

DaimlerChrysler Corporation

DRB III®

- **Hardware**
- **Operation &**
- **Accessories**

Reference Guide

P/N CH6050

IMPORTANT INFORMATION

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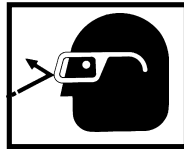
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Safety Precautions

⚠ DANGER:

- Engines produce carbon monoxide which is odorless, causes slower reaction time, and can lead to serious injury. When the engine is operating, keep service areas **WELL VENTILATED** or attach the vehicle exhaust system to the shop exhaust removal system.
- 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; the parking brake does not hold the drive wheels.
- Wear an eye shield when testing or repairing vehicles.
- Exceeding the limits of the DRB III multimeter function is dangerous. It can expose you to serious or possibly fatal injury. Carefully read and understand the cautions and the specification limits.
- Do not hang the tester from the rear view mirror or operate the tester yourself during a test drive. Have an assistant available to operate the DRB III for you.



DRB III General Information

This guide covers brief, introductory information for the DRB III tester, Connecting Cables and Peripheral Expansion Port (PEP) module programs. Further operating instructions for the DRB III are available through your local DaimlerChrysler Technical Training classes.



DRBIII Available Kits

Refer to the Appendix for a detailed list of included items.

CH6000A DRBIII Only
 CH6010A Deluxe DRBIII Complete Package
 CH6020A Economy DRBIII Kit with glove
 CE6000A International version DRBIII only, CE certified.
 CE6005A International version Economy DRBIII kit, CE certified.
 CE6010A International version Deluxe DRBIII Kit, CE certified.

DRB III Description

The DRB III is DaimlerChrysler Corporation's latest generation hand-held Diagnostic Scan Tool. It is a ruggedized portable computer that has unique hardware developed for the automotive environment and software developed for automotive diagnostics. The DRB III is designed to communicate with On Board Diagnostics Systems (OBD II) for the vehicle model years beginning in 1994 and extending into the future. The DRB III is hardware capable of supporting previous model year vehicle diagnostics.

The DRB III hardware will interface to electronic modules on all vehicles sold by DaimlerChrysler.

The DRB III is also an AC/DC dual channel (utilizes two sets of test leads) multimeter. It will measure current, voltage, frequency, resistance and temperature.

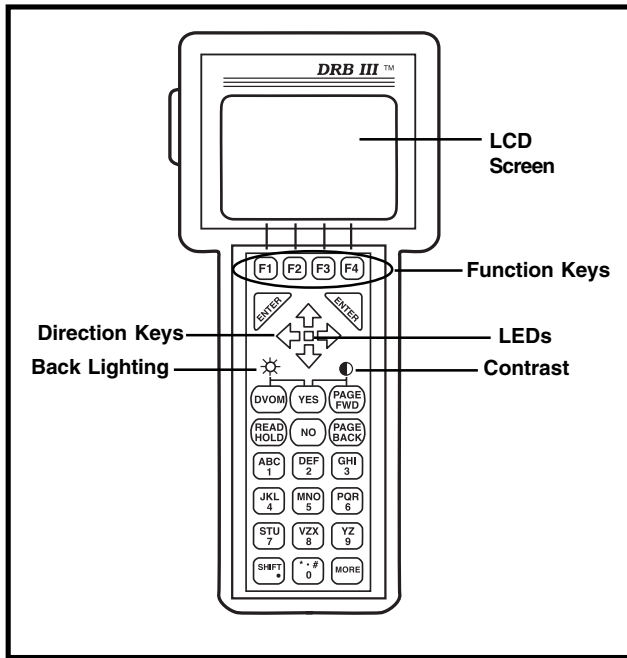
The DRB III diagnostic software can be updated using TechCONNECT software on the DealerCONNECT client computer or through software supplied on a PCMCIA memory card. The hardware can be updated through the Peripheral Expansion Port (PEP) module, which expands the DRB III hardware capabilities without any hardware changes to the DRB III base unit.

Function	Input limit
Volts	0 - 500 peak Volts AC 0 - 500 Volts DC
Ohms (resistance) ♣	0 - 1.12 M Ω
Frequency Measured	0 - 10 kHz
Temperature	-58 - 1100 ° F -50 - 600 ° C
Current Clamp	0 -200 Amps AC/DC 0 - 2000 Amps AC/DC
Low Current Shunt	0 - 2 Amps 0 - 10 Amps

♣ Ohms cannot be measured if voltage is present, Ohms can be measured only in a non-powered circuit.

Keypad and Controls

The DRB III keypad controls are pressure sensitive controls that respond with an audible “click” when a key is pressed. Key actions are identified with a symbol or description.



LED: Light Emitting Diodes (LED) function as indicator lights. Each software program will indicate LED functions with a screen message.

Back Lighting: to toggle the back lighted screen on or off during low light conditions, press the DVOM key and the YES key at the same time.

Contrast: To adjust the contrast, press the PAGE FWD key and the YES key at the same time. Press the left arrow Direction key for less contrast or the right arrow Direction key for more contrast. Press the PAGE FWD key and the YES key at the same time to exit.

Key actions may be selected throughout the application.

KEY

F1, F2, F3 or F4

ENTER

UP Arrow

DOWN Arrow

RIGHT Arrow

LEFT Arrow

DVOM

YES

PAGE FWD

READ HOLD

NO

PAGE BACK

0-9 (Shifted Alpha)

SHIFT

MODE

ACTION

Press the Function key aligned with a word or icon that appears at the bottom of the LCD screen

Select currently highlighted option

Move cursor or highlight bar up

Move cursor or highlight bar down

Move cursor or highlight bar right

Move cursor or highlight bar left

Toggle Digital Volt Ohm functions

Answer YES to a question

Advance to next screen

Toggle freeze frame

Answer NO to a question

Return to a previous screen

Numeric entry or select numbered menu option.

Toggle shifted key definitions

Toggle between two pages of options on a menu

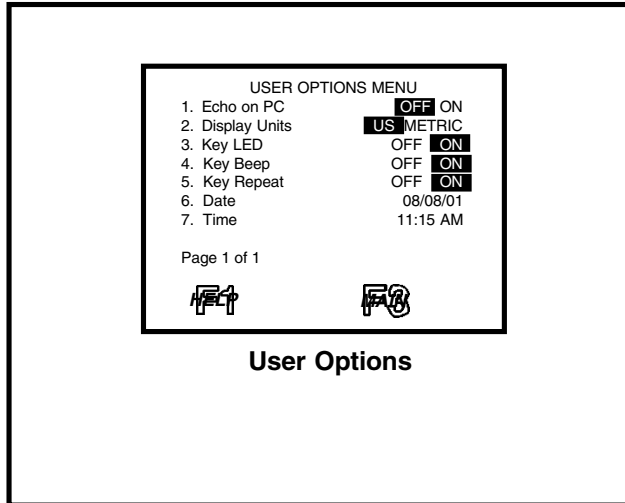
User Option Utilities

The User Option Utilities provides basic operating system settings.

Option Configuration:

To change the option configurations, follow these steps:

1. Select **Main Menu > DRB Utilities > User Option**.



2. From the User Option menu, select the system configuration to change:
 - **Echo on PC** - When the DRB III is connected to a PC, turn the echo ON to enable the DRB III screen display on the PC screen. Generally, this option is set to OFF because it slows down the screen refresh rate. It is an option used primarily as a visual aid for training
 - **Display Units** - enable the metric or US display.
 - **Key LED** - enable the green LED to flash each time a key is pressed.
 - **Key Beep** - enable a “beep” each time a key is pressed.
 - **Key Repeats** - enable the key action to repeat when the key is held down.
 - **Date** - set the date in the operating system.
 - **Time** - set the time in the operating system.

Memory Card

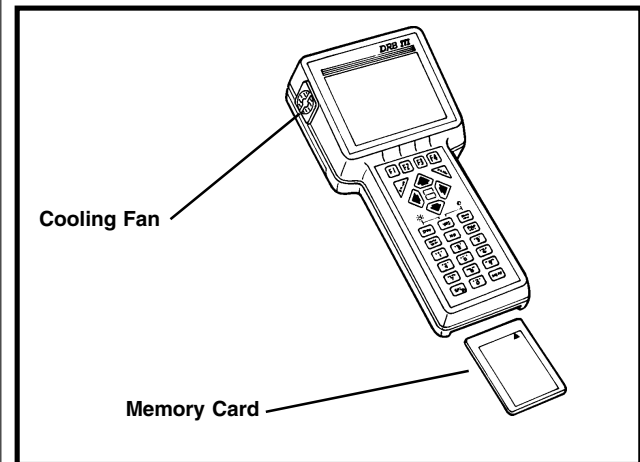
The DRB III accepts a standard, removable 4 MB PCMCIA Memory Card. This PCMCIA card may supply additional memory, updates or software programs.

Removal or Insertion:

- Remove the card by gripping the edges on both sides of the card and pull straight out.
- Insert by positioning the DRB III so it faces upward. Position the card so that the arrow on the card is facing up. Align the card in the slot, then slide and seat the card firmly into the DRB III.

WARNING:
Removing or pulling the PCMCIA supplemental memory card out of the socket while the application program is running is not recommended.

Important: Do not drop the PCMCIA card or place it near a motor winding or magnet. The data is stored magnetically and may be lost.



Cooling Fan

The cooling fan should run continuously when the DRB III is powered up. Periodically, snap the fan cover off and check the filter. Replace the filter (Filter Replacement Kit CH6060) if it appears to be dirty.

Important: Do not block the cooling fan; failure to allow full air flow may cause your DRB III to overheat.

Digital Multimeter

The Digital Multimeter (DMM) is accessed by pressing the Digital Volt Ohm Multimeter (DVOM) key following a selection from the Main Menu or Select System menu. Two displays are offered on the DVOM menu to correspond to the two pairs of ports. Either channel may be used. A probe error message may be displayed for certain selections if the test leads are improperly attached. Following a given selection for each channel, pressing the DVOM key restores the screen to the previous display, with the DVOM readouts displayed at the bottom. Pressing the DVOM key again cancels the DVOM function completely.

The DMM has an analog-to-digital converter that operates at 7.5 conversions per second. It measures DC volts, AC volts (RMS), ohms, current (amps), temperature (by ohms) and frequency (Hertz). The DRB III is only capable of measuring DC frequencies (not AC). The DRB III can also generate a DC square wave signal. The signal can range from 1 to 100,000 Hertz at 1 to 100 % Duty Cycle. Accuracy is calibrated at 72 ° at up to 90 % humidity. The unit is voltage protected up to +/- 550 volts DC (meter only indicates +/- 500 volts). AC voltage is averaged (RMS), not peak-to-peak.

Note: Since the DRB III PEP module Oscilloscope (Lab Scope) picks up all the signal data and displays the data in a waveform, it's best to use the Lab Scope when diagnosing intermittent readings. Refer to Section 2, Oscilloscope for setup and use. By contrast, the DMM samples signals several times per second and then averages the data. Intermittent readings will be missed if the fault didn't occur when the multimeter sampled the signal, or the intermittent readings may be averaged out of the data.

Voltages are referenced by grounds, which are established several ways:

- The connecting cable (chassis)
- The negative test probe
- A ground established by a sensor signal ground

Observe the following safety rules:

WARNING:

- **Exceeding the limits of the DRB III multimeter function is dangerous. It can expose you to serious or possibly fatal injury. Carefully read and understand the cautions and the specification limits.**



- **Voltage between any terminal and ground must not exceed 500v DC or 500v peak AC.**

- **Use caution when measuring voltage above 25v DC or 25v AC.**
 - **Low Current Shunt must be protected by the correct fuse. Replace fuses with the same type and rating.**
 - **Do not use the DRB III if it has been damaged.**
 - **Do not use the test leads if the insulation is damaged or if metal is exposed.**
 - **Use the Low Current Shunt to measure circuits up to 10A. Use the High Current Clamp to measure circuits exceeding 10A.**
 - **Avoid electrical shock: do not touch the test leads, tips or the circuit being tested.**
 - **When testing for the presence of voltage or current, make sure the meter is functioning correctly. Take a reading of a known voltage or current before accepting a zero reading.**
 - **Choose the proper range and function for the measurement. Do not try voltage or current measurements that may exceed the rated capacity.**
 - **Disconnect the live test lead before disconnecting the common test lead.**
 - **When measuring current, connect the meter in series with the load.**
 - **When measuring voltage, connect the meter leads across the load.**
 - **Perform resistance (ohms) measurements on non-powered circuits only.**
- Important:**
- **When using the meter function, keep the tester away from spark plug or coil wires to avoid measuring error from outside interference.**
 - **Follow the vehicle manufacturer's service procedures at all times.**

DC Volts

Measure voltage with the test probes included in the kit. Observe correct polarity (red is positive [+], black is negative [-]).

Voltage accuracy is:

- 25 VDC to 500 VDC is within 20 mV
- 2.5 VDC to 25 VDC is within 1 mV
- up to 2.5 VDC is within 0.15 mV
- Input impedance equals 10 million (10 meg) ohms per volt.

AC Volts

AC Volts are averaged (RMS), not peak-to-peak. Readings are accurate only with sine wave signals, not square wave or saw-tooth. The AC signal must not exceed the range of 31 Hertz to 2000 (2K) Hertz.

Full scale is 0 to 500 V peak in three ranges:

- ± 25 VAC to ± 500 VDC is within 20 mV
- ± 2.5 VDC to ± 25 VDC is within 1 mV
- up to ± 2.5 VDC is within 0.15 mV

Ohms



WARNING:

- Ohms cannot be measured if voltage is present. Ohms can only be measured in a non-powered circuit. The DRB III will be damaged if voltage is present while measuring ohms.

Measure resistance with test probes supplied with the kit. Insert the component to be measured between test leads. Be sure object being tested is not connected to voltage (example: remove a fuse from the fuse block before testing it). A clicking sound coming for the DRB III is normal and indicates switching of the auto-ranging function.

The probe colors indicate DC polarity for use in testing diodes. The ohmmeter is capable of measuring resistance up to 1.12 Megohms.

Cable Connector Panel

The Cable Connector Panel is located at the top of the DRB III tester. The connector ports are labeled as multimeter terminals or interface terminals.

- **Multimeter Test Lead Terminals (Set 1 and Set 2):** The Negative (-) terminal is the common terminal. The Positive (+) terminal is used to measure the signal under test.

There are diagnostic tests available that use only the Positive terminal. The measurement configurations for these tests are controlled through the DRB III program.

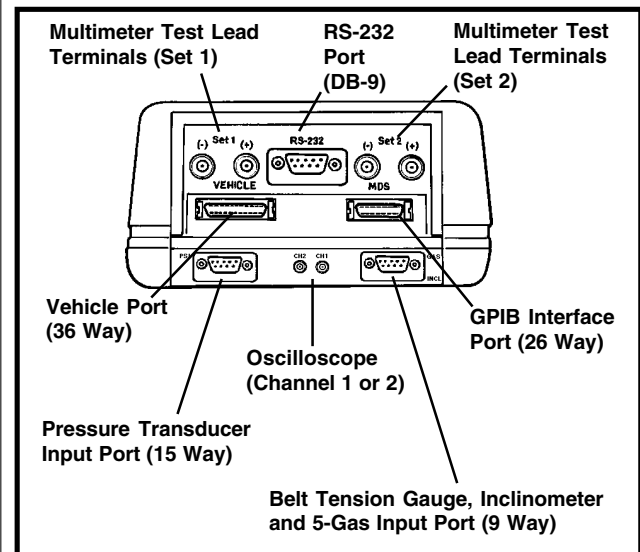


WARNING:

Shrouded meter leads (CH7030) must be used with the DRB III. The shroud detects ground lead presence and helps to prevent electrical shock.

- **Vehicle Port (36 Way):** Terminal used for all vehicle adapter cables.

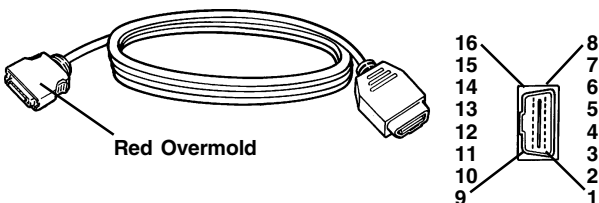
- **RS-232 Port (DB-9):** Terminal used for attaching optional devices such as a printer, terminal or personal computer.
- **GPB Interface Port (26 Way):** Terminal used to connect high speed interface cabling (GPB/IEEE 488) to the DealerCONNECT Client computer.
- **Pressure Transducer Input Port (15 Way):** Terminal used to connect optional device such as a Digital Pressure Tester.
- **Oscilloscope (Channel 1 or 2):** Terminal (channel) used to connect input cables from option devices such as the Oscilloscope and the Belt Tension Gauge.
- **Belt Tension Gauge, Inclinator and 5-Gas Input Port (9 Way):** Terminal used to connect optional devices such as a Belt Tension Gauge, Inclinator or 5-Gas tester.



Connecting Cables

Important: Cables are wear items. Many intermittent problems are a result of a worn cable. Keep a spare cable available to determine if an intermittent problem is from a worn cable and to use as a replacement. Properly dispose of damaged cables.

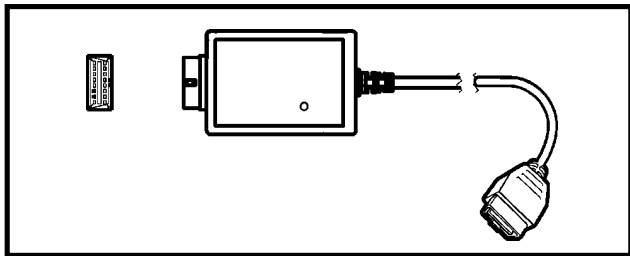
J1962 Cable, CH7000A (8ft.) CH7001A (12ft.): Use this cable to connect to OBD II capable vehicles. (Replaces CH7000 and CH7001.)



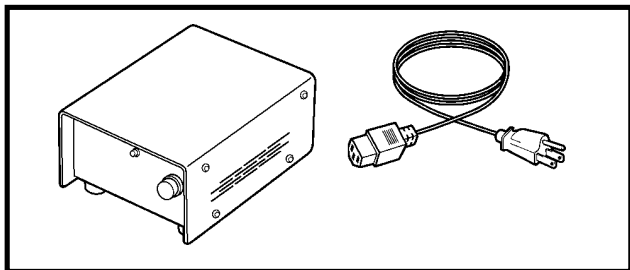
Red Overmold

<p>J1962 Pin Connections</p> <ul style="list-style-type: none"> 1-Remote Keyless Entry 2-J1850 + 3-CCD Bus + 4-Chassis Ground 5-Signal Ground 6-SCI Engine Flash & RX 7-9141-K/Eng SCI-2 TX/EATX III TX 8-Switched Battery 	<p>J1962 Pin Connections</p> <ul style="list-style-type: none"> 9-Body Flash & RX 10-J1850 - 11-CCD Bus - 12-Chassis Flash & RX, K-H RX 13-Future Groundable W/17 14-SCI EATX Flash & RX 15-9141-L, Kelsey Hays SCI TX 16-Power (Battery)
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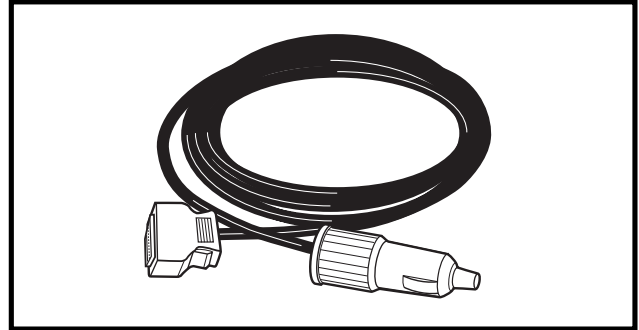
Multiplexer Cable, CH9043: For OBD II capable vehicles, use this cable to connect between either the CH7000A or CH7001A and the vehicle.



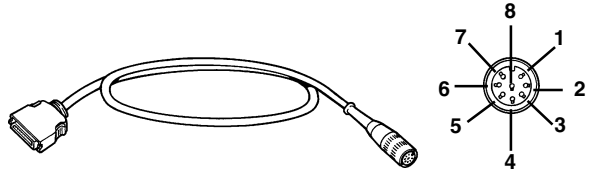
Power Supply, CE2092 and 110 VAC Cord, CE2094: Use the power supply along with the DIN Cable, CH7025 to supply power to the DRB III.



Power Cable, CH7055: Plug this cable into the vehicle cigarette lighter receptacle to supply power to the DRB III.

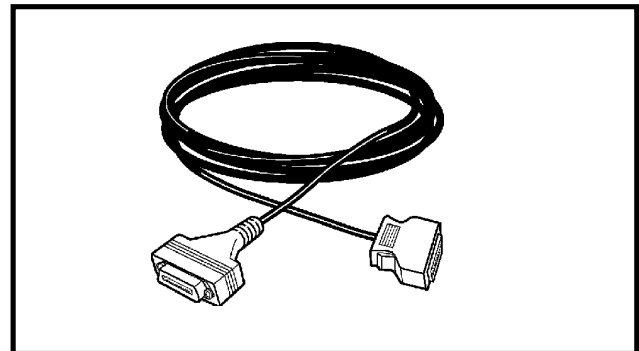


DIN Cable, CH7025: Use this cable, along with Power Supply CE2092, to power the DRB III. Also use this DIN Cable, along with the 1993 - 1995 EATX Adapter CH5500, to reprogram transmission controllers.

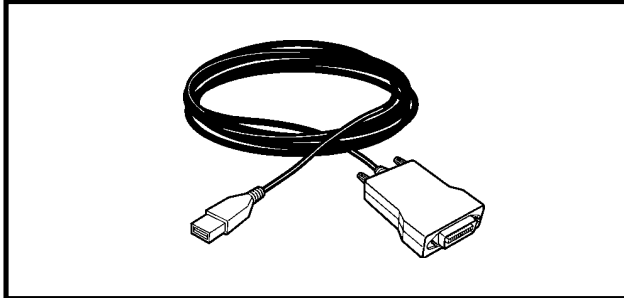


<p>DIN Pin Connections</p> <ul style="list-style-type: none"> 1-Power (Battery) 2-CCD (-) 3-CCD (+) 4-ASD Relay 	<p>DIN Pin Connections</p> <ul style="list-style-type: none"> 5-Eng/ABS/Airbag SCI RX 6-Eng/ABS/Airbag SCI TX 7-Chassis Ground 8-Signal Ground
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General Purpose Interface Bus (GPIB) Cable, CH7035B: Use this cable, along with USB Cable CH2002, to communicate with the DealerCONNECT Client. A cable to supply power to the DRB III, such as the vehicle interface cable or DIN cable, will also be required.



USB Cable, CH2002: Use this cable, along with GPIB Cable CH7035B, to communicate with the Dealer-CONNECT Client.



J1962/MMC Cable, CH7010: Use this cable to connect to Mitsubishi Motor Company (MMC) vehicles that are OBD II capable.

<p>MMC Pin Connections</p> <ul style="list-style-type: none"> 1-Traction Data 2- 3- 4- 5-SCI EATX Flash & RX 6-SCI Eng. RX, Flash & MMC Transmission Data. 7-CCD Bus + 8-CCD Bus - 9- 10-Steering Data 11-Switched Battery 12- 	<p>J1962 Pin Connections</p> <ul style="list-style-type: none"> 1- Diagnostic Enable 2-J1850 + 3-Suspension Data 4-Chassis Ground 5-Signal Ground 6-SCI Eng. RX, Flash & MMC Transmission Data 7-9141-K/Eng SCI-2 TX 8-ABS Brake Data 9-Pulse Signal Diagnostics 10-J1850 - 11-Full Auto A/C Data 12-SRS Air Bag Data 13-Auto Cruise Data 14-Simulated Speed Signal 15-9141-L 16-Power (Battery)
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MMC Cable, CH7005: Use this cable to connect to MMC vehicles that are not OBD II compliant.

<p>MMC Pin Connections</p> <ul style="list-style-type: none"> 1-MMC Engine Data 2-Steering Data 3-Suspension Data 4-ABS Brake Data 5-Cruise Data 6- MMC Transmission Data 	<p>MMC Pin Connections</p> <ul style="list-style-type: none"> 7-Full Auto A/C Data 8-(Future) 9-Pulse Signal Diagnostics 10-Diagnostic Enable 11-Simulated Speed Signal 12-Chassis/Signal Ground
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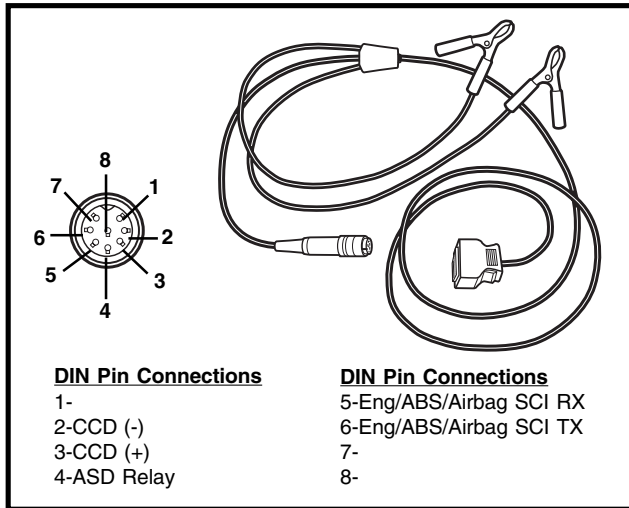
CCD (Body) Cable, CH7020 (8ft.) CH7021 (12ft.): Use this cable to communicate with the vehicle DaimlerChrysler Collision Detection (CCD) bus (Pre OBD II vehicles).

<p>CCD Pin Connections</p> <ul style="list-style-type: none"> 1-Eng/ABS/Airbag SCI RX 2-Power (Battery) 3-CCD Bus (-) 4-CCD Bus (+) 5-Eng/ABS/Airbag SCI TX 6-Chassis /Signal Ground

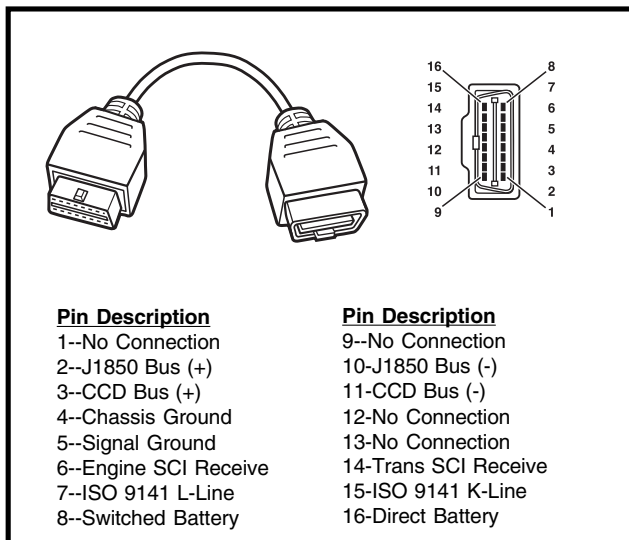
SCI (Engine) Cable, CH7015: Use this cable to communicate with the vehicle engine diagnostics (Pre OBD II vehicles).

<p>SCI Pin Connections</p> <ul style="list-style-type: none"> 1- Chassis /Signal Ground 2- 3-Engine SCI TX 4-Engine SCI RX 5- 6-ASD Relay
--

Jeep/Eagle Adapter Cable, CH7500: Use this cable with the 1987-90 Jeep/Eagle Adapter (JE1000) which connects to D1 and D2 under the hood for ENGINE, ABS and Passive Belts.

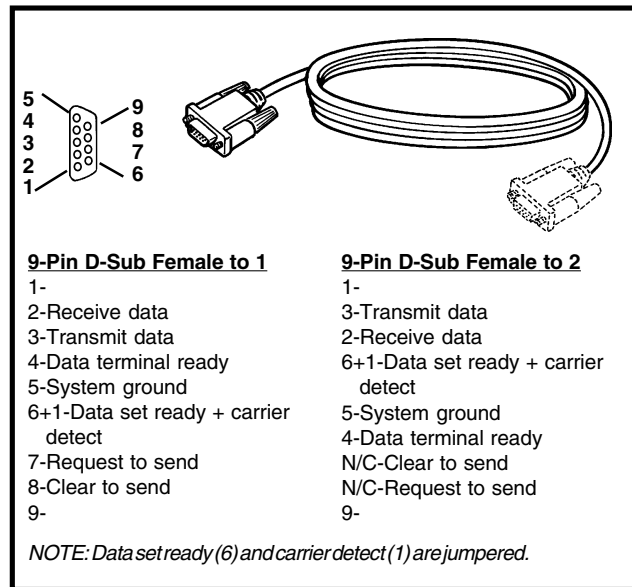


1996 Diesel Fuel Diagnostics Cable (International Only), CI7002: For some 1996 Diesel Fuel Diagnostics, use this adapter cable along with the CE7000A cable. Connect the adapter to the DLC and the CE7000A cable; connect the CE7000A cable to the DRB III.



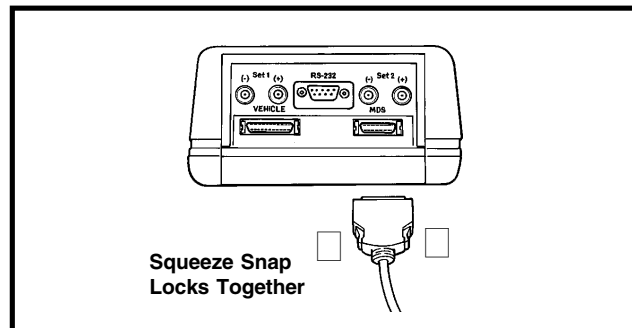
RS-232, Peripheral Communication Cable, CH7068:

The RS-232 cable must have a 9-pin female connector on each end and the cable wiring must be configured as shown below. (The cable is commonly called a "null modem" cable and can be purchased at most businesses that sell computer equipment.)



Cable Connections

Cable connections to the DRB III are made by matching the end connectors and then sliding them together until you hear the locks "snap" in place. Remove by squeezing the snap locks and pulling straight out.



Cable connections to the vehicle are described in the vehicle service manual.

Cable Cleaning

Use a tooth brush, or a similar brush, dipped in Isopropyl alcohol to clean cables and connectors; other solvents may cause damage. Be sure to also clean the connection on the DRB III with the brush dipped in Isopropyl alcohol.

DRB III Update

Three methods are available to update the DRB III:

- Method 1 - DealerCONNECT Client
- Method 2 - ISIS or aftermarket CD
- Method 3 - PCMCIA Memory Card

DealerCONNECT Client

The DRB III program software can be updated with the TechCONNECT software on the DealerCONNECT Client computer. The General Purpose Interface Bus (GPIB) cable (CH7035B) must be connected for communication between the DRB III and TechCONNECT. A cable to supply power to the DRB III, such as the vehicle or DIN cable (CH7025), is also required.

WARNING:
Turn the DRB III power OFF before installing the GPIB Cable.

1. Connect one end of the GPIB cable (7035B) to the DRB III and the other end to the USB Cable (CH2002) and connect the USB Cable to the DealerCONNECT Client.
2. Supply power to the DRB III with either of the following two methods:
 - connect a vehicle cable to the vehicle and to the DRB III Vehicle connection.
 - connect the DIN cable (CH7025) to the DRB III Vehicle connection and to the Power Supply (CE2092).
3. Turn the DRB III power ON.
4. After the DRB III has completed its boot up sequence, it will automatically enter into connected mode. It will automatically determine if an update is available for the DRB III. If the DRB III is current and a PCMCIA "Super Card" is detected, the application will also automatically determine if an update is available for the "Super Card."
5. If an update is available, select the UPDATE Tab to begin.

ISIS or Aftermarket CD

1. Install the DRB III update software.
2. Follow the instructions on the CD to update the DRB III.

PCMCIA Card

1. Insert the PCMCIA update card into the DRB III.
2. Press and continue to hold down the number 2 key on the DRB III as the DRB III power is turned ON.
3. When the DRB III Update Menu appears, release the number 2 key.

DRB III Update Menu

1. Update using update memory card
2. Update via legacy MDS2 application
3. Cancel update request

4. Select **Update using update memory card**. The update process is automatically activated. When it is completed, it will automatically launch the DRB III Main Menu.

Troubleshooting

DRB III does not power up:

- If the LEDs do not light or no sound is emitted at start-up, check for loose cable connections or a bad cable.
- Check the vehicle battery voltage. A minimum of 9 volts is required to adequately power the DRB III tester.
- If all DRB III vehicle or other device connections are proper and the vehicle battery is fully charged, an inoperative DRB III may be the result of faulty cable connector or vehicle wiring. Always test the DRB III with another vehicle or a different cable before returning the tester for service.

Display is not visible:

- Low or high temperatures will affect the visibility of the display, adjust the contrast to compensate. For more information, see "Keypad and Controls" on Page 1-2.

Multimeter doesn't function:

- Try a different set of leads.

High Current Clamp doesn't function:

- Check the Current Clamp internal 9 V battery.
- Check the switch position.
- Check cable connections.

Low Current Shunt doesn't function:

- Check terminal connections
- Check both shunt fuses.

DRB III application doesn't return to Main Menu:

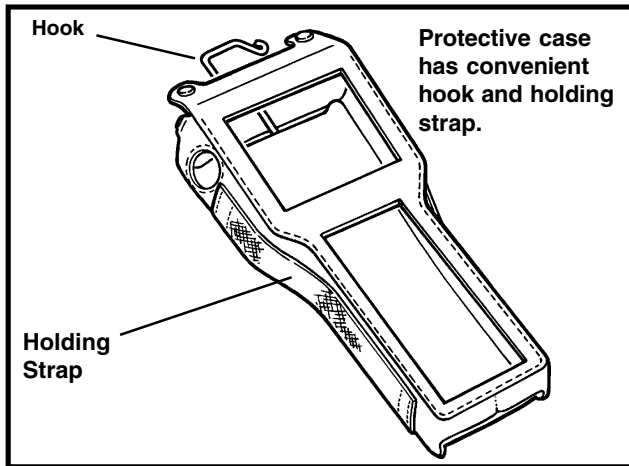
- Warm boot - simultaneously press the MORE and the NO key to reset the operating program and the memory card. All items stored in RAM memory will remain in RAM memory. The program will open to the MAIN MENU.
- Cold boot - simultaneously press the MORE and the YES key to reset the operating program, the memory card and to clear all items stored in RAM memory. A Warning screen will advise that memory will be cleared, press CANCEL to escape or press F4 to continue. The program will open to the MAIN MENU.

DRB III software version is outdated:

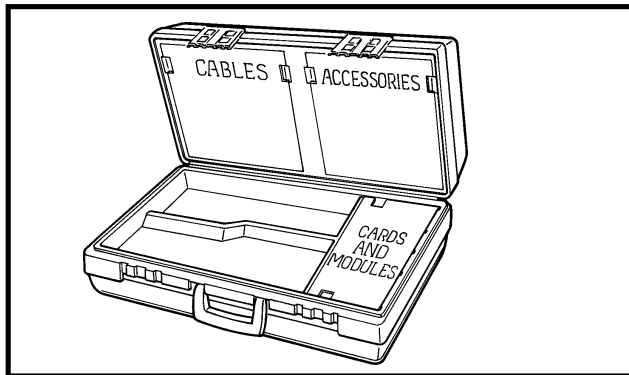
- DRB III software versions may be updated as often as every 30 days. Connect the DRB III to the Dealer-CONNECT Client (refer to p. 1-9) to automatically determine if an update is available for the DRB III and the PCMCIA "Super Card."

Accessory Items

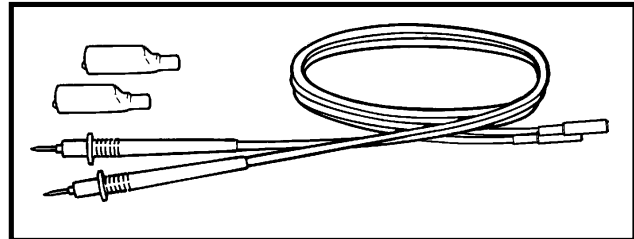
Glove, CH6040: Use this leather-like protective case to help protect the DRB III.



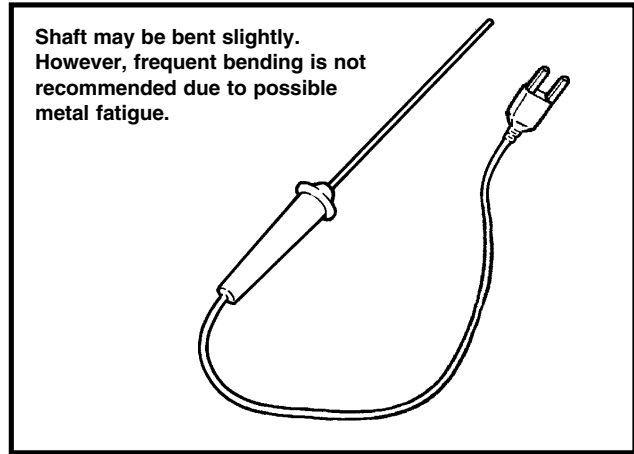
Carrying Case, CH6030: This case will store and transport a gloved or ungloved DRB III, cables and accessories.



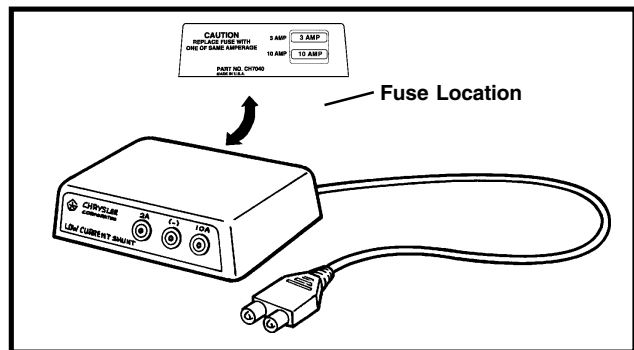
Shrouded Multimeter Probe Leads, CH7030: One (1) Red and one (1) Black multimeter probe and one (1) Red and one (1) Black alligator clip are part of this test lead set.



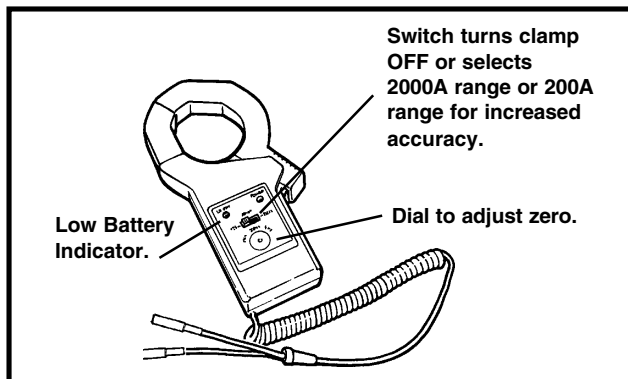
Temperature Probe, CH7050: This attachment can be used to test air or surface temperature. It may also be immersed in liquid to test liquid temperature.



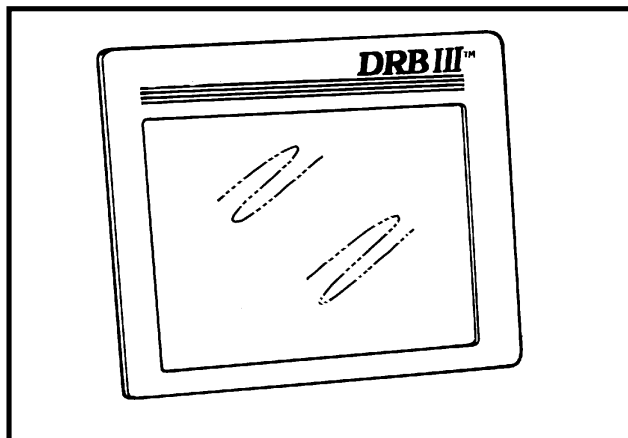
Low Current Shunt, CH7040: This Current Shunt is used in series with the circuit under test. Test scales are 0 - 2 amps and 2 - 10 amps. Each test scale is fused separately. The 2 amp range is fused with a 3 amp automotive fuse; the 10 amp range is fused with a 10 amp automotive fuse.



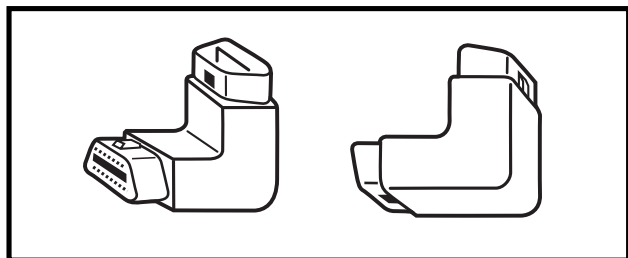
High Current Clamp, CH7045: This 9 V DC battery-powered High Current Clamp is used to measure alternating or direct current. The jaws clamp around the cable, so it is not necessary to break any connections. For detailed information, refer to the instructions included with the tool.



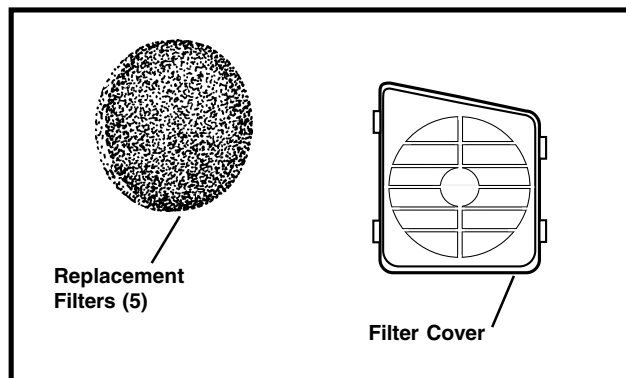
Lens Replacement Kit, Normal-CH6070 or Non-Glare-CH6080: Used for easy replacement of damaged lens.



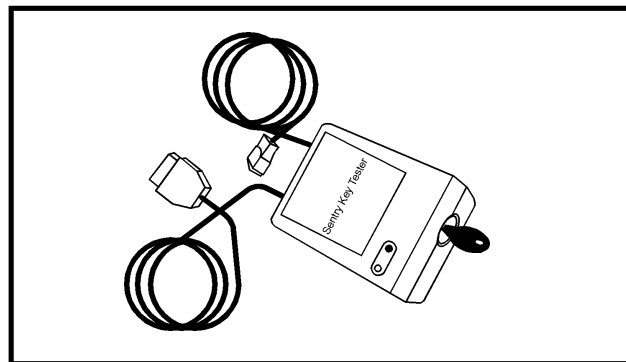
Right Angle J1962 Adapter Kit, OT2050: The 90 degree adapters plug into the J1962 style Data Link Connector (DLC) to allow a cable to be connected and routed properly.



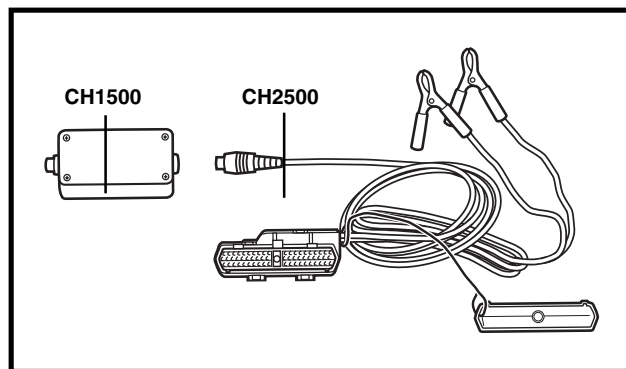
Air Filter Replacement, CH6060



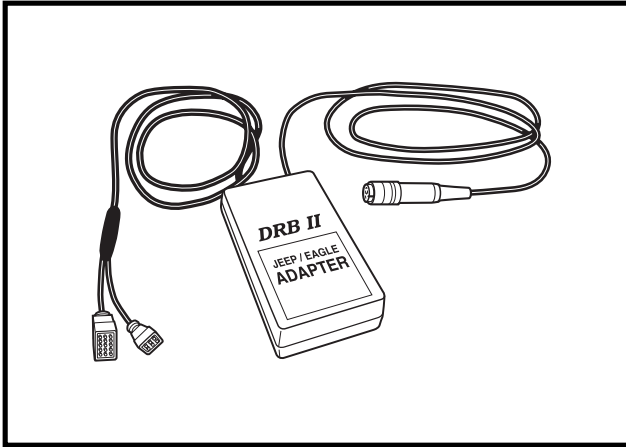
Sentry Key Tester, MLR8311: Used with the DRB III to diagnose faults between the Sentry Key Immobilizer Module and the transponder in the key.



Flash Reprogramming Kit, CH5500: This kit allows easy reprogramming of the transmission or engine controller. For detailed information, refer to the instructions included with the tool.



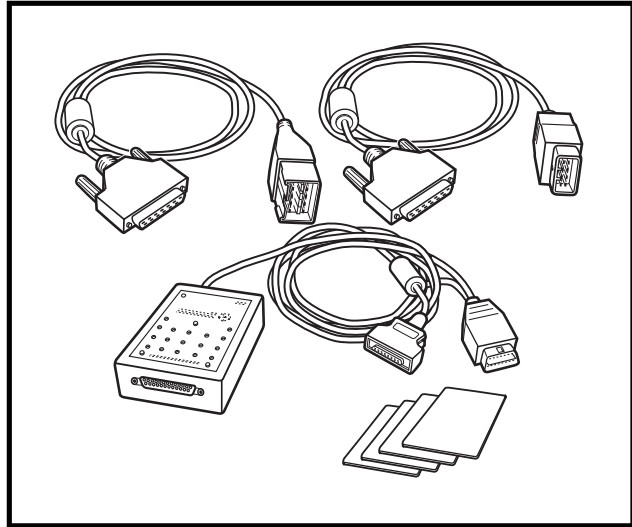
Adapter Box, JE1000: An adapter for 1987 through 1990 Jeep/Eagle (Pre-Chrysler) to be used with the CH7500. Order the adapter separately, it is not included in any kits.



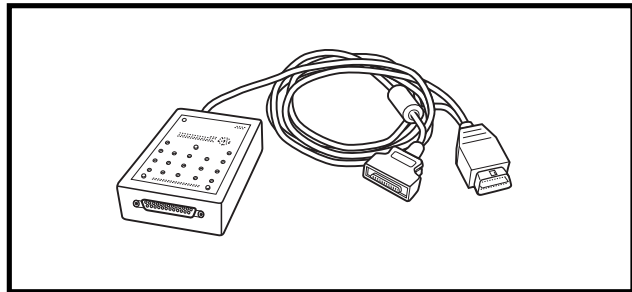
J1962 Breakout Box, CH7002: Connects in-line between the vehicle's J1962 connector and the DRB III CH7000A diagnostics cable. The CH7002 Breakout Box is used for DRB III cable or DLC diagnostics.

J1962 Pin Connections	J1962 Pin Connections
1-	9-
2-J1859 (+)	10-J1850 (-)
3-CCD (+)	11-CCD (-)
4-Chassis Ground	12-
5-Signal Ground	13-
6-Engine SCI Receive	14-Trans SCI Receive
7-ISO 9141 L-Line	15-ISO 9141 L-Line
8-Switched Battery	16-Direct Battery

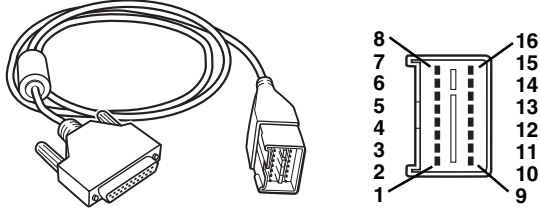
PCI Bus Tester, 8587: Used in conjunction with the DRB III to isolate communication problems on the PCI bus in 2001 trucks, mini-vans and 1999 through current year Jeep Grand Cherokee vehicles. The PCI Bus Tester also allows testing without back-probing of the pins in the PCI Junction Port.



8339: A component of the PCI Bus Tester Kit, 8587. Used in conjunction with the DRB III to isolate communication problems on the PCI bus in 2001 trucks, mini-vans and 1999 through current year Jeep Grand Cherokee vehicles.

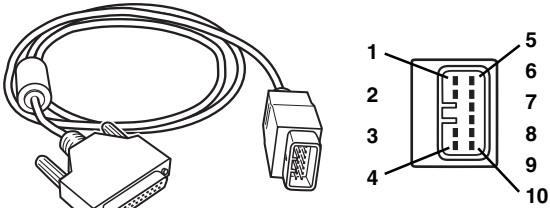


8360: A component of the PCI Bus Tester Kit, 8587. Used in conjunction with the DRB III to isolate communication problems on the PCI bus in 2001 WJ and 1999 through current year Jeep Grand Cherokee vehicles.



<p>Minivan Junction Port Pin-out</p> <p>1-SBEC, SKIM 2-Climate Control 3-Radio 4-ORC 5-Cluster 6-Body Control 7-Diagnostic 8-Overhead Console 9-IPM 10-Driver Side Airbag 11-Memory, Seat/Mirror 12-Pwr door LT/RT, Pwr Liftgate 13-Pass Side Airbag 14-Open 15-Open 16-Airbag ON/OFF Switch System</p>	<p>Truck Junction Port Pin-out</p> <p>1-Cluster A 2-4x4 Module 3-Central Timer Module (CTM) 4-Overhead Console 5-J1962 6-JTEC+ 7-ABS/RWAL Module 8-EATX 9-Open 10-Open 11-Open 12-Remote Radio 13-(AN) HVAC A 14-(DN) HVAC A 15-AECM AN, AN84, DN 16-SKIM</p>
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8623: A component of the PCI Bus Tester Kit, 8587. Used in conjunction with the DRB III to isolate communication problems on the PCI bus in trucks and mini-vans.



<p>Grand Cherokee Junction Port Pin-out</p> <p>1-EATX, JTEC, PDM, SKIM 2-ABS, DDM, EVIC, MHSM 3-AZC 4-Radio 5-ACM 6-EMIC 7-Open 8-BCM 9-PCI Feed to Diagnostic Connector 10 through 16-Open</p>	<p>2001 WJ Junction Port Pin-out</p> <p>1-EATX, JTEC, PDM, SKIM 2-AZC 3-Radio, CD Changer 4-ACM 5-EMIC 6-BCM 7-J1962 8-ABS, DDM, EVIC, MHSM, OSSM 9-OSSP 10 through 16-Open</p>
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DRB III PCMCIA Cards

SuperCard I (CH8000 - white label): Using the SuperCard I PCMCIA card and the appropriate cable(s), DRB III users can access 10 model years (1983-1993) of vehicles spanning from feedback carburetion to fuel injection. The SuperCard I will allow the user to access and diagnose all of the vehicles applicable controllers.



SuperCard II (CH8361 - yellow label) Using the SuperCard II PCMCIA card and the appropriate cable(s), DRB III users can access the following applications:

- 1994-1997 domestic
- 1994-2000 MMC-Badged vehicles
- Generic Scan Tool coverage for ALL OBDII vehicles.
- Access to PEP utilities:
 - Pressure Vacuum Gauge
 - Lab Oscilloscope
 - Belt Tension Gauge
 - Viper Inclinometer to the DRB III.



ST22 Sebring / Stratus 2-Door Coupes (CH8425 - blue label): Using the ST22 PCMCIA card and the J1962 MMC cable (CH7010), users will be able to access all diagnosable modules on model year 2001 and newer Sebring / Stratus 2-door coupes. The ST22 combined Service/Diagnostic manual will be used for the testing of specific modules.

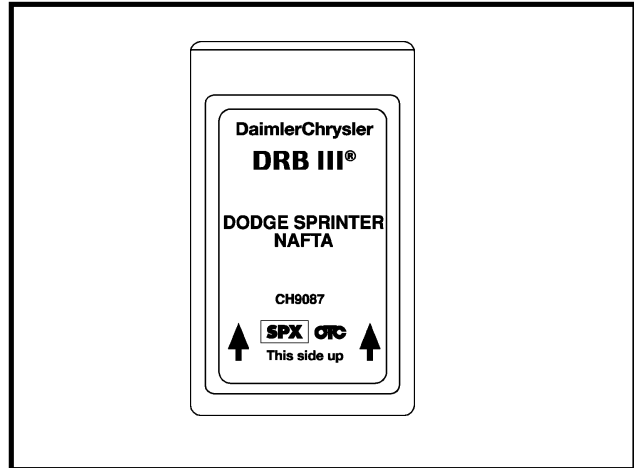


Note: Dealers will be able to connect to the Dealer-CONNECT Client and download any updates for the PCMCIA cards.

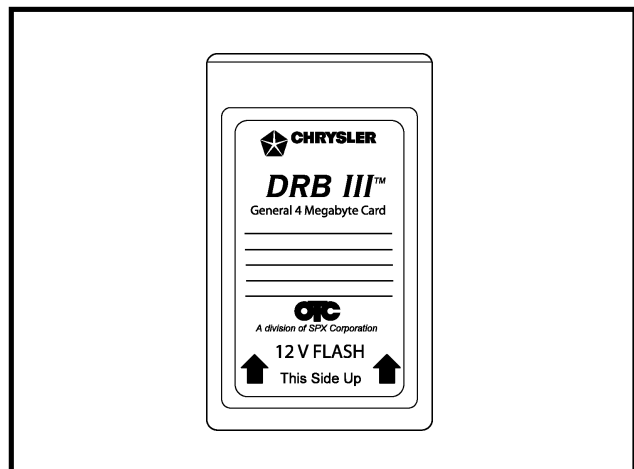
Crossfire (CH9044 - orange label): Using the Crossfire PCMCIA card, the CH7000A or CH7001A cable, and the CH9043 Multiplexer, users will be able to access all diagnosable modules on model year 2004 and newer Crossfire vehicles.



Sprinter (CH9087 - green label): Using the Sprinter PCMCIA card, the CH7000A or CH7001A cable, and the CH9043 Multiplexer, users will be able to access all diagnosable modules on model year 2003 and newer Sprinter vehicles.



Blank 4 Mbyte PCMCIA card (CI8023): A blank card that can be used for loading software updates into the DRB III.



Blank 8 Mbyte PCMCIA card (CI8024 - not shown): A blank card that can be used by engineering and development.

Oscilloscope

About the Oscilloscope

The Oscilloscope application is supplied on the SuperCard II (CH8361), version 7.0 or higher.

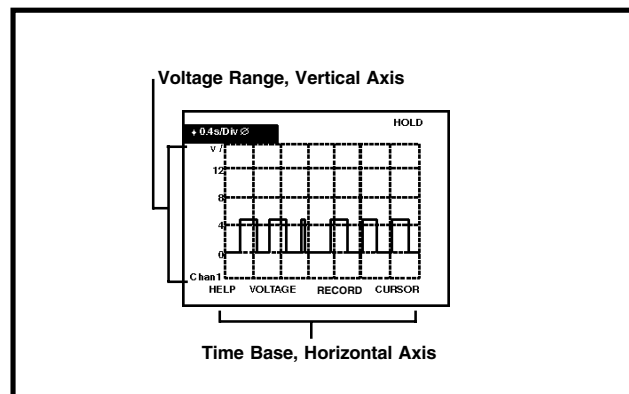
Since 1984 the ever increasing use of on-board automotive electronics has made automotive diagnostics more challenging than ever. Instruments such as an oscilloscope have become necessary tools for today's technicians as they work with increasingly sophisticated vehicle control systems.

Digital storage oscilloscopes—commonly called lab scopes—display a high quality rendition of the vehicle electrical signals by sampling an electrical signal thousands of times per second. This enables the lab scope to display a waveform that shows a complete representation of the signal—you see not only the quantity of the signal but also the quality.

Other instruments, such as digital multimeters, sample the signal several times per second and then average the data. Intermittent faults are missed if they didn't occur when the multimeter sampled the signal, or they may be averaged out of the data. In comparison, the lab scope easily picks up all of the signal data and visually displays a waveform image that shows every variation in the signal.

Waveform Display

In its simplest form, a lab scope waveform is a trace of voltage and time. The lab scope samples the signal and then plots it as voltage on the vertical axis and time on the horizontal axis. This is repeated thousands of times per second and a continuous waveform is produced.



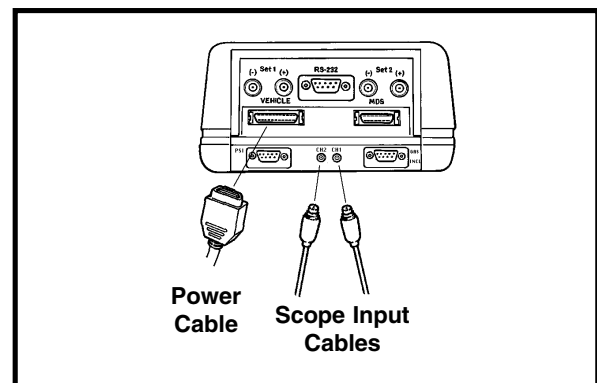
Features and Functions

The Multifunction PEP module oscilloscope program features the following options:

- Two channels
- Automatic setups
- Holding, recording and replaying a signal
- Record
- Voltage, time or frequency measurement

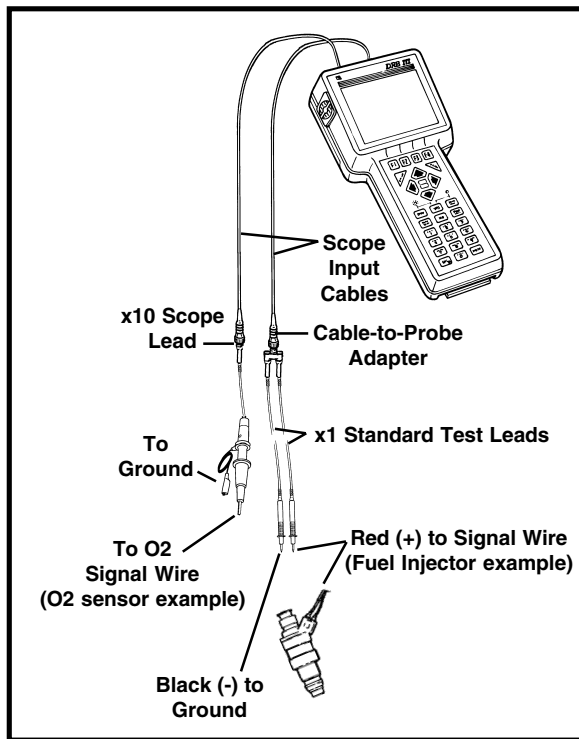
Oscilloscope Setup

1. Plug the Power Cable into the DRB III power connector marked VEHICLE.



2. Plug the scope input cable(s) into the channel connectors located on the PEP module. The DRB III will support two scope channels.

3. Attach one or both of the following cable setups:
 - **High Impedance Circuit**
 - A. To test a high impedance circuit (for example, an O2 sensor) attach the x10 Scope Lead to the Scope Input Cable. Attach the x10 ground clip to a good ground and the probe to the O2 signal wire.
 - B. Setup for the x10 lead also requires that you select the x10 probe setting from the live data screen. Refer to FUNCTION KEY OPTIONS, page 2-6.

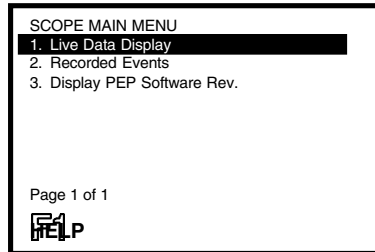


- **Low Impedance Circuit**
 - A. To test a low impedance circuit (for example, a Fuel Injector) attach the Cable-to-Probe Adapter to the Scope Input Cable.
 - B. Attach the x1 Standard Leads to the Cable-to-Probe Adapter.

Note: Measure the signal as close to the sensor as possible to minimize interference.

4. Insert the SuperCard 2, release 7 or higher (CH8361), PCMCIA memory card into the DRB III.

5. Attach the appropriate power cable to the DRB III.
6. Select the Live Data Display option from the Scope Main Menu.



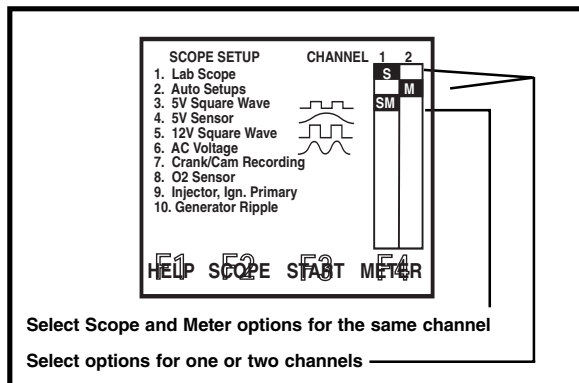
Lab Scope Calibration

1. From the DRB III PEP Module Tools Menu, select item 2, Lab Scope.
2. Read and follow on screen prompts until the Scope Main Menu is displayed.
3. Select the Live Data option.
4. Configure the desired settings for channel 1 and channel 2 from the Scope Setup Menu.
5. Connect the appropriate probe into either channel 1 or 2 scope port on the PEP module.
6. Press F3 to begin calibration. The message "Scope Calibration will appear at the top of the screen. You are prompted at this time to Chassis ground the probes. Press ENTER to continue.
7. The message "Channel 1 calibrated Press ENTER to continue..." will be displayed within two seconds.
8. Press F3 to start the scope measurement.

Program Setup

The Scope or Meter may be displayed with one screen for each option or the Scope and Meter may be displayed together on a split screen.

1. Select a setup option by positioning the highlighted area under channel 1 or 2. Use the \blacklozenge \square \rightarrow \circlearrowleft keys to move the highlight.



2. Press F2 to see a scope display and F4 to see a meter display. To cancel a display choice, press the same "F" key again. A scope and meter can be displayed on each channel or both scope and meter can be displayed on a single channel.
3. Press F3 or Enter to activate the live data display.

Icons

An icon is displayed at the bottom of the display screen when a special function is available. These functions are "called up" by pressing the related Function Key ("F" key).



F1/Help will present a Help message related to the context of the program you have active (context sensitive). Press F3 to view the Help Index of other subjects available; press the number of the subject you want to see more information about. Press F1 to exit Help.



F2/Scope will set up the scope function for the channel highlighted. Press once to select, press again to deselect.



F3/Start acts as a command to save all setup and run the program or display live data.



F4/Meter will set up the meter function for the channel highlighted. Press once to select, press again to deselect.

Option Description

Ten programmed options are available through the Scope Setup menu. Each option programs the display for the test condition described in the title. Additional setup conditions may be activated or adjusted from the live data screen.

1. **Lab scope:** A general setup useful for viewing a slow changing waveform of 0 to 12 volts.
2. **Auto Setup:** Automatically sets an appropriate voltage range, time base and trigger for the signal viewed.
3. **5V Square Wave:** Setup best for viewing fast changing square waves of 0 to 5 volts, such as camshaft or crankshaft sensors.
4. **5V Sensor:** Setup best for viewing slow changing analog waves of 0 to 5 volts, such as a Throttle Position Sensor.
5. **12V Square Wave:** Setup best for viewing a fast changing signal of 0 to 12 volts.
6. **AC Voltage:** Setup for general Alternating Current (AC) signal such as a ABS Tone Wheel, EATX Turbine or Output Speed Sensors.
7. **Crank/cam Recording:** Feature not currently implemented.
8. **O2 Sensor:** Setup to view the O2 sensor signal. The x10 lead must be used to reduce loading on the O2 circuit when testing the O2 sensor.
9. **Injector or Ignition Primary:** Setup to view the fuel injector signal or any primary ignition signal that has inductive spikes in the signal.
10. **Generator Ripple:** Setup best for analyzing alternator diode ripple and alternator belt slippage.

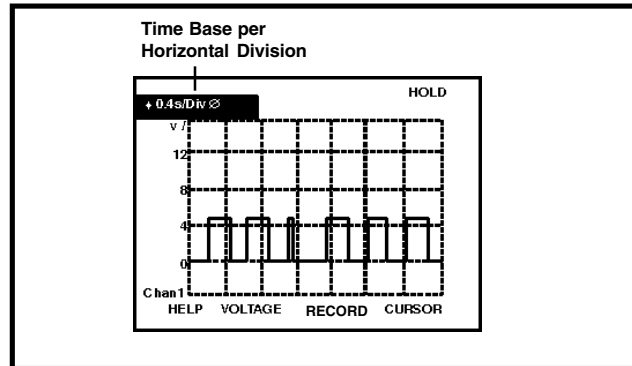
Single or Split Screens

A single or split screen can be displayed for any active channel, or two single screens can be displayed for two separate channels and two separate options. Move the highlight with the \blacklozenge or \emptyset key to an active channel, then press the F-key for Scope (F2) or Meter (F4) or both. Pressing the F-key again will deselect a function. Press F3 or Enter to start the active data display.

<p>SCOPE SETUP CHANNEL 1 2 1. Lab Scope 2. Auto Setups 3. 5V Square Wave 4. 5V Sensor 5. 12V Square Wave 6. AC Voltage 7. Crank/Cam Recording 8. O2 Sensor 9. Injector, Ign. Primary 10. Generator Ripple</p> <p>HELP SCOPE START METER</p>	}	<p>+ 0.4s/Div \emptyset HOLD v/v 12 8 4 0 Chan1 HELP VOLTAGE RECORD CURSOR</p>
<p>SCOPE SETUP CHANNEL 1 2 1. Lab Scope 2. Auto Setups 3. 5V Square Wave 4. 5V Sensor 5. 12V Square Wave 6. AC Voltage 7. Crank/Cam Recording 8. O2 Sensor 9. Injector, Ign. Primary 10. Generator Ripple</p> <p>HELP SCOPE START METER</p>	}	<p>+ 0.4s/Div \emptyset HOLD Chan1 5V SQUARE WAVE 10.0 volts max 11.2 min 9.2 Press ENTER to reset min/max HELP VOLTAGE RECORD CURSOR</p>
<p>SCOPE SETUP CHANNEL 1 2 1. Lab Scope 2. Auto Setups 3. 5V Square Wave 4. 5V Sensor 5. 12V Square Wave 6. AC Voltage 7. Crank/Cam Recording 8. O2 Sensor 9. Injector, Ign. Primary 10. Generator Ripple</p> <p>HELP SCOPE START METER</p>	}	<p>Chan1 5V SQUARE WAVE 10.0 volts max 11.2 min 9.2 Press ENTER to reset min/max + 0.4s/Div \emptyset HOLD v/v 12 8 4 0 Chan1 HELP VOLTAGE RECORD CURSOR</p>
<p>SCOPE SETUP CHANNEL 1 2 1. Lab Scope 2. Auto Setups 3. 5V Square Wave 4. 5V Sensor 5. 12V Square Wave 6. AC Voltage 7. Crank/Cam Recording 8. O2 Sensor 9. Injector, Ign. Primary 10. Generator Ripple</p> <p>HELP SCOPE START METER</p>	}	<p>+ 0.1ms/Div \emptyset HOLD v/v 12 8 4 0 Chan1 Chan2 HELP VOLTAGE RECORD CURSOR</p>

Screen Divisions

The lab scope screen is divided into five divisions on the vertical axis and seven divisions on the horizontal axis.



The volts per division can be determined by dividing the voltage range (-4 to 16 volts illustrated) by the number of divisions. The illustration shown has 4 volts per division (20v divided by 5 divisions = 4v per division). The voltage range is adjustable, see "Function Key Options > F2/Voltage > Range" for more information.

The time base is different. The time base figure shown on the screen is per division. The entire screen illustrated covers a time period of 2.8s in total (.4s x 7 divisions = 2.8s). The time base is adjustable, press \blacklozenge or \emptyset to change from 0.4ms through 4 seconds.

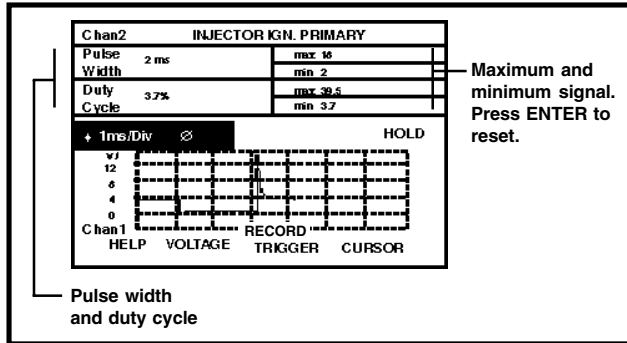
Program Description

Programmed Screen Setups

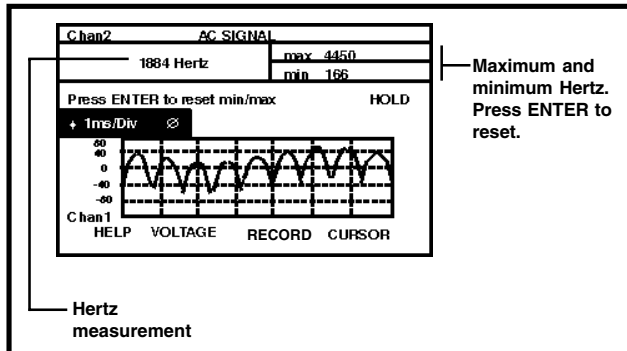
O2 Scope and Meter: The programmed screen for the O2 is a waveform display and a meter display that shows cross-counts per second, minimum and maximum voltage and a lean or rich fuel indicator in addition to the standard screen options as described in "Screen Options."

<p>Cross-counts are number of times per second that signal crosses 0.45 v.</p>	<p>Maximum and minimum voltage. Press ENTER to reset.</p>
<p>Chan2 O2 SENSOR Cross Counts 1.8 per sec max .70 min .20 Press ENTER to reset min/max + 0.1s/Div \emptyset HOLD v/v 12 0.8 0.4 0.0 Chan1 HELP VOLTAGE RECORD CURSOR</p>	
<p>Rich = Over 0.45 v Lean = Under 0.45 v</p>	

Injector Scope and Meter: The programmed screen for the Fuel Injector is a waveform display and a meter display that shows pulse width, duty cycle and the minimum and maximum pulse width and duty cycle. In addition it has the standard screen options as described in “Screen Options.”

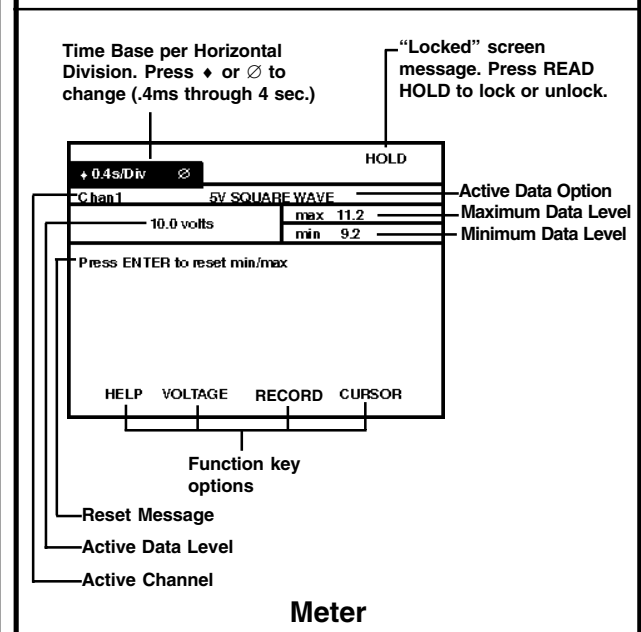
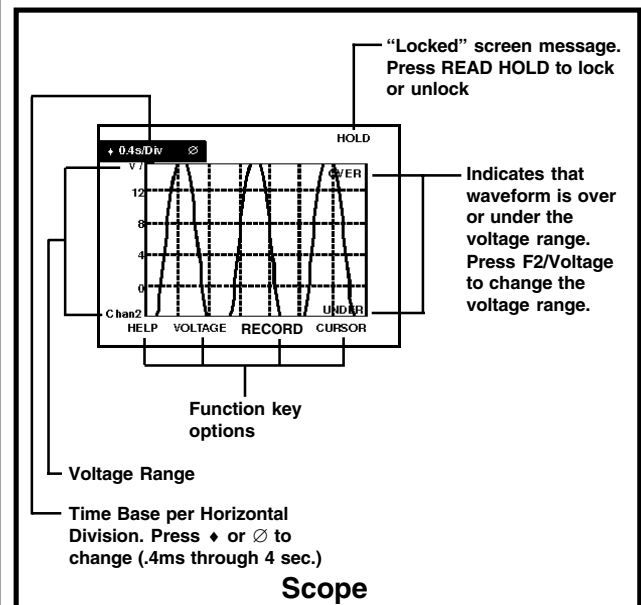


AC Scope and Meter: The programmed screen for alternating current is a waveform display and a meter display that shows the frequency measurement in hertz plus the minimum and maximum frequency. In addition it has the standard screen options as described in “Screen Options.”



Screen Options

Two methods of signal display are available: A Scope waveform display and a Meter display. Each display features on-screen information and function key access to a number of options.



- **Time Base:** Change by pressing the ♦ or ⊗ key
- **Hold:** Press the READ HOLD key to “freeze” the screen; press again to cancel
- **F1/Help, F2/Voltage, F3/Record and F4/Cursor:** See “Function Key Options.”
- **Over or Under:** Indicates that waveform is over or under the voltage range. See “Function Key Options” to change voltage range.

Function Key Options

Four function key options are available from the live data screen. Press the function key once to access the options, press the function key again to save changes or exit from the option.

F1/Help

Press F1 to access context-sensitive Help. Press F1 to return.

F2/Voltage

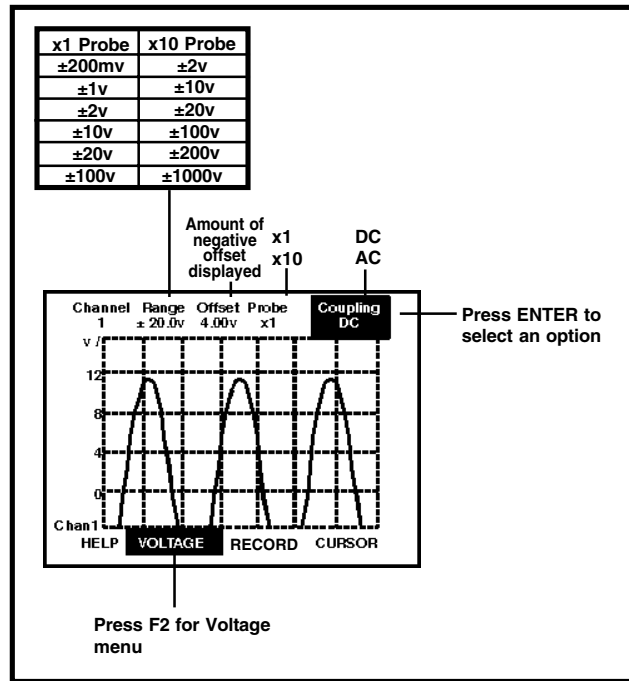
Press F2 to display the voltage menu. Press ENTER to select an option, press \square or \rightarrow to select a different setting. Press F2 to save the settings.

If two screens are displayed, highlight the channel option and select channel 1 or 2 for the voltage setup. You can setup both channels, one at a time.

There are four voltage options available:

- **Range:** If x1 probe selected, ranges available are $\pm 200\text{mv}$, $\pm 1\text{v}$, $\pm 2\text{v}$, $\pm 10\text{v}$, $\pm 20\text{v}$ and $\pm 100\text{v}$. If x10 probe selected, ranges available are $\pm 2\text{v}$, $\pm 10\text{v}$, $\pm 20\text{v}$, $\pm 100\text{v}$, $\pm 200\text{v}$ and $\pm 1000\text{v}$.
- **Offset:** The graph shows half of the voltage range; therefore, an offset is used to select the part of the voltage range to be displayed. The standard range offset displays four divisions of the positive range and one division of the negative range. Pressing \square or \rightarrow indexes the divisions, one division at a time, to display the entire positive or negative range.
- **Probe:** Select standard (x1) or high impedance (x10) probe setting.
- **Coupling:** Select AC or DC setting.

Note: Coupling refers to the method used to connect an electrical signal from one circuit to another. With the DRB III, coupling is the connection from your test circuit to the DRB III. DC coupling shows all the input signal and AC coupling blocks the DC component of a signal to show the waveform centered around zero volts.



F3/Record

The Record function is a means to set up conditions that must be met by the signal before a waveform can be displayed. Record is commonly used to begin rewriting a repeating waveform in the same location on the screen: without Record, the waveform could begin at any place and appear to move about on the screen. Record is also used to synchronize the waveforms so that they are in step with each other when multiple screens are displayed.

Record is available through the Function Keys. Press F3 to display the Record menu. Press \blacklozenge or \emptyset to select an option to change, press \square or \rightarrow to select a setting. Press F3 to save changes. See Double Channel Screen illustration.

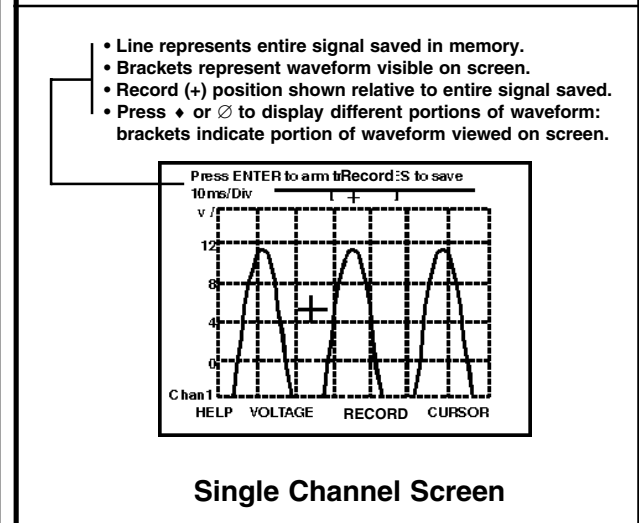
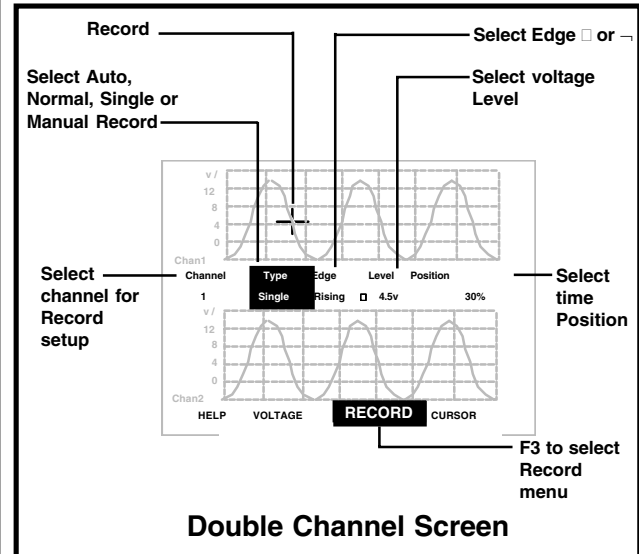
If two scope screens are displayed, highlight the Channel option and select channel 1 or 2 for Record setup.

Four Record setups are available:

- **Type > Auto:** Record is not set and any signal detected is displayed.
- **Type > Normal:** The waveform is displayed each time the signal crosses the Record point. Waveforms do not display if the signal does not cross the Record point.
- **Type > Single:** This option records and holds the signal that crosses the Record point. Save the recorded signal waveform by pressing Yes or reset (arm Record) to record the next signal by pressing Enter. See Single Channel Screen illustration. Any recorded signal waveforms can be played back by selecting Recorded Events from the Scope Main Menu.
- **Type > Manual:** Record is not set and any signal is recorded and held by pressing Enter. Save the Recorded signal waveform by pressing Yes or reset (arm Record) to Record the next signal.

Three options are available for the Normal and Single Record setups:

- **Edge > Rising \square or \rightarrow Falling:** Edge sets Record to begin drawing the waveform on a rising signal or on a falling signal.
- **Level > 0.0 v:** Level is the location of the Record point on the vertical voltage scale.
- **Position > 0 %:** Position is the location of the Record point on the horizontal time scale.



See also:

- Recorded Events
- Playback Scope Events

F4/Cursor

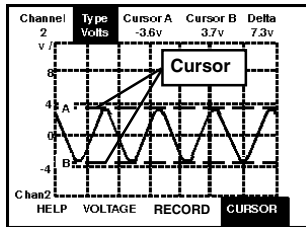
The cursor function measures the frequency of a regularly repeating signal or the time or voltage difference between two points on a waveform.

The cursor is available through the Function Keys. Press F4 to display the cursor menu. Press \blacklozenge or \emptyset to select an option, press \square or \rightarrow to select a setting. Press F4 to save changes.

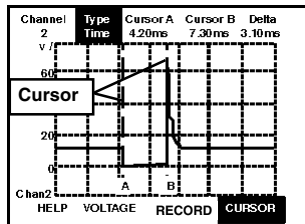
If two scope screens are displayed, highlight the Channel option and select channel 1 or 2 for cursor setup.

Three cursor setups are available:

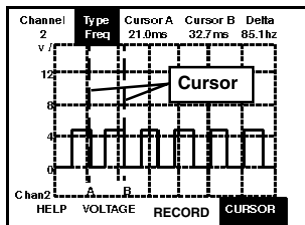
- **Type > Volts:** Measure the voltage difference between two points.



- **Type > Time:** Measure the time difference between two points.



- **Type > Frequency:** Measure the frequency difference between two points. Note that when measuring frequency, it is important that the full cycle (on and off time) be measured.



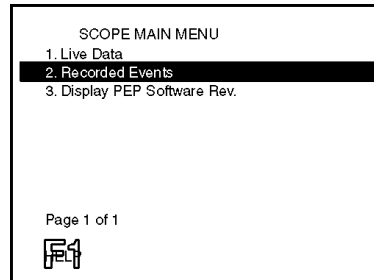
1. Highlight the Type option and select either the Volt, Time or Frequency measurement: two cursor lines will appear on the screen.
2. Highlight Cursor A setting: press \square or \rightarrow to select a volts starting point; press \blacklozenge or \emptyset to select a frequency or time starting point.
3. Highlight Cursor B setting: press \square or \rightarrow to select a volts ending point; press \blacklozenge or \emptyset to select a frequency or time ending point.

The measured difference (delta) between the Cursor A point and Cursor B point will be displayed under the Delta heading. Notice that as you move the cursor, the delta between the two points is updated.

Recorded Events

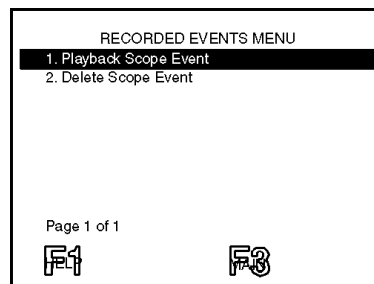
Recorded data gathered with the Record feature can be played back for review or deleted when no longer needed.

1. Choose Recorded Events from the Main Menu.



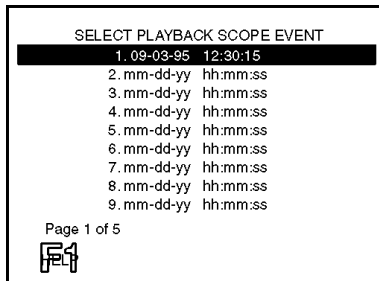
Main Menu

2. The Recorded Events Menu lists the options available. Selecting either of the options from the Recorded Events Menu will display all of the recorded events stored in memory.



Recorded Events Menu

3. Press the MORE key to see all events held in memory. The page message line will indicate how many pages of events are available.



Playback Menu

4. Select an event using the or key, press ENTER.

Playback Scope Event

Select Playback Scope Event from the Recorded Events Menu to review a recorded event. Select the event for review from the Playback Scope Event menu.

All of the events recorded will be shown in the normal mode, but you can change the Voltage setting, set Record or set a Cursor to measure volts, time or frequency of a recorded signal. Press the Function key to select the option and settings just as you would for a live signal.

Delete Event

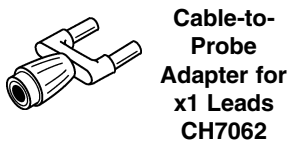
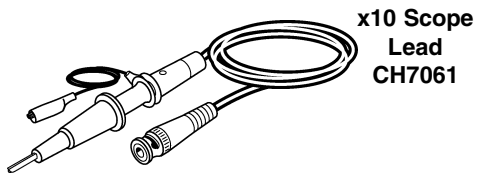
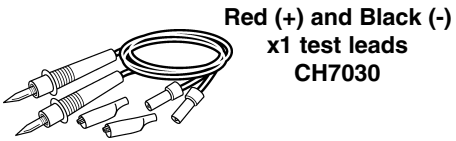
Events can be deleted when they are no longer needed or if memory is needed to permit the recording of additional events. Select Delete Scope Events from the Recorded Events Menu and select the event to delete. Press Yes to confirm event to be deleted.

Accessories

Scope Accessory Kit - CH8523

The scope accessory kit include the following pieces:

- CH7030 Heavy Duty Test Leads
- CH7058 Scope Input Cable
- CH7061 10:1 Scope Probe
- CH7062 BNC to Banana Adapter



Digital Pressure Tester

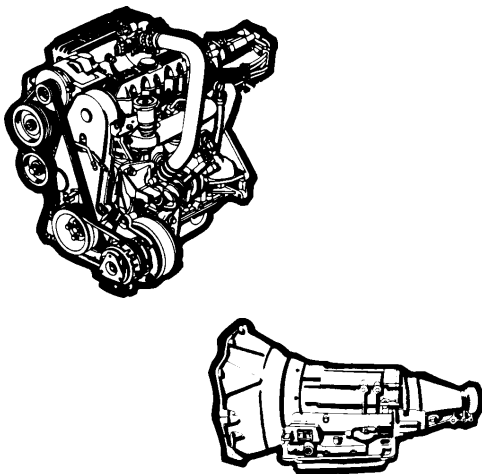
The Digital Pressure Tester application is supplied on the SuperCard II (CH8361), version 7.0 or higher.

Industry has traditionally used mechanical pressure and vacuum gauges to test systems operated by fluid, air or vacuum. The mechanical gauges are generally large, require cumbersome lines under pressure and a number of setups are required for comparisons.

The digital pressure tester eliminates many of these traditional problems. A pressure transducer attaches at the pressure source and sends digital signals by wire to the tester. This eliminates testing with pressurized lines and the need for multiple gauges. The signals can be received from up to six (6) test points and all signals are converted to data and displayed on one screen for comparison, graphing and analysis.

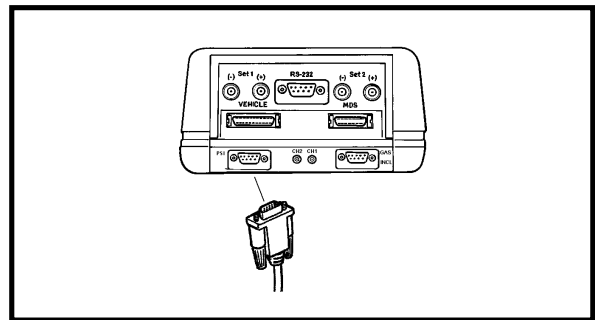
Data can also be recorded to allow play back and review of the recorded information or to save it for future reference.

The number of applications this tool can be used on is limited only by your imagination. Some of the more common applications include engine compression, vacuum, fuel, and exhaust systems; automatic transmissions, hydraulic systems, ABS brake systems, air conditioning and more.

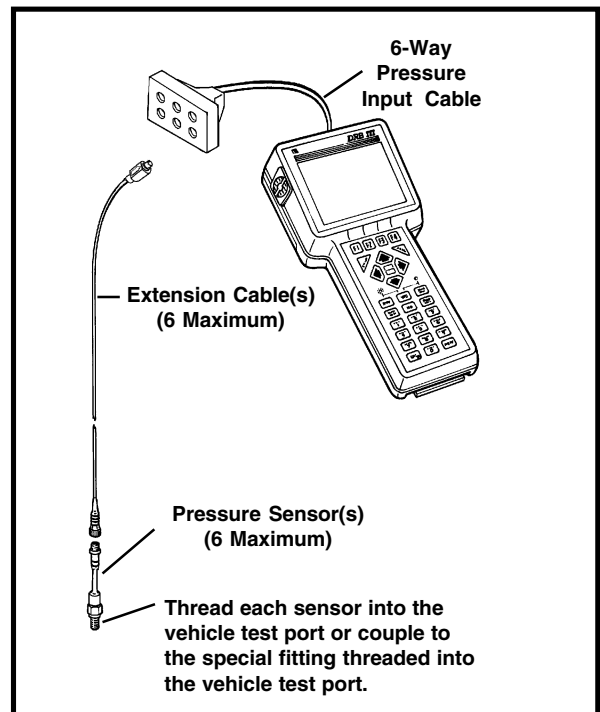


Digital Pressure Tester Setup

1. Plug the 6-Way Pressure Input connector cable into the PEP module port marked PSI.



2. Attach the extension cables and pressure sensors to the multiple outlet end of the 6-Way Pressure Input connector cable



3. Thread an adapter into a vehicle test port and tighten securely. Couple the sensor to the adapter. Attach the extension cables to the sensors.
4. Insert the SuperCard 2, release 7 or higher (CH8361), PCMCIA memory card into the DRB III.
5. Connect the appropriate power cable to the DRB III power connector marked VEHICLE.

Important:

- **Choose the proper pressure range sensor for the application and pressure expected. Do not try pressure measurements that may exceed the rated capacity.**
- **Do not contaminate ABS systems with fluid from other systems. Use only with D.O.T. 3 or D.O.T. 4 brake fluid; other fluids may cause contamination and result in brake system failure.**
- **Follow the vehicle manufacturer's service procedures at all times.**

Pressure Transducer Calibration

1. From the DRB III Module Tools Menu select item 1.
2. Read and follow the on-screen prompts until the Digital Pressure Main Menu is displayed.
3. Select item 1, **Live Data Display**.
4. Plug the required sensor(s) into the 6-way Pressure Input Cable.
5. Enter the sensor type and units into the appropriate channel. There are two options at this point. You may zero all sensors, or you may zero any individual sensor.
6. Press F4 to Zero all Sensors. At the bottom of the screen a message will appear that reads "Pressure Sensors are Zeroed".

Program Setup

Icons

An icon is displayed at the bottom of the display screen when a special function is available. These functions are "called up" by pressing the related Function Key (F key). Press the F key again to exit the function. The function for the icons may change, depending upon what part of the program is active.



F1/Help will present a Help message related to the segment of the program you have active (context sensitive). Press F3 to view the Help Index of other subjects available; press the number of the subject you want to see more information about.



F2/Zero will save the selected sensor's current reading as zero (0) pressure. Any future pressure readings are compared to the zero reading and displayed as a delta (difference in a variable) reading.



F2/Add will add one more sensor to the graphing function.



F2/Delta saves the selected sensor's current reading in memory. Any future pressure readings are compared to the reading captured in memory when F2 was pressed. These readings are displayed as a delta (difference in a variable) reading.



F3/Start acts as a command to save all setup and run the program or display live data.



F3/Index displays the help index of help subjects available.



F3/Next cycles sensor choices on the graphing function.



F3/Minimum or maximum shows the sensor's minimum and maximum reading



F3/Main returns to the main menu.



F4/Record begins recording data sample to memory; pressing F4 again ends the recording and saves the data samples to memory.



F4/Zero All sets all sensors at zero (0) pressure.

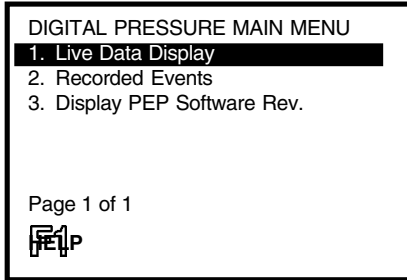


F4/Delete removes the highlighted graph.

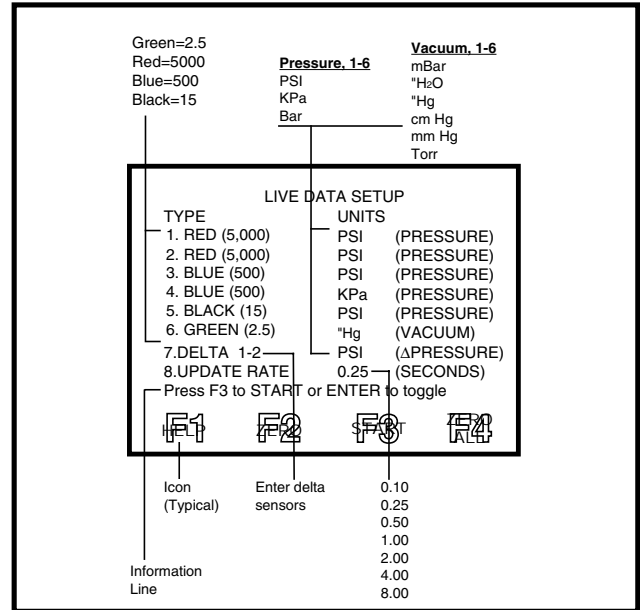
Data Display Setup

The Pressure Tester option is available from the DRB III Stand Alone menu (Revision 19.2 or higher).

1. Select the Digital Pressure Gauge from the DRB III Stand-Alone Main Menu.
2. Select the Live Data Display option.



The Live Data Setup screen will allow you to setup from one (1) to six (6) sensors, designate two (2) delta sensors and select how often you want the program to update the data.



Each sensor setting is changed by positioning the reverse video bar with the arrow keys, then pressing ENTER to cycle the settings.

Options 1-6: Sensors can be set for vacuum or pressure range and units of display. Color identifies the sensor pressure range. **Note:** Zero sensors before activating live data. Press F2/Zero to zero a sensor or press F4/Zero All to zero all sensors.

Option 7: Select sensors for delta measurement. Select the delta option and then select the sensors and units of pressure to compare to each other.

Option 8: Select how often the screen is updated. An average of the readings taken between updates will be displayed.

Information line: displays messages having a bearing on the active line being setup.

Icon: a symbol to show that a command activated by the appropriate Function (F) key is available.

Press **F3/START** to save all settings and to activate live data sampling.

Pressure Tester Program

Live Data Modes

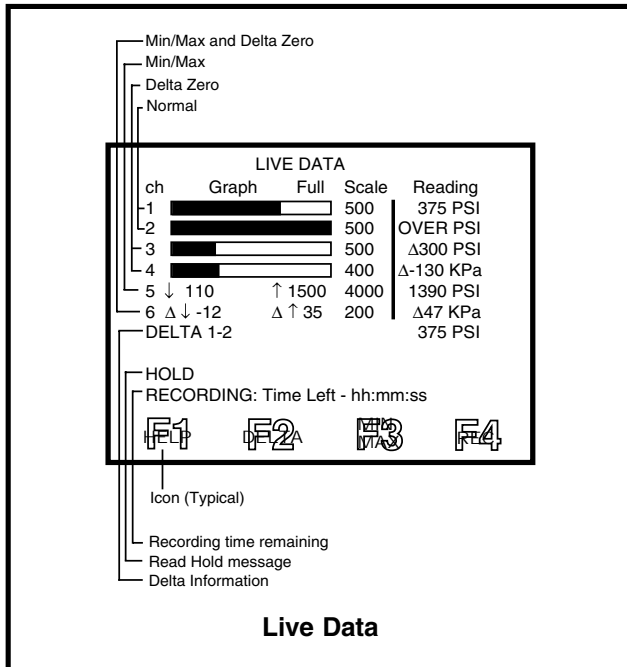
The Live Data screen displays up to six (6) sensors, allows you to select data display modes and options, and has a record and a hold (freeze frame) option.

Four live data modes and three live data options are available from the Live Data screen.

The Live Data screen in Figure 6 shows each sensor activated in one (1) of four (4) modes:

- **Normal** - Shows a bar graph and the current reading.
- **Min/Max** - Shows the minimum, maximum and the current reading.
- **Delta Zero** - Shows a bar graph and the difference between the current reading and the previous reading at the time the sensor was zeroed.
- **Min/Max and Delta Zero** - Shows the minimum, maximum and current delta readings.

Each of the modes is setup from the Live Data screen. Position the reverse video bar on the sensor number, then press the F key, or keys, for the mode setup.



Live Data Options

Bar Graph Range Adjustment - Each bar graph range can be adjusted individually. Position the reverse video bar on the sensor number and press the right arrow key to increase the range, press the left arrow key to decrease the range. When the arrow key is pressed, the full scale reading will change to show the top range limit of the bar graph.

Note: If the sensor pressure is greater than the allowed range, the word OVER is displayed.

Read Hold - Press the Read Hold key to pause the screen update for live data and when recording data. Pressing Read Hold a second time resumes the data update. A message line on the display screen indicates if READ or HOLD is activated.

Record - Press the F4 key to begin the record-to-memory feature. Press F4 a second time to end recording.

A message line on the display screen indicates how much time is available for recording at the update rate set on line 8 of the Live Data Setup screen. Recording time available is at least 40 minutes if no other events are stored in memory.

Recorded Events

Record Pressure Event

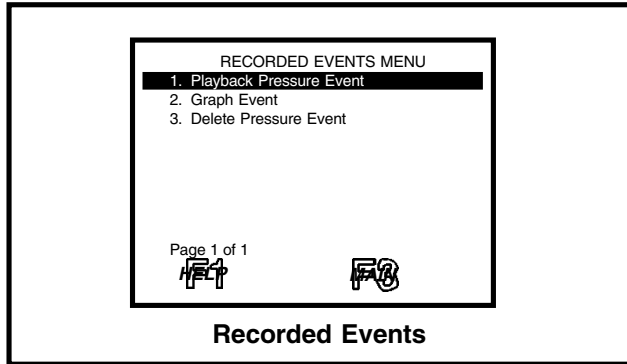
Recorded data gathered with the F4 record feature can be played back for review, graphed or deleted when no longer needed.

To Record an event, press the F4 key to begin the record-to-memory feature. See the Live Data illustration.

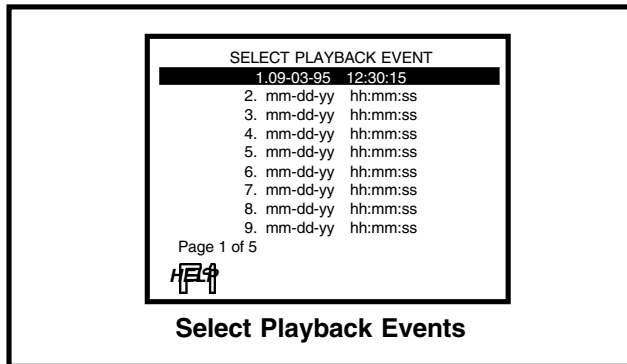
A message line on the display screen indicates how much time is available for recording at the update rate set on line 8 of the Live Data Setup screen. Recording time available is at least 40 minutes if no other events are stored in memory. Press F4 a second time to end recording. The event is saved automatically to memory.

Playback Pressure Event

Select Playback from the Recorded Events Menu to review a recorded event.



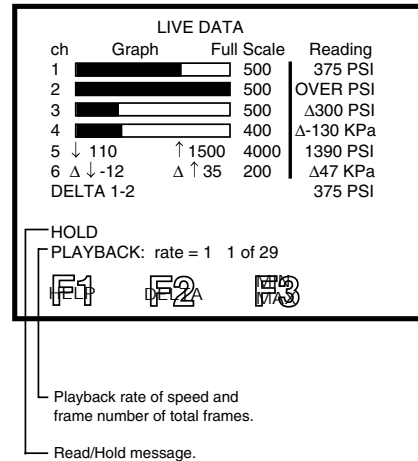
Select the event for review from the Select Playback Event menu.



All of the sensors recorded will be shown in the normal mode, however, you can change the mode of any sensor to display a delta or the minimum or maximum value. Place the reverse video on the sensor number and press the F key to set the mode required.

Playback Rate

The message line indicates the rate of speed for playback and the frame number.



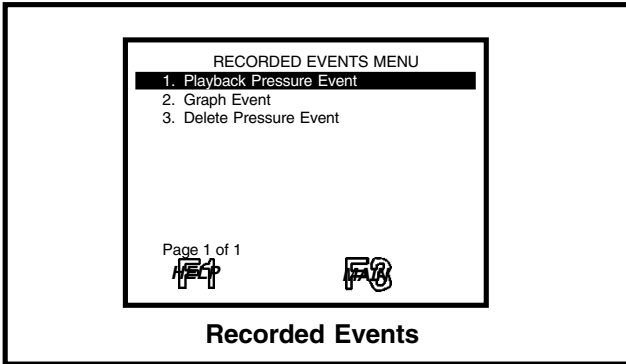
- Increase the rate of playback by pressing the ∅ arrow.
- Play the event backwards by pressing the ♦ arrow.
- Press Read Hold to temporarily halt playback.

Delete Event

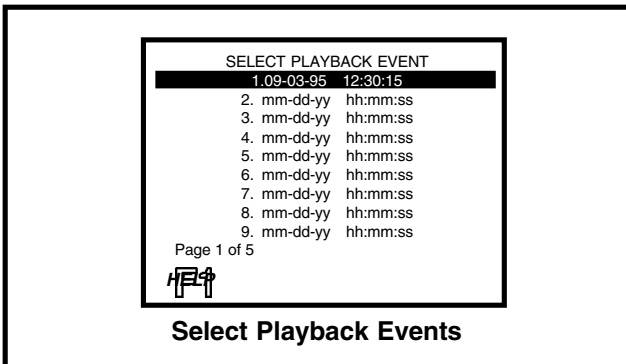
Events can be deleted when they are no longer needed or if memory is needed to permit the recording of additional events. Select Delete Pressure Events from the Recorded Events Menu, see Recorded Events illustration, and select the event to delete, see Select Playback Events illustration. Press Yes to confirm event to be deleted.

Graph Event

Select Graph Pressure Events from the Recorded Events Menu.

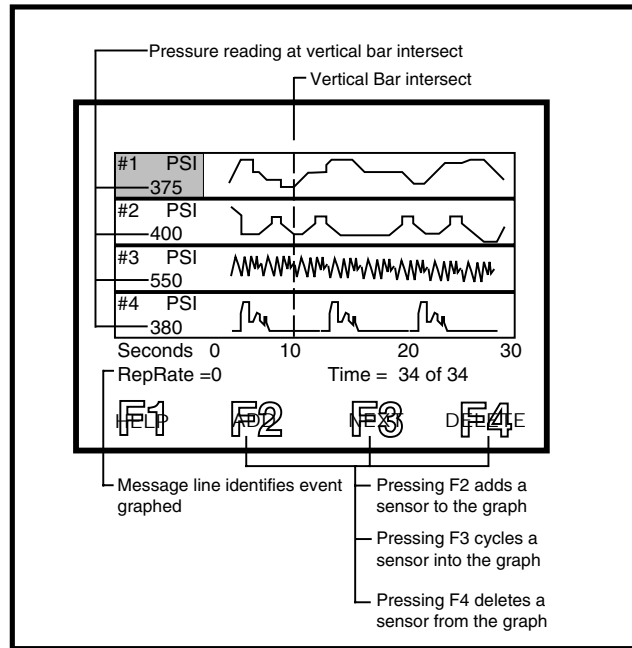


Select the event to graph.



The graph option will graph up to four (4) sensors. A vertical bar intersect will show pressure data for each sensor at the point of intersection. Press the \blacklozenge or \emptyset to position the vertical bar.

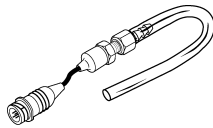
Initially, only the first sensor will be graphed. Add additional sensors, up to a total of four (4), by pressing the F2 key. Press the F3 key to cycle a new sensor into the graph; press F4 to delete a sensor from the graph. Press the \square or \leftarrow arrow to move the cursor block to the sensor to be changed or deleted.



2.5 PSI Transducer Kit - CH7069

The 2.5 PSI Transducer kit includes the following pieces:

- CH7069 2.5 PSI Transducer Assembly
 - 237665 2.5 PSI Transducer and Hose Assembly



2.5 PSI Transducer and Hose Assembly

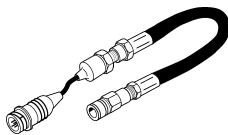
500 PSI Transducer Kit - CH8520

The 500 PSI Transducer kit includes the following pieces:

- CH8520 500 PSI Transducer Kit
 - CH7060 DP6 Cable
 - 235159 500 PSI Transducer and Hose Assembly



**Transducer Cable
12 Ft. CH7060**



**500 PSI Transducer and Hose Assembly
235159**

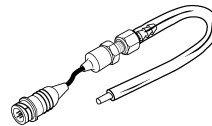
15 PSI Transducer Kit - CH8521

The 15 PSI Transducer kit includes the following pieces:

- CH8521 15 PSI Transducer Kit
 - CH7060 DP6 Cable
 - 235221 15 PSI Transducer and Hose Assembly



**Transducer Cable
12 Ft. CH7060**



15 PSI Transducer and Hose Assembly

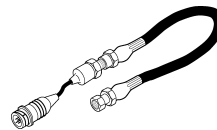
5000 PSI Transducer Kit - CH8522

The 5000 PSI Transducer kit includes the following pieces:

- CH8522 5000 PSI Transducer Kit
 - CH7060 DP6 Cable
 - 235210 5000 PSI Transducer and Hose Assembly



**Transducer Cable
12 Ft. CH7060**

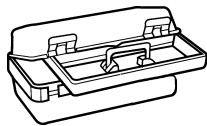


**5000 PSI Transducer and Hose Assembly
235210**

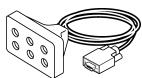
Pressure Accessory Kit - CH8524

The Pressure accessory kit includes the following pieces:

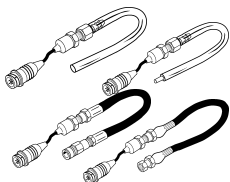
- 3491-31 Carrying Case
- CH7057 6-Way Pressure Input Cable
- CH7069 2.5 PSI Transducer Assembly
 - 237665 2.5 PSI Transducer and Hose Assembly
- CH8520 500 PSI Transducer Kit
 - CH7060 DP6 Cable
 - 235159 500 PSI Transducer and Hose Assembly
- CH8521 15 PSI Transducer Kit
 - CH7060 DP6 Cable
 - 235221 15 PSI Transducer and Hose Assembly
- CH8522 5000 PSI Transducer Kit
 - CH7060 DP6 Cable
 - 235210 5000 PSI Transducer and Hose Assembly
- CH8512 Fuel/R12 A/C Pressure Fitting
- CH8519 Exhaust Back Pressure Fitting



**Carrying Case
3491-31**



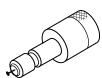
**6-Way Pressure Input Cable
CH7057**



**Transducer and Hose
Assemblies:**
 2.5 PSI 237665
 15 PSI 235221
 500 PSI 235159
 5000 PSI 235210



**Transducer Cables:
12 Ft. CH7060**



**Fuel/R12 A/C Pressure Fitting
CH8512**

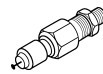


**Exhaust Back
Pressure Fitting
CH8519**

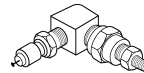
Pressure Fitting Kit - CH8527

The Pressure fitting kit includes the following pieces:

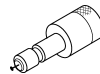
- CH8509, FWD Trans/Oil Pressure Straight Fitting
- CH8511, FWD Trans/Oil Pressure 90 Degree Fitting
- CH8512, Fuel/R12 AC Pressure Fitting
- CH8513, RWD Transmission Fitting
- CH8516, Engine Oil Fitting Assembly
- CH8517, Evaporative/Purge Pressure Fitting
- CH8526, RWD Transmission 45 Degree Fitting
- CH8620, F4A42 and F4A51 Transaxle Fitting



**Front Wheel Drive
Transmission or Oil
Pressure Fitting (1/8
Pipe Thread)
CH8509**



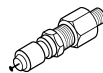
**90° Front
Wheel Drive
Fitting (1/8
Pipe Thread)
CH8511**



**Fuel/R12 AC
Pressure Fitting
CH8512**



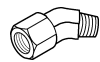
**Rear Wheel Drive
Transmission
Fitting (1/4 Pipe
Thread)
CH8513**



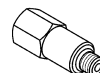
**Oil Pressure
Fitting (British
Pipe Thread)
CH8516**



**Evaporative Emission
Pressure/Purge Fitting
CH8517**



**45° Angle Rear Wheel Drive
Transmission Fitting (1/4
Pipe Thread)
CH8526**

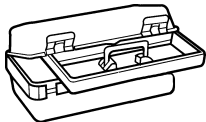


**F4A42 and F4A51
Transaxle Fitting
CH8620**

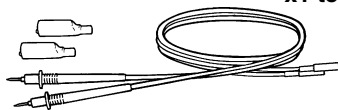
Scope and Pressure Accessory Kit - CH8525

The Scope and Pressure accessory kit includes the following pieces:

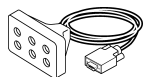
- 3491-31 Carrying Case
- CH7030, Heavy Duty Test Leads
- CH7057, 6-Way Pressure Input Cable
- CH7058, Scope Input Cable (2)
- CH7060, DP6 Cable
- CH7061, 10:1 Scope Probe
- CH7062, BNC to Banana Adapter
- CH7069 2.5 PSI Transducer Assembly
 - 237665 2.5 PSI Transducer and Hose Assembly
- CH8520 500 PSI Transducer Kit
 - CH7060 DP6 Cable
 - 235159 500 PSI Transducer and Hose Assembly
- CH8521 15 PSI Transducer Kit
 - CH7060 DP6 Cable
 - 235221 15 PSI Transducer and Hose Assembly
- CH8522 5000 PSI Transducer Kit
 - CH7060 DP6 Cable
 - 235210 5000 PSI Transducer and Hose Assembly
- CH8512, Fuel/R12 A/C Pressure Fitting
- CH8519, Exhaust Back Pressure Fitting



**Carrying Case
3491-31**



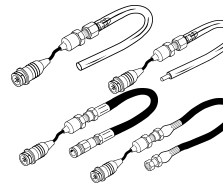
**Red (+) and Black (-)
x1 test leads (2 sets)
CH7030**



**6-Way Pressure Input Cable
CH7057**



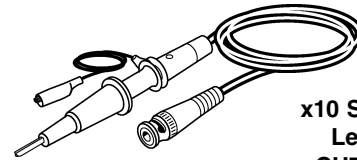
**Scope Input Cable
CH7058**



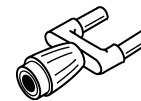
**Transducer and Hose
Assemblies:**
2.5 PSI 237665
15 PSI 235221
500 PSI 235159
5000 PSI 235210



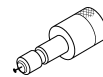
Transducer Cables:
12 Ft. . CH7060
20 Ft. . 3491-13



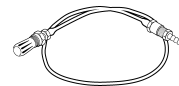
**x10 Scope
Lead
CH7061**



**Cable-to-Probe
Adapter for x1 Leads
CH7062**



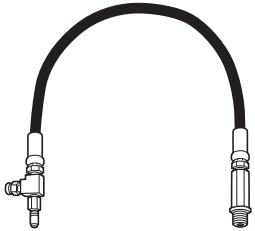
**Fuel/R12 A/C
Pressure Fitting
CH8512**



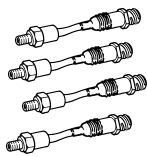
**Exhaust Back
Pressure Fitting
CH8519**

Pressure Accessories

**Engine Compression Tester
8116**



Transducer Sensors:

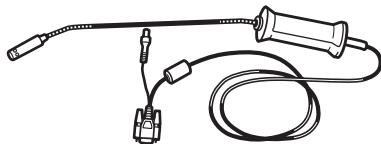


- 2.5 PSI 237667**
- 15 PSI CH7063**
- 500 PSI CH7059**
- 5000 PSI CH7064**

Belt Tension Gauge

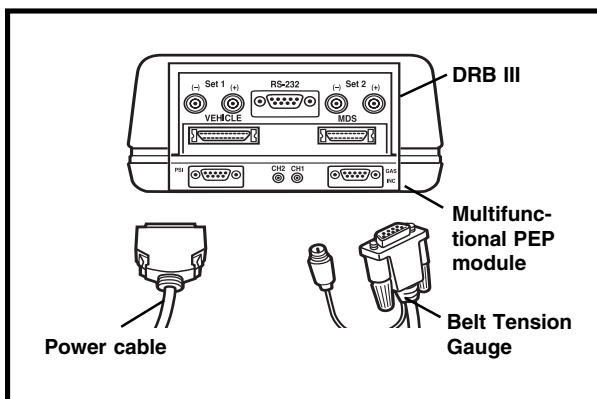
The Digital Pressure Tester application is supplied on the SuperCard II (CH8361), version 7.0 or higher.

The purpose of the Belt Tension Gauge (8371) is to accurately set the drive belt tension when used in conjunction with the DRB III. The Belt Tension Gauge utilizes a microphone to display a frequency on the DRB III screen. This frequency is then compared to the belt specifications listed in the service manual.

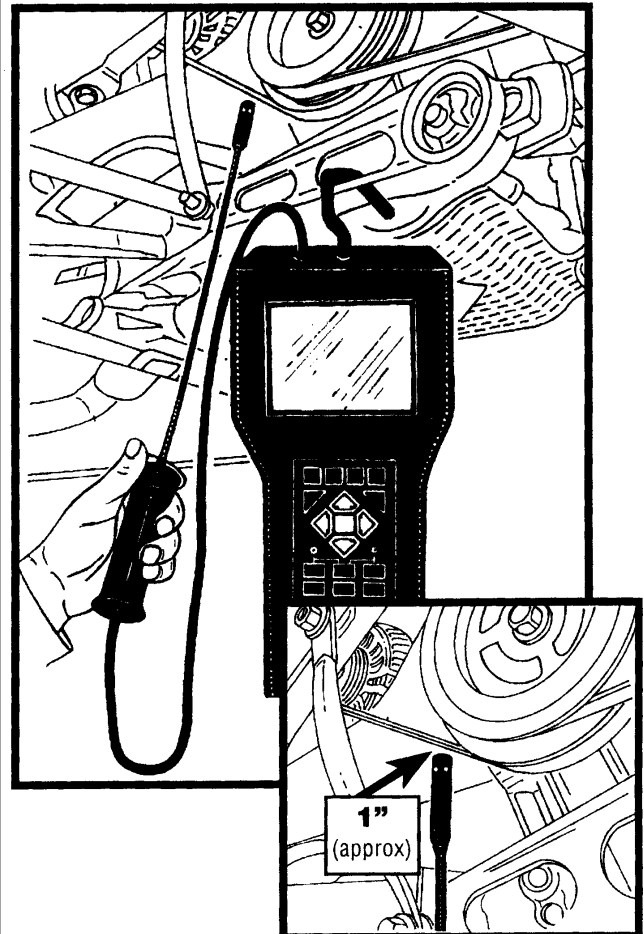


Program Setup

1. Consult the appropriate service information to obtain a valid range of frequencies and belt pluck location(s) for applicable vehicle and belt.
2. Connect the belt tension gauge into Scope Input channel one, (CH1) and DB9 connector labeled EXH/INCL of DRBIII PEP module.



3. Insert the SuperCard 2, release 7 or higher (CH8361), PCMCIA memory card into the DRB III.
4. Power up the DRBIII using the CH7001 or other cable.
5. Select DRB III PEP Module Tools, then page through the SPX menus on the DRBIII and select the Belt Tension Gauge menu item.
6. Check the Signal Level gauge on the DRBIII. The background noise is within an acceptable range if the Signal Level is below the Threshold level.

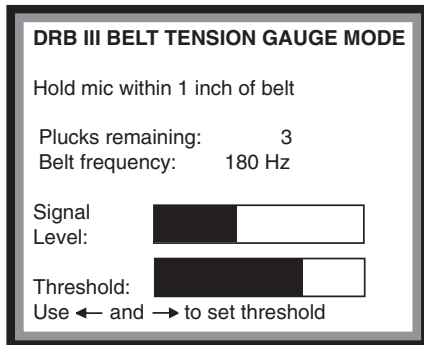


Warning:
Do not check the belt tension with the engine running.

IMPORTANT:

- Do not submerge, or expose, any part of the tool to prolonged contact with solvents or liquids.
- Avoid leaving the tool in the open sun or areas where temperatures exceed 110° F (43° C) for extended periods.
- Avoid extremely high humidity.
- Do not let any part of the tool touch hot surfaces, sparkplug wiring or non-insulated 12-volt sources.
- Keep the tool away from moving components such as pulleys, belts and fan blades.
- Do not place the microphone in the direct blast of cooling air or the direct flow or exhaust gases.

7. Position the microphone (located on end of gooseneck) near the belt center span with approximately 1 inch (2.54 cm) of clearance from the Belt.
8. Depress ENTER on the DRB III touch pad to zero the display.
9. Using either your hand or a probe (not provided), pluck the belt.



10. For each signal (pluck) recorded above the threshold level a reading is stored. Once three (3) plucks are recorded, an average is then displayed.

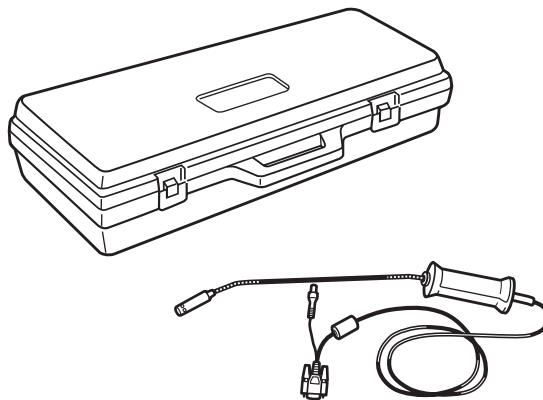
NOTE: To determine if a signal (or Pluck) is recorded, monitor the “Plucks remaining:” feature displayed on the DRBIII screen. The plucks remaining counter will perform a count down as each pluck is received starting with number three (3), then two (2), and one (1). When the counter returns to three (3), the average of the three signals is displayed in frequency (Hz).

11. If the signal is not recorded, the technician will either adjust the distance from the microphone to the belt or adjust the Threshold. Adjustment to the Threshold is made by pressing the Right and Left Arrow keys.
12. When a measurement has been made, compare the measured frequency to that in the service information and adjust appropriately: Lower than the spec: Tighten belt; Higher than the spec: Loosen belt.
13. After any adjustment, confirm the proper tension has been attained with a frequency measurement.
14. To exit the Belt Tension Gauge tool mode press the PAGE BACK key.

Tool Care

This tool is a precision instrument and should be treated accordingly. Keep it clean and dry at all times. For best performance and longest life, it is good practice to place the tool in its storage case when not in use, to protect it from mechanical damage and from the dust and dirt typically found in any shop environment.

The gooseneck areas on the tool are easy to position properly, and are heavily lubricated to offer very smooth and quiet operation. Should positioning the gooseneck become noisy, affecting the readings, apply light machine oil directly on the gooseneck area affected.



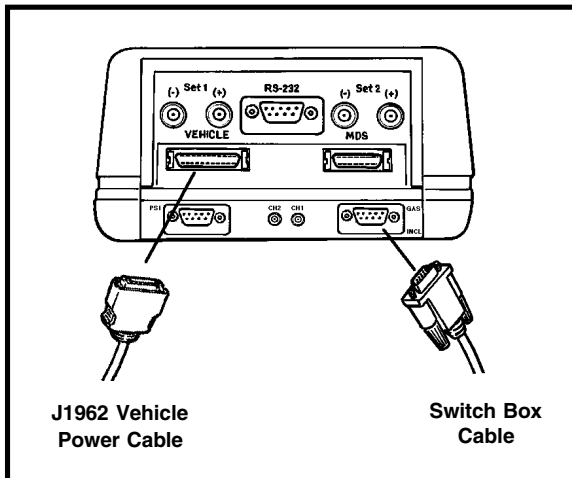
Viper Inclinometer

The Digital Pressure Tester application is supplied on the SuperCard II (CH8361), version 7.0 or higher.

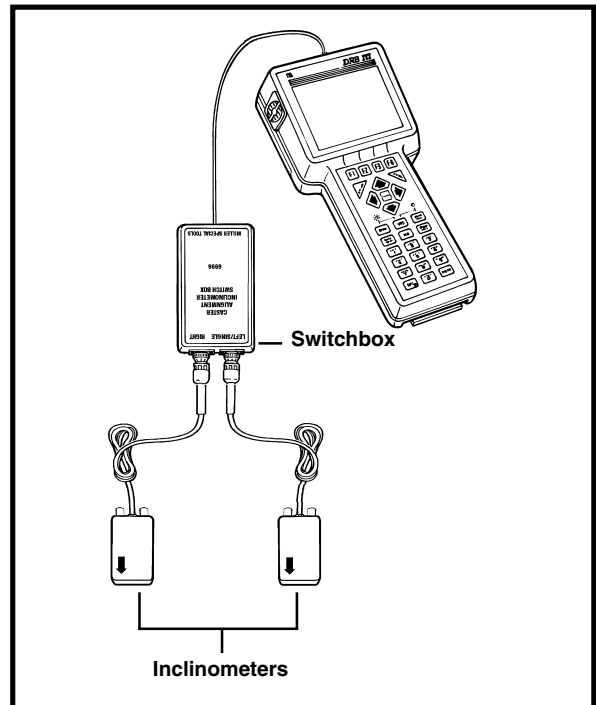
The Inclinometer is a tool used to determine the caster angle of the steering knuckles for the Viper. The tool setup is shown in this instruction document, the setup onto the vehicle is shown in the vehicle service manual under the Suspension section.

Inclinometer Setup

1. Plug the switch box cable into the PEP module connector marked "Incl."



2. Plug the J1962 Vehicle Power Cable into the DRB III power connector marked "Vehicle."



3. Attach the inclinometers to the switchbox.
4. Attach the J1962 Vehicle Power Cable from the DRB III to the vehicle data connector.

Program Setup

Icons

An icon is displayed at the bottom of the screen when a special function is available. These functions are “called up” by pressing the related Function Key (“F” key).



F1/Help displays a Help message for the active program (context sensitive). Press F3 to view the Help Index for other subjects available. Press the number of the subject to see more information. Press F1 to exit Help.



F2/Zero will zero the inclinometers.



F3/Double or Single toggles the display between single or double inclinometer readings.

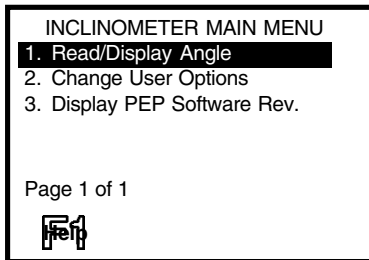


F4/Beep On or Off toggles the beep on or off.

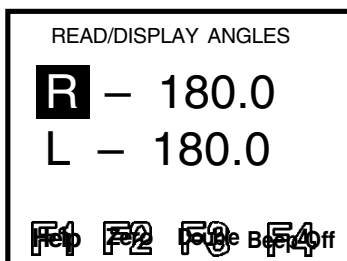
Program

The Inclinometer option is available from the DRB III Stand Alone menu (Version 19.1 or higher).

1. Select the Inclinometer option from the DRB III Stand-Alone Main Menu.
2. Select the Read/Display Angle option from the Inclinometer Main Menu.



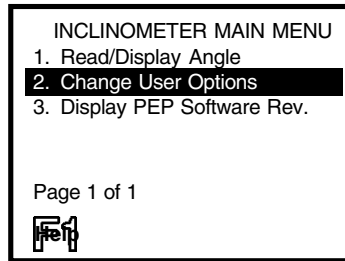
The Read/Display screen shows the angle readout and is used to zero the inclinometers before they are attached to the vehicle.



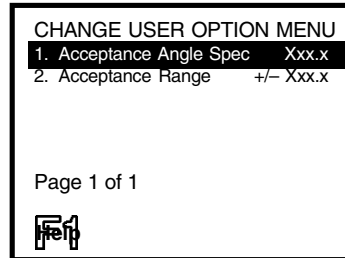
User Options

The caster angle specifications and a tolerance can be entered into the program. If the measurement is out of tolerance the DRB III will beep until the measurement is brought back within the specification limits.

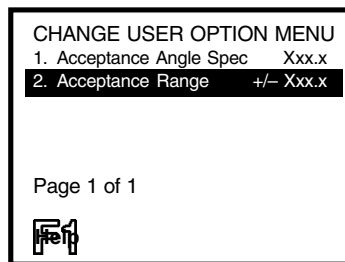
1. Select Change User Options from the Inclinometer Main Menu.



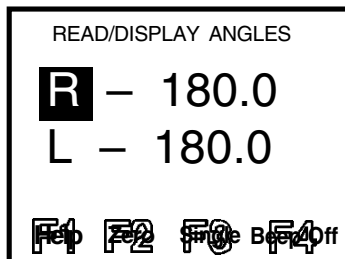
2. Highlight Acceptance Angle Spec. option or press key 1. Enter the angle specification into the program by pressing the appropriate number keys.



3. Highlight and select Acceptance Range option or press key 2. Enter the angle range (tolerance) into the program by pressing the appropriate number keys.



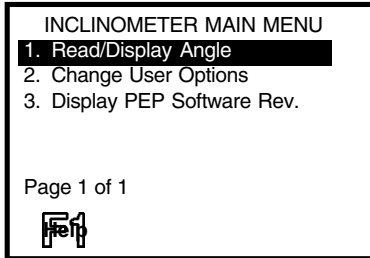
4. Page back to the Inclinometer Main Menu and select the Read/Display Angle option. Press F4 to activate the beep.



Read Angle

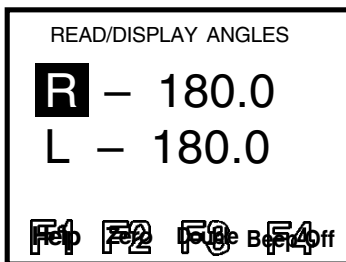
The inclinometers must set to a zero setting, and then placed on the vehicle. The inclinometers will measure the caster angle for the steering knuckles.

1. Select Read/Display Angle from the Inclinometer Main Menu.



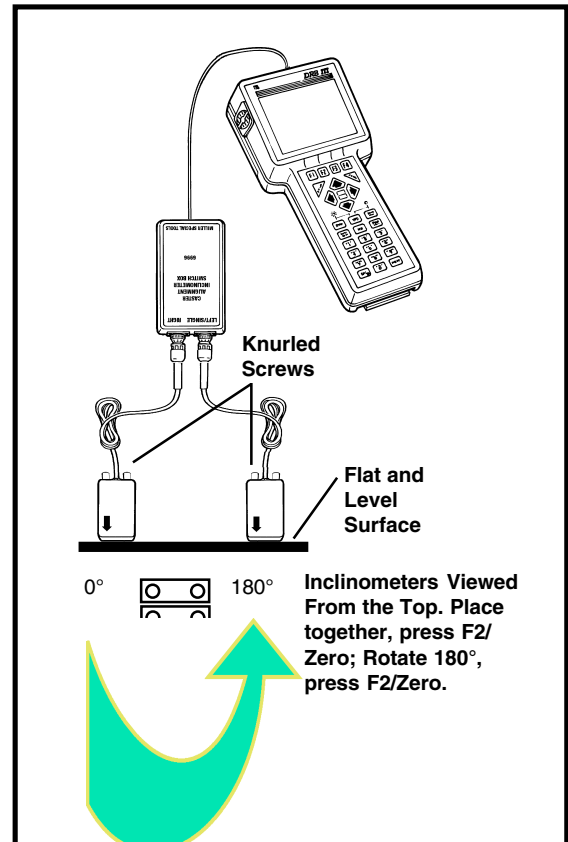
The screen shows the readout for the Right (R) and the Left (L) inclinometer. Pressing F3 will toggle the screen to show both inclinometers (Double) or a single inclinometer (Single).

If both inclinometers are displayed and the Beep (F4) and acceptance angle (See User Options) are active, press the \square or \rightarrow key to highlight and make active either the right or left inclinometer for the beep.



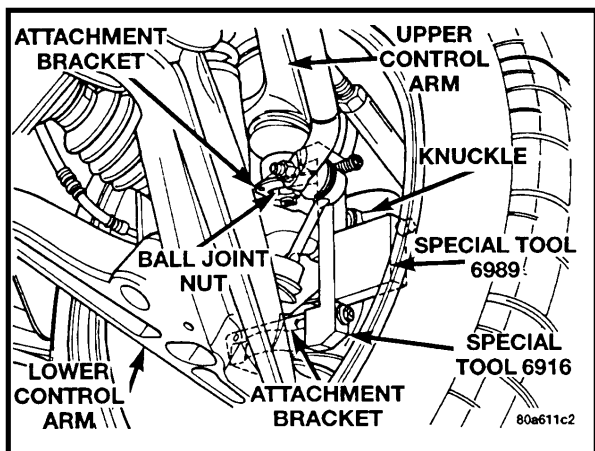
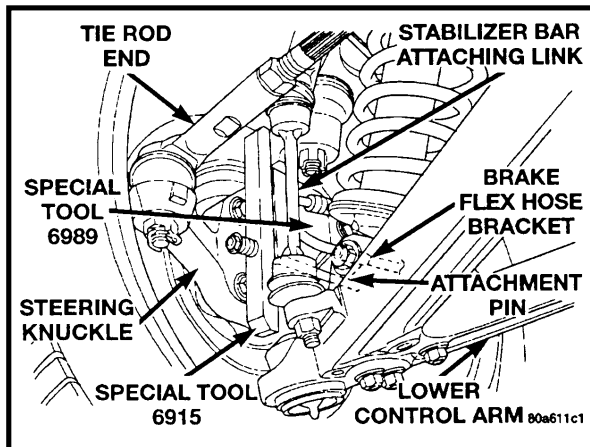
2. Zero the inclinometers:

- A. Place inclinometers together on a flat, level surface—The knurled end of the fastening screws must be vertical as illustrated.



- B. Press F2/Zero—this zeros both inclinometers in one direction. Rotate both inclinometers 180 degrees and press F2 again, this zeros both inclinometers in the other direction.

3. The inclinometers are ready to mount to the vehicle but first, special tool fixtures must be installed on the front and rear vehicle knuckles.



Fasten the inclinometers onto the special tool fixtures by threading the inclinometer screws into the mounting surface located near the bottom of the special tool fixtures. Refer to the vehicle service manual for mounting instructions.

DRB III Inclinometer Accessories

- 6989 Inclinometer
- 6996 Inclinometer Switch Box



Inclinometer
6989



Inclinometer Switch Box
6996

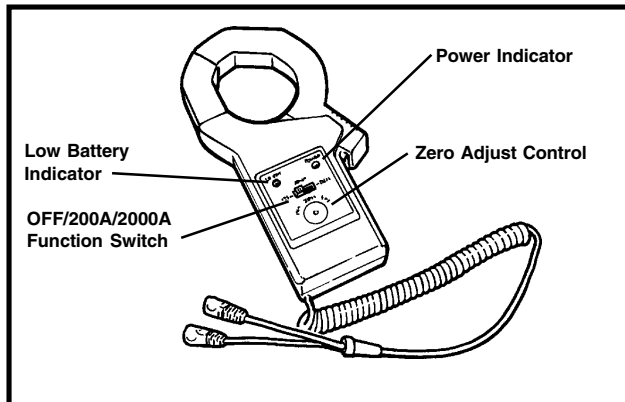
Related Special Service Tools

- 6990 Inclinometer Kit
 - 6961 Ball Joint Remover Adapter
 - 6962 Ball Joint Remover Adapter
- 6914 Suspension Height Gauges
- 6915 Front Caster Adapter
- 6916 Rear Caster Adapter
- 6925 Torque Wrench Adapter
- 6969 Central Arm Bushing Remover/Installer
- 6983 Ball Joint Remover Adapter

High Current Clamp

The High Current Clamp (CH7045) is an inductive “clamp” that measures alternating or direct current. The leads may be connected to the DRB III Set 1 or Set 2 terminals. The Current Clamp jaws encircle the cable and sense the magnetic field formed by the current in the wire, it is not necessary to break the electrical connection for measurement.

Current Clamp Controls



OFF/200A/2000A Function Switch: Turn ON the Current Clamp by sliding the function switch to the 200A or 2000A position. Turn OFF the current clamp by sliding the switch to the OFF position. Turn OFF the Current Clamp after every use to prolong the life of the internal battery.

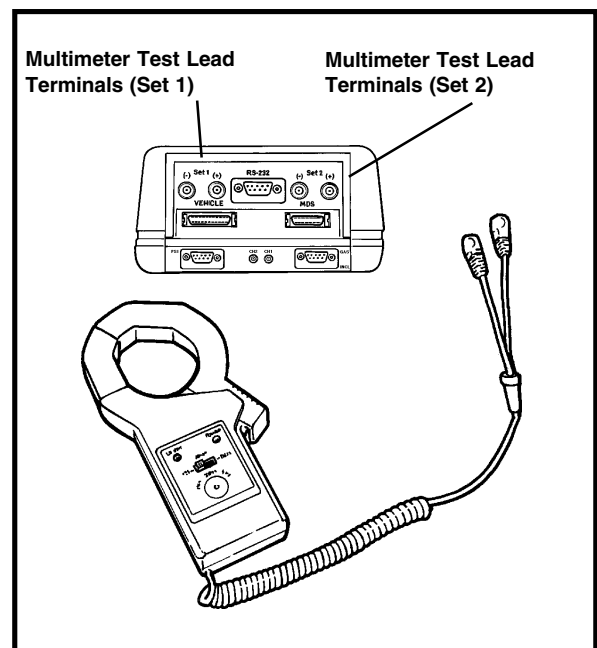
Low Battery Indicator: The LO BAT indicator lights when the Current Clamp's internal battery requires replacement. Replace the battery within 30 minutes from when the indicator lights to maintain accurate measurement.

Zero Adjust Control: The DCA ZERO ADJ. zeroes the display for Direct Current (DC) measurement.

Power Indicator: The Power Indicator lights when the Current Clamp is turned ON.

Current Clamp Setup

1. Connect the Current Clamp to the DRB III Multimeter Test Lead set 1 or 2. Connect the red output lead to the Positive (+) terminal and the black output lead to the Negative (-) terminal.



2. Select **High Current (200+ Amps)** from the DRB III DIGITAL MULTIMETER MENU. *For more information, see “Digital Multimeter” on page 1-4 Section DRB.*
3. Slide the Current Clamp Function Switch to the 200A or 2000A position.
4. If measuring AC voltage, go to step 5. If measuring DC voltage, adjust the Zero Adjust Control until the display reads “0.”

Note: The core of the jaws may hold some residual magnetism. If you cannot zero adjust the display, open the jaws and snap them closed several times.
5. Place the Current Clamp jaws over the wire carrying current. Read the value on the DRB III.

Note: The Current Clamp measures current flow and direction. If measuring DC voltage and the reading appears negative or positive when it should obviously not be negative or positive, disconnect the clamp, turn it over and retest.

Current Clamp Maintenance

- Keep the mating surfaces of the jaws clean. If the jaws cannot close completely, the current readout will be wrong.
- Regularly test the battery inside the Current Clamp. If the clamp is not used over a long period of time, remove the battery.

Replacing the Battery

1. Remove the lock screw on the back side of the Current Clamp.
2. Slide the battery cover off.
3. Lift the back end of the battery and slide it partially out.
4. Remove the battery strap and pull the battery completely out.
5. Attach a new heavy duty alkaline 9-volt battery to the battery strap. Place the battery in the battery compartment.
6. Replace the battery cover and the lock screw.

DRB III Accessories

The following accessories are available for the DRB III:

3491-13 20 Ft. Transducer Cable	3-9
3491-21 Hose, Extension, 500 PSI, 8.5 in.	
3491-31 Carrying Case	3-8
6989 Inclinometer	5-1
6996 Switch Box for Inclinometer	5-1
8116 Engine Compression Tester	3-10
8311 Sentry Key Tester	1-12
8371 Belt Tension Gauge	4-1
8587 PCI Bus Tester	1-12
• 8339 Cable	
• 8360 Cable	
• 8623 Cable	
235159 500 PSI Transducer and Hose Assembly	3-7
235210 5000 PSI Transducer and Hose Assembly	3-7
235221 15 PSI Transducer and Hose Assembly	3-8
237667 2.5 PSI Transducer Sensor	3-10
CE 2092 DRB III Power Supply	1-6
CE2094 110VAC Power Supply Cord	1-6
CE6000A International version, CE certified, DRB III with PEP.	
CE6005A International version, CE certified, Economy DRB III kit.	
CE6010A International version, CE certified, Deluxe DRB III Kit.	
CE7056 Power Cable (International Only)	
CE7057 6-way Pressure Input Cable (International Only)	
CE7058 Scope Input Cable (International Only)	
CE7060 12 Ft. Transducer Cable (International Only)	
CE7061 x10 Scope lead (International Only)	
CE7062 Cable-to-Probe Adapter for x Leads (International Only)	
CE8506 Scope/Pressure Kit Carry Case (International Only)	
CE8515 PEP Module (International Only)	
CH2002 USB Cable	1-7
CH5500 Flash Programming Kit	1-11
• CH1070 Storage Case	
• CH1500 Flash Programming Power Supply	
• CH2500 Flash EATX Harness	
CH6000A DRB III with PEP	
CH6010A Deluxe DRBIII Complete Package	
• Includes all components in CH6020A Kit Plus:	
• CH6050 User's Manual	
• CH7040 0 – 10A Current Shunt	
• CH7045 2000A Current Probe (AC/DC)	
• CH7050 Temperature Probe	
• CH7056 Power Cable	
• CH7057 Pressure Extension Cable	
• CH7058 Scope Cable, BNC (two each)	
• CH7060 Pressure Cable, 12 inch	
• CH7061 x10 Scope Probe	
• CH7062 BNC to Banana Adapter (two each)	
• CH8506 Pressure Kit Carrying Case	
• CH8509 1/8 inch FWD Trans/oil straight Fitting	
• CH8510 Multifunction PEP Kit	
• CH8511 90° 1/8 inch FWD Trans Fitting	
• CH8512 Fuel and R-12 Schraeder Valve Fitting	
• CH8513 1/4 inch RWD Trans Straight Fitting	
• CH8516 2.21, 2.51, 2.61 Oil Pressure Fitting	
• CH8517 Evap. Pressure/Purge Fitting	
• CH8519 Exhaust Back Pressure Fitting	
• CH8521 Low Pressure Transducer	
CH6020A Economy DRB III Kit with Glove	
• CH6000A DRB III with PEP	
• CH6030 Carrying Case	
• CH6040 Glove	
• CH6050 User's Manual	
• CH7000 J1962 Cable	
• CH7005 MMC Cable	
• CH7010 MMC J1962 Cable	
• CH7015 Engine Cable	
• CH7020 Body Cable	
• CH7025 DIN Cable	
• CH7030 DVOM Leads (two sets)	
CH6030 DRB III Carrying Case	1-10
CH6040 DRB III Protective Glove	1-10
CH6060 Air Filter Replacement	1-11
CH6070 Lens Replacement Kit	1-11
CH6080 Non-Glare Lens Replacement Kit	1-11
CH7000A J1962 8 ft. Cable	1-6
CH7001A J1962 12 ft. Cable	1-6
CH7002 J1962 Breakout Box Cable	1-12
CH7005 MMC Cable	1-7
CH7010 J1962/MMC Cable	1-7
CH7015 SCI (Engine) Cable	1-7
CH7020 CCD (Body) 8 ft. Cable	1-7
CH7021 CCD (Body) 2 ft. Cable	1-7
CH7025 DIN Cable	1-6
CH7030 Multimeter Probe Leads	1-10
CH7035B General Purpose Interface Bus (GPIB) Cable ..	1-6
CH7040 Low Current Shunt	1-10
CH7045 High Current Clamp	1-11
CH7050 Temperature Probe	1-10
CH7055 Power Cable	1-6
CH7057 6-way Pressure Input Cable	3-8
CH7058 Scope Input Cable	3-9
CH7059 500 PSI Transducer Sensor	3-10
CH7060 12 Ft. Transducer Cable	3-8
CH7061 x10 Scope lead	3-9
CH7062 Cable-to-Probe Adapter for x1 Leads	3-9
CH7063 15 PSI Transducer Sensor	3-10
CH7064 5000 PSI Transducer Sensor	3-10
CH7065 10:1 Probe Jumper Cable	
CH7066 10:1 Probe Tip	
CH7067 10:1 Probe Ground Lead	
CH7068 RS232 Peripheral Communication Cable	1-8
CH7069 2.5 PSI Transducer Assembly	3-7
• 237665 2.5 PSI Transducer and Hose Assembly	

CH7500 Jeep/Eagle Adapter Cable 1-8
 CH8000 SuperCard I PCMCIA Card 1-13
 CH8001 SuperCard Kit
 • CH8000 SuperCard I
 • CH7500 Jeep/Eagle DIN Cable
 CH8361 SuperCard II PCMCIA Card 1-13
 CH8425 ST22 PCMCIA Card 1-14
 CH8505 500 PSI Quick Coupler
 CH8506 Scope/Pressure Kit Carrying Case
 CH8508 500 PSI Quick Coupler
 CH8509 Front Wheel Drive Transmission or Oil Pressure .
 Fitting (1/8 Pipe Thread) 3-8
 CH8511 90° Front Wheel Drive Fitting (1/8 Pipe Thread) .. 3-8
 CH8512 Fuel/R12 A/C Pressure Fitting 3-8
 CH8513 Rear Wheel Drive Transmission Fitting (1/4 Pipe
 Thread) 3-8
 CH8515 PEP Module
 CH8516 Oil Pressure Fitting (British Pipe Thread) 3-8
 CH8517 Evaporative Emission Pressure/Purge Fitting 3-8
 CH8519 Exhaust Back Pressure Fitting 3-8
 CH8520 500 PSI Transducer Kit 3-7
 • 235159 500 PSI Transducer and Hose Assembly
 • CH7060 DP6 Cable
 CH8521 15 PSI Transducer Kit 3-7
 • CH7060 DP6 Cable
 • 235221 15 PSI Transducer and Hose Assembly
 CH8522 5000 PSI Transducer Kit 3-7
 • CH7060 DP6 Cable
 • 235210 5000 PSI Transducer and Hose Assembly
 CH8523 Scope Accessory Kit 2-10
 • CH7030 Heavy Duty Test Leads
 • CH7058 Scope Input Cable (2)
 • CH7061 10:1 Scope Probe
 • CH7062 BNC to Banana Adapter
 CH8524 Pressure Accessory Kit 3-8
 • CH7057 Ext. Pressure Input Cable
 • CH7060 Pressure Cable
 • CH7069 2.5 PSI Transducer Assembly
 • CH8512 Fuel Pressure Fitting
 • CH8519 Exhaust Back Pressure Fitting
 • CH8520 500 PSI Transducer Assembly
 • CH8521 15 PSI Transducer Assembly
 • CH8522 5000 PSI Transducer Assembly
 CH8525 Scope and Pressure Accessory Kit 3-9
 • CH7030 Heavy Duty Test Leads
 • CH7057 Ext. Pressure Input Cable
 • CH7058 Scope Input Cable (2)
 • CH7060 Pressure Cable
 • CH7061 10:1 Scope Probe
 • CH7062 BNC to Banana Adapter
 • CH7069 2.5 PSI Transducer Assembly
 • CH8512 Fuel Pressure Fittings
 • CH8519 Exhaust Back Pressure Fitting
 • CH8520 500 PSI Transducer Assembly
 • CH8521 15 PSI Transducer Assembly
 • CH8522 5000 PSI Transducer Assembly

CH8526 45° Angle Rear Wheel Drive Transmission Fitting
 (1/4 Pipe Thread) 3-8
 CH8527 Pressure Fitting Kit 3-8
 • CH8509 FWD Trans/Oil Pressure Straight Fitting
 • CH8511 FWD Trans/Oil Pressure 90 Degree Fitting
 • CH8512 Fuel/R112 AC Pressure Fitting
 • CH8513 RWD Transmission Fitting
 • CH8516 Engine Oil Fitting Assembly
 • CH8517 Evaporative/Purge Pressure Fitting
 • CH8526 RWD Transmission 45 Degree Fitting
 • CH8620 Pressure Adapter
 CH9043 Cable, Multiplexer 1-6
 CH9044 Crossfire PCMCIA Card 1-14
 CH9087 Sprinter PCMCIA Card 1-14
 CI7002 1996 Diesel Fuel Diagnostics Cable (International
 Only) 1-8
 CI8023 Blank 4 Mbyte PCMCIA Card (International
 Only) 1-14
 CI8024 Blank 8 Mbyte PCMCIA Card 1-14
 JE1000 Jeep/Eagle Adapter Box 1-12
 MLR8311 Sentry Key Tester 1-11
 OT2050 Right Angle J1962 Adapter kit 1-11
 • OT2050A 90 Degree Right Angle Adapter
 • OT2050B 270 Degree Right Angle Adapter

International Part Number Cross-reference

Domestic	International	Description
CE2092	CE2092	DRB III power supply
CE2094	CE2094	110 VAC power supply cord
CH6000A	CE6000A	DRB III with PEP
CH6020A	CE6005A	Economy DRB III kit
CH6010A	CE6010A	Deluxe DRB III Kit.
CH7056	CE7056	Power Cable
CH7057	CE7057	6-way Pressure Input Cable
CH7058	CE7058	Scope Input Cable
CH7060	CE7060	12 Ft. Transducer Cable
CH7061	CE7061	x10 Scope lead
CH7062	CE7062	Cable-to-Probe Adapter for x1 Leads
CH7062	CE8506	Scope/Pressure Kit Carry Case
CH8515	CE8515	PEP Module
	CI7002	1996 Diesel Fuel Diagnostics Cable
CI8023	CI8023	Blank 4 Mbyte PCMCIA Card

SPX Corporation Electronic Service Center, Owatonna, MN.

Repair Authorization

Please complete this form, and return it along with your product when sending equipment to us for repair.

Italicized fields are required information.

Product Information

Item to be repaired _____ OTHER _____ S/N _____

Describe Symptoms:

Has the unit been repaired previously by SPX? Yes _____ No _____ Date of repair _____

Customer Information

Business Name _____ Contact _____
 Address _____ Phone _____
 City _____ Dealer Code _____
 State/Province _____ Fax _____
 Zip/Postal Code _____ E-mail _____

PAYMENT INFORMATION

THIS INFORMATION IS REQUIRED TO BEGIN NON-WARRANTY REPAIR

PO# _____

Visa ___ ***MC*** ___ ***Discover*** ___ ***Card No*** _____ ***Exp. Date*** ___/___

Name as it appears on credit card _____

Shipping Information

Please package your product securely and ship to SPX at the following address:

SPX Corporation
 Depot Service Department
 2300 Park Drive
 Owatonna, MN 55060

Date Shipped _____ Mode of Shipment, UPS Red _____ Other _____

USA/Canada **1-800-344-4013**, email at eservice@servicesolutions.spx.com
 All others 1-507-455-4369

SPX Corporation Limited Warranty

THIS WARRANTY IS EXPRESSLY LIMITED TO ORIGINAL RETAIL BUYERS OF SPX ELECTRONIC DIAGNOSTIC TOOLS ("UNITS").

SPX Units are warranted against defects in materials and workmanship for Two years (24 months) from date of delivery. This warranty does not cover any Unit that has been abused, altered, used for a purpose other than that for which it was intended, or used in a manner inconsistent with instructions regarding use. The sole and exclusive remedy for any Unit found to be defective is repair or replacement, at the option of SPX. In no event shall SPX be liable for any direct, indirect, special, incidental or consequential damages (including lost profit) whether based on warranty, contract, tort or any other legal theory. The existence of a defect shall be determined by SPX in accordance with procedures established by SPX. No one is authorized to make any statement or representation altering the terms of this warranty.

DISCLAIMER

THE ABOVE WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

SOFTWARE

Unit software is proprietary, confidential information protected under copyright law. Users have no right in or title to Unit software other than a limited right of use revocable by SPX. Unit software may not be transferred or disclosed without the written consent of SPX. Unit software may not be copied except in ordinary backup procedures.

DEALER ORDER INFORMATION

Kits, replacement and optional parts can be ordered directly from PSE. Call Customer Service at **1-800-223-5623**, fax your order to **1-800-734-4334** or visit www.pse.daimlerchrysler.com. Your order should include the following information:

1. Quantity
2. Part number
3. Item description
4. Dealer Code

International dealers, Aftermarket customers, and Fleets can order from SPX Miller Special Tools. Call Customer Service at 1-800-801-5420.

TECHNICAL SERVICE

If you have questions on the operation of the product, please call your hotline at **1-800-374-4040**, call Miller Special Tools at **1-800-801-5420**, or visit www.spxmiller.com.

REPAIR SERVICE

If you have questions about sending a product in for repair, you can reach the repair department by calling **1-800-344-4013** (USA/Canada) or **1-507-455-4369** (all others), fax **1-507-455-4410** or email at eservice@servicesolutions.spx.com. When sending your SPX electronic product in for repair, please use the Repair Authorization Form on page 7-3 and include the following information:

- company name
- contact name
- telephone number
- description of the problem
- proof-of-purchase for warranty repairs
- preferred method of payment for non-warranty repairs

Payment can be made with Visa, Master Card, COD, or with approved credit terms. To receive a credit application, please fax your request to the Credit Department at **1-800-962-8734**.

Send the unit to:

SPX Corporation, Owatonna Facility
2300 Park Drive, Owatonna, MN 55060
Attn: Repair

DaimlerChrysler Corporation