

# F - BASIC TESTING

## 1992 Subaru SVX

1992 ENGINE PERFORMANCE  
Subaru Basic Diagnostic Procedures

SVX

### INTRODUCTION

The following diagnostic steps help prevent overlooking a simple problem. This is also where to begin diagnosis for a no-start condition. The first step in diagnosing any driveability problem is verifying the customer's complaint with a test drive under the conditions the problem reportedly occurred.

Before entering self-diagnostics, perform a careful and complete visual inspection. Most engine control problems result from mechanical breakdowns, poor electrical connections or damaged/misrouted vacuum hoses. Before condemning the computerized system, perform each test listed in this article.

NOTE: Perform all voltage tests with a Digital Volt-Ohmmeter (DVOM) with a minimum 10-megohm input impedance, unless stated otherwise in test procedure.

### PRELIMINARY INSPECTION & ADJUSTMENTS

#### VISUAL INSPECTION

Visually inspect all electrical wiring for chafed, stretched, cut or pinched wiring. Ensure electrical connectors fit tightly and are not corroded. Ensure vacuum hoses are properly routed and are not pinched or cut. See M - VACUUM DIAGRAMS article in the ENGINE PERFORMANCE Section to verify routing and connections (if necessary). Inspect air induction system for possible vacuum leaks.

#### MECHANICAL INSPECTION

##### Compression

Check engine mechanical condition using a compression gauge, vacuum gauge or engine analyzer. See engine analyzer manual for specific instructions.

WARNING: DO NOT use ignition switch during compression tests on fuel injected vehicles. Use a remote starter to crank engine. Fuel injectors on many models are triggered by ignition switch during cranking mode, which can create a fire hazard or contaminate the engine's oiling system.

##### Exhaust System Backpressure

1) The exhaust system can be checked with a vacuum or pressure gauge. Remove O2 sensor or air injection check valve (if equipped).

2) Connect a 1-10 psi pressure gauge and operate engine at 2500 RPM. If exhaust system backpressure is greater than 1 3/4 - 2 psi, exhaust system or catalytic converter is plugged.

3) If a vacuum gauge is used, connect vacuum gauge hose to intake manifold vacuum port and start engine. Observe vacuum gauge. Open throttle part way and hold it steady. If vacuum gauge reading slowly drops after stabilizing, check exhaust system for restriction.

## FUEL SYSTEM

### FUEL PRESSURE

**WARNING:** Always relieve fuel pressure before disconnecting any fuel injection-related component. DO NOT allow fuel to contact engine or electrical components. If connecting fuel pressure gauge to fuel system without using a "T" connector, DO NOT operate fuel pump for more than a few seconds. Operating fuel pump for longer than a few seconds under this condition damages fuel pump.

Basic diagnosis of fuel system should begin by determining fuel system pressure. If fuel pump is inoperative, see appropriate FUEL PUMP CIRCUIT TEST chart under FUEL PUMP CIRCUIT TESTS.

#### Carbureted

Disconnect fuel hose from carburetor, and install pressure gauge using "T" connector. Turn ignition on. Fuel pump should run for 3 seconds and THEN stop. See REGULATED FUEL PRESSURE table.

#### Fuel-Injected

1) Disconnect fuel pump connector. Crank engine for at least 5 seconds. If engine starts, let it run until it stops. Disconnect fuel hose at pressure regulator and install fuel pressure gauge using "T" connector.

2) Start engine and check fuel pressure at idle. See REGULATED FUEL PRESSURE table. Ensure fuel pressure increases as engine speed increases.

#### REGULATED FUEL PRESSURE TABLE

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Application	At Idle psi (kg/cm <sup>2</sup> )
SVX .....	36 (2.6)

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## IGNITION CHECKS

**NOTE:** Also see appropriate IGNITION CONTROL SYSTEM TEST chart under IGNITION CONTROL SYSTEM TESTS.

### SPARK

Check for spark at spark plug wires using a spark tester. Check resistance of each spark plug wire. Replace wire if resistance is not within specification. See appropriate HIGH TENSION WIRE RESISTANCE table.

**NOTE:** SVX is equipped with Direct Ignition Systems (DIS).

### IGNITION COIL RESISTANCE

#### IGNITION COIL RESISTANCE TABLE (1)

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Application	Primary	Secondary
SVX .....	(2) .....	(2)

(1) - OHMS @ 68°F (20°C)

(2) - Information is not available from manufacturer.

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## CRANK ANGLE & TDC SENSOR SIGNALS

NOTE: For crank angle and TDC sensor signal testing, see  
G - TESTS W/ CODES article in the ENGINE PERFORMANCE Section.

## IDLE SPEED & IGNITION TIMING

Ensure idle speed and ignition timing are set to specification. See IDLE SPEED SPECIFICATIONS and IGNITION TIMING tables. For adjustment procedures, see D - ADJUSTMENTS article in the ENGINE PERFORMANCE Section.

### IDLE SPEED SPECIFICATIONS TABLE

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Application	RPM
With Accessories Off .....	510-710
With Accessories On .....	750-850

(1) - With test mode and read memory connectors connected.

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### IGNITION TIMING TABLE (1)

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Application	Man. Trans.	Auto. Trans.
SVX .....	SVX .....	12-28 @ 610

(1) - Degrees BTDC @ RPM

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## WIRE COLORS

NOTE: Use WIRE COLOR ABBREVIATIONS table to identify wire colors  
in FUEL PUMP CIRCUIT TESTS and IGNITION CONTROL SYSTEM TESTS.

### WIRE COLOR ABBREVIATIONS TABLE

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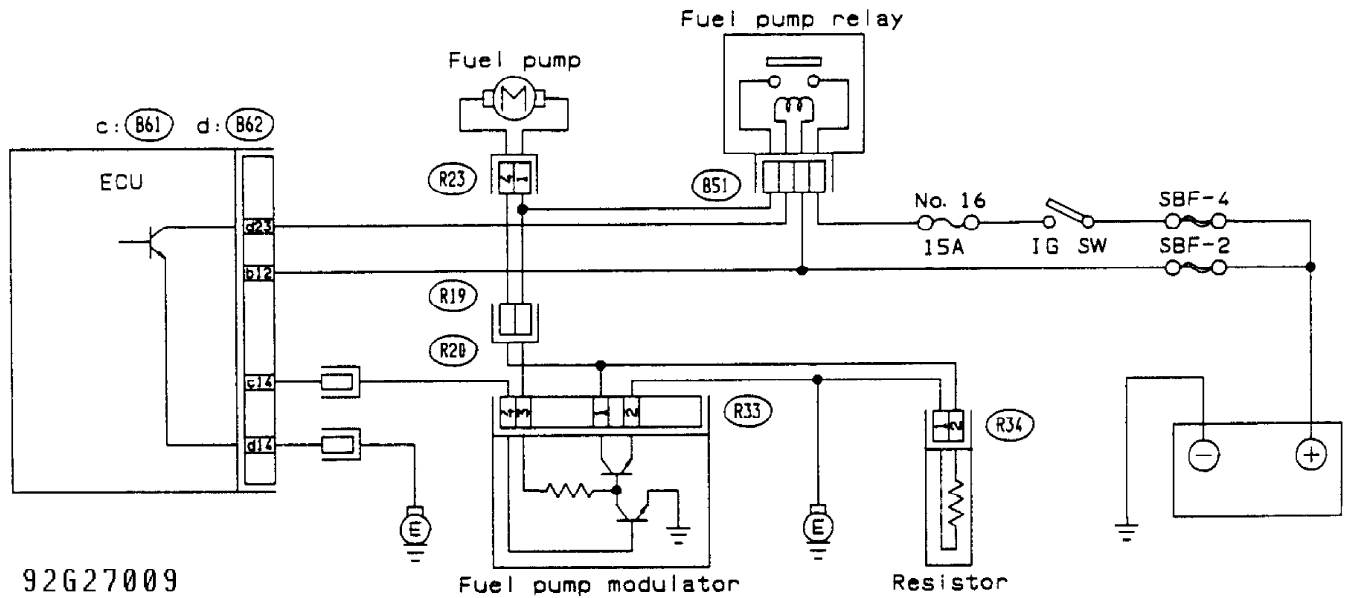
Abbreviation	Color
BR .....	Black/Red
B .....	Black
Br .....	Brown
BW .....	Black/White
BY .....	Black/Yellow
G .....	Green
GB .....	Green/Black
GL .....	Green/Blue
GR .....	Green/Red
Gr .....	Gray
GW .....	Green/White
GY .....	Green/Yellow
L .....	Blue
Lb .....	Light Blue
Lg .....	Light Green
LgB .....	Light Green/Black
LR .....	Blue/Red
LW .....	Blue/White
LY .....	Blue/Yellow

Or	Orange
P	Pink
R	Red
RY	Red/Yellow
V	Violet
W	White
WB	White/Black
WR	White/Red
WY	White/Yellow
Y	Yellow
YL	Yellow/Blue
YR	Yellow/Red
YW	Yellow/White

**SUMMARY**

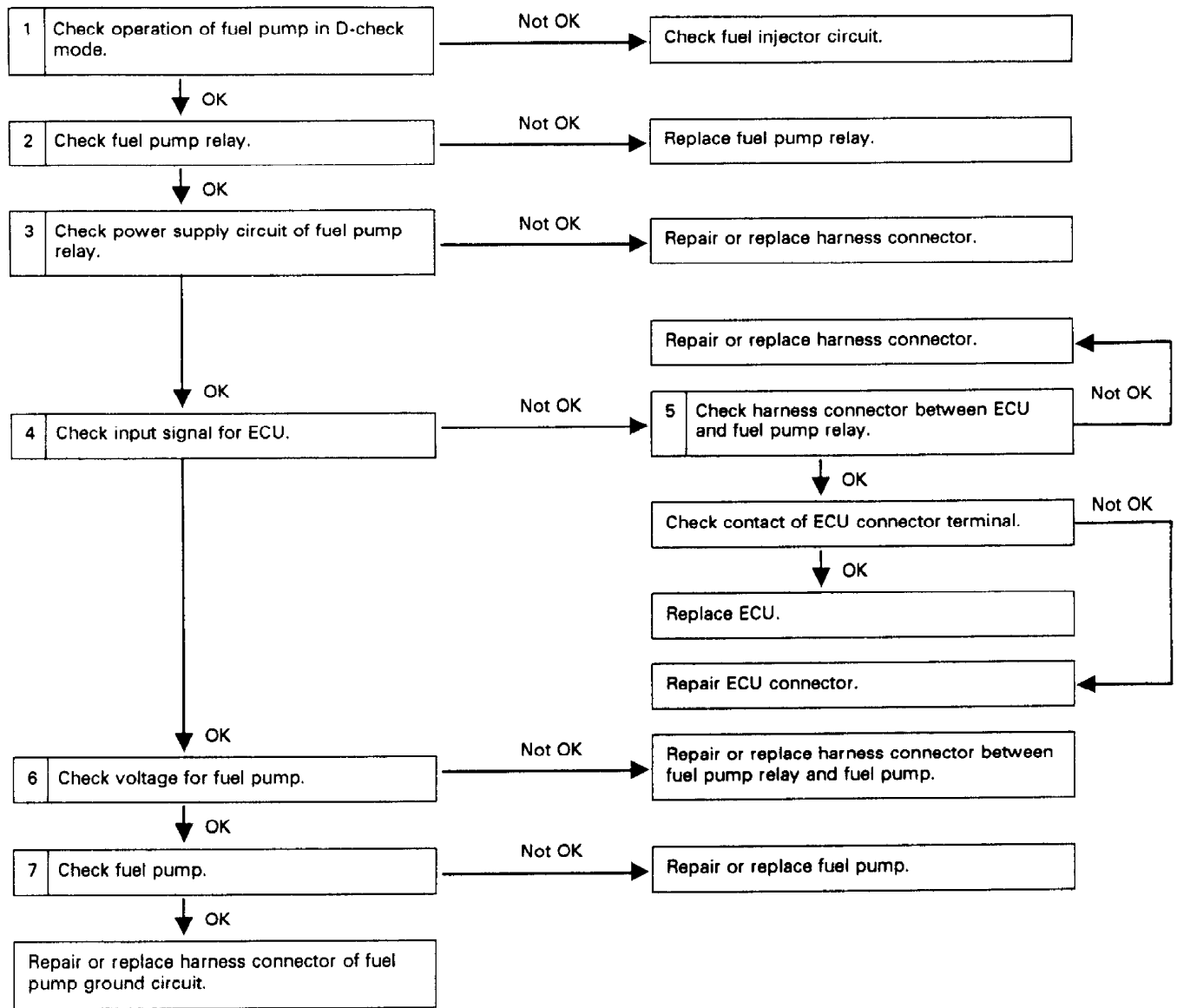
If no faults were found while performing BASIC DIAGNOSTIC PROCEDURES, proceed to G - TESTS W/ CODES article in the ENGINE PERFORMANCE Section. If no hard codes are found in self-diagnostics, go to H - TESTS W/O CODES article in the ENGINE PERFORMANCE Section for diagnosis by symptom (i.e., ROUGH IDLE, NO START, etc.) or intermittent diagnostic procedures.

**FUEL PUMP CIRCUIT TESTS**



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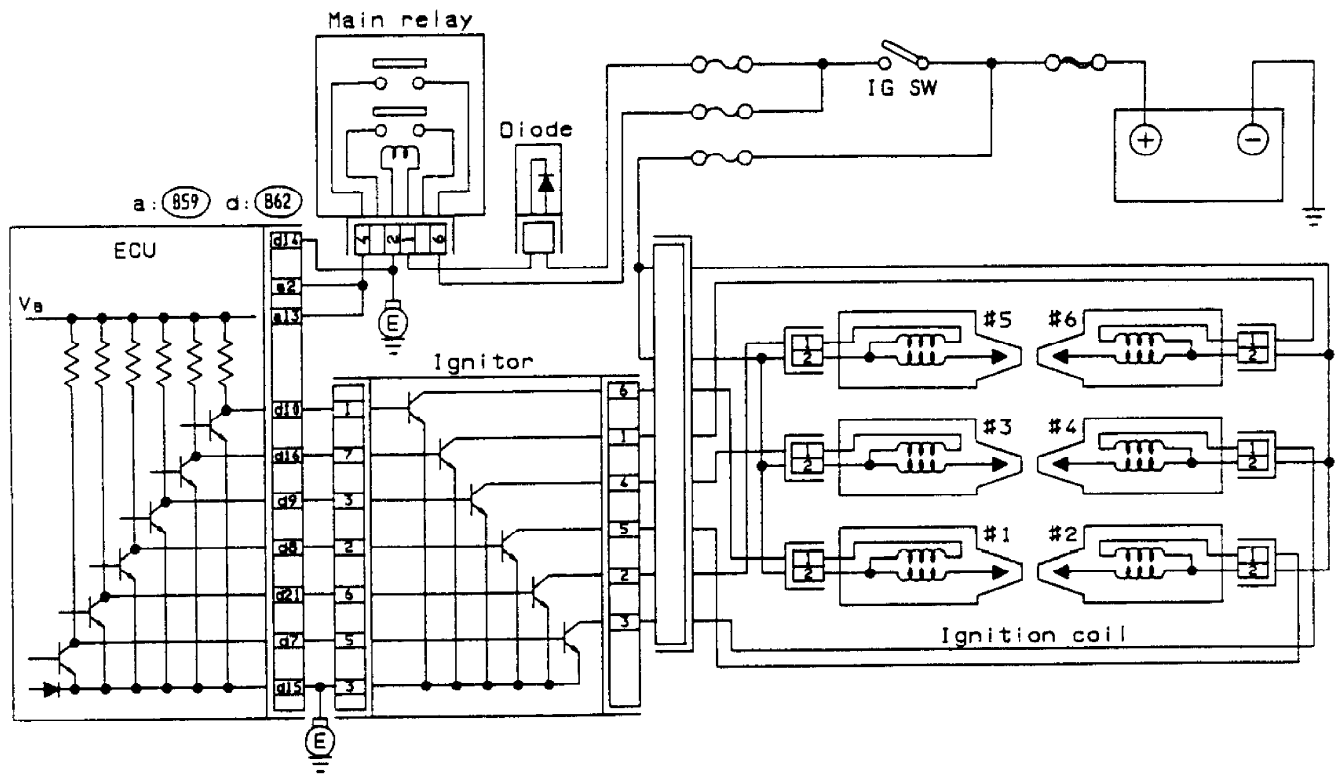
Fig. 1: Fuel Pump Circuit Test, Schematic  
 Courtesy of Subaru of America, Inc.



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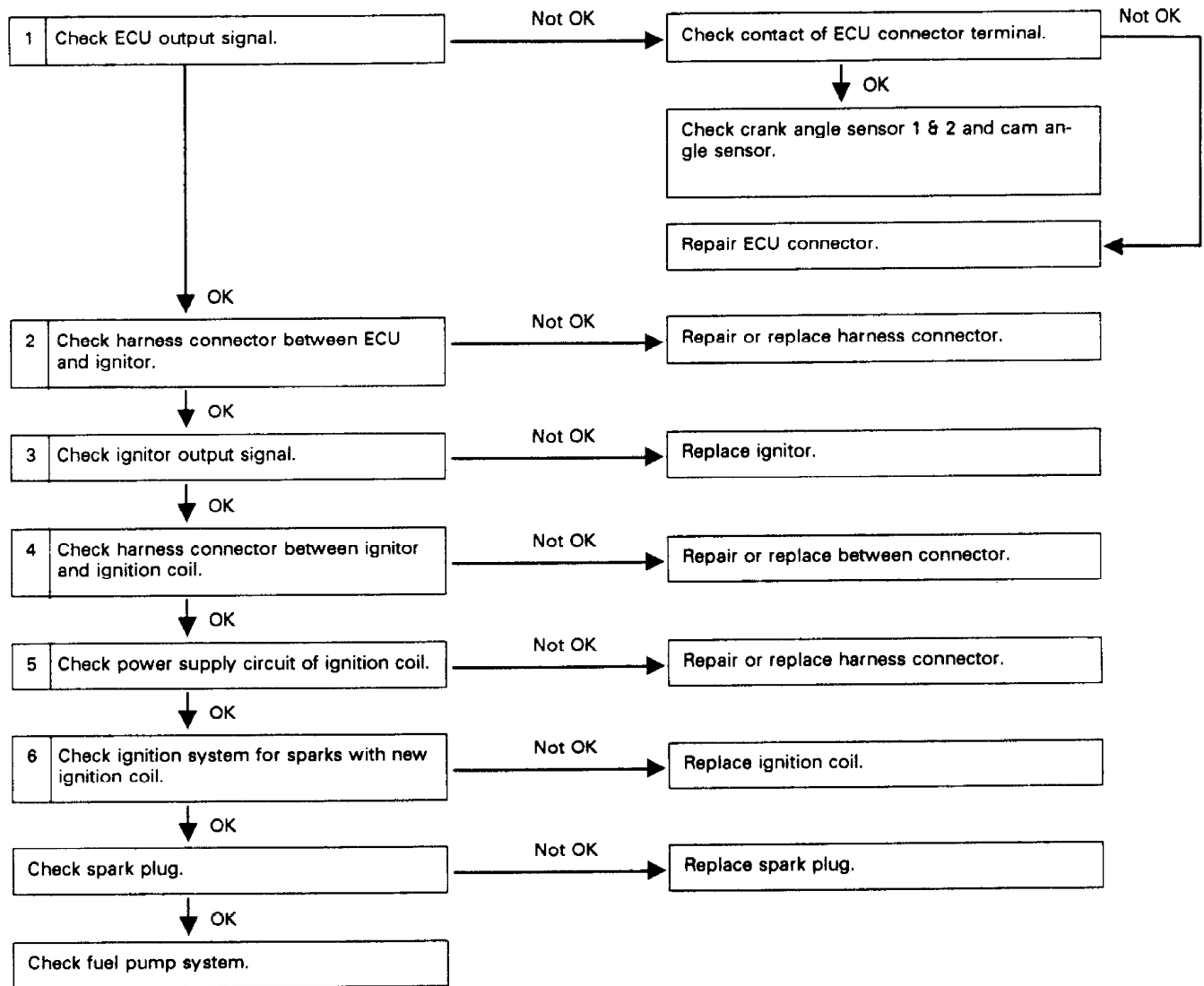
Fig. 2: Fuel Pump Circuit Test, Flow Chart  
 Courtesy of Subaru of America, Inc.

**IGNITION CONTROL SYSTEM TEST**



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Fig. 3: Ignition Control System Test, Schematic  
 Courtesy of Subaru of America, Inc.



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Fig. 4: Ignition Control System Test, Flow Chart  
 Courtesy of Subaru of America, Inc.