

Power/Data Cable

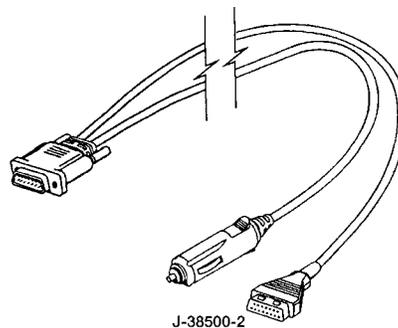
The data and power cable must be connected to the vehicle or an external 12-volt power source before the Pro-Link/MPC tool can function.

Connecting the Power/Data Cable

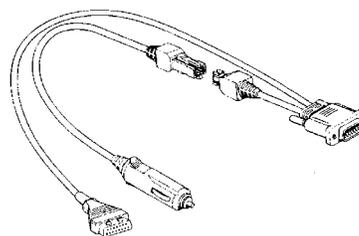
Earlier cables consisted of a single assembly; both the data cable and power cable are attached by a single molded connector. Later versions have two separate cables.

In both cases, the power cable includes a cigarette lighter adapter.

- 1 Locate the vehicle power/data cable (part number 501002 or J-38500-2). The cable has a large, 15-pin connector with two thumbscrews. Note that part 501002 is a two-piece cable and permits the removal of the power cable (containing the cigarette lighter adapter).
- 2 Plug the connector into the top of the Pro-Link/MPC tool.
- 3 Tighten the two thumbscrews to secure the cable.



Power/data cable, earlier version



Power/data cable, later version

Fuse

The standard power cable contains a replaceable fuse inside the cigarette lighter adapter. There is a fuse inside the MPC cartridge that can be reset.

Application Cards

Application cards are specific to the vehicle's computer system. Before beginning work on the vehicle, check the identification label on the application card to make sure you are using the correct vehicle application.

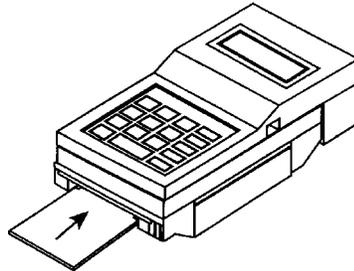
Installing the Application Card:

Slide the application card into the PCMCIA card slot on the MPC cartridge. The card will seat into the MPC cartridge only one way. Do not force the card into place.

Application cards can be inserted or removed while the Pro-Link is powered. Removal of the application card will halt the system. Reinserting the application card will reboot the ProLink tool.

When correctly seated, the eject button to the left of the PCMCIA card slot will pop out. **If the card seats but the eject button does not pop out, the card has been inserted upside down.** Pressing the eject button will remove only a properly inserted card.

Note: The "Write Protect" (W/P) switch must be in the OFF position for the application card to work properly.

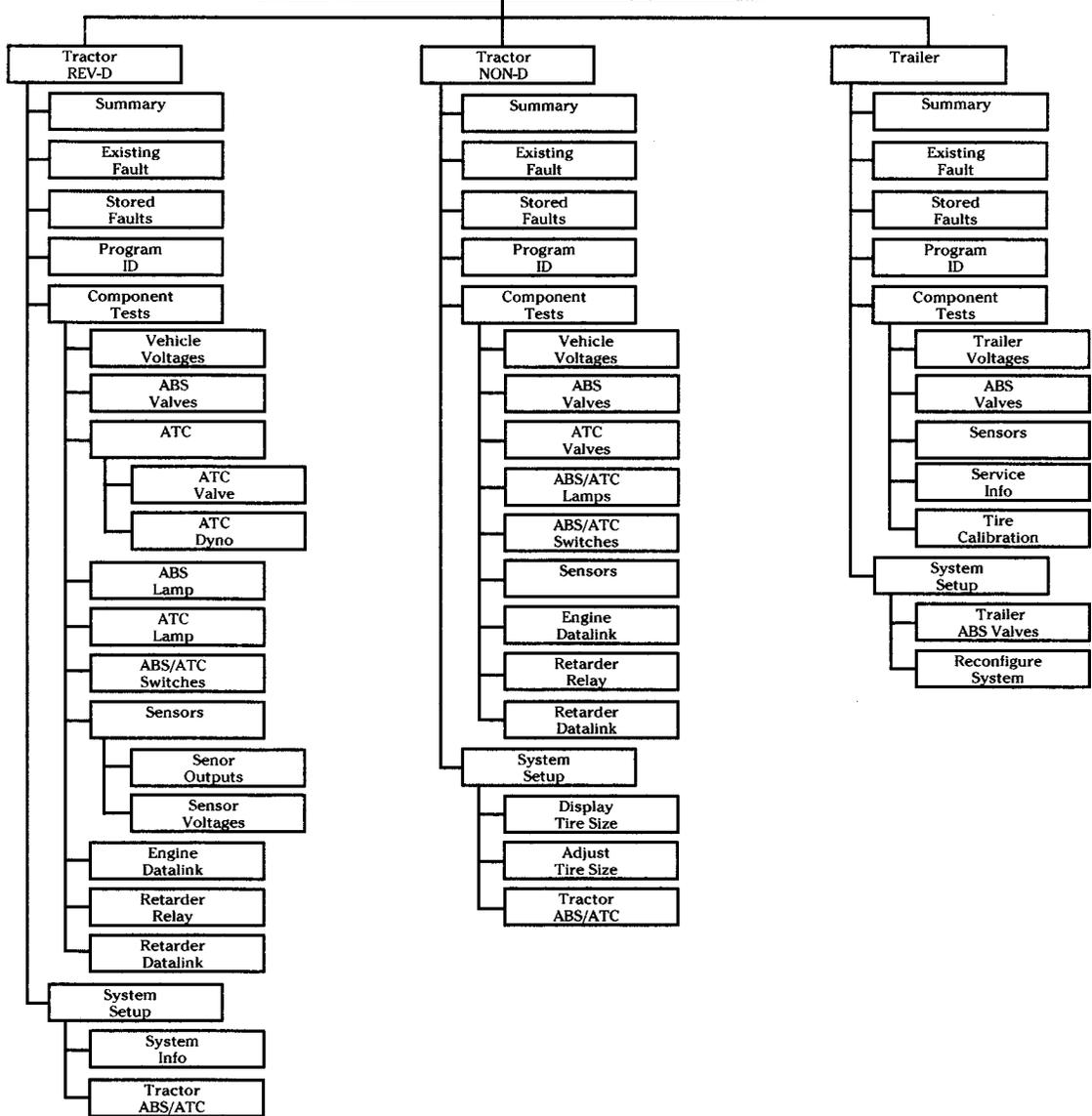


W3003013

MPC Application Menu Structure

The application menu structure will assist you in locating specific functions of the Wabco ABS/ATC application card.

Meritor Wabco ABS/ATC File Structure



W5001144

Diagnosing Faults using the Pro-Link 9000 (with Cartridge)

DANGER

Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

DANGER

Exhaust gases contain carbon monoxide. When testing a vehicle with the engine running, conduct the test outdoors or use a properly vented exhaust hose. Prolonged or excessive exposure may cause serious illness or death.

CAUTION

Possible damage to electronic components. Turn the vehicle ignition switch OFF before disconnecting or connecting any electrical components. Failure to de-energize circuits may result in electronic equipment damage.

Perform the following steps to determine faults using the Pro-Link:

- 1 Connect the Pro-link with the ROCKWELL WABCO ABS cartridge, version 4.0 or higher, to the diagnostic socket located under the left side of the dash.
- 2 Turn the vehicle ignition ON.
- 3 Verify the information displayed by the Pro-Link matches the vehicle configuration (i.e., 4 sensors, 4 modulator valves). If it does not, refer to the Pro-Link manual to change the Pro-Link configuration.
- 4 If the display for existing faults or stored faults is YES, press the FUNC key to access the ABS MENU.

```

TRACTOR ABS/ATC MENU

- - - - SELECTIONS - - - -
      ↑ EXISTING FAULTS ↓
    
```

- 5 When the ABS MENU appears, use the up and down arrow keys to scroll to existing faults or stored faults. Then press ENTER.
- 6 If there are any faults of the type selected, the Pro-Link will display them one at a time, such as in the example below.

```

      1 of 1           (2,3)           1X

      R REAR ABS VALVE
      OPEN OR CABLE DAMAGE

      ↑                               ↓
    
```

The number, blink codes, number of occurrences and description of the fault is displayed.

- 7 **Important:** Record all fault codes on the work order before they are cleared. They cannot be retrieved after clearing.
- 8 Correct the faulty condition.
- 9 Erase the fault from the ECU by cycling the ignition OFF, then back to ON.
- 10 Repeat the process for any other existing faults.
- 11 When an existing fault has been repaired, it changes to a stored fault.
- 12 Stored faults may also be displayed. See "Clearing Fault Codes" page 47 for instructions on clearing a stored fault. Refer to the Pro-Link manual for complete diagnostic and testing information.

Component Tests

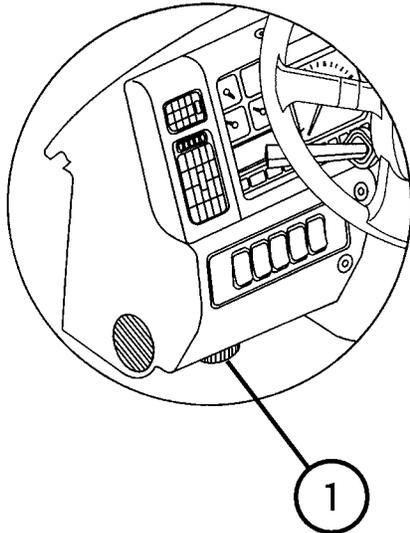
Component tests are available using the Pro-Link for the following ABS/TCS components:

ABS VALVES	Cycles the valves, one at a time. There is an audible click as the valve cycles.
ATC (TCS)	Checks the traction control valve. There is an audible click as the valve cycles.
ABS LAMP	Check/change the status (on/off) of the ABS warning lamp.
ATC (TCS) LAMP	Check/change the status (on/off) of the TCS lamp.
ABS/ATC SWITCHES	Checks the status of the ABS and TCS switches on the dash.
SENSORS	Monitors the inputs to the ECU from the wheels.
ENGINE DATA LINK	Checks J1922 wiring connections between the engine and the ECU for throttle-back.
RETARDER RELAY	Activates the relay to verify function (a click will be heard). Also checks wiring connections.
RETARDER DATALINK	Checks J1922 wiring connections between the retarder and the ECU.

Using the Wabco ABS Cartridge

Perform the following steps to determine faults using the Pro-Link 9000.

- 1 Insert the Wabco ABS cartridge into the Pro-Link 9000/MPC tool.
- 2 Plug the male end of the data cable into the Pro-Link 9000. Tighten the thumbscrews to secure the cable.
- 3 Remove the dust cap from the vehicle diagnostics connector and connect the data cable to the diagnostics connector (1) on the vehicle.



W5000547

1) Diagnostics connector location

- 4 Place the vehicle ignition switch ON.
- 5 Verify the Pro-Link 9000 powers up properly by observing the following display.

```

MPSI Pro-Link 9000
SOFTWARE COPYRIGHT
1995 VERSION 1.0
WABCO ABS/ATC
    
```

- 6 Verify the Pro-Link establishes communication with the ABS by observing a display similar to the following.

```

4 SENSOR ABS
ACTIVE FAULTS YES
FAULT HISTORY YES
[ ENTER ] TO CONTINUE
    
```

- 7 Verify the information displayed matches the vehicle configuration (4 sensor or 6 sensors). If it does not, refer to the MPSI Pro-Link 9000 manual for the Wabco ABS/ATC System to change the Pro-Link 9000 test configuration.
- 8 Press ENTER to access the function selections menu.
- 9 If ABS/ATC does not have brackets around it, press the left arrow to place brackets around ABS/ATC, then press ENTER.

```

FUNCTION SELECTIONS
SELECT DESIRED
MENU
[ABS/ATC]← →Pro-Link
    
```

- 10 With the DIAGNOSTIC CODES menu displayed, press ENTER to go to the faults menu.

```

WABCO ABS/ATC

- - - - SELECTIONS - - - -
↑ DIAGNOSTIC CODES ↓
    
```

- 11 When the ABS MENU appears, use the up and down arrow keys to scroll to ACTIVE FAULTS or FAULT HISTORY, then press ENTER.

```

WABCO ABS/ATC

- - - - SELECTIONS - - - -
↑ ACTIVE FAULTS ↓
    
```

- 12 If there are any faults of the type selected, the Pro-Link 9000 will display them one at a time, such as in the example below.

LEFT FRONT SENSOR
SENSOR OPEN

↑ A1 DEV: 11 FLT: 01 ↓

The last line of the display provides information regarding the fault. In the example, "A1" refers to the number of the **A**ctive fault assigned by the ECU. "H1" would refer to the first fault stored in the fault **H**istory. "DEV:" refers to the device number of the faulty component, such as 11 for Left Front Sensor or 22 for Right Rear Modulator. "FLT:" identifies the specific type fault such as 01 for sensor open or 80 for shorted modulator.

- 13 Correct the active faults using appropriate Service Procedures or other repair method.
- 14 Press the FUNC key to return to the fault selection menu.
- 15 Use the up or down arrow keys to select CLR ACTIVE FAULTS or CLR FAULT HISTORY, then press ENTER. The following screen will appear.

CLR ACTIVE FAULTS

ARE YOU SURE ?

YES ← → [NO]

If sure, press the left arrow to place brackets around YES, then press ENTER.

- 16 If clearing ACTIVE FAULTS was successful, repeat the clearing process for FAULT HISTORY, otherwise repeat the entire process to repair and clear ACTIVE FAULTS.
- 17 Press FUNC several times to return to the function selections menu.

FUNCTION SELECTIONS

SELECT DESIRED
MENU

[ABS/ATC]← →Pro-Link

- 18 When troubleshooting with the Pro-Link 9000 is complete, turn the vehicle ignition to OFF, then disconnect the Pro-Link 9000. Replace the diagnostics connector dust cap.

System Testing Using the Pro-Link 9000

There are several tests that can be run on the Wabco system using the MPSI Pro-Link 9000. The available tests are:

- Vehicle voltages
- ABS modulator valves
- Traction control valve
- ABS/Wheel spin dash warning lamps
- Sensors
- Engine datalink
- Retarder relay
- Retarder datalink

Perform the following steps to set up the Pro-Link 9000 to run system tests:

- 1 Insert the Wabco ABS cartridge into the Pro-Link 9000.
- 2 Plug the male end of the data cable into the Pro-Link 9000. Tighten the thumbscrews to secure the cable.
- 3 Connect the female end of the data cable to the data link connector on the vehicle.
- 4 Place the vehicle ignition switch ON.
- 5 Verify the Pro-Link 9000 powers up properly by observing the following display.

MPSI Pro-Link 9000
 SOFTWARE COPYRIGHT
 1995 VERSION 1.0
 WABCO ABS/ATC

Note: ATC on the MPSI Pro-Link 9000 displays refers to the Traction Control System

- 6 Verify the Pro-Link establishes communication with the ABS by observing a display similar to the following.

4 SENSOR ABS
 ACTIVE FAULTS YES
 FAULT HISTORY NO
 [ENTER] TO CONTINUE

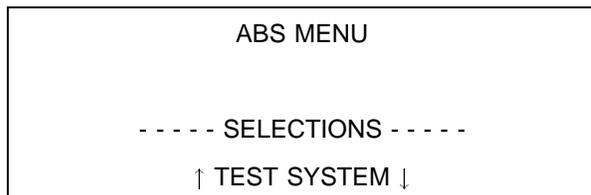
- 7 Verify that the information displayed matches the vehicle configuration (4 sensors, 4 valves). If it does not, change the Pro-Link 9000 test configuration (refer to the MPSI Pro-Link 9000 manual for the Wabco ABS/ATC System).
- 8 Press ENTER to access the function selections menu.
- 9 If ABS/ATC does not have brackets around it, press the left arrow to place brackets around ABS/ATC, then press ENTER.

FUNCTION SELECTIONS
 SELECT DESIRED
 MENU
 [ABS/ATC]← →Pro-Link

- 10 With the DIAGNOSTIC CODES menu displayed, press ENTER to go to the faults menu.

WABCO ABS/ATC
 - - - - SELECTIONS - - - -
 ↑ DIAGNOSTIC CODES ↓

- 11 When the ABS selections menu appears, use the down arrow key to scroll to TEST SYSTEM. Then press ENTER.



- 12 Use the up and down arrow keys to scroll to the test of your choice, then press ENTER to run the test.
- 13 When system testing is complete, press FUNC to return to the selections menu. Use the up or down arrow keys to scroll to DATA LIST, then press ENTER.
- 14 The Pro-Link 9000 will display the current value of four parameters. Press the down arrow to view additional parameters. The status of the following parameters can be displayed by the Pro-Link 9000.
- L FRONT MPH
 - R FRONT MPH
 - L REAR MPH
 - R REAR MPH
 - L MIDDLE MPH
 - R MIDDLE MPH
 - BATT VOLTAGE
 - TRACTOR LAMP
 - WARNING LAMP
 - RETARDER RELAY
 - ENGINE IDLE
 - SBEND RELAY
 - ENGINE DATA LINK
 - RETARDER DATA LINK
- 15 At any time, press FUNC to move back to the previous menu (one level higher).
- 16 When all testing is complete, turn the vehicle ignition switch to OFF before disconnecting the Pro-Link 9000.

Diagnosing Faults using the Instrument Cluster



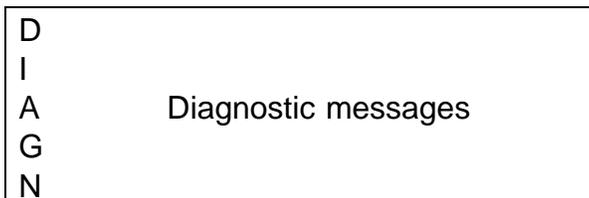
Before working on a vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and can cause serious personal injury or death.

The graphic display of the instrument cluster can be used to display diagnostic messages from the ABS. The system uses the SAE J1708/1587 data link and is installed in vehicles with electronically controlled engines.

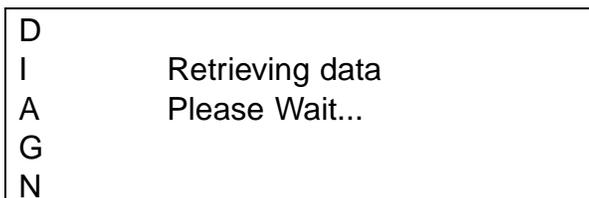
Fault codes cannot be cleared using the instrument cluster graphic display.

To see diagnostic messages,

- 1 Stop the engine.
- 2 Turn the ignition ON.
- 3 Press the MODE button on the vehicle dash until the Diagnostics Menu is displayed. Use the Up and Down buttons to display DIAGNOSTIC MESSAGES.



- 4 Press the SET button to have the datalink retrieve data.



- 5 Press the DOWN button until the brake screen is displayed.

D	Brakes
I	ABS Snsr, Axle 3 L
A	Current hi or Short C
G	Active, Count:1
N	

The Set button can be pressed to toggle the display between the text description and the received data. If the display shows "UNKNOWN" in any line, press the Set button to display the MID, PID or SID and FMI.

- a. If the condition that caused the currently displayed fault still exists, the cluster will display "ACTIVE."
 - b. If the condition that caused the currently displayed fault is no longer occurring, the cluster will display "INACTIVE."
 - c. The number of times a fault has occurred will be displayed when available. In some cases, a short message may also be displayed.
- 6 Record all codes displayed.
 - 7 To display the next stored fault, press the Down button.