MODEL CBM-100

MIC CONTROLLED 40-CHANNEL CB MODULE



OWNER'S MANUAL

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SPECIFICATIONS

RECEIVER SECTION	
Frequency range (MHz)	: 26.965 – 27.405
Sensitivity for 10 dB S/N	: 0.7μV
Selectivity	: 55 dB
Adjacent Channel Rejection	: 45 dB
IF Rejection	: 70 dB
A.G.C. Figure of Merit (dB)	: 60 dB
Squelch Sensitivity at Threshold	: 0.5μV
Audio Power Output at 10% T.H.D.	: 3 Watts RMS
Audio Frequency Response at 6 dB down (Hz)	: 300 – 2700
Battery Drain at Full Audio	: 1.0 A
TRANSMITTER SECTION	
Frequency Range (MHz)	: 26.965 – 27.405
RF Power Output	: 4.0 Watts (FCC Maximum)
Modulation Capability	: 85% (Less than 90%)
Modulation Sensitivity for 50% Mod.	: 5 mV
Frequency Tolerance	: 270 Hz ±0.005%
Antenna Impedance	: 50 ohm
Modulation Limitter Range	: 36 dB
Battery Drain at Full Mod.	: 1.6 A
Power Source	: 12 V DC Negative Ground Only

For your own protection, we urge you to record the serial number of this unit in the space provided. You will find the serial number on the rear of the unit.

OWNER'S RECORD

Model No. _____

Serial No. C0078077

Purchase Date _____

Purchased From _____

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GENERAL INFORMATION

Your ACSA CBM-100 is a 40-Channel Mic. controlled CB MODULE. It is designed for a three ways Installation.

1. Just plug-in and operate with ACSA Combination Car Models (such as 410-8MF, 501-8PBX, 601-CMF). Please refer to the INSTALLATION-1.
2. Operate CBM-100 with any Radio/Tape Car Model which does not have a 6 pin Radio-CB connector for CBM-100. Please refer to the INSTALLATION-2.
3. Operate CBM-100 independently — just add speaker and CB antenna. Please refer to the INSTALLATION-3.

F.C.C. RULES AND REGULATIONS ON CB USE

IMPORTANT

Your CBM-100 AM Transceiver is literlly a "Radio Station" and like all radio station in the county. It must be licensed by the Federal Communications Commission in Washington, D.C.. This transceiver is designed for use under F.C.C. Rules and Regulations and you are prohibited from operating this transceiver until you obtain your Citizens Band Class D license. You have complied with the following F.C.C. REQUIREMENTS:

* Fill out and post a Temporary Permit for Class D Citizens Radio Station Operation (F.C.C. Form 555-B).
* Apply for a permanent CB license by filling out and mailing F.C.C. Form 505 along with the proper filing fee to the Federal Communications Commission P.O. Box 1010, Gettysburg, PA 17325.
* Read and understand Part 95 of the F.C.C. Rules and Regulations and all licenses are required to maintain an up-to-date copy of these rules.
  Subscription(s) must be filed with the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

Adjustments to the transmitter circuit of the transceiver may be made only by or under the supervision of a person holding a current commercial first or second class radiotelephone operator license. Replacement or substitution of crystals, semiconductors or other components must be made only by components supplied by A.C.S.A. Corporation.

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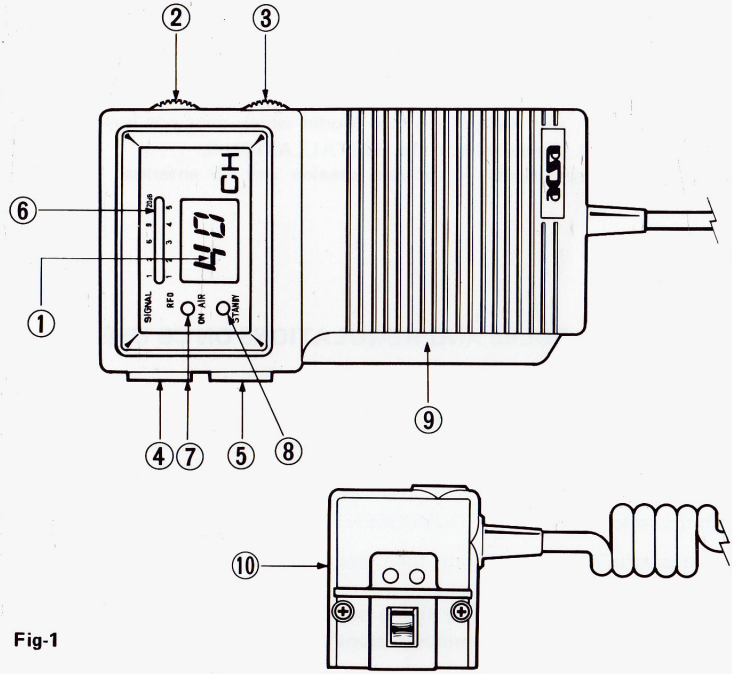


Fig-1

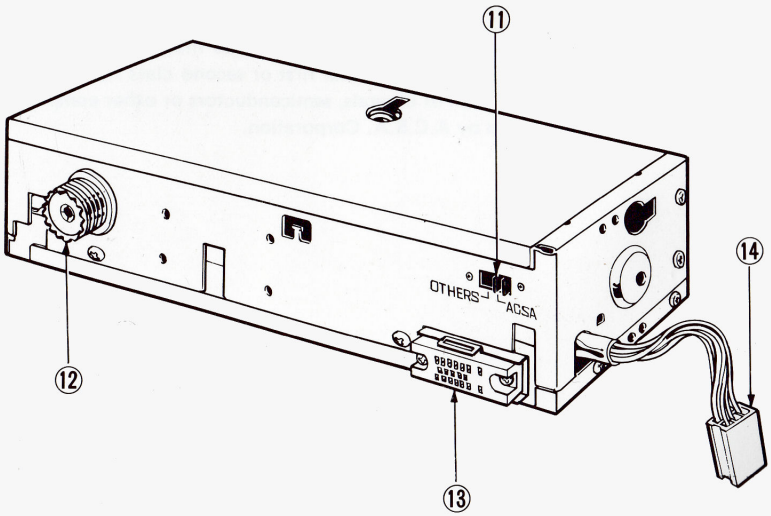


Fig-2

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① **CHANNEL Indicator**
This indicator shows which channel you are on in bright, easily read digital numbers.

② **SQUELCH Control**
The squelch eliminates background noise when no signal is being received. Turn the knob counterclockwise until the background noise just disappears. The receiver will be relatively quiet under no signal conditions, but an incoming signal will overcome the squelch action and be heard. As the control is turned clockwise, the squelch action is progressively increased and stronger signals are needed to overcome it. To receive extremely weak signals or to disable the squelch circuit turn the knob fully counterclockwise.

③ **VOLUME Control**
Turn the knob clockwise, increases the volume from the speaker.

④ **CHANNEL Selector "UP"**
Depressing this button counts the channels up and selected channel will be indicated by digital readout on CHANNEL Indicator ①. If the button is held in depressed position there will be a continuous rotating of the channels. For example, if you were on channel 19 and wanted to change to channel 25, you should hold the button in depressed position until the selector counts up 6 steps and indicates that you have reached channel 25.

⑤ **CHANNEL Selector "DOWN"**
Depressing this button counts the channels down and selected channel will be indicated by digital readout on CHANNEL Indicator ①.

⑥ **SIGNAL STRENGTH/RF OUTPUT Power Meter**
This indicator consists of 5 LED's, which provide relative indications of Signal Strength and RF Output Power. In receive; one lamp lit = "S1", two lamps = "S3", three lamps = "S5", four lamps = "S9" and five lamps = "S9" plus. During transmit, generally four out of five lamps will light up.

⑦ **ON AIR Indicator**
This L.E.D. Indicator lights up to show you that you are transmitting.

⑧ **STANDBY Indicator**
This Indicator will light up when the STANDBY Switch (provided on ACSA Combination Car Models such as Model 410-8MF, 601-CMF, 501-8PBM which can be combined with ACSA CBM-100) is depressed.

⑨ **PUSH-TO-TALK Switch**
Depress this switch in to activate the transmitter. Release this switch to receive CB signals.

⑩ **MICROPHONE Connector**
This connector is to be connected to the Microphone Receptacle ⑬.

⑪ **SELECTOR Switch for external unit**
When connect CBM-100 to ACSA Combination car Models (such as Model 410-8MF, 601-CMF, 501-8PBX), set it to the "ACSA" position. If you wish to connect CBM-100 to any other maker's car radio/tape by using ACSA SWITCH PANEL, set it to the "OTHERS" position.

⑫ **CB ANTENNA Receptacle**
CB Antenna is to be connected to this Receptacle.

⑬ **MICROPHONE Receptacle**
Microphone connector ⑩ will be connected to this Receptacle.

⑭ **6-Pin RADIO-CB Connector**
Connect this connector to the ACSA Combination Car Models (such as Model 410-8MF, 601-CMF, 501-8PBX). Which have 6 pin Radio-CB Connector.

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IMPORTANT

1. Use with 12 volts negative ground power supply.
2. Securely fasten all interconnections before operating.
3. Connect antenna properly before operating.
4. Locate unit away from heater blower or other sources of heat.
5. Keep unit away from water or excessive moisture.
6. Before installing pre-set SELECTOR Switch on your CBM-100 as shown in Fig. 3 as to what type of installation is required.

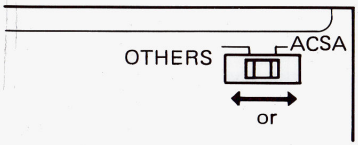


Fig-3

INSTALLATION-1

Installation of CBM-100 with ACSA Combination Car Models (such as 410-8MF, 501-8PBX, 601-CMF).

1. Your ACSA CBM-100 can be installed at the rear, top or bottom of the ACSA Combination Car Models by using brackets provided.
   Installation procedure is as follows:
   1) First you must choose the installing location A, B or C. See Fig. -4.
   2) Be sure to set the SELECTOR Switch on the CBM-100 to the "ACSA" position.
   3) Attach the brackets, using Hex. bolts, Plain washers and Toothed washers supplied. See Fig. -5
   4) Connect the CB-Radio 6 pin connector, CB Antenna and Mic. control connector as Fig. -8.

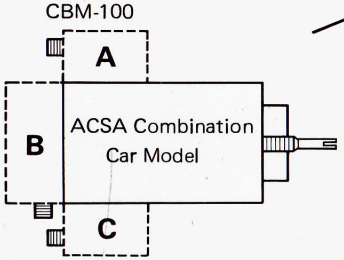


Fig. -4

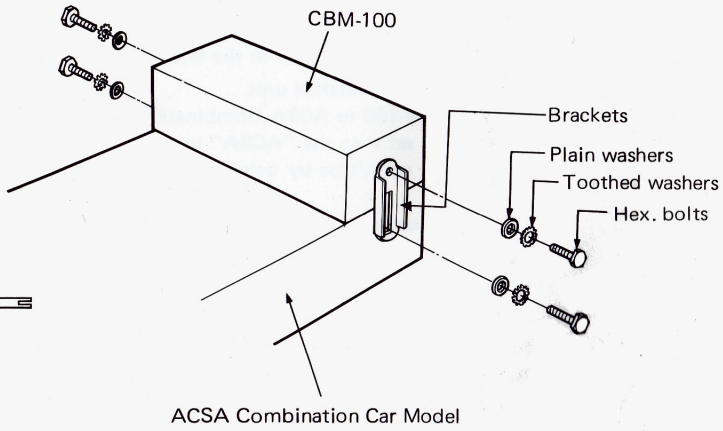
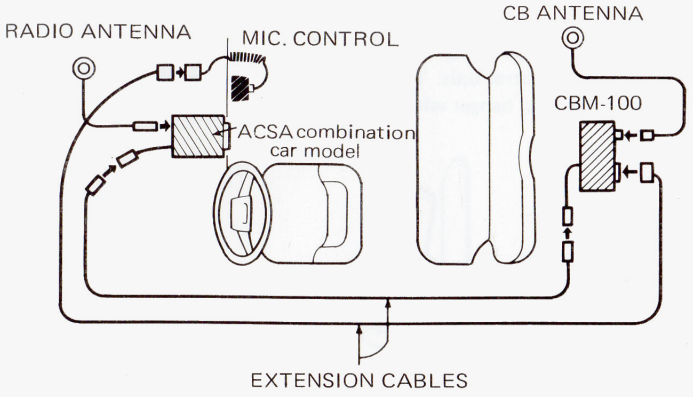


Fig. -5

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2. Your ACSA CBM-100 can be installed at any location in your car such as under the seat or truck for using with small "L" brackets provided.
   Installation procedure is as follows:
   1) First you must choose the installing location. Choose a convenient location; the protect from moisture and direct sunlight and be sure that it will not interfere with your driving. (Fig. -6)
   2) Be sure to set the SELECTOR Switch on the CBM-100 at the "ACSA" position.
   3) Attach the "L" brackets, bracket spacers, screws, tapping screws, plain washers and toothed washers supplied. (Fig. -7)
   4) Connect the Mic. control and Mic. control receptacle on the CBM-100 with the extention cable, CBM-100 and ACSA car model through a another extention cable. (Fig. -8)

NOTE: Purchase a Extention Cable Kit (Trunk mounting accessory kit: Model CBM-TR-12 kit) from your nearest ACSA dealer.



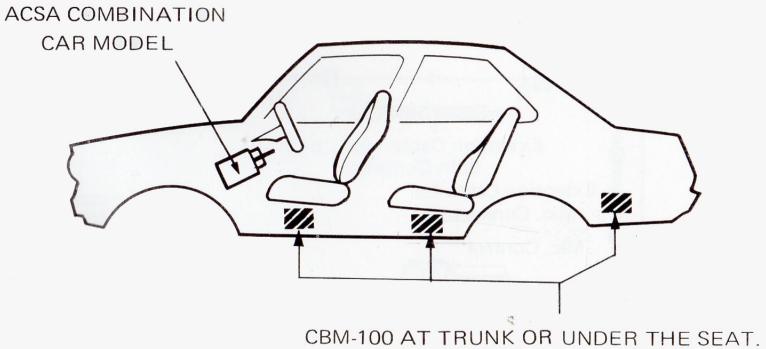


Fig-6

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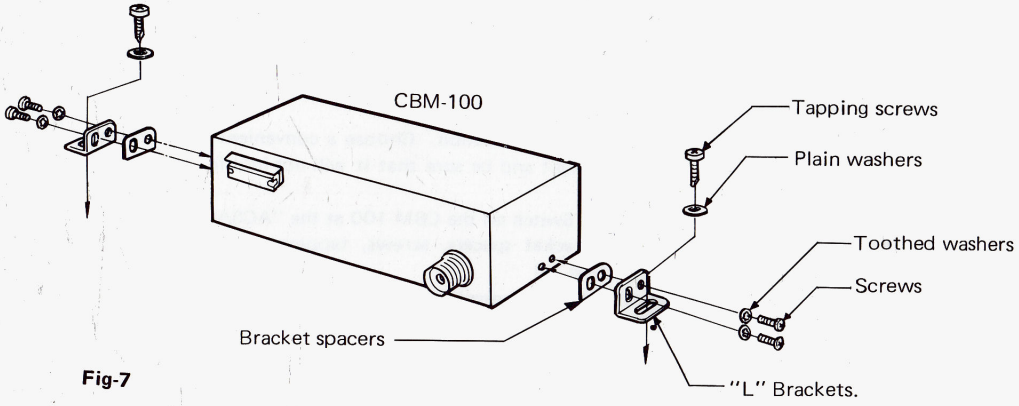
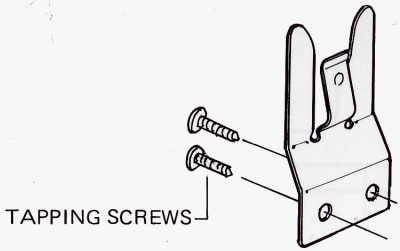


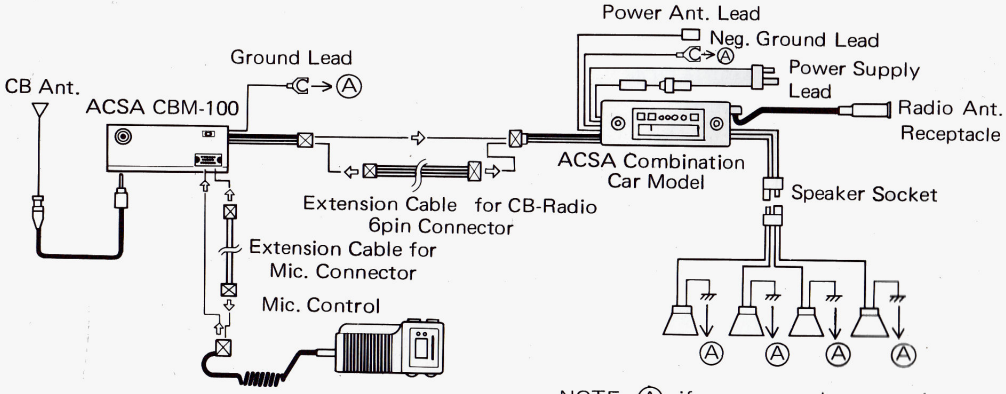
Fig-7

Mic. Hanger Installation

The Mic. control hanger should be mounted within easy reach of the driver. On the dash is best. This allows the driver full view of the Mic. control without talking his eyes off the road. This would not be the case if the Mic. hanger was mounted on the console or was allowed to play on the seat. The mounting position is an important consideration because all the operator controls are located on the Mic. control unit. These function must be easily accessible to the driver. Drill the holes and install the Mic. hanger with two screws provided.



WIRING CONNECTION



NOTE: Ⓐ if your car has negative grounded system, connect ground lead wires to car chassis. If your car has floating ground system, connect ground lead wires to ⊖ negative terminal.

Fig. -8

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OPERATION

How to operate ACSA CBM-100 with combined ACSA Car Models (such as 410-8FM, 601-CMF, 501-8PBX).

Make sure the wiring connection are properly made as Fig-8.

1) Turn the power on by rotating the ON-OFF & VOLUME Knob on ACSA Car Model.
2) Depress the CB/RADIO selector switch on combined ACSA car Model to CB mode, simultaneously L.E.D. STANDBY Indicator on Mic. control will light up.
3) Rotate and adjust the VOLUME Control on Mic. control to your desired listening level. Controls on combined ACSA Car Model are not effective, once CB/RADIO Selector switch is depressed.
4) Select the CB channel you desired by depressing the Channel selector on Mic. control. CB channel number is digitally indicated on Mic. control.
5) If necessary, adjust the SQUELCH Control on Mic. control as follows: when no signals are present (noise only), rotate the SQUELCH control clockwise until the CB receiver is silenced. Incoming CB signals will automatically release the squelch enabling you to receive normally. Carefull adjustment is necessary because setting too far to the clockwise will not allow weaker signals to be received through the squelch.
6) To transmit: Depress the Push-to-Talk switch on Mic. control, simultaneously L.E.D. ON-AIR Indicator will light up. Speak into Microphone at a normal voice, holding the Microphone 3 to 6 inches from the mouth. Do not shout or move Microphone too close to your mouth.
7) To back to the receiving mode, simply release the Push-to-Talk switch.
8) By depressing the STANDBY switch on combined ACSA Car Model while you are listening to radio or tape, simultaneously L.E.D. STANDBY Indicator will light up and the CB "call-in" signal will automatically break-in the radio or tape signal in accordance with the squelch level having been preset by the SQUELCH control on Mic. control. However, radio or tape signal will remain at reduced volume. As soon as reception of CB signal has been finished, radio or tape signal will return to normal volume. If you wish to answer that CB signal, depress the CB/RADIO selector switch to CB mode and speak into the Microphone with depressing Push-to-Talk switch, in the mean time, you may leave the STANDBY switch as it is.

NOTE: Serious attention is definitely needer for setting the Squelch control in case of STANDBY reception. If you set it too far to the clockwise, only very strong signal can "break-in". Consequently, you might miss the "call-in" signal. On the contrary, setting it too far to the counterclockwise will cause frequent "break-in" by very weak signals or even noise. If you set the SQUELCH control to the fully counterclockwise (minimum squelch) while the STANDBY switch is being depressed, radio or tape might be cut off even though there will be no call-in signal. Do not be concerned as there is nothing wrong with this function. So long as you do not depress STANDBY switch, the SQUELCH control has nothing to do with the radio or tape.

INSTALLATION-2

1. Your ACSA CBM-100 can be installed at any location in your car such as under the seat or in the trunk by using with small "L" brackets provided.

   Installation procedure is as follows:

   1) First you must choose the installing location. Choose a convenient location that is protected from moisture and direct sunlight, and be sure that the will not interfere with your driving. (Fig. -6)
   2) Be sure to set the Selector Switch on the CBM-100 to the "OTHERS" position.
   3) Attach the "L" brackets, bracket spacers, screws, tapping screws, plain washers and toothed washers supplied. (Fig. 7).

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4) Connect the MIC. Control to the MIC. Connector on the CBM-100 through the Extension Cable. And the Switch Panel to the CBM-100 through the another Extension Cable. (Fig. -9)
5) Connect the Radio/Tape unit, speakers and power supply leads. (Fig. -9)

NOTE: Purchase a Extension Cable Kit (Trunk Mounting Accessory Kit: Model CBM-TR-12 Kit) from your nearst ACSA dealer.

WIRING CONNECTION

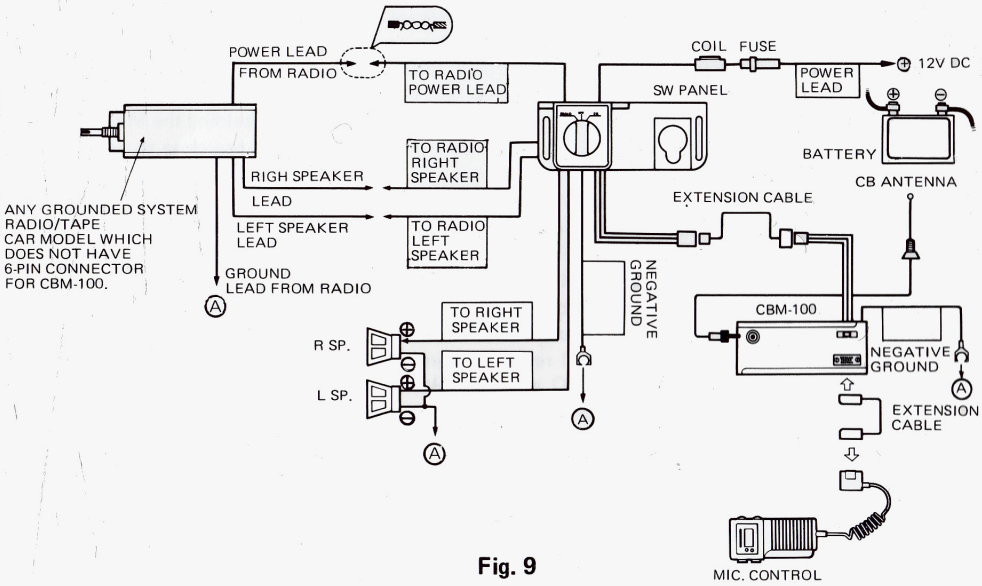


Fig. 9

NOTE:

Ⓐ: If your car has a grounded system, connect these leads to the metal part of your car.
If your car has a froating ground system, connect these leads to the ⊖ terminal of your car.

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2. Your ACSA CBM-100 can be operated with the Froating CAR/TAPE Car Model by using the Switch Panel provided.
   Installation Procedure is same as INSTALLATION-2 at 1.
   Please refer to Wiring Connection as following:

WIRING CONNECTION

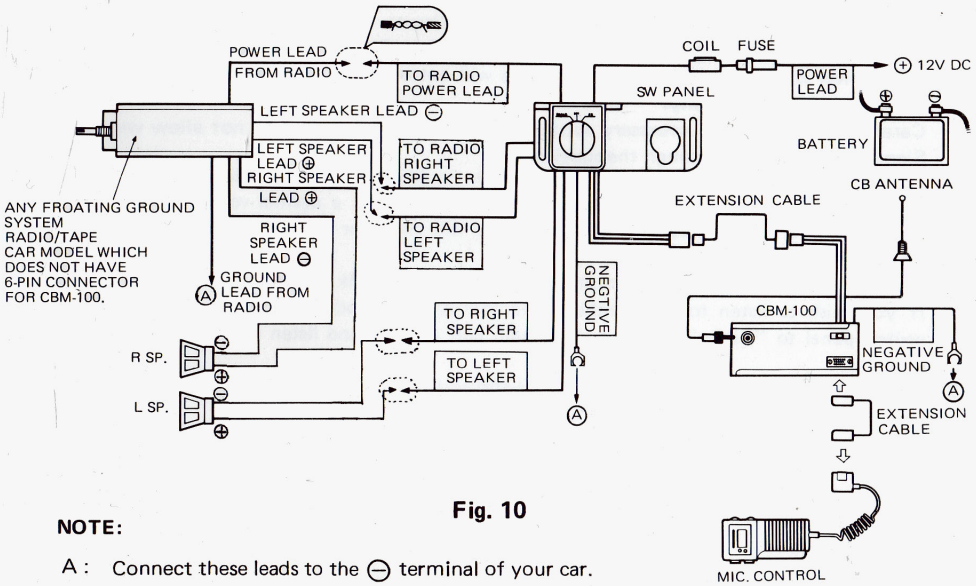


Fig. 10

NOTE:

A : Connect these leads to the ⊖ terminal of your car.

SWITCH PANEL INSTALLATION

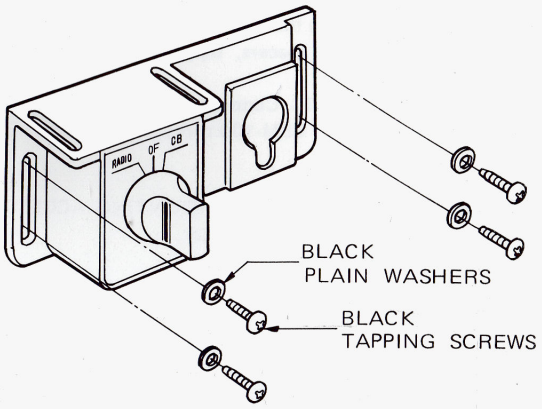


Fig. 11

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CB OPERATION

Make sure the wiring connection are properly made.

I) Turn the power on by setting know on ACSA switch panel to "CB" Position. At the same time L.E.D. STANDBY indicator on MIC. control will light up.

2) Rotate and adjust the Volume control on MIC. control to your desired listening level. Controls on combined car model are not effective for ACSA CBM-100.

3) Select the CB channel you desired by depressing the Channel Selector on Mic. control. CB channel number is digitally indicated on Mic. control.

4) Adjust the SQUELCH control on Mic. control as follows:
When no signals are present (noise only), rotate the SQUELCH control clockwise until the CB receiver is silenced. Incoming CB signals will automatically release the squelch enabling you to receive normally.
Carefully adjustment is necessary setting too far to the clockwise will not allow weaker Signals to be received through the squelch.

5) To transmit : Depress the Push-to-Talk switch on Mic. control, simultaneously L.E.D. ON-AIR indicator will light up. Speak into Microphone at a normal voice, holding the Microphones 3 to 6 inches from the mouth. do not shout or move Microphone too close to your mouth.

6) To back to the receiving mode, simply release the Push-to-Talk switch.

7) If you wish to listen to the combined Radio/Tape car model, set the knob on ACSA switch panel to "Radio" position. Now you can operate and listen the Radio/Tape car model.

8) While you are not operating the both CBM-100 and combined Radio/Tape car model, set the knob on ACSA switch panel to "OFF" position.

INSTALLATION-3

1. When you operate the CBM-100 itself, refer to following procedure:
   1) First you must chose the installing location. Choose a convenient location that is protected from moisture and direct sunlight, and be sure that the will not interfere with your driving. (Fig. -6)
   2) Be sure to set the Selector Switch on the CBM-100 to the "OTHERS" position.
   3) Attach the "L" brackets, bracket spacers, tapping screws, plain washers and toothed washers supplied. (Fig. -7)
   4) Connect the MIC. Control to the MIC. Connector on the CBM-100 through the Extension Cable. And the Switch Panel to the CBM-100 through the another Extension Cable. (Fig. -13)

NOTE: Purchase a Extension Cable Kit (TRUNK MOUNTING ACCESSORY KIT; MODEL CBM-TR-12 KIT) from your nearst ACSA dealer.

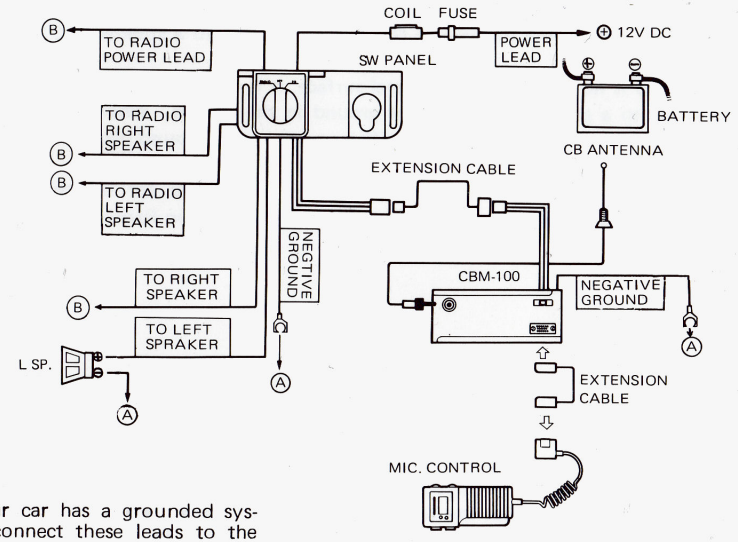
CB OPERATION

1) CB operation procedure is same as "CB OPERATION" Step 1 to Step 6 on page 12.

2) While you are not operating the CBM-100, set the knob on ACSA Switch Panel to the "OFF" position.

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WIRING CONNECTION



NOTE:

Ⓐ : If your car has a grounded system, connect these leads to the metal part of your car.
If your car has a froating ground system, connect these leads to the ⊖ terminal of your car.

Ⓑ : No connection leads.

Fig. 13

CAUTION

Do not try to transmit without a proper antenna connected to the antenna connector of the CBM-100 or you could seriously damage your CBM-100.

Do not transmit until you have send Form 505 to the FCC and have received your Clase D license.

NOTE: When your CBM-100 is turned off, either by the ON/OFF switch or by the vehicle ignition switch, the channel will be No. 11 from the one you had been using. This is not a defective sign.

ANTENNA

Since the maximum allowable power output of the transmitter is limited by the FCC, the antenna is one important factor affecting transmission distance. Only a properly matched antenna system will allow maximum power transfer from the 50 ohm transmission line to the radiating element. In mobile installations (cars, trucks, boats, etc.), an antenna system that is non-directional should be used.

A vertically polarized, quarter-wavelength whip antenna provides the most reliable operation and greatest range. Shorter, loaded-type whip antennas are more attractive, compact and adequate for applications where the maximum possible distance is not required. Also, the loaded whips do not present the problems of height imposed by a full quarter-wavelength whip.

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Mobile whip antennas utilize the metal body of the vehicle as a ground plane. When mounted at a corner of the vehicle they are slightly directional, in the direction of the body of the vehicle. For all practical purposes, however, the radiation pattern is nondirectional. The slight directional characteristic will be observed only at extreme distances. A standard antenna connector (type SO 239) is provided on the transceiver for easy connection to a standard PL 259 cable termination.

If the CBM-100 is not mounted on a metal surface, it is necessary to run a separate ground wire from the unit to a good metal electrical ground in the vehicle. When installed in a boat, the transceiver will not operate at maximum efficiency without a ground plate, unless the vessel has a steel hull.

Before installing the CBM-100 in a boat, consult your dealer for information regarding an adequate grounding system and prevention of electrolysis between fittings in the hull and water.

NOISE SUPPERSSION

TUNE-UP

The CBM-100 is equipped with an automatic noise limiter which will eliminate most unwanted noise. In some cases further noise suppression steps will be necessary.

Before beginning, be sure that the vehicle is well tuned. Clean and tighten all connections, including alternator, battery, regulator, and coil connections. Regap or replace spark plugs (resistive spark plug wires are recommended), and ignition points. Chech and clean alternator rings or generator brushes. Retune the engine at the manufacturer's recommended intervals.

CORRECTIVE STEPS

If noise is problem, it will be necessary to take corrective action. In order to find and eliminate the maximum number of noise sources that are present in any vehicle start at the strong sources and work down.

First determine whether the noise is actually from your vehicle. Drive to a location that is free of man-made electrical interference (such as noisy power lines, industrial noise, or ther vehicles). Test for noise with a weak signal on the channel and the engine off. Then start the engine. Ignition noise will probably be present at all engine speeds. If it is severe, it will make a normally readable signal unreadable.

To reduce ignition noise, install resistor-type spark plugs. If non-resistance ignition wiring is used, install a 10k-ohm suppressor resistor at each spark plug tower of the distributor. Install a coaxial capacitor as close as possible to the ignition coil primary.

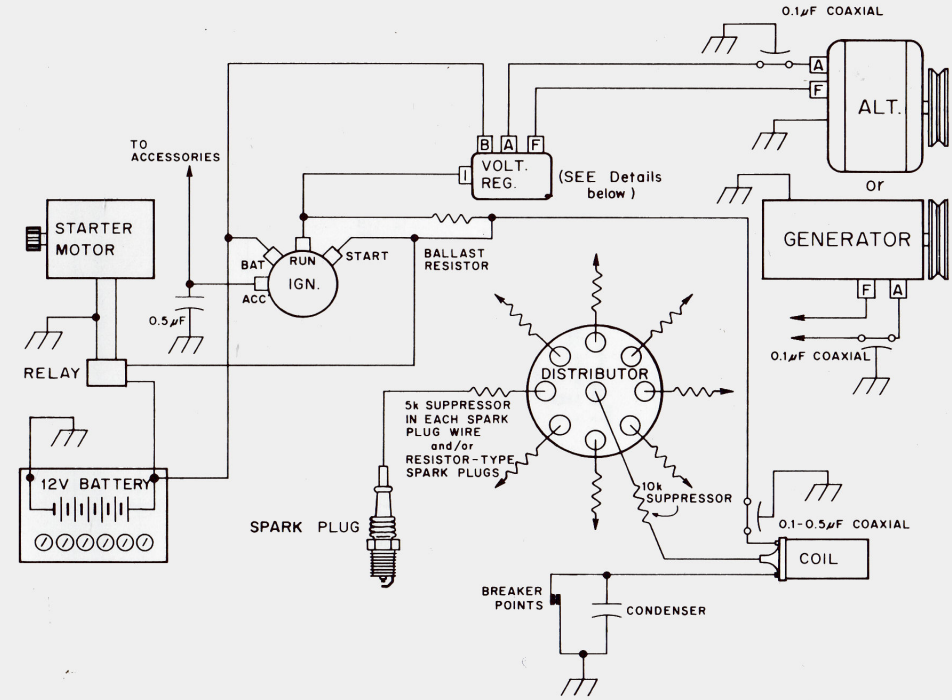
A "whining" noise which varies with engine speed and continues with the ignition turned off and the vehicle coasting in gear characterizes the alternator.

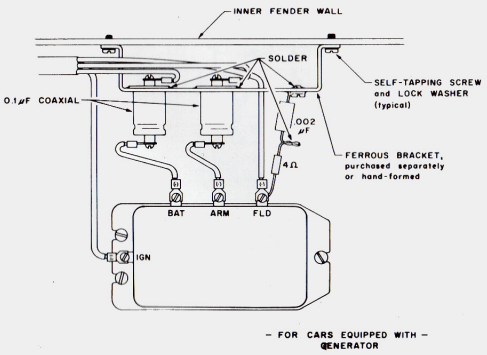
Chech and clean it and install an alternator filter.

An irregular, clicking sound which disappears at a slow idle may be the voltage regulator. Install a 4-ohm carbon resistor as close to the field terminal of the regulator as possible, then a 0.002μF capacitor in series with and as close to the resistor as possible. Connect the capacitor to ground. Refer to Fig.

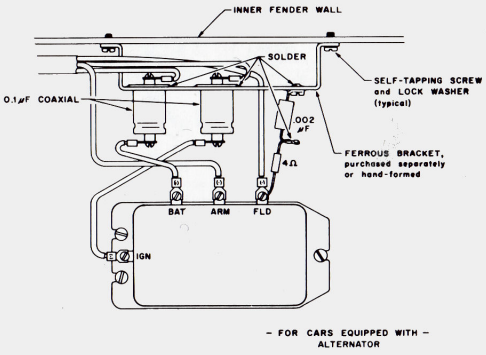
Irregular popping noises which vary with road surfaces indicate static discharge at any of several locations in the vehicle. Tighten loose nuts and bolts and bond large areas such as the fenders, exhaust pipe, firewall, etc. to the frame with lengths of heavy wire braid. Connect a local electronics parts or automotive electrical service company to purchase the necessary items.

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– FOR CARS EQUIPPED WITH – GENERATOR



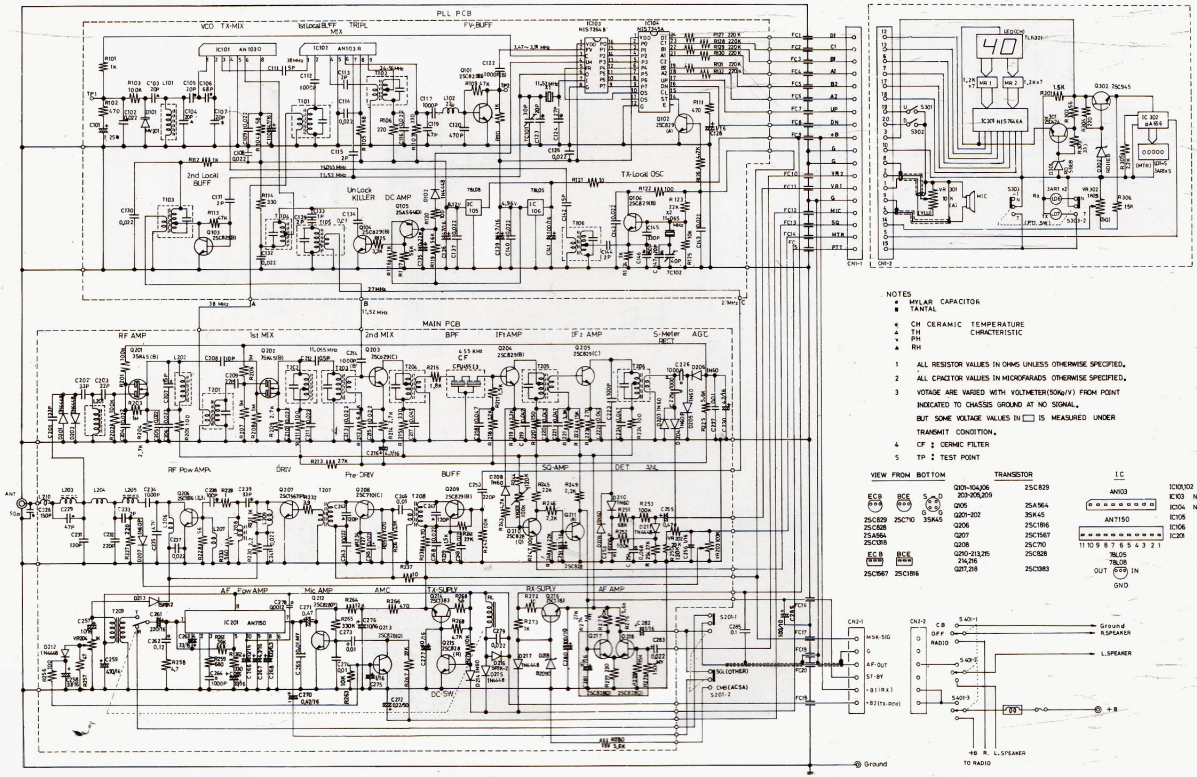
– FOR CARS EQUIPPED WITH – ALTERNATOR

NOISE SUPPRESSION DIAGRAM Fig. 14

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SCHEMATIC DIAGRAM OF MODEL CBM-100



Description and data subject to minor change without notice.

ACSA CORPORATION
L.A. CALIFORNIA
MANUFACTURED IN JAPAN

Printed in Japan