenience than ever before in an automotive sound system.

To make the most of the system's capabilities, however, you first will need to familiarize yourself with its features and controls. Please read this owner's manual carefully before operating the receiver/tape deck or equalizer/spectrum analyzer; then, practice performing the major tuning, cassette play and equalizer functions while the car is stationary.

You will be rewarded with optimum audio performance and touchplate convenience on the road.

Saab/Clarion Audio Protection System

The superlative performance and high-fidelity sound of your Saab/Clarion audio system were designed to give you many years of listening pleasure. Unfortunately, these same qualities would make the system a tempting target for theft if protective measures were not taken. These measures *have* been taken with the Saab/Clarion Audio Protection System.

The Surest Protection: Removing Your Radio

Since there is no foolproof way to prevent a determined thief from breaking into your car, the most effective deterrent is to remove the incentive to do so: Nobody can take something that is not there to be stolen. That is why your Saab/Clarion AM/FM stereo cassette/receiver has been designed on a removable chassis.

Simply insert the special tools provided into the holes on both sides of the cassette/receiver faceplate until they lock in place. Withdraw the unit from the dash.

It takes just a few seconds and presents would-be thieves with an empty space instead of a valuable target. You can either take the unit with you, or store it in your trunk. A specially designed protective carrying bag is available from your Saab dealer (Part Number 02 73 136).

This bag is a convenient place to store your radio when it be removed and can also hold up to 8 cassettes and your Saab head cleaning cassette (Part Number 02 59 994).

To reinstall your radio, just slide it back into position. Gently apply pressure between the two removal holes on each side of the unit simultaneously until it locks into place. There are no wires to worry about and nothing for you to connect.

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There is also a Tidy Box available (Part Number 02 73 417) which can be inserted into the radio bracket when the radio is removed. This box protects the radio connections and at the same time offers a convenient storage space for small articles.

The tidy box can be easily removed using outward finger pressure while pulling towards you.

When the radio is removed from the dash, it will retain any preset stations in memory for at least one month. The equalizer memory will be retained as long as the unit is supplied with battery voltage.

Turbo cars come equipped with a thin black cover that can be installed over the equalizer when the radio is removed. This will prevent the equalizer from being mistaken for a radio by would-be thieves when the radio/cassette unit has been taken out of the car.

Handling Precautions

1. Protect the unit from moisture, high ambient temperature and humidity. Take sufficient care when cleaning the interior of the car and provide adequate ventilation.
2. Wipe the unit with a soft, dry cloth for cleaning. In cases of severe contamination, use some cleaning alcohol. Never use benzine, solvents or the like.

Using The Electronic Lock-Out System (S/TURBO)

The second protective measure in the Saab/Clarion Audio Protection System is an ingenious electronic lock-out feature: This renders the cassette/receiver inoperable if it is removed from the dash or if the radio power is disconnected during servicing or for any other reason. The only way to make the unit functional again is by entering a special six-digit code, which only *you* know.

Keying in the code is simple. The easy-to-understand instructions are given on the special card which contains your code numbers and are repeated here. After you've put the unit back into the dash, simply:

1. Turn on the ignition.
2. Depress Red Power switch once.
3. Depress the Dynamic Noise Reduction (DNR) switch, and *keep it depressed throughout the key-in procedure.*
4. Key in your code numbers using the station preset keys (1-6). After last digit is entered, release DNR switch and unit will operate.

If you make a mistake when entering your code, simply release the DNR switch, depress it again and enter the correct code.

The Saab/Clarion Audio Protection System is built-in. To enjoy the years of listening pleasure your audio system was designed to provide, all you have to do is use it.
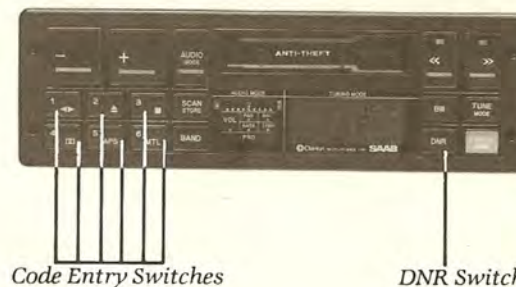
Code Entry Switches   *DNR Switch*

Owner Identification Card (S/TURBO)

In your glove compartment, you will find an Owner Identification Card attached to a card carrier on which your electronic lock-out code and other important information is recorded. Your card also contains the step-by-step reinstallation procedures outlined above.

When you have transferred the owner identification information from your card carrier to your card, place the card in your wallet. Do not leave it in the glove compartment, where it can fall prey to vandals. File the card carrier with your other important documents, where it will not be available to anyone except you.

If you look at your card, you'll see that your Radio Part Number has already been recorded on your Owner Identification Card. Be sure to record your radio serial, electronic lock-out code, vehicle identification and theft I.D. numbers on your card before placing it in your wallet or other safe place. If you lose your Owner Identification Card, contact your Saab dealer.

Key Performance/ Convenience Features

Touchplate Controls

Touchplate, electronically-activated controls for precision and convenience. Controls are logically arranged and fall readily to hand, through ergonomically efficient design. Touchplate digital tuning eliminates conventional tuning knob inaccuracies.

Advanced FM Circuit Design

Incorporates an automatic distance/local circuit (Keyed Automatic Gain Control) that automatically adjusts FM tuner sensitivity for ideal reception based on signal strength. Also, a dual-gate Field Effect Transistor/balanced mixer reduces interference from strong adjacent signals. A Signal Actuated Stereo Control (SASC) circuit reduces noise and resists multipath interference, while a special noise-canceling circuit blocks strong noise impulses received through the antenna. It all adds up to clear, clean FM reception under virtually any operating conditions.

AM Stereo (S/TURBO)

Compatible with all AM stereo broadcasts. As long as an AM station is broadcasting in stereo, this tuner will receive the signal and reproduce it.

Cassette Head-Release System

Protects tape and tape player from damage by automatically withdrawing the head from the tape when power is turned off.

Cassette Auto Reverse, Automatic Program System

Cassette will automatically reverse at the end of tape or can be manually reversed at any point during play. Automatic Program System (APS) permits replay of current selection or advancing on to the next.

Night Illumination
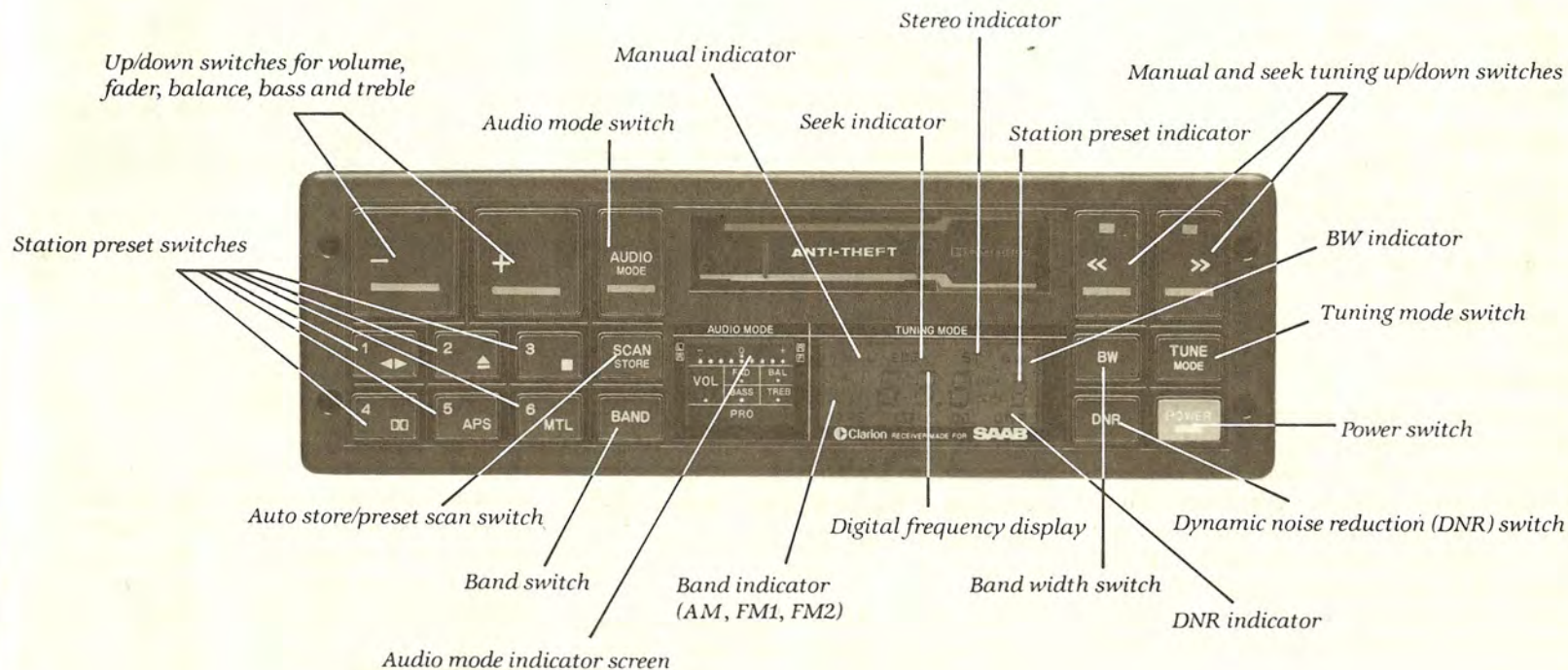
All switches are fully illuminated for night viewing.

Automatic Antenna Circuit

When the radio is turned on, the electronic antenna automatically extends. When the radio is turned off, the antenna automatically retracts.

When entering an automatic car wash, be sure to *turn the radio off*. If the car is driven through the car wash with the antenna extended, the antenna might be damaged.

S/TURBO Features and Operation
AM/FM Tuner Controls

Stereo indicator

Manual indicator

Up/down switches for volume,
fader, balance, bass and treble

Manual and seek tuning up/down switches

Audio mode switch

Seek indicator

Station preset indicator

Station preset switches

BW indicator

Tuning mode switch

Power switch

Auto store/preset scan switch

Dynamic noise reduction (DNR) switch

Band switch

Digital frequency display

Band indicator
(AM, FM1, FM2)

Band width switch

DNR indicator

Audio mode indicator screen

AM/FM Features and Operation

Power Switch

Press Red Power switch to turn the radio on. To turn radio off, press the Power switch again. If you hear a warning beep, you must enter your six-digit electronic lock-out code. (See Saab/Clarion Protection System, p. 3.)

Audio Mode

The Audio Mode Selection switch is located to the left of the cassette door. The primary audio mode is volume. In addition to regulating volume, these controls permit fader, balance, bass and treble adjustments as described below.

Volume Control

Depress the + switch to increase volume or the – switch to decrease it. The red volume (VOL) indicator will illuminate. The lights on the audio mode indicator graph will illuminate left to right as volume increases and right to left as volume decreases. If the volume is at an excessive level when the radio is turned off, it will automatically be reduced by 30% when the radio is turned on again.

Fader

(Front to Rear) Depress the Audio Mode Selection switch *once*. The dark green fader (FAD) indicator will illuminate, and the central point in the audio mode indicator graph will glow red. Use the +/– switches to increase or decrease the proportion of sound from the front or rear speakers. When the red point alone is lit, the sound is centrally balanced.

Balance

(Left to Right) Depress the Audio Mode Selection switch *twice*. The yellow balance (BAL) indicator will illuminate, and the central point in the audio mode indicator graph will glow red. Use the +/– switches to increase or decrease the proportion of sound from the left or right speakers. When the red point alone is lit, the sound is centrally balanced.

Bass

Depress the Audio Mode Selection switch *three times*. The amber bass (BASS) indicator will illuminate, and the central point in the audio mode indicator graph will glow red. Use the +/– switches to increase or decrease the bass (low frequencies). When the red point alone is lit, the bass is at its normal (flat) frequency setting.

Treble

Depress the Audio Mode Selection switch *four times*. The light green treble (TREB) indicator will illuminate, and the central bar in the audio mode indicator graph will glow red. Use the +/– switches to increase or decrease the treble (high frequencies). When the red point alone is lit, the treble is at its normal (flat) frequency setting.

IMPORTANT:

When using the seven-band graphic equalizer, the bass and treble settings should be left in the center position. Verify the settings by selecting those modes and making sure only the red central point in the audio mode indicator graph is illuminated.

The audio mode selector will automatically return to volume from any mode if it is left alone for more than five seconds.

Tuning Mode

Use the Tuning Mode switch to select manual or seek tuning. The frequency display will indicate which mode you are in.

Manual tuning is accomplished by pressing the < < or > > switches. The < < switch lowers the frequency. The > > switch raises the frequency.

In the Seek Tuning mode, the radio automatically seeks out the next clear station when the < < or > > switch is depressed. Use the < < switch to seek the next clear lower frequency station, the > > switch to seek the next clear higher station.

Station Presets

You can preset up to 18 stations—six on each of the three indicated bands. Once you know which stations you'll enjoy listening to regularly, you can use the preset function to summon them instantly.

First, use the BAND switch to select the AM, FM 1 or FM 2 band. Note that FM 1 and FM 2 both represent the regular FM band. The duplicate listing merely allows you to store six FM stations on one band, and six different FM stations on the other.

Using the manual mode, select the first station to be preset. Generally, this will either be the station you listen to most often or the first station on the dial that you listen to frequently. Use whatever sequence is easy for you to remember. To enter this station in memory, depress and hold the No. 1 memory preset switch. Ch(annel) 1 will illuminate on the tuning display. While this switch is held, you will hear the volume decrease and then return to its original level. When it returns to its original level, release the switch and that station is memorized. Tune to the next station you want memorized and repeat procedure on next channel switch. To call up a memorized station, simply tap the appropriately numbered memory preset.

Auto Store

If you are driving in an unfamiliar area—and thereby lose the stations you generally listen to—you can use the auto store function to find and memorize the strongest stations in the area in which you're driving. To activate the auto store function, depress the Auto Store/Preset Scan (SCAN/STORE) switch for two seconds. In this mode the radio will

automatically scan the entire frequency band (AM if on AM, FM if on FM). Six stations with strong signal strength will be stored in the radio's memory. If six strong stations cannot be found, weaker stations will be chosen. The auto store function will only store six stations at one time—six on AM or six on FM.

If you use the auto store function, you will lose the stations that had previously been programmed into memory. They can be reset when you are again driving in your local area.

Preset Scan

In the preset scan mode, the radio will automatically scan the stations stored in its memory (six if on AM band, and twelve if on FM band). Activate the preset scan mode by depressing the SCAN/STORE switch for less than two seconds. Once the desired station is reached, stop the scanning process by pressing the SCAN/STORE switch again. The radio will not automatically switch from AM to FM while in the preset mode.

Stereo Indicator

Whenever the radio is receiving a stereo signal, whether AM or FM, the stereo (ST) indicator will illuminate in the right center of the frequency display.
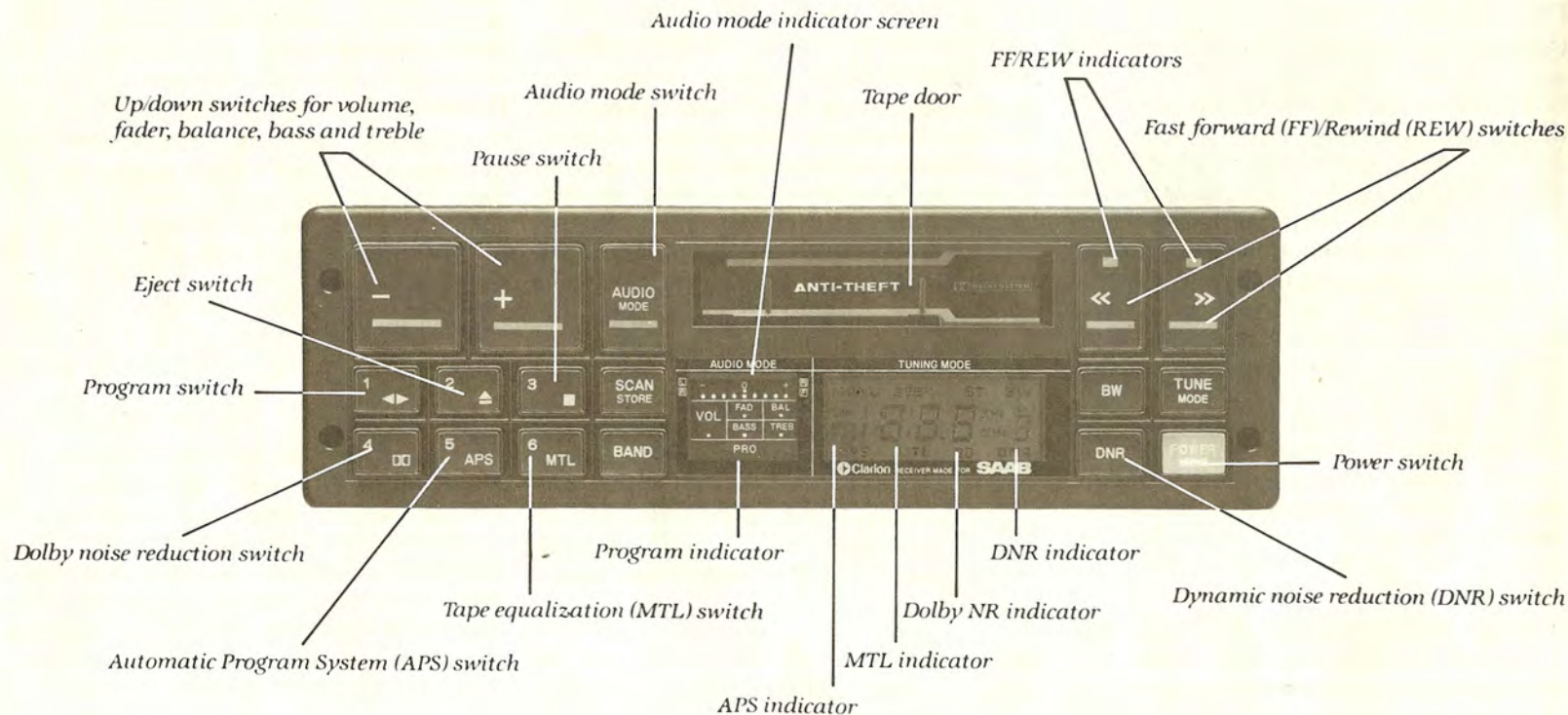
Band Width

This BW switch will increase the band width on AM stations broadcasting in stereo if the signal you are receiving is weak. When the BW mode is activated, a BW will appear in the upper right-hand corner of the frequency display.

Dynamic Noise Reduction

The Dynamic Noise Reduction (DNR) switch can be used to limit background noise on both AM and FM bands. When the DNR switch is activated, DNR will illuminate in the lower right-hand corner of the frequency display.

Cassette Controls (S/TURBO)

Audio mode indicator screen

FF/REW indicators

Up/down switches for volume, fader, balance, bass and treble

Audio mode switch

Tape door

Fast forward (FF)/Rewind (REW) switches

Pause switch

Eject switch

Program switch

Power switch

Dolby noise reduction switch

DNR indicator

Dynamic noise reduction (DNR) switch

Program indicator

Tape equalization (MTL) switch

Dolby NR indicator

Automatic Program System (APS) switch

MTL indicator

APS indicator

AUDIO MODE

ANTI-THEFT

AUDIO MODE

TUNING MODE

VOL FAD BAL

BASS TRES

PRO

SCAN STORE

BAND

BW

TUNE MODE

DNR

POWER

Clarion RECEIVER MADE FOR SAAB

Cassette Operation

To start

Depress the Power switch to activate the unit, and the radio will begin playing. If you hear a warning beep, enter your six-digit code. Insert a cassette—desired playing side up and the exposed-tape side of the cassette to the right. The tape will begin playing, and the appropriate tape direction indicator will light. (◁▷ = forward play, ◁▷ = reverse.) Next, adjust volume with the +/– audio mode control switches. Select the appropriate tape equalization and noise reduction setting (described later in this section.)

Cassette Programming

The tape player features *auto reverse*, which means the second side of a cassette will automatically be played when the first side is finished. But, if you decide you'd like to listen to Side B midway through Side A, you can switch instantly simply by pressing the Tape Program ◁▷ switch.

Fast Forward or Rewind

Fast forward or rewind is accomplished by pressing the < < or > > switch. It is not necessary to hold the switch while the tape is forwarding or rewinding. The tape will wind at high speed in the direction the arrows are pointed. The appropriate indicator will illuminate above the arrow. Check tape direction indicator before pressing FF or REW to verify tape direction.

NOTE:
—To release the cassette from fast forward, press the Fast Forward switch again. To stop the cassette from rewinding, press the Rewind switch again.
—If tape is wound completely in the FF mode, it will stop automatically and play the opposite side. If tape is wound completely in the REW mode, it will stop automatically and play the same side.
—If the tape is in the FF or REW mode and the Program switch is pressed, the tape will stop and begin play in the opposite direction.

Automatic Program System (APS)

This feature provides still more flexibility. It allows you to repeat the selection you're currently listening to or jump ahead to the next selection before the current one is finished.

To repeat the selection that is currently playing, tap the APS switch (an APS indicator will light) and the cassette rewind or fast-forward control—whichever direction is *opposite* that of current tape travel as shown by the tape direction indicators.

To jump to the *next* selection, tap APS and the cassette rewind or fast-forward control *corresponding* to the current direction of tape travel.

NOTE: The APS system may occasionally be "fooled" by the long low-level passages in classical music, since these resemble the silent gaps between selections.

Tape Equalization

There are several different types of tape currently in use, and a Tape Equalization switch (marked MTL for metal, a tape type) is provided to enable you to match their playback characteristics for the best sound. Most tapes have a normal equalization of 120µs (normal bias). Unless there is some indication to the contrary—such as the designations "metal," "chrome" or "70µs" (high bias)—you can assume that the tape requires normal equalization and no adjustment is necessary. However, high-performance metal and chrome cassettes (as well as ferrichrome, an infrequently used tape type) require a different equalization. You can provide it by pressing the MTL switch. The MTL indicator will light to confirm proper equalization.

There is one important exception: Many prerecorded cassettes today use chrome tape for improved performance with normal bias (120µs) equalization. When playing such cassettes, do not use the Tape Equalization switch.

S/TURBO

Noise Reduction

This tape player offers two types, Dolby® "B" and Dynamic Noise Reduction (DNR). If a cassette is Dolby encoded (look for the □□), press the Dolby □□ switch. If the cassette is *not* Dolby encoded, the DNR switch will still provide useful noise reduction. There are illuminated indicators for both controls.

Tape Pause

The Tape Pause (■) switch enables you to interrupt cassette play temporarily and resume exactly where you left off. If the tape is in either FF, REW or play mode and the Pause switch is pressed, the tape will stop. To resume play, depress the Pause switch again. Normal play will begin even if the cassette had been in the FF or REW mode.

The radio cannot be played when the pause mode is engaged.

Head-Release System

If the power is turned off while the tape is playing or the pause mode is engaged, the tape head will automatically release. When the power is turned on or the Pause switch is pressed again, the tape will begin normal play.

Eject

When you're finished listening to a tape, simply press the Tape Eject (▲) switch. The cassette will be released for retrieval from the tape slot, and the radio will resume playing the most recently tuned station. To eject a cassette after the power has been turned off, depress the Eject switch and hold for more than two seconds.

Routine Maintenance

To perform at its peak, your tape player requires periodic cleaning and demagnetization (elimination of the magnetic field that gradually builds up around the playback head). Of the two tasks, cleaning is the most important—dulled high frequencies will result if it is not carried out regularly.

Cleaning should be performed after every eight to ten hours of playing time, using the Saab head-cleaning cassette (Part Number 02 59 994) or that of another reputable brand. Demagnetizing should be carried out every 50 to 100 hours of playing time, using a quality head demagnetizer (available from most car stereo and audio stores).

HANDLING TIPS:

—Store cassettes in their plastic cases when not in use.
—Do *not* leave cassettes in your car, particularly during warm weather.
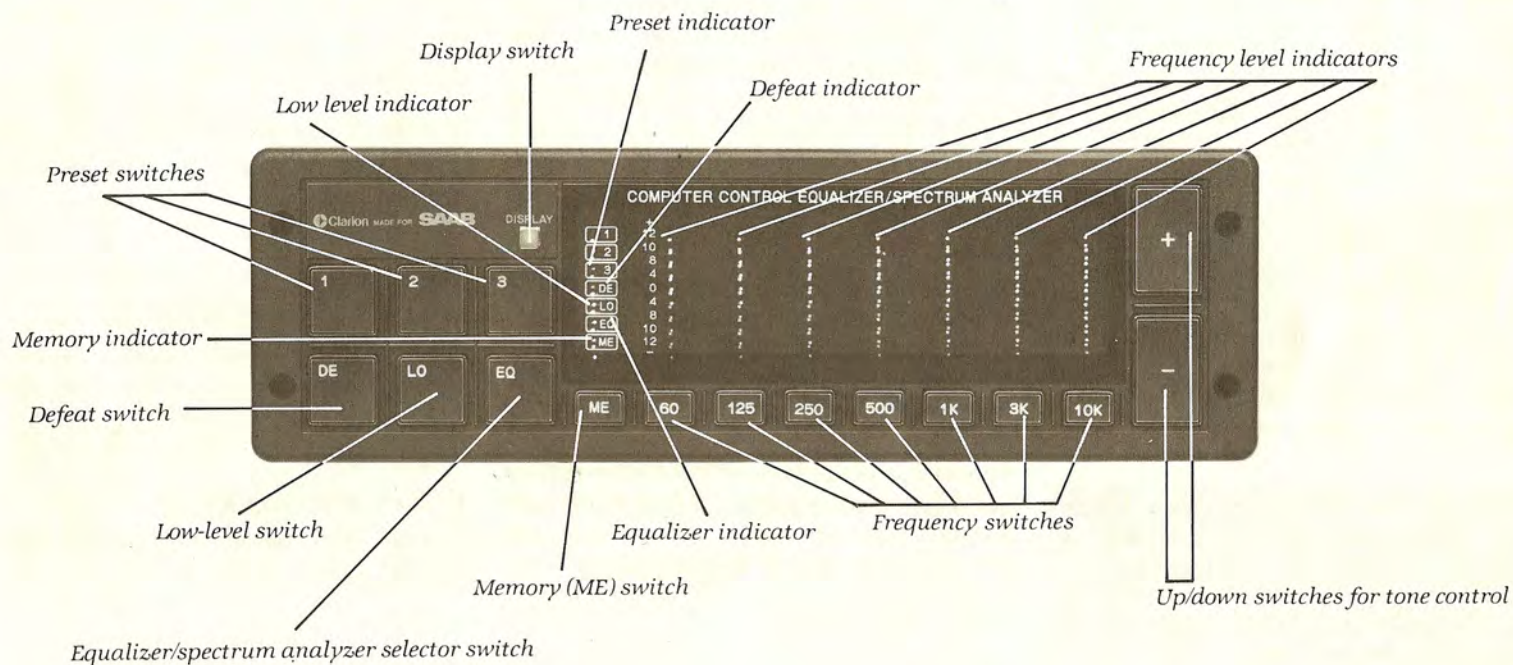—Take up any slack in the cassette before playing.
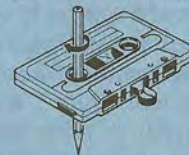
—Do not play C-120 (or longer) cassettes. The tape in these cassettes is very thin and prone to breakage.

Equalizer Features and Operation

Graphic Equalizer/Spectrum Analyzer

Preset indicator

Display switch

Low level indicator

Defeat indicator

Frequency level indicators

Preset switches

Memory indicator

Defeat switch

Low-level switch

Equalizer indicator

Frequency switches

Memory (ME) switch

Up/down switches for tone control

Equalizer/spectrum analyzer selector switch

TURBO

Computer Control Equalizer/Spectrum Analyzer Operation

This sophisticated graphic equalizer/ spectrum analyzer provides a range of tonal adjustments far beyond the capabilities of conventional tone controls. Because altering frequency response for better sound requires that you pay very close attention to what you are hearing, *it is strongly recommended that the equalizer be operated only when the car is stationary.*

Similarly, because the spectrum analyzer enables you to see the frequency band components and sound levels of the music you are listening to, it would prove distracting on the road and *should not be used while driving.*

However, you can easily and safely summon up any of three preferred frequency band equalizer settings simply by tapping on the programmed memory preset switches.

NOTE: If the Defeat (DE) switch has been pressed and the DE indicator is on, the equalizer will be inoperative until DE is pressed again to override it. The Defeat switch serves as the on-off control for the equalizer.

Equalizer Memory

This unit's equalizer is capable of storing up to three separate settings in its memory. Use the *frequency band activators and control switches* to make your equalizer adjustments. As an example, suppose you want to decrease the treble content of the music (at 10 kHz) to reduce tape hiss. Press the 10K activator, and the yellow indicator light at the center of that frequency band will flash on and off for approximately 10 seconds to indicate that your command has been received.

While the indicator is flashing, deemphasize this frequency by depressing and holding the – frequency band control switch.

Release the – frequency band control switch when you think you've reduced this frequency far enough. Conversely, to *emphasize* the selected frequency band, depress the + frequency band control switch.

Repeat this procedure with each frequency band that needs adjusting. Then, if you wish to enter your settings in memory, simply press the Memory (ME) switch and the appropriate frequency band memory preset within five seconds.

60 Hz Frequency Band

Controls the extreme low frequencies. Can be used to counter the masking effect of road noise, etc.

125 Hz Frequency Band

Controls the low frequencies. Boosting this frequency range emphasizes the sound of bass drums, etc. Cutting this frequency range can help to alleviate muffled speaker sound.

250 Hz Frequency Band

Controls the medium-low frequencies. Rhythm section instruments (drums, bass, etc.) are centered around this frequency range.

500 Hz Frequency Band

Controls the lower mid-range frequencies. The main sound energy of most instruments and human voices is centered around this frequency range.

1 kHz Frequency Band

Controls the mid-range frequencies (above 500 Hz).

3 kHZ Frequency Band

Controls the upper mid-range frequencies. The human ear is most sensitive in this range. Excessive boost can therefore lend a stringent quality to the sound.

10 kHz Frequency Band

Controls the high frequencies. Can be used to attenuate tape hiss, etc.

NOTE: There is a permanent memory setting encoded into the equalizer. If the battery power is disconnected for any reason, the equalizer memory will return to these three settings:

Preset switch

1	+ 12 dB (maximum)
2	0 dB (flat)
3	– 12 dB (minimum)

Any settings you wish to program into the memory will override these permanent settings as long as battery power is supplied to the unit.

Spectrum Analyzer

Simply press the Equalizer/Spectrum Analyzer (EQ) switch to turn on the spectrum analyzer; the EQ indicator will go out. Use the spectrum analyzer display to confirm the evidence of your ears. For example, if you feel the music could use more deep bass, and the spectrum analyzer confirms that there is little or no musical energy in the lower frequency bands, then adjust the equalizer accordingly.

Low Level Switch

During high-powered listening, use of the Low Level (LO) switch will ensure that the musical content displayed does not exceed the upper level of the spectrum analyzer.

Defeat Switch

To restore flat (0 dB) frequency response, press the Defeat switch. The DE indicator will light, and all seven frequency band 0 dB

indicators will flash to indicate reception of the command. As long as the DE indicator is illuminated, the frequency band activators and the equalizer itself are inoperative. To readjust frequencies and turn on the equalizer again, you must first re-press the Defeat switch to release it.

Display Switch

If the spectrum analyzer is distracting, it can be turned off by depressing the Display switch. This will not affect the performance of the equalizer; it will simply make the display invisible.
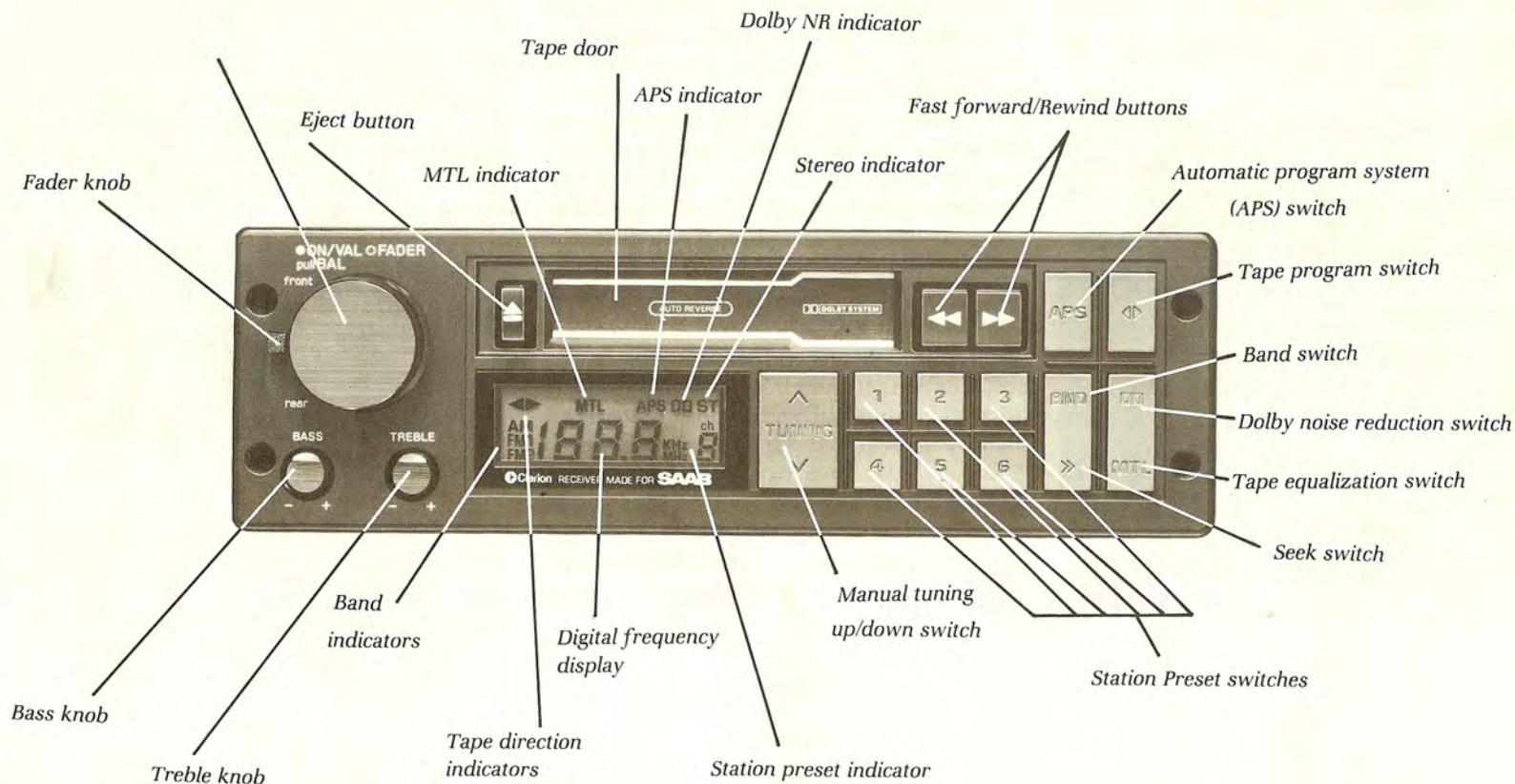
If the unit is in the spectrum analyzer mode when the power is turned off, the equalizer settings will be displayed when power is resumed. In ten seconds, the spectrum analyzer display will appear again.

900 Features and Operation
AM/FM Cassette Controls

Power/volume and balance knob

Tape door

Dolby NR indicator

APS indicator

Eject button

Fast forward/Rewind buttons

Fader knob

MTL indicator

Stereo indicator

Automatic program system
(APS) switch

Tape program switch

Band switch

Dolby noise reduction switch

Tape equalization switch

Seek switch

Manual tuning
up/down switch

Band
indicators

Digital frequency
display

Station Preset switches

Bass knob

Tape direction
indicators

Station preset indicator

Treble knob

AM/FM Features and Operation

Power/Volume Control

Rotate the power/volume knob clockwise to turn on the radio. Rotating the knob more will increase the volume.

Fader

Rotate the fader knob clockwise to emphasize the sound to the front speakers. Turn it counter-clockwise to emphasize the sound to the rear speakers.

Balance

Pull the power/volume knob out to the locked position. Rotate the knob clockwise to emphasize the sound to the right speakers and counter-clockwise to emphasize the sound to the left speakers.

Treble

Depress the treble knob and it will spring outward so that the treble can be controlled. Rotate the knob clockwise from the center click-stop position to increase the treble. Turn it counter-clockwise to decrease the treble. After the adjustment is made, push the knob back into its original position.

Bass

Depress the bass knob and it will spring outward so that the bass can be controlled. Rotate the knob clockwise from the center click-stop position to increase the bass. Turn it counter-clockwise to decrease the bass. After the adjustment is made, push the knob back into its original position.

Stereo Indicator

Whenever the radio is receiving a stereo signal, the stereo (ST) indicator will illuminate in the top right of the frequency display.

Manual Tuning

Manual tuning is accomplished by pressing the Λ or V end of the tuning switch. The V position lowers the frequency. The Λ position raises the frequency.

Seek Tuning

In the Seek Tuning Mode, the radio automatically seeks out the next clear station when the > > switch is depressed. Use the > > switch to seek the next clear higher station.

Station Presets

You can preset up to 18 stations—six on each of the three indicated bands. Once you know which stations you'll enjoy listening to regularly, you can use the preset function to summon them instantly.

First, use the BND switch to select the AM, FM1 or FM2 band. Note that FM1 and FM2 both represent the regular FM band. The duplicate listing merely allows you to store six FM stations on one band, and six different FM stations on the other.

Using the Tuning switch, select the first station to be preset. Generally, this will either be the station you listen to most often or the first station on the dial that you listen to frequently. Use whatever sequence is easy for you to remember. To enter this station in memory, depress and hold the No. 1 memory preset switch. Ch(annel) 1 will illuminate on the tuning display. While this switch is held, you will hear the volume decrease and then return to its original level. When it returns to its original level, release the switch and that station is memorized. Tune to the next station you want memorized and repeat the procedure on the next channel switch. To call up a memorized station, simply tap the appropriately numbered memory preset.

900

Cassette Operation

To Start

Turn on the Power switch to activate the unit, and the radio will begin playing. Insert a cassette—desired side up and the exposed-tape side of the cassette to the right. The tape will begin playing, and the appropriate tape direction indicator will light. (◁▶ = forward play, ◀▷ = reverse.) Next adjust volume with the volume knob. Select the appropriate tape equalization and noise reduction setting (described later in the section.)

Cassette Programming

The tape player features *auto reverse*, which means the second side of the cassette will automatically be played when the first side is finished. But, if you decide you'd like to listen to Side B midway through side A, you can switch instantly simply by pressing the Tape Program ◁▷ switch.

Fast Forward or Rewind

Fast forward or rewind is accomplished by pressing the ◀◀ or ▶▶ switch. It is not necessary to hold the switch while the tape is forwarding or rewinding. The tape will wind at a high speed in the direction the arrows are pointed. Check tape direction indicator before pressing FF or REW to verify tape direction.

NOTE: To release the cassette from the fast forward or rewinding mode, partially depress the opposite function. Example: If the cassette is rewinding depress fast forward partially to release.
If the tape is wound completely in the FF mode, it will stop automatically and play the opposite side. If the tape is wound completely in the REW mode, it will stop automatically and play the same side.
If the tape is in the FF or REW mode and the Program switch is pressed, the tape will stop and begin play in the opposite direction.

Automatic Program System (APS)

This feature provides still more flexibility. It allows you to repeat the selection you're currently listening to or jump ahead to the next selection before the current one is finished.

To repeat the selection that is currently playing tap the APS switch (the APS indicator will light) and the cassette rewind or fast-forward control—whichever direction is *opposite* that of the current tape travel as shown by the tape direction indicators.

To jump to the next selection, depress APS and the cassette rewind or fast-forward control *corresponding* to the current direction of tape travel.

NOTE: The APS system may occasionally be "fooled" by the long low-level passages in classical music, since these resemble the silent gaps between selections.

Tape Equalization

There are several different types of tape currently in use, and a Tape Equalization switch (marked MTL for metal, a tape type) is provided to enable you to match their playback characteristics for the best sound. Most tapes have a normal equalization of 120 μs (normal bias). Unless there is some indication to the contrary—such as the designations "metal", "chrome" or "70 μs" (high bias)—you can assume that the tape requires normal equalization and no adjustment is necessary. However, high-performance metal and chrome cassettes (as well as ferrichrome, an infrequently used tape type) require a different equalization. You can provide it by pressing the MTL switch. The MTL indicator will light to confirm proper equalization.

There is one important exception: Many prerecorded cassettes today use chrome tape for improved performance with normal bias (120 μs) equalization. When playing such cassettes, do not use the Tape Equalization switch.

Noise Reduction

This tape player offers Dolby ® "B" Noise Reduction. If a cassette is Dolby encoded (look for the ⎅⎅), press Dolby ⎅⎅ switch. There is an illuminated indicator for this control located in the display screen.

Head-Release System

If the power is turned off while the tape is playing, the tape head will automatically release. When the power is turned on, the tape will begin normal play.

Eject

When you're finished listening to a tape, simply press the Tape Eject (⏏) switch. The cassette will be released for retrieval from the tape slot, and the radio will resume playing the most recently tuned station. To eject a cassette after the power has been turned off, depress the Eject switch.

Routine Maintenance

To perform at its peak, your tape player requires periodic cleaning and demagnetization (elimination of the magnetic field that gradually builds up around the playback head). Of the two tasks, cleaning is the most important-dulled high frequencies will result if it is not carried out regularly.

Cleaning should be performed after every eight to ten hours of playing time, using the SAAB head-cleaning cassette (Part Number 02 59 994) or that of another reputable brand. Demagnetizing should be carried out every 50 to 100 hours of playing time, using a quality head demagnetizer (available from most car stereo and audio stores).

Handling Tips

1. Store cassettes in their plastic cases when not in use.
2. Do not leave cassettes in your car, particularly during warm weather.
3. Take up any slack in the cassette before playing.
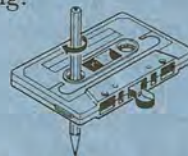
4. Do not play C-120 (or longer) cassettes. The tape in these cassettes is very thin and prone to breakage.

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Broadcast Reception Performance Characteristics

FM reception poses particularly challenging problems because FM radio waves are transmitted at very high frequencies in straight lines like light waves. Any number of obstacles can and do get in the way: tall buildings, hills, etc. Such obstacles can cause "shadows" with momentary loss of signal.

In addition, FM signals can also be reflected by obstructions. When this happens, direct and reflected signals from the same station can arrive at the car's antenna simultaneously. The noise this causes is known as multipath interference.

The tuner in this unit was designed to minimize multipath interference and other common reception problems.

Under weak signal conditions, the Signal Actuated Stereo Control (SASC) circuit takes over to provide the strongest possible signal, switching to mono reception when circumstances warrant. An automatic distance/local reception circuit (Keyed Automatic Gain Control) provides full sensitivity, while a dual-gate FET RF amplifier provides a high signal-to-noise ratio.

Optimum selectivity virtually eliminates interference from strong nearby stations, and a special FM noise canceller works to suppress ignition noise and other pulse interference. Wide dynamic range avoids overload distortion and the unpleasant noise it causes.

Nor has AM reception been neglected in the design of this tuner. A special circuit feature permits only the strongest, clearest stations to get through when broadcast conditions are less than optimum. It is one more refinement that accounts for the superb performance of the tuner and adds to your listening enjoyment.

AM and FM

Both AM and FM reception have advantages and disadvantages resulting from their differing properties. AM waves can reach longer distances than FM waves. They can bend around buildings or mountains and bounce off the ionosphere. This means that an AM service area is very wide.

FM waves, on the other hand, have much higher frequencies and shorter wave lengths. Unlike AM waves, they cannot travel around corners. They reflect off solid objects in their path, which limit the areas they can reach. An average FM signal can be heard only within a 25-mile to 35-mile radius of a transmitter.

|	Arrival distance	Sound quality	Frequency
AM	60 - 120 miles	Fair	530 - 1,610 kHz
FM	25 - 30 miles	Good	88 - 108 MHz
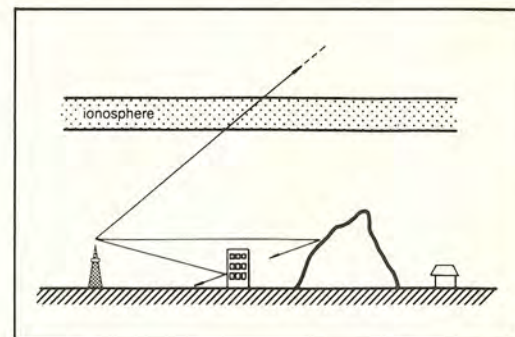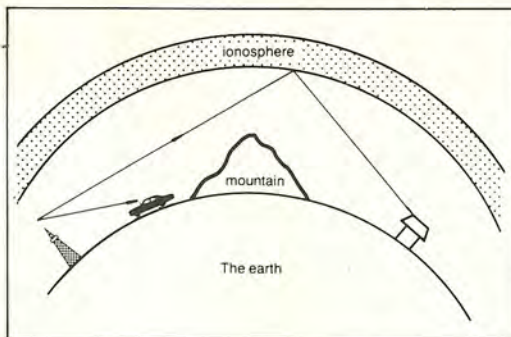
Stereo and Monaural

Stereo and monaural FM reception characteristics are also different. Monaural transmission utilizes the range of audio frequencies audible to the human ear. Stereo transmission relies on a range of frequencies that extend beyond human hearing limits on both the high and low ends. This broadened frequency range requires more power, thereby reducing the range of a station broadcasting in stereo.
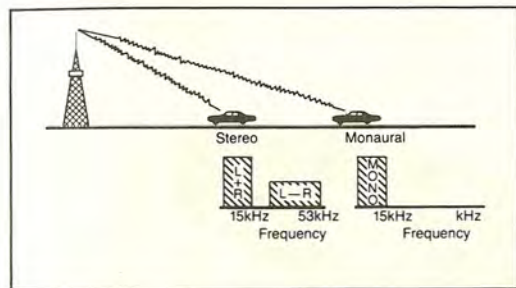
In weak signal areas—called fringe areas—there will be increased noise on stereo broadcasts. When signal strength diminishes significantly in the the stereo mode, the radio will automatically switch to monaural transmission.
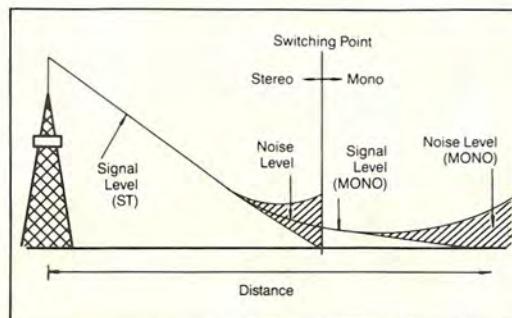
Fuse Replacement

If your radio will not activate when you turn on the Power switch or if your electric antenna will not function, a fuse may have blown. Check the car fuses first:

900—Fuse box (under hood) fuse #20 (blue, 15 amp)

9000—Fuse box (in glove box) fuse #19 (blue, 15 amp)
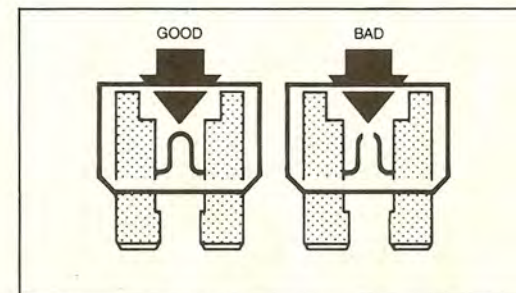
S/TURBO
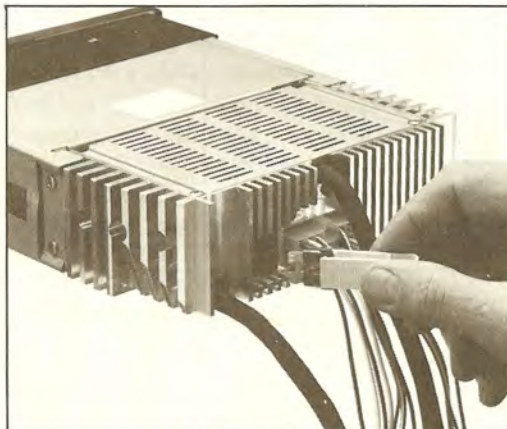
If the car fuses are good, check the radio fuses.

See directions below:

1. Insert the radio removal tools into the four holes in face of the equalizer or storage box (S models).

900

If the car fuses are good, check the radio fuse.

See directions below.

1. Insert the radio removal tools into the four holes in the face of the radio.
2. Slide the unit out and locate the single blade type fuse at the rear of the radio.
3. Check and replace the fuse as necessary using the removal tool found in the fuse box.

   3 amp (violet)—radio power fuse
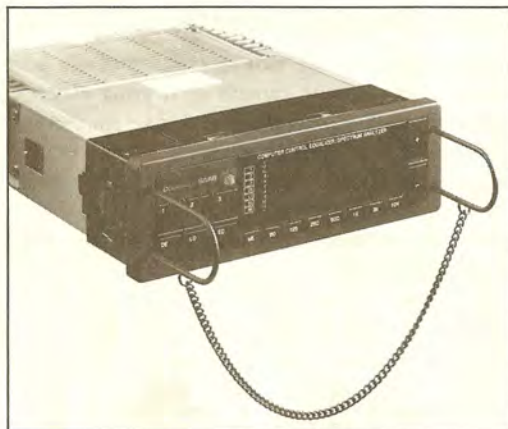
2. Slide the unit out and locate the two blade type fuses at the rear of the amplifier.
3. Check and replace the fuses as necessary using the removal tool found in the fuse box.

   10 amp (red)—amplifier, equalizer and radio power
   3 amp (violet)—antenna trigger signal

NOTE: Never replace a "blown" fuse with a fuse of a higher rating.

4. Reinstall the equalizer/amplifier by sliding it back into place being careful not to pinch any of the wiring. Gently apply pressure between the two removal holes on each side of the unit simultaneously.

NOTE: To make the radio operational again you must enter the electronic lock out code.
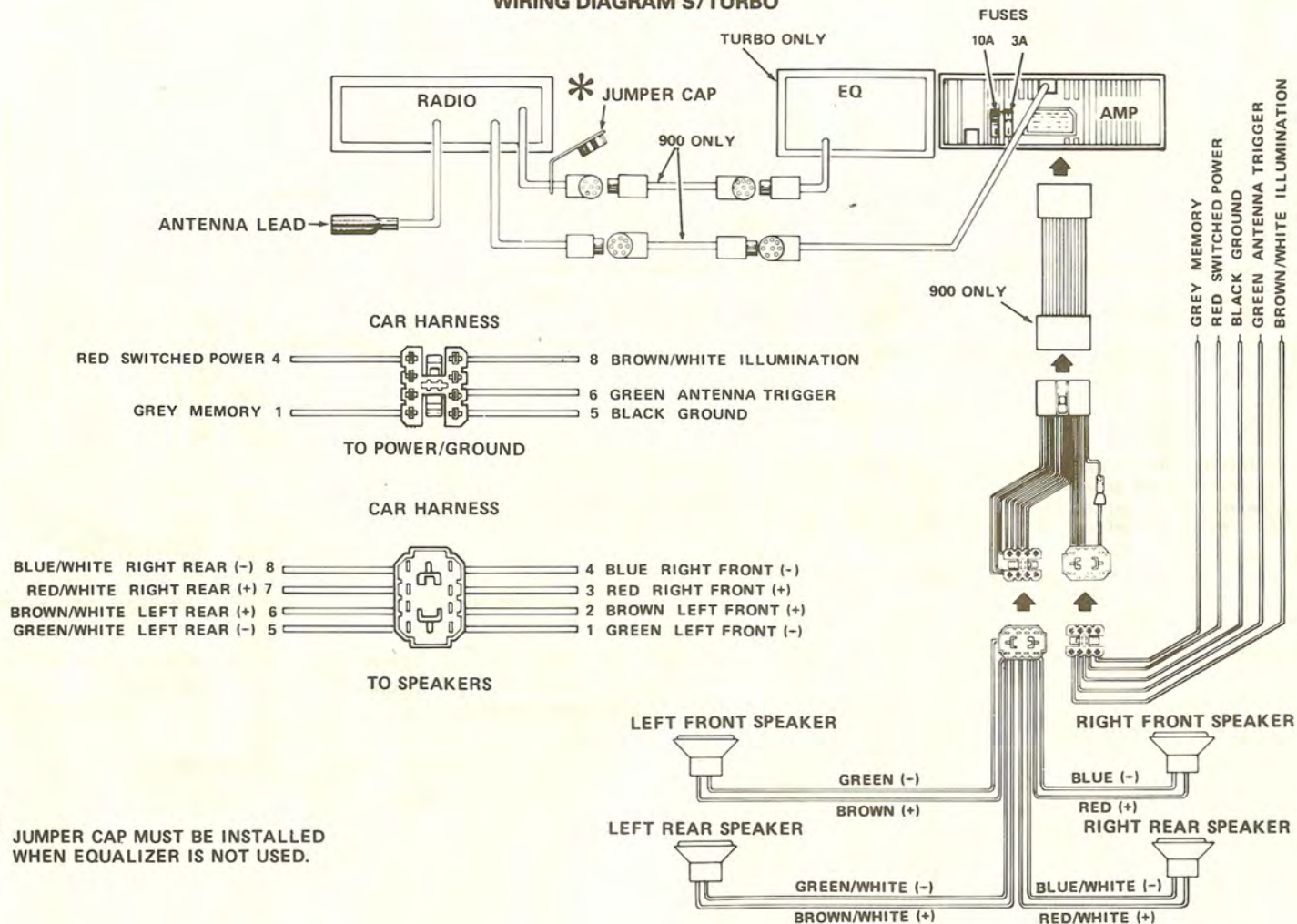
NOTE: Never replace a "blown" fuse with a fuse of a higher rating.

4. Reinstall the radio by sliding it back into place. Gently apply pressure between the two removal holes on each side of the unit simultaneously.
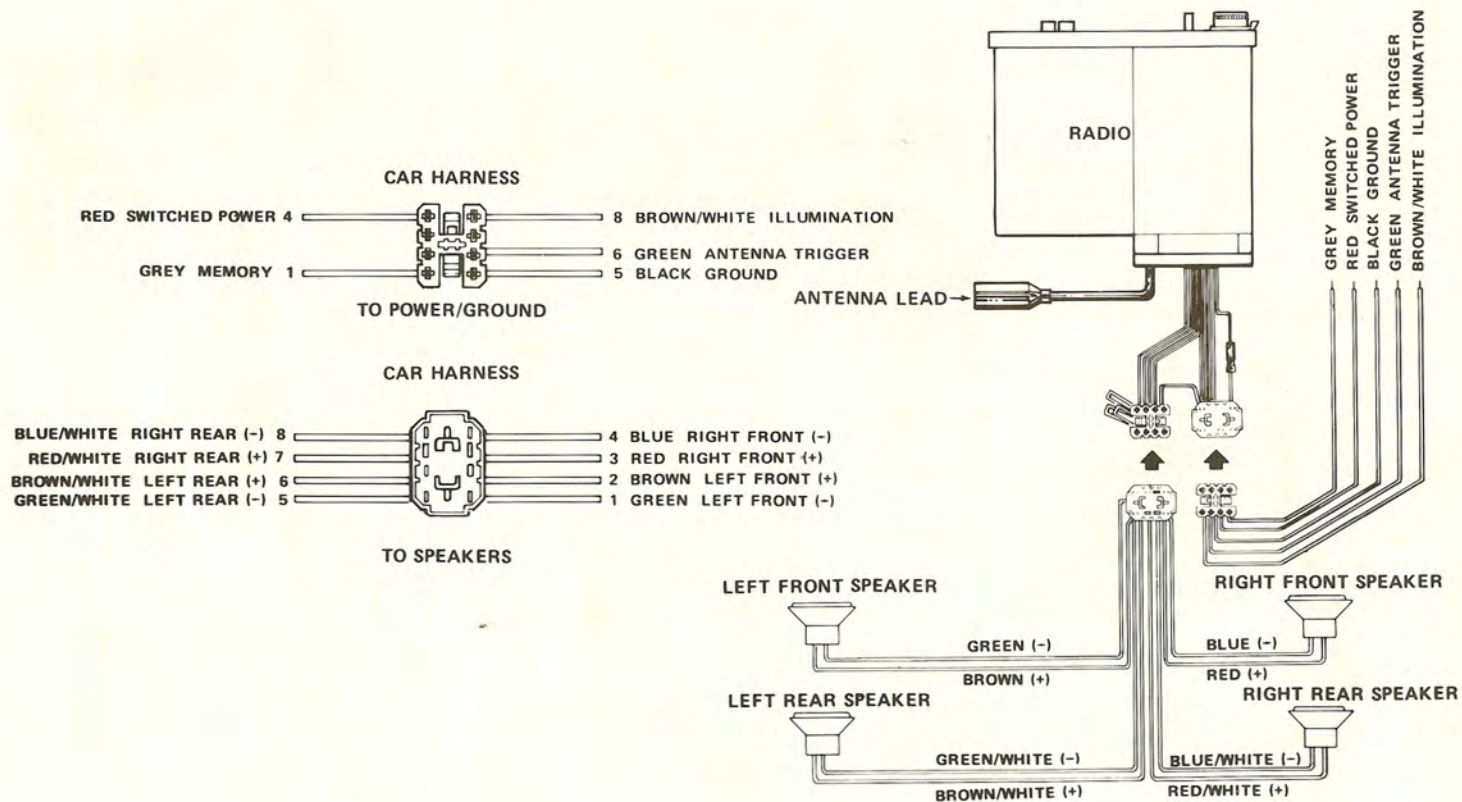
WIRING DIAGRAM S/TURBO

FUSES
10A   3A

TURBO ONLY

RADIO

✱ JUMPER CAP

EQ

AMP

900 ONLY

ANTENNA LEAD→

GREY MEMORY
RED SWITCHED POWER
BLACK GROUND
GREEN ANTENNA TRIGGER
BROWN/WHITE ILLUMINATION

CAR HARNESS

900 ONLY

RED SWITCHED POWER 4 ⊏⊐ 8 BROWN/WHITE ILLUMINATION
6 GREEN ANTENNA TRIGGER
GREY MEMORY 1 ⊏⊐ 5 BLACK GROUND

TO POWER/GROUND

CAR HARNESS

BLUE/WHITE RIGHT REAR (−) 8 ⊏⊐ 4 BLUE RIGHT FRONT (−)
RED/WHITE RIGHT REAR (+) 7 ⊏⊐ 3 RED RIGHT FRONT (+)
BROWN/WHITE LEFT REAR (+) 6 ⊏⊐ 2 BROWN LEFT FRONT (+)
GREEN/WHITE LEFT REAR (−) 5 ⊏⊐ 1 GREEN LEFT FRONT (−)

TO SPEAKERS

LEFT FRONT SPEAKER

RIGHT FRONT SPEAKER

GREEN (−)

BLUE (−)

BROWN (+)

RED (+)

LEFT REAR SPEAKER

RIGHT REAR SPEAKER

✱ JUMPER CAP MUST BE INSTALLED
WHEN EQUALIZER IS NOT USED.

GREEN/WHITE (−)

BLUE/WHITE (−)

BROWN/WHITE (+)

RED/WHITE (+)

S/TURBO

WIRING DIAGRAM 900

RADIO

CAR HARNESS

RED SWITCHED POWER 4 ⊏══════════ ⊐ 8 BROWN/WHITE ILLUMINATION

⊐ 6 GREEN ANTENNA TRIGGER

GREY MEMORY 1 ⊏══════════ ⊐ 5 BLACK GROUND

TO POWER/GROUND

ANTENNA LEAD →

CAR HARNESS

BLUE/WHITE RIGHT REAR (−) 8 ⊏══════════ ⊐ 4 BLUE RIGHT FRONT (−)
RED/WHITE RIGHT REAR (+) 7 ⊏══════════ ⊐ 3 RED RIGHT FRONT (+)
BROWN/WHITE LEFT REAR (+) 6 ⊏══════════ ⊐ 2 BROWN LEFT FRONT (+)
GREEN/WHITE LEFT REAR (−) 5 ⊏══════════ ⊐ 1 GREEN LEFT FRONT (−)

TO SPEAKERS

GREY MEMORY
RED SWITCHED POWER
BLACK GROUND
GREEN ANTENNA TRIGGER
BROWN/WHITE ILLUMINATION

LEFT FRONT SPEAKER   **RIGHT FRONT SPEAKER**

GREEN (−)   BLUE (−)

BROWN (+)   RED (+)

LEFT REAR SPEAKER   **RIGHT REAR SPEAKER**

GREEN/WHITE (−)   BLUE/WHITE (−)

BROWN/WHITE (+)   RED/WHITE (+)

Specifications

S/TURBO Specifications

GENERAL—
Power Supply Voltage ....14.4V (10.8 to 15.6V allowable)
Current Consumption ....Less than 10 amps

AUDIO SECTION—
*Tone action ....± 10 dB at 100 Hz; ± 10 dB at 10 kHz
Power-output ....20 watts X 4 at max. power output
(Separate amplifier)

FM SECTION—
Frequency range ....88.1 to 107.9 MHz
*Usable sensitivity ....13 dBf
*50D dB quieting sensitivity ....18 dBf
*Capture ratio ....1.5 dB
*Alternate channel selectivity ....70 dB
*Stereo separation ....35 dB at 1 kHz
*Frequency response ....30 to 15,000 Hz ± 3 dB

AM SECTION—
Frequency range ....530 to 1,610 kHz
Usable sensitivity (20 dB S/N) 28μV

TAPE SECTION—
Tape speed ....4.75 cm/s (1-7/8 ips)
*WOW and Flutter ....0.13% WRMS
*Signal to noise ratio Standard tape (120μs) ....53 dB/62 dB (Dolby NR off/on)
Cr02-Metal tape (70μs) ....56 dB/65 dB (Dolby NR off/on)
*Frequency response ....50 to 14,000 Hz ± 3 dB
*Stereo separation ....42 dB

Graphic Equalizer Specifications
Center frequencies for adjustment ......60 Hz/125 Hz/250 Hz/500 Hz/1 kHz/ 3 kHz/10 kHz
Adjustment range ....± 12 dB each
Frequency response.....................20 Hz – 70 kHz $\left\{ \begin{array}{l} +0\ dB \\ -3\ dB \end{array} \right.$
Gain ....– 3.5 dB
Distortion ....0.003% (at 1 kHz)
Power consumption 580mA
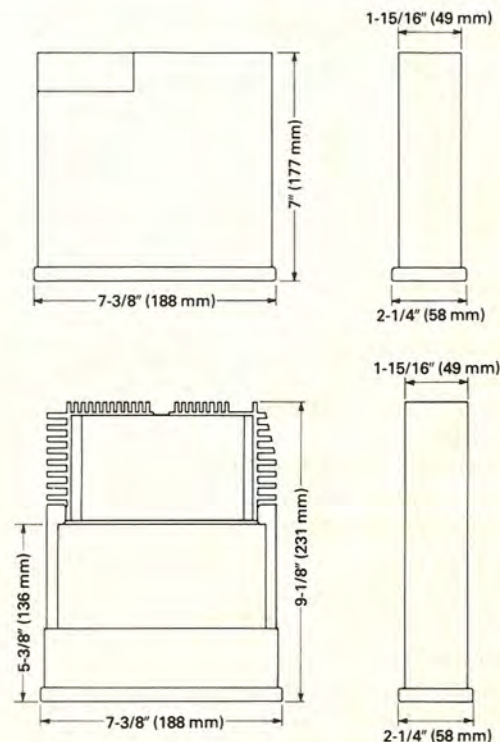
Specifications subject to design change.
*Marks comply with AD-HOC committee standards.
•Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
•"Dolby" and the double-D symbols are trademarks of Dolby Laboratories Licensing Corporation.

S/TURBO

Specifications

900 Specifications

GENERAL—
Power Supply Voltage ....14.4V (10.8 to 15.6V allowable)
Current Consumption ....Less than 3 Amps

AUDIO SECTION—
*Tone action....................................± 8 dB at 100 Hz
                                               ± 5 dB at 10 kHz
Power-output ....6 Watts x 2 at maximum power output

FM SECTION—
Frequency range................................88.1 to 107.9 MHz
*Usable sensitivity ....12 dBf
*50 dB quieting sensitivity......................17 dBf
*Capture ratio ....1.5 dB
*Alternate channel selectivity ....70 dB
*Stereo separation.............................35 dB at 1 kHz
*Frequency response...........................30 to 15,000 Hz ± 3 dB

AM SECTION—
Frequency range............................... 530 to 1610 kHz
Usable sensitivity (20 dB S/N)...................28μV

TAPE SECTION—
Tape speed....................................4.75 cm/s (1-7/8 ips)
*WOW & Flutter ....0.13% WRMS
*Signal to noise ratio
  Standard tape (120μs).........................53 dB/62 dB (Dolby NR off/on)
  CrO2 Metal tape (70μs).......................56 dB/65 dB (Dolby NR off/on)
*Frequency response...........................50 to 12,500 Hz ± 3 dB
*Stereo separation.............................42 dB

WEIGHT—
AM/FM Stereo ....1.98 lbs (0.9 kg)
AM/FM Cassette ....3.09 lbs (1.4 kg)
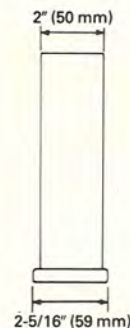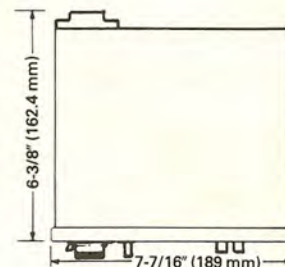
6-3/8" (162.4 mm)
7-7/16" (189 mm)

2" (50 mm)
2-5/16" (59 mm)

Specifications subject to design change.
* Marks comply with AD-HOC committee standards.
· Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
· "Dolby" and the double D symbols are trademarks of Dolby Laboratories Licensing Corporation.

Audio System Part Numbers

S/TURBO

	SAAB P/N
Complete Turbo radio kit	02 73 375
Complete "S" radio kit	02 73 383
900 Turbo installation kit	02 73 037
900 S Installation kit	02 73 433
S/TURBO radio head	02 73 409
S/TURBO radio bracket	02 73 094
Turbo equalizer	02 73 052
S/TURBO amplifier	02 73 060
EQ/Amp bracket	02 73 086
EQ/Amp DIN cord (900 only)	02 73 102
Car/Amp adapter harness	02 73 110
13 pin/13 pin 900 adapter cable	02 73 003
S storage box (in front of amp)	02 73 078
Removal tools (fits all removable units)	02 73 128
Radio carrying bag (fits all removable radios)	02 73 136
Tidy Box (used when radio is removed)	02 73 417
Equalizer cover	02 73 300
10 Amp fuse blade type (red)	79 74 637
3 Amp fuse blade type (violet)	02 61 826
RADIO owner's manual	02 73 425

900

	SAAB P/N
Complete 900 base radio kit	02 73 177
Radio Bracket	02 73 193
On/off volume knob	02 73 201
Fader knob	02 61 362
Tone balance knob	02 73 219
Removal tools (fits all removable radios)	02 73 128
Radio carrying bag	02 73 136
Tidy Box (used when radio is removed)	02 73 417
3 Amp fuse blade type (violet)	02 61 826
Radio adaptor cable M83-85 to M86-	02 73 185
Radio owners manual	02 73 425

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Photographs and Illustrations

Index (900)

Photographs and Illustrations

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MEMO

280-4878-01