

Electrical System – Radio, Telephone, Board Computer

Index

Index continues on next page

RADIO

- Bose speakers
 - removing/installing 91.24
- CD changer controller
 - * - removing/installing 91.27
- CD changer system
 - * - component layout 91.26
 - * - components, removing/installing 91.27
 - * - electrical connectors, terminal identification 91.28
 - * - self-diagnosis 91.30
 - * - troubleshooting 91.32
- CD changer unit
 - * - cable, terminal identification 91.28
 - * - removing/installing 91.27
- CD frequency and loudness switches
 - * - changing 91.39
- CD magazine
 - * - emergency ejecting 91.39
- CD remote control cable
 - * - terminal identification 91.28
- Delta Bose fixed coded radio
 - coding/reactivating 91.20
 - unlocking 91.22
- Delta Bose stereo system
 - component layout 91.23
- Eight-point radio connector
 - * - terminal identification 91.29
- Four-point connector (CD changer)
 - * - terminal identification 91.29

- Front antenna
 - checking 91.16
 - installation/connections 91.15
- Radio
 - connections 91.14
 - signal reception 91.13

- Rear antenna
 - checking 91.18
 - installation/connections 91.17

TELEPHONE

- Antenna performance
 - * - checking 91.55
- Cellular telephone
 - * - system components 91.44
- Cradle and antenna
 - * - removing/installing 91.47
- Electronic serial number (ESN)
 - * - checking (diagnostic test command 38#) 91.58
- Fast busy signal
 - * - when placing calls 91.67
- Fuse
 - * - checking 91.51
- Handset
 - * - identifying 91.41
- Hands-free microphone and speaker
 - * - removing/installing 91.45

* NEW INFORMATION since last filming

Electrical System – Radio, Telephone, Board Computer

Index

Hands-free system

- * - checking 91.56

Lockout counter

- * - resetting (diagnostic command 32#) 91.57

"NoSvc" light

- * - stays on 91.66

Roam characteristics

- * - checking 91.43

Security code

- * - identifying (diagnostic test command 55#) 91.60

Static

- * - on calls 91.71

Telephone

- * - does not respond to voice commands 91.72
- * - does not switch ON 91.63
- * - won't operate in hands-free mode 91.69

Test mode

- * - programming chart (55#) 91.62

Transceiver

- * - registering 91.49
- * - removing/installing 91.48

8-point modular connector on handset

- * - terminal identification 91.52

25-point connector to transceiver

- * - terminal identification 91.53

NEW INFORMATION since last filming

BOARD COMPUTER

Air flow sensor potentiometer

- adjusting 91.9
- removing/installing 91.9

Average fuel consumption display

- checking 91.5

Average speed display

- checking 91.5

Board computer

- code checking 91.3
- controls checking 91.6
- country code checking 91.4
- functional testing 91.3
- test notes 91.2

Boost pressure display

- checking 91.6

Boost pressure signal

- checking 91.10

Fuel consumption

- factor, checking 91.5
- factor, correcting 91.11
- from start, checking 91.6
- signal, CIS-E III checking 91.7
- signal, CIS checking 91.8

Fuel injection code

- checking 91.4

Fuel shut-off signal

- checking 91.10

Function selector switch

- checking 91.12
- operating 91.2

Range calibration

- adjusting 91.11
- checking 91.10

Speed signal

- checking 91.7

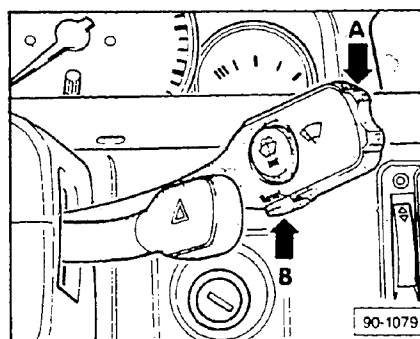
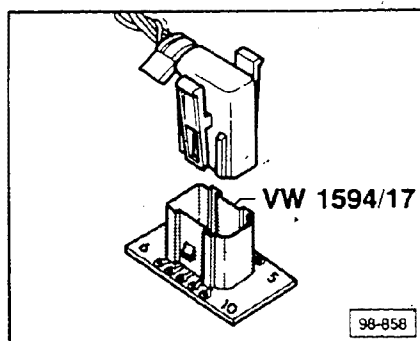
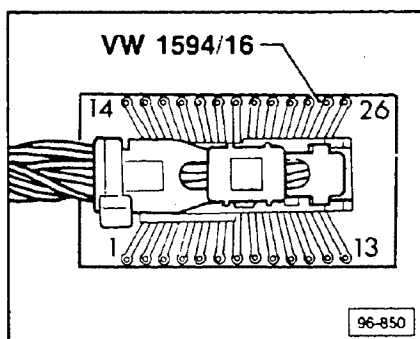
Electrical System – Radio, Telephone, Board Computer

Board Computer test notes

Specified values given for testing apply when using special tools US 1119 and VW 1301.

Test requirements

- computer coding OK
- fuse S4 OK
- battery OK
- all connectors disconnected from instrument panel
- measure 26-point connectors using adapter 1594/16
- measure 10-point connector using adapter 1594/17



Function selector switch, operating

- A — function selector switch
- B — reset button

Display sequence

- push upper switch
 - upper functions of display are selected from left to right
- push lower switch
 - lower functions of display are selected from right to left

If functions cannot be selected

- check function selector switch, page 91.12

If Board Computer functions are only weakly lit

- check day/night illumination lights

Electrical System – Radio, Telephone, Board Computer

Board Computer, functional testing

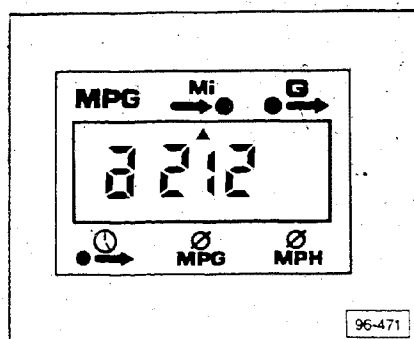
It is possible to check the condition of the computer components by selecting the individual functions in the specified sequence.

If defective components are found, check the wiring to these components using the wiring diagram.

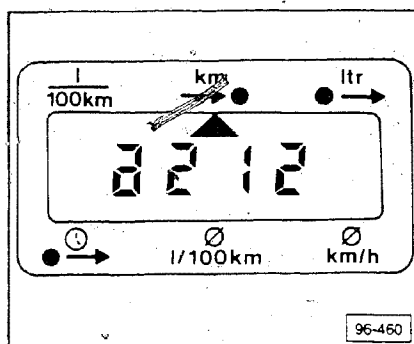
If a defect is found in the display unit of the Board Computer, it must be replaced.

If the Board Computer is replaced, the coding connector of the old computer must be installed on the new computer.

If the coding connector is not correct, the correct connector may be ordered by the Parts Department.



► Fig. 1 Board Computer display US (U.S. measuring system)



► Fig. 2 Board Computer display Canada (metric measuring system)

Note

In this troubleshooting program, the Board Computer with the U.S. measuring system is pictured. The values and data given are also applicable to the Board Computer for Canada.

Board computer codes

- 112 — USA, CAN, 443 919 100K,
ENGINE CODE NF, AUDI
100, 100 QUATTRO
- 212 — USA, CAN, 443 919 100L,
ENGINE CODE MC, AUDI
200, 200 QUATTRO

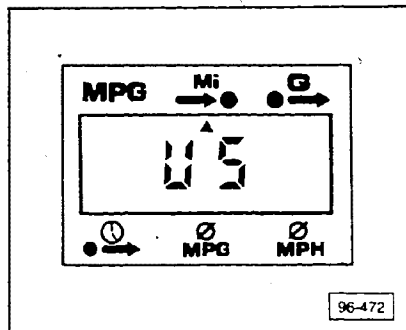
Board Computer code, checking

- switch ignition **OFF**
- press and hold **RESET** button
- switch ignition **ON** (while holding **RESET** button down)
 - correct code is displayed (see chart at left)

If correct code is **NOT** displayed

- check coding connector located on left rear of instrument panel for correct part number (see chart at left)

Electrical System – Radio, Telephone, Board Computer



Country code, checking

- switch ignition **OFF**
- press and hold **RESET** button
- switch ignition **ON**
- release **RESET** button
- press lower part of function selector switch
 - country code is displayed

US for U.S.A. models

CA for Canadian models

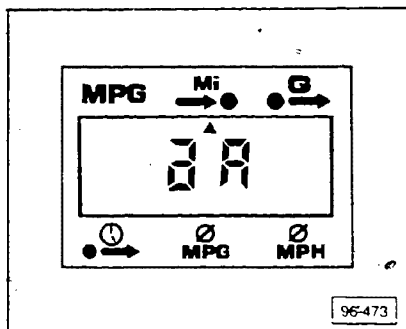
SA for Saudi Arabian models

Note

The country codes for Canada (**CA**) and Saudi Arabia (**SA**) appear alternately approximately once per second.

If the correct country code is **NOT** displayed

- check computer coding, page 91.3



Fuel injection code, checking

- start engine and run at 3000 RPM for approximately 30 seconds
- stop engine and switch ignition **OFF**
- press and hold down **RESET** button
- switch ignition **ON**
- press upper function selector switch and hold down
 - fuel injection code is displayed

A for CIS fuel injection

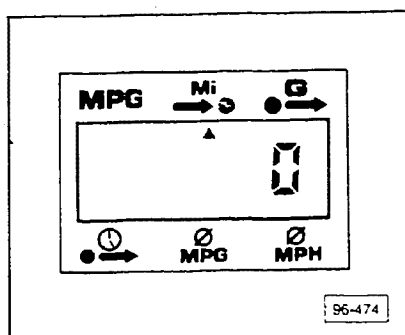
F for CIS-E III fuel injection

If correct fuel injection code is **NOT** displayed

- check for correct coding connector

OR

- check fuel consumption signal

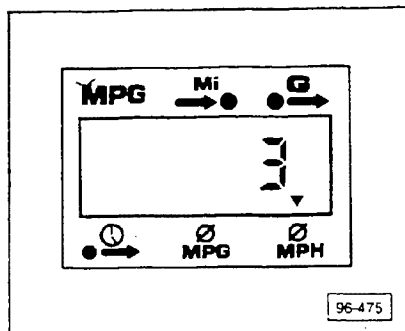


Fuel consumption correction factor, checking

- switch ignition **OFF**
- press and hold down **RESET** button
- switch ignition **ON**
- release **RESET** button
- press upper function selector switch and hold down
 - fuel consumption correction factor is displayed

Note

The correction range lies between – 15% and – 15%. The sign is only displayed in the negative (–) correction range.

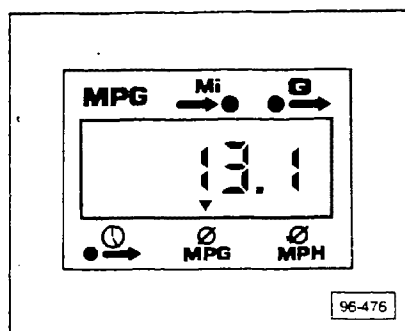


Average speed display, checking ($\odot$ km/h or $\odot$ mph)

- switch ignition **ON**
- select $\odot$ km/h or $\odot$ MPH with the function selector switch
- drive vehicle and push and hold down **RESET** button for at least 2 seconds
 - the speed you are presently driving should be displayed

If there is no speed display

- check speedometer signal, page 91.7



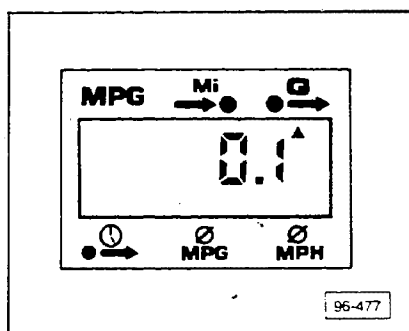
Average fuel consumption display, checking

- switch ignition **ON**
- select $\odot$ l/100 km or $\odot$ MPG function with the function selector switch
- drive vehicle and push and hold down **RESET** button for at least 2 seconds
 - average fuel consumption is displayed

If there is no display

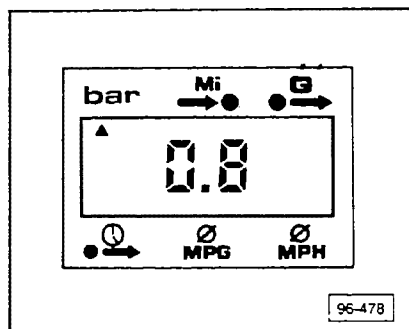
- check fuel consumption signal, pages 91.7 and 91.8

Electrical System – Radio, Telephone, Board Computer



Fuel consumption from start, checking

- switch ignition **ON**
- select ltr. **→** or **G →** function with the function selector switch
- drive vehicle (avoid decelerating if possible)
 - after approximately 3 km or 3 miles, fuel quantity used will be displayed

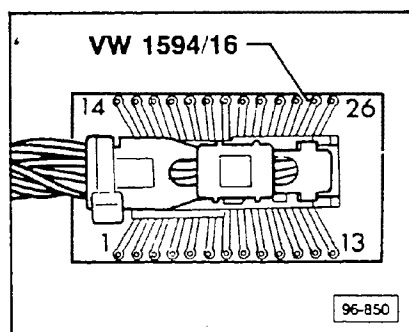


Boost pressure display (bar), checking (only with turbo engines)

- switch ignition **ON**
- select "bar" function with function selector switch
- start engine and let idle
 - display approximately 0.2 to 0.8 bar

If displayed pressure is 0.0 bar

- check boost pressure signal, page 91.10



Board Computer controls, checking

- remove instrument cluster (see Repair Group 90)
- disconnect the two 26-point connectors (brown and black)
- use adapters **1594/16** and **1594/17**

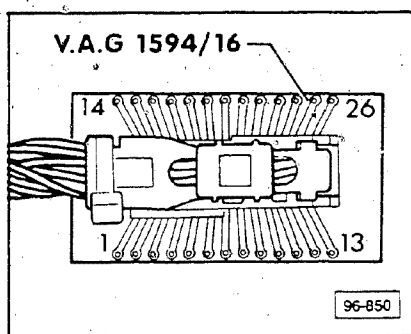
Voltage supply, checking

- connect voltmeter between terminals 1 and 10 of black 26-point connector
 - approximately 12.0V
- connect voltmeter between terminals 1 and 10 of black 26-point connector
- switch ignition **ON**
 - approximately 12.0V

If **NOT OK**

- repair open circuit according to wiring diagram

Electrical System – Radio, Telephone, Board Computer



Speed signal, checking (vehicles with manual transmission)

- connect ohmmeter between contacts 4 and 10 of black 26-point connector
- place transmission in neutral and engage parking brake
- lift vehicle at left front and support with jack stand
- turn left front wheel by hand
 - ohmmeter must vary between 0 and ∞ ohms

If NOT OK

- repair open circuit according to wiring diagram

OR

- replace speedometer sender

Speed signal, checking (vehicles with automatic transmission)

- connect voltmeter between contacts 4 and 11 of black 26-point connector
- switch ignition **ON**
- roll vehicle backwards and forwards approximately 1 meter (3 feet)
 - voltmeter reading must vary between approximately 0 and 5 Volts

If NOT OK

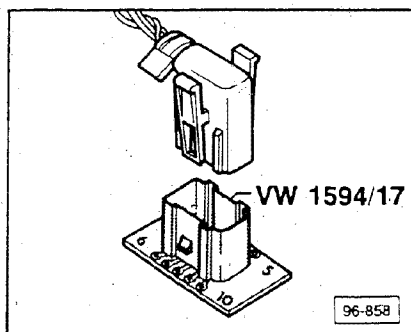
- repair open circuit according to wiring diagram

OR

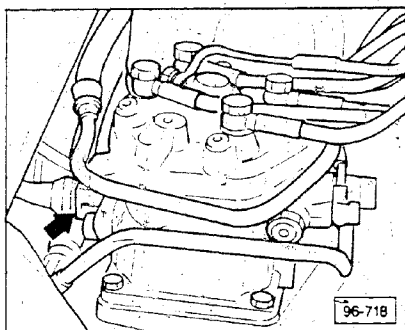
- replace speedometer sender

Fuel consumption signal, checking (vehicles with CIS-E III fuel injection)

- check that air flow sensor plate is properly adjusted (see Repair Group 25)
- connect black 10-point connector to adapter 1594/17
- connect voltmeter between contacts 5 and engine ground
- start engine and run continuously between 1000 RPM and 4000 RPM
 - voltage varies between 0.3 and 0.8 Volts (corresponding to engine RPM)
- drive vehicle and measure voltage during deceleration
 - 0.0 V



Electrical System – Radio, Telephone, Board Computer

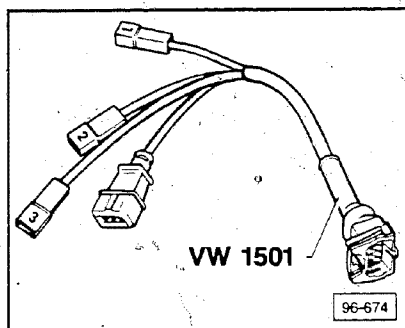


If NOT OK

- repair open circuit between fuel injection control unit and black 10-point connector for Board Computer

Fuel consumption signal, checking (vehicles with CIS fuel injection)

- check that the air flow sensor plate is properly adjusted (see Repair Group 25)
- remove connector from air flow sensor potentiometer

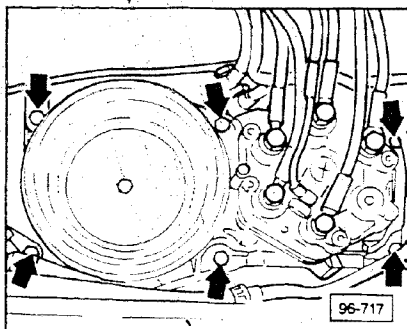


- connect VW 1501 between air flow sensor potentiometer and connector
- connect voltmeter between connectors 1 and 3 of VW 1501
- switch ignition ON
 - approximately 5.0 V

If NOT OK

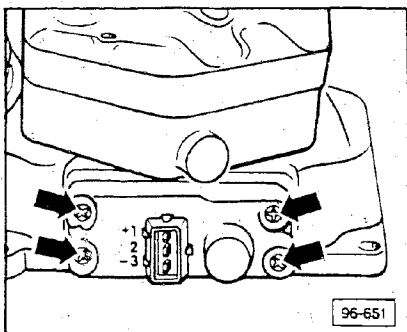
- repair open circuit according to wiring diagram
- connect voltmeter between connectors 2 and 3 of VW 1501
- sensor plate in rest position
 - 0-0.2 volts
- start engine and run at idle speed
 - approximately 0.2 to 0.5 V
 - voltage increases with RPM

Electrical System – Radio, Telephone, Board Computer



Air flow sensor potentiometer, removing/
installing (only on vehicles with CIS fuel
injection)

- remove air intake boot
- remove mixture control assembly (**arrows**)
- remove air flow sensor potentiometer connector



- remove air flow sensor potentiometer screws (**arrows**)

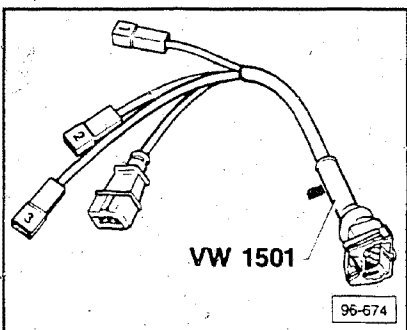
CAUTION

Do not touch the contact surface or contact tabs of the air flow sensor potentiometer.

- install new air flow sensor potentiometer and adjust

Always replace fuel injection seals.

Air flow sensor potentiometer, adjusting
(for vehicles with CIS fuel injection)



CAUTION

Adjust air flow sensor potentiometer only after replacement.

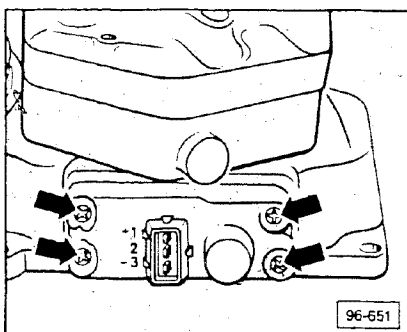
- remove air flow sensor potentiometer connector
- install **VW 1501**
- connect voltmeter between connectors 2 and 3 of **VW 1501**
- start engine at run at idle speed
 - 0.2 to 0.5 Volts

If NOT OK

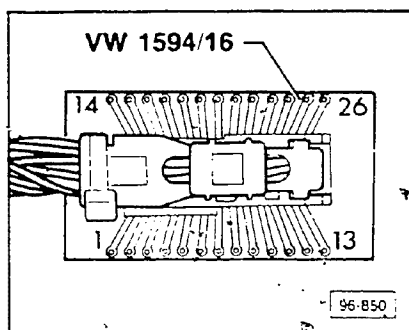
- loosen air flow potentiometer screws (**arrows**) and move sensor in slots until specified value is obtained

If value **CANNOT** be obtained

- replace air flow sensor plate

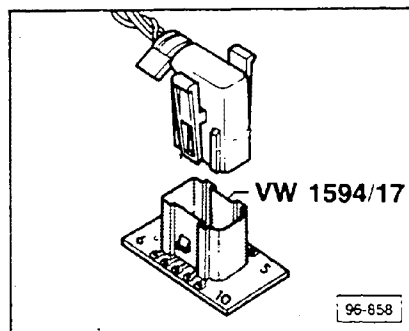


Electrical System – Radio, Telephone, Board Computer



Fuel shut-off signal, checking (for CIS vehicles only)

- connect voltmeter between contact 2 of brown 26-point connector and contact 10 of the black 10-point connector
- switch ignition **ON**
 - 0.0 Volts



- drive vehicle and measure voltage during deceleration
 - approximately 13.0 V

If **NOT OK**

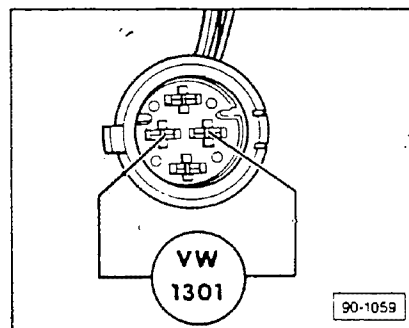
- repair open circuit according to wiring diagram

OR

- check idle stabilizer control unit

Boost pressure signal, checking

- connect voltmeter to contact 9 of the black 10-point connector
- start engine and let idle
 - approximately 1.5 V

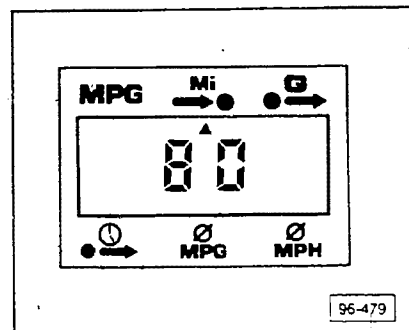


Range calibration, checking

Note

Range calibration is to be done only after replacement of the Board Computer.

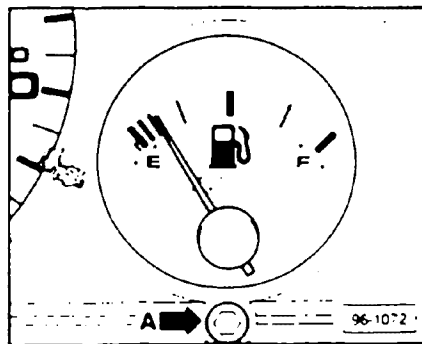
For the range calibration, the Board Computer calculates with an average consumption of 10l/100 km no matter if the display is G → or ltr. →.



- remove connector from fuel gauge sender
- connect **VW 1301** as shown
- adjust **VW 1301** to 250
- switch ignition **OFF**
- press and hold down **RESET** button
- switch ignition **ON**
- release **RESET** button
 - approximately 80 km

more

Electrical System – Radio, Telephone, Board Computer

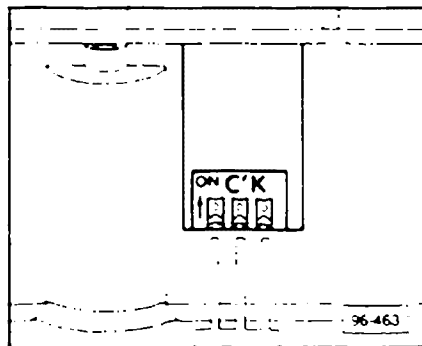


If **NOT OK**

- adjust range calibration
- adjust range calibration by using a small screwdriver inserted through the hex recess adjusting nut **A** of the fuel gauge

Note

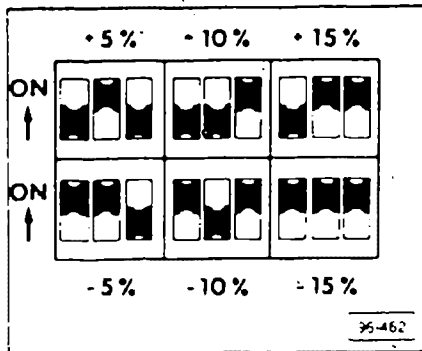
The range calibration potentiometer can only be moved approximately 1/2 turn between the stops.



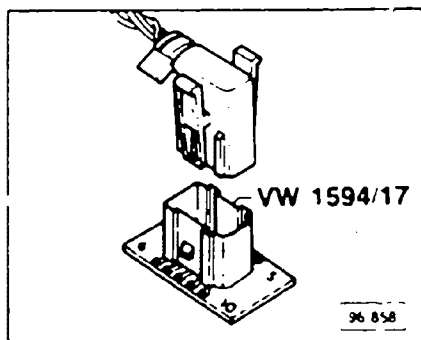
Fuel consumption factor, correcting

It is possible to adjust the Board Computer if the average fuel consumption measured by the driver varies by more than 5% from the average fuel consumption calculated by the Board Computer

A total of $\pm 15\%$ correction can be made.



- select the appropriate correction range by sliding the adjustment switches on the instrument cluster according to the % of change required



Function selector switch, checking

- remove instrument cluster
- remove 10-pin black connector and install on 1594/17
- connect ohmmeter between contacts 1 and 3
 - ∞ ohms
- press **RESET** button
 - 0 0 ohms
- connect ohmmeter between contacts 1 and 2
 - ∞ ohms
- press upper function selector switch
 - 0 0 ohms
- connect ohmmeter between contacts 1 and 4
 - ∞ ohms
- press lower function selector switch
 - approximately 0 0 ohms

If one of the specified values is **NOT** obtained

- repair open circuit in wiring according to wiring diagram

OR

- replace function selector switch

Signal Reception

Audi 100 200 models are equipped with two window antennas.

AM radio signals are received only by the antenna mounted in the rear window.

FM radio signals are received by both the front windshield antenna and the rear window antenna. The radio tunes in to the FM signal that is the strongest.

If radio reception disturbances occur during radio operation.

- remove radio from center console
- check that the 5.0 A fuse in the back of the radio is **OK**
- check that all wires are properly connected. 91.14

If there is no AM reception.

- check rear antenna amplifier. 91.18

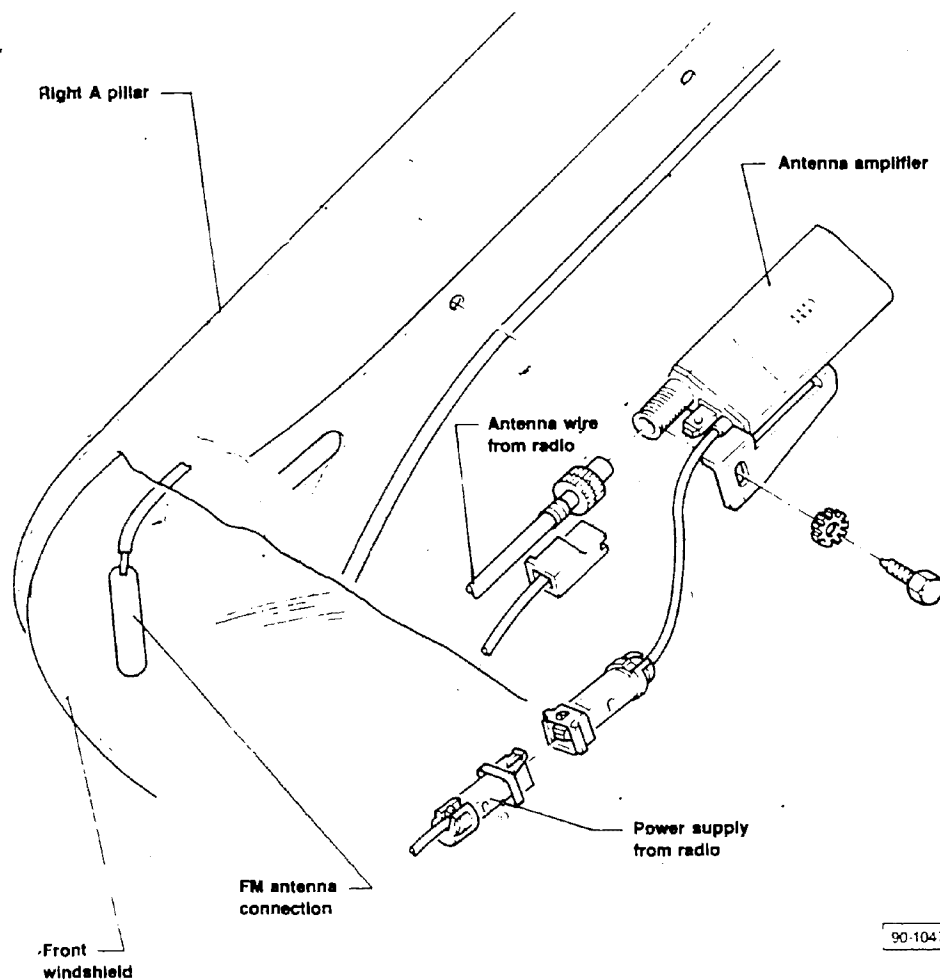
If there is no AM or FM reception.

- check front antenna amplifier. 91.16
- check rear antenna amplifier. 91.18

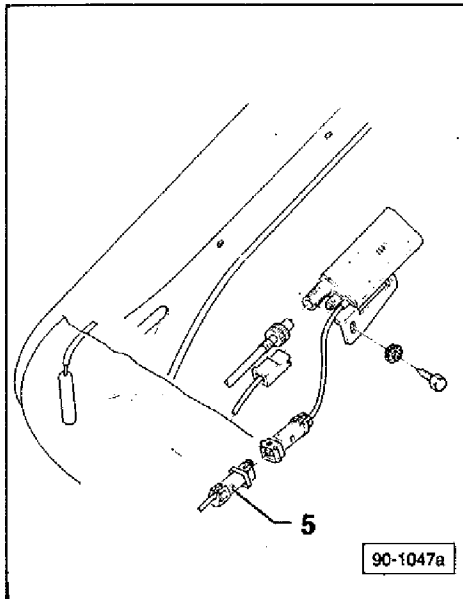
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Front antenna, checking

Test requirements

- battery OK
- remove right A pillar cover
- remove connector 5
- connect voltmeter between connector 5 and ground
- switch radio ON
 - approximately battery voltage

If NO,

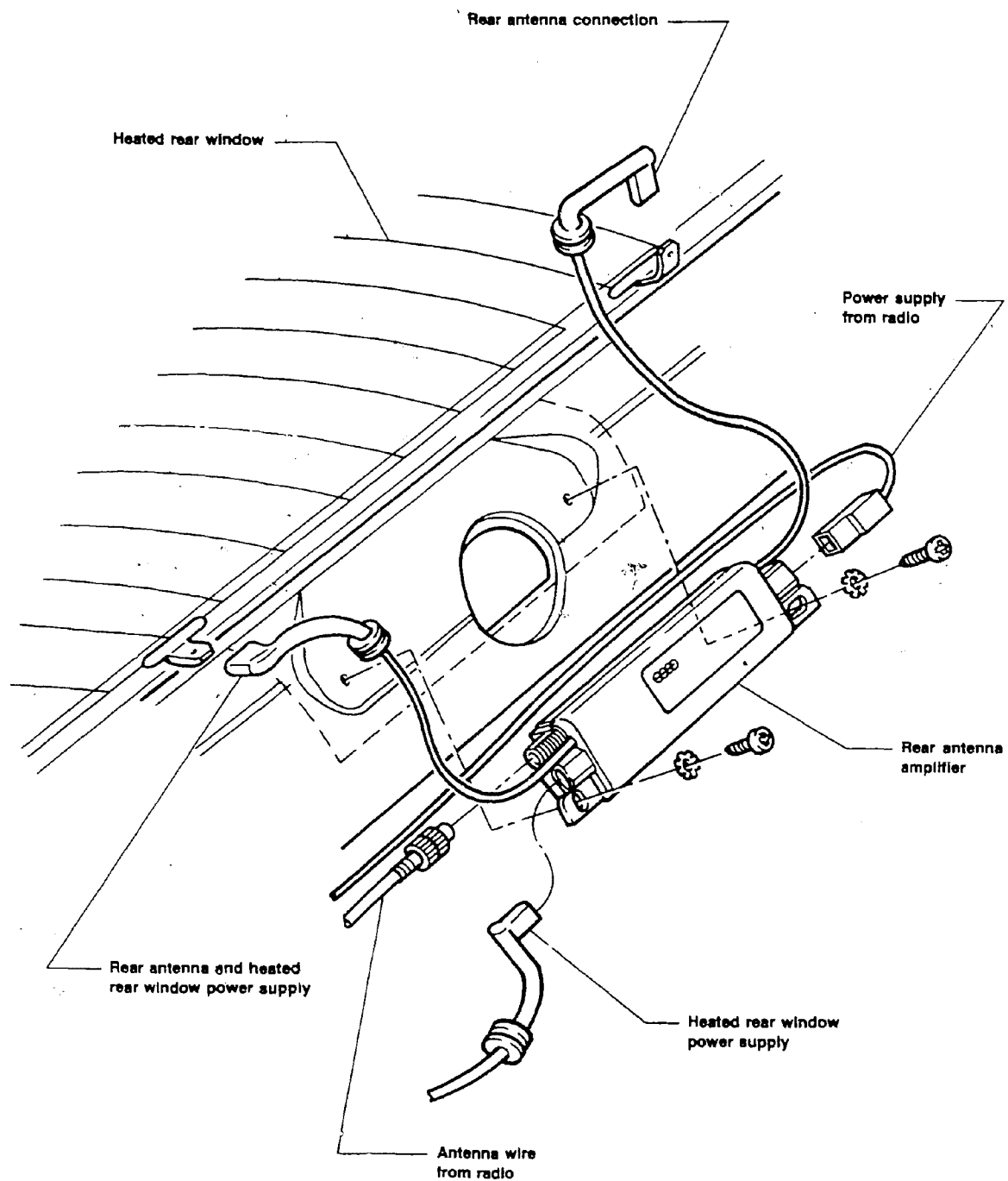
- repair break in wiring according to current flow diagram

If specified value is obtained,

- replace antenna amplifier

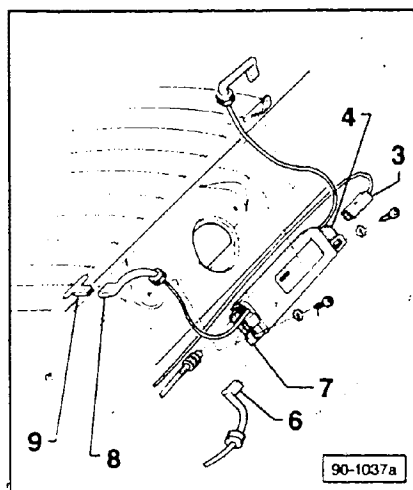
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90-1037

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Rear antenna, checking

Check these first:

- battery OK
- fuse S16 OK

- remove right and left D pillar trim panels
- check heated rear window ground connection for tightness

- remove connector 3
- connect voltmeter between connector 3 and ground
- switch radio **ON**
 - approximately battery voltage

If **NO**

- repair break in wiring according to current flow diagram

With connector 3 still removed and ignition **ON**,

- measure current between connector 3 and rear antenna amplifier at 4
 - 30-50 mA

If **NO**

- replace rear antenna amplifier
- remove connector 6 from antenna amplifier
- connect voltmeter between connector 6 and ground
- switch ignition **ON**
- switch heated rear window **ON**
 - approximately battery voltage

If **NO**

- repair break in wiring according to current flow diagram

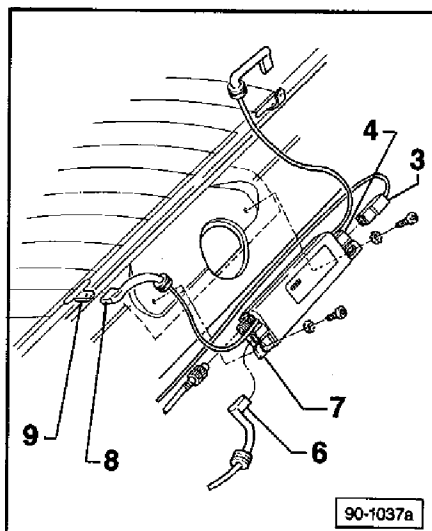
With connector 6 still removed and ignition **ON**,

- measure current between connector 6 and rear antenna amplifier at 7
 - 13.0-13.5 A

If **NO**

- repair break in wiring according to current flow diagram or check rear window heater elements

Electrical System – Radio, Telephone, Board Computer



- remove connector 8 from heated rear window
- connect voltmeter between connector 8 and ground
- switch ignition **ON**
- switch heated rear window **ON**
 - approximately battery voltage

If **NO**,

- repair break in wiring according to current flow diagram

If specified value is obtained,

- replace rear antenna amplifier

With connector 8 still removed and ignition **ON**,

- measure current between connector 8 and rear window heat elements at 9
 - 13.0-13.5 A

If **NO**,

- repair break in wiring according to current flow diagram **OR** check rear window heater elements

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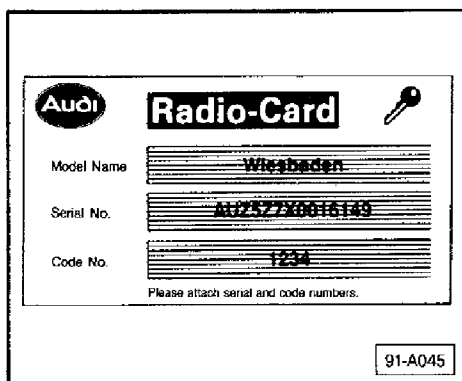
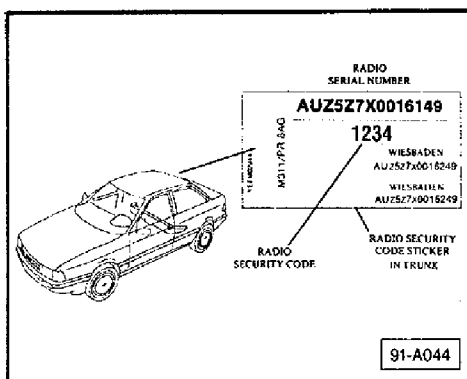
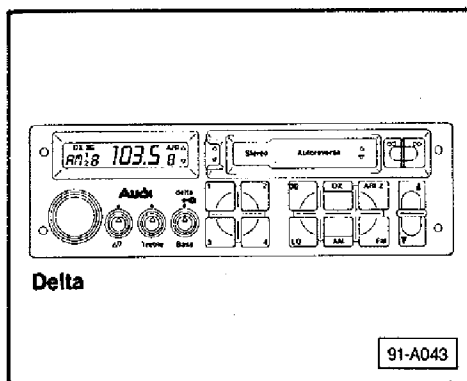
Delta fixed coded radio

Overview

As of model year 1990, Delta radios are assigned a fixed four digit security code from the factory. Unlike previous coded radios, **the security code cannot be changed.**

The fixed coded radios have been implemented gradually and can be identified by the part number. A part number label is attached to the radio chassis.

Delta	—	Part No. 893 035 093B
Delta Bose	—	Part No. 893 035 093C



CAUTION

Part numbers are for reference only.
Always check with your Parts
Department for latest information.

The radios are not coded at the factory. To activate the theft protection, the radio must be coded during the Pre-Delivery Inspection.

The security code and serial number of the radio are printed on a removable sticker located in the trunk near the vehicle identification sticker.

Coding a new or remanufactured radio

- remove radio security code/serial number sticker from trunk and attach to radio card in operating instructions manual

CAUTION

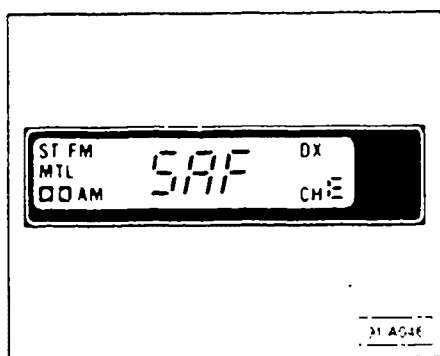
DO NOT keep the security code or radio card with the vehicle. Always instruct customers to detach radio card from operating instructions manual and keep in a safe place.

Electrical System – Radio, Telephone, Board Computer

Note

The security code serial number sticker for remanufactured replacement radios comes in the box with the new radio. Place the new sticker over the old sticker on the radio card.

- switch radio **ON**
 - radio plays and radio station frequency is displayed
- push and hold **AM** and **ARI-Z** buttons
 - radio display changes to **CODE** and then **1000**
- release **AM** and **ARI-Z** buttons
 - **1000** will remain on display
- enter radio's security code using program station buttons
 - security code will appear on display
- push and hold **AM** and **ARI-Z** buttons once again until display changes to **SAFE**



Note

A new or remanufactured radio will only accept its factory assigned security code. If an incorrect code is entered, the radio display will not change to **SAFE**.

- release **AM** and **ARI-Z** buttons
 - radio display changes to a radio station frequency
 - radio is now coded

Reactivating radio after reconnecting power

After disconnecting power (fuse, battery, etc.), the radio will lock up electronically.

To reactivate

- obtain radio's security code
 - located on radio card
- switch radio **ON**
 - radio will not play
 - radio display shows **SAFE**

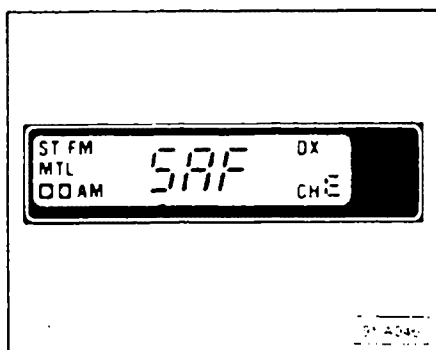
Electrical System – Radio, Telephone, Board Computer

- push and hold **AM** and **ARI-Z** buttons
 - display changes to **1000**
- release **AM** and **ARI-Z** buttons
 - **1000** remains on display

Note

If the **AM** and **ARI-Z** buttons are held down too long or pushed again, the radio will misinterpret the **1000** as an attempt at coding and one incorrect attempt will be logged

- enter radio's security code using program station buttons
 - security code will appear on display
- push and hold **AM** and **ARI-Z** buttons once again until display changes to **SAFE**
- release **AM** and **ARI-Z** buttons
 - radio display changes to a radio station frequency
 - radio is now coded and plays



Unlocking an electronically locked radio

After two incorrect attempts at entering the security code, the radio will lock-up electronically. The display shows **SAFE** and will not change.

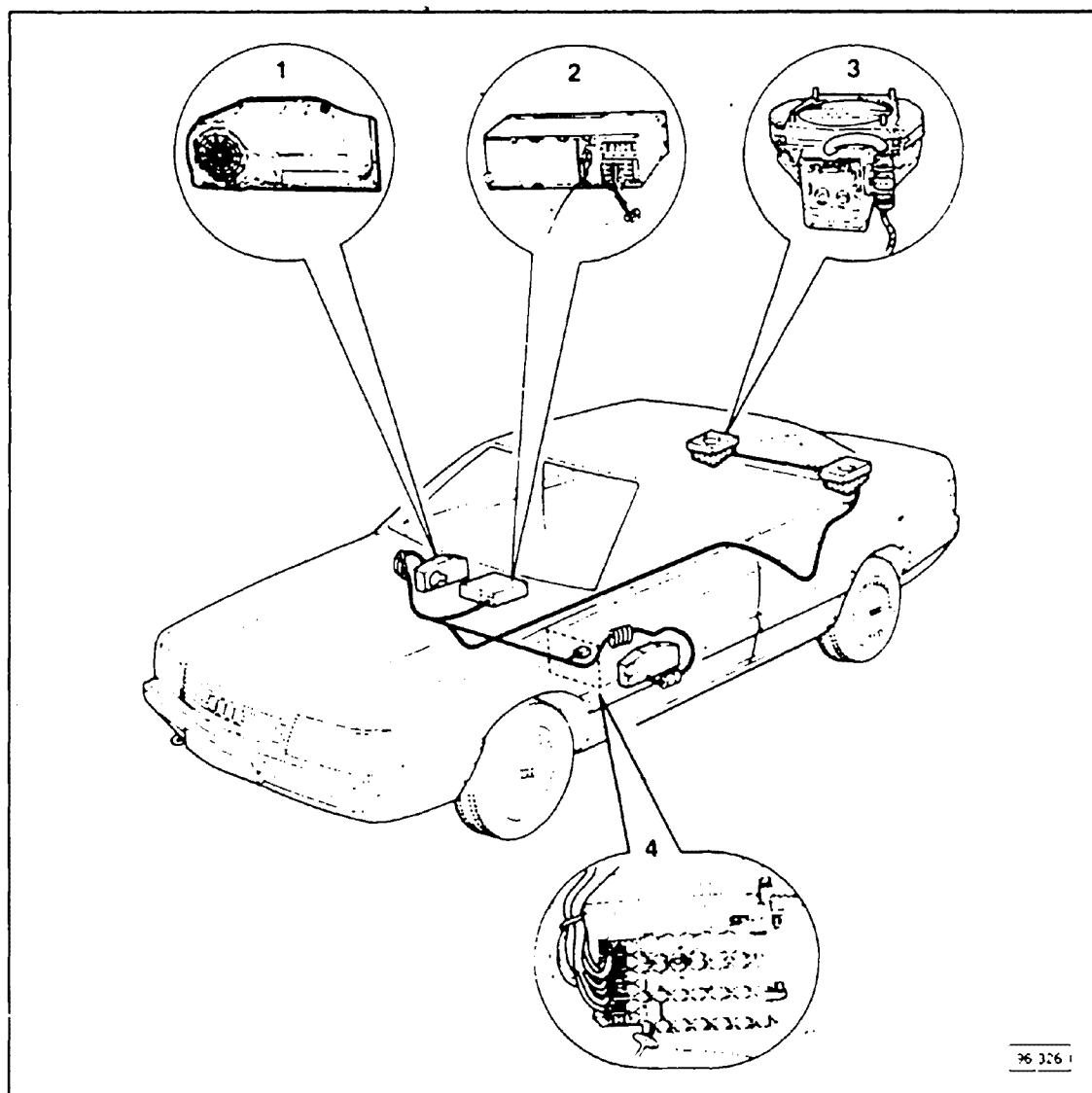
To unlock

- leave radio switched **ON** for approximately one hour
- after one hour, reactivate (code) radio as it would be after a power interruption

Note

The radio will never permanently lock-up no matter how many incorrect coding attempts are made. The reactivation procedure can be repeated indefinitely.

Electrical System – Radio, Telephone, Board Computer



1 — Front speaker enclosure (amplified), R2, R3

- installed in lower part of front doors
- replace speaker and enclosure as an assembly

2 — Stereo radio (Delta)

- installed in center console
- remove with tool VW 160

3 — Rear speaker (amplified), R4, R5

- installed on rear shelf (in luggage compartment)
- amplifier integrated with speaker, replace as an assembly
- different versions with leather and cloth interior

4 — Speaker relay, J225

- located on auxiliary relay panel under instrument panel, left
- see wiring diagram for exact relay location

Bose speakers, removing/installing

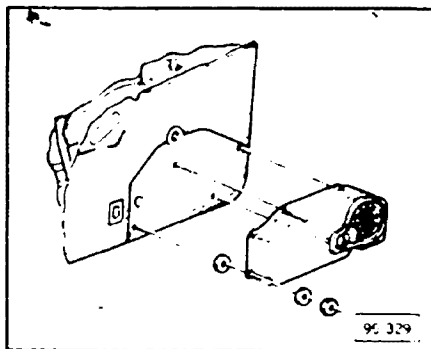
Front speakers (R2, R3), removing -installing

- remove door trim panel, see Repair Group 70

Note

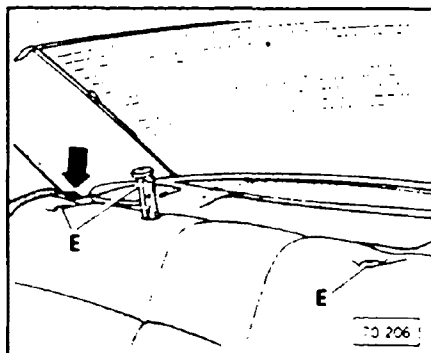
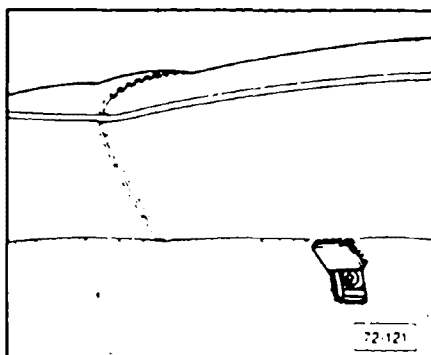
When removing the speaker enclosure, note the number of washers between the speaker enclosure and the door subframe. Use the same number of washers when reinstalling.

- remove nuts and carefully pull speaker enclosure outward
- remove wire connector and remove speaker enclosure
- install in reverse order of removal making sure wire connector is fully installed on back of speaker



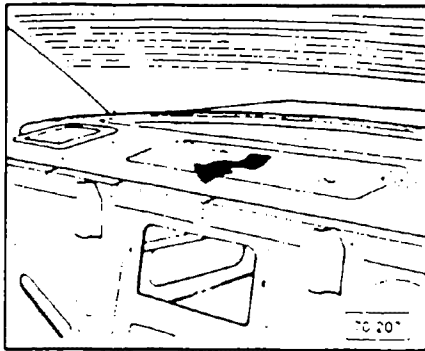
Rear speakers (R4, R5), removing installing

- pry up carpeting or caps covering rear seat retaining screws (Phillips)
- remove left and right Phillips screws
- lift front of rear seat bench slightly and pull forward
- remove rear seat bench

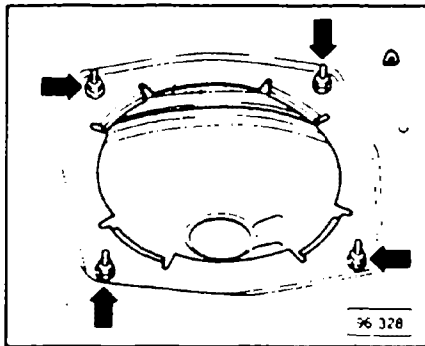


- remove rear seat headrests
- push headrest guides **E** out from inside of luggage compartment
- press seat backrest downward and detach from retainers on heel board
- remove rear seat backrest

Electrical System – Radio, Telephone, Board Computer



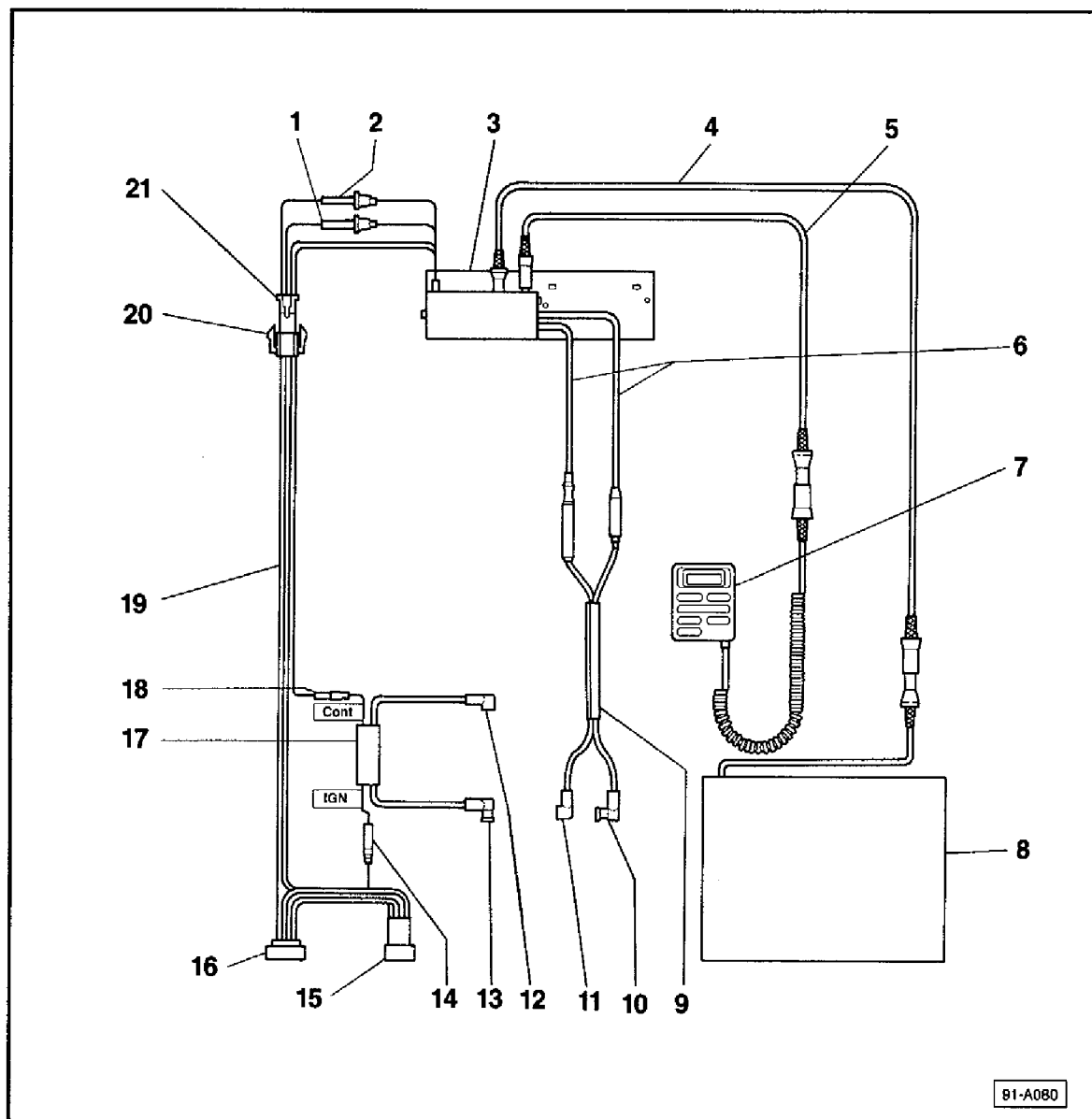
- press rear shelf (filler panel) down slightly over hole area (**arrow**) and remove toward front



- hold rear speaker in place from inside of luggage compartment (with help from second mechanic)
- remove rear speaker retaining nuts (**arrows**)
- lower speaker into luggage compartment and remove wire connector
- remove rear speaker
- install in reverse order of removal

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Electrical System – Radio, Telephone, Board Computer



Note

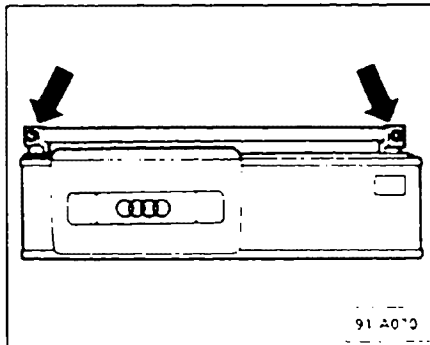
For complete wiring information, see Wiring Diagram.

- | | | |
|--|--|--|
| 1 — Fuse, 3A | 8 — CD changer unit
• six disc capacity
• installed in trunk | 15 — Radio connector
connects to radio connector on car |
| 2 — Fuse, 1A | 9 — Antenna adaptor cable (assembly) | 16 — Radio connector
connects to radio |
| 3 — CD changer controller
installed on right air duct, under instrument panel | 10 — Rear antenna connector to rear antenna lead | 17 — Antenna diversity switch
located behind center console, near radio |
| 4 — CD changer unit cable
DIN, blue | 11 — Rear antenna connector
connects to radio | 18 — Single-point bullet connector |
| 5 — CD remote control cable
DIN, black | 12 — Front antenna connector
connects to radio | 19 — Radio interface wiring harness |
| 6 — Antenna cables | 13 — Front antenna connector to front antenna lead | 20 — Four-point connector, male |
| 7 — CD remote control | 14 — Single-point bullet connector | 21 — Four-point connector, female |

Electrical System – Radio, Telephone, Board Computer

CD changer components, removing/installing

CD changer unit, removing/installing



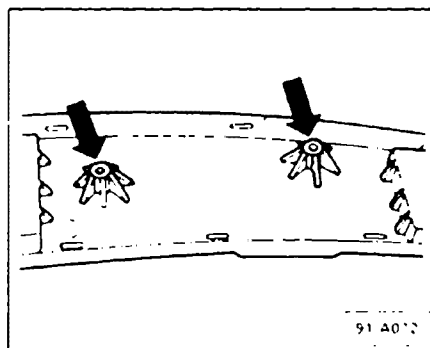
- disconnect eight-point DIN cable connection from rear of CD changer
- remove CD changer mounting screws (**arrows**)
- slide CD changer unit off trunk support bracket
- install in reverse order of removal
- ensure brackets on CD changer unit properly engage trunk support bracket

CD changer controller, removing/installing

- obtain radio security code
- disconnect battery ground strap
- remove passenger footwell light and cover
- remove passenger side lower instrument panel cover

Note

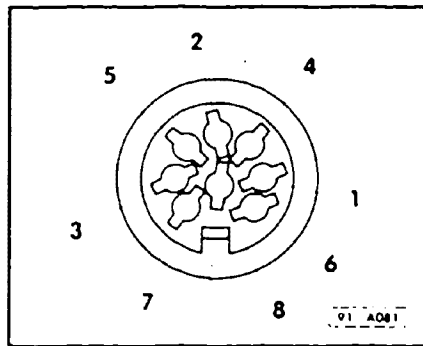
The frequency and loudness switches on the CD changer controller can be changed without lowering the air duct or removing the controller



- remove air duct securing screws and carefully lower air duct
- remove all cable and wire connections from CD changer controller
- remove mounting screws from air duct (**arrows**)
- remove CD changer controller
- install in reverse order of removal

Electrical System – Radio, Telephone, Board Computer

CD changer electrical connectors, terminal identification

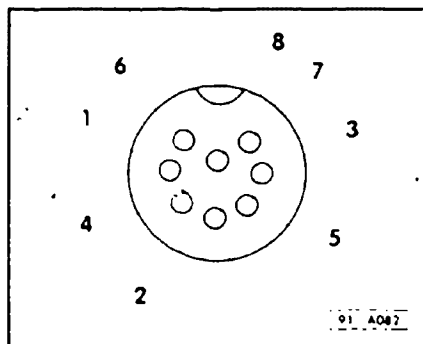


CD remote control cable (DIN, black), terminal identification

Note

Illustration at left shows connector end (female) that plugs into CD changer controller. Female connector on CD remote control is also the same

- 1 – data bus
- 2 – not connected
- 3 – data bus ground
- 4 – control signal
- 5 – not connected
- 6 – plus (+), terminal 30
- 7 – plus (+), terminal 15
- 8 – ground (-), terminal 31



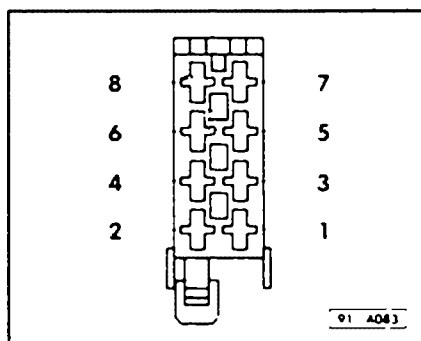
CD changer unit cable (DIN, blue), terminal identification

Note

Illustration at left shows connector end (male) that plugs into CD changer controller. Male connector on CD changer unit is also the same

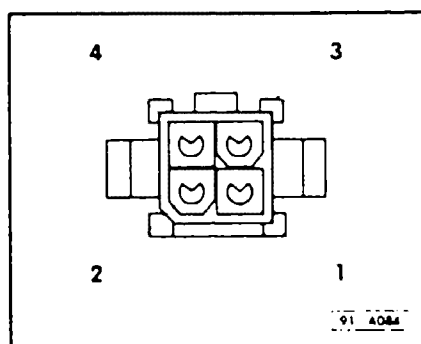
- 1 – data bus
- 2 – signal ground
- 3 – data bus ground
- 4 – right channel
- 5 – left channel
- 6 – plus (+), terminal 30
- 7 – plus (+), terminal 15
- 8 – ground (-) terminal 31

Electrical System – Radio, Telephone, Board Computer



Eight-point radio connector (female, gray), terminal identification

- 1 – not connected
- 2 – ground
- 3 – plus (+), radio ON
- 4 – not connected
- 5 – plus (+), radio ON
- 6 – plus (+), terminal 58b
- 7 – plus (+), terminal 30
- 8 – ground (-), terminal 31



Four-point connector (male, on radio interface wiring harness), terminal identification

- 1 – plus (+), terminal 30
- 2 – plus (+), terminal 15
- 3 – ground (-), terminal 31
- 4 – control signal

Electrical System – Radio, Telephone, Board Computer

CD changer system, self-diagnosis

The CD changer is equipped with a self-diagnostic function. If the CD remote displays one of the following error codes, follow the service solution indicated.

Error code	Cause of problem	Service solution
E-01	Disc change malfunction	■ press magazine eject button on CD changer and remove magazine ■ reinsert magazine
E-02	Disc is in player mechanism	■ press magazine eject button on CD changer and remove magazine ■ remove any CD's from magazine ■ reinsert empty magazine
E-03 E-04 E-05	Disc change malfunction	■ obtain radio security code ■ disconnect battery ground strap ■ reconnect battery and reactivate (code) radio ■ switch CD ON and recheck display If error code remains, ■ replace CD changer Note After switching CD changer ON, one of the above codes may be displayed for a few seconds and then disappear. This is normal and the CD changer unit is OK.
E-06	Disc change malfunction	■ press magazine eject button on CD changer and remove magazine ■ reinsert magazine ■ check display for error code If error code remains ■ replace CD changer If magazine does not eject, ■ refer to CD magazine emergency eject procedure, see Index If magazine still does not eject, ■ replace CD changer and magazine

Electrical System – Radio, Telephone, Board Computer

Error code	Cause of problem	Service solution
E-07	Magazine ejection impossible	■ press magazine eject button on CD changer - If magazine does not eject. ■ refer to CD magazine emergency eject procedure. see Index - If magazine still does not eject ■ replace CD changer and magazine
E-30	High temperature	■ temperature of CD changer has exceeded 50 C (122 F). CD operation has stopped ■ CD operation will resume when temperature drops to normal range - Once CD changer has cooled off ■ check CD operation
E EE	No communication (data connection) between radio and CD changer	■ refer to troubleshooting section. see Index
— — —	No CD magazine in CD changer	■ insert CD magazine into CD changer
2 — —	No CD in second slot of CD magazine or CD installed upside down in second slot	■ insert CD into second slot of CD magazine or turn CD over
Note A similar display will appear if a CD disc is missing from or is upside down in another slot. The number displayed will correspond with the slot. If a slot is empty or if a disc is upside down, the CD changer will automatically proceed to the next available disc.		
0 00	No CDs in magazine CD magazine is empty	■ insert CDs into magazine
Note This display will also appear if all the discs in the CD magazine are installed upside down.		

CD changer system, troubleshooting

WARNING

Compact disc players contain an optical laser. Any internal adjustments or repairs by an unauthorized person may result in injury. Using optical instruments with the CD changer may cause eye injury.

CAUTION

Do not attempt to play cracked, warped or otherwise damaged discs. Playing a damaged disc could severely damage the changer.

Note

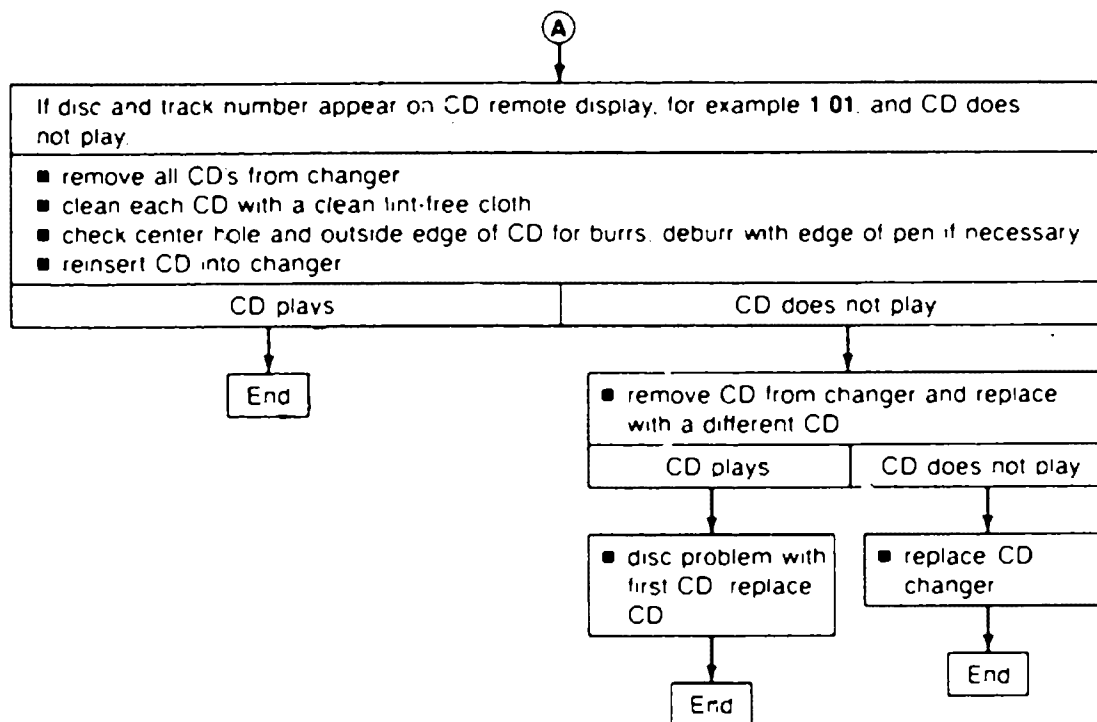
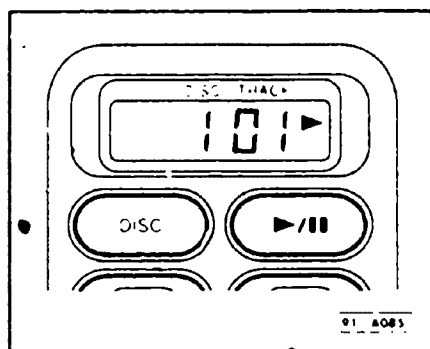
The CD changer may not operate properly because of condensation collected on the discs or optical parts (lens or prism). This may happen during cold winter weather when the inside of the car starts to warm up. Dry a misted disc with a clean, dry, lintfree cloth. Wait approximately one hour for optical parts to dry.

CD does not play

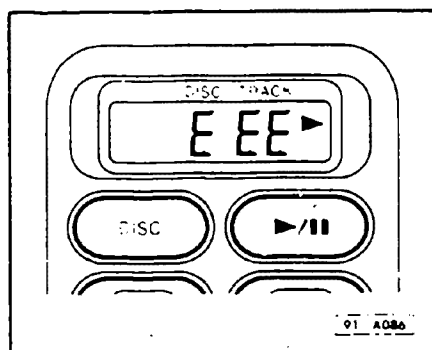
- switch radio and CD changer **ON**
- compare display on remote control with the following chart

Display on CD remote control	Troubleshooting reference
1 01	Go to (A) , next page
E EE	Go to (B) , two pages following
No display (blank)	Go to (C) , two pages following
E-01 to E-07	See self diagnostic chart preceding this section
E-30	Go to (D) , three pages following
0 00	Go to (E) , three pages following
— — —	Go to (F) , three pages following

Electrical System – Radio, Telephone, Board Computer



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Ⓑ

If **E E E** appears on CD remote display, and CD does not play.

- check wiring (DIN cables) and connections between radio and CD changer for open circuits according to wiring diagram. repair as necessary

All wires and connections check **OK**. display does not change

Open in wire or connection found and repaired

- replace CD changer

End

Go to Ⓒ.
two pages following

Ⓒ

If CD remote display is blank and CD does not play.

- check fuses and power supply to CD changer

If **OK**

- check wiring (DIN cables) and connections between radio and CD changer for open circuits according to wiring diagram. repair as necessary

All wires and connections check **OK**. display does not change

Open in wire or connection found and repaired

- replace CD remote control with a known good unit
 - CD remote must display disc and track number, for example **1 01**, and CD must play

YES

NO

- replace CD remote control

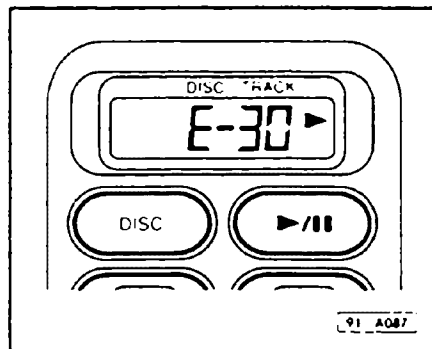
End

- reinstall first CD remote control
- replace CD changer

End

Go to Ⓒ.
two pages following

Electrical System – Radio, Telephone, Board Computer



Ⓓ

If **E-30** appears on CD remote display and CD does not play.

- temperature of CD changer has exceeded 50°C (122°F). CD operation has stopped
- CD operation will resume when temperature drops to normal range

Once CD changer has cooled off.

- check CD operation

Go to Ⓔ,
next page

Ⓔ

If **0 00** appears on CD remote display, and CD does not play.

CD magazine is empty or all discs in CD magazine are installed upside down

- insert discs into CD magazine or turn all CD's over
- insert CD magazine into CD changer

Go to Ⓔ,
next page

Ⓕ

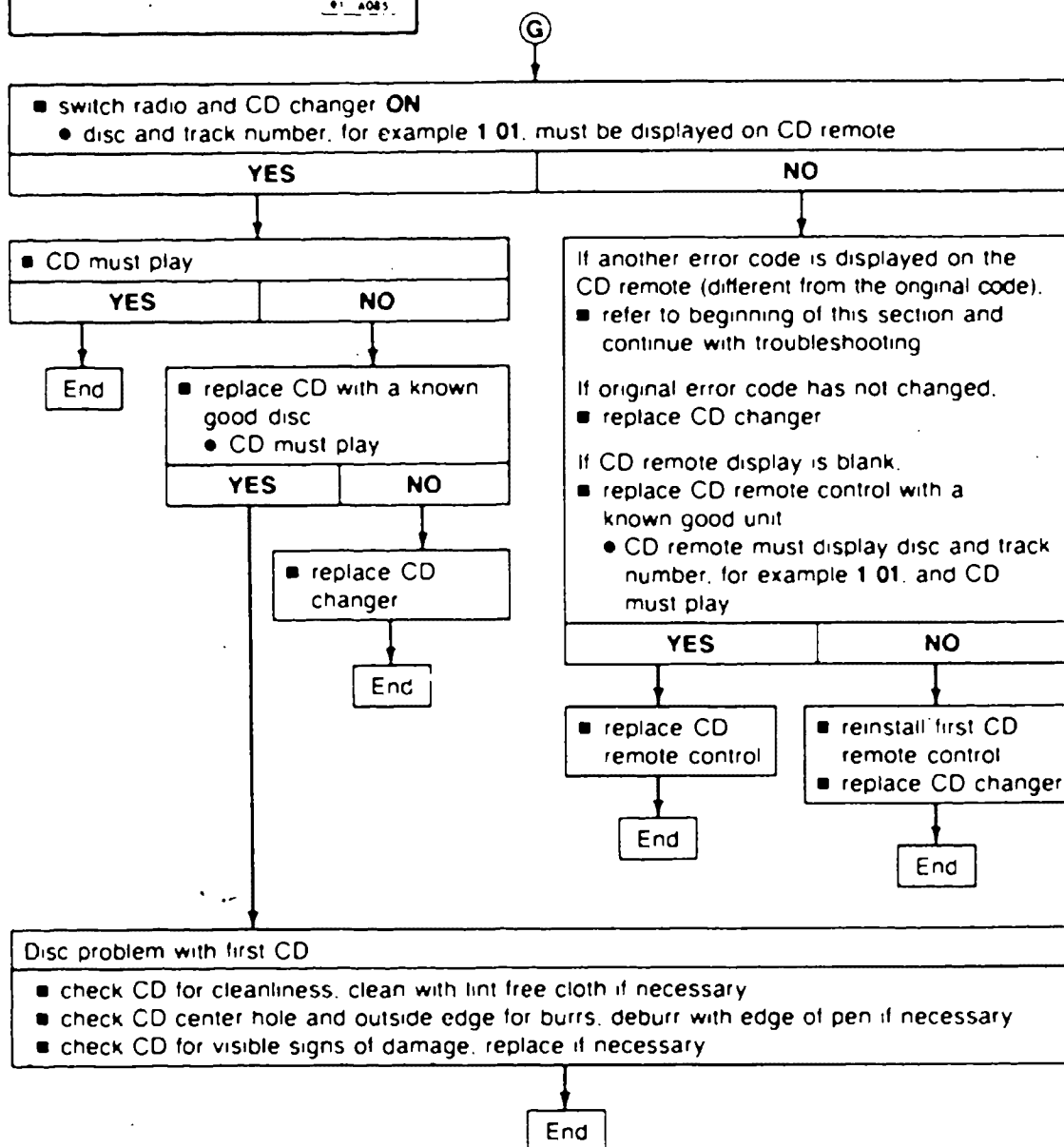
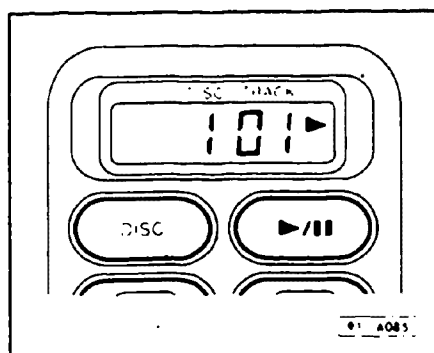
If **— — —** (dashes) appear on CD remote display and CD does not play.

CD magazine not installed in CD changer

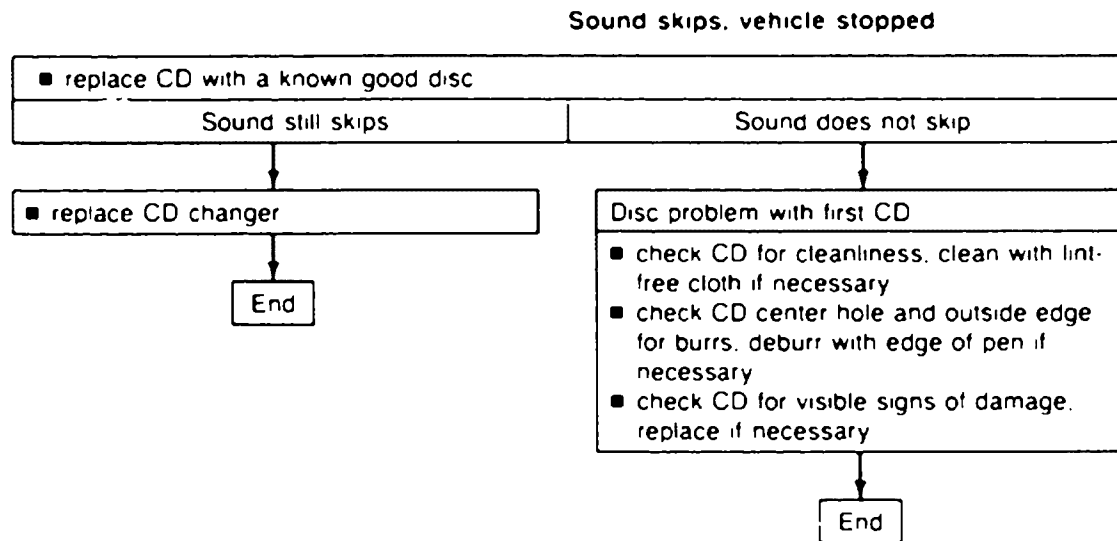
- insert discs into CD magazine
- insert CD magazine into CD changer

Go to Ⓔ,
next page

Electrical System – Radio, Telephone, Board Computer

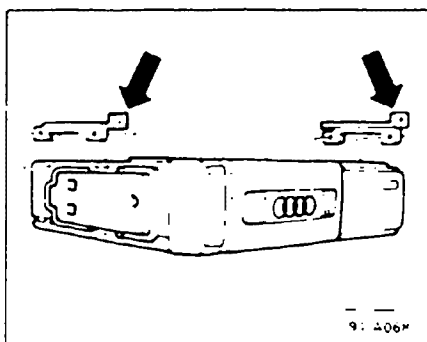
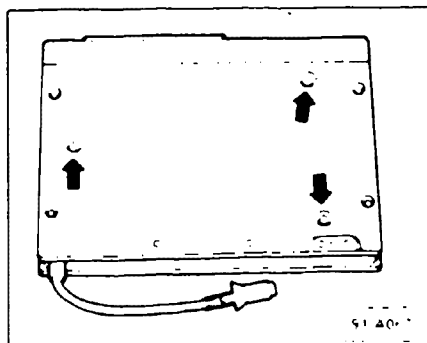


Electrical System – Radio, Telephone, Board Computer



Electrical System – Radio, Telephone, Board Computer

Sound skips, vehicle moving



- ensure shipping screws (arrows) are removed from bottom of CD changer

- check CD changer mounting brackets (arrows) for looseness and tighten if necessary

- drive vehicle while playing CD

Sound skip varies with road conditions or driving mode

Sound skip remains constant regardless of road conditions or driving mode

■ replace CD with a known good disc	
Sound still skips	Sound does not skip

■ replace CD with a known good disc	
Sound still skips	Sound does not skip

Note
High frequency shock caused by rough roads or roads hazards can cause a normally operating CD changer to skip
If excessive skipping persists.
■ replace CD changer

End

■ replace CD changer

End

Disc problem with first CD

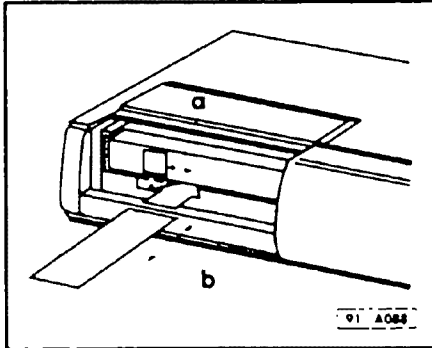
- check CD for cleanliness. clean with lint-free cloth if necessary
- check CD center hole and outside edge for burrs. deburr with edge of pen if necessary
- check CD for visible signs of damage. replace if necessary

End

Electrical System – Radio, Telephone, Board Computer

CD magazine will not eject

Use the following procedure if CD magazine will not eject.



CD magazine, emergency ejecting

- slide open dust cover on CD changer
- fold a business card vertically in half
- insert business card between CD magazine and CD changer mechanism to release lock lever
 - a = approx. 20mm (3/4 in.)
 - b = approx. 40mm (1 1/2 in.)
 - CD magazine will eject when the folded business card is inserted approximately 40mm (1 1/2 in.)

- remove CD magazine

CD sound level, too high or too low

If CD sound level is too high or low relative to radio/tape sound level, adjust CD output level (loudness) with loudness switch on the CD changer controller.

CD loudness switch, changing

- obtain radio security code
- disconnect battery ground strap
- remove passenger side lower instrument panel cover
 - CD changer controller mounted to air duct

Note

The CD changer loudness switch is set to M (middle) at the factory.

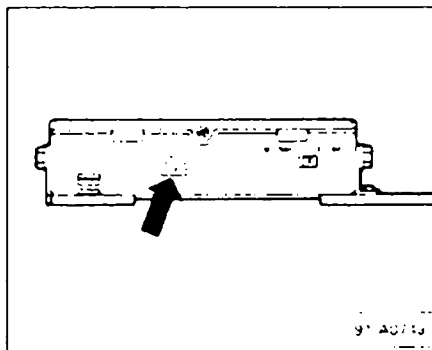
- adjust CD changer loudness switch (arrow) as follows

If CD sound level is too high (loud) relative to radio/tape play or if CD sound level becomes distorted at high volume level.

- adjust switch to L (low) position

If CD sound level is too low (soft) relative to radio/tape play.

- adjust switch to H (high) position



Electrical System – Radio, Telephone, Board Computer

- reinstall passenger side lower instrument panel cover
- reconnect battery ground strap
- reactivate (code) radio

- check CD changer operation

Static when listening to CD

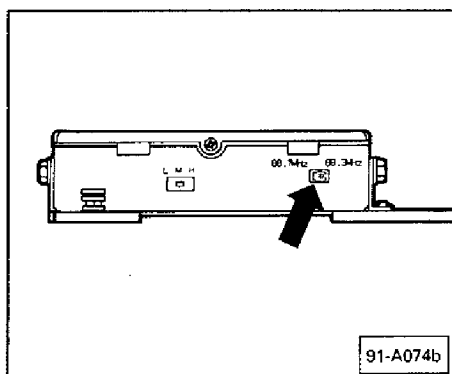
A strong station broadcasting at 88.3MHz in the customer's area can cause static while listening to the CD. If static is heard, change the CD frequency switch on the CD changer controller to 88.7MHz.

CD frequency switch, changing

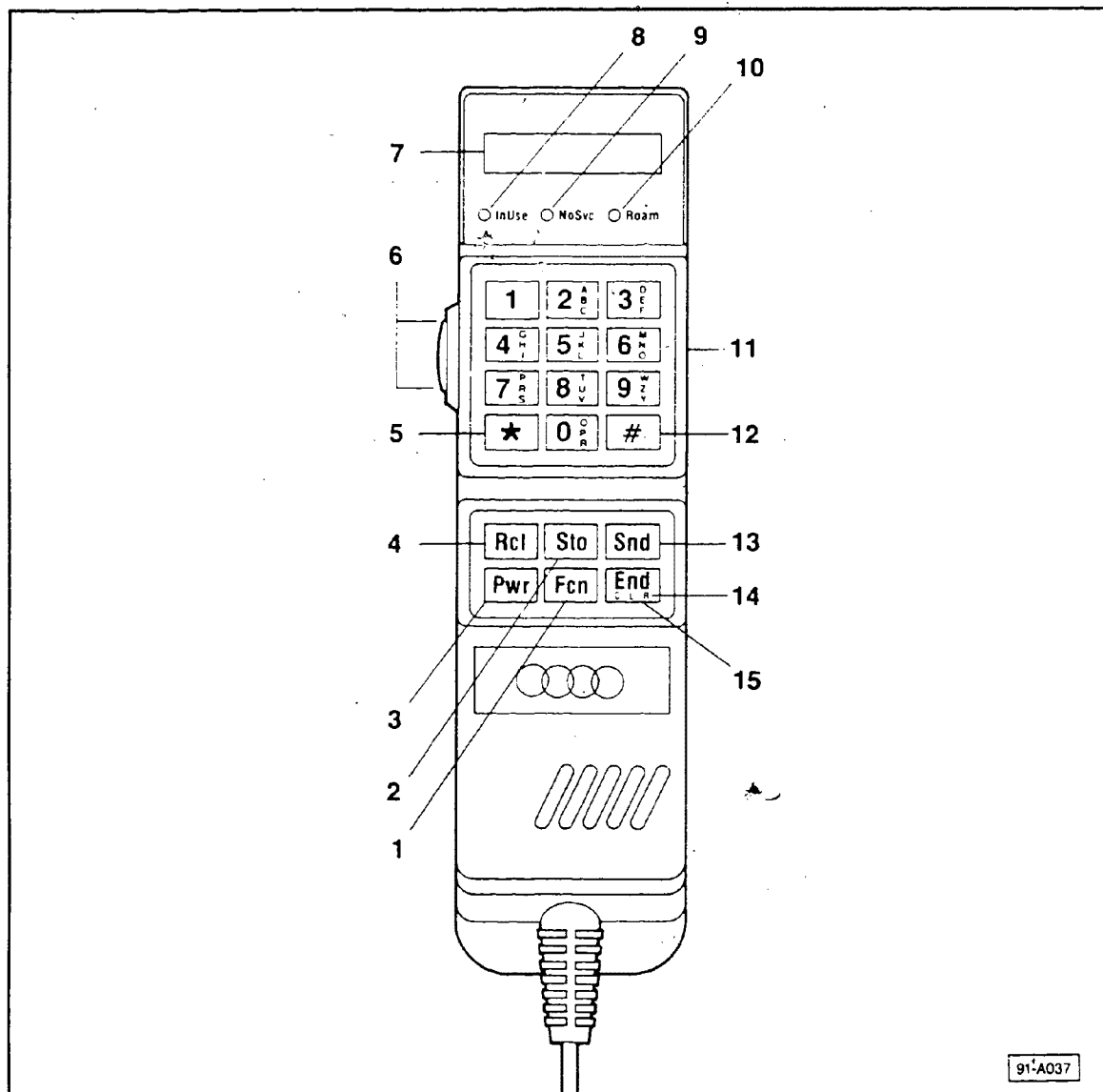
Note

The CD changer frequency switch is set to 88.3MHz at the factory.

- obtain radio security code
- disconnect battery ground strap
- remove passenger footwell light and cover
- remove passenger side lower instrument panel cover
 - CD changer controller mounted to air duct
- adjust CD changer frequency switch (**arrow**) to 88.7MHz
- reinstall passenger side lower instrument panel cover
- reinstall passenger footwell light and cover
- reconnect battery ground strap
- reactivate (code) radio
- check CD changer operation



Electrical System – Radio, Telephone, Board Computer



- 1 — **Function**
used in combination with other buttons for specific user-programmed operations
- 2 — **Store**
press to store telephone numbers into memory
also used to select various menu choices
- 3 — **Power**
press to turn **ON**
press again to turn **OFF**
- 4 — **Recall**
press to display telephone numbers stored in memory
also press to display last number entered if display has been blanked

- 5 — **Star key**
press to scroll forward through NAM programming directory
also used in combination with other keys
- 6 — **Pushbutton volume control**
press and hold to increase or decrease sound level of incoming calls or confirmation tones
volume changes in stepped increments
Handset earpiece volume
lift handset and press volume button while a call is in process
Speaker volume
operate button while handset is in cradle
Alert (ringer) volume
lift handset and operate button when a call is not in process

Electrical System – Radio, Telephone, Board Computer

- 7 — **Dialed number display**
displays telephone numbers and messages
associated with mobile telephone service
- 8 — **In use**
illuminates from time a call is initiated or answered
until time call is terminated
- 9 — **No service**
illuminates when unit is out of range of cellular
system
calls cannot be placed or received
- 10 — **Roam**
illuminates when unit is within range of a cellular
system other than its home registered system
home system: steady
non-home system: blinking
- 11 — **Numeric keypad**
used to enter telephone numbers or Test Mode
system functions
- 12 — **Pound key**
used in combination with other keys
- 13 — **Send**
press to call entered telephone number or to answer
a call
press for switch-hook flash when a call is in process
- 14 — **End**
press to terminate a call
- 15 — **Clear**
press and release to clear last digit entered
press and hold to clear display in the event of an
error (does not affect numbers stored in memory)

WARNING

Some state and local laws prohibit using the cellular telephone while the vehicle is in motion. For safety reasons, stop the vehicle in a safe location before answering or placing a call.

While in construction areas, look for and observe signs cautioning against two-way radio transmissions. If mobile radio transmission is prohibited, turn OFF cellular telephone to prevent any incoming calls and transmissions. DO NOT turn the phone back on or place any calls until out of the area.

Before entering a car wash, switch telephone OFF and remove the antenna mast to prevent damage. Before turning telephone back on, reinstall antenna.

Since cellular telephones use radio transmissions to communicate, privacy cannot be assured. Commercially available scanning equipment can permit a third party to monitor mobile telephone calls.

Electrical System – Radio, Telephone, Board Computer

Roam characteristics, checking

The roam characteristics of the phone can be changed to allow the type of service provided (non-wireline A, or wireline b) to be programmed and in what preference.

Complaints of the "NoSvc" light or "Roam" light illuminating constantly can be the result of incorrect or undesirable roam characteristics.

Check roam characteristics as follows:

- turn telephone **ON**
- press **Rcl** and ***** buttons
 - current roam selection displayed

Note

Five roam selections are available: standard (Ab or bA), inverted (bA or Ab), home, non-wireline only, and wireline only.

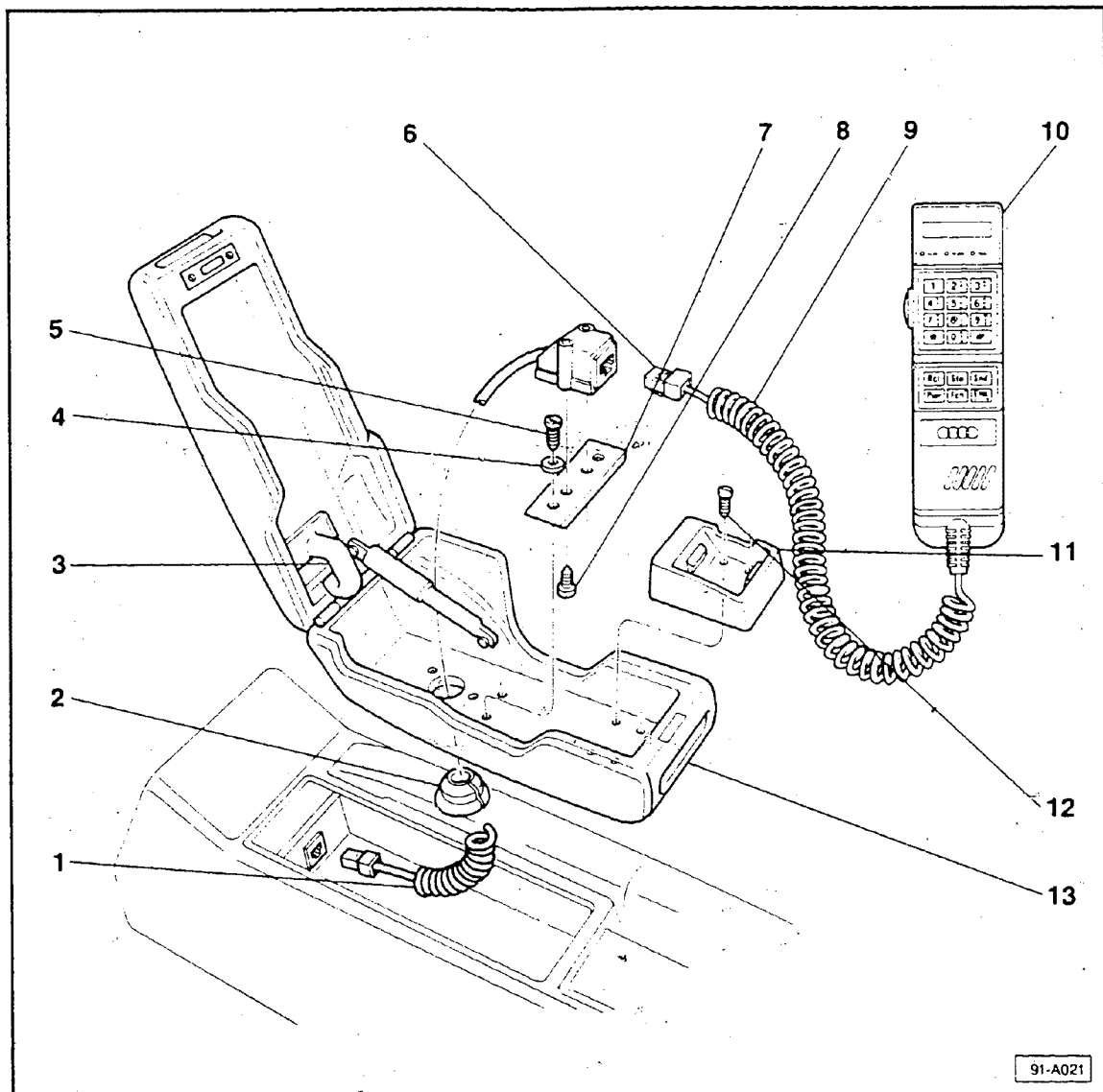
Selection	Display shows
Standard (Prefer home type systems) Prefer A systems, accept B systems or Prefer B systems, accept A systems	St d Ab St d bA
Inverted (Prefer non-home type systems) Prefer A systems, accept B systems or Prefer B systems, accept A systems	St rA Ab St rA bA
Home only Do not allow roaming	HOmTE
Non-wireline only Accept A systems ONLY	St rA A
Wireline only Accept B systems ONLY	St rA b

- press ***** button repeatedly to advance through the selections
- press **Sto** button to enter desired choice (Standard)

Note

The best telephone performance is usually obtained with the **Standard** roam selection setting. Set roam selection to **Standard**, unless otherwise preferred by customer.

Electrical System – Radio, Telephone, Board Computer



1 — Short cord
provides wire connection flexibility
so armrest can swing up or down

2 — Grommet

3 — Handset cable guide

4 — Washer

5 — Screw

6 — Handset eight-point modular
connector
terminal identification, see Index

7 — Short cord mounting plate

8 — Screw

9 — Handset cord

10 — Handset
located in driver armrest
remove by lifting from cradle
and unplugging cord connection

11 — Cradle
fastened to driver armrest

12 — Screw
4 pieces

13 — Armrest

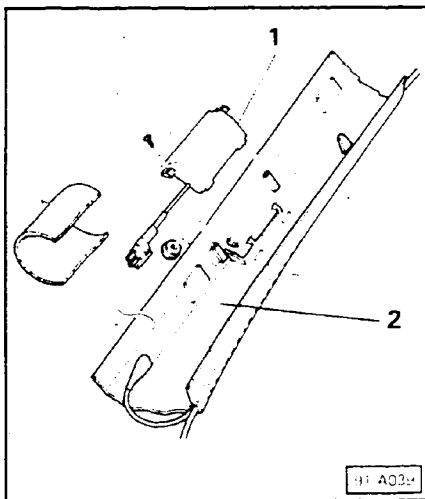
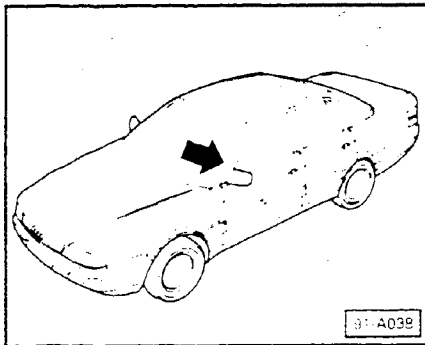
91-A021

Electrical System – Radio, Telephone, Board Computer

Hands-free microphone and speaker, removing/installing

Microphone

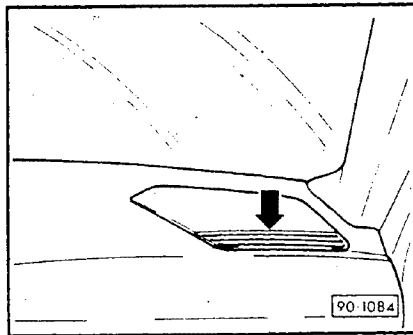
The hands-free microphone is located behind the left A-pillar interior trim piece (**arrow**).



- remove left A-pillar trim 2
- unplug wire connector from microphone 1
- remove two microphone securing screws
- remove microphone from A-pillar trim
- install in reverse order of removal

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Electrical System – Radio, Telephone, Board Computer



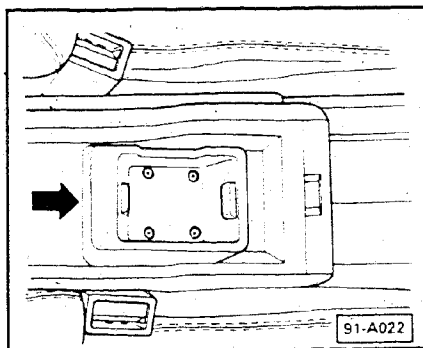
Speaker

The hands-free speaker is located in the upper right portion of the dashboard.

- carefully pry up speaker cover at (arrow)
- remove speaker and disconnect wiring connections
- install in reverse order of removal

Electrical System – Radio, Telephone, Board Computer

Cradle and antenna, removing/installing



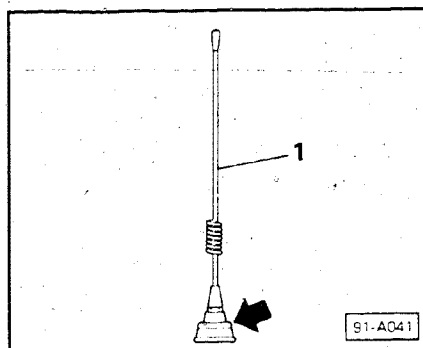
Cradle

The cradle (**arrow**) is attached to the driver armrest with four screws.

- lift phone from cradle
- remove rubber screw caps from two rear screws
- remove four screws and lift out cradle
- install in reverse order of removal

Antenna

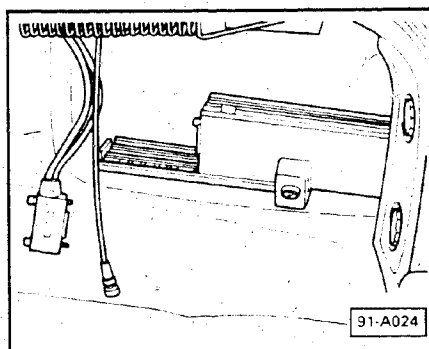
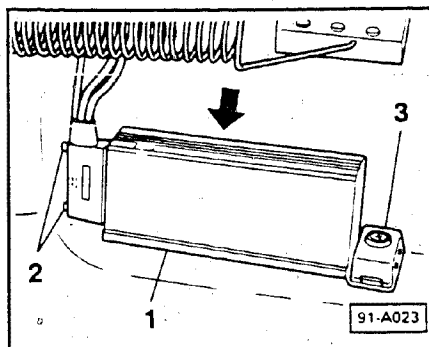
The antenna is mounted on top of the right rear quarter panel.



- switch phone **OFF**
- remove antenna cable from transceiver
- unscrew antenna mast **1** from base
- remove spanner nut (**arrow**) and remove upper antenna base plate
- slide antenna base down through hole and remove
- install in reverse order of removal

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Transceiver, removing/installing



The telephone transceiver (**arrow**) is mounted in the right side of the trunk and is held in place by a lockable sliding track mount 1.

Removing

- unlock (with key) lock housing 3 and swing open
- slide transceiver rearward on track mount enough to remove wire connections
- loosen retaining screws 2 on 25-point connector and remove power cord from transceiver
- unscrew antenna cable and remove

- slide transceiver fully rearward and lift from track mount

Installing

- place transceiver onto mount with electrical connections facing front of car
- connect power cord (25-point connector) and antenna cable to transceiver
- slide transceiver forward on mount to stop

CAUTION

Grooves in transceiver housing must fully engage track mount to ensure secure mounting.

- close lock housing and lock (with key)

CAUTION

Each transceiver has its own electronic serial number (ESN). **ALWAYS** register a new transceiver with the Cellular Telephone Company before placing a call.

Electrical System – Radio, Telephone, Board Computer

Transceiver, registering

New replacement transceivers must be registered with the Cellular Telephone Company and programmed before the telephone can be reactivated.

In order to register the transceiver, the Cellular Telephone Company must be contacted so that the electronic serial number (ESN) of the new transceiver can be recorded.

The following information is required from the Cellular Telephone Company to register (program) the telephone.

- 1 – System ID (five digits)
- 2 – Verification of customer's phone number (ten digits, including area code)
- 3 – Station Class Mark (two digits)
- 4 – Access Overload Class (two digits)
- 5 – Group ID (two digits)
- 6 – Initial paging channel (three digits)
- 7 – MIN Mark (enable/disable)
- 8 – Local use (enable/disable)

The following information is required from the customer to register (program) the telephone:

- 1 – Preferred unlock code (three digits)
- 2 – Preferred security code (six digits)
- 3 – Cellular phone number(s)
- 4 – Phone number of the Cellular Telephone Company

To register the phone, the entire telephone programming procedure must be followed.

If possible, obtain a completed copy of the programming sheet that was used when phone was originally programmed.

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CAUTION

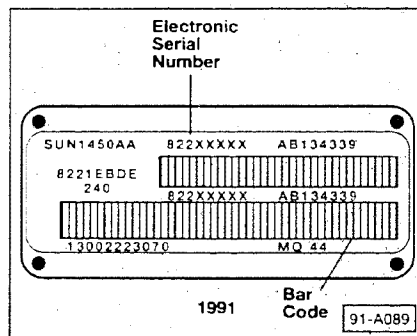
DO NOT attempt to place a call before programming the telephone **or** before the Cellular Telephone Company has activated the phone number. Activation of the phone by the Cellular Telephone Company may take until the next business day to complete.

To register telephone:

- write down eight-digit electronic serial number (ESN) of new transceiver
 - ESN starts with **82** - - - - -
 - printed on bar-code label on rear of transceiver
- obtain necessary customer provided information (phone number, unlock code, security code, etc.)
- call Cellular Telephone Company and inform representative of transceiver replacement
 - representative will ask for ESN and provide instructions and programming information
- write down necessary telephone programming information
- program telephone using information provided by both customer and Cellular Telephone Company, refer to booklet **Cellular Telephone Programming Instructions**.

If the phone won't go into programming,

- check programming sequence and review instructions for proper programming
- check speed of data entry — enter information without long pauses
- phone is locked up (after three changes of telephone number) — reset lockout counter via **32 #** command in Test Mode (using test connector **US 30844**), See Index
- phone has been previously programmed and security code is unknown/forgotten — use **55 #** command in Test Mode to review prior security code (using test connector **US 30844**), See Index



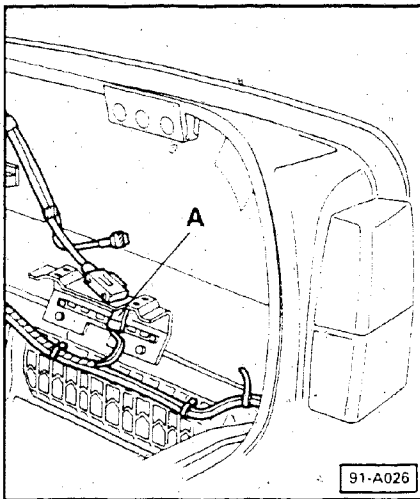
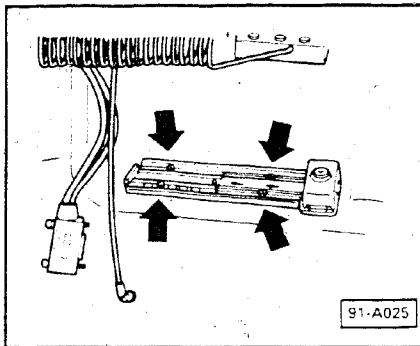
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Fuse, checking

The fuse for the telephone is located underneath the transceiver mounting bracket, below the trunk carpeting.

To replace or check the fuse:

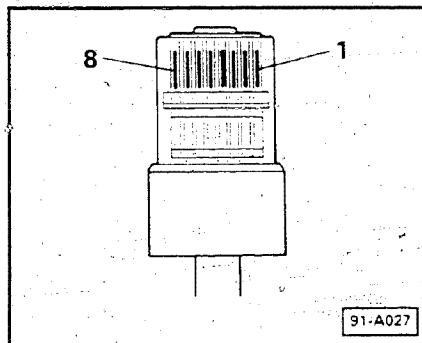
- remove telephone transceiver from mount, See Index, Transceiver, removing/installing
- remove securing screws (arrows) and remove transceiver mount



- remove right side trunk carpet securing screws and fold back carpet
 - fuse holder A mounted below transceiver bracket
- check fuse
 - 10 amp

Electrical System – Radio, Telephone, Board Computer

8-point modular connector on handset, terminal identification

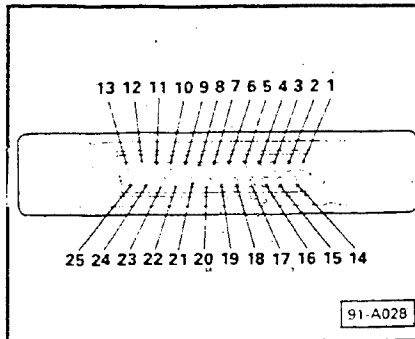


- 1— Handset logic ground (-), blue (to terminal 23 on 25-point connector)
- 2— Regulated 9.6 V (+), red (to terminal 8 on 25-point connector)
- 3— T-data communication line, purple (to terminal 11 on 25-point connector)
- 4— C-data communication line, orange (to terminal 12 on 25-point connector)
- 5— R-data communication line, yellow (to terminal 18 on 25-point connector)
- 6— Handset audio ground (-), brown (to terminal 24 on 25-point connector)
- 7— On/Off function, transmit audio, green, (to terminal 1 on 25-point connector)
- 8— Receive audio, white, (to terminal 6 on 25-point connector)

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25-point connector to transceiver, terminal identification



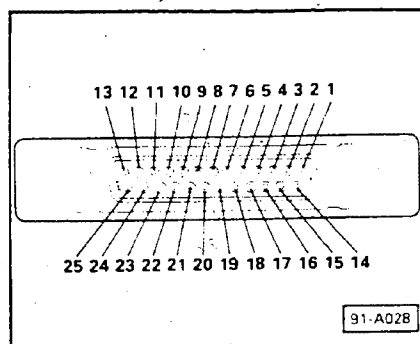
CAUTION

DO NOT damage, enlarge or bend connector pins or cavities by forcing probes into them when performing electrical checks.

Illustration at left identifies the 25-point connector as it appears on the wiring harness.

- 1— On/off function, transmit audio (to terminal 7, green, on handset)
- 2— Mobile/portable select line
- 3— Ground (-)
- 4— Plus connection (+), terminal 30
- 5— Plus connection (+), terminal 15, ignition sense lead
- 6— Receive audio to handset (to terminal 8, white, on handset)
- 7— Receiver audio opt
- 8— Regulated +9.6V (to terminal 2, red, on handset)
- 9— Accessory plus connection (+)
- 10—Auxiliary alert (not applicable)
- 11—T-data communication line (to terminal 3, purple, on handset)
- 12—C-data communication line (to terminal 4, orange, on handset)
- 13—Speaker disable line
- 14—Transmit audio shield, to hands-free microphone
- 15—Transmit audio, to hands-free microphone
- 16—Plus connection (+), terminal 30
- 17—Ground (-)
- 18—R-data communication line (to terminal 5, yellow, on handset)
- 19—Receiver audio, to hands-free speaker
- 20—Ground (-)

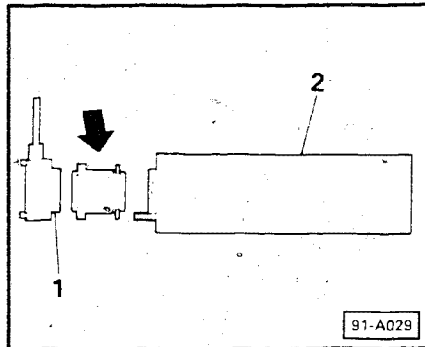
Electrical System – Radio, Telephone, Board Computer



- 21—Manual test lead (Test Mode)
- 22—Microphone mute line
- 23—Handset logic ground (-) (to terminal 1, blue; on handset)
- 24—Handset audio ground (-) (to terminal 6, brown, on handset)
- 25—Accessory ground, to hands-free speaker

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Antenna performance, checking



- insert test connector **US 30844** (arrow) in line between power cord (25-pin connector) 1 and transceiver 2
- switch ignition **ON**
- switch phone **ON** by pressing **Pwr** button on handset
- observe flashing display on handset
 - two sets of numbers will alternately be displayed; for example:

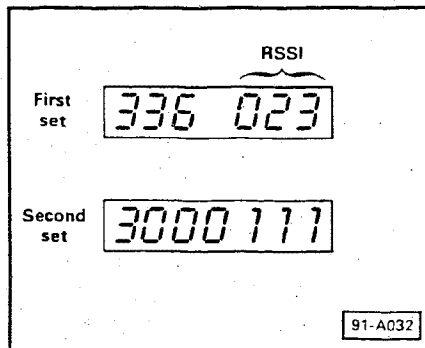
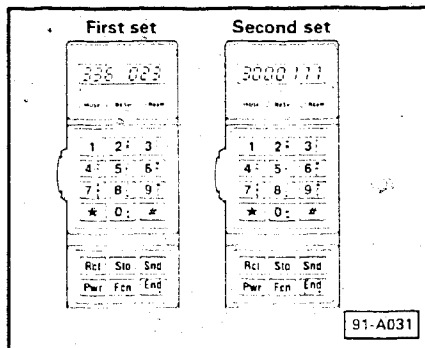
First set - "336 023"

Second set - "3000111"

Note

The first set of numbers will be constantly changing. The first three numbers on the left indicate the control channel number, and the three numbers on the right represent the Receiver Signal Strength Indicator (RSSI). The RSSI reading is used to indicate the strength of incoming signals.

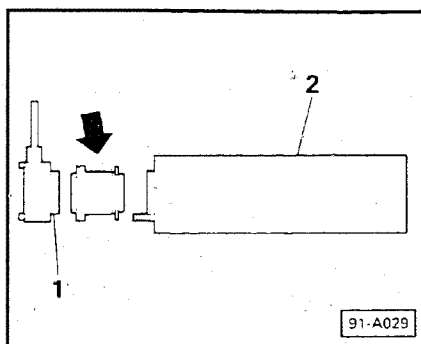
The second set of numbers represents control functions of the telephone and is not used in our diagnosis.



- with vehicle's antenna connected, read strength of RSSI readings and note an average
- turn phone **OFF**
- substitute vehicle's antenna with magnetic mount test antenna **US 30845**
- turn phone **ON**
- observe flashing display on handset
- read strength of RSSI readings and compare to average readings received from vehicle's antenna
 - RSSI reading of vehicle's antenna must not vary by more than -10 units
- replace vehicle antenna if its RSSI readings are more than 10 units below that of magnetic mount test antenna **US 30845**

Electrical System – Radio, Telephone, Board Computer

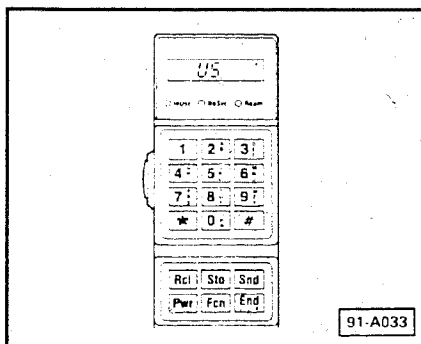
Hands-free system, checking



- insert test connector **US 30844 (arrow)** in line between power cord (25-pin connector) 1 and transceiver 2
- switch ignition **ON**
- switch phone **ON** by pressing **Pwr** button on handset
 - handset readout displays two alternating sets of numbers

Note

This procedure can also be performed with the ignition switch **OFF**. However, when the phone is switched **ON**, the display may show "**Loc'd**". To proceed, press the **#** key to enter the Test Mode directly.



- press **#** key to enter Test Mode
 - handset readout displays "**US**" with an apostrophe (') in the upper right hand corner
- enter diagnostic command **350 #** by pressing keys **3**, **5**, **0** and **#**
- enter diagnostic command **48 #** by pressing keys **4**, **8**, and **#**
- tap microphone lightly while listening to hands-free speaker
 - must hear audio from speaker
- if **NO**, refer to hands-free operation troubleshooting, See Index
- to exit test mode, switch phone **OFF**
- remove test connector

Note

All hands-free system components (microphone, speaker, wiring, etc.) are verified by successful completion of this check.

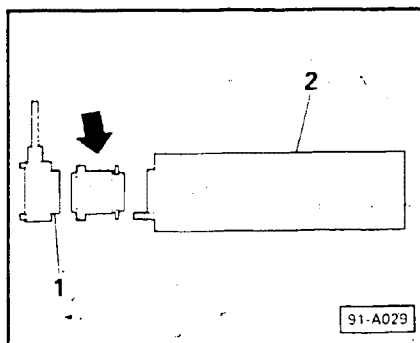
Electrical System – Radio, Telephone, Board Computer

Lockout counter, resetting (diagnostic command 32 #)

The telephone is designed to allow up to three changes of the phone number. After three changes, (and three presses of the **Snd** button) the phone will lock out any further attempts at programming.

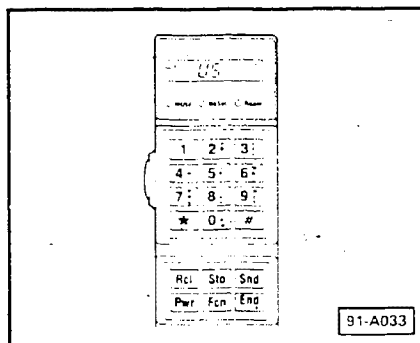
To unlock/reset phone:

- insert test connector **US 30844 (arrow)** in line between power cord (25-pin connector) **1** and transceiver **2**
- switch ignition **ON**
- switch phone **ON** by pressing **Pwr** button on handset
 - handset readout displays two alternating sets of numbers

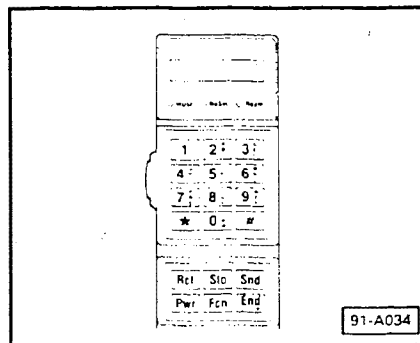


Note

This procedure can also be performed with the ignition switch **OFF**. However, when the phone is switched **ON**, the display may show "Loc 'd". To proceed, press the **#** key to enter the Test Mode directly.



- press **#** key to enter Test Mode
 - handset readout displays "US" with an apostrophe (') in the upper right hand corner
- enter diagnostic test command **32 #** by pressing keys **3**, **2**, and **#**
 - counter reset is now activated



- when counter reset is complete, handset readout displays an apostrophe (') in the upper right hand corner
- switch power **OFF** and remove diagnostic test connector

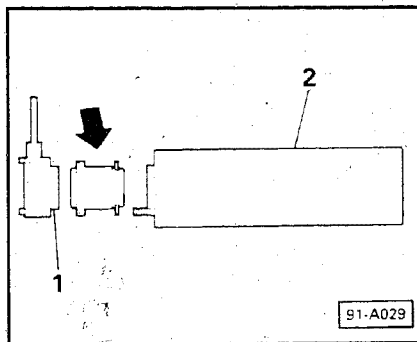
Note

The **32 #** command resets **all** user programmable features to standard and clears **all** timers and user stored memory (e.g. customer's stored personal phone numbers).

- re-program user information as necessary

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Electronic serial number (ESN), checking (diagnostic test command 38 #)

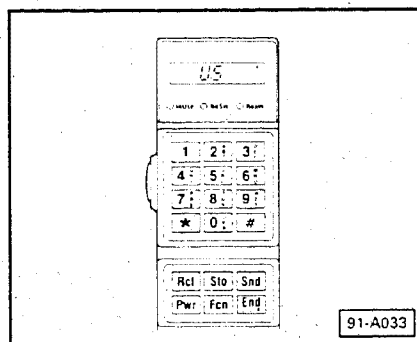


- insert test connector **US 30844** (arrow) in line between power cord (25-pin connector) **1** and transceiver **2**
- switch ignition **ON**
- switch phone **ON** by pressing **Pwr** button on handset
 - handset readout displays two alternating sets of numbers

Note

This procedure can also be performed with the ignition switch **OFF**. However, when the phone is switched **ON**, the display may show "**Loc 'd**". To proceed, press the **#** key to enter the Test Mode directly.

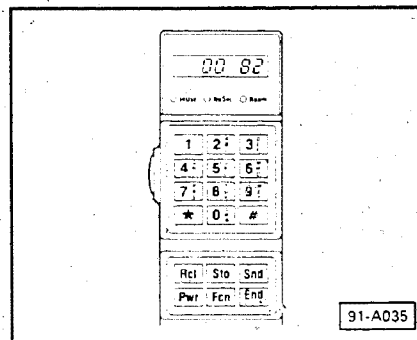
- press **#** key to enter Test Mode
 - handset readout displays "**US**" with an apostrophe (') in the upper right hand corner



- enter diagnostic command **38 #** by pressing keys **3**, **8**, and **#**
 - electronic serial number identification begins, first display is shown ("**00 82**")

Note

The electronic serial number (ESN) readout is divided into four separate displays each showing two characters of the ESN. The number on the left indicates the step of the identification process (00 through 03), and the two characters on the right indicate a portion of the ESN.



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For example:

First display: "00 82"

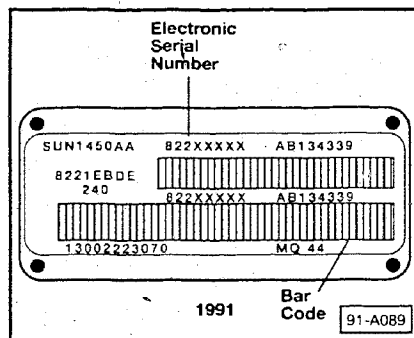
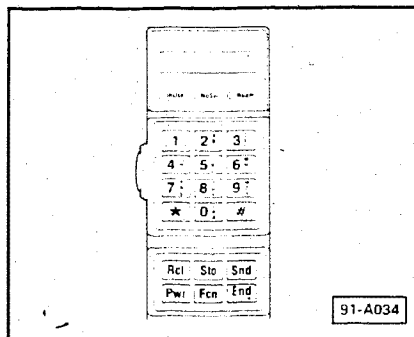
Second display: "01 0A"

Third display: "02 16"

Fourth display: "03 F7"

ESN = 820A16F7

- press * key to advance from display to display
 - repeated pressing of * button will cycle displays (00 to 03) continuously
- write down each part of ESN (two characters) at each step
- press # key to exit test mode
 - handset readout displays an apostrophe (') in the upper right hand corner



- turn phone **OFF** and remove test connector
- compare displayed ESN to ESN printed on bar-code label on rear of transceiver

If displayed ESN does not match printed ESN by one or two digits

- contact Cellular Phone Company and make arrangements to activate correct (displayed) ESN

If displayed ESN is scrambled and does not resemble printed ESN

- replace transceiver

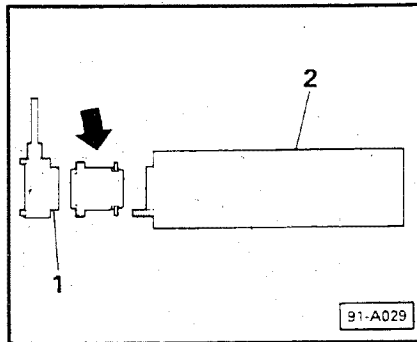
CAUTION

Each transceiver has its own electronic serial number (ESN). **ALWAYS** register a new transceiver with the Cellular Telephone Company before placing a call.

Electrical System – Radio, Telephone, Board Computer

Security code, identifying (diagnostic test command 55 #)

Use the following procedure when phone programming is not possible due to an unknown or forgotten six-digit security code. This procedure is also used to determine a forgotten lock code or phone number.

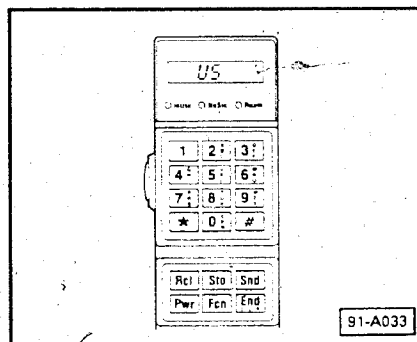


- insert test connector **US 30844** (arrow) in line between power cord (25-pin connector) 1 and transceiver 2
- switch ignition **ON**
- switch phone **ON** by pressing **Pwr** button on handset
 - handset readout displays two alternating sets of numbers

Note

This procedure can also be performed with the ignition switch **OFF**. However, when the phone is switched **ON**, the display may show "Loc 'd". To proceed, press the # key to enter the Test Mode directly.

- press # key to enter Test Mode
 - handset readout displays "US" with an apostrophe (') in the upper right hand corner
- enter diagnostic command 55 # by pressing keys 5 , 5 , and #
 - test mode programming begins on step one

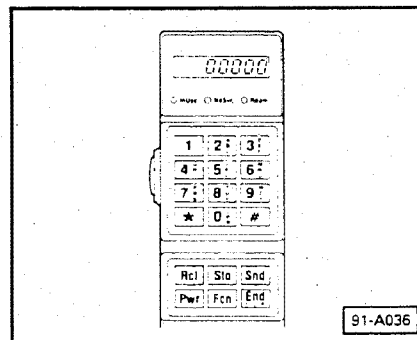


- five-digit system identification number is displayed (for example, "00000")

Note

Sixteen different steps, each containing telephone programming information, can be displayed during this test mode. See chart, two pages following.

- * key — advances to next programming step
- # key — exits program mode
- press * key six times to display six digit security code (step 7)

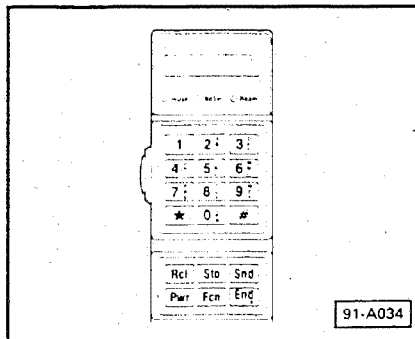


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Note

Press * key two times to display phone number (step 3) or seven times to display three-digit unlock code (step 8).

- write down needed information
- press # key to exit test mode
 - handset readout displays an apostrophe (') in the upper right hand corner
- switch phone **OFF** and remove test connector



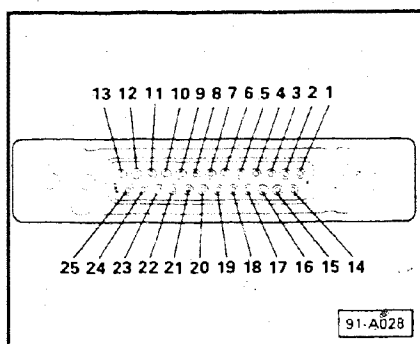
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Test mode programming chart (55 #)

Step number	Display description	Standard display
1	System identification number (five digits)	00000
2	A option byte (eight digits) (first digit will not appear on display)	(1)0101101
3	Phone number (seven digits displayed)	(111)1110111
4	Station class mark (two digits)	12
5	Access overload class (two digits — from system provider)	00
6	Group I.D. mark (two digits — from system provider)	00
7	Security code (six digits — user decides)	000000
8	Unlock code (three digits — user decides)	123
9	Service level (see user's manual for call restrictions)	004
10	B option byte (eight digits) (first digit will not appear on display)	(0)0000100
11	C option byte (eight digits) (first digit will not appear on display)	(0)0001000
12	Initial paging channel ("0333" or "0334")	0XXX
13	Initial paging channel for "A" system	0333
14	Initial paging channel for "B" system	0334
15	Number of dedicated paging channels (always 21 in U.S.)	021
16	D option byte (eight digits) (first digit will not appear on display)	(0)0000001

Electrical System – Radio, Telephone, Board Computer

Telephone does not switch ON



CAUTION

DO NOT damage, enlarge or bend connector pins or cavities by forcing probes into them when performing electrical checks.

- leave ignition switch **OFF**
- disconnect 25-point connector from transceiver
- set multimeter **US 1119** to volt scale
- measure power at terminals 4 and 16 of 25-point connector
 - approximately battery voltage

Yes

No

Go to
Ⓐ
next page

- switch ignition **ON**
- measure power at terminal 5 of connector
 - approximately battery voltage

Yes

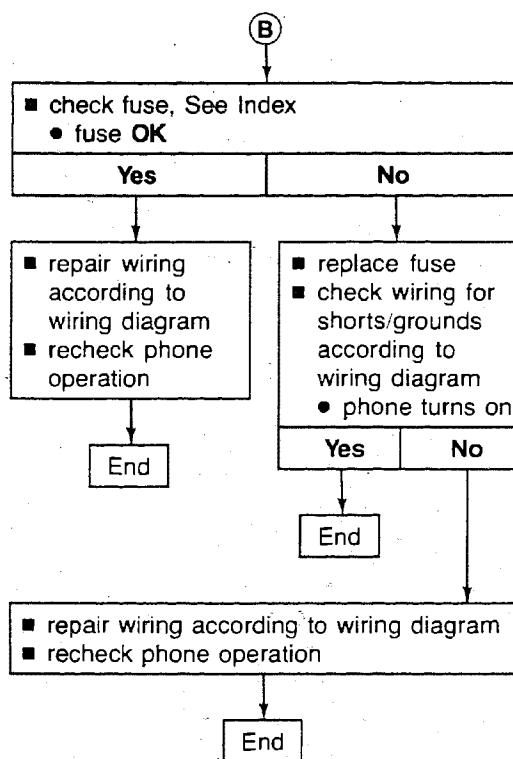
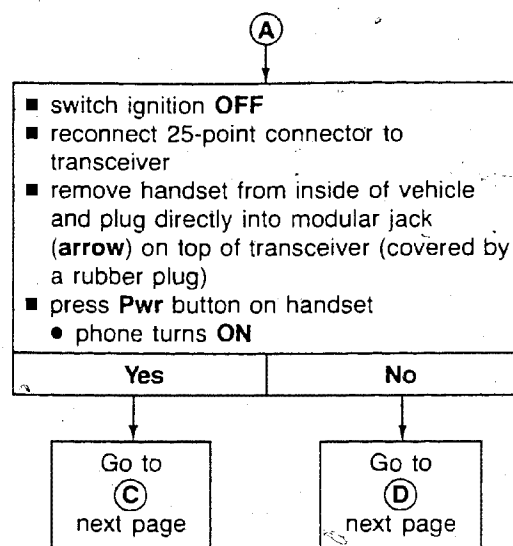
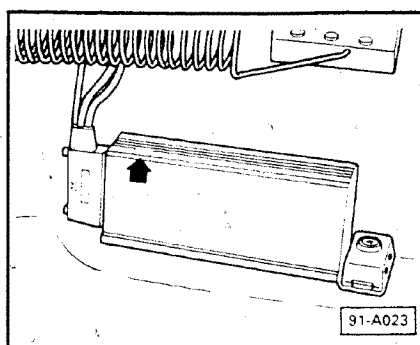
No

Go to
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next page

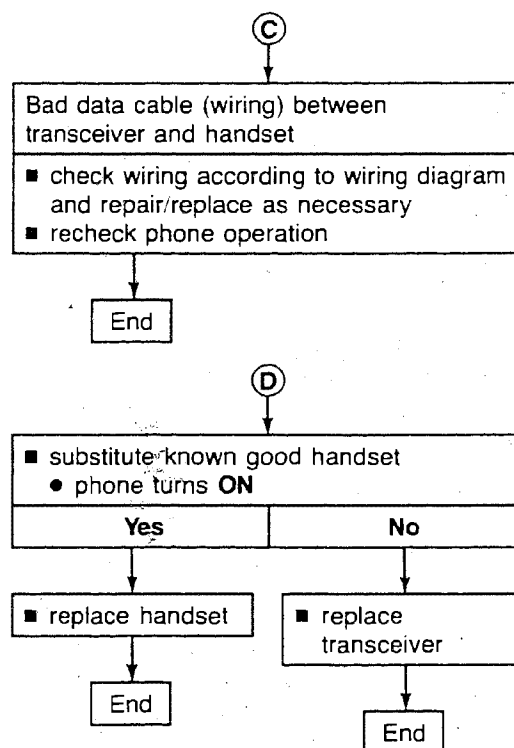
- repair wiring according to wiring diagram
- recheck phone operation

End

Electrical System – Radio, Telephone, Board Computer



Electrical System – Radio, Telephone, Board Computer

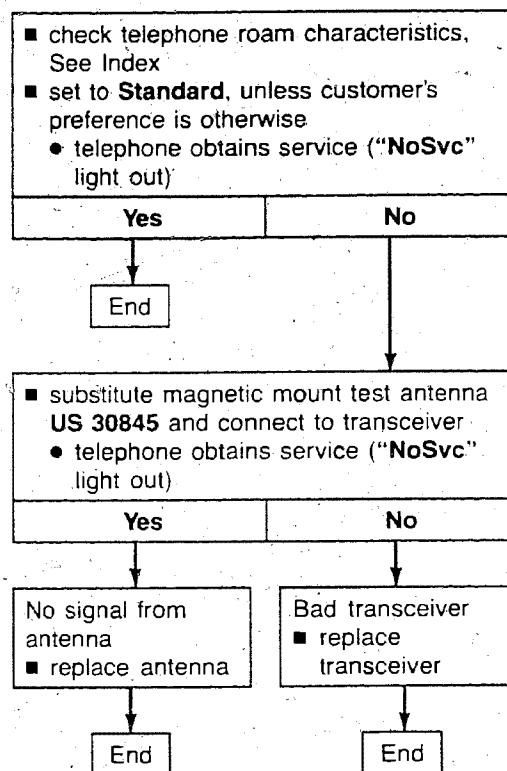


CAUTION

Each transceiver has its own electronic serial (ESN). **ALWAYS** register a new transceiver with the Cellular Telephone Company before placing a call.

Electrical System – Radio, Telephone, Board Computer

"NoSvc" light stays on

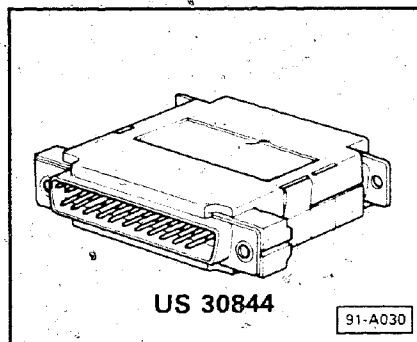


CAUTION

Each transceiver has its own electronic serial number (ESN). **ALWAYS** register a new transceiver with the Cellular Telephone Company before placing a call.

Electrical System – Radio, Telephone, Board Computer

Fast busy signal or recording received when placing calls



■ call system provider to ensure Electronic Serial Number (ESN) is activated	
● number activated	
Yes	No

■ make arrangements with Cellular Phone Company to activate number
--

End

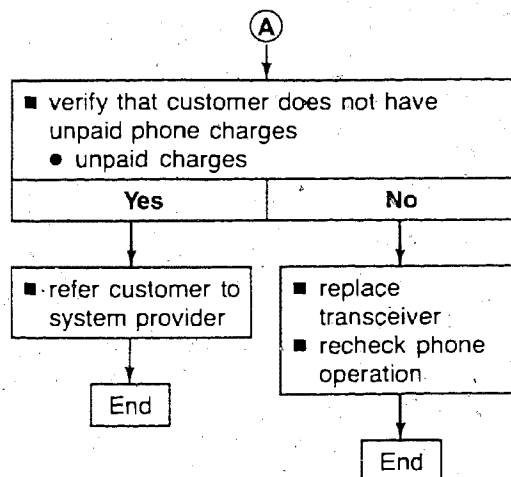
■ verify that activated ESN is correct by using 38 # command in Test Mode (using test connector US 30844), See Index, Electronic Serial Number, checking	
● number correct	
Yes	No

Go to
Ⓐ
next page

■ make arrangements with Cellular Phone Company to activate correct number
--

End

Electrical System – Radio, Telephone, Board Computer

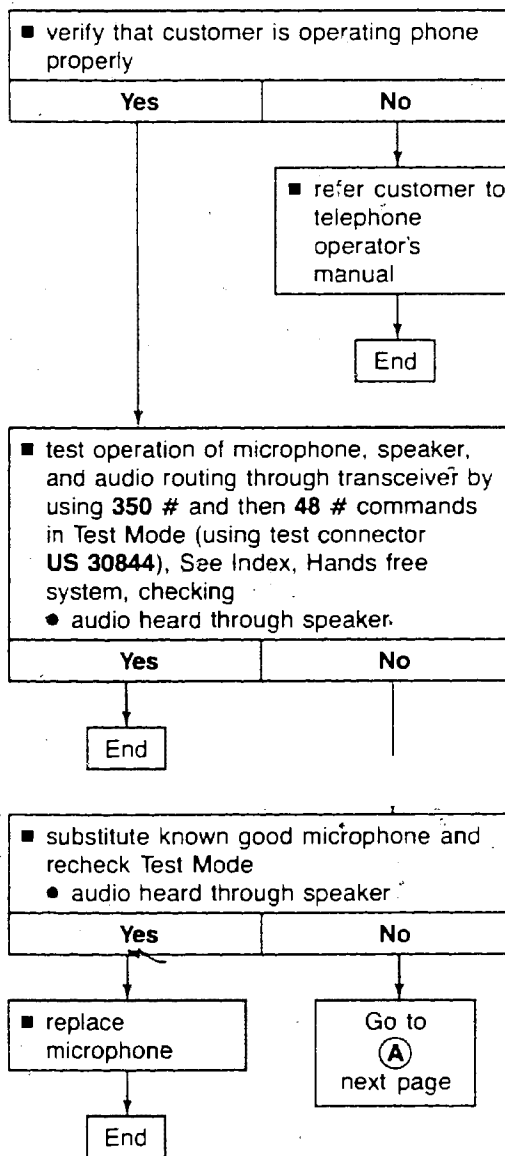
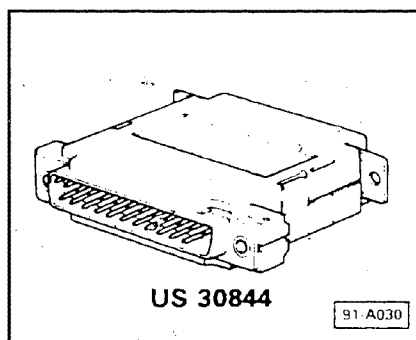


CAUTION

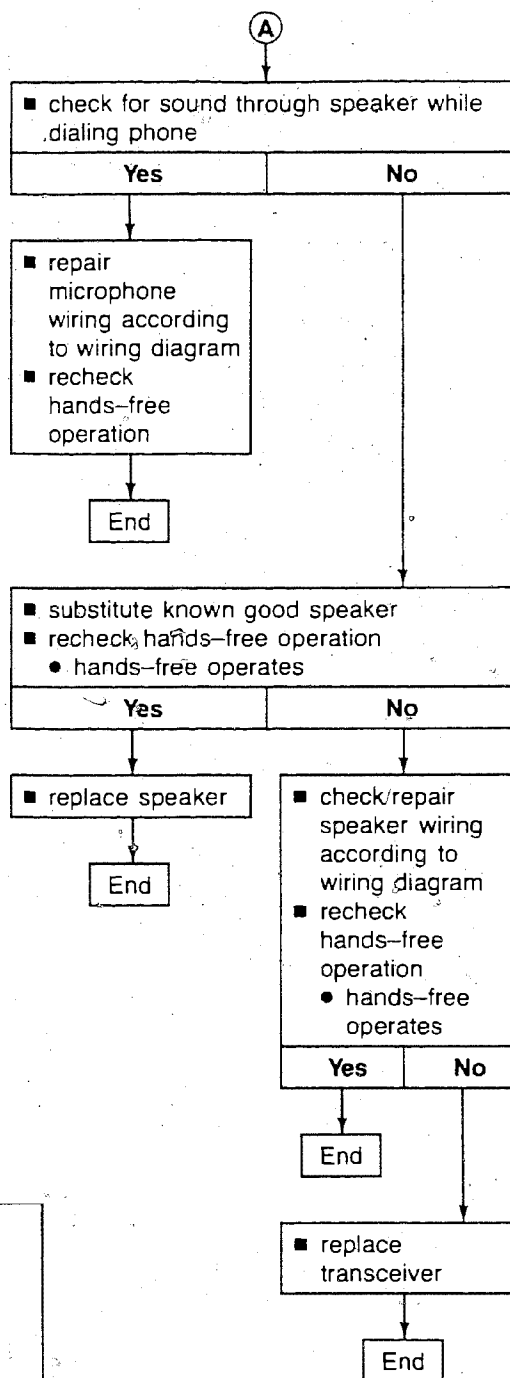
Each transceiver has its own electronic serial number (ESN). **ALWAYS** register a new transceiver with the Cellular Telephone Company before placing a call.

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Telephone does not operate in hands-free mode



Electrical System – Radio, Telephone, Board Computer



CAUTION

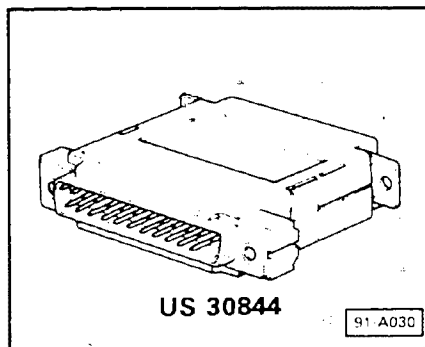
Each transceiver has its own electronic serial number (ESN). **ALWAYS** register a new transceiver with the Cellular Telephone Company before placing a call.

Electrical System – Radio, Telephone, Board Computer

Static on calls

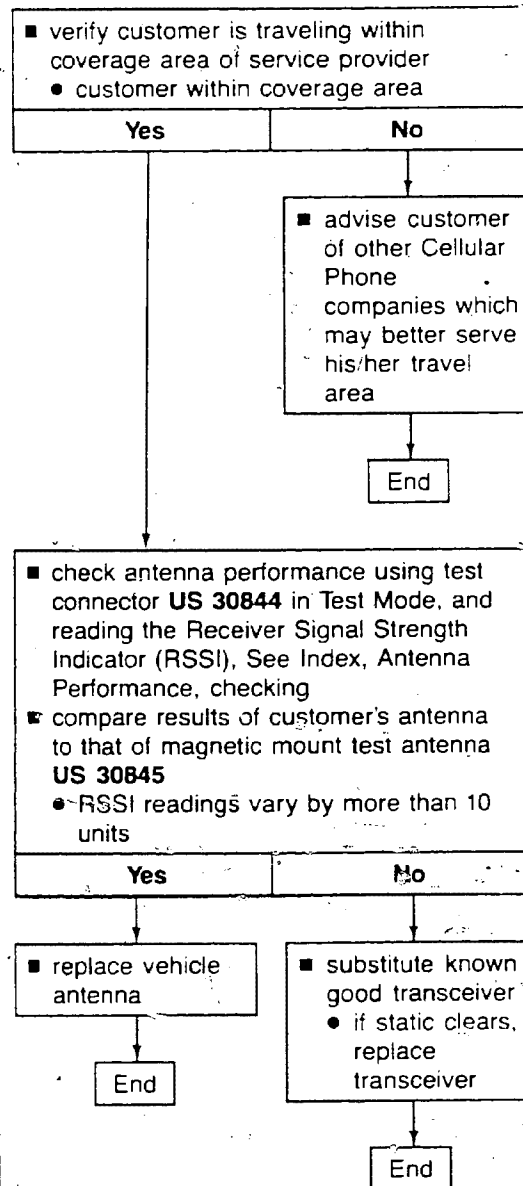
Note

The cellular telephone communicates via radio frequencies and is susceptible to reception problems much like that of a car radio.



CAUTION

Each transceiver has its own electronic serial number (ESN). **ALWAYS** register a new replacement transceiver with the Cellular Phone Company before placing a call.

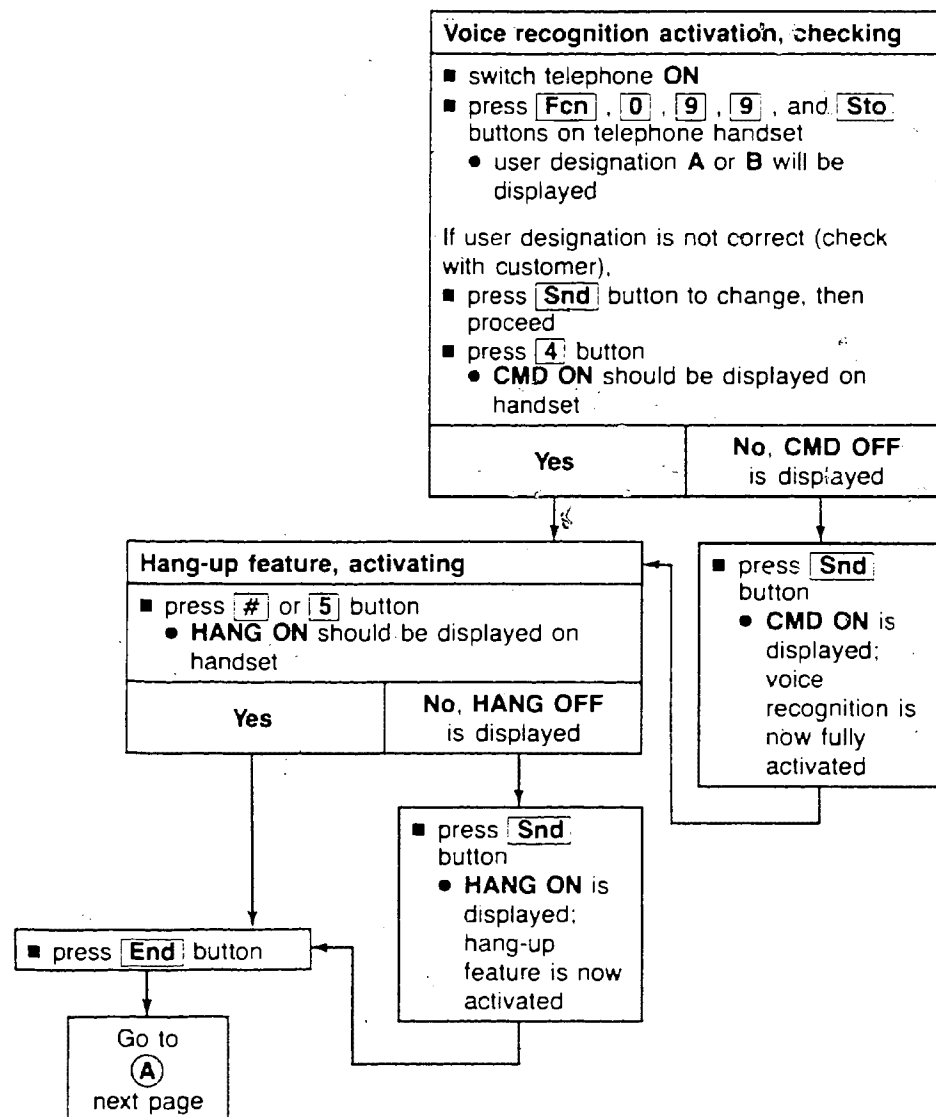


Electrical System – Radio, Telephone, Board Computer

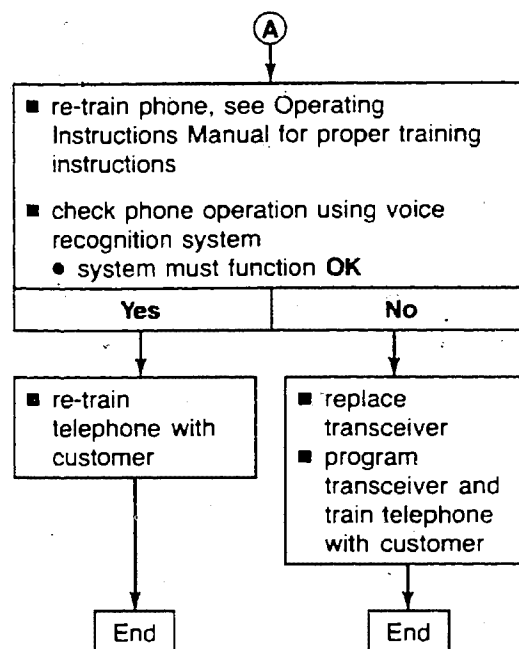
Telephone does not respond to voice commands (Voice recognition does not work)

Test requirements

- hands-free system **OK**
- verify customer is operating and training voice recognition system properly
- always refer to Operating Instructions Manual for proper programming and training instructions
- ensure handset is hung up (system will not work if handset is off cradle)



Electrical System – Radio, Telephone, Board Computer



CAUTION

Each transceiver has its own electronic serial number (ESN). **ALWAYS** register a new transceiver with the Cellular Telephone Company before placing a call.