Mazda Reference

Subject: Fuel system pressure testing for fuel injected engines

Symptom: Hard starting cold, power loss climbing hills, overall poor performance, engine surges and then stops running

Source: Mazda service manuals and technicians

Risk of fire.

- **Wear safety goggles and protective clothing, user and bystander.**
- **Relieve fuel system pressure before opening lines and connections.**
- **Keep cigarettes, sparks, open flame, and other sources of ignition away from vehicle.**
- **Keep food out of area when fuel is present.**
- **Disconnect the battery ground before opening any fuel system fittings, reconnect the cable to run the engine or operate the fuel pump for testing.**
- **Gasoline, methanol and oxygenated fuels are toxic and flammable and must be handled appropriately.**
- **Keep a dry chemical (Class B) fire extinguisher rated for gasoline, chemical, and electrical fires in the work area.**

Fire can cause serious injury.

IMPORTANT:
The fuel system remains under pressure when the engine is not running. Release fuel pressure before disconnecting any fuel line to reduce the chance of personal injury or fire damage to vehicle components.

IMPORTANT:
Strict observance of posted speed limits and attention to driving conditions are mandatory when conducting fuel pressure testing while road testing.

IMPORTANT:
Late model fuel lines use plastic snap-lock connections that are easily damaged. The fuel line must be replaced if the snap-lock connection is damaged when it is disassembled to install a fuel pressure gauge. The sealing O-rings should be replaced whenever a connection is opened.

NOTE:
Operating with a low fuel level may overheat the electric fuel pump. Mazda advises that low fuel level in the tank may damage the fuel pump.

The ECM-PCM controls ground to the fuel pump through a relay.

RX-7 models with fuel injection use a dual primary-secondary injection system controlled by the ECM. Each injection pipe has two injectors. These systems use an electric in-tank fuel pump.

Relieving Fuel Pressure

Pressure must be relieved and a gauge connected before testing the fuel system. Wrap a rag around the connection fitting and slowly loosen the fitting to relieve pressure. Refer to Table MA014-1 for fuel pressures and test procedures.

Table MA014-1 *Fuel pressure specifications and test procedures (part 1 of 2)*

MODEL	YEAR	ENGINE	FUEL PRESSURE (psi)			FUEL PUMP TEST CONNECTOR	GO TO
			REGULATED	UNREGULATED	MAXIMUM		
323, Protege	1986–89	Non-turbo	35	45	75	Yellow	”Procedure A”
	1988–89	Turbo	35	45	75	Yellow	
	1990–94	1.6L	35	45	75	DLC	”Procedure C”
	1990–2000	1.8L	35	45	75	DLC	
	1995–98	1.5L	35	45	75	DLC	
	1999–2003	1.6L	35	45	75	DLC	
	2001–03	2.0L	35	45	75	DLC	
626, MX-6	1986–87	2.0L	35	45	75	Yellow	”Procedure A”
	1988–92	2.2L	35	45	75	Yellow	
	1993	2.0L	35	45	75	DLC	”Procedure C”
	1993–97	2.5L	35	45	75	DLC	
	1994–97	2.0L w/MT	35	45	75	DLC	
		2.0L w/AT	35	45	75	F/P relay	”Procedure F”
	1998–2002	All	35	45	75	F/P relay	
929	1988–95	All	35	45	75	Yellow	”Procedure A”
B-Series	1989–93	FI	35	45	75	Yellow	
	1995–97	All	32	40	N/A	F/P relay	”Procedure D”
	1998–2000	All	66	N/A	N/A	F/P relay	”Procedure E”
	2001	All	66	N/A	N/A	F/P relay	”Procedure J”
	2002–06	2.3L	56–72	N/A	N/A	F/P relay	”Procedure M”
		3.0L, 4.0L	56–72	N/A	N/A	F/P relay	”Procedure K”
Mazda3	2004–06	All	51–60	N/A	N/A	PCM connector	”Procedure N”
Mazda5	2006	2.3L	50.8–59.4	N/A	N/A	F/P check	”Procedure P”
Mazda6	2003–06	2.3L	55–65	N/A	N/A	F/P check connector	”Procedure L”
		3.0L	63–73				
Mazdaspeed6	2006	2.3L TC	60–71	N/A	N/A	F/P check	”Procedure L”
Millenia	1995–2002	All	35	45	75	DLC	”Procedure C”
MPV	1989–93.5	2.6L, 3.0L	35	45	75	Yellow	”Procedure A”
	1993.5–95	2.6L	35	45	75	DLC	”Procedure C”
	1993.5–98	3.0L	35	45	75	DLC	
	2000–01	2.5L	45	60	113	DLC	
	2002–06	3.0L	45	60	113	DLC	
MX-3	1992–96	All	35	45	75	DLC	
MX-5 Miata	1990–97	All	35	45	75	DLC	
	1999–2006	1.8L	60	N/A	92	DLC	

Table MA014-1 *Fuel pressure specifications and test procedures (part 2 of 2)*

MODEL	YEAR	ENGINE	FUEL PRESSURE (psi)			FUEL PUMP TEST CONNECTOR	GO TO
			REGULATED	UNREGULATED	MAXIMUM		
RX-7	1984–91	Non-turbo FI	35	45	75	Yellow	"Procedure A"
	1987–88	Turbo FI	35	45	75	Yellow	"Procedure B"
	1989–91	Turbo FI	35	45	75	Yellow	"Procedure A"
	1993–95	FI	35	45	75	DLC	"Procedure C"
RX-8	2004–06	All	55–65	N/A	N/A	F/P check connector	"Procedure O"
Tribute	2001–06	2.0L	65	65	65	F/P relay	"Procedure G"
		3.0L	65	65	65	F/P relay	"Procedure H"

Yellow 2-Pin Fuel Pump Test Connector Locations

- Refer to Figure MA014-1:
- 1986–89 323—Left rear of engine compartment, near the wiper motor
- 1986–92 626—Left rear of engine compartment, at the rear of the shock tower
- 1988–95 929—Left front of engine compartment, left of AFM
- 1989–93.5 MPV—Left front of engine compartment, left of air filter
- 1984–91 RX-7—Right side engine compartment, area of right shock tower (except 1987–88 turbo, see Procedure B)
- 1989–93 B-Series FI truck—Left rear of engine compartment, area of wiper motor

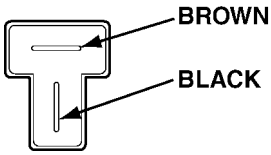

Figure MA014-1

Fuel pressure Testing for Vehicles with Yellow 2-Pin Test connector

Do not use this procedure for testing a 1987–88 RX-7 turbo: refer to procedure B below.

Procedure A

1. Switch the ignition off, then relieve fuel system pressure and disconnect the fuel hose at the fuel filter outlet.
2. Tee a pressure gauge into the fuel line between the filter and the injectors (Snap-on gauge set MT3370A or equivalent, or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through 0–100 psi transducer and suitable adapter).
3. Use a fused jumper to short across the fuel pump test terminal, turn ignition on. Note unregulated gauge reading, see Table MA014-1 for specifications.
4. Disconnect the vacuum line at the pressure regulator and apply 17 in-Hg of vacuum with hand pump. Note the regulated pressure, see Table MA014-1 for specifications.
5. Remove vacuum pump, reconnect the pressure regulator vacuum line and remove jumper. Turn ignition off, wait 10 minutes.

   Pressure should drop no more than about 1 psi per minute.
6. Relieve fuel pressure, remove pressure gauge and jumper, restore all connections.
7. Start the engine, check for fuel leaks.

RX-7 1987–88 Turbo Engines

Procedure B

1. Switch the ignition off, then relieve fuel system pressure and disconnect the fuel supply hose from fuel line.
2. Tee a pressure gauge into the fuel supply line between the pump and injectors (Snap-on gauge set MT3370A or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through a 0-100 psi transducer and suitable adapter).
3. Use a fused jumper to short across the test terminals as shown in Figure MA014-2 (2-pin yellow connector, at left shock tower area).
4. Locate the orange pressure regulator solenoid connector. Energize the fuel pressure regulator solenoid using a fused jumper wire to ground the control terminal, which is opposite the Blk-Wht power terminal (Figure MA014-2). The gauge should read regulated pressure of about 35 psi.

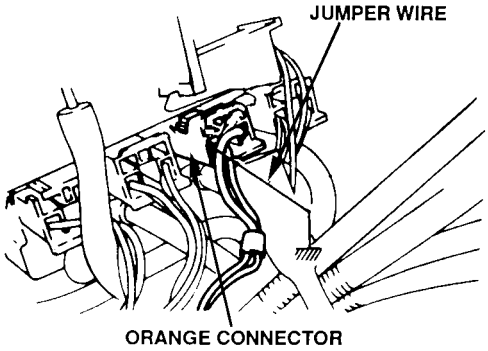

Figure MA014-2

IMPORTANT:
Do not short the black-white power wire to ground!

5. Remove the jumper wire from pressure regulator solenoid and note the gauge. It should read unregulated pressure of about 45 psi. If readings are not as specified, check the solenoid and wiring. If the wiring is good, suspect a faulty pressure regulator or fuel pump.
6. Turn the ignition off and wait about 10 minutes. Fuel pressure should drop no more than about 1 psi per minute.
7. Relieve fuel system pressure. Remove pressure gauge and jumper, restore connections.
8. Start the engine and check for leaks.

All models with DLC Fuel Pump Activation Test Terminal

Procedure C

1. With the ignition off, relieve fuel system pressure.
2. Tee a pressure gauge into the fuel line between the fuel pump and the injectors (Snap-on gauge set MT3370A or equivalent or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through 0-100 psi transducer and suitable adapter).
3. Use a fused jumper to ground the fuel pump test terminal in the underhood connector (Figure MA014-3). Switch the ignition on and note the KOEO reading.

NOTE:
For vehicles with an external fuel pressure regulator, KOEO reading indicates unregulated pressure, with an integrated pressure regulator, KOEO reading indicates regulated pressure.

See Table MA014-1 for specifications.

4. For vehicles with an external fuel pressure regulator only; disconnect the vacuum line at the pressure regulator. Use a hand pump to apply 17 in-Hg of vacuum and note regulated pressure. See Table MA014-1 for specifications. Remove the vacuum pump.
5. Remove the jumper, and connect the pressure regulator vacuum line if applicable.
6. Switch the ignition off, wait 10 minutes. Pressure should drop no more than about 1 psi per minute.

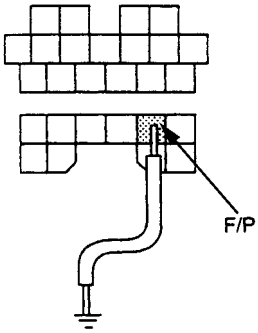

Figure MA014-3

7. Relieve fuel pressure, remove pressure gauge and restore all connections.
8. Start engine, check for fuel leaks.

1995–97 B-Series Trucks

Procedure D

1. Attach a fuel pressure gauge (Snap-on MT3370A or equivalent or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through 0-100 psi transducer and suitable adapter) to the Schraeder valve on fuel rail. Relieve fuel pressure.
2. Locate engine compartment fuse/relay box at left rear corner of engine compartment area of driver side hood hinge. Refer to the fuse and relay box diagram (Figure MA014-4).

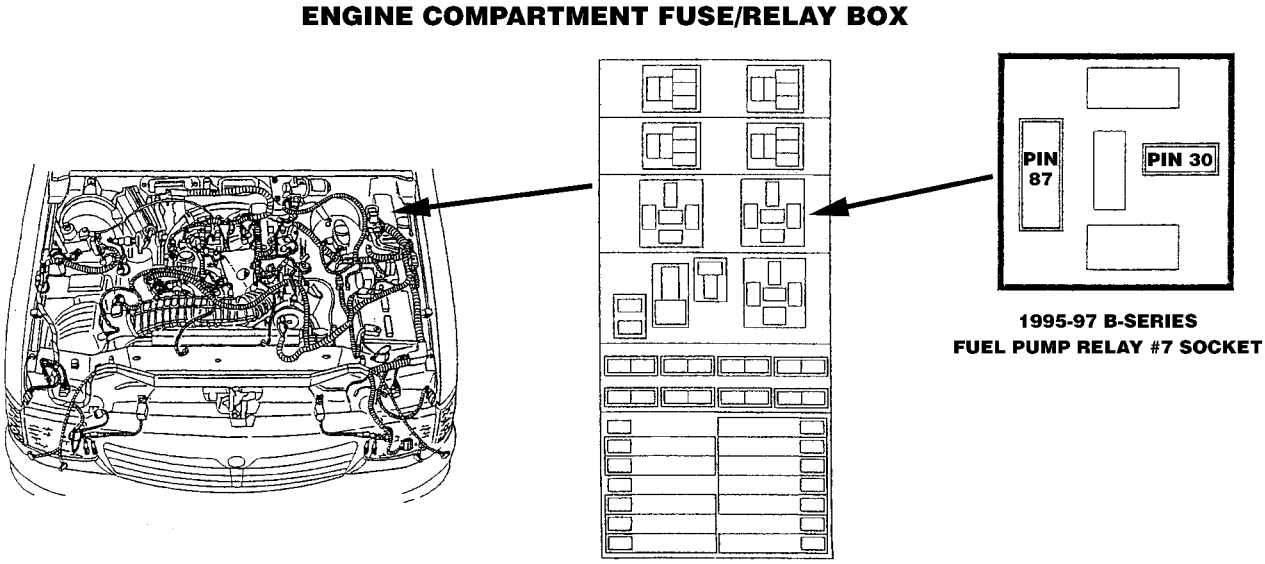

Figure MA014-4

3. Remove fuel pump relay 7. Relays are numbered on underside of fuse/relay box lid.
4. Switch the ignition off, then install a fused jumper across terminals 30 and 87 of fuel pump relay socket in fuse/relay box.
5. Switch the ignition on and note the fuel pressure reading on the gauge. Fuel pressure should be about 40 psi.
6. Switch the ignition off, remove the jumper wire and reinstall fuel pump relay. Start the engine and observe the fuel pressure gauge reading, it should be about 32 psi.
7. With the engine running, disconnect and plug the vacuum line from fuel pressure regulator. Test drive the vehicle observing fuel gauge pressure reading. Drive vehicle under heavy acceleration, fuel pressure reading should not vary more than about 3 psi.
8. With the engine running, reconnect fuel pressure regulator vacuum line. Pressure reading should return to 32 psi.
9. Switch the ignition off, observe gauge reading after about 1 minute. Pressure should drop no more than about 5 psi in the first minute and no more than about 1 psi per minute after.
10. Relieve system pressure, then remove the gauge and replace the Schraeder valve cap.
11. Start the engine and check for leaks.

1998–2000 B-Series Trucks

Procedure E

1. Relieve fuel pressure, drain fuel into an appropriate container and dispose of it properly.
2. Remove the Schraeder valve cap on fuel rail fitting, attach fuel pressure gauge (Snap-on gauge set MT3370A or equivalent).
3. Locate engine compartment fuse/relay box at left rear corner of the engine compartment near the driver side hood hinge. Refer to the fuse and relay box diagram (Figure MA014-5).

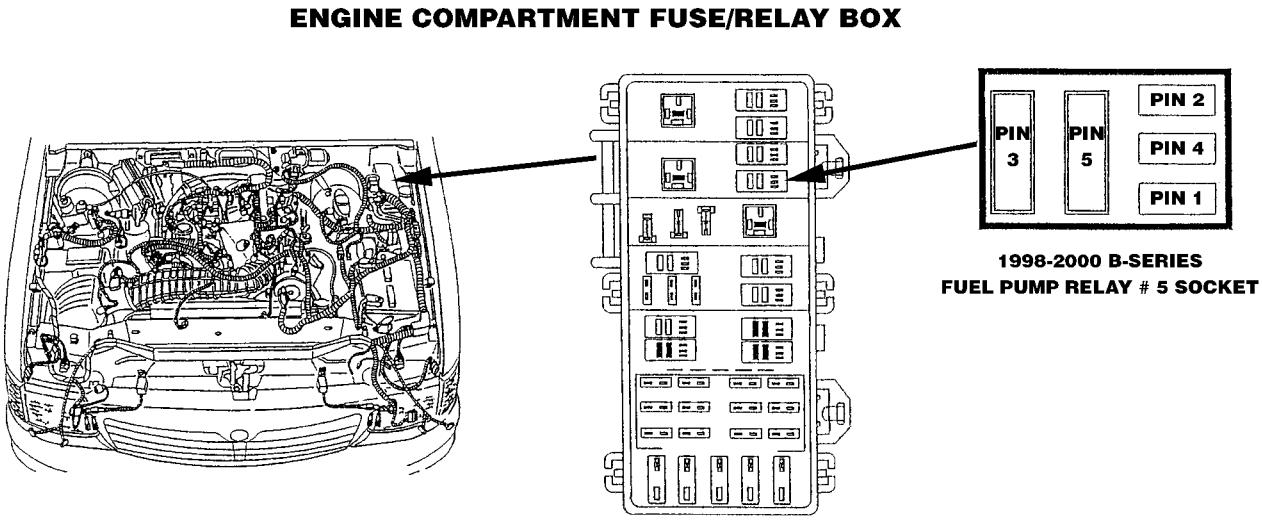

Figure MA014-5

4. Remove fuel pump relay 5, the relays are numbered on underside of fuse/relay box lid.
5. With the ignition off, install fused jumper across terminals 3 and 5 (2 large parallel terminals) of fuel pump relay socket in fuse/relay box.

6. Switch the ignition on. Record fuel pressure on the gauge, it should be about 66 psi.
7. Switch the ignition off, then remove the jumper wire and reinstall the fuel pump relay. Test drive the vehicle while observing fuel gauge pressure. Drive under heavy acceleration, fuel pressure gauge reading should not vary more than about 3 psi.
8. Switch the ignition off. Restart engine and the pressure reading should return to 66 psi.
9. Switch the ignition off, observe gauge after about 1 minute, pressure should drop no more than about 5 psi, then no more than1 psi per minute after that.
10. Relieve system pressure, remove the gauge, and replace the Schraeder valve cap.
11. Start the engine and check for leaks.

1994–97 626/MX-6 2.0L with ATX, 1998–2002 626 without “FP” Terminal in DLC

Procedure F

NOTE:
On vehicles without access to the fuel pump activation terminal in the DLC, the fuel pump relay must be removed and jumped to power the fuel pump for pressure testing (Figure MA014-6).

1. To activate the pump, remove the pump relay and install a fused jumper wire between terminals 30 and 87 (Figure MA014-7).
2. Once the jumper wire is installed, See “Procedure C” on page AA96. to test the fuel pressure.

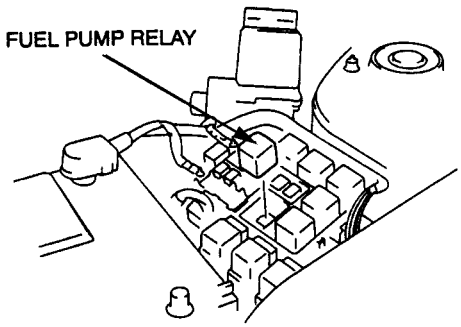

Figure MA014-6

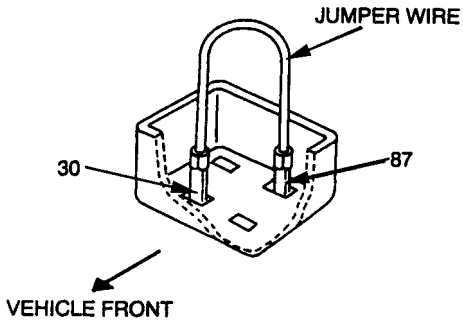

Figure MA014-7

2001–2006 Tribute 2.0L

Procedure G

1. With the ignition off, locate and remove the fuel pump relay in the underhood fuse/relay box (Figure MA014-8). Start and run the engine until it stalls, then restart and stall the engine a second time.
2. Switch the ignition off, carefully relieve residual fuel system pressure, then disconnect the fuel outlet line at the fuel filter.
3. Tee a fuel pressure gauge (Snap-on gauge set MT3370A or equivalent, or use or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through 0-100 psi transducer and suitable adapter) into the fuel line.

4. Install a fused jumper across terminals 30 and 87 (Figure MA014-8).
5. Switch the ignition on and check for fuel leaks. Note the unregulated fuel pressure on the gauge. See Table MA014-1 for specifications.
6. Switch the ignition off, remove the jumper wire and reinstall the fuel pump relay. Start and run the engine to allow fuel pressure to stabilize, then read regulated fuel pressure on the gauge. See Table MA014-1 for specifications.

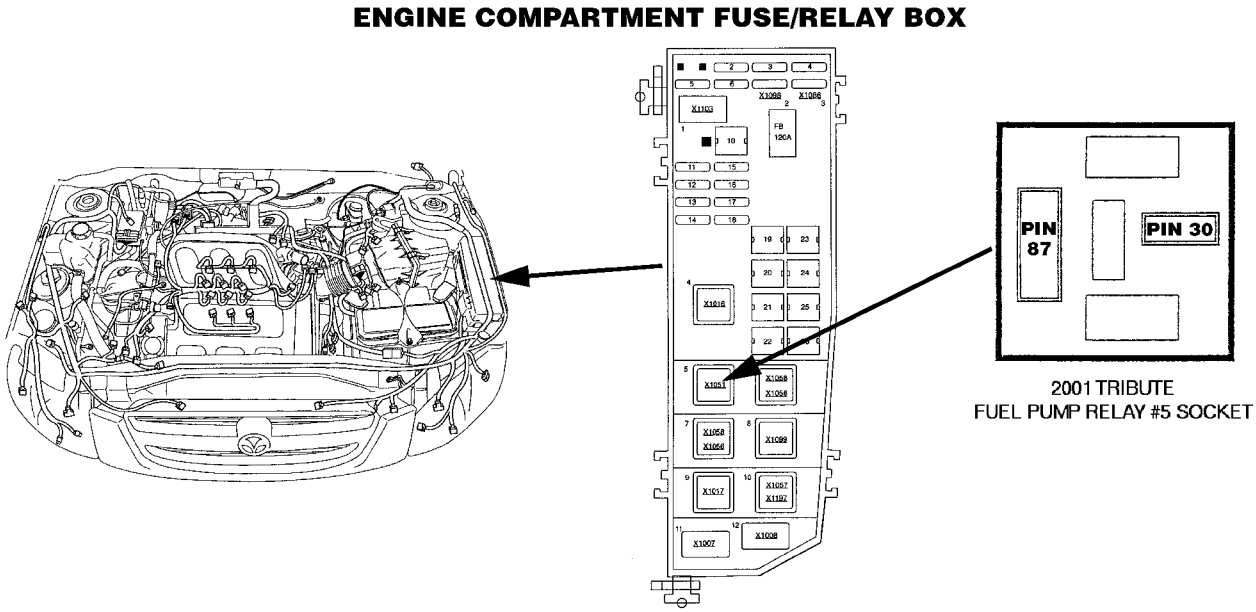

Figure MA014-8

7. Switch the ignition off and remove the fuel pump relay. Start and run the engine until it stalls to relieve pressure. Remove the fuel pressure gauge, restore all connections, and reinstall the relay.
8. Start the engine and check for leaks.

2001–2006 Tribute 3.0L

Procedure H

1. With the ignition off, locate and remove the fuel pump relay in the underhood fuse/relay box (Figure MA014-8). Start and run the engine until it stalls, then restart and stall the engine a second time.
2. Switch the ignition off, carefully relieve residual fuel system pressure. Connect a fuel pressure gauge (Snap-on gauge set MT3370A or equivalent, or use or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through 0-100 psi transducer and suitable adapter) into the fuel line at the Schraeder valve on the fuel injector supply manifold.
3. Install a fused jumper across terminals 30 and 87 (Figure MA014-8).
4. Switch the ignition on and check for fuel leaks. Note the unregulated fuel pressure on the gauge. See Table MA014-1 for specifications.

5. Switch the ignition off, remove the jumper wire and reinstall the fuel pump relay. Start and run the engine to allow fuel pressure to stabilize, then read regulated fuel pressure on the gauge. See Table MA014-1 for specifications.
6. Switch the ignition off and remove the fuel pump relay. Start and run the engine until it stalls to relieve pressure. Remove the fuel pressure gauge, reinstall the Schraeder valve cap, and reinstall the relay.
7. Start the engine and check for leaks.

2001 B-Series Trucks

Procedure J

1. Relieve fuel pressure, drain fuel into an appropriate container and dispose of it properly.
2. Remove the Schraeder valve cap on fuel rail fitting, attach fuel pressure gauge (Snap-on gauge set MT3370A or equivalent or use or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through 0-100 psi transducer and suitable adapter).
3. Locate engine compartment fuse/relay box at left rear corner of the engine compartment near the driver side hood hinge. Refer to the fuse and relay box diagram (Figure MA014-9).
4. Remove fuel pump relay 50B, the relays are numbered on underside of fuse/relay box lid.
5. With the ignition off, install fused jumper across terminals 3 and 5 (2 large parallel terminals) of fuel pump relay socket in fuse/relay box.

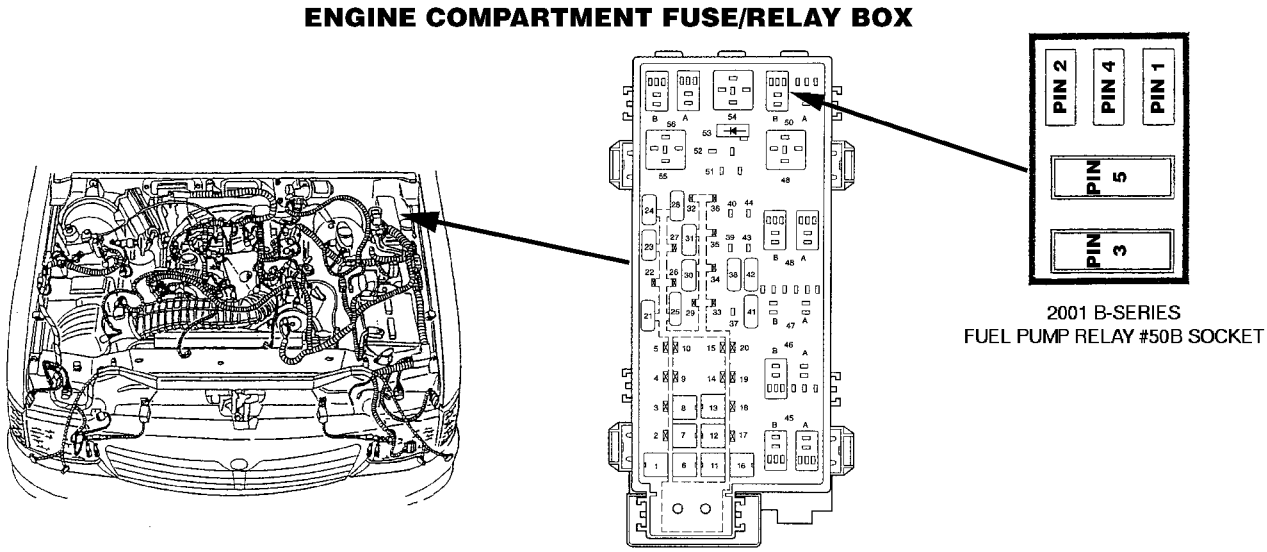

Figure MA014-9

6. Switch the ignition on, record fuel pressure reading on gauge. Fuel pressure gauge reading should be about 66 psi.
7. Switch the ignition off, then remove the jumper wire and reinstall the fuel pump relay. Test drive the vehicle while observing fuel gauge pressure. Drive under heavy acceleration, fuel pressure gauge reading should not vary more than about 3 psi.
8. Switch the ignition off. Restart engine and the pressure reading should return to about 66 psi.

9. Switch the ignition off, observe gauge reading after about 1 minute, pressure should drop no more than about 5 psi, then no more than about 1 psi per minute after that.
10. Relieve system pressure, remove the gauge, and replace the Schraeder valve cap.
11. Start the engine and check for leaks.

2002–2006 B-3000 and B4000 Trucks

Procedure K

1. Relieve fuel pressure, drain fuel into an appropriate container and dispose of it properly.
2. Remove the Schraeder valve cap on fuel rail fitting, attach fuel pressure gauge (Snap-on gauge set MT3370A or equivalent or use or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through 0-100 psi transducer and suitable adapter).
3. Locate engine compartment fuse/relay box at left rear corner of the engine compartment near the driver side hood hinge. Refer to the fuse and relay box diagram (Figure MA014-10).
4. Remove fuel pump relay 46A, the relays are numbered on underside of fuse/relay box lid.
5. With the ignition off, install fused jumper across terminals 3 and 5 (2 large parallel terminals) of fuel pump relay socket in fuse/relay box.
6. Switch the ignition on, record fuel pressure reading on gauge. Fuel pressure gauge reading should be about 56 to 72 psi.
7. Switch the ignition off, then remove the jumper wire and reinstall the fuel pump relay. Test drive the vehicle while observing fuel gauge pressure. Drive under heavy acceleration, fuel pressure gauge reading should not vary more than about 3 psi.
8. Switch the ignition off. Restart engine and the pressure should return to about 66 psi.

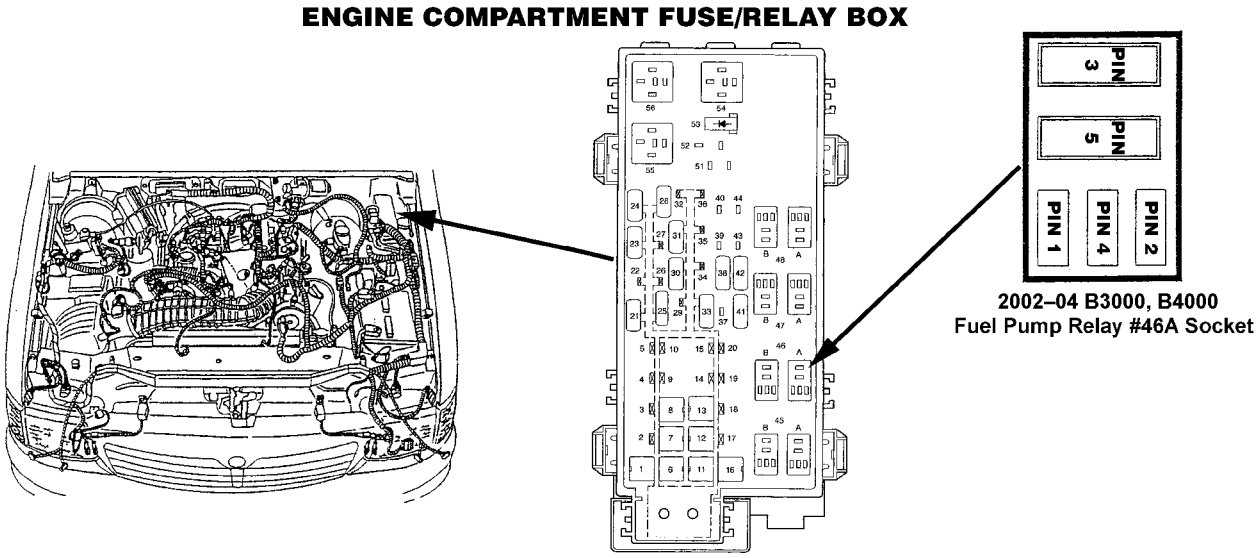

Figure MA014-10

9. Switch the ignition off, observe gauge reading after about 1 minute, pressure should drop no more than about 5 psi, then no more than about 1 psi per minute after that.
10. Relieve system pressure, remove the gauge, and replace the Schraeder valve cap.

11. Start the engine and check for leaks.

2003–06 Mazda6 2.3L and 3.0L, 2006 Mazdaspeed6 2.3L TC

Procedure L

1. Disconnect the negative (–) battery cable.
2. Remove the fuel line Schrader valve cap located under the throttle body (Figure MA014-11).

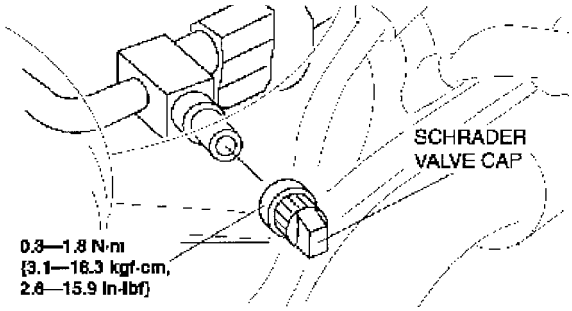

Figure MA014-11

3. Connect suitable fuel pressure gauge and adapter (Snap-on® gauge set MT3370A or equivalent, or MODIS™, Vantage PRO™ or Vantage® meter to read pressure through 0—100 psi transducer and suitable adapter).
4. Clean any resulting fuel leakage and dispose of properly.
5. Connect the negative (–) battery cable.
6. Verify that the shift lever is in the P or N for ATX vehicles, or neutral for MTX vehicles.
7. Start the engine and allow it to idle. Measure the fuel line pressure and compare it to the specifications below.

Fuel Line Pressure

- 2.3L: 55–65 psi (375–450 kPa, 3.9–4.5 kgf/cm^2)
- 12.3L TC 60–71 psi (410–490 kPa, 4.2–4.9 kgf/cm^2)
- 3.0L: 63–73 psi (430–510 kPa, 4.4–5.2 kgf/cm^2)

If not as specified, inspect the following:

Zero or Low Pressure:

- Fuel pump circuit
- Fuel pump
- Fuel line clog, dented or bent pipe, or kinked tubing
- Fuel leak inside pressure regulator (defective regulator)

High Pressure:

- Defective pressure regulator

8. Observe the fuel pressure reading during heavy acceleration.
9. Verify that the fuel pressure variation is within the specification during the test.

   If not as specified, inspect the following:

- PCM
- Fuel pump
- Pulsation damper
- Fuel line dents, kinks, leaks or improper routing

Fuel Pressure variation specification (Under Acceleration)

- L3: 53–65 psi (365–450 kPa, 3.8–4.5 kgf/cm^2)
- AJ: 61–73 psi (420–510 kPa, 4.3–5.2 kgf/cm^2)

10. Turn the ignition switch to the OFF position.
11. After five minutes, measure the fuel hold pressure (specification below).

Fuel Hold Pressure

- L3: More than 29 psi (200 kPa, 2.0 kgf/cm^2)
- L3/TC: More than 33 psi (230 kPa, 2.3 kgf/cm^2)
- AJ: More than 36 psi (250 kPa, 2.5 kgf/cm^2)

If not as specified, inspect the following:

- Fuel pump check valve
- Fuel injector leaks
- Fuel line kinks, leaks or improper routing

12. Disconnect the fuel pressure gauge apparatus and adapter.
13. Restore the fuel system to operating condition and check for fuel leaks.

2002–2006 B-2300 Trucks

Procedure M

1. Relieve fuel pressure, drain fuel into an appropriate container and dispose of it properly.
2. Remove the Schraeder valve cap on fuel rail fitting, attach fuel pressure gauge (Snap-on gauge set MT3370A or equivalent or use or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through 0-100 psi transducer and suitable adapter).
3. Locate engine compartment fuse/relay box at left rear corner of the engine compartment near the driver side hood hinge. Refer to the fuse and relay box diagram (Figure MA014-12).

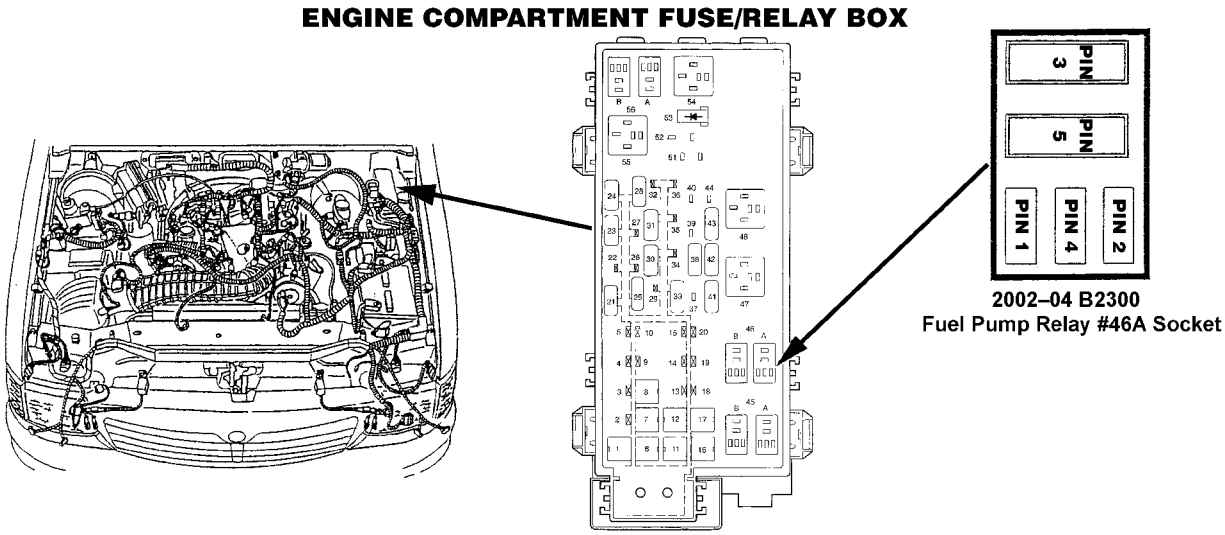

Figure MA014-12

4. Remove fuel pump relay 46A, the relays are numbered on underside of fuse/relay box lid.
5. With the ignition off, install fused jumper across terminals 3 and 5 (2 large parallel terminals) of fuel pump relay socket in fuse/relay box.
6. Switch the ignition on, record fuel pressure reading on gauge. Fuel pressure gauge reading should be about 56 to 72 psi.
7. Switch the ignition off, then remove the jumper wire and reinstall the fuel pump relay. Test drive the vehicle while observing fuel gauge pressure. Drive under heavy acceleration, fuel pressure gauge reading should not vary more than about 3 psi.
8. Switch the ignition off. Restart engine and the pressure should return to about 66 psi.

2004–06 Mazda3

Procedure N

1. Relieve fuel pressure by starting the engine, then remove the fuse from the engine compartment relay box (Figure MA014-13), the engine will stall.

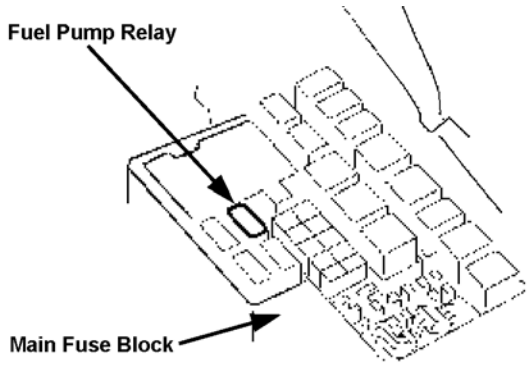

Figure MA014-13

2. Attempt to restart without the relay installed, repeat restart until the engine will not fire.
3. Replace the relay.

4. Disconnect the negative battery terminal.
5. Disconnect the quick release fuel line connector in the engine compartment.
6. Connect a fuel pressure gauge (Snap-on MT3370A or equivalent or use or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through 0-100 psi transducer and suitable adapter) (Figure MA014-14).
7. Connect the negative battery terminal.
8. Use a fused jumper wire to ground the PCM terminal (Figure MA014-15):
   - With immobilizer system, 1AR
   - Without immobilizer system, 1AQ

IMPORTANT:
Shorting the wrong terminal can cause injury or damage, only short the specified terminal.

9. Turn the ignition switch to on to start the fuel pump.

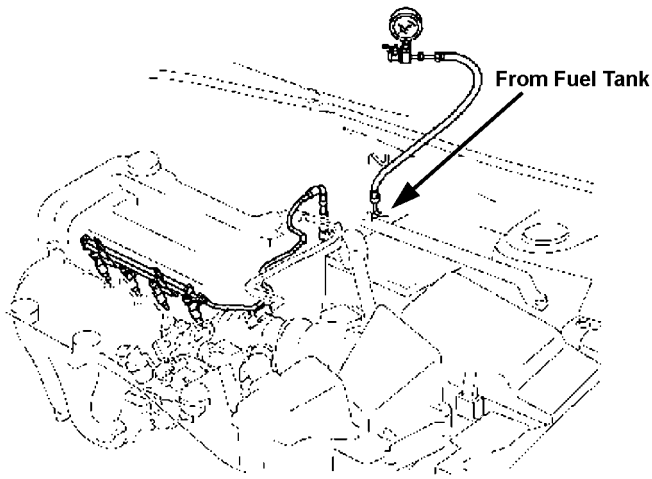

Figure MA014-14

PCM Connector, Wiring Harness Side

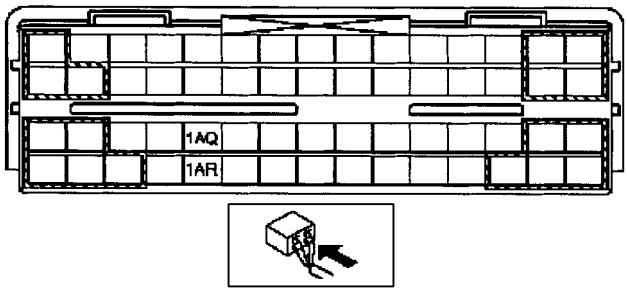

Figure MA014-15

10. Allow the pump to run for ten seconds, then note the pressure reading:

Fuel Pressure (Reference)

- 58 to 59.4 psi (350 to 410 kPa, 3.57 to 4.18 kgf/cm^2)

If not as specified, inspect the following:

Less than specified:

- Fuel pump unit
- Fuel line leakage

Higher than specified:

- Pressure regulator

11. Turn the ignition switch to off to stop the fuel pump, then remove the jumper.
12. After 5 minutes, read the fuel hold pressure.
13. See specifications below:

Fuel Hold Pressure (Reference)

- 36.2 psi (250 kPa, 2.55 kgf/cm^2) or more

If not as specified, inspect the following:

- Fuel line for clogging or leakage

14. Disconnect the fuel pressure gauge and adapter.
15. Restore the fuel system to operating condition, start and run the engine, and check for fuel leaks.

2004–06 RX-8

Procedure O

1. Relieve fuel pressure by starting the engine, then remove the fuse from the engine compartment relay box (Figure MA014-16), the engine will stall.

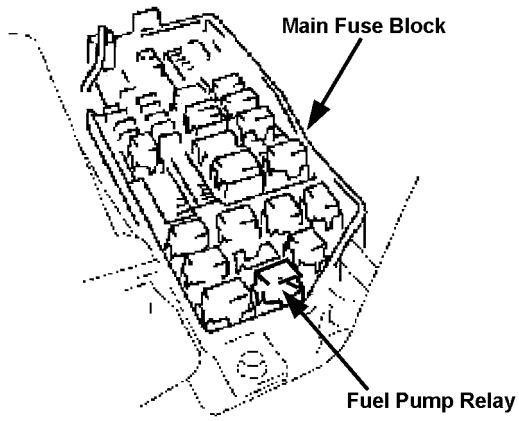

Figure MA014-16

2. Attempt to restart without the relay installed, repeat restart until the engine will not fire.
3. Replace the relay.
4. Disconnect the negative battery terminal.
5. Disconnect the engine compartment side quick release fuel line connector in the engine compartment.
6. Connect a fuel pressure gauge (Snap-on MT3370A or equivalent or use or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through 0-100 psi transducer and suitable adapter) (Figure MA014-17).

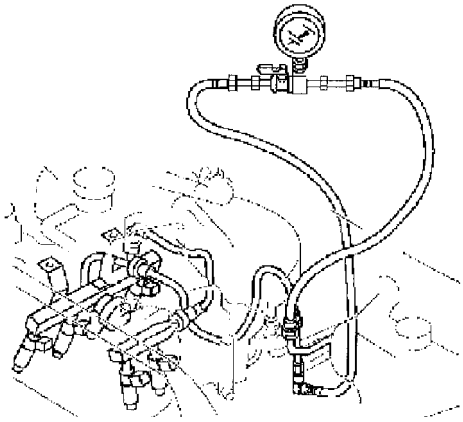

Figure MA014-17

7. Connect the negative battery terminal.
8. Use a fused jumper wire to ground the fuel pump check connector (Blu-Blk wire) terminal (Figure MA014-18).

IMPORTANT:
Shorting the wrong terminal can cause injury or damage, only short the specified terminal.

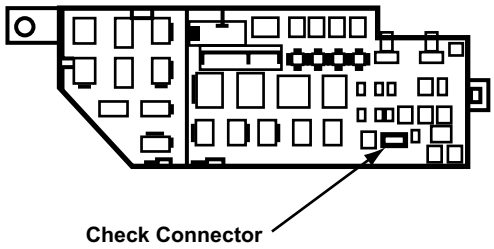

Figure MA014-18

9. Turn the ignition switch to on to start the fuel pump.
10. Measure fuel line pressure. See specifications below:

Fuel Line Pressure

- 54.4 to 65.2 psi (375 to 450 kPa, 3.83 to 4.58 kgf/cm^2)

11. Turn the ignition switch off and remove the jumper wire.
12. After 5 minutes, read the fuel hold pressure. See specifications below:

Fuel Hold Pressure (Reference)

- 29 psi (200 kPa, 2.0 kgf/cm^2) or more

13. Disconnect the fuel pressure gauge and adapter.
14. Restore the fuel system to operating condition, start and run the engine, and check for fuel leaks.

2006 Mazda5

Procedure P

1. Disconnect the negative (–) battery cable.
2. Disconnect the quick release fuel line connector in the engine compartment.
3. Connect a fuel pressure gauge (Snap-on MT3370A or equivalent or use or use a Vantage® graphing meter or MODIS™ Lab Scope Plug-in to read pressure through a 0-100 psi transducer and suitable adapter) (Figure MA014-19).

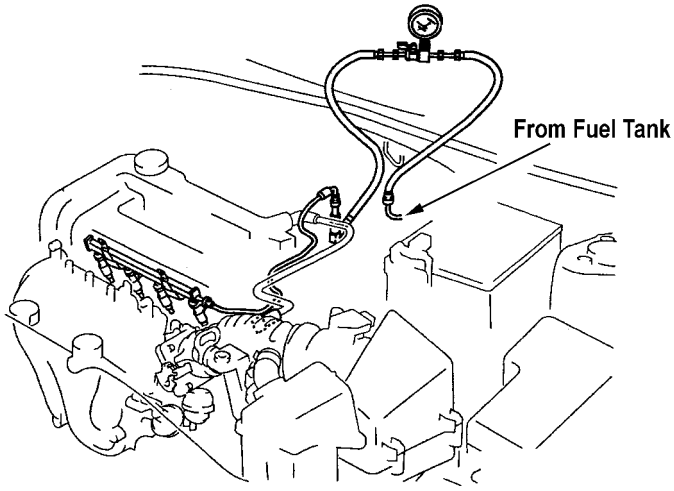

Figure MA014-19

4. Pull on the quick release connector by hand to verify taht it is firmly connected.
5. Connect the negative battery cable.
6. Use a fused jumper wire to ground the PCM terminal 1AR (Figure MA014-20).

PCM Connector, Wiring Harness Side

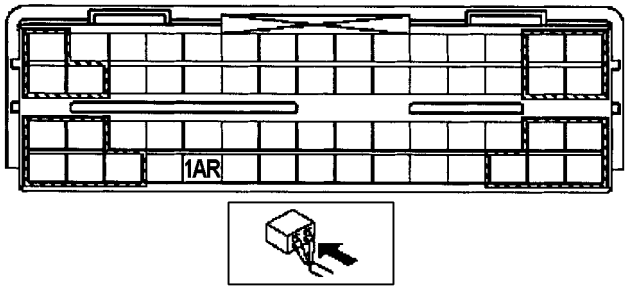

Figure MA014-20

7. Turn the ignition switch to thew ON position to start the fuel pump.
8. Operate the pump for 10 seconds, then read fuel line pressure. See specifications below:

Fuel Line Pressure

- 50.8 to 59.4 psi (350 to 410 kPa, 3.57 to 4.18 kgf/cm^2)
  If pressure is below specification, inspect the following:
  - Fuel pump assembly
  - Fuel line leakage

If fuel pressure exceeds specification, inspect the following:

- Fuel pressure regulator

9. Turn the ignition switch off and remove the jumper wire.
10. After 5 minutes, read fuel hold pressure. See specifications below:

Fuel Line Pressure

- more than 36.3 psi (250 kPa, 2.55 kgf/cm^2)

Fuel Volume Test—All Models

With a fuel pressure gauge connected as in above procedures, and the vacuum line to the fuel pressure regulator disconnected and plugged—applicable vehicles only, check fuel pressure when the throttle is quickly opened. Fuel pressure should momentarily drop by no more than about 3 psi. If pressure drop is excessive, the probable cause is insufficient fuel volume due to a restricted fuel line or filter, defective fuel pump or a faulty fuel pump ground.

It may be necessary to road test the vehicle under full throttle to verify output volume. Fuel pressure should not drop more than about 3 psi or progressively decrease under these conditions.