12. POWER VALVE CONTROL SYSTEM

CONTENTS

12. POWER VALVE CONTROL SYSTEM (2F ENGINE ONLY)

DESCRIPTION

This system serves to reduce the CO (Carbon monoxide) emission to a minimum and to ensure good driveability.

OPERATION

1. Power Valve Control System Operation

[At full throttle]

- Depressing the accelerator pedal all the way down causes the throttle position switch to turn "ON" and result in the VSV to turn "ON".
- With the VSV "ON", the intake manifold vacuum acts on the power valve.
- Since the throttle valve is full open, the intake manifold vacuum is nearly at atmospheric pressure. The power valve will, therefore, be opened by spring tension pushing down on the valve.
- As a result, more fuel will be supplied.

[At coolant temperature below 122°F]

- The VSV will be turned "ON" in the same manner as at full throttle and cause the intake manifold vacuum to act on the power valve.
- The power valve will then open and close in accordance with the changes in the intake manifold vacuum.

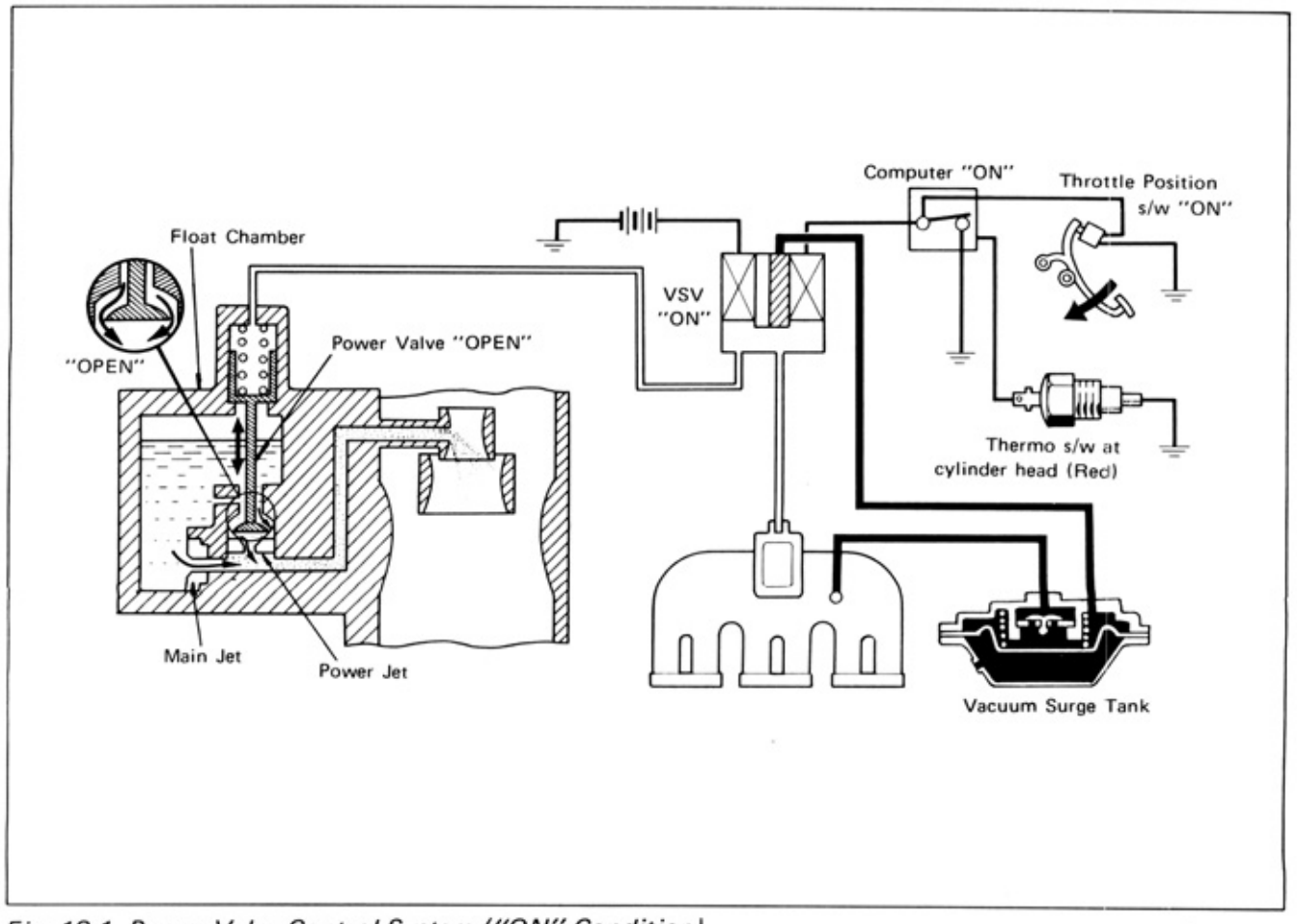


Fig. 12-1 Power Valve Control System ("ON" Condition)

["OFF" condition]

- The computer will have the VSV turned "OFF" when the coolant temperature is below 122°F, providing that the accelerator pedal is not depressed fully.
- With the VSV "OFF", the vacuum from the vacuum surge tank acts on the power valve.
- The vacuum stored in the vacuum surge tanks then closes the power valve by pulling up the valve.
- Thus, there will be no more fuel supplied through the power valve jet.

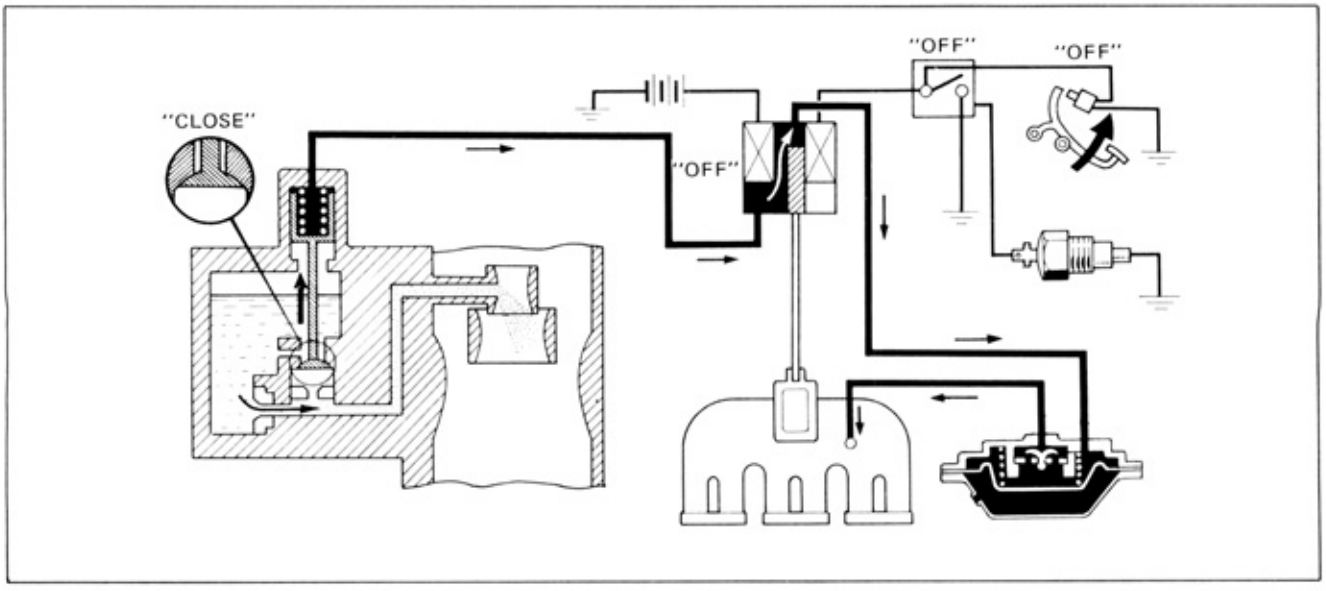


Fig. 12-2 Power Valve Control System ("OFF" Condition)

2. Vacuum Surge Tank Operation

- When the vacuum rises in the intake manifold, the check valve opens and stores the vacuum in the vacuum chamber.

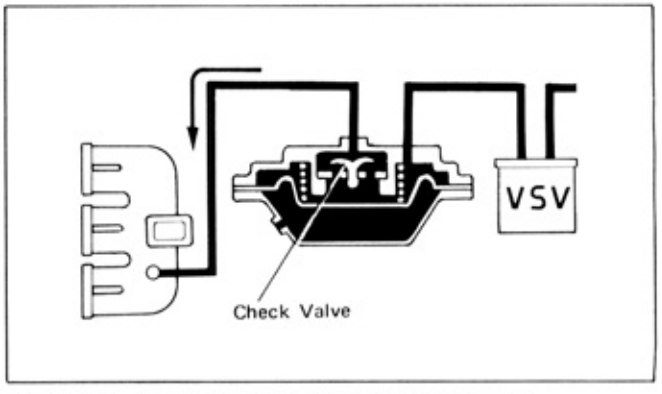


Fig. 12-3 Vacuum Surge Tank Operation

- When the vacuum in the intake manifold becomes lower than that in the vacuum surge tank, the check valve closes and retains the vacuum.

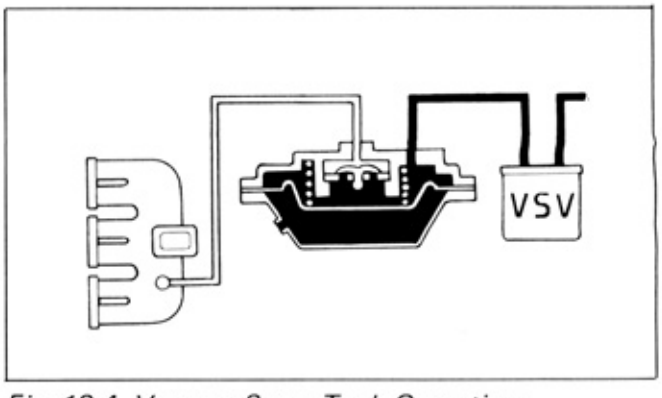
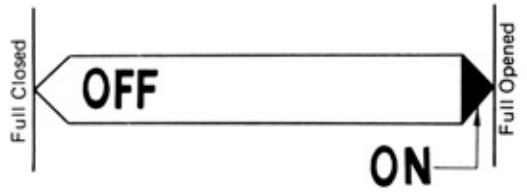
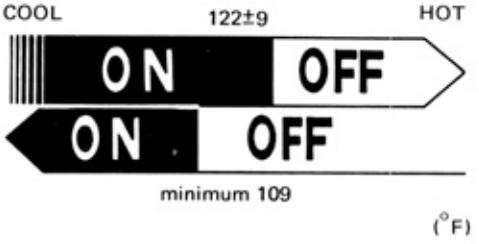


Fig. 12-4 Vacuum Surge Tank Operation

3. Power Valve System Operating Range

Power valve control system "ON" { (1) At full throttle; (2) Coolant temp. in "ON" range } — System "ON" at either (1) or (2).

Power valve control system "OFF" — At coolant temp. in "OFF" range and other than full throttle.

Throttle Valve Opening–Throttle Position s/w	Coolant Temp.–Thermo s/w
	

INSPECTION

Throttle Position Switch Inspection

- With circuit tester (ohm-meter), check to see that when switch knob is pressed, there will be continuity between the connector terminals.
- Also check to see that when switch knob is not pushed, there will be no continuity between the connector terminals.

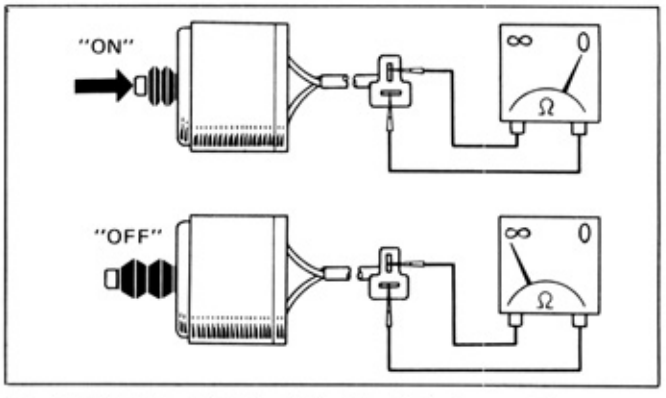


Fig. 12-5 Throttle Position Switch Inspection

Vacuum Surge Tank Inspection

- Connect a vacuum gauge to the tank pipe at VSV side and the intake manifold to the other pipe. When the vacuum reaches 12 in. Hg. disconnect the hose from the intake manifold. The loss in vacuum in one minute should not exceed 0.4 in. Hg.
- If defective, replace the tank.

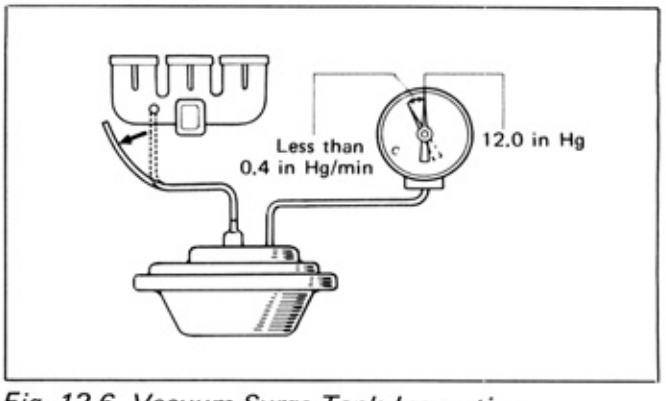
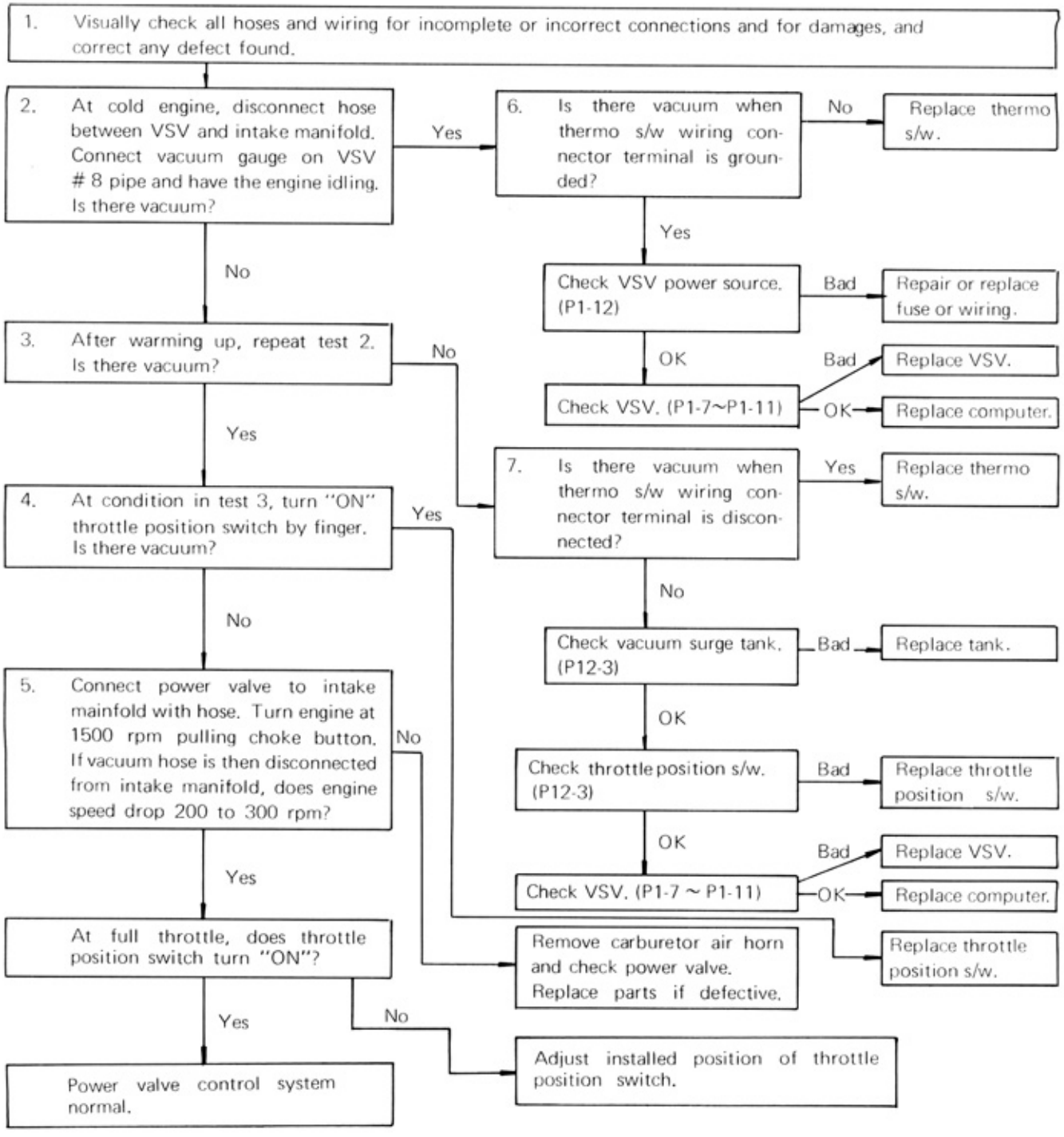
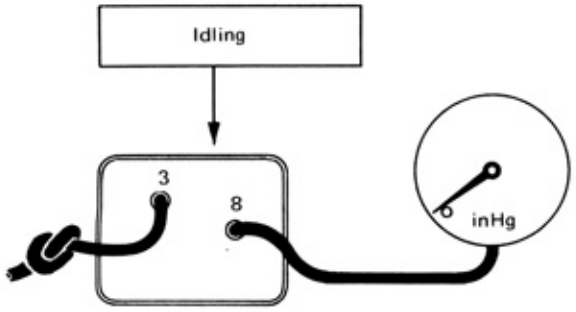


Fig. 12-6 Vacuum Surge Tank Inspection

POWER VALVE CONTROL SYSTEM INSPECTION PROCEDURE (2F Engine)

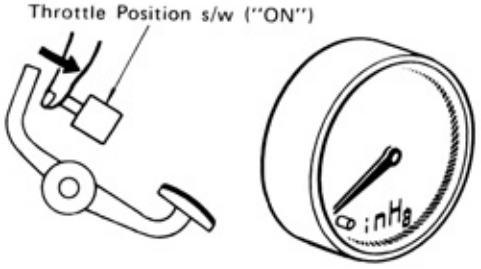


(2) Coolant Temp. : below 100°F

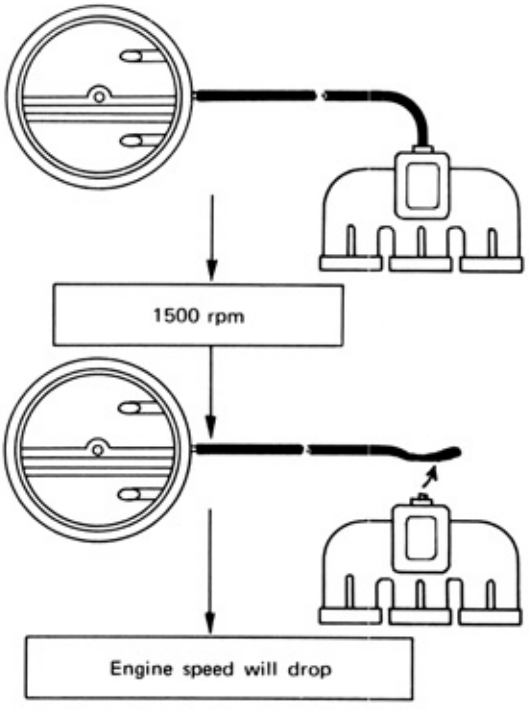


(3) after Warming-up

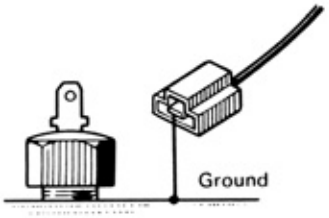
(4)



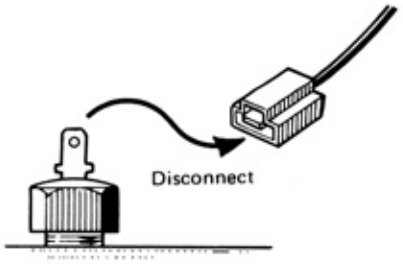
(5)



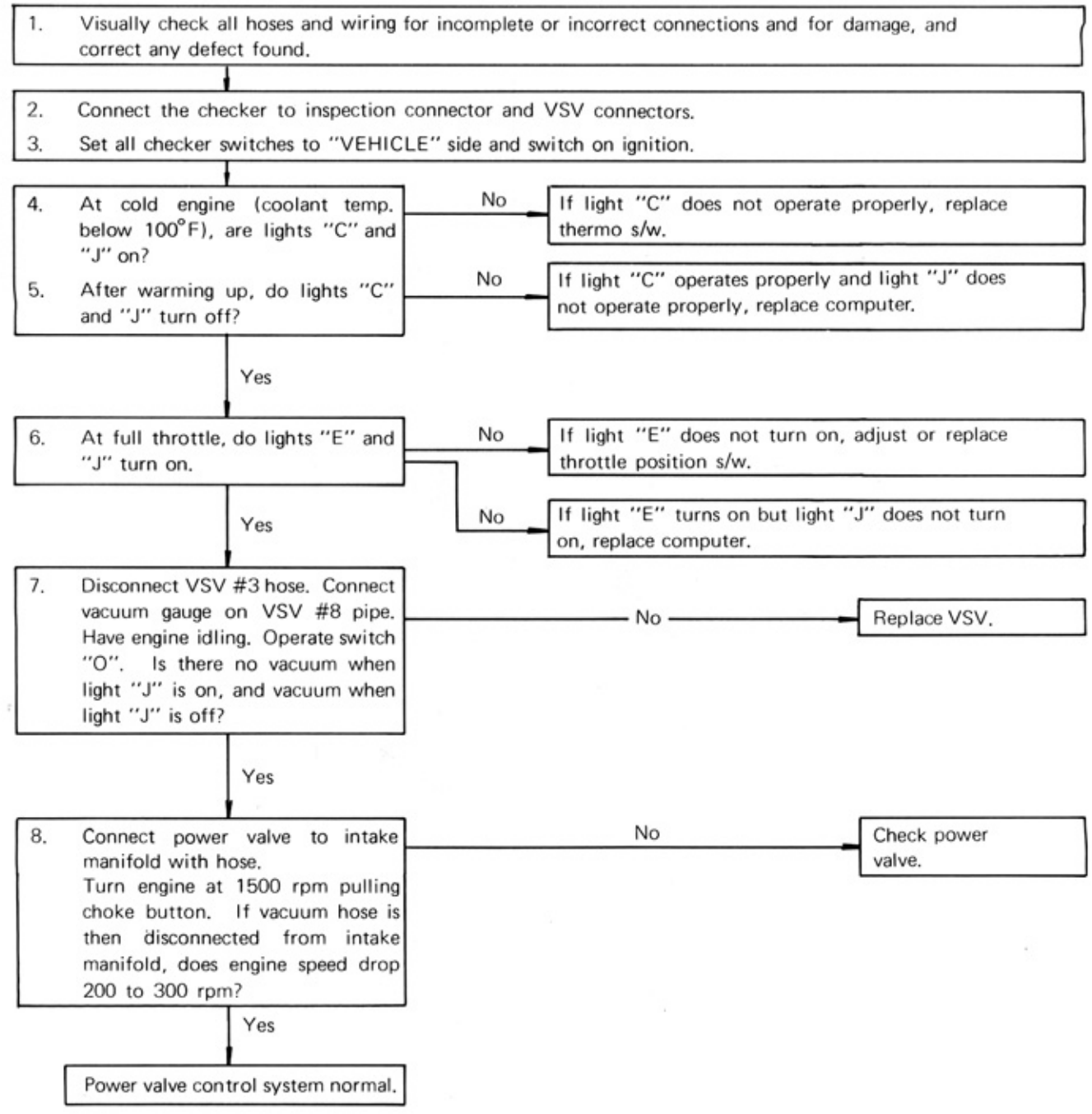
(6)



(7)

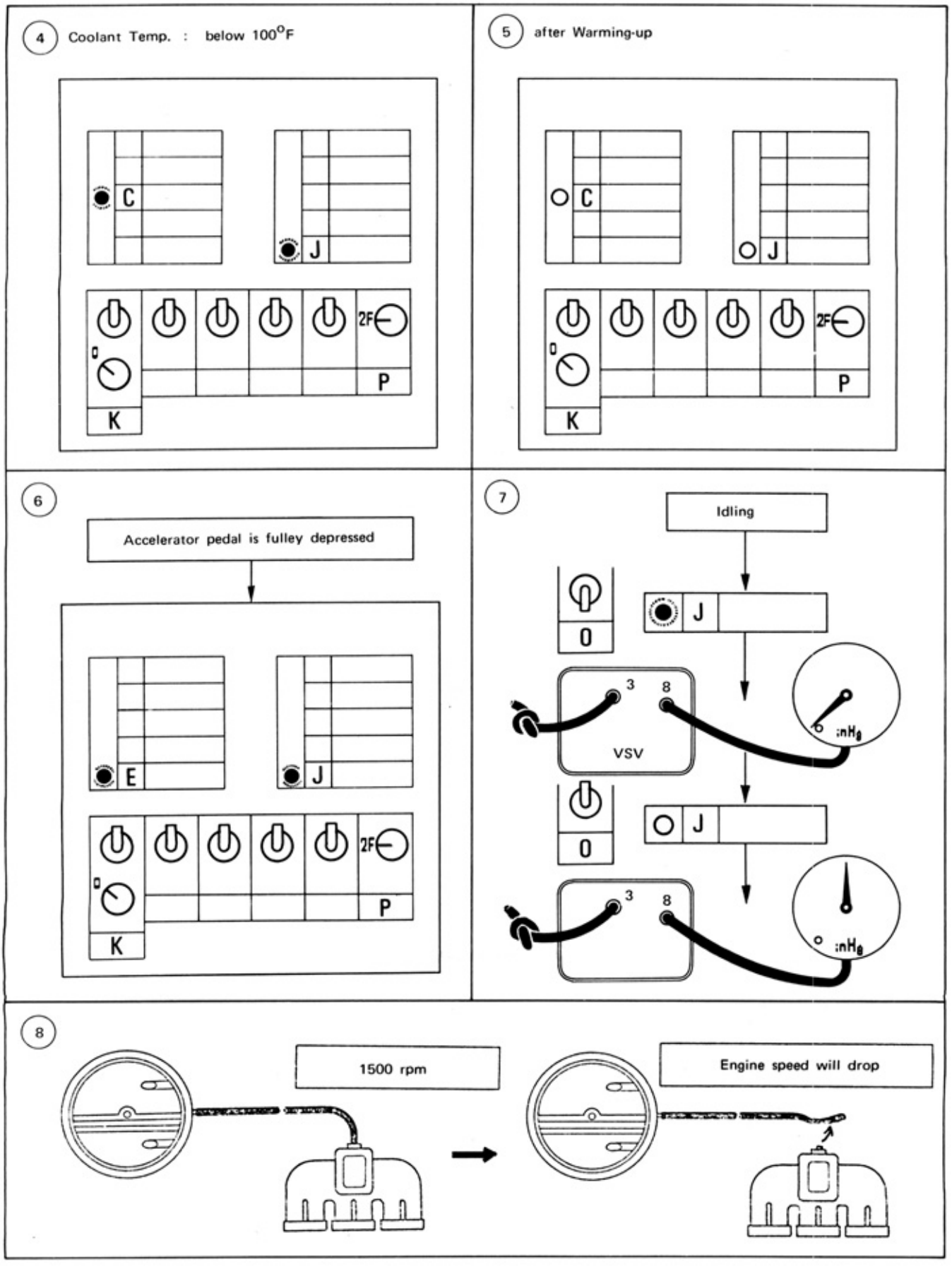


POWER VALVE CONTROL SYSTEM INSPECTION PROCEDURE (Using Checker –2F Engine)



Note

After removing checker, have the VSV connector plugged in properly.


4
Coolant Temp. : below 100°F
C
J
2F
P
K
5
after Warming-up
C
J
2F
P
K
6
Accelerator pedal is fulley depressed
E
J
2F
P
K
7
Idling
J
0
3
8
VSV
inHg
J
0
3
8
inHg
8
1500 rpm
Engine speed will drop