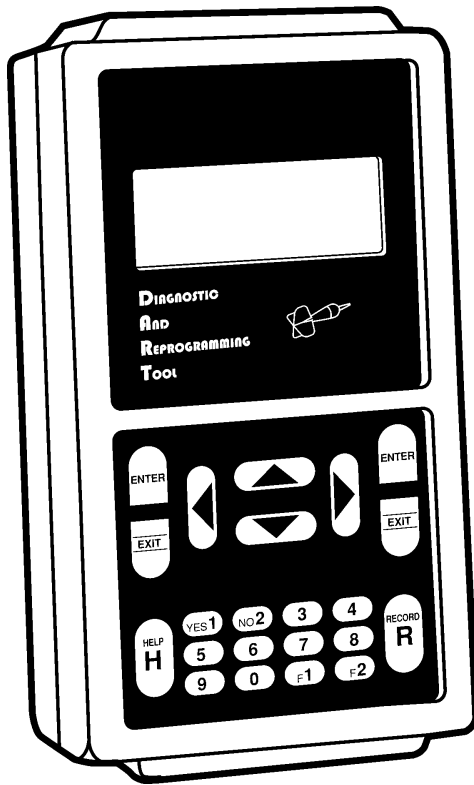


DIAGNOSTIC AND REPROGRAMMING Tool



USER'S MANUAL
VERSION 3.0

SPX **OTC**

IMPORTANT NOTICE

SAFETY

All Danger, Warning and important notes must be followed for your safety. These safety messages will be in the following formats:

- **Danger** means you may risk possible loss of life;
- **Warning** means you may risk bodily harm;
- **Important** means you risk damage to the vehicle or the tool;
- **Notes** are added to provide clarity and helpful tips.

These safety messages cover situations SPX is aware of. SPX cannot know, evaluate and advise you as to all of the possible hazards. You must be certain that your personal safety is not jeopardized by any conditions or service procedures encountered.

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DISCLAIMER

All information, illustrations, and specifications contained in this technical instruction manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without obligation to notify any person or organization of such revisions or changes. Further, SPX shall not be liable for errors contained herein or for incidental or consequential damages (including lost profits) in connection with the furnishing, performance or use of this material.

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Precautions

Danger

- When an engine is operating, keep the service area **WELL VENTILATED** or attach a building exhaust removal system to the engine exhaust system. Engines produce carbon monoxide, an odorless, poisonous gas that causes slower reaction time and can lead to serious injury or death.



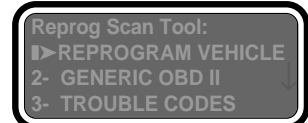
Warning

- Set the parking brake and block the wheels before testing or repairing the vehicle. It is especially important to block the wheels on front-wheel drive vehicles because the parking brake does not hold the drive wheels.
- Be sure there is adequate clearance between any moving components when testing. Moving components and belts can "catch" loose clothing, parts of your body or the test equipment and cause serious damage or personal injury.
- Wear an ANSI approved eye shield when testing or repairing vehicles. Objects can be propelled by whirling engine components and liquids escaping under pressure can cause serious injury.
- Automotive batteries contain sulfuric acid and produce explosive gases that can result in serious injury. To prevent ignition of gases, keep lighted cigarettes, sparks, flames, and other ignition sources away from the battery at all times. If you are using the battery as a power source, connect the **RED (+)** battery clip to the positive vehicle battery terminal and connect the **BLACK (-)** battery clip to a good ground away from the battery.



Important:

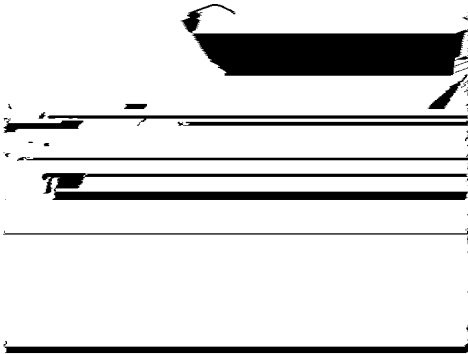
- Do not leave the tool for prolonged periods in the direct sunlight, the display may darken due to excess heat.



Welcome

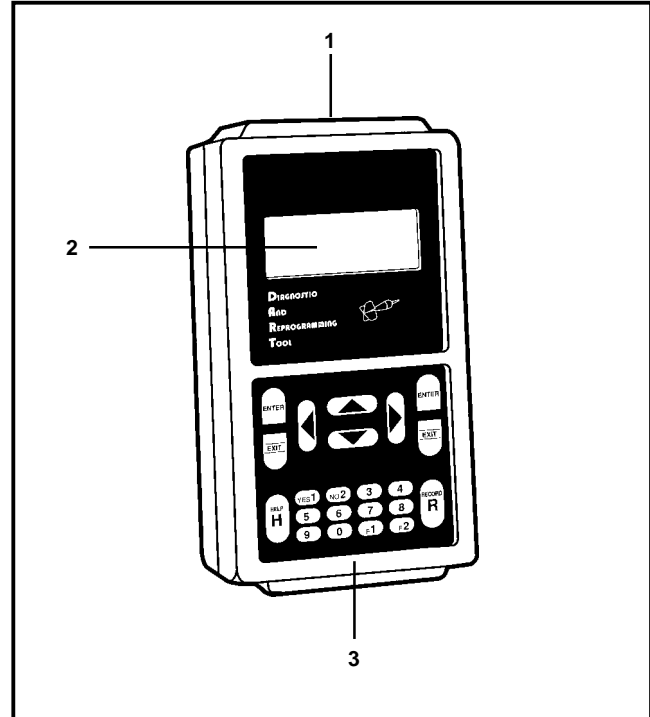
The Diagnostic and Reprogramming Tool (D.A.R.T.) is designed to reprogram vehicle controller software programs or change function settings on a Chrysler vehicle easier and faster. This tool is designed to access the following areas:

- **Reprogramming**—when Chrysler releases software updates for vehicle controllers, or when additional functions and capabilities are added to the D.A.R.T. programming, you have the ability to update a vehicle or tool program with the software you download from the OTC Bulletin Board System
- **Reset Customer Preferences**—comfort and convenience features on Chrysler vehicles can be changed to meet the customer's desires. Turn warning chimes on or off, enable or disable automatic door locks, set the headlights to come on with the windshield wipers, and more.
- **Locksmith Function**—many new Chrysler vehicles are equipped with a Sentry Key Immobilizer System (SKIS). This system uses a vehicle immobilizer to prevent vehicle theft. D.A.R.T. can program the SKIS driver's key to the vehicle or erase the key from the vehicle system if it is lost or stolen.
- **Diagnostic Trouble Code Reader**—Read and erase Diagnostic Trouble Codes (DTCs) on generic OBD II systems plus 1989-'98 Chrysler Engine Management Systems, SIR, BODY and many other Chrysler systems.



D.A.R.T. Basics

The D.A.R.T. is an easy-to-use test instrument that will stand up to rugged use. Take a moment to familiarize yourself with the basic functional areas.



1. **DB25 Port** – Adapter cables plug into the DB25 port.
2. **Display Window** – display data and messages to the user.
3. **Keypad** – enter data and reply to tester messages. Keys listed perform the following functions:
 - **UP/DOWN arrow keys**—press to move through menus or move the Selector Cursor up or down.
 - **LEFT/RIGHT arrow keys**—press to move the Selector Cursor left, right, or move screen by screen through the menus.
 - **F1/F2 keys**—future option.
 - **ENTER keys**—enter your command into the tester.
 - **EXIT keys**—go back to the previous menu or test.
 - **HELP key**—display additional information.
 - **RECORD key**—future option

Figure 1.1: D.A.R.T.

Cable Connection Error Messages

The D.A.R.T. produces an error message when it does not get a signal response (Fig. 1.2).

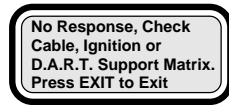


Figure 1.2: Error Message

An error may occur for the following reasons:

- Poor connection: Check all cables and connections for a tight fit and try again.
- Low battery voltage: Recharge the battery.
- Wrong cable used to connect to the Data Link Connector: Verify that the correct cable is used.
- Under certain circumstances the vehicle may lose communications with the D.A.R.T. tool. Switch the vehicle ignition off, wait 15 seconds and then switch the ignition on.

Program Icons

Program icons signal when functions are available or must be used to access more information.

- The Arrow Icon means more information is available. Press the ↓ or ↑ key to view the next screen.



Figure 1.3: Arrow Keys

- Press the HELP key to view additional instructions or information.



Figure 1.4: Help

- Move the Selector Cursor with the ↓ or ↑ arrow key to position it beside an option you want to select, and then press ENTER.

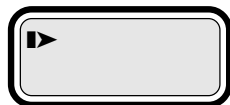


Figure 1.5: Selector

Typical Cable Setup

1. Refer to *Cable Connections Locations* in the Appendix to determine which cables are required to connect the tool to the vehicle and to determine where the connector is located on the vehicle.
2. Connect the cables to the D.A.R.T. and to the vehicle Data Link Connector or to the controller.

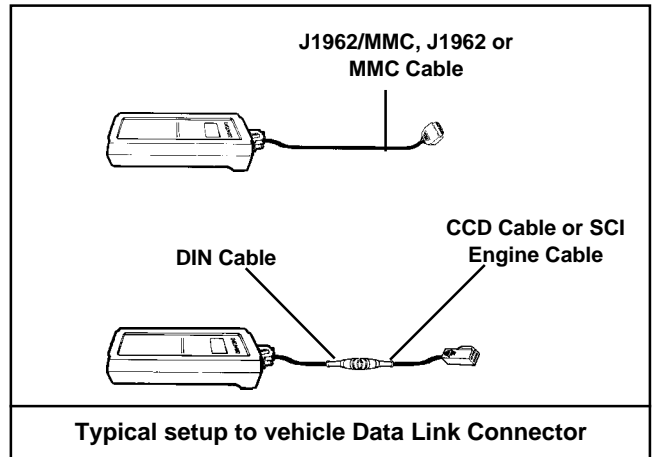


Figure 1.6: Data Link Connector Cable Setup

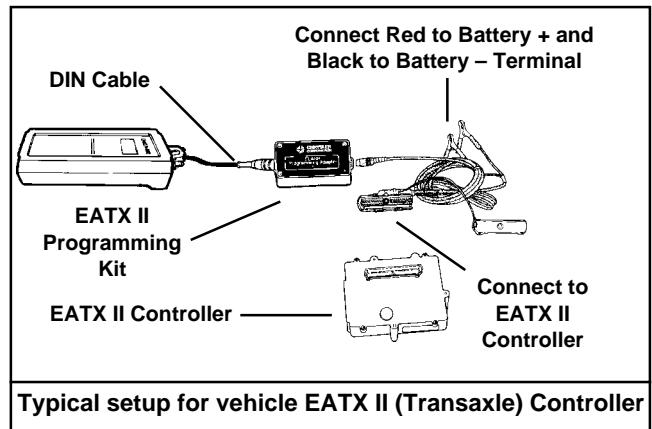


Figure 1.7: EATX II Controller Setup

3. Supply power to the tool, the program will automatically initialize and identify the vehicle.

Power is supplied to the D.A.R.T. when the cable is connected to the Data Link Connector (DLC), the controller, or when the cable battery clamp (if so equipped) is connected to the battery.

Read Me First: Registration and Software Update

Before you can use all of the features of your D.A.R.T., you must first perform two steps to set up your D.A.R.T. Tool:

- Register your subscription on the OTC Bulletin Board System (BBS).
- Download the D.A.R.T. program software to update your D.A.R.T. into a fully operational tool.

How to Register

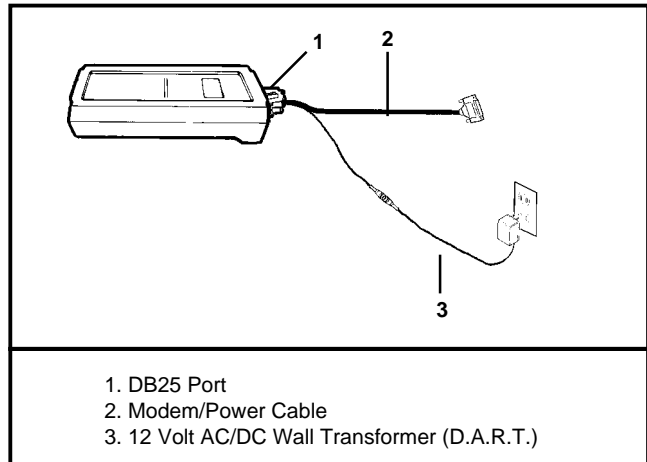
For immediate registration, telephone 800-926-9430 and provide the information required from the D.A.R.T. Registration form, or fax your D.A.R.T. Registration form to 800-283-8665 for activation within 24 hours.

Figure 1.8: Registration Form

How to Update D.A.R.T. Software

Set up the D.A.R.T. with a modem to communicate with the OTC Bulletin Board Service (BBS).

1. Attach the Modem/Power Cable to the D.A.R.T. DB25 Port (see Fig. 1.9).



1. DB25 Port
2. Modem/Power Cable
3. 12 Volt AC/DC Wall Transformer (D.A.R.T.)

Figure 1.9: D.A.R.T. Setup

2. Supply DC power (Item 3) to the D.A.R.T., as illustrated (see Fig 1.9).

The DART will initialize the program and display a Main Menu when power is supplied. Press the ↑ or ↓ key to position the Selector Cursor beside SYSTEM CONFIG, and press ENTER to select it.



Figure 1.10: Main Menu

IMPORTANT: The Locksmith option for the D.A.R.T. tool relates only to the SKIM FUNCTION and the SYSTEM CONFIG(uration) function even though the entire menu structure for the DART tool is displayed.

3. Turn telephone service Call Waiting features off, or go to step 4 if you DO NOT have Call Waiting.

How to Turn Call Waiting off:

Call Waiting telephone services must be turned off to prevent disruption of data during a download from the BBS.

Your Call Waiting Code may be different than the standard call waiting code set as a default. Your applicable call waiting defeat code is generally listed in your area telephone book, or call your local telephone service to find out what it is.

CONTINUED ON NEXT PAGE...

The steps to turn Call Waiting off are:

- Select DIAL PREFIX CODE from the SYSTEM CONFIG menu (See Fig 1.11).

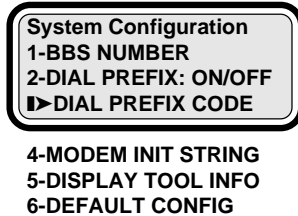


Figure 1.11: System Configuration

- Enter your Call Waiting Defeat Code if it is different than the pre-set *70: Press the ← or → key to move the cursor left or right, press the ↑ or ↓ key or key in the number to change the setting. Press ENTER to save changes (See Fig. 1.12).

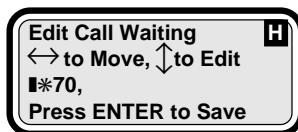


Figure 1.12: Edit Call Waiting

- Select DIAL PREFIX:(ON or OFF) from the SYSTEM CONFIG menu, and then press ENTER to toggle the DIAL PREFIX:(ON or OFF) to display DIAL PREFIX:ON

Call Waiting will be restored, for most telephone services, when you disconnect from the BBS. Some older telephone systems may not automatically reconnect and will require a specific Call Waiting reconnect routine as provided by the telephone service provider.

Note: The Dial Prefix-Off setup will automatically turn the Call Waiting off each time you connect to the BBS unless you change the setting.

4. Add an “outside line” number to the BBS dial-up number sequence, or go to step 5 if you DO NOT have an internal telephone system that requires a number before you can call outside your internal telephone system.

How to Change the BBS Dial-Up Number:

A dial-up number can be changed or numbers, pauses and symbols may be added to select an outside telephone line from within an internal telephone system.

The steps to change the BBS dial-up sequence are:

- Select BBS NUMBER from the SYSTEM CONFIG menu (See Fig 1.13).

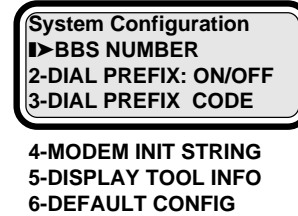
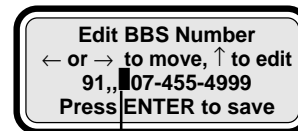


Figure 1.13: System Configuration

- Press the ← or → key to position the cursor.
- Key in the number or press ↓ or ↑ to scroll the correct number in place.
- Place one comma for each one second delay, if required. Spaces and hyphens are ignored during dialing.
- Press ENTER to save changes.



Cursor

Figure 1.14: Edit Screen

5. Add any modem initiation changes required for access through your telephone; for example, you may have a pulse telephone instead of the standard tone telephone, or additional codes are required to go through your telephone service provider. **SKIP STEP 5 and go to step 6 if you have a standard tone telephone system and no special conditions are required by your telephone service provider.**

How to Change the Initiation String:

Communication with your telephone service provider sometimes requires that additional codes be set in the dial-up string: For example, change the setting to support a pulse telephone by adding P to the modem initialization string (AT&F0 to AT&F0P). please refer to the manual included with the modem for a complete listing of code variations available to complete the initiation string.

The steps to change the initiation string sequence are:

- Select MODEM INIT STRING from the System Configuration menu.
- Press the ← or → key to position the cursor.
- Key in the number or press ↓ or ↑ to scroll the correct number or letter in place.
- Press ENTER to save changes.

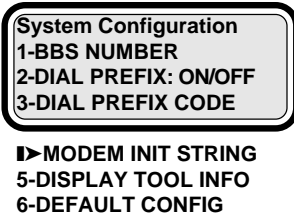


Figure 1.15: System Configuration Screen

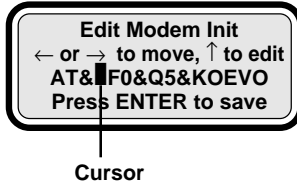


Figure 1.16: Modem Initiation Configuration Screen

- Turn the DART off by disconnecting it from the 12 volt wall transformer.
- Connect the D.A.R.T. to the modem as illustrated in Fig. 1.17. Supply power to the modem with the 9 volt wall transformer.

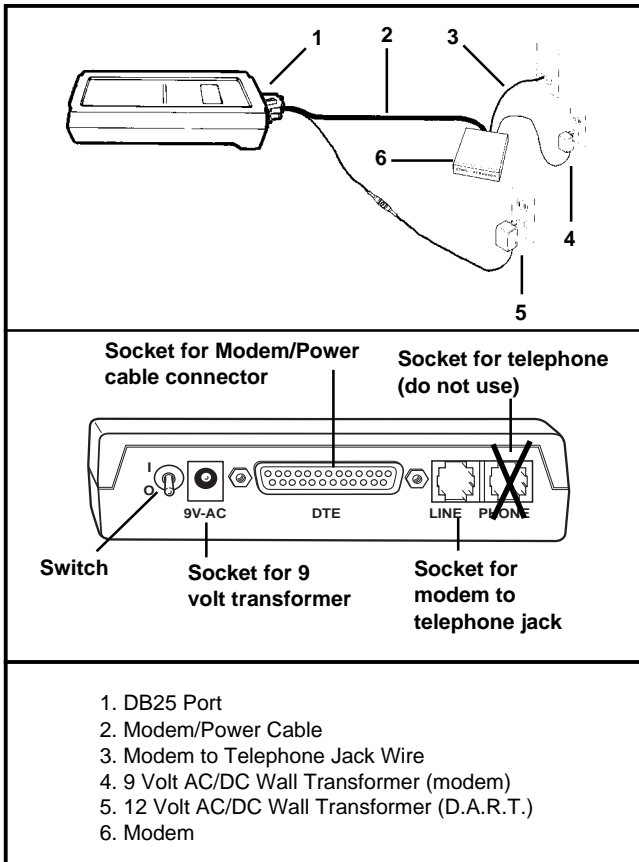


Figure 1.17: D.A.R.T. and Modem Setup

- Connect the modem to an analog telephone line.
- Turn on the modem switch, the modem will automatically initialize itself.
- Turn the DART on by connecting it to the 12 volt wall transformer.

The DART will initialize a startup procedure and recognize the modem setup. A dial-in routine will begin, progress screens will keep you informed and a screen will show when you are connected to the server. Press ENTER to continue the update process or EXIT to quit.

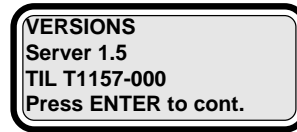
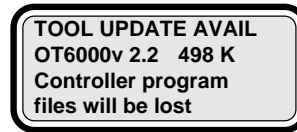


Figure 1.18: Server Screen

A TOOL UPDATE available screen will appear next.



update may take 20 minutes.
 Press ENTER to Load
 Press EXIT to cancel

Figure 1.19: Tool Update Screen

You will also see a message stating that controller files will be lost. *This is not applicable to this update.* Press ENTER to load the update or EXIT to quit.

Note: Updates may take up to 20 minutes. The condition of your telephone line affects the download transfer rate.

BBS Connection Error Messages:

The D.A.R.T. produces an error message when it does not get a signal response.

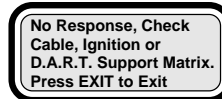


Figure 1.20: Error Message

Press EXIT to reconnect to the BBS. If the error continues, unplug the wall transformer for the D.A.R.T., the modem, and also detach the cables. Check to be sure you are plugged into an analog telephone line. Re-attach the cables, wall transformers and try again. If the error persists, call technical service at 800-533-6127.

How to Update a D.A.R.T. Manual

As future updates to the D.A.R.T. operating system are made available for download to your tool, the D.A.R.T. User's Manual will also be made available for download to your computer. Simply access the OTC World Wide Web site located at <http://www.otctools.com> and click on the Product Manuals icon to download an updated User's Manual. You may also order an updated User's Manual through your SPX/OTC tool supplier.

How to Update a Controller

Chrysler software updates for engine or transmission controllers can be performed with the D.A.R.T. But first, there are documentation and labeling issues that you must be aware of before you update a vehicle controller.

Required Documentation

Updates to software for engine or transmission controllers are published in Chrysler Technical Service Bulletins (TSBs). A Chrysler Technical Service Bulletin must specify that a control module update is required before you may reprogram any engine or transmission controller. In addition, there may be laws that specify what documentation is required before you can reprogram a vehicle controller.

Once the controller software is updated, you must place an Authorized Software Update Label on the vehicle controller and an Authorized Modification Label beside the Vehicle Emission Component Information (VECI) label.

Additional vehicle component replacement—if required with the controller update—is also specified on the same TSB. It is important that the entire TSB be read and all requirements carried out to ensure that all components of the update are completed.

To Get Technical Service Bulletins

Technical Service Bulletins (TSB) are prepared by the Chrysler Corporation and then distributed to Chrysler Dealerships. Your local Chrysler Dealership is your best source for TSBs that specifically address any drivability problems and corrective actions. Additional sources are:

- Chrysler Training Publications
- Service information resources such as OTC Drivability TSB Manuals
- Federal Government World Wide Web site located at <http://www.Fedworld.gov/cleanair/search.htm>

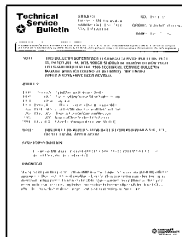


Figure 2.1: Technical Service Bulletin

About Cable Setup

The D.A.R.T. cable setup configuration requires one setup to connect the tool to the OTC Bulletin Board System (BBS) to download programming information and a second setup to connect the tool to the vehicle controller or Data Link Connector (DLC). To determine which cable is required for your application, Refer to *Cable Connector Locations* in the Appendix.

How do I Update a Controller

Step 1: Connect the D.A.R.T. to the vehicle controller to determine the controller part number.

1. From the **Main Menu** screen, press the ↓ key until the ► icon points to **VEHICLE ID**, and then press ENTER to select.



Figure 2.2: Select Vehicle

2. From the **Vehicle ID** menu, select **READ ENGINE ID #** or **READ TRANS ID #**, and then press ENTER to select.

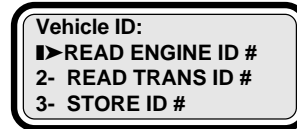


Figure 2.3: Select Store ID Number

The DART will read and display the Controller Identification number. Exit the ID screen and go to the next step.

3. From the **Vehicle ID** menu, select **STORE ID #**, and then press ENTER to select.

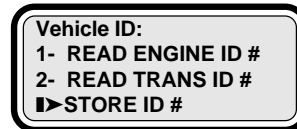


Figure 2.4: Select Store ID Number

The tool will save the data into memory. Press EXIT twice to return to the Main Menu screen.

4. **Detach the cable from the tool.**

Step 2: Connect the D.A.R.T. to the BBS.

5. Attach the Modem/Power Cable to the DART DB25 Port and to the Modem (see Fig. 2.5).

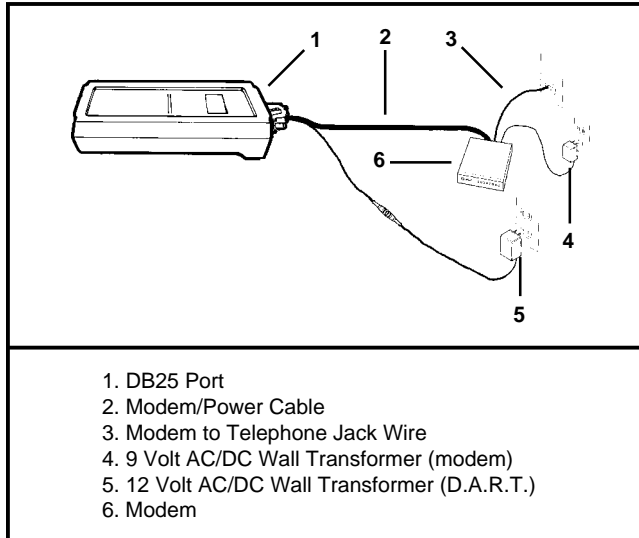


Figure 2.5: D.A.R.T. and Modem Setup

6. Supply DC power (Item 5) to the D.A.R.T., as illustrated.

The DART will initiate a Main Menu display when power is supplied.

Note: Call Waiting service—if you have this feature for your telephone line— should have been turned off when you registered and updated your D.A.R.T. software. The DART setup for the Bulletin Board System (BBS) will automatically turn the call waiting off again until you finish communicating with the BBS.

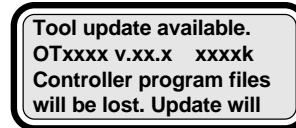
7. Connect the D.A.R.T. to the modem as illustrated in Fig. 2.5. Supply power to the modem with the 9 volt wall transformer: The modem will automatically initialize itself, and then dial into the BBS.

Note: If there is an ERROR response, press EXIT and retry. If the error continues, unplug the wall transformers, the modem, and also detach the cables; reattach the cables, wall transformers and try again. If the error persists, call technical service at 800-533-6127.

The BBS will check the revision level of the D.A.R.T. software. It will notify you if there is an update and let you make the choice if you want to automatically update the D.A.R.T. software. Press EXIT if you want to update at a later date.

Important: a D.A.R.T. update erases all controller update files stored in the D.A.R.T. Directory List.

Note: There are no controller update files stored in the tool if this is the first time you are getting controller update files from the BBS.



take up to 20 minutes.
Press ENTER to load
Press EXIT to cancel

Figure 2.6: Warning Screen

Tool update time may vary significantly due to variations in the telephone line quality.

8. The BBS will offer two options for submission of controller update information, select one:

- **DIRECT PART NUMBER**—Submit the controller part number stored in memory to the BBS, or enter a number manually (press ← or → to position the cursor, press ↓ to ↑ change the number).
- **VEHICLE DESCRIPTION**—Enter a vehicle description to be submitted to the BBS.



Figure 2.7: Submit Options

If DIRECT PART NUMBER is selected: A screen to verify the number or request additional vehicle option information will be displayed before the download program is initiated.

If VEHICLE DESCRIPTION is selected: A series of screen queries will be displayed. An accurate response to each query is required.

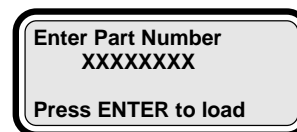


Figure 2.8: Direct Part Number

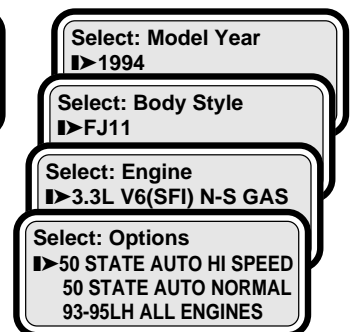


Figure 2.9: Vehicle Description

When the BBS has completed the download, disconnect the D.A.R.T. from the modem.

Step 3: Reconnect the D.A.R.T. to the vehicle controller.

9. The D.A.R.T. will initialize and display the *Main Menu* screen. Press the ↓ key until the ► icon points to REPROGRAM VEHICLE, and then press ENTER to select.

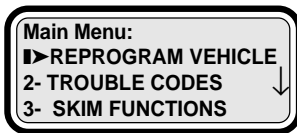


Figure 2.10: Reprogram Vehicle

10. Select REPROGRAM ENGINE or REPROGRAM TRANS from the *Reprogram Vehicle* menu.



Figure 2.11: Select Reprogram

Additional transmission choices (such as EATX2, EATX3 or EATX3 MMC) may be offered. Select the appropriate configuration, and then respond to any directions displayed as the D.A.R.T. guides you through the reprogramming process.

⚡ Important: The vehicle computer/controller may be damaged beyond repair if a power cable or adapter cable is removed during the reprogramming step.

As the D.A.R.T. downloads the selected programming file to the vehicle computer/controller, follow the instructions displayed on-screen.

If the computer/controller programming is current or if the program is invalid for the vehicle, the tool will immediately stop the procedure before any change takes place.

About the Directory List:

Previously downloaded programs are stored in D.A.R.T. memory and may be used if appropriate. If, during a download, the directory list is filled, you will have to delete a file to make room for the new file, follow the on-screen prompts.

To re-use a file, select DIRECTORY LIST from the Reprogram Vehicle menu, and choose the proper program.

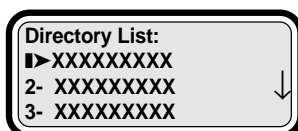


Figure 2.12: Select File

Step 4: Complete any steps remaining in the TSB.

Step 5: Attach the labels—as required by law—to the vehicle and to the reprogrammed controller.

Authorized Software Update Label Requirements:

Each time a software update is made to a vehicle, you must enter the information required onto the Authorized Software Update label and attach this label onto the vehicle as directed. **Important: The Authorized Software Update label is required by law.**

- Fill out the Authorized Software Update label with the following information:
 - The part number of the updated controller;
 - Your Dealer Code or D.A.R.T. serial number;
 - The date

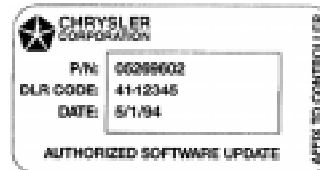


Figure 2.13: Authorized Software Update Label

- Attach the label on top of the controller and place the accompanying clear sticker over the top of the label.

Authorized Modification Label Requirements:

Each time a software update is made to a vehicle, you must enter the update data required onto the Authorized Modification label and attach this label onto the vehicle as directed. **Important: The Authorized Modification label is required by law.**

- Fill out the Authorized Modification Label with the following information:
 - The part number of the updated controller;
 - The change authority (TSB number);
 - Your Dealer Code or D.A.R.T. serial number;
 - The date.

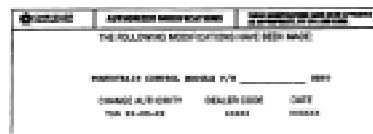


Figure 2.14: Authorized Modification Label

- Attach the label on the vehicle near the Emission Component Information (VECI) label.

About Diagnostic Trouble Codes

Diagnostic testing is one of the functions performed by the vehicle management system. The Powertrain Control Module (PCM) monitors the system and performs activity tests when passive tests fail. A Diagnostic Trouble Code (DTC) is recorded in the vehicle computer memory if the PCM determines that a component may have failed.

The D.A.R.T. reads and displays the DTCs recorded in the PCM.

How to Connect the Cable

1. Refer to *Cable Connector Locations* in the Appendix to determine which cables are required to connect the D.A.R.T. to the vehicle and to determine where the connector is located on the vehicle.
2. Connect the cable to the tool and to the vehicle connector.
3. Supply power to the tool, the program will automatically initialize and identify the vehicle.

Power is supplied to the D.A.R.T. when the cable is connected to the DLC or when the cable battery clamp (if so equipped) is connected to the battery.

How to Read Diagnostic Trouble Codes

1. From the D.A.R.T. *Main Menu*, select **TROUBLE CODES** or **GENERIC OBD II**.

Select **TROUBLE CODES** to see DTCs for all vehicle systems. Select **GENERIC OBD II** to see DTCs for the Emissions System.

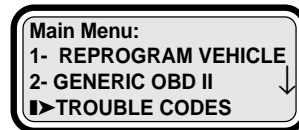


Figure 2.15: Main Menu

2. Select a vehicle system to view if you selected **TROUBLE CODES**.

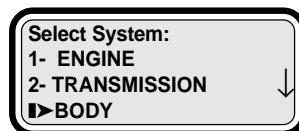


Figure 2.16: Vehicle Systems

3. From the DTC menu, Select your task choice.

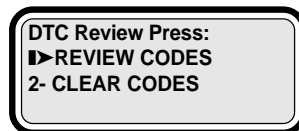


FIGURE 2.17: Generic OBDII DTC Menu

REVIEW CODES: Display the DTCs recorded in the vehicle controller. Press the ↑ or ↓ key to position the code to the top of the list, press ENTER to see the code description.

CLEAR CODES: Select to clear (erase) all DTCs from the vehicle controller memory. This will clear all OBD II data, including readiness status.

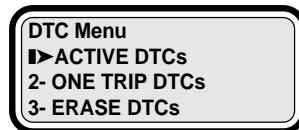


Figure 2.18: Trouble Code Menu

ACTIVE DTCs: Display the DTCs recorded in the vehicle controller.

ONE TRIP DTCs: Display the DTCs recorded after a single trip. Many DTCs are not considered to be a problem unless they re-occur during successive trips.

ERASE DTCs: Select to clear (erase) all DTCs from the vehicle controller memory.

4. Clear (Erase) DTCs after the repair is completed.

How to Program the Sentry Key

The Sentry Key Immobilizer System (SKIS) is a Chrysler option designed to deter vehicle theft. Two important components of the SKIS are the Sentry ignition key and the Sentry Key Immobilizer Module (SKIM). The immobilizer module prevents the vehicle from starting until it is disabled with a signal transmitted from a valid ignition key. The SKIM maintains ignition key integrity by “remembering” each key programmed for the vehicle.

The D.A.R.T. may be used to:

- Add up to eight additional keys to SKIM memory;
- program a set of new keys into SKIM memory;
- if a key is lost, program the SKIM to erase memory for all of the keys programmed for the vehicle;
- reprogram existing keys into SKIM memory.

How to Connect the Cable

1. Connect J1962 cable to the D.A.R.T. and to the vehicle Data Link Connector located under the dash.



Figure 2.19: Data Link Connector Cable Setup

Power is supplied through the DLC to the D.A.R.T.: The D.A.R.T. program will automatically initialize and identify the vehicle.

More about Programming Sentry Keys

A Personal Identification Number (PIN) issued to the vehicle owner by the Chrysler Dealer when the vehicle was purchased will be required before the SKIM program can be activated. If the PIN is unavailable, contact the Chrysler dealer from whom the car was purchased. You will be required to supply the Vehicle Identification Number (VIN) to receive the PIN.

How to Program Keys

1. Select **SKIM FUNCTIONS** from the *Main Menu*, and then press **ENTER**.
2. Place a mechanically cut Sentry ignition key in the vehicle ignition.
3. Select **PROGRAM KEY(S)** from the *SKIM Function* menu, and then press **ENTER**.

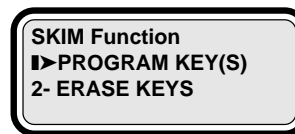


Figure 2.20: Program Keys

4. Enter the vehicle owner's PIN, and then press **ENTER**.
5. Verify that the PIN number is correct (**YES**) or re-enter if the PIN number is wrong (**NO**). Follow the on-screen prompts to complete the task.

How to Erase Keys

1. Select **SKIM FUNCTIONS** from the *Main Menu*, and then press **ENTER**.
2. Place a mechanically cut Sentry ignition key in the vehicle ignition.
3. Select **ERASE ALL KEYS** from the *SKIM Function* menu, and then press **ENTER**. Select **YES** to verify that you want to erase a key, or select **NO** to quit.

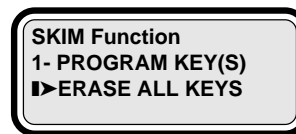


Figure 2.21: Erase All Keys

4. Enter the vehicle owner's PIN, and then press **ENTER**.
5. Verify that the PIN number is correct (**YES**) or re-enter if the PIN number is wrong (**NO**). Follow the on-screen prompts to complete the task.
6. To reprogram erased keys, follow the [How to Program Keys](#) procedure.

About Customer Preferences

Customer Preferences are vehicle options that may be toggled or set through the vehicle controller.

How to Connect the Cable

1. Refer to *Cable Connections Locations* in Appendix to determine which cables are required to connect the D.A.R.T. to the vehicle and to determine where the connector is located on the vehicle.
2. Connect the cable to the tool and to the vehicle connector.
3. Supply power to the tool, the program will automatically initialize and identify the vehicle.

Power is supplied to the D.A.R.T. when the cable is connected to the DLC or when the cable battery clamp (if so equipped) is connected to the battery.

How to Set Customer Preferences

1. Select **CUSTOMER PREFERENCES** from the D.A.R.T. *Main Menu*.

The tool will automatically query the diagnostic protocol to determine which Customer Preferences are available on the vehicle controller.

2. Select the Customer Preferences you wish to change.

Notes:

- All Customer Preferences shown as available for the vehicle controller may not be installed options; i.e., automatic door locks programming is shown in the controller but the automatic door locks option was not purchased by the vehicle owner.
- All vehicle controller systems are not equipped to turn options on or off.

Customer Preference Descriptions

- **AUTO DOOR LOCKS** Enable/Disable
Enable or disable the switch that locks the doors after a vehicle reaches speed of 15 mph.
- **SPEED CHIME** Enable/Disable
Enable or disable the switch that sounds a chime when a factory-set speed is exceeded.
- **LOW FUEL CHIME** Enable/Disable
Enable or disable the switch that sounds a chime when fuel is low.
- **TURN SIGNAL** Enable/Disable
Enable or disable the switch that sounds a chime if a turn signal remains on too long.
- **ILLUMINATED ENTRY** Enable/Disable
Enable or disable the switch that turns the Interior lights on when the door handle is lifted.
- **AUTO HEAD LAMP** Enable/Disable
Enable or disable the switch that turns the headlights on when windshield wipers are turned on.
- **RKE HORN CHIRP** Enable/Disable
Turn the Remote Keyless Entry horn "chirp" on or off.
- **RKE PANIC MODE** Enable/Disable
Turn the Remote Keyless Entry Panic Mode on or off.
- **RKE DOOR UNLOCK** Press Once/ Twice
Set the Remote Keyless Entry to unlock all doors when the remote transmitter is clicked once or twice.
- **PROGRAM RKE** Program transmitter
Select remote transmitter 1 or 2 for reprogramming.
- **CHANGE COUNTRY** Select Country
Enable vehicle settings that are specific to the country the vehicle is driven in.
- **CHANGE EQUIPMENT**
Identify the equipment or vehicle settings for a recently installed controller.
 - **AIR BAG** Yes/No
Identify if equipped with an air bag.
 - **DRIVE** Right/Left
Identify if equipped with Right or Left Drive.
 - **FUEL UNITS** US/Imperial
Identify if fuel to be displayed in US or Imperial gallons.
 - **POLICE** Yes/No
Identify if vehicle is equipped as a Police vehicle
 - **FOG LAMPS** Yes/No
Identify if vehicle is equipped with fog lamps.
 - **COMPASS MINI TRIP** Yes/No
Identify if vehicle is equipped with the Compass Mini Trip option.
- **HORN CHIRP TIME** 20ms/40ms
Set the horn "chirp" to a shorter or longer duration.

Miscellaneous Tests

Miscellaneous test options are generally service tests or a means of setting adjustments to vehicle components. Refer to each option description to see if it may apply to your vehicle repair.

Additional tests or settings will be added in the future and can be downloaded to the D.A.R.T. when you connect to the BBS.

Select MISC. FUNCTIONS from the DART Main Menu to see miscellaneous tests available.

Note: All tests may not be applicable to all vehicles.

About Pinion Factor

The Pinion Factor option sets the pinion factor in the Transmission Control Module memory. Use this feature if tire size or a control module is changed.

How to Set Pinion Factor:

1. Select PINION FACTOR from the *Misc. Functions* menu.
2. Select the tire size, and then press ENTER to set the pinion factor into the controller memory.

About Clutch Volume Index

The Clutch Volume Index option shows the vehicle actual clutch volume values. If the battery electrical feed is disconnected from the controller, the learned clutch fill volumes will be erased and initial values will be substituted. The transmission may shift gears somewhat harshly until the vehicle computer relearns optimum clutch fill volumes.

How to see Clutch Volume Index:

Select CLUTCH VOL INDEX from the *Misc. Functions* menu. The DART will show the Clutch Volume Values.

About Vehicle Identification

Accurate identification of the vehicle and part number identification of the controllers installed on the vehicle is important to make sure the correct software update for each component is correctly identified for programming updates. The Vehicle Identification options read and store the necessary part numbers for each controller.

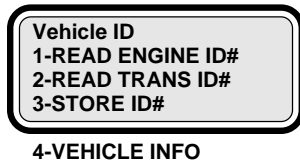


Figure 2.22: Vehicle Identification

How to Identify a Vehicle

Select VEHICLE INFO from the *Vehicle ID* menu to see a description of the vehicle.



Figure 2.23: Vehicle Description

How to Read an Engine Identification Number

Select READ ENGINE ID # from the *Vehicle ID* menu to see the part number for the engine controller.



Figure 2.24: Engine Controller Part Number

Exit and select STORE ID # if you want to save the engine information into D.A.R.T. memory.

How to Read a Transmission Identification Number

Select READ TRANS ID# from the *Vehicle ID* menu to see the part number for the transmission controller.



Figure 2.25: Transmission Controller Part Number

Exit and select STORE ID# if you want to save the engine information into D.A.R.T. memory.

How to Save an Identification Number into Memory

Select STORE ID# from the *Vehicle ID* menu to save the part number for the controller read.



Figure 2.26: Store ID Number

About Modem Setup

As you set up the modem to communicate with the OTC Bulletin Board System (BBS), you may have to adjust the modem communication settings to allow for new telephone numbers or to alter the code in the dial-up string. All options to set modem changes are accessed through the SYSTEM CONFIG located on the D.A.R.T. Main Menu.

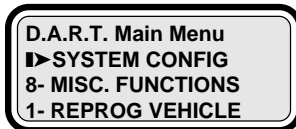


Figure 2.27: Main Menu

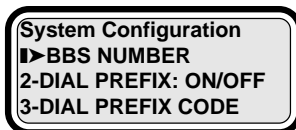
About Dial-Up Number

A dial-up number can be changed or numbers, pauses and symbols may be added to select an outside telephone line from within an internal telephone system.

How to Change the BBS Dial-Up Number:

The steps to change the BBS dial-up sequence are:

- Select BBS NUMBER from the SYSTEM CONFIG menu (See Fig 2.28).

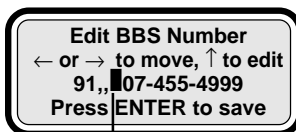


```

4-MODEM INIT STRING
5-DISPLAY TOOL INFO
6-DEFAULT CONFIG
    
```

Figure 2.28: System Configuration

- Press the ← or → key to position the cursor.
- Key in the number or press ↓ or ↑ to scroll the correct number in place.
- Place one comma for each one second delay, if required. Spaces and hyphens are ignored during dialing.
- Press ENTER to save changes.



Cursor

Figure 2.29: Edit Screen

1. Add any modem initiation changes required for access through your telephone; for example, you may have a pulse telephone instead of the standard tone telephone, or additional codes are required to go through your telephone service provider. **SKIP STEP 5 and go to step 6 if you have a standard tone telephone system and no special conditions are required by your telephone service provider.**

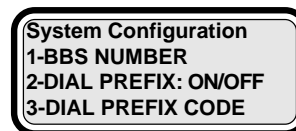
About Modem Initiation String

Communication with your telephone service provider sometimes requires that additional codes be set in the dial-up string: For example, change the setting to support a pulse telephone by adding P to the modem initialization string (AT&F0 to AT&F0P). please refer to the manual included with the modem for a complete listing of code variations available to complete the initiation string.

How to change the initiation string:

The steps to change the initiation string sequence are:

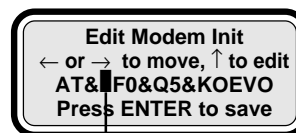
- Select MODEM INIT STRING from the System Configuration menu.
- Press the ← or → key to position the cursor.
- Key in the number or press ↓ or ↑ to scroll the correct number or letter in place.
- Press ENTER to save changes.



```

5-DISPLAY TOOL INFO
6-DEFAULT CONFIG
    
```

Figure 2.30: System Configuration Screen



Cursor

Figure 2.31: Modem Initiation Configuration Screen

About Call Waiting Service

Call Waiting services set up with your telephone service provider must be turned off to prevent disruption of data during a download from the BBS.

How to turn Call Waiting off:

Your Call Waiting Code may be different than the standard call waiting code set as a default. Your applicable call waiting defeat code is generally listed in your area telephone book, or call your local telephone service to find out what it is.

The steps to turn Call Waiting off are:

- Select DIAL PREFIX CODE from the SYSTEM CONFIG menu (See Fig 2.32).

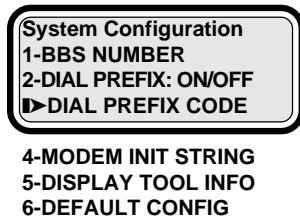


Figure 2.32: System Configuration

- Enter your Call Waiting Defeat Code if it is different than the pre-set *70: Press the ← or → key to move the cursor left or right, press the ↑ or ↓ key or key in the number to change the setting. Press ENTER to save changes (See Fig. 2.33).



Figure 2.33: Edit Call Waiting

- Select DIAL PREFIX:(ON or OFF) from the SYSTEM CONFIG menu, and then press ENTER to toggle the DIAL PREFIX:(ON or OFF) to display DIAL PREFIX:ON

Call Waiting will be restored, for most telephone services, when you disconnect from the BBS. Some older telephone systems may not automatically reconnect and will require a specific Call Waiting reconnect routine as provided by the telephone service provider.

Note: The Call Waiting-Off setup will automatically turn the Call Waiting off each time you connect to the BBS unless you change the setting.

1. Add an “outside line” number to the BBS dial-up number sequence, or go to step 5 if you DO NOT have an internal telephone system that requires a number before you can call outside your internal telephone system.

BBS Connection Error Messages:

The D.A.R.T. produces an error message when it does not get a signal response.

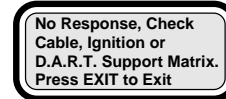


Figure 2.34: Error Message

Press EXIT to reconnect to the BBS. If the error continues, unplug the wall transformer for the D.A.R.T., the modem, and also detach the cables. Check to be sure you are plugged into an analog telephone line. Re-attach the cables, wall transformers and try again. If the error persists, call technical service at 800-533-6127.

D.A.R.T. Menu View

- 1-REPROG VEHICLE
 - 1-REPROG ENGINE
 - 2-REPROG TRANS
 - 2-DIRECTORY LIST
 - 3-DELETE FILE
- 2-GENERIC OBD II
 - 1-REVIEW CODES
 - 2-CLEAR CODES
- 3-TROUBLE CODES
 - (ENGINE, TRANSMISSION, BODY, SUSPENSION, CHASSIS, BRAKES, PASSIVE RESTRAINT, THEFT ALARM)
 - 1-ACTIVE DTCs
 - 2-ONE TRIP DTCs
 - 3-ERASE DTCs
- 4-SKIM FUNCTIONS
 - 1-PROGRAM KEY(S)
 - 2-ERASE ALL KEYS
- 5-CUSTOMER PREFERENCE
 - 1-AUTO DOOR LOCKS
 - 2-SPEED CHIME
 - 3-LOW FUEL CHIME
 - 4-TURN SIGNAL
 - 5-ILLUMINATED ENTRY
 - 6-AUTO HEAD LAMP
 - 7-RKE HORN CHIRP
 - 8-RKE PANIC MODE
 - 9-RKE DOOR UNLOCK
 - 10-PROGRAM RKE
 - 11-CHANGE COUNTRY
 - 12-CHANGE EQUIPMENT
 - 1-AIR BAG
 - 2-DRIVE
 - 3-FUEL UNITS
 - 4-POLICE
 - 5-FOG LAMPS
 - 6-COMPASS MINI TRIP
 - 13-HORN CHIRP TIME
- 6-VEHICLE ID
 - 1-READ ENGINE ID#
 - 2-READ TRANS ID#
 - 3-STORE ID#
 - 4-VEHICLE INFORMATION
- 7-SYSTEM CONFIG
 - 1-BBS NUMBER
 - 2-DIAL PREFIX: ON/OFF
 - 3-DIAL PREFIX CODE
 - 4-MODEM INIT STRING
 - 5-DISPLAY TOOL INFO
 - 6-DEFAULT CONFIG
- 8-MISC FUNCTIONS
 - 1-PINION FACTOR
 - 2-CLUTCH VOL. INDEX

Note: All vehicles may not support all of the menu option illustrated

REPROG(ram) VEHICLE

The REPROGRAM VEHICLE option makes reprogramming options available for the engine and transmission controllers.

REPROG(ram) ENGINE

Select REPROG ENGINE when you have the correct controller file in the D.A.R.T. memory. During the setup process, the appropriate files that are available for reprogramming the selected controller are displayed. This option guides you through the reprogram steps, simply respond to any questions or directions displayed on-screen.

Apply an Authorized Software Update label and an Authorized Modification Label to the controller when reprogramming is completed.

REPROGRAM TRANSM(ission)

Select REPROGRAM TRANSM when you have the correct controller file in the D.A.R.T. memory. During the setup process, the appropriate files that are available for reprogramming the selected controller are displayed. This option guides you through the reprogram steps, simply respond to any questions or directions displayed on-screen.

Apply an Authorized Software Update label and an Authorized Modification Label to the controller when reprogramming is completed.

DIRECTORY LIST

Select DIRECTORY LIST to see a listing of controller update programs stored in the D.A.R.T. memory. A program from this list will be selected by the DART during the reprogramming process.

ERASE FILE

Select the file to be erased from the list.

GENERIC OBD II

The GENERIC OBD II option reads and displays the emission Diagnostic Trouble Codes (DTCs) recorded in a vehicle Power Control Module (PCM). This option is available for all OBD II compliant vehicles sold in the USA.

REVIEW DTCs

Select REVIEW DTCs to see the Diagnostic Trouble Codes saved in the PCM.

CLEAR DTCs

All DTCs will be deleted (erased) from the PCM.

TROUBLE CODES

The TROUBLE CODES option reads and displays the Diagnostic Trouble Codes (DTCs) recorded in a controller module. Select the controller module (Engine, Transmission, ABS, SRS, Body, etc.) you want to check, and then select whether you want to see active DTCs or One Trip DTCs.

Note: Trouble Codes may also be labeled as Fault Codes.

ACTIVE DTCs

Select ACTIVE DTCs to display the codes saved in the PCM. Codes received are displayed as a number. Press the ENTER key to see a description of the code positioned on the top line of the display screen. Press the ↑ key to position any other codes onto the top line for display.

ONE TRIP DTCs

Select the ONE TRIP DTC option to see codes saved due to a fault that occurred at least once. Many faults are not saved as a DTC until they have occurred over multiple trips because one or two occurrences do not necessarily indicate a true fault that should set a DTC.

ERASE DTCs

All DTCs will be deleted (erased) from the PCM.

SKIM FUNCTIONS

Select the D.A.R.T. SKIM FUNCTION if the Sentry Key Immobilizer Module (SKIM) must be reprogrammed for new keys or if additional Sentry ignition keys need to be programmed into SKIM memory.

PROGRAM KEY(S)

The PROGRAM KEY(S) selection initiates a programming process that programs keys into the SKIM system.

ERASE ALL KEYS

Select ERASE ALL KEYS to erase SKIM memory

CUSTOMER PREFERENCES

Select CUSTOMER PREFERENCES to set or to turn vehicle options on or off through the vehicle controller. Some Customer Preferences may offer additional programming options.

VEHICLE ID(entification)

Select VEHICLE ID to read or save the controller identification number into the D.A.R.T. memory.

READ ENGINE ID(entification)#

Select READ ENGINE ID# to read and display the engine controller identification number.

READ TRANS(mission) ID(entification)#

Select READ TRANS ID# to read and display the transmission controller identification number.

STORE ID(entification)#

Select STORE ID# to save the controller identification number in D.A.R.T. memory.

VEHICLE INFO(rmation)

Select VEHICLE INFO to display the vehicle description.

SYSTEM CONF(iguration)

Select SYSTEM CONFIG to set up or to change the factory settings for the BBS communication program.

BBS NUMBER

Select BBS NUMBER to change the number used to dial into the Bulletin Board.

DIAL PREFIX: ON/OFF

The Call Waiting feature provided by your telephone service can disrupt data during a file download. Call Waiting must be turned off during the time the D.A.R.T. is communicating with the bulletin board.

Select DIAL PREFIX: ON and press the number key 2 or press ENTER to toggle the Call Waiting off.

This feature is generally restored when you disconnect and remove the D.A.R.T. from the modem setup. Some older telephone systems may not automatically reconnect and will require a specific Call Waiting reconnect routine as provided by the telephone service provider.

DIAL PREFIX CODE

Select DIAL PREFIX CODE to enter your Call Waiting Defeat Code. Your applicable defeat code is listed in your area telephone book, or call your local telephone service.

MODEM INIT(ialize) STRING

Select MODEM INIT STRING to change the setting for the modem dial-up routine.

DISPLAY TOOL INFO(rmation)

Select DISPLAY TOOL INFO to view software revision date and revision number.

DEFAULT CONF(iguration)

Select DEFAULT CONFIG to restore the current communication settings back to the original factory communication settings.

MISC(ellaneous) FUNCTIONS

Additional tests and settings are accessed through the Miscellaneous option.

PINION FACTOR

Select PINION FACTOR to set the pinion factor in the Transmission Control Module memory. Use this option if tire size or a control module is changed.

CLUTCH VOL(ume) INDEX

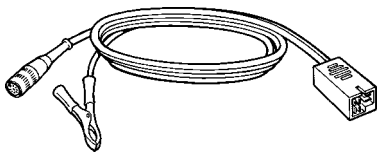
The CLUTCH VOL INDEX option shows the vehicle actual clutch volume values. If the battery electrical feed is disconnected from the controller, the learned clutch fill volumes will be erased and initial values will be substituted.

Cable Connection Locations



J1962 Cable: (16-way, J1962) cable is connected inside the vehicle above the drivers feet and is used for all systems on:

- 1995 to current year PL and JA
- 1996 to current year NS
- All current domestics
- All EATX III transmissions
- All SKIM systems



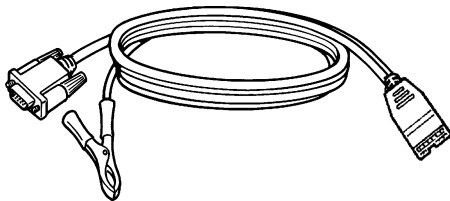
SCI Engine Cable: (SCI 6-Way) cable is connected under the hood and used for:

- 1989-95 all except LH/PL/JA/FJ
- 1991-95 Jeep Engine
- 1991 1/4 - 92 Premier / Monaco



Chrysler Collision Detection (CCD) Cable: (Body 6-Way) cable is connected inside the vehicle and used for Body/Eng/Trans/ABS:

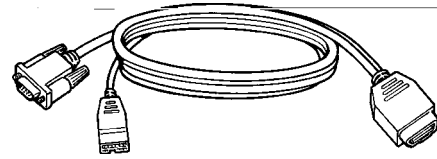
- 1989-95 Chrysler/Plymouth/Dodge CCD systems
- 1993-95 LH engine



Mitsubishi Motors Corporation (MMC) Cable: (12-way, Positive + battery clip) cable is connected inside the vehicle next to the fuse panel for all systems on:

- 1989-93 all MMC and Diamond Star Motors
- 1994 DSM F24S Laser/Talon

The cable power clip connects to the battery positive (+) post.

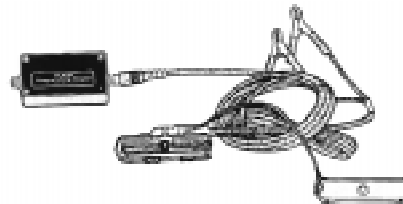


J1962/Mitsubishi Motors Corporation (MMC) Cable: (12-way MMC and 16-way J1962) double-headed cable is connected inside the vehicle above the driver's feet. Used on all systems:

- 1994 MMC vehicles
- 1995 and up all FJ MMC and DSM vehicles



DIN Cable: (8-way DIN cable) used as an adapter cable to connect the tool to the SCI Engine cable OT CC2000 or to the CCD Body cable OT CC2010.



EATX II Programming Kit: – connect between the DIN cable and the EATX Controller. Connect the red battery power clip to the battery positive (+) terminal and the black battery power clip to the battery negative (-) terminal.



Modem/Power Cable – connect the modem to the Diagnostic and Reprogramming Tool and to the power supplied by the AC/DC transformer.

Body Platform Designations

Body Platform	Vehicle Line
AA	ACCLAIM
AA	LEBARON
AA	SPIRIT
AA	SPIRIT (MEX)
AB	B-150
AB	B-250
AB	B-350
AB	RAM 150
AB	RAM 250
AB	RAM 350
AB	RAM B-250
AB	RAM B-350
AB	RAM VAN 1500
AB	RAM VAN 2500
AB	RAM VAN 3500
AB	RAM WAGON 1500
AB	RAM WAGON 2500
AB	RAM WAGON 3500
AC	DYNASTY
AC	NEW YORKER
AD	POWER RAM 100
AD	POWER RAM 150
AD	POWER RAM 250
AD	POWER RAM 350
AD	RAM 100 4X2
AD	RAM 150 4X2
AD	RAM 250 4X2
AD	RAM 350 4X2
AD	RAMCHARGER 4X2
AD	RAMCHARGER 4X4
AG	DAYTONA
AH	LANCER
AH	LEBARON
AJ	LEBARON
AK	ARIES
AK	RELIANT
AL	HORIZON
AL	OMNI
AN	DAKOTA 4X2
AN	DAKOTA 4X4
AP	SHADOW
AP	SUNDANCE
AQ	TC
AS	CARAVAN
AS	GRAND CARAVAN
AS	GRAND VOYAGER
AS	INCOMPLETE VEH
AS	MINI-VAN
AS	RAM MINI-VAN
AS	TOWN & COUNTRY
AS	VOYAGER
AY	IMPERIAL
AY	NEW YORKER
B1	COLT
B2	COLT
B2	COLT (CANADA)
B2	SUMMIT
B3	COLT

Body Platform	Vehicle Line
B3	SUMMIT
B3	VISTA
B4	D-50
B4	D-50 4X2
B4	D-50 4X4
B7	STEALTH
B8	SUMMIT
B8	VISTA
B9	COLT (CANADA)
B9	SUMMIT
B9	SUMMIT FWD
BB	MONACO
BB	PREMIER
BD	LASER
BD	TALON
BR	RAM 1500 4X2
BR	RAM 1500 4X4
BR	RAM 2500 4X2
BR	RAM 2500 4X4
BR	RAM 3500 4X2
BR	RAM 3500 4X4
DN	DURANGO
FJ	AVENGER
FJ	SEBRING
FJ	TALON
JA	BREEZE
JA	CIRRUS
JA	STRATUS
JX	SEBRING
LA	COLT (CANADA)
LH	CONCORDE
LH	INTREPID
LH	LHS
LH	NEW YORKER
LH	VISION
MJ	COMANCHE
NF	VISTA
NS	CARAVAN
NS	GRAND CARAVAN
NS	GRAND VOYAGER
NS	TOWN & COUNTRY
NS	VOYAGER
PL	NEON
PL	NEON (MEXICO)
PR	PROWLER
SJ	GRAND WAGONEER
SJ	RAIDER
SR	VIPER
SR	VIPER (EUROPE)
TJ	WRANGLER
XJ	CHEROKEE
XJ	CHEROKEE (RHD)
XJ	WAGONEER
YD	CONQUEST
YJ	WRANGLER
ZJ	GRAND CHEROKEE
ZJ	GRAND WAGONEER

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1. Quantity
2. Part number
3. Item description

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If you have any questions on the operation of the product, please call:

(800) 533-6127

If your unit requires repair service, return it to the manufacturer with a copy of the sales receipt and a note describing the problem. If the unit is determined to be in warranty, it will be repaired or replaced at no charge and returned freight pre-paid. If the unit is determined to be out of warranty, it will be repaired for a nominal service charge plus return freight. Send the unit pre-paid to:

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