

Owner's Manual

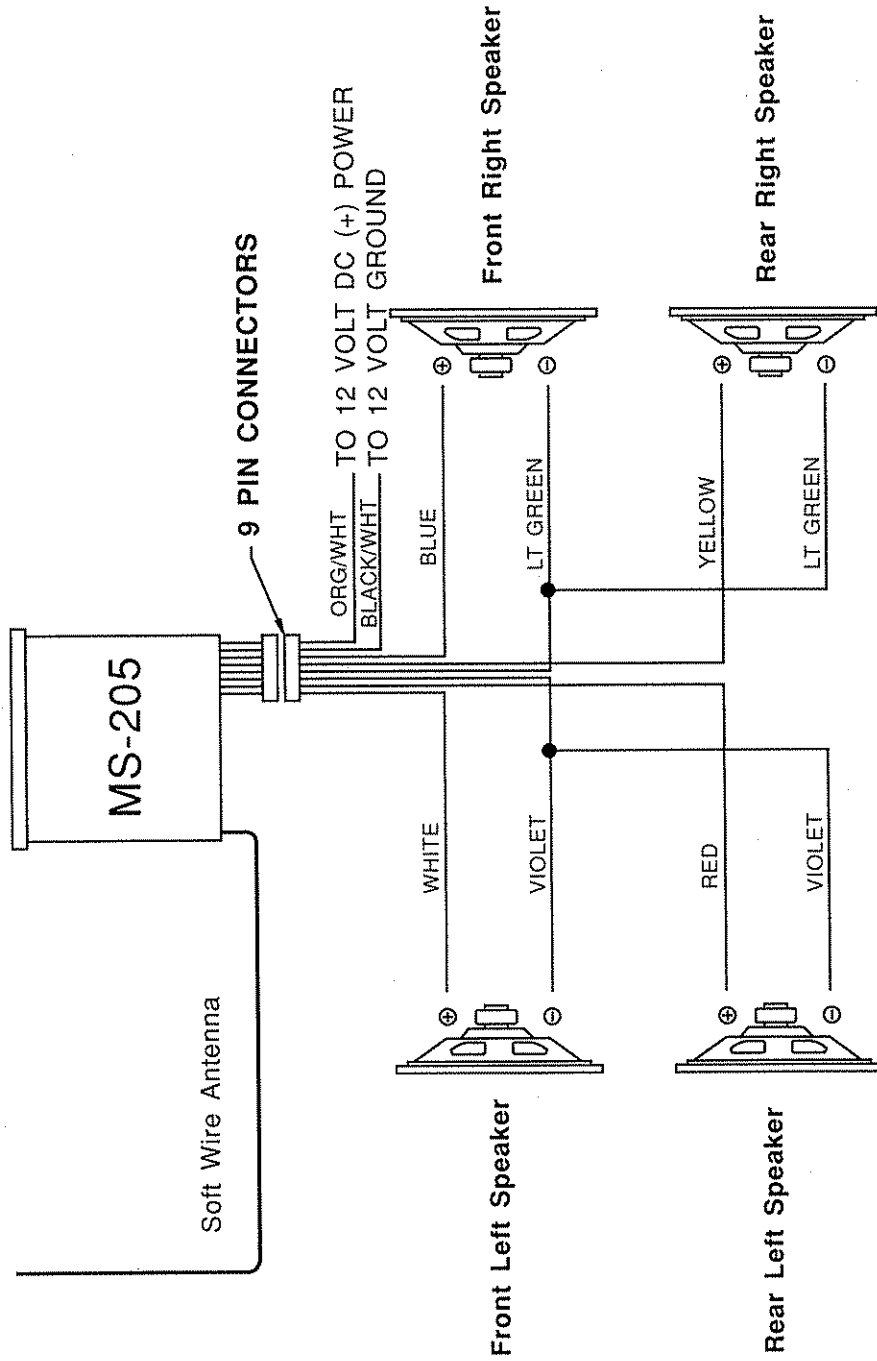
AM/FM STEREO RADIO WITH
CASSETTE PLAYER

*Designed Specifically for
the Marine Environment*

MS-205

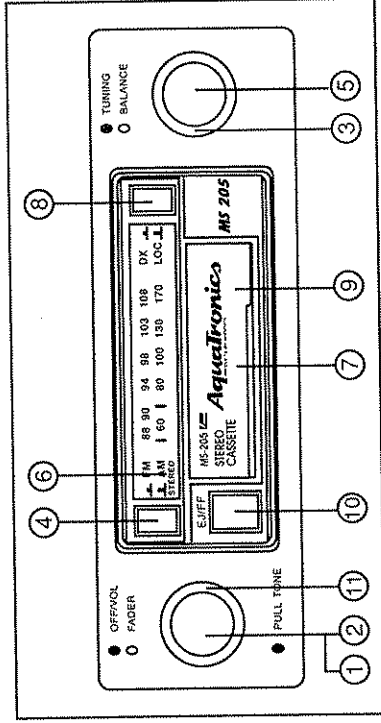
AquaTronics

WIRING DIAGRAM



OPERATING INSTRUCTION

- 1. ON-OFF/ VOLUME**
Rotate this knob to the right to turn the radio on. Continue rotation until the desired volume level is obtained.
- 2. TONE CONTROL (Pull volume knob out)**
Pull out, then turn to the left or right to obtain desired bass or treble tones. Push back in to return to volume mode.
- 3. BALANCE CONTROL**
Allows you to adjust stereo balance between left the right speakers. Rotate clockwise to emphasize right speaker, counter clockwise to emphasize left speaker.
- 4. AM-FM SELECTOR**
Depress this button to change the band from AM to FM. In the in-position, you will receive FM stereo broadcasts and AM broadcasts in the Out-position.
- 5. MANUAL TUNING**
By rotating the knob you can manually change stations. When using this control to select a station always adjust it so you are receiving the full signal (exactly in the center of the broadcast frequency). If it is off station you could experience noise and reception problems. The dial pointer will move along the dial to indicate which frequency you are tuning to.



- 6. STEREO INDICATOR (RED)**
This will illuminate whenever you select a stereo station. If the light flicker or goes on and off as you drive it is the indication that the stereo signal is too weak to reproduce and you should select another station.
- 7. ANTENNA TRIMMER**
It is very important to adjust the ANTENNA TRIMMER for optimum AM reception. Antenna trimmer is located at the back in the tape slot. Tune in a weak station around 1400 KHz and adjust the trimmer with a small screw driver for maximum output.

CARE & MAINTENANCE

8. LOCAL-DISTANT SWITCH

This two position switch is incorporated to allow maximum reception in both weak and strong FM signal areas. When tuned to a weak (distant) station push switch in. This will allow maximum signal to the receiver. When in an extremely strong signal area (local), release switch. This will eliminate all weak signals and suppress overly strong signals so as to avoid overloading the receiver input. When moving out of a strong signal area, return switch to the "distant" position.
Note: the Local-Distant switch only affects FM signals.

9. CASSETTE SLOT

The cassette should be checked that the tape is tightly wound on the spools before inserting. To properly insert the cassette, hold it so the narrow side faces the slot with the exposed tape edge to the right. Insert tape into opening. Depress fully until cassette is engaged and mechanism starts playing.

10. FAST-FORWARD & EJECT BUTTON

This button performs two functions, to eject a cassette simply depress this button fully then release. The cassette will eject for easy removal. This button also allows you to rapidly advance the tape so you can skip any undesired tape programs. To use fast-forward, depress button half-way in to the locked position. To stop-forward, depress button slightly and release (do not press fully in or cassette will eject). The tape will resume normal speed.

11. FADER CONTROL

Rotate this knob to the left or right to obtain desired mix between front and rear speakers.

CASSETTE

Always check that the tape is tightly wound inside the take-up spool on the cassette. If the tape is loose, wind it with a six-sided pencil.

- A. Never use C-120 style cassettes in this player (120 minute cassette).
- B. Never insert a cassette into your player when the vehicle temperature is near or below freezing.

CLEANING OF TAPE HEAD & CAPSTAN

Since tape contain oxides, you will find a black residue will built-up on the tape head and drive capstan (inside cassette door). These residues should be cleaned after 50 to 100 hours of accumulated tape operation. You can either clean them by hand, with a cotton swab slightly damp with alcohol (do not use any petroleum solvent) or a commercial tape head cleaning solution available at most stereo stores. Also, you can use a special cleaning cassette (available at stereo stores) that automatically cleans the head and capstan when inserted.

DE-MAGNETIZING

The movement of the magnetic tape across the head and metal parts of the tape player cause a magnet field to develop. We recommend you have the tape player de-magnetizing at least twice annually. You can buy an inexpensive de-magnetizing tool or have a stereo shop do it for you.

Size: 7" (W) x 2" (H) x 5" (D)
178mm x 50mm x 120mm
Operating Voltage: 12 volts DC, negative ground
Output Power: 14 watts RMS maximum stereo power
Output Wiring: Common ground tupe designed for
4 speaker operation
Output Impedance: Compatible with 4-8 ohm speakers
Tuning Range: (AM) 540-1,710 KHz
(FM) 88-108 MHz
Sensitivity: (AM) less than 15 μ V
(FM) less than 2.5 μ V
FM Stereo Separation: More than 30dB
Frequency Response: 50-10,000 Hz
Wow & Flutter: 0.25%
Tape S/N Ratio: 50 dB standard tape

AM/FM RADIOS

Symptom	Cause	Possible Solution
No Power		Check circuit fuse at source
		Check in-line fuse on power lead (wallmount units are located in rear cabinet)
Power indicated; No audio output		Power lead disconnected
		Ground connection
		Circuit fuse at source
		In-line memory lead fuse
	Speaker Output shorted	Check continuity of speaker leads to ground
	Speaker out cross channeled	Check for proper speaker wiring. Note: Radios have a sticker on them explaining wiring color code.

Only one channel (right or left side)	Radio Balance	Check radio function
	Speaker Disconnected	Check speaker connection at radio and/or speaker
	Speaker lead shorted or grounded	Check speaker wiring continuity to ground w/tester or meter
Popping in one or both channels	Speaker wiring shorted or positive lead grounded	Leads from speaker cone to terminal touching metal basket or speaker
	Speaker terminals grounded or shorted	
No AM Reception	Antenna disconnected	Connect Antenna
	Antenna mast grounded or shorted	Check antenna or substitute with antenna known to be good
	Antenna center lead broken	Check antenna or substitute with antenna known to be good
<p>NOTE: Antenna leads can be tested with continuity or multi-tester. Some may have electronic component (capacitor) built-in which will not allow it to be tested.</p>		

RADI-1

AUDIOVOX[®] TECHNICAL

NOVEMBER 1993

Specialized Applications, LLC BULLETIN

AM/FM RECEPTION

Many Vans and RV's have more than one AM/FM radio. The best way to insure good reception is to supply a separate antenna for each radio. Other options available to supply adequate AM/FM reception to these radios are listed below, along with some general information in regards to radio reception.

"Y" ADAPTORS

The "Y" adaptors used to connect one antenna to two radios will only provide AM reception to one of the radios and will compromise both AM and FM reception.

AMPLIFIED AM/FM ANTENNA

A popular second antenna that can be used is our AB-100 amplified AM/FM antenna. It is small and has a retractable mast that can be mounted vertically or horizontally. This antenna provides good FM reception, but the AM reception will be compromised to some degree because of the length of the mast.

MAST LENGTH

AM/FM antennas compromise AM reception by design. The optimum mast length for FM is approximately 30 inches which is the standard for most automotive antennas. The optimum mast length for AM is over 100 inches which is not practical for mobile applications.

Special circuitry in electronic tuned radios or AM trimmers in mechanically tuned radios, make up for some of this difference in optimum mast length for AM reception.

FM reception can be received with a very limited antenna and strong local FM stations can be received without an antenna, depending on the circumstances.

CONCLUSION:

AM/FM reception is subject to the choice of an antenna and it's application. There can also be a variety of methods used to supply signal to both primary and secondary radios, but AM performance is the ultimate "test".

It appears that consumers or end users are becoming much more critical when it comes to acceptable antenna performance. It may be necessary for manufacturers to re-evaluate what was once considered acceptable.

ANTENNA CABLE

Increasing the antenna lead cable (adding extensions) will reduce sensitivity of AM with electronic tuned radios.

GROUND PLANES

Ground planes are also important when considering antenna performance. Most automotive antennas are designed to be mounted on the metal body of the vehicle.

The metal body reflects the signal and shields interference generated by the vehicle's electrical system while it also provides the ground for the antenna lead shield. All this is necessary in order to maintain a good signal, especially AM.

FM RECEPTION

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AUDIOVOX[®] TECHNICAL BULLETIN

August 1993

Specialized Applications, LLC

This bulletin will discuss DC Power sources and how they relate to 12 volt DC video and audio products.

DC (DIRECT CURRENT) POWER

A large number of our products are designed for 12 volt DC applications. The power is supplied by a variety of sources i.e., the battery, converters, ignition systems and solar power.

General Specifications

Our general specification for the voltage range of operation is 10 to 16 volts DC. TV's and VCP's (video cassette players) require slightly more than 10 volts to function properly. Normally this 10.5 to 11 voltage requirement does not create a problem, but keep in mind the following points:

Voltage

The voltage of a fully charged battery (engine not running) is approximately 12.5 VDC. Once a load (items being powered represent the "load") is applied, the voltage will drop. How much the voltage is reduced will depend on the following:

1. Current draw (amount of amperage)
The higher the draw the greater the voltage will drop.
2. This size and length of the conductor (wire) supplying power.

Amperage

A TV will draw considerably more amperage than a VCP. For instance, a 14" TV will draw approximately 3.5 amps compared to a VCP that draws 1 amp while

the tape is being loaded or ejected. Checking the voltage of a TV while it is playing shows an approximate 1 volt drop, (11.5 VDC) The voltage at the VCP can be another .5 VDC (11 VDC) less than the TV.

In conclusion, operating these video products without the engine running will drain the battery to the point where these products will perform unacceptably in a short period of time.

Converters

Many RV OEM's incorporate converters as a source fo 12VDC when connected to shore power (110-120 VAC). Some models put out a very clean DC supply where others may have a considerable amount of AC ripple under maximum load.

This AC ripple is filtered by the coach battery when connected into the circuit, but when the battery is removed or disconnected the amount of AC ripple can create major problems for audio and video products. Noise may result and the line fuse may fail.

Ignition Systems

Unwanted noise generated from ignition systems used to be a big problem. However, with more sophisticated filtering circuits designed into audio/video products, these problems are not as wide spread.

Changes in wire harnessing also has contributed to the decline of application problems. Use the same ground point for all related products. This will greatly reduce the potential for alternator whine.

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12 MONTH LIMITED WARRANTY

Applies to radios, radio/tape player and radio/CD player combinations, CD changers and accessories.

AUDIOVOX SPECIALIZED APPLICATIONS, LLC (the company) warrants to the original retail purchaser of this product that should this product or any part thereof, under normal use and service, be proven defective in material or workmanship within 12 months from the date of original purchase, such defects(s) will be repaired or replaced (at the Company's option) without charge for parts and labor.

To obtain repair or replacement within the terms of this Warranty, the product is to be delivered with proof of warranty coverage (e.g. dated bill of sale), transportation prepaid, to an approved warranty station or the company at the address shown below.

This Warranty does not extend to the elimination of car static or motor noise, to correction of antenna problems, to costs incurred for removal or reinstallation of the product, or to damaged to tapes, speaker, accessories, or car electrical systems.

This Warranty does not apply to any product or part thereof which in the opinion of the Company has been damaged through alteration, improper installation, mishandling, misuse, neglect, or accident.

This Warranty is in lieu of all other express warranties or liabilities. ANY IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, SHALL BE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. ANY ACTION FOR BREACH OF ANY WARRANTY HEREUNDER INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY MUST BE BROUGHT WITHIN A PERIOD OF 12 MONTHS FROM DATE OF ORIGINAL PURCHASE IN NO CASE SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WHATSOEVER. No person or representative is authorized to assume for the Company any liability other than expressed herein in connection with the sale of this product.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damage so the above limitations or exclusions may not apply to you.
This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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