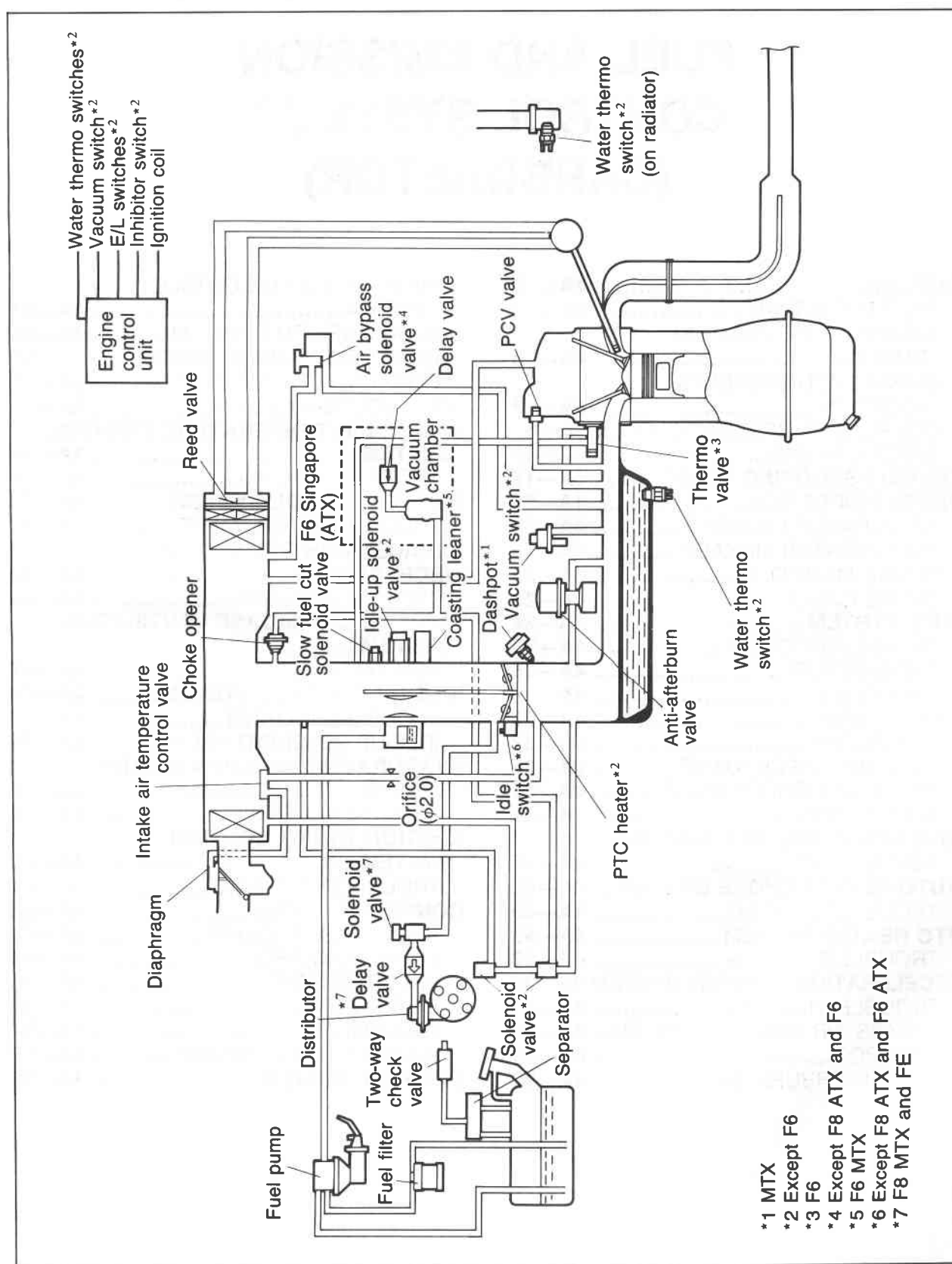


FUEL AND EMISSION CONTROL SYSTEMS (CARBURETOR)

OUTLINE	4A— 2		
SYSTEM DIAGRAM.....	4A— 2		
VACUUM HOSE ROUTING DIAGRAM.....	4A— 5		
EMISSION COMPONENTS LOCATION	4A— 8		
COMPONENT DESCRIPTIONS.....	4A—12		
SPECIFICATIONS	4A—15		
TROUBLESHOOTING GUIDE	4A—17		
PARTS INSPECTION.....	4A—23		
AIR CLEANER ELEMENT	4A—23		
ACCELERATOR LINKAGE	4A—23		
INTAKE MANIFOLD.....	4A—23		
CHOKE CABLE.....	4A—23		
FUEL SYSTEM	4A—24		
TROUBLESHOOTING.....	4A—25		
CARBURETOR.....	4A—26		
FUEL PUMP.....	4A—35		
FUEL TANK	4A—36		
SEPARATOR.....	4A—37		
TWO-WAY CHECK VALVE	4A—37		
THREE-WAY CHECK VALVE	4A—37		
FUEL FILTER.....	4A—37		
IDLE SPEED AND IDLE MIXTURE ..	4A—38		
ADJUSTMENT	4A—38		
AUTO-RETURN CHOKE SYSTEM ...	4A—40		
TROUBLESHOOTING.....	4A—40		
PTC HEATER SYSTEM	4A—42		
TROUBLESHOOTING.....	4A—42		
DECELERATION CONTROL SYSTEM	4A—45		
TROUBLESHOOTING.....	4A—45		
BYPASS AIR CONTROL SYSTEM ..	4A—48		
DASHPOT	4A—50		
ANTI-AFTERBURN VALVE	4A—50		
		MAIN AIR BLEED CONTROL SYSTEM.....	4A—51
		SLOW FUEL CUT SYSTEM	4A—53
		COAST ENRICHMENT SYSTEM	4A—54
		COASTING LEANER SYSTEM.....	4A—56
		AIR INJECTION SYSTEM	4A—58
		INTAKE AIR TEMPERATURE CONTROL SYSTEM	4A—60
		TROUBLESHOOTING.....	4A—60
		PURGE CONTROL SYSTEM	4A—63
		VACUUM SWITCH VALVE	4A—63
		EXHAUST GAS RECIRCULATION (EGR) SYSTEM.....	4A—64
		TROUBLESHOOTING.....	4A—65
		POSITIVE CRANKCASE VENTILATION SYSTEM	4A—67
		PCV VALVE	4A—67
		IDLE-UP CONTROL SYSTEM.....	4A—68
		TROUBLESHOOTING.....	4A—70
		IDLE-UP SOLENOID VALVE	4A—76
		EVAPORATIVE EMISSION CONTROL SYSTEM	4A—78
		TROUBLESHOOTING.....	4A—79
		IGNITION TIMING CONTROL SYSTEM	4A—80
		TROUBLESHOOTING.....	4A—81
		CONTROL SYSTEM	4A—83
		RELATIONSHIP CHART.....	4A—84
		ENGINE CONTROL UNIT	4A—86
		INHIBITOR SWITCH	4A—93
		IDLE SWITCH	4A—93
		VACUUM SWITCH.....	4A—94
		WATER THERMO SWITCH.....	4A—95
		EXHAUST SYSTEM	4A—96

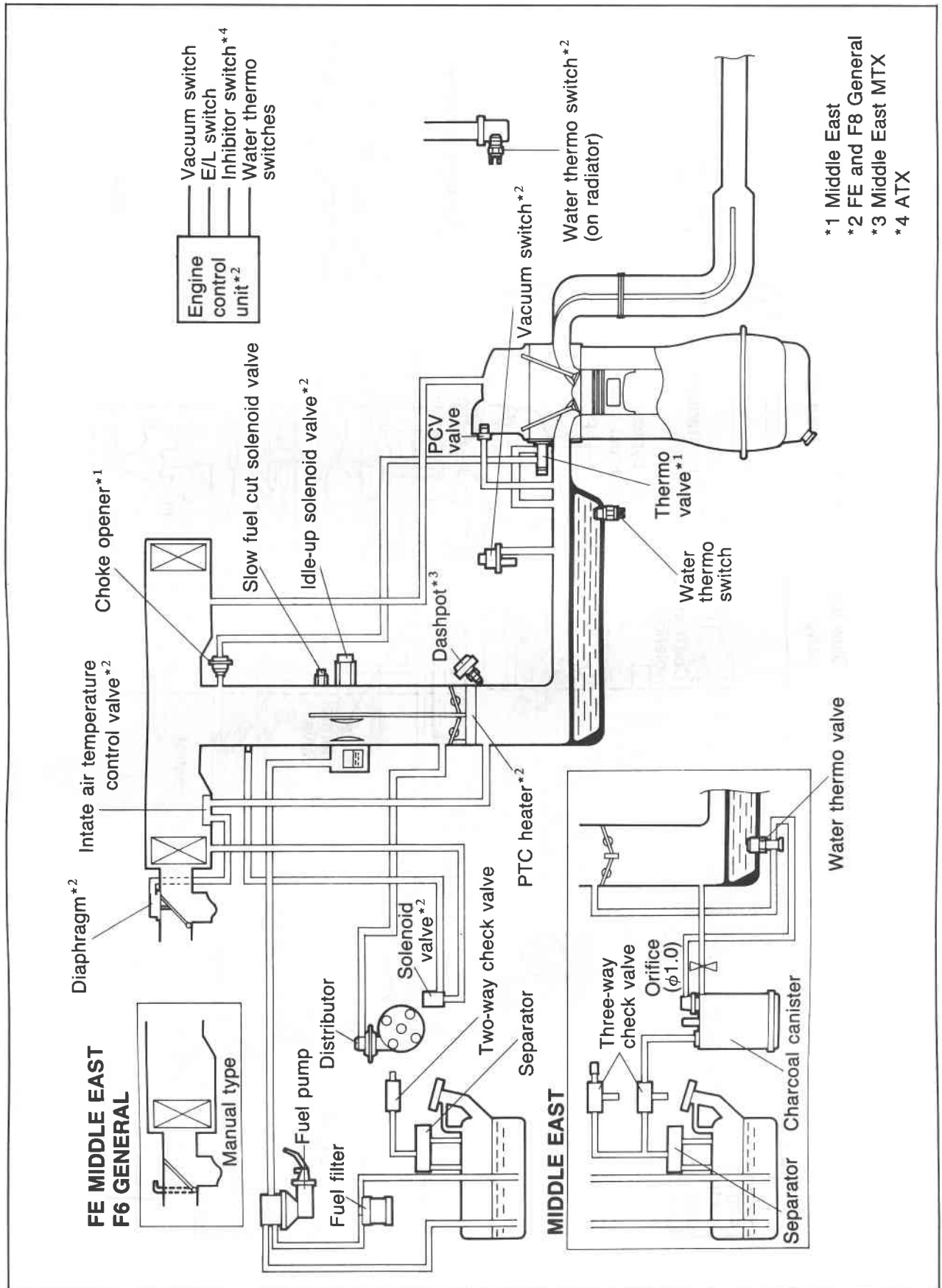
OUTLINE

SYSTEM DIAGRAM ECE, Hong Kong, and Singapore



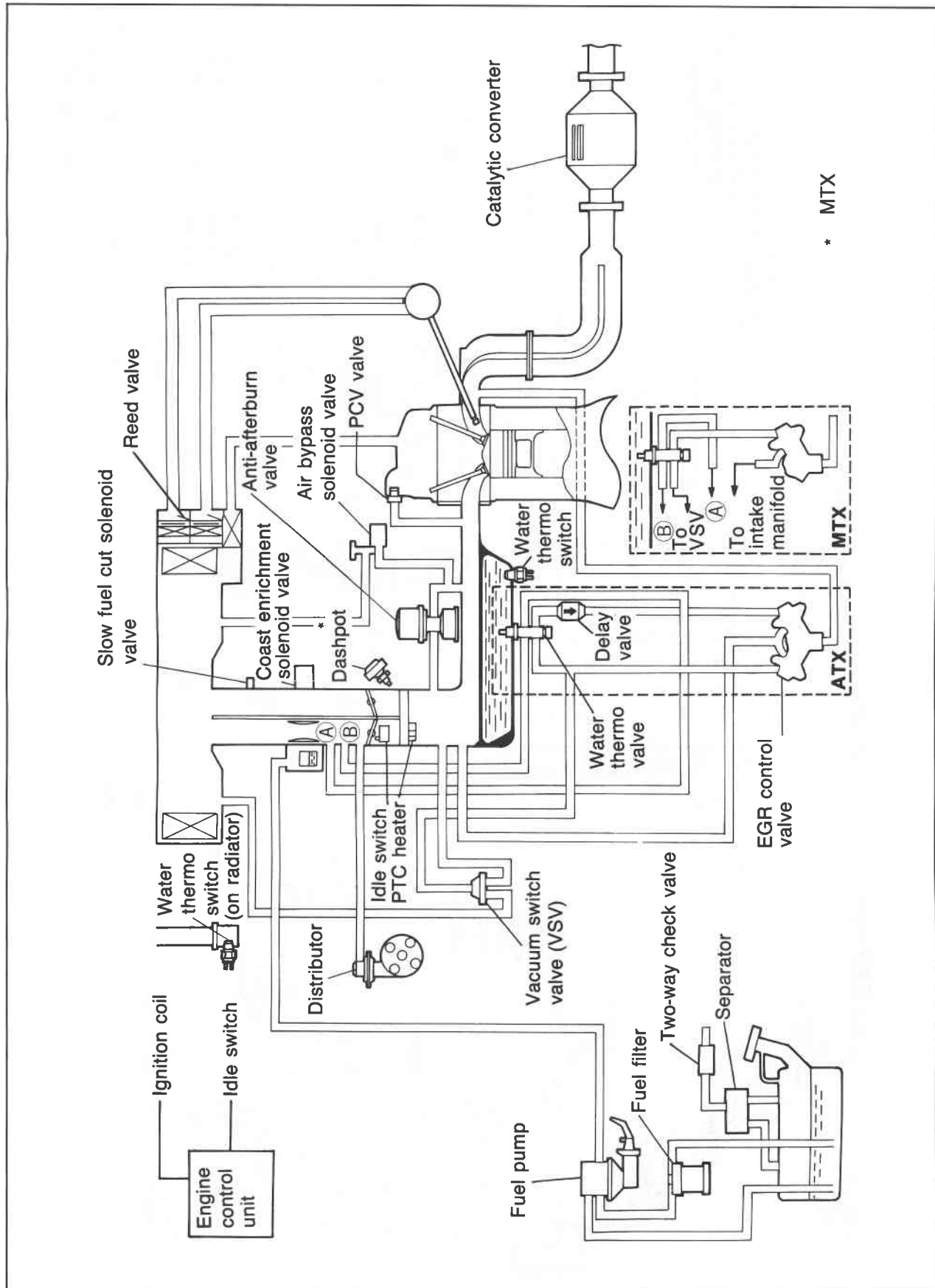
76G04A-002

General and Middle East



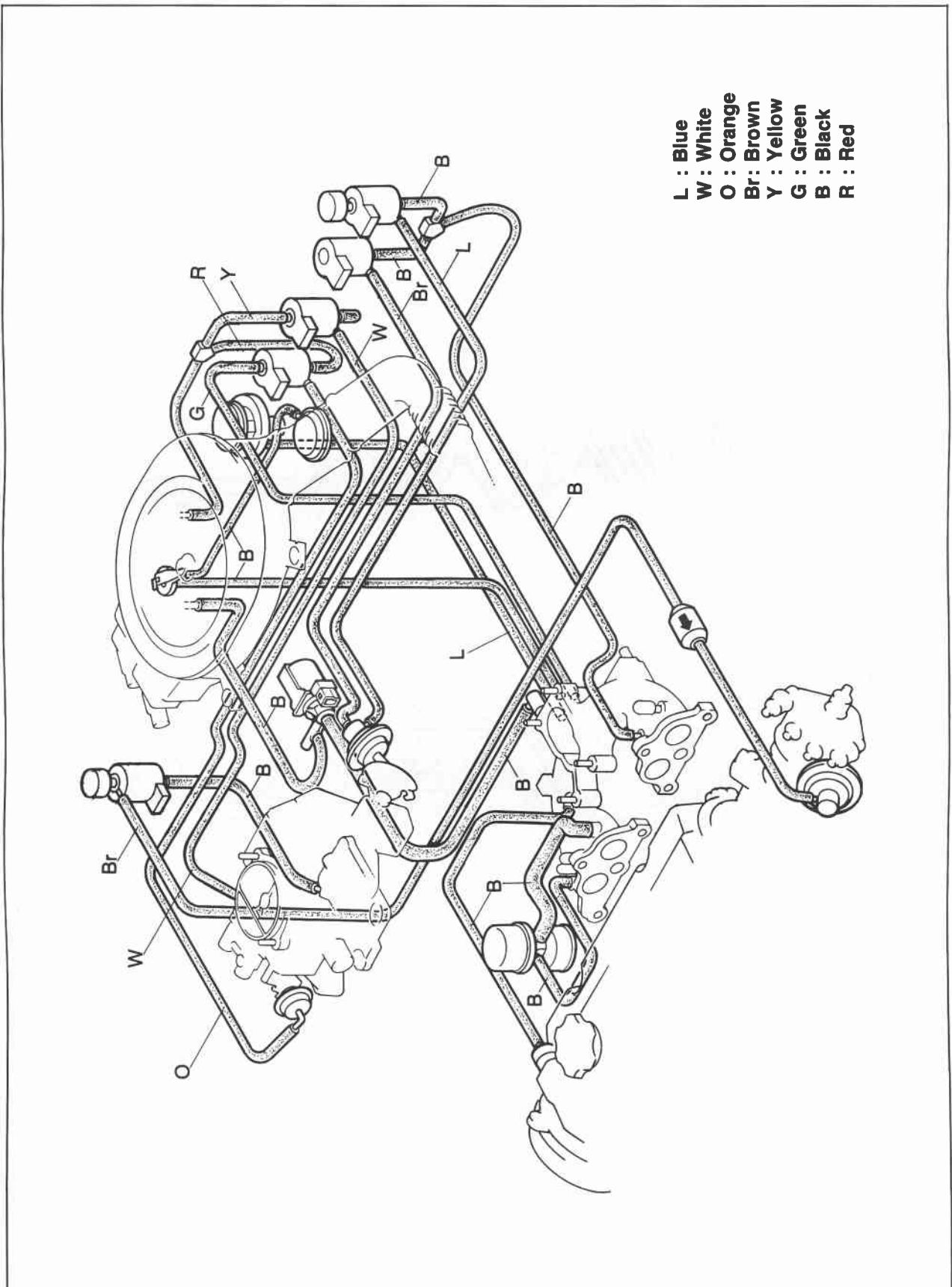
76G04A-003

FE 8Valve—Unleaded Fuel



76G04A-004

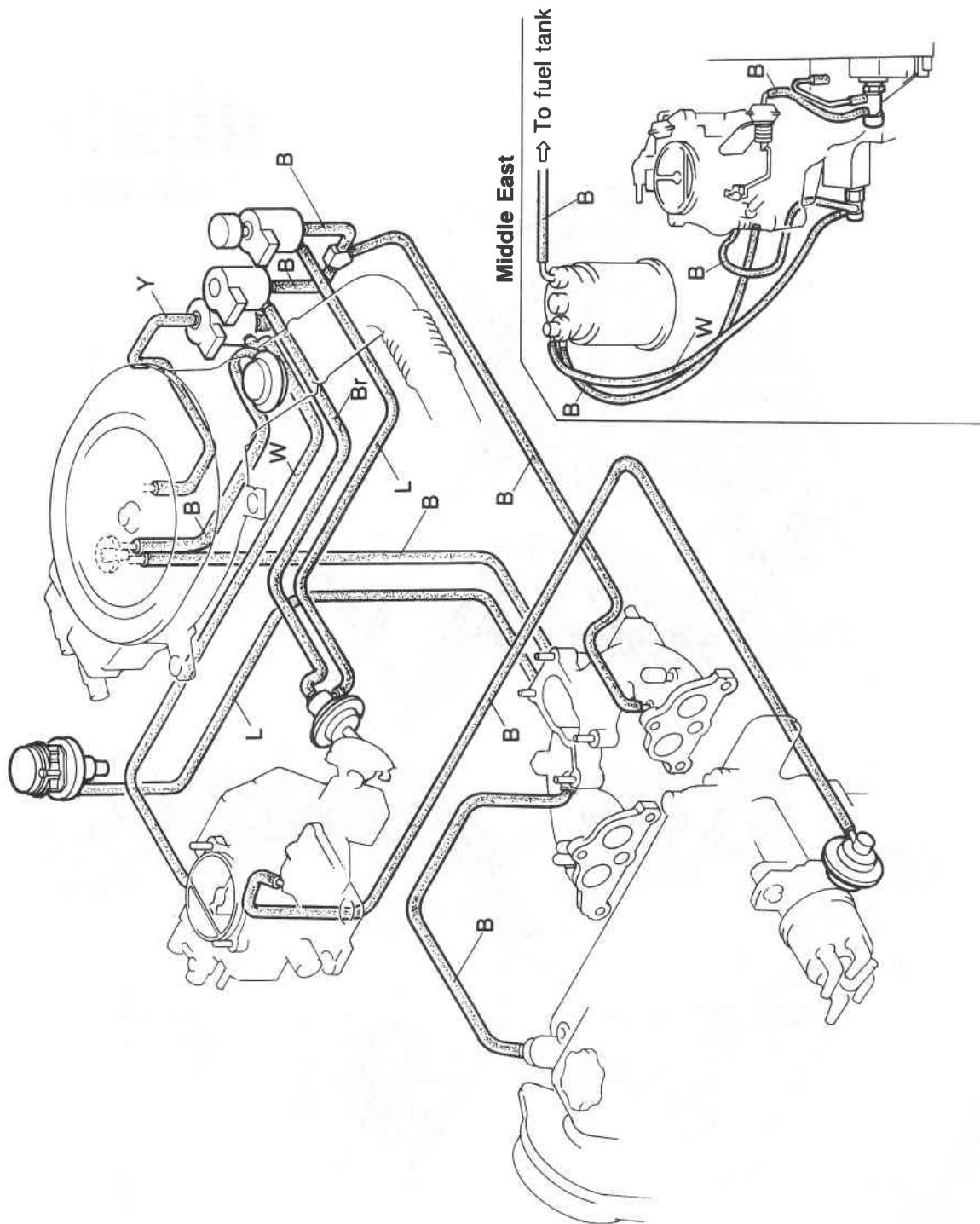
VACUUM HOSE ROUTING DIAGRAM ECE, Hong Kong, and Singapore



76G04A-005

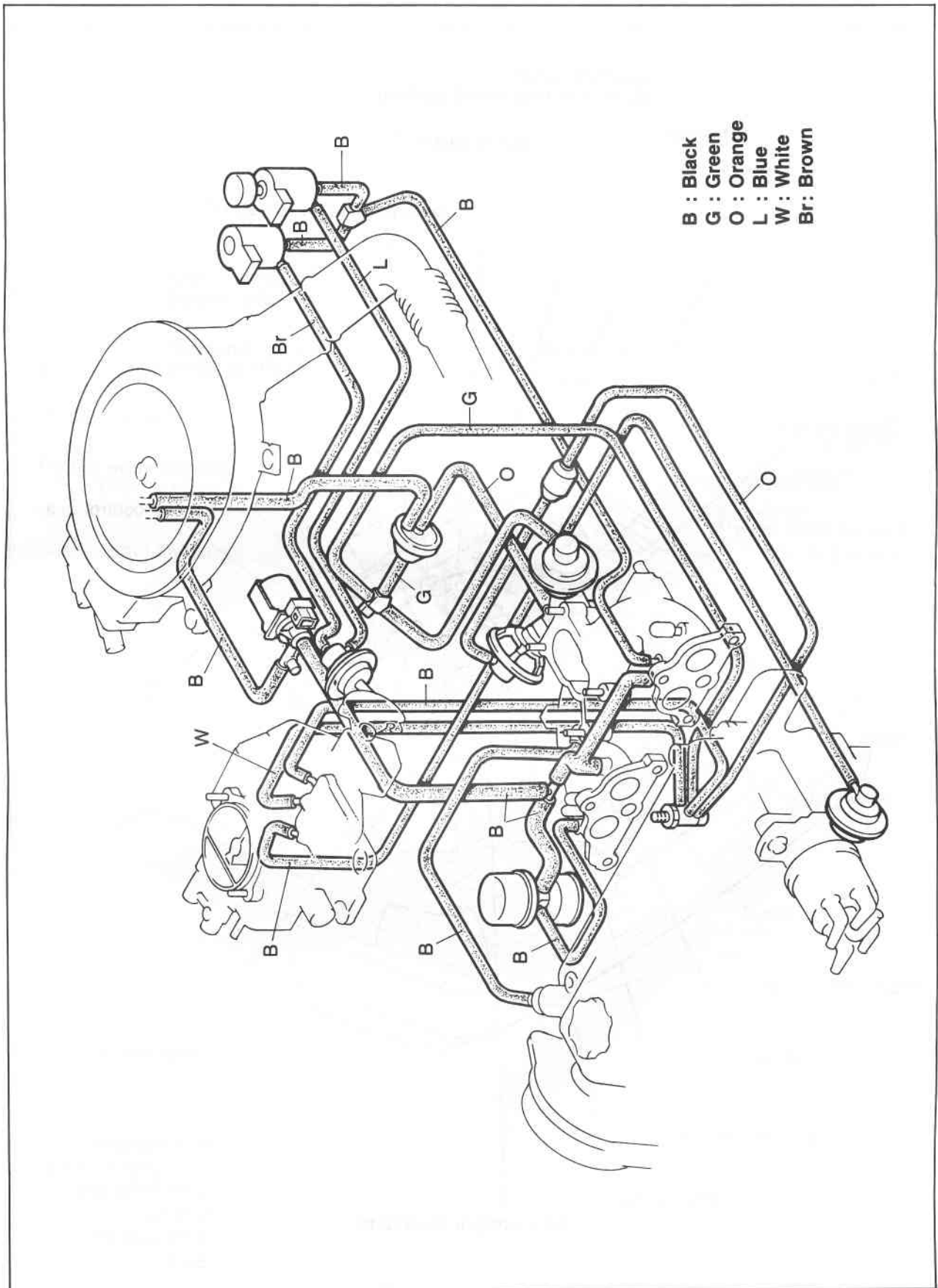
4A OUTLINE

General and Middle East



L : Blue
W : White
Y : Yellow
Br : Brown
B : Black

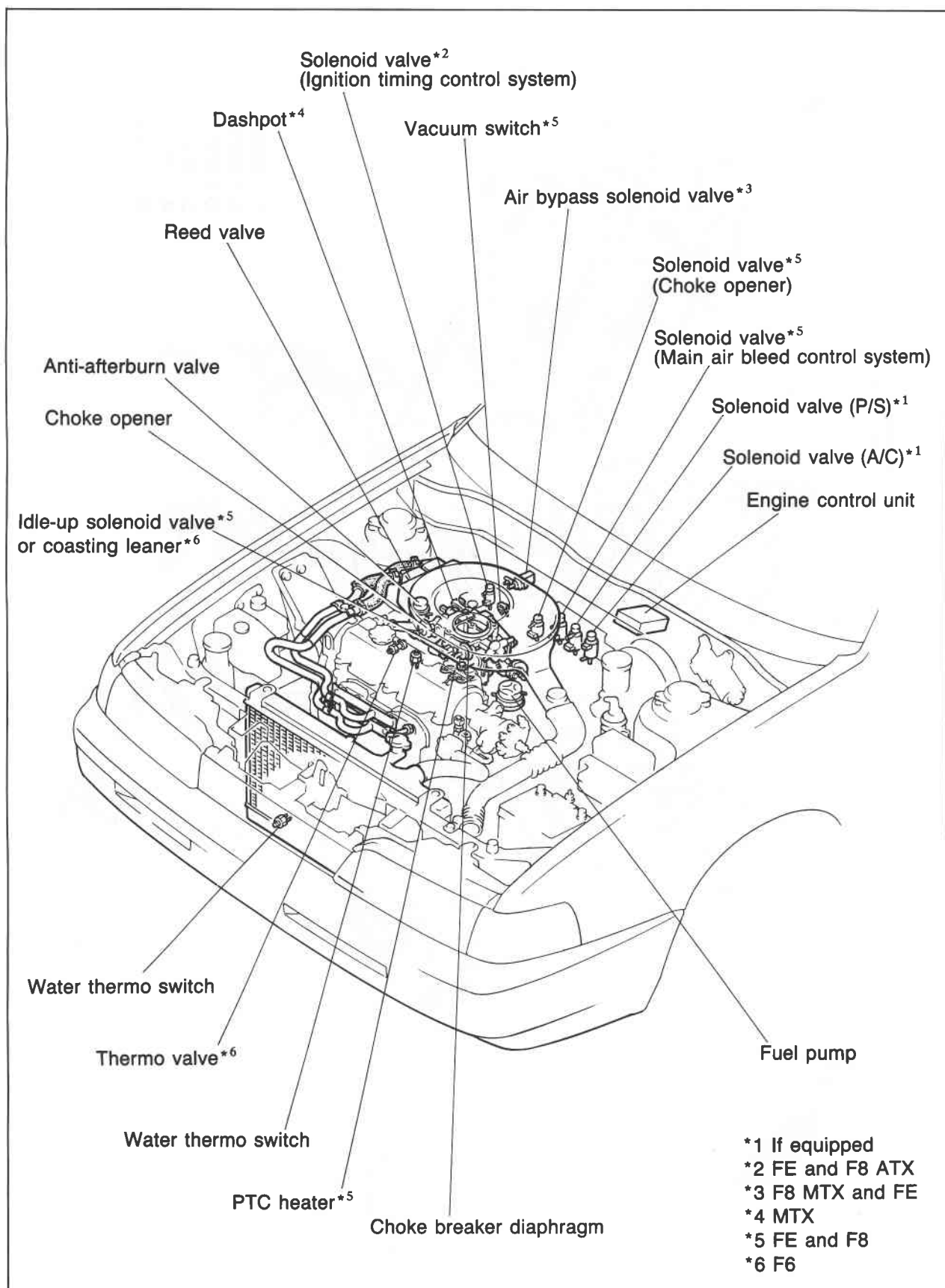
FE 8Valve—Unleaded Fuel



76G04A-007

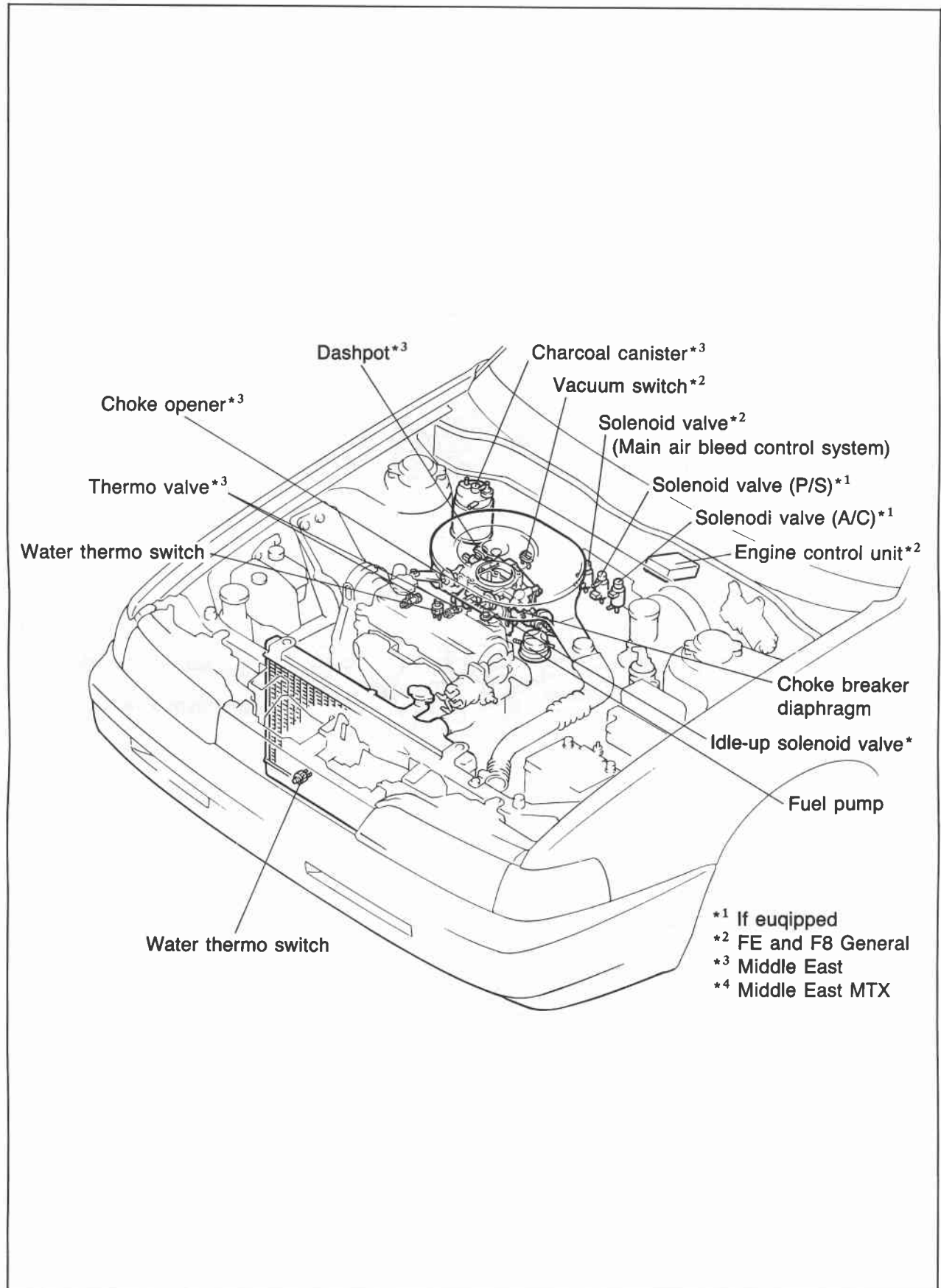
4A OUTLINE

EMISSION COMPONENTS LOCATION ECE, Hong Kong, and Singapore



76G04A-008

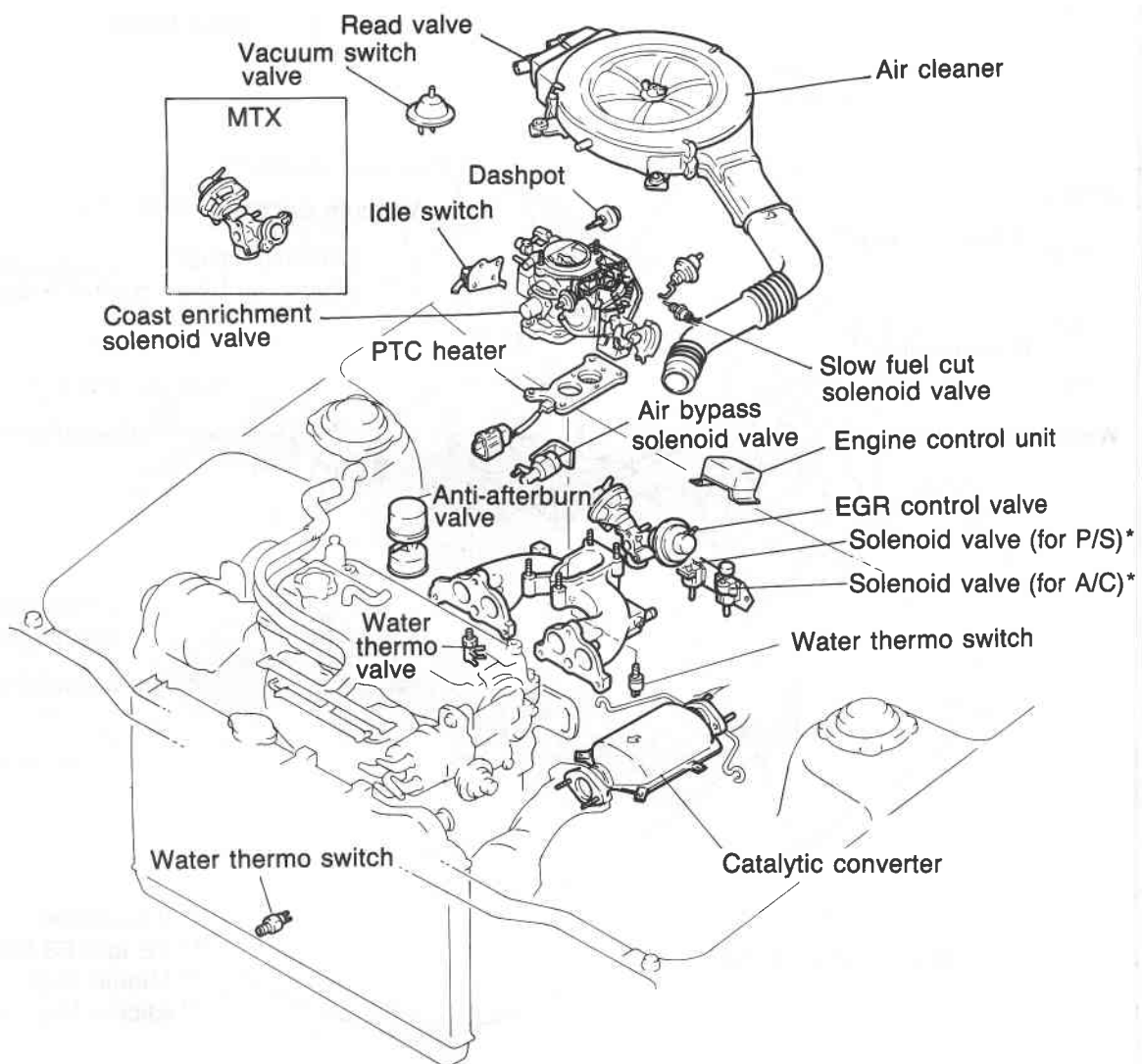
General and Middle East



76G04A-009

4A OUTLINE

FE 8Valve—Unleaded Fuel

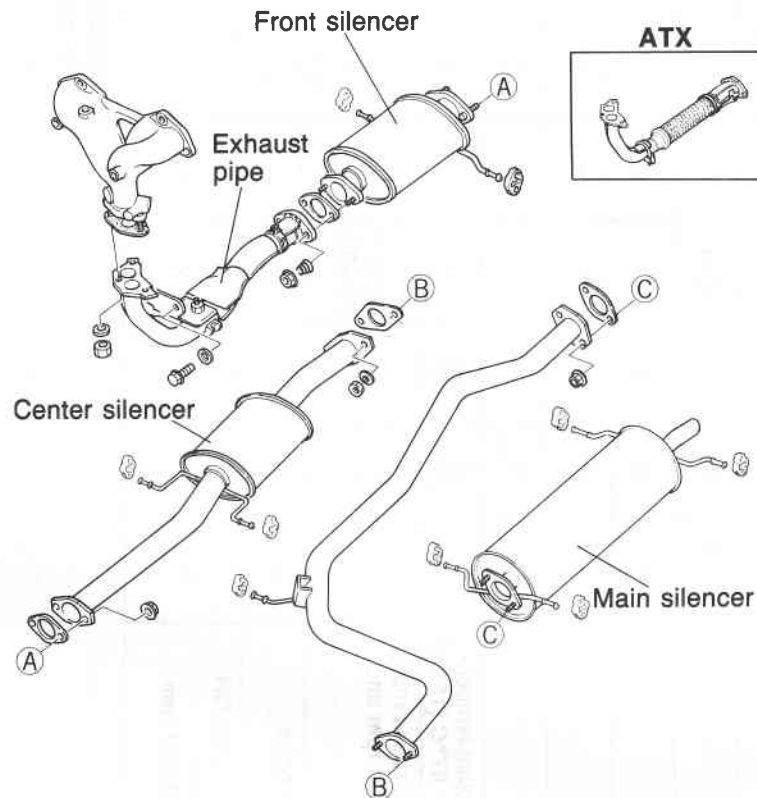


* If equipped

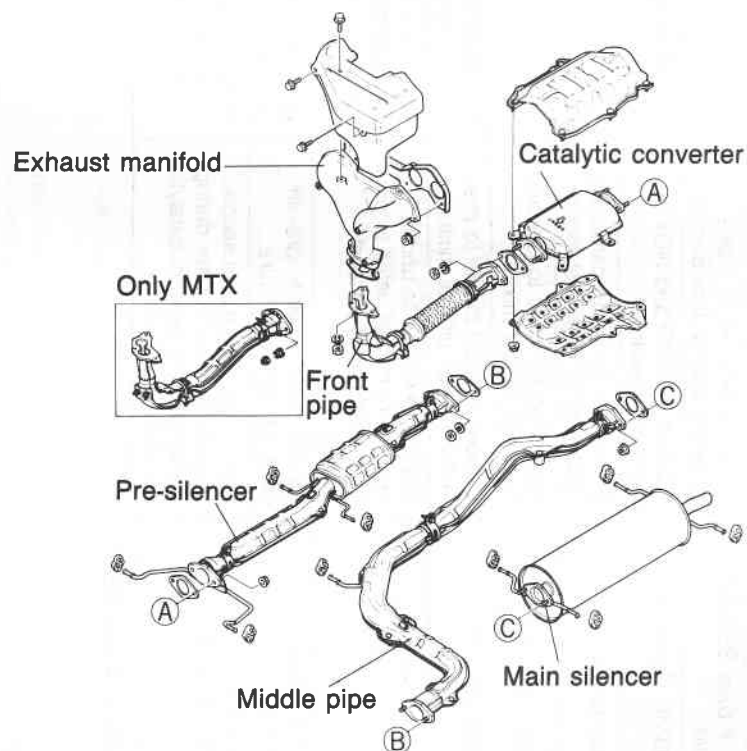
76G04A-010

Exhaust System

Except FE 8Valve—Unleaded Fuel



FE 8Valve—Unleaded Fuel



COMPONENT DESCRIPTIONS

Component	Function	Remark	New 626					Previous 626	
			ECE & Hong Kong	General	Middle East	Singapore	FE 8 Valve Unleaded fuel	Leaded fuel	Unleaded fuel
Anti-afterburn Valve	Supplies fresh air to intake manifold during deceleration to prevent afterburn in exhaust system	Operated by intake manifold vacuum	○	X	X	○	○	○	○
Air Bypass Solenoid Valve	Supplies fresh air to intake manifold during deceleration.		○ ^{*1}	X	X	○ ^{*1}	○	X	○
Catalytic Converter	Reduce HC, CO and NOx by chemical reaction.	Monolithic type	X	X	X	X	○	X	○
Charcoal Canister	Stores fuel tank and carburetor vapors while engine stopped.		X	X	○	X	X	X	X
Choke Opener	Opens choke valve to prevent over-rich air/fuel mixture.		○	X	○	○	X	○	X
Choke Magnet	Cancels manual choke to prevent over-rich air/fuel mixture.	• Operation: Coolant temperature more than 67°C (153°F)	X	○ (F6)	○	X	○	X	○
Coasting Leaner	Supplies fresh air to under secondary throttle valve to prevent afterburn in exhaust system.	Operation: Engine speed more than approx. 2,100 rpm and idle switch ON.	X	X	X	○ (F6 MTX)	X	○	X
Choke Braker Diaphragm	Opens choke valve to prevent over-rich air/fuel mixture.	Operation: While engine running.	○	○	○	○	○	○	○
Coast Enrichment Solenoid valve	Opens fuel passage to secondary stage of carburetor during deceleration to prevent catalytic converter overheating.	• Operation: Idle switch ON and engine speed during 1,500—2,300 rpm	X	X	X	X	○	X	○

○ : Equipped
X : Not equipped

^{*1} F8 MTX and FE

Component	Function	Remark	New 626					Previous 626	
			ECE & Hong Kong	General	Middle East	Singapore	FE 8 Valve Unlead-ed fuel	Leaded fuel	Unlead-ed fuel
Dashpot	Allows throttle to gradually close during deceleration. Reduces CO and HC emission.	<ul style="list-style-type: none"> Adjustment speed: 2,200 ± 100 rpm (in neutral). MTX 	○	X	○	○	○	○	○
Engine Control Unit	Detects electrical signal from input devices and controls output devices.		○	○ (FE & F8)	X	○	○	X	○
EGR Control Valve	Supplies exhaust gas to intake manifold to reduce NOx	<ul style="list-style-type: none"> Operation: Coolant temperature more than 50°C (122°F). 	X	X	X	X	○	X	○
Fuel Filter	Filters fuel		○	○	○	○	○	○	○
Fuel Pump	Provides fuel to carburetor.	Mechanical type	○	○	○	○	○	○	○
Idle Switch	Detects when throttle valve fully closed.	Installed on carburetor.	○*1	X	X	○ ³	○	○ (MTX)	○
Idle-up Solenoid Valve	Opens fuel passage to secondary stage of carburetor.		○	○ (FE & F8)	X	○ (FE & F8)	X	X	X
Intake Air Temperature Control Valve	Controls shutter valve by intake air temperature.	Improvement of product quality.	○	○ (FE & F8)	X	○	X	X	○
PTC Heater	Prevents carburetor icing.		○	○ (FE & F8)	X	○ (FE & F8)	○	X	○
Reed Valve	Supplies fresh air to exhaust manifold to reduce CO and HC emissions.		○	X	X	○	○	○	○
Separator	Prevents fuel from flowing into two-way or three-way check valve		○	○	○	○	○	X	X

○ : Equipped
X : Not equipped

*1 F8 MTX and FE
*2 Except F6 ATX
*3 F6 MTX, F8 MTX, and FE

Component	Function		Remark	New 626				Previous 626	
				ECE & Hong Kong	General	Middle East	Singapore	FE 8 Valve Unleaded fuel	Leaded fuel
Slow Fuel Cut Solenoid Valve	Closes primary fuel line	Prevents run-on. • Prevents run-on. • Prevents catalytic converter overheating.	Operation: Ignition switch OFF. Operation: • Ignition switch OFF. • Engine speed more than 2,300 rpm on deceleration.	○	○	○	○	X	X
Two-way Check Valve	Releases excessive pressure or vacuum in fuel tank to atmosphere.			○	○	X	○	○	X
Thermo Valve	Opens vacuum port based on engine coolant temperature.		Opens when: More than 50°C (122°F)	X	X	○	X	○	X
	Opens vacuum port by engine compartment temperature.		Opens when: More than 17°C (63°F)	X	X	○	(F6)	X	○
Three-way Check Valve	Controls pressure in fuel tank.			X	X	○	X	X	X
Vacuum Chamber	Stores vacuum to stabilize intake manifold vacuum.			X	X	X	(F6 ATX)	○	X
Vacuum Switch	Detects intake manifold vacuum.		Controls operation of main air bleed control system.	○	○	X	(FE & F8)	X	X
Solenoid Valve (Ignition timing control system)	Controls vacuum to distributor vacuum advance diaphragm.		Operation: Radiator coolant temperature more than 17°C (63°F) ; engine coolant temperature less than 72°C (162°F) ; engine speed less than approx. 2,300 rpm , and ingear condition.	○ (ATX)	X	X	(FE & F8 ATX)	X	X
Solenoid Valve (Main air bleed control system)	Opens vacuum port to primary main air bleed.		Opens when: Radiator coolant temperature more than 17°C (63°F) and intake manifold vacuum more than 300 mmHg (11.8 inHg)...MTX, 200 mmHg (7.9 inHg)...ATX	○	○	X	(FE & F8)	X	X
Water Thermo Switch (Intake manifold)	Detects engine coolant temperature.		Turned off when: More than 67°C (153°F)*4 or More than 72°C (162°F)*5	○	○	○	(FE & F8)	○	○
Water Thermo Switch (Radiator)	Detects radiator coolant temperature.		Turned off when: More than 17°C (63°F)	○	(FE & F8)	X	(FE & F8)	○	○

○: Equipped
X: Not equipped

*4 Middle East, F6 General, and FE 8 Valve—Unleaded fuel
*5 FE and F8 (General, ECE, Hong Kong, and Singapore)

SPECIFICATIONS F6 & F8 Engine

Engine			F6		F8	
Specification			General	Singapore	General	ECE, Hong Kong, & Singapore
Idle speed		rpm	MTX	800 ⁺⁵⁰ ₀		
			ATX	950 ⁺⁵⁰ ₀ (in N range)	900 ⁺⁵⁰ ₀ (in N range)	
CO concentration			2.0 ± 0.5 (Without secondary air injection)			
Carburetor						
Type			Down draft, two barrel			
Throat diameter		mm (in)	Primary	30 (1.18)		
			Secondary	34 (1.34)		
Venturi diameter		mm (in)	Primary	23.5 (0.93)		
			Secondary	29.0 (1.14)		
Main nozzle		mm (in)	Primary	2.6 (0.10)		
			Secondary	2.8 (0.11)		
Main jet	mm (in)	Primary	1.10 (0.0433)	1.09 (0.0429)	1.14 (0.045)	
		ATX		1.08 (0.0425)	1.12 (0.044)	
		Secondary	1.50 (0.059)			
Main air bleed	mm (in)	Primary	0.60 (0.024)	0.60 (0.024)	0.55 (0.022)	
		ATX		0.80 (0.031)	0.60 (0.024)	
		Secondary	0.50 (0.020)			
Slow jet	mm (in)	Primary	0.48 (0.019)	0.46 (0.018)		
		Secondary	1.00 (0.039)		1.10 (0.043)	
Slow air bleed	mm (in)	Primary	No.1	0.80 (0.031)		
			No.2	1.90 (0.075)		
	Secondary	No.1	1.00 (0.039)		0.80 (0.031)	
		No.2	0.50 (0.020)			
Power jet		mm (in)	0.50 (0.020)			
Fast idle adjustment		mm (in)	1.40—1.76 (0.055—0.069)		MTX: 0.48—0.64 (0.019—0.025) ATX: 0.56—0.72 (0.022—0.028)	
Float level adjustment	mm (in)	Max. fuel flow "L"		44 (17.3)		
		Clearance between float and air horn without gasket				
		Fuel stop "H"		12.5 (0.49)		
		Clearance between float and air horn without gasket; float lowered by own weight				
Choke breaker diaphragm		mmHg (inHg)	Start	180—240 (7.1—9.5)		100—160 (3.9—6.3)
			Stop	290—350 (11.4—13.8)		220—280 (8.7—11.0)
Choke opener	mmHg (inHg)	Start		35—65 (1.4—2.6)		35—65 (1.4—2.6)
		Stop		130—190 (5.1—7.5)		130—190 (5.1—7.5)
Fuel tank capacity		Liters (US gal, Imp gal)	60 (15.9, 13.2)			
Fuel pump						
Delivery pressure		kPa (kg/cm ² , psi)	20—26 (0.20—0.27, 2.8—3.8)			
Feeding capacity		cc/min (cu in/min)	More than 860 (52.5) at idle			
Fuel filter						
Type			Paper element with magnet			
Air cleaner						
Fresh-Hot switching			Manual	Diaphragm type		
Element type			Oil permeated paper			
Fuel specification			Leaded regular			

76G04A-513

4A OUTLINE

FE Engine

Engine			FE 8Valve		FE 12Valve	FE 8Valve	
Specification			General	Middle East	ECE, Hong Kong, & Singapore	Unleaded fuel	
Idle speed	rpm	MTX	800 ⁺⁵⁰ ₀			850 ⁺⁵⁰ ₀	
		ATX	900 ⁺⁵⁰ ₀ (in N range)				
CO concentration		%	2.0 ± 0.5 (Without secondary air injection)				
Carburetor							
Type			Down draft, two barrel				
Throat diameter	mm (in)	Primary	30 (1.18)				
		Secondary	34 (1.34)				
Venturi diameter	mm (in)	Primary	23.5 (0.93)				
		Secondary	29.0 (1.14)				
Main nozzle	mm (in)	Primary	2.6 (0.10)				
		Secondary	2.8 (0.11)				
Main jet	mm (in)	Primary	MTX	1.14 (0.045)	1.09 (0.0429)	1.14 (0.045)	1.09 (0.0429)
			ATX	1.12 (0.044)	1.08 (0.0425)	1.12 (0.044)	
		Secondary	1.55 (0.061)		1.50 (0.059)	1.55 (0.061)	1.50 (0.059)
Main air bleed	mm (in)	Primary	MTX	0.50 (0.020)	0.60(0.024)	0.50 (0.020)	0.50 (0.020)
			ATX	0.55 (0.022)	0.80 (0.031)	0.55 (0.022)	
		Secondary	0.50 (0.020)				
Slow jet	mm (in)	Primary	0.46 (0.018)				
		Secondary	MTX	1.10 (0.043)	1.00 (0.039)	1.10 (0.043)	0.90 (0.035)
			ATX				1.00 (0.039)
Slow air bleed	mm (in)	Primary	No.1	0.80 (0.031)			1.00 (0.039)
			No.2	1.90 (0.075)			
		Secondary	No.1	0.80 (0.031)	1.00 (0.039)	0.80 (0.031)	1.00 (0.039)
			No.2	0.50 (0.020)			
Power jet	mm (in)	MTX	0.50 (0.020)				0.50 (0.020)
		ATX					0.40 (0.016)
Fast idle adjustment Clearance between primary throttle valve and bore	mm (in)	MTX	0.48—0.64 (0.019—0.025)	1.40—1.76 (0.055—0.069)	0.48—0.64 (0.019—0.025)	1.40—1.76 (0.055—0.069)	
		ATX	0.56—0.72 (0.022—0.028)		0.56—0.72 (0.022—0.028)		
Float level adjust- ment	mm (in)	Max. fuel flow “L”		44 (17.3)			
		Clearance between float and air horn without gasket					
		Fuel stop “H”		12.5 (0.49)			
			Clearance between float and air horn without gasket; float lowered by own weight				
Choke breaker diaphragm	mm-Hg (in-Hg)	Start	100—160 (3.9—6.3)	180—240 (7.1—9.4)	100—160 (3.9—6.3)	180—240 (7.1—9.4)	
		Stop	220—280 (8.7—11.0)	290—350 (11.4—13.8)	220—280 (8.7—11.0)	290—350 (11.4—13.8)	
Choke opener	mmHg (inHg)	Start		80—120 (3.1—8.7)	30—70 (1.2—2.8)		
		Stop		220—280 (8.7—11.0)	130—190 (5.1—7.5)		
Fuel tank capacity		Liters (US gal, Imp gal)	60 (15.9, 13.2)				
Fuel pump							
Delivery pressure	kPa (kg/cm ² , psi)		20—26 (0.20—0.27, 2.8—3.8)		20—29 (0.20—0.30, 2.8—4.3)	20—26 (0.20—0.27, 2.8—3.8)	
Feeding capacity	cc/min (cu in/min)		More than 860 (52.5) at idle				
Fuel filter							
Type			Paper element with magnet				
Air cleaner							
Fresh-Hot switching			Diaphragm	Manual	Diaphragm	Bimetal	
Element type			Oil permeated paper				
Fuel specification			Leaded super Unleaded super	Leaded regular	Leaded super Unleaded super	Unleaded regular	

76G04G-514

TROUBLESHOOTING GUIDE

F6 (GENERAL)

The Troubleshooting Guide lists the systems most likely to cause a given symptom. After finding the system(s) to check, refer to the pages shown for detailed guides for each system.

<div style="position: relative; height: 100px;"> <div style="position: absolute; top: 0; right: 0; width: 100%; height: 100%; border: 1px solid black; transform: rotate(45deg); transform-origin: top right; pointer-events: none;"> <div style="position: absolute; top: 0; left: 0; width: 100%; height: 100%; background: linear-gradient(to top right, transparent 49%, black 49%, black 51%, transparent 51%);"></div> </div> </div>		POSSIBLE CAUSE							
		Air cleaner (Air cleaner element)	Intake air temperature control system	Idle adjustment	Fuel system (Carburetor, Fuel pump)	Idle-up control system	Exhaust system	Positive crankcase ventilation system	Auto-return choke system
SYMPTOM		4A—23	4A—60	4A—38	4A—24	4A—68	4A—96	4A—67	4A—40
1	Hard start or won't start (Crank OK)	1			2				
2	Engine stalls								
	During warm up	3	2	1	4				
3	Rough idle								
	After warm up	4		2	5			1	3
4	High idle speed after warm up								
				1	3	2			
5	Poor acceleration, hesitation, or lack of power	1			2		3		
6	Runs rough on deceleration				1				
7	Afterburn in exhaust system				1				
8	Poor fuel consumption	2		1	4				3
9	Fails emission test	2		1	4		5		3

76G04A-015

The numbers of the list show the priorities of inspections from the most possible to that with the lowest possibility.

These were determined on the following basis:

- Ease of inspection
- Most possible system
- Most Possible point in system

TROUBLESHOOTING PROCEDURE:

1st Check the following items:

Electrical system

- 1) Battery condition
- 2) Fuses

Ignition system

- 1) Spark plugs
- 2) Ignition timing

Fuel system

- 1) Fuel level
- 2) Fuel leakage
- 3) Fuel filter
- 4) Idle speed

Intake air system

- 1) Vacuum or air leakage
- 2) Vacuum hose routing
- 3) Accelerator cable
- 4) Choke cable

Engine

- 1) Compression
- 2) Overheating

Others

- 1) Clutch slippage
- 2) Brake dragging

2nd Check Fuel and Emission Control Systems

4A TROUBLESHOOTING GUIDE

F6 (SINGAPORE)

The Troubleshooting Guide lists the systems most likely to cause a given symptom. After finding the system(s) to check, refer to the pages shown for detailed guides for each system.

SYMPTOM		POSSIBLE CAUSE								
		Air cleaner (Air cleaner element)	Intake air temperature control system	Idle adjustment	Fuel system (Carburetor, Fuel pump)	Air injection system	Deceleration control system	Positive crankcase ventilation system	Exhaust system	Idle-up control system
		4A—23	4A—60	4A—38	4A—24	4A—58	4A—45	4A—67	4A—96	4A—68
1	Hard start or won't start (Crank OK)	1			2					
2	Engine stalls									
	During warm up	3	2	1	4					
	After warm up	3		2	4			1		
3	Rough idle									
	During warm up	3	2	1	4					
	After warm up	3		2	4			1		
4	High idle speed after warm up			1	4		3*			2
5	Poor acceleration, hesitation, or lack of power	1			2				3	
6	Runs rough on deceleration				2		1			
7	Afterburn in exhaust system				2		1			
8	Poor fuel consumption	2		1	4					3
9	Fails emission test	6		4	5	3	2		1	

* Only MTX

76G04A-016

The numbers of the list show the priorities of inspections from the most possible to that with the lowest possibility.

These were determined on the following basis:

- Ease of inspection
- Most possible system
- Most possible point in system

TROUBLESHOOTING PROCEDURE:

1st Check the following items:

Electrical system

- 1) Battery condition
- 2) Fuses

Ignition system

- 1) Spark plugs
- 2) Ignition timing

Fuel system

- 1) Fuel level
- 2) Fuel leakage
- 3) Fuel filter
- 4) Idle speed

Intake air system

- 1) Vacuum or air leakage
- 2) Vacuum hose routing
- 3) Accelerator cable

Engine

- 1) Compression
- 2) Overheating

Others

- 1) Clutch slippage
- 2) Brake dragging

2nd Check the Fuel and Emission Control Systems

FE 12 VALVE and F8 (EXCEPT MIDDLE EAST and GENERAL)

The Troubleshooting Guide lists the systems most likely to cause a given symptom. After finding the system(s) to check, refer to the pages shown for detailed guides for each system.

SYMPTOM		POSSIBLE CAUSE									
		Air cleaner (Air cleaner element)	Intake air temperature control system	Idle adjustment	Fuel system (Carburetor, Fuel pump)	PTC heater system	Air injection system	Positive crankcase ventilation system	Deceleration control system	Idle-up control system	Ignition control system
		4A-23	4A-60	4A-38	4A-24	4A-42	4A-58	4A-67	4A-45	4A-68	4A-80
1	Hard start or won't start (Crank OK)	1			2						
2	Engine stalls										
3	Rough idle										
4	High idle speed after warm up			1	4				3	2	
5	Poor acceleration, hesitation, or lack of power	1			4				2		3
6	Runs rough on deceleration				2				1		
7	Afterburn in exhaust system				2				1		
8	Poor fuel consumption	3		1	4				2		
9	Fails emission test	6		2	5		3		1		4

76G04A-017

The numbers of the list show the priorities of inspections from the most possible to that with the lowest possibility.

These were determined on the following basis:

- Ease of inspection
- Most possible system
- Most possible point in system

TROUBLESHOOTING PROCEDURE:

1st Check the following items:

Electrical system

- 1) Battery condition
- 2) Fuses

Ignition system

- 1) Spark plugs
- 2) Ignition timing

Fuel system

- 1) Fuel level
- 2) Fuel leakage
- 3) Fuel filter
- 4) Idle speed

Intake air system

- 1) Vacuum or air leakage
- 2) Vacuum hose routing
- 3) Accelerator cable

Engine

- 1) Compression
- 2) Overheating

Others

- 1) Clutch slippage
- 2) Brake dragging

2nd Check the Fuel and Emission Control Systems

4A TROUBLESHOOTING GUIDE

FE and F8 (GENERAL)

The Troubleshooting Guide lists the systems most likely to cause a given symptom. After finding the system(s) to check, refer to the pages shown for detailed guides for each system.

SYMPTOM		POSSIBLE CAUSE							
		Air cleaner (Air cleaner element)	Intake air temperature control system	Idle adjustment	Fuel system (Carburetor, Fuel pump)	Idle-up control system	PTC heater system	Positive crankcase ventilation system	Deceleration control system
		4A—23	4A—60	4A—38	4A—24	4A—68	4A—42	4A—67	4A—45
1	Hard start or won't start (Crank OK)	1			2				
2	Engine stalls								
	During warm up	5	4	1	6		2		3
3	Engine stalls								
	After warm up	3		2	4			1	
3	Rough idle								
	During warm up	5	4	1	6		2		3
4	Rough idle								
	After warm up	3		2	4			1	
4	High idle speed after warm up			1	4	2			3
5	Poor acceleration, hesitation, or lack of power	1			4		3		2
6	Runs rough on deceleration				2				1
7	Afterburn in exhaust system				2				1
8	Poor fuel consumption	2		1	3				
9	Fails emission test	3		2	4				1

76G04A-018

The numbers of the list show the priorities of inspections from the most possible to that with the lowest possibility.

These were determined on the following basis:

- Ease of inspection
- Most possible system
- Most possible point in system

TROUBLESHOOTING PROCEDURE:

1st Check the following items:

Electrical system

- 1) Battery condition
- 2) Fuses

Ignition system

- 1) Spark plugs
- 2) Ignition timing

Fuel system

- 1) Fuel level
- 2) Fuel leakage
- 3) Fuel filter
- 4) Idle speed

Intake air system

- 1) Vacuum or air leakage
- 2) Vacuum hose routing
- 3) Accelerator cable

Engine

- 1) Compression
- 2) Overheating

Others

- 1) Clutch slippage
- 2) Brake dragging

2nd Check the Fuel and Emission Control Systems

FE (MIDDLE EAST)

The Troubleshooting Guide lists the systems most likely to cause a given symptom. After finding the system(s) to check, refer to pages shown for detailed guides for each system.

POSSIBLE CAUSE		PAGE									
		Air cleaner (Air cleaner element)	Intake air temperature control system	Idle adjustment	Fuel system (Carburetor, Fuel pump)	Idle-up control system	Dashpot (Only MTX)	Positive crankcase ventilation system	Exhaust system	Evaporative emission control system	Auto-return choke system
SYMPTOM		4A-23	4A-60	4A-38	4A-24	4A-68	4A-50	4A-67	4A-96	4A-78	4A-40
1	Hard start or won't start (Crank OK)	1			2						3
2	Engine stalls										
	During warm up	3	2	1	4						
	After warm up	3		2	4			1			
3	Rough idle										
	During warm up	3	2	1	4						
	After warm up	3		2	4			1			
4	High idle speed after warm up			1	5	3	4				2
5	Poor acceleration, hesitation, or lack of power	1			2				3		
6	Runs rough on deceleration				2					1	
7	Afterburn in exhaust system				3		1				2
8	Poor fuel consumption	5		1	6		2			3	4
9	Fails emission test	5		4	6		3		1	2	

76G04A-019

The numbers of the list show the priorities of inspections from the most possible to that with the lowest possibility.

These were determined on the following basis:

- Ease of inspection
- Most possible system
- Most possible point in system

TROUBLESHOOTING PROCEDURE:

1st Check the following items:

Electrical system

- 1) Battery condition
- 2) Fuses

Ignition system

- 1) Spark plugs
- 2) Ignition timing

Fuel system

- 1) Fuel level
- 2) Fuel leakage
- 3) Fuel filter
- 4) Idle speed

Intake air system

- 1) Vacuum or air leakage
- 2) Vacuum hose routing
- 3) Accelerator cable
- 4) Choke cable

Engine

- 1) Compression
- 2) Overheating

Others

- 1) Clutch slippage
- 2) Brake dragging

2nd Check the Fuel and Emission Control Systems

4A TROUBLESHOOTING GUIDE

FE 8VALVE—UNLEADED FUEL

The Troubleshooting Guide lists the systems most likely to cause a given symptom. After finding the system(s) to check, refer to the pages shown for detailed guides for each system.

SYMPTOM		POSSIBLE CAUSE													
		Air cleaner (Air cleaner element)	Idle adjustment	Fuel system (Carburetor, Fuel pump)	PTC heater system	Air injection system	Positive crankcase ventilation system	Deceleration control system	Exhaust gas recirculation (EGR) system	Exhaust system	Intake air temperature control system	Idle-up control system	Purge control system	Auto-return choke system	
		4A—23	4A—38	4A—24	4A—42	4A—58	4A—67	4A—45	4A—96	4A—97	4A—60	4A—68	4A—63	4A—40	
1	Hard start or won't start (Crank OK)	1		2											
2	Engine stalls	During warm up	6	1	2	5					3		4		
		After warm up	4	2	3		1								
3	Rough Idle	During warm up	5	1	2	4					3		6		
		After warm up	4	2	3		1								
4	High Idle speed after warm up		1	5				4				3		2	
5	Poor acceleration, hesitation, or lack of power	1		2	5				3	4					
6	Runs rough on deceleratio			2				1							
7	Afterburn in exhaust system			2				1							
8	Poor fuel consumption	4	1	2				3						5	
9	Falls emission test	5	1	6		4		3		2					

76G04A-020

The numbers of the list show the priorities of inspections from the most possible to that with the lowest possibility.

These were determined on the following basis:

- Ease of inspection
- Most possible system
- Most possible point in system

TROUBLESHOOTING PROCEDURE:

1st Check the following items:

Electrical system

- 1) Battery condition
- 2) Fuses

Ignition system

- 1) Spark plugs
- 2) Ignition timing

Fuel system

- 1) Fuel level
- 2) Fuel leakage
- 3) Fuel filter
- 4) Idle speed

Intake air system

- 1) Vacuum or air leakage
- 2) Vacuum hose routing
- 3) Accelerator cable
- 4) Choke cable

Engine

- 1) Compression
- 2) Overheating

Others

- 1) Clutch slippage
- 2) Brake dragging

2nd Check the Fuel and Emission Control Systems

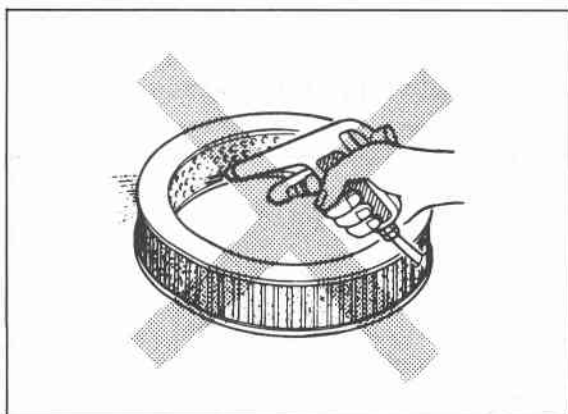
PARTS INSPECTION

AIR CLEANER ELEMENT

Visually check the air cleaner element for excessive dirt, damage, or oil. Replace, if necessary.

Caution

Do not clean the element with compressed air.



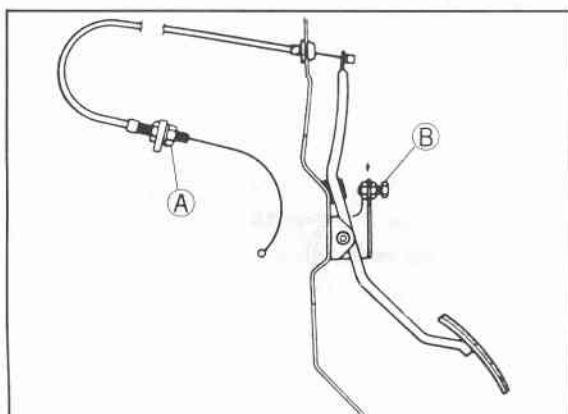
76G04A-021

ACCELERATOR LINKAGE

Caution

Confirm that the choke valve is fully open and that the throttle valve is set to the correct idle opening.

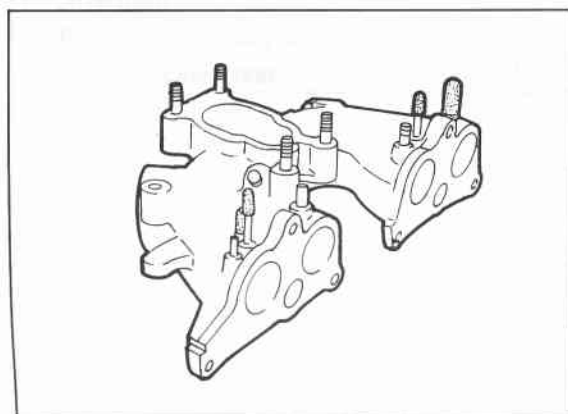
1. Inspect the deflection of the cable. If the deflection is not within **1—3 mm (0.039—0.118 in)**, adjust nuts A.
2. Depress the accelerator pedal to the floor and verify that the throttle valve is fully opened. Adjust bolt B if necessary.



76G04A-022

INTAKE MANIFOLD

1. Visually check the intake manifold for damage.
2. Replace it if necessary.

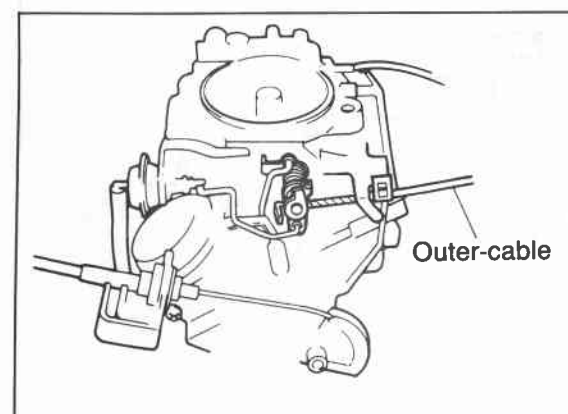


76G04A-023

CHOKE CABLE

Except FE and F8 (General, ECE, Hong Kong, and Singapore)

1. Pull the choke knob and confirm that the choke valve is fully closed.
2. Return the choke knob and confirm that the choke valve is fully opened.
3. Adjust the position of the outer cable, if necessary.

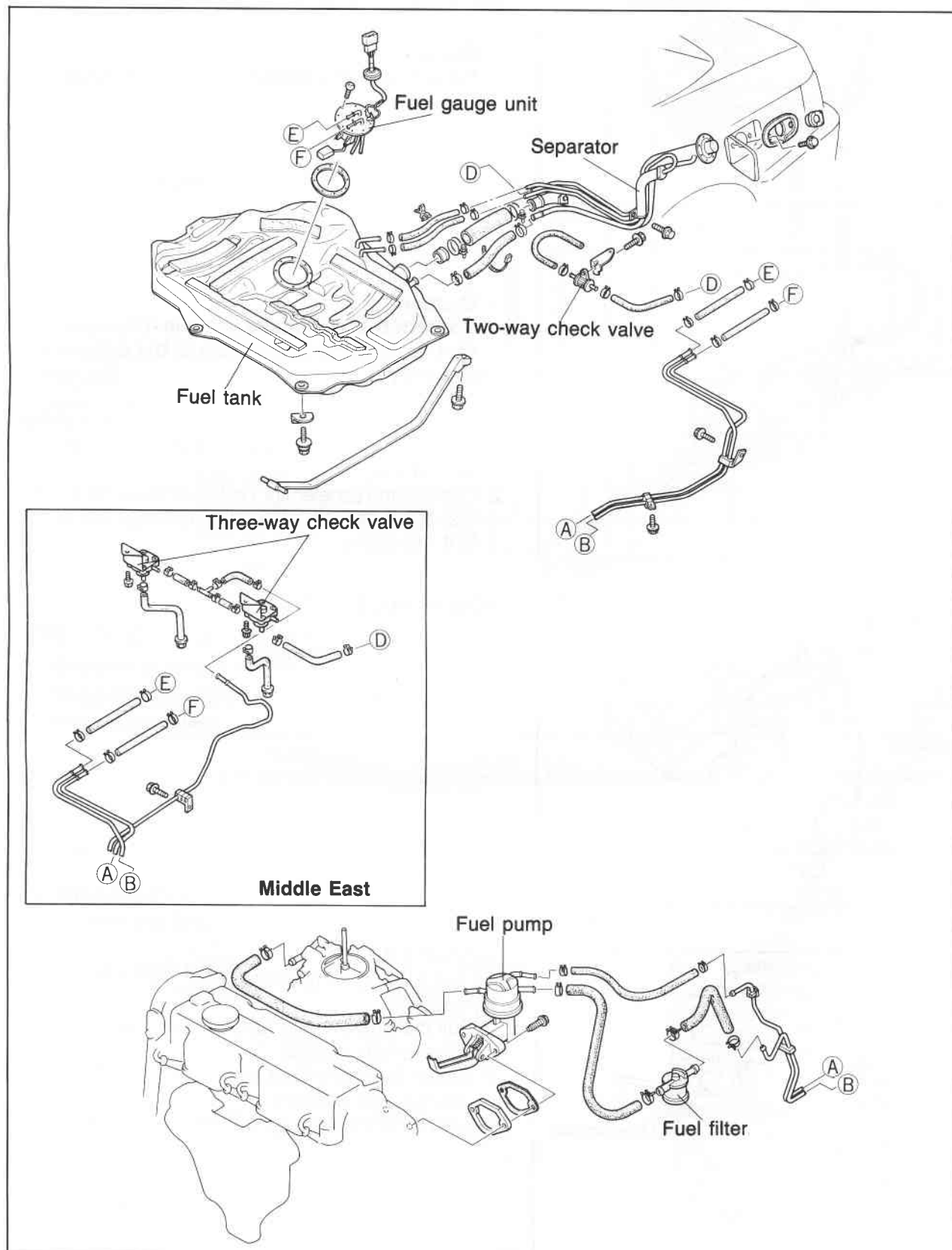


76G04A-024

4A FUEL SYSTEM

FUEL SYSTEM

This system consists of the fuel pump, fuel filters, and carburetor, and supplies the necessary fuel for operation of the engine.



76G04A-025

TROUBLESHOOTING

POSSIBLE CAUSE		Carburetor	Fuel pump	Separator	Two-way check valve (Except Middle East) Three-way check valve (Middle East)
SYMPTOM		4A—26	4A—35	4A—37	4A—37
1	Hard start or won't start (Crank OK)	2	1		
2	Engine stalls				
	During warm up	2	1		
	After warm up	2	1		
3	Rough Idle				
	During warm up	2	1		
	After warm up	2	1		
4	High Idle speed after warm up	1			
5	Poor acceleration, hesitation, or lack of power	2	1		
6	Runs rough on deceleration	1			
7	Afterburn in exhaust system	1			
8	Poor fuel consumption	1		2	3
9	Fails emission test	1			

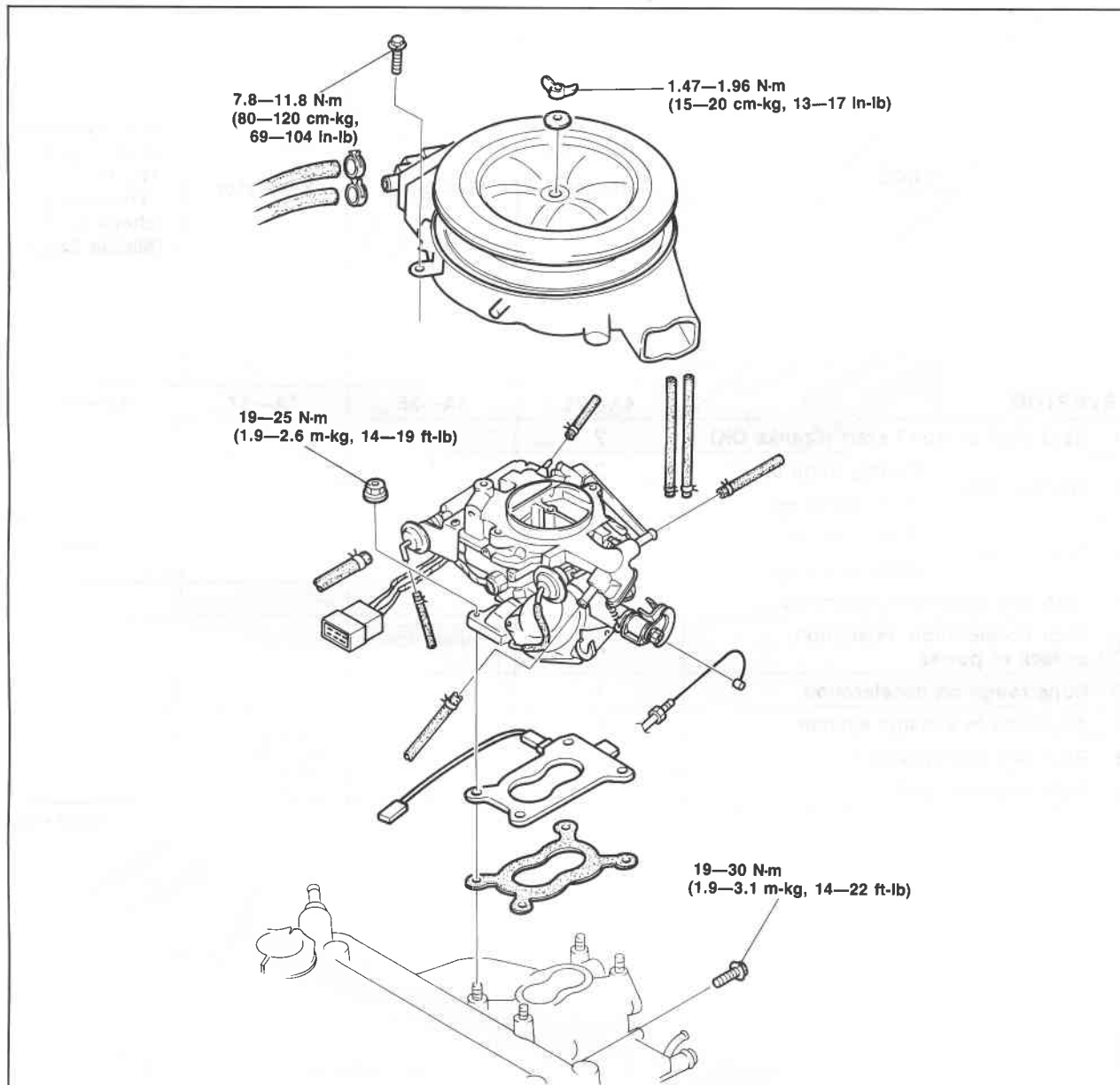
76G04A-026

4A FUEL SYSTEM

CARBURETOR

Removal

Remove in the sequence shown in the figure.



76G04A-027

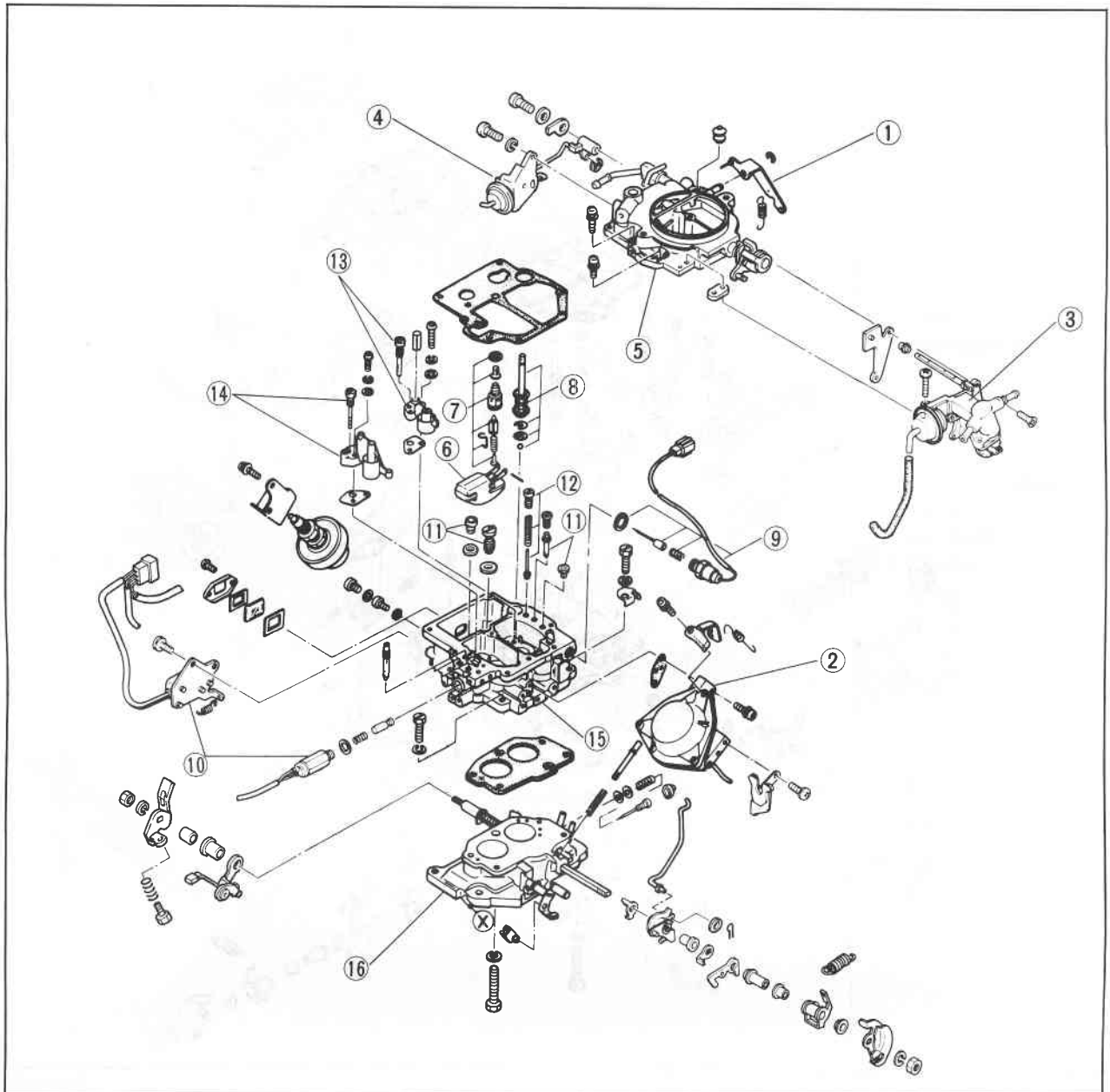
1. Secondary air hoses (If equipped) and air cleaner
2. Water hoses
3. Fuel hose
4. Vacuum hoses
5. Accelerator cable
6. Connector
7. Carburetor
8. PTC heater (If equipped)
9. Gasket (If equipped)

Installation

Install the reverse order of removal, referring following points.

1. Check for fuel leaks.
2. Check the vacuum hose installation.
3. Check the idle speed and idle mixture (Refer to page 4A—38).
4. Warm up the engine to the normal operating temperature and check that fuel level is at the center of the float level indicator window.

Disassembly FE and F8 (General, ECE, Hong Kong, and Singapore)



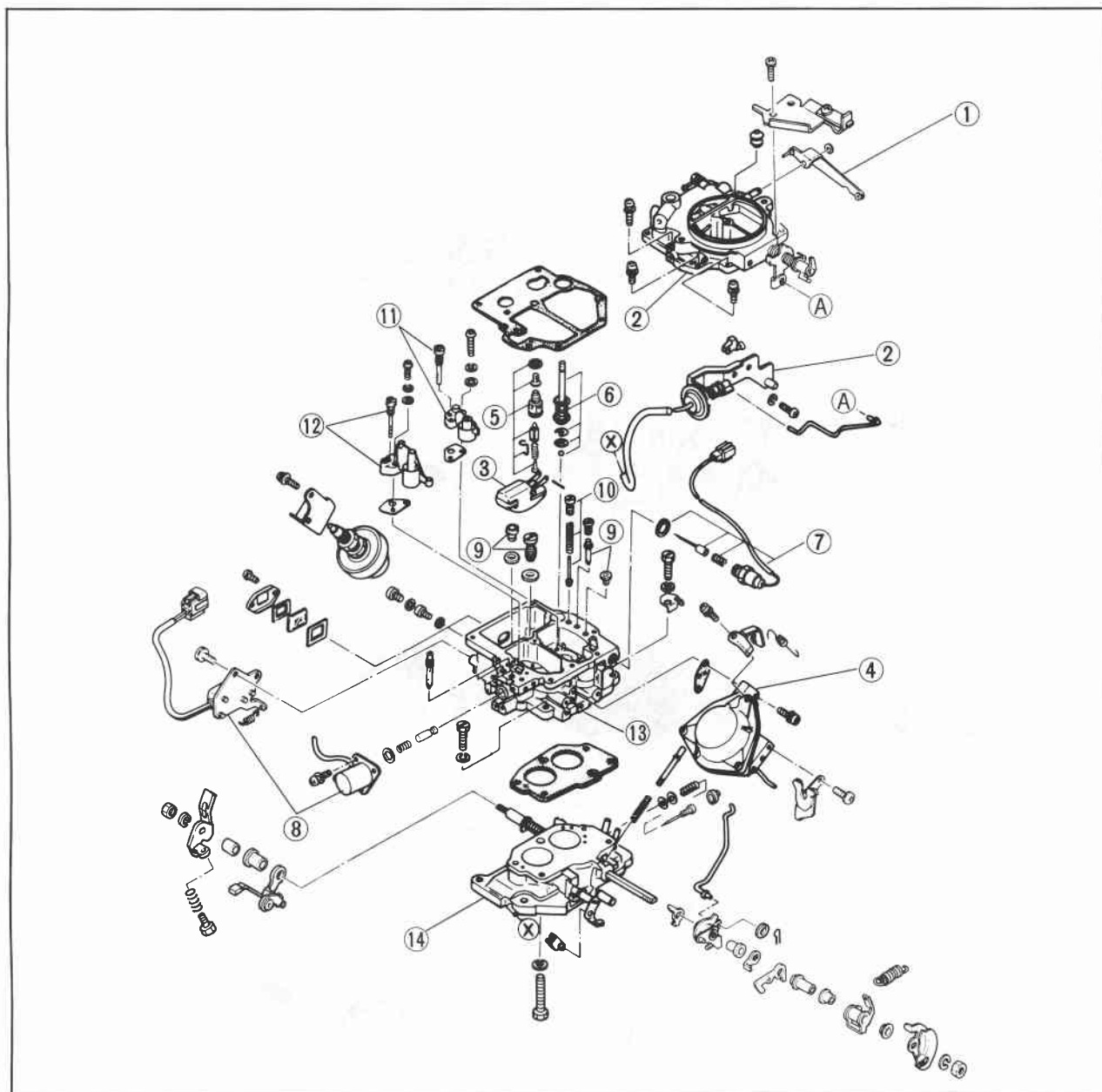
76G04A-028

Disassemble in the sequence shown in the figure.

- | | |
|--|---|
| 1. Lever | 9. Slow fuel cut solenoid valve |
| 2. Secondary diaphragm | 10. Idle-up solenoid valve and idle switch
(If equipped) |
| 3. Choke breaker diaphragm and thermo wax
(If equipped) | 11. Air bleeds and jets |
| 4. Choke opener and bracket (If equipped) | 12. Injector weight |
| 5. Air horn | 13. Primary venturi and nozzle |
| 6. Float | 14. Secondary venturi and nozzle |
| 7. Needle valve | 15. Main body |
| 8. Accelerator pump | 16. Throttle body |

4A FUEL SYSTEM

FE 8 Valve (Except General) and F6



76G04A-029

Disassemble in the sequence shown in the figure.

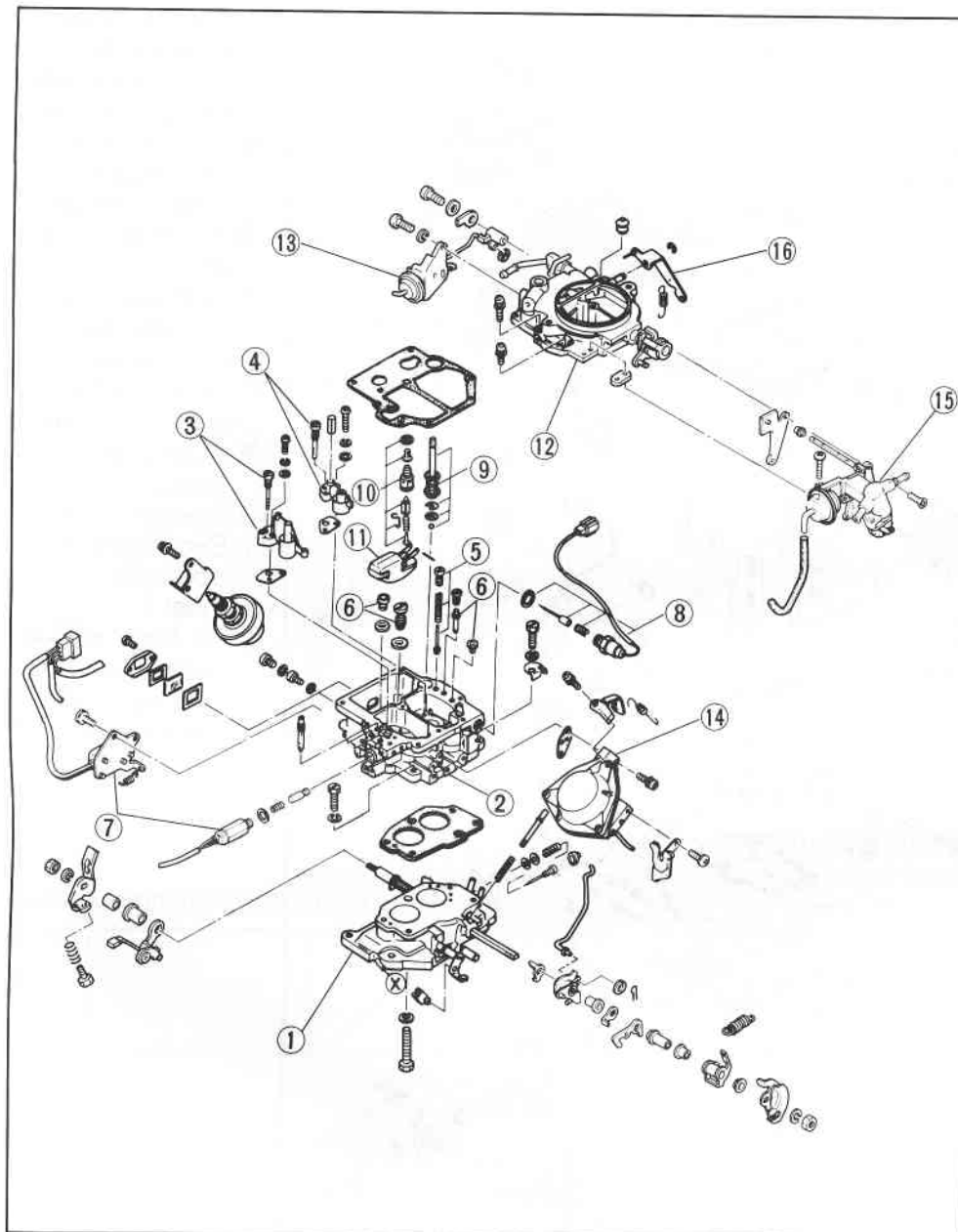
- | | |
|--|--|
| 1. Lever | 8. Solenoid valve* and idle switch (If equipped) |
| 2. Air horn, choke breaker diaphragm, and choke opener (If equipped) | 9. Air bleeds and jets |
| 3. Float | 10. Injector weight |
| 4. Secondary diaphragm | 11. Primary venturi and nozzle |
| 5. Needle valve | 12. Secondary venturi and nozzle |
| 6. Accelerator pump | 13. Main body |
| 7. Slow fuel cut solenoid valve | 14. Throttle body |

*Solenoid valve:

Coast enrichment solenoid valve	FE 8 Valve—Unleaded fuel
Coasting leaner	F6 Singapore

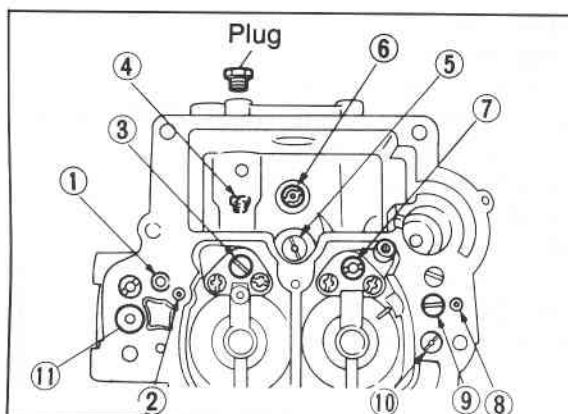
Assembly [FE and F8 (General, ECE, Hong Kong, and Singapore)]

Assemble in the sequence shown in the figure, referring to the assembly note for specially marked parts.



76G04A-030

1. Throttle body
2. Main body
3. Secondary venturi and nozzle
4. Primary venturi and nozzle
5. Injector weight
6. Air bleeds and jets
7. Idle-up solenoid valve and idle switch (If equipped)
8. Slow fuel cut solenoid valve
9. Accelerator pump
10. Needle valve
11. Float
12. Air horn
13. Choke opener and bracket (If equipped)
14. Choke breaker diaphragm and thermo wax (If equipped)
15. Secondary diaphragm
16. Lever



76G04A-031

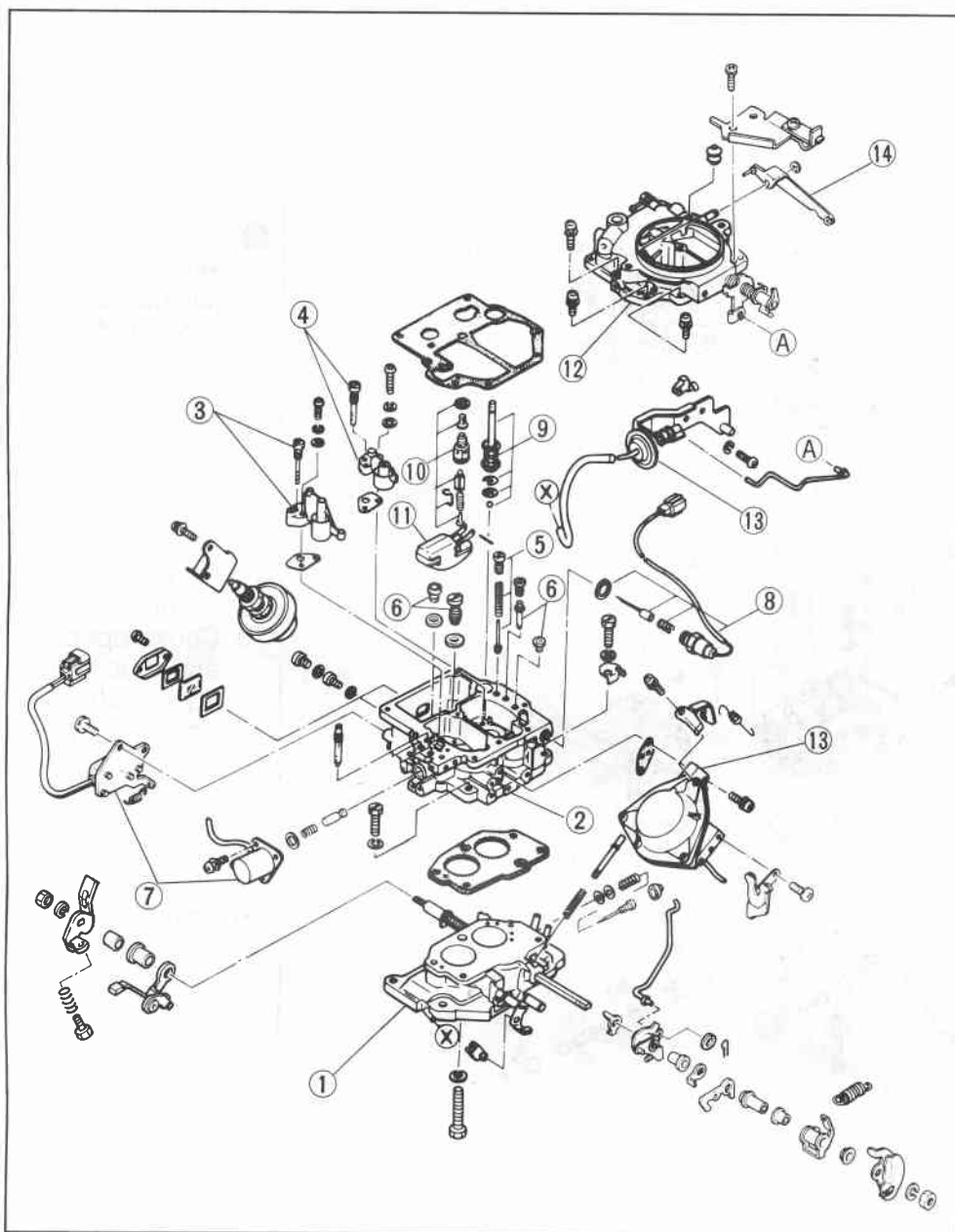
Assembly note Air bleeds and jets

1. Step jet and plug
2. Secondary step air bleed (No. 1) (Fixed type)
3. Secondary main air bleed
4. Secondary main jet
5. Power jet
6. Primary main jet
7. Primary main air bleed
8. Primary slow air bleed (No. 1)
9. Primary slow jet and plug
10. Primary slow air bleed (No. 2)

4A FUEL SYSTEM

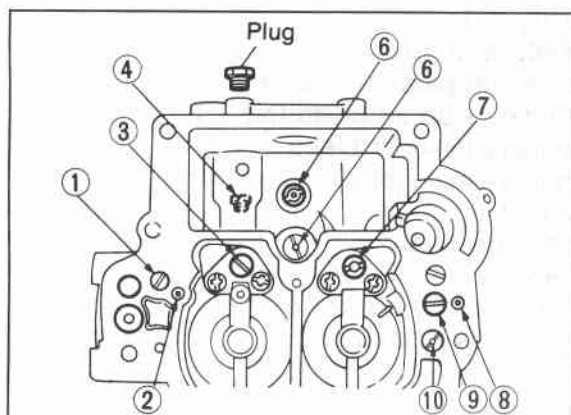
[FE 8Valve (Except General) and F6]

Assemble in the sequence shown in the figure, referring to the assembly note for specially marked parts.



1. Throttle body
2. Main body
3. Secondary venturi and nozzle
4. Primary venturi and nozzle
5. Injector weight
6. Air bleeds and jets
7. Solenoid valve and idle switch (If equipped)
8. Slow fuel cut solenoid valve
9. Accelerator pump
10. Needle valve
11. Secondary diaphragm
12. Float
13. Air horn, choke breaker diaphragm, and choke opener (If equipped)
14. Lever

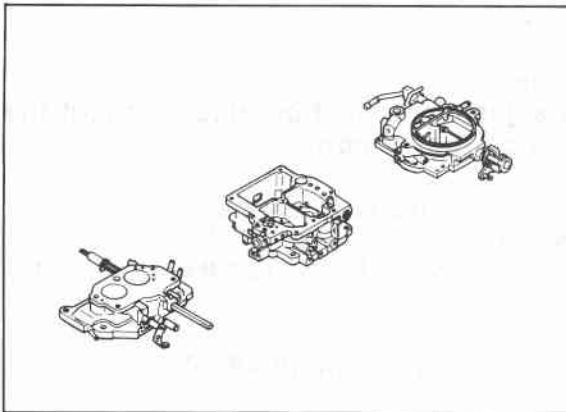
76G04A-032



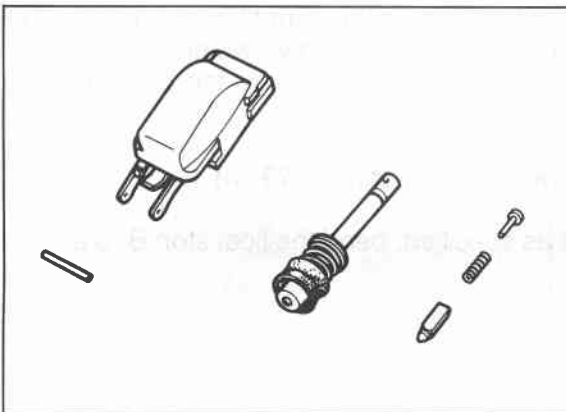
76G04A-033

Assembly note Air bleeds and jets

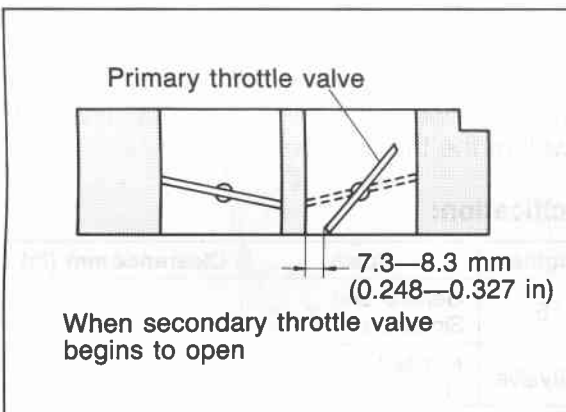
1. Step jet and plug
2. Secondary step air bleed (No. 1) (Fixed type)
3. Secondary main air bleed
4. Secondary main jet
5. Power jet
6. Primary main jet
7. Primary main air bleed
8. Primary slow air bleed (No. 1)
9. Primary slow jet and plug
10. Primary slow air bleed (No. 2)



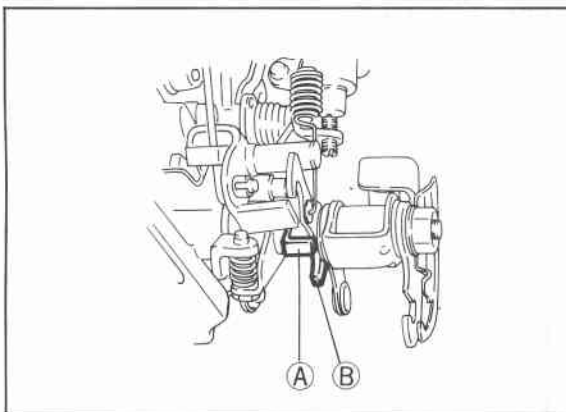
76G04A-034



76G04A-191



76G04A-035



76G04A-036

Inspection

Note

- a) Clean all parts with carburetor cleaner and dry with compressed air.
- b) Do not use a wire to clean the jets.

Check the following and replace any faulty parts.

1. Damaged air horn, main body, or throttle body
2. Improper operation of the choke valve or throttle valve
3. Damaged float
4. Needle valve damage or improper seating
5. Clogged or damaged jet or air bleed
6. Damaged piston cup in the accelerator pump
7. Weakened or broken spring
8. Damaged diaphragm
9. Improper solenoid operation

Secondary Throttle Valve

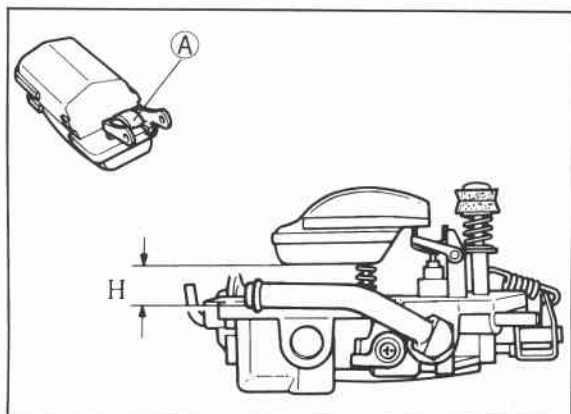
1. Check the clearance between the primary throttle valve and wall when lever A contacts lever B.

Clearance:

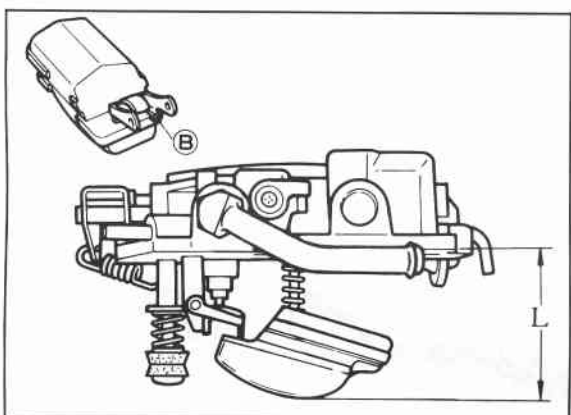
7.3—8.3 mm (0.248—0.327 in)

3. If not within specification, adjust it by bending lever A.

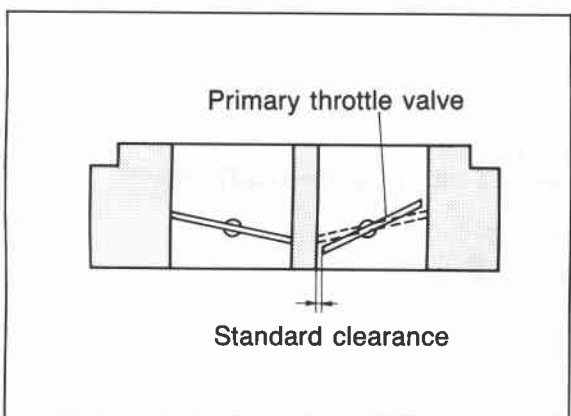
4A FUEL SYSTEM



76G04A-037



76G04A-038



76G04A-039

Float Level

Caution

This adjustment must be made without the gasket on the air horn.

1. Turn the air horn upside-down and allow the float to lower by its own weight.
2. Measure clearance H between the float and the air horn.

Clearance H: 12.5 mm (0.49 in)

3. If not as specified, bend the float seat lip A to adjust.
4. Turn the air horn to the normal position and allow the float to lower by its own weight.
5. Measure clearance L between the bottom of the float and the air horn.

Clearance L: 44 mm (1.73 in)

6. If not as specified, bend the float stop B to adjust.

Fast Opening

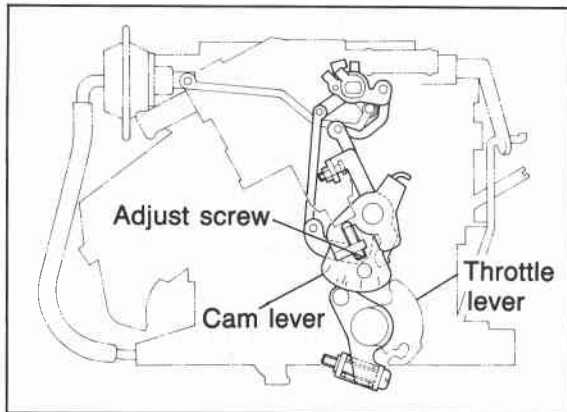
F6 and FE 8Valve (Except General)

1. With the choke valve fully closed, measure the clearance between the primary throttle valve and the wall of the throttle bore.

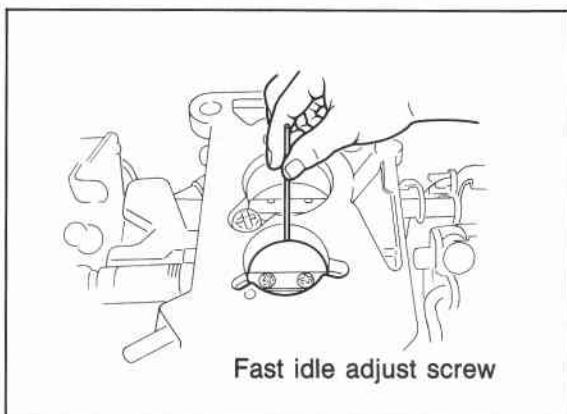
Specification:

Engine	Spec.	Clearance mm (in)
F6	General and Singapore	1.40—1.76 (0.055—0.069)
FE 8Valve	Middle East and Unleaded Fuel	

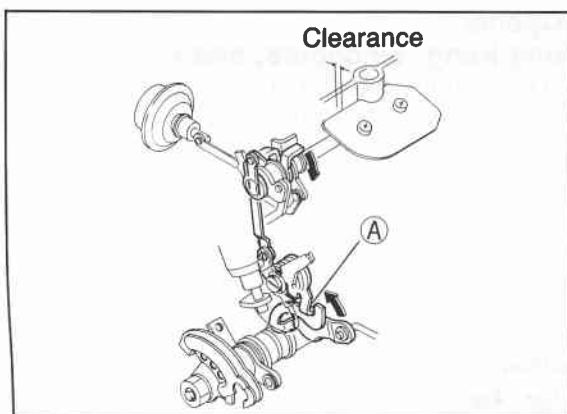
2. If not within specification, carefully bend the connecting rod to adjust.



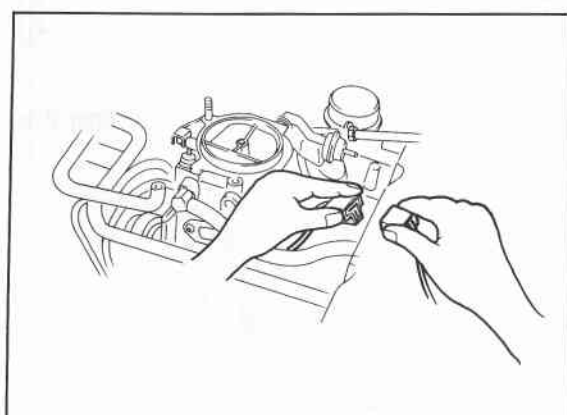
76G04A-040



76G04A-041



76G04A-042



76G04A-043

Fast Idle Opening

FE and F8 (General, ECE, Hong Kong, and Singapore)

Adjustment of fast idle opening is normally unnecessary.

But if it is necessary, adjust it as shown.

1. Before adjustment, let the carburetor set at **25°C (77°F)** for at least 1 hour.
2. Check that the center of the cam lever aligns with the mark (25°) on the fast idle cam.
3. If not as specified, adjust it by turning the adjust screw.

4. Measure the throttle valve clearance between the throttle valve and wall with a wire gage.

Specification

Spec.	General, ECE, Hong Kong, and Singapore	
Transmission	MTX	ATX
Clearance mm (in)	0.48—0.64 (0.019—0.025)	0.56—0.72 (0.022—0.028)

5. If not as specified, adjust it by turning the fast idle adjust screw.

Unloader System

Only FE and F8 (General, ECE, Hong Kong, and Singapore)

1. Open the primary throttle valve fully.
2. Measure the choke valve clearance.

Clearance:

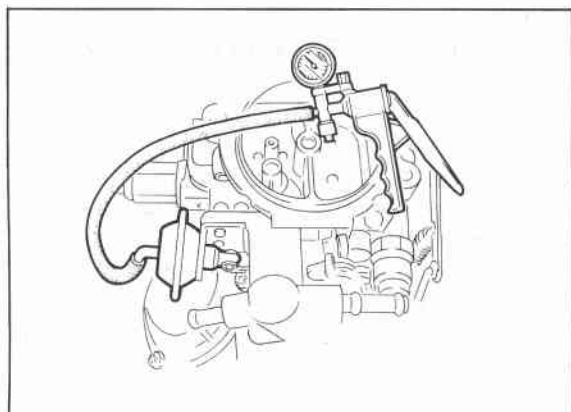
1.68—2.14 mm (0.066—0.084 in)

3. If not as specified, adjust it by bending tab A.

Slow Fuel Cut Solenoid Valve

1. Start the engine, and run it at idle.
2. Disconnect the connector of the carburetor.
3. Check that the engine stops.
4. If the engine does not stop, replace the slow fuel cut solenoid valve.

4A FUEL SYSTEM



76G04A-044

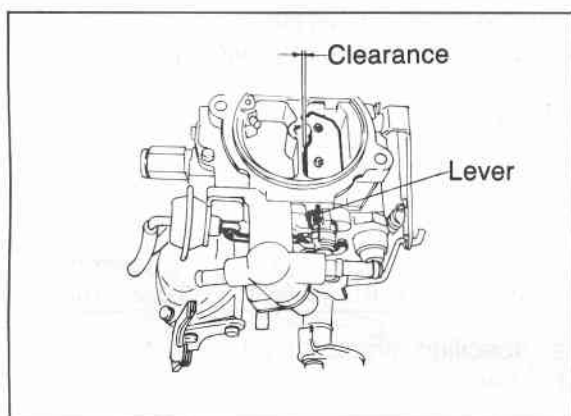
Choke Breaker Diaphragm

1. Warm up the engine to the normal operating temperature, then stop the engine.
2. Set the choke valve to the fully closed position.
3. Apply **400 mmHg (15.7 inHg)** vacuum to the diaphragm.
4. Measure the clearance between the choke valve and air horn with a wire gauge.

Clearance:

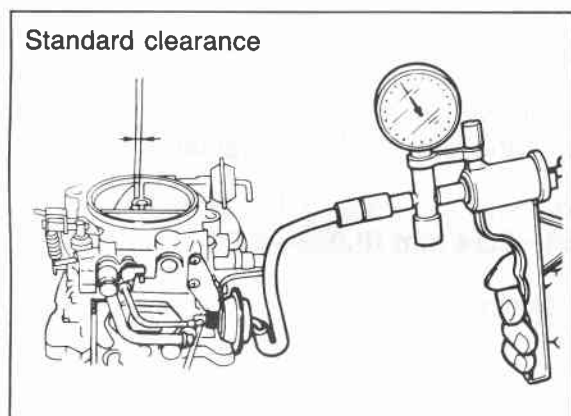
2.45—3.11 mm (0.096—0.122) FE, F8

1.68—2.14 mm (0.066—0.084 in) F6



76G04A-045

5. If not within specification, adjust by bending the lever.



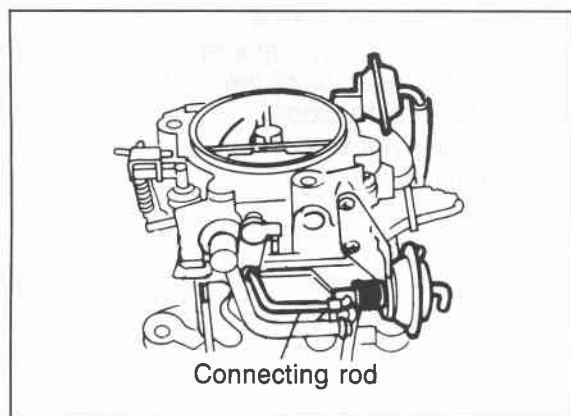
76G04A-046

Choke Opener

ECE, Hong Kong, Singapore, and Middle East

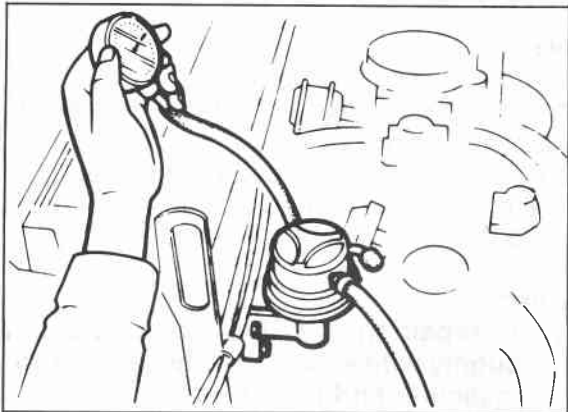
1. Warm up the engine to the normal operating temperature, then stop the engine.
2. Set the choke valve to the fully closed position.
3. Apply **400 mmHg (15.7 inHg)** vacuum to the diaphragm.
4. Measure the clearance between the choke valve and air horn with a wire gauge.

Specification	Clearance mm (in)
ECE, Hong Kong, and Singapore (Except F6 MTX)	3.7—4.0 (0.15—0.16)
Middle East	3.3—3.6 (0.13—0.14)
F6 Singapore MTX	3.2—3.5 (0.13—0.14)



76G04A-047

5. If not within specification, adjust by bending the connecting rod.



76G04A-048

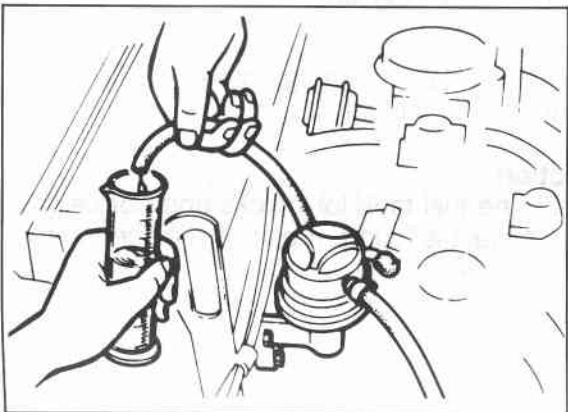
FUEL PUMP

Inspection

Fuel pressure

1. Disconnect the hose at the carburetor and connect a fuel pressure gauge.
2. Disconnect the fuel return hose from the fuel pump and plug the fuel pump return pipe as shown in the figure.
3. Measure the pressure while the engine is idling. Replace the pump, if necessary.

	FE & F8 (ECE, Hong Kong, Singapore)	Others
Pressure kPa (kg/cm ² , psi)	20—29 (0.2—0.3, 2.8—4.3)	20—26 (0.20—0.27, 2.8—3.8)

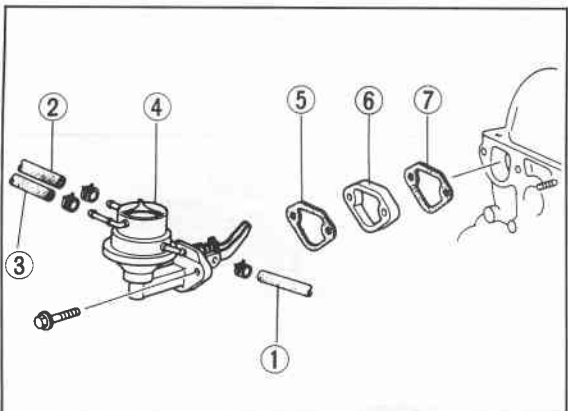


76G04A-049

Flow rate (volume)

1. Disconnect the carburetor fuel hose and insert the end into a measuring breaker.
2. Disconnect the fuel return hose from the fuel pump and plug the fuel pump return pipe as shown in the figure.
3. Start the engine and measure the amount of fuel pumped per minute.

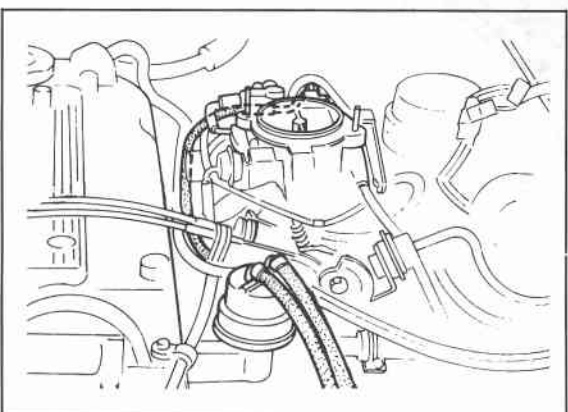
Volume: More than 860 cc (52.5 cuin)/min



76G04A-050

Removal

1. Remove in the following order.
 - (1) Fuel outlet hose
 - (2) Fuel inlet hose
 - (3) Fuel return hose
 - (4) Fuel pump
 - (5) Gasket
 - (6) Insulator
 - (7) Gasket



76G04A-051

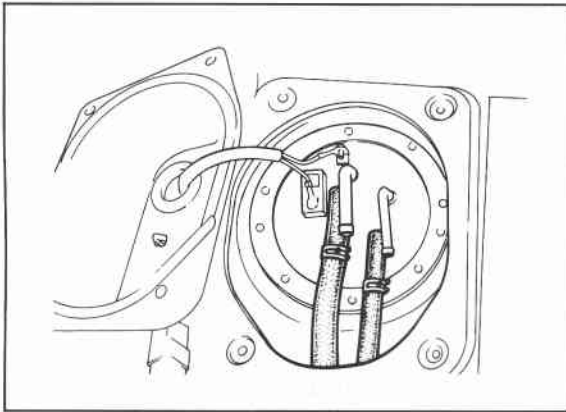
Installation

Install in the reverse order of removal.

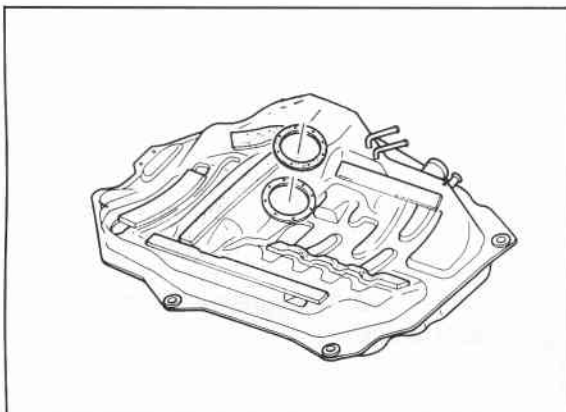
Caution

- a) Replace the gasket whenever the fuel pump is replaced.
- b) Be sure to connect the hoses in the correct positions.
Check for leaks.

4A FUEL SYSTEM



76G04A-052



76G04A-053

FUEL TANK

Removal

1. Remove the rear seat cushion.
2. Remove the cover and disconnect the fuel tank gauge unit connector.
3. Disconnect the fuel main and return hoses.
4. Raise the vehicle and support it with safety stands.
5. Remove the fuel level gauge unit assembly.

Warning

- a) When repairing the fuel tank, clean it thoroughly with steam to remove all explosive gasoline and fumes.
- b) Use of fire is strictly prohibited while working on the fuel tank.

6. Drain the fuel.
7. Disconnect the remaining hoses.
8. Remove the fuel tank.

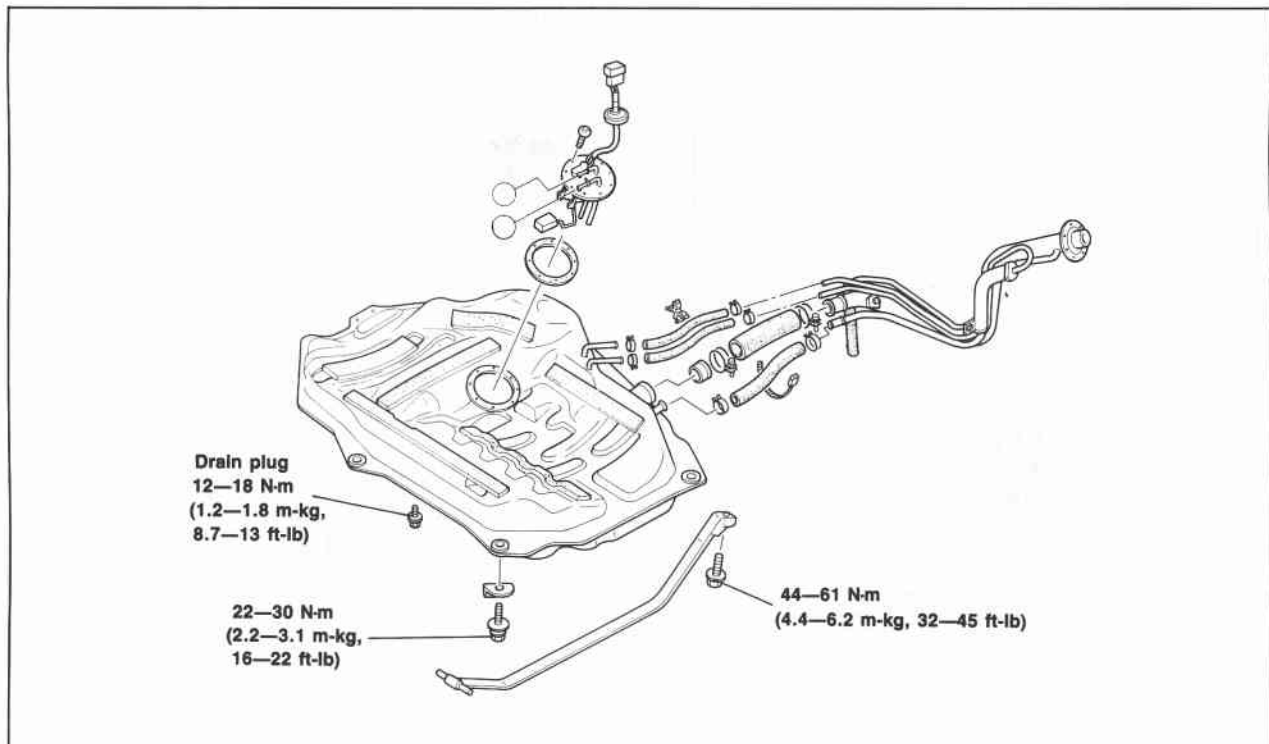
Inspection

1. Check the fuel tank for cracks and corrosion.
2. If any defect is found, repair or replace the tank.
3. Check for leaks.

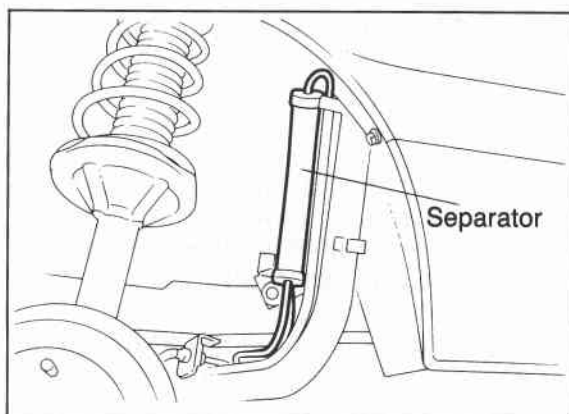
Installation

Install in the reverse order of removal.

Torque Specifications



76G04A-054

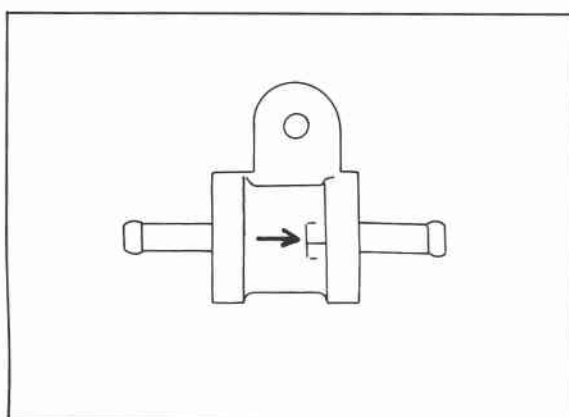


76G04A-055

SEPARATOR

Inspection

Visually check the separator for fuel leakage and damage. Replace, if necessary.



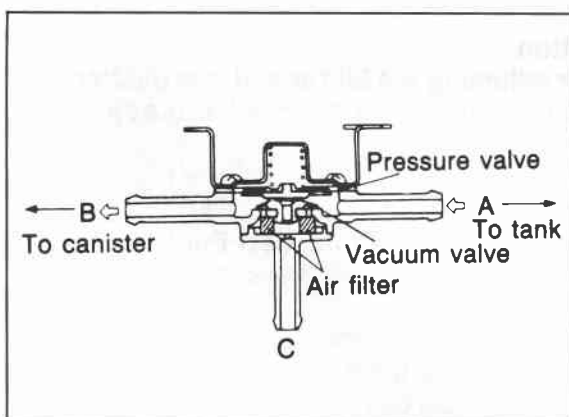
76G04A-056

TWO-WAY CHECK VALVE

(Except Middle East)

Inspection

1. Disconnect the hoses, and remove the check valve.
2. Check that air flows in both directions through the valve.
3. If not as specified, replace the two-way check valve.

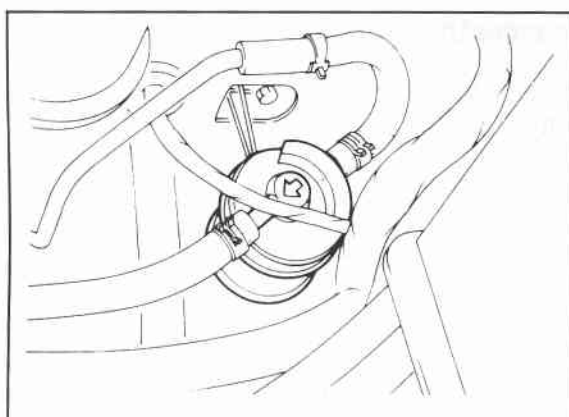


76G04A-057

THREE-WAY CHECK VALVE

(Middle East)

1. Blow through the valve from port (A), and check that air comes out of port (B). Next, block port (B) and check that air comes out of port (C).
2. Block port (B) and apply vacuum with a vacuum pump through port (A).
3. Check that no vacuum is held.



76G04A-058

FUEL FILTER

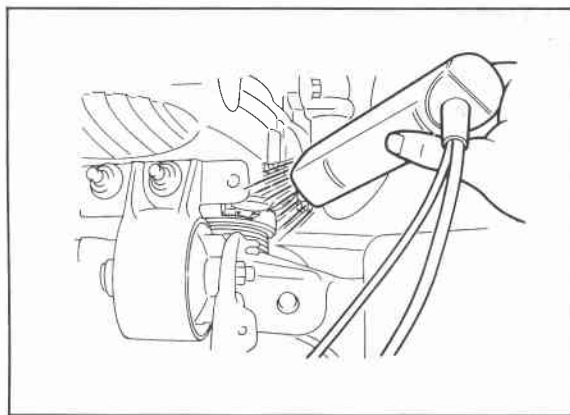
Replacement

The fuel filter is mounted on the left side of the frame.

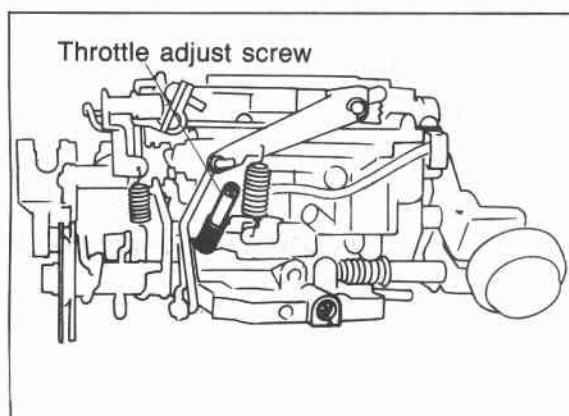
Caution

- a) To prevent gasoline from draining during removal, first disconnect and plug the inlet hose.
- b) During installation be sure to install the fuel filter in the correct direction of flow.

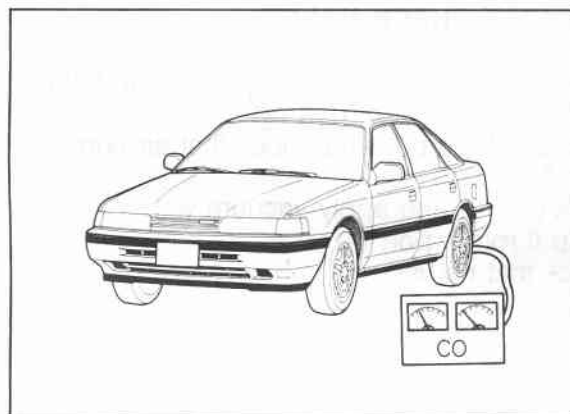
4A IDLE SPEED AND IDLE MIXTURE



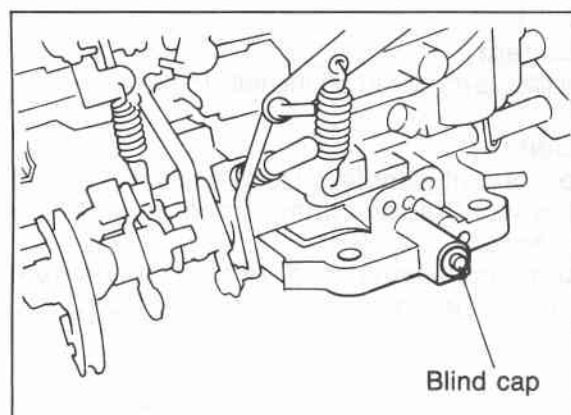
76G04A-059



76G04A-060



76G04A-061



76G04A-062

IDLE SPEED AND IDLE MIXTURE

ADJUSTMENT

Note

- Before adjusting the idle speed and idle mixture, be sure the ignition timing, spark plugs, carburetor float level, etc., are all in normal operation condition.
- Turn off all electrical loads.
- This adjustment must be done while the fan motor is not operating.

Idle Speed

- Connect a tachometer to the engine.
- Warm up the engine, and check that the choke valve has fully opened.
- Check the idle speed.

Specification	MTX		ATX (in N range)	
	Others	FE 8Valve Unleaded fuel	F6	F8 & FE
Idle speed rpm	800 ± 50	850 ± 50	950 ± 50	900 ± 50

- If not within specification, adjust the idle speed by turning the throttle adjust screw.

Caution

After adjusting the idle speed, the dashpot adjustment should be checked and adjusted if necessary.

Idle Mixture

[Except FE 8Valve—Unleaded Fuel]

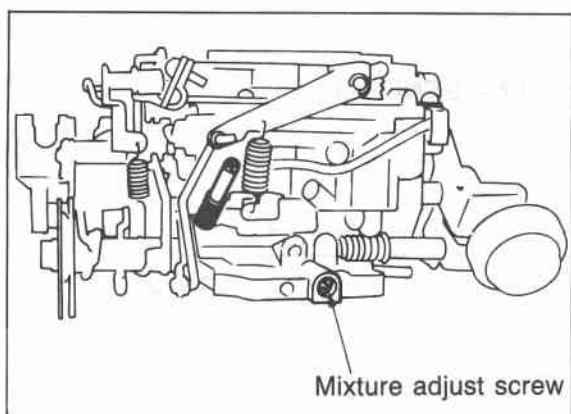
Adjust the idle mixture as follows, after adjusting the idle speed.

- Disconnect the secondary air hoses from the reed valves and plug them. (If equipped.)
- Insert an exhaust gas analyzer into the tail pipe and measure the CO concentration.

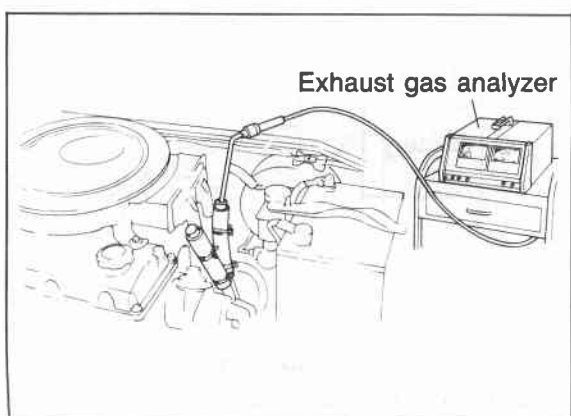
CO concentration: $2.0 \pm 0.5\%$

- If not within the specification, remove the blind cap from the mixture adjust screw.

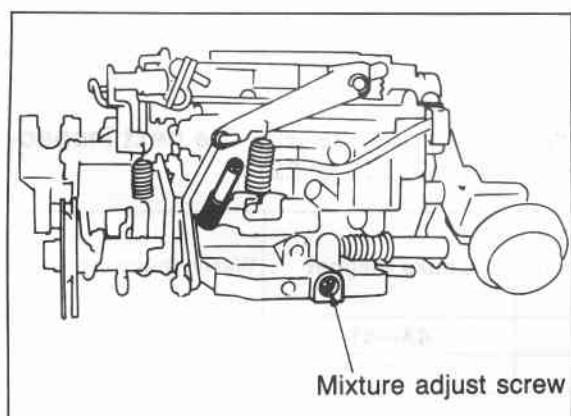
IDLE SPEED AND IDLE MIXTURE 4A



76G04A-063



76G04A-064



76G04A-065

4. Turn the mixture adjust screw to adjust the CO concentration.
5. Recheck the idle speed.
6. Fit a new blind cap onto the mixture adjust screw.

Idle Mixture [FE 8Valve—Unleaded Fuel]

Adjustment of the idle mixture is normally unnecessary.

But if it is necessary, adjust it as follows.

Note

Do not insert the exhaust gas analyzer into the tail pipe.

Before adjust the idle mixture, check and set the idle speed.

1. Disconnect the secondary air hoses.
2. Insert an exhaust gas analyzer into the hose and plug it to prevent leakage.
3. Start the engine and run it at idle.
4. Measure the CO concentration.
5. Remove the blind cap from the mixture adjust screw.
6. Turn the mixture adjust screw and adjust the CO level.

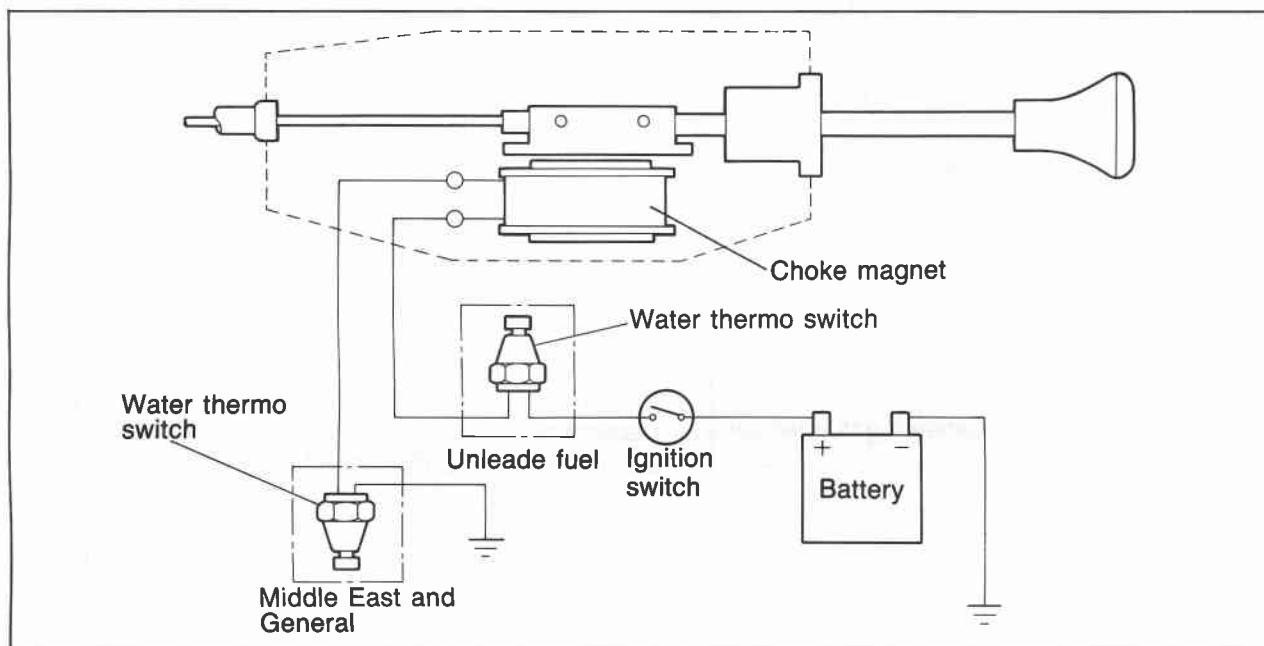
CO concentration: $2.0 \pm 0.5\%$

7. If the idle speed fails to meet specification as the result of the above steps, adjust the idle.
8. Reconnect the secondary air hoses.
9. Fit a new blind cap onto the mixture adjust screw.

4A AUTO-RETURN CHOKE SYSTEM

AUTO-RETURN CHOKE SYSTEM

[FE 8VALVE—UNLEADED FUEL, MIDDLE EAST, and F6—GENERAL]



76G04A-066

An auto-return choke is adopted to prevent the catalytic converter from over-heating because of over use of the choke. This system opens the choke valve by causing the choke knob to return when the engine coolant temperature is **more than 67°C (153°F)**.

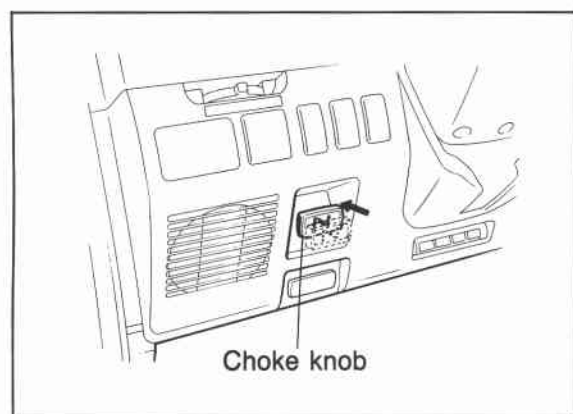
TROUBLESHOOTING

Note

Make the system inspection first. If no problem is found, continue with the next inspection of the Troubleshooting Guide. (Refer to pages 4A—16, 21, or 22)

Possible cause	Page		
	System inspection	Choke magnet	Water thermo switch
Symptom	4A—40	4A—41	4A—41
Checking order	1	2	3

76G04A-067

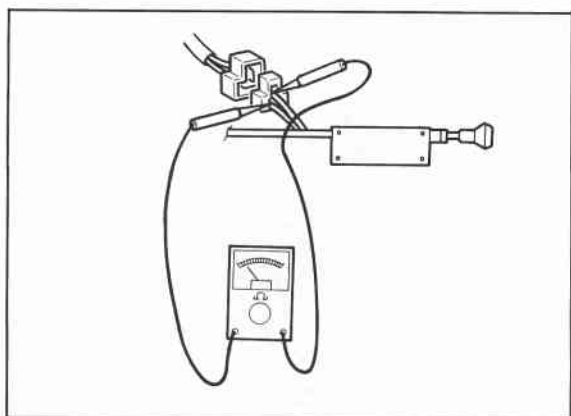


76G04A-068

System Inspection

1. Make sure that the engine is cold and turn the ignition switch ON.
2. Pull out the choke knob and check that it is held on.
3. Start the engine and check that the choke knob returns during warming-up.

AUTO-RETURN CHOKE SYSTEM **4A**



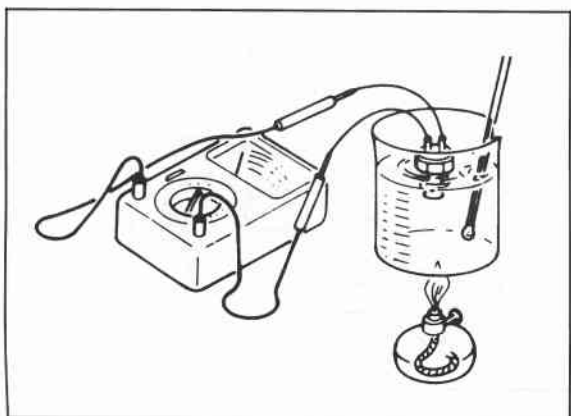
76G04A-069

Choke Magnet

1. Remove the under dash cover.
2. Disconnect the choke magnet connector.
3. Turn the ignition switch on and check the resistance using an ohmmeter.

Resistance: Approx. 35 Ω

4. If it is not within the specification, the choke magnet is malfunction.



76G04A-070

Water thermo switch

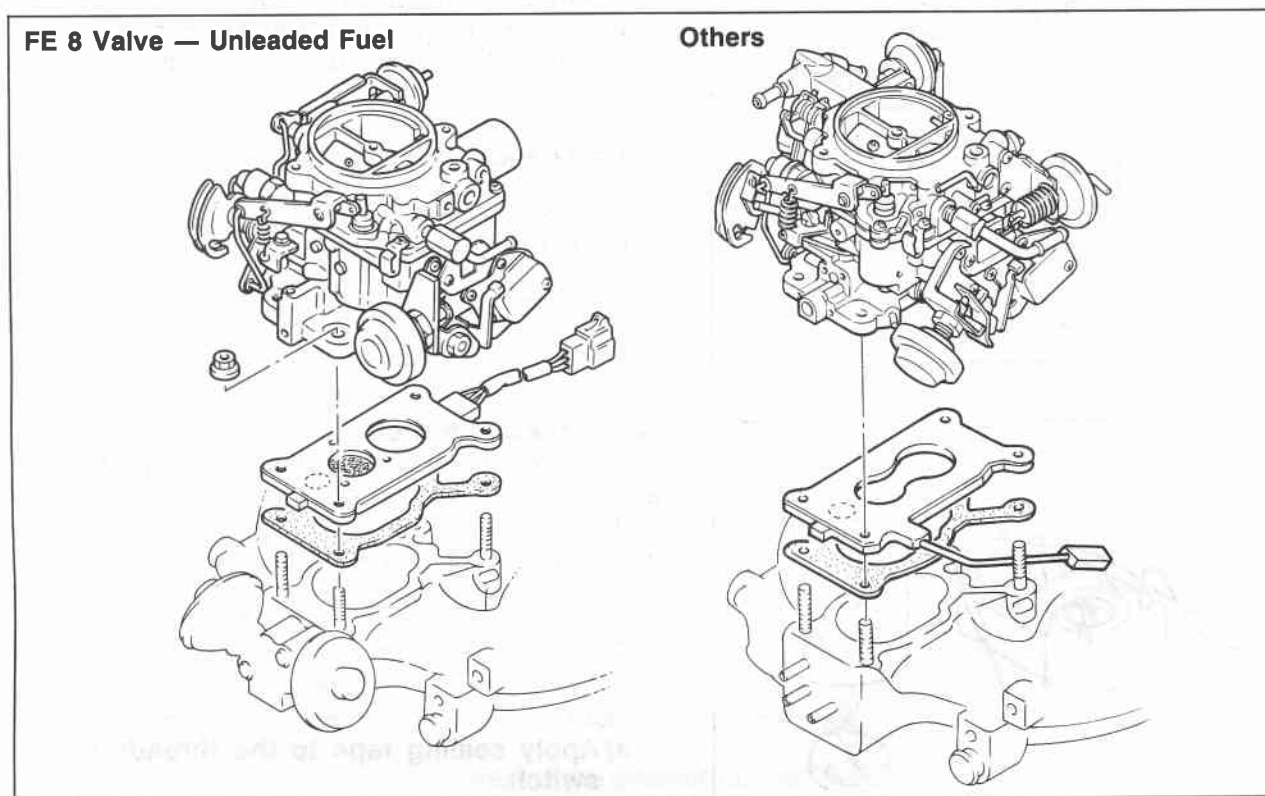
1. Remove the switch from the intake manifold.
2. Place the switch in a container of water with a thermometer.
3. Connect an ohmmeter to the switch.
4. Heat the water slowly and check that the switch has continuity at **67°C (152°F)**.
5. Replace if necessary.

Note

- a) Apply sealing tape to the threads of the switch.
- b) After installing, check the coolant level and check for leaks.

4A PTC HEATER SYSTEM

PTC HEATER SYSTEM [FE and F8 engine (except Middle East)]



76G04A-071

The PTC heater system consists of the PTC heater, relay, and water thermo switch. The system is designed to prevent carburetor icing when the engine operating temperature is low to assure optimum driveability.

TROUBLESHOOTING

Note

Make the system inspection first. If no problem is found, continue with the next inspection of the Troubleshooting Guide. (Refer to pages 4A—19, —20, or—22)

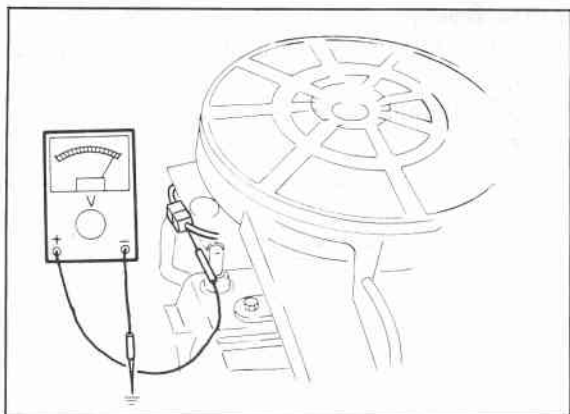
FE 8Valve—Unleaded Fuel

Possible cause	System inspection	Water thermo switch (Intake manifold)	PTC heater	Water thermo switch (Radiator)	PTC heater relay
Page	4A—43	4A—41	4A—43	4A—95	4A—44
Checking order	1	2	3	4	5

Except FE 8Valve—Unleaded Fuel

Possible cause	System inspection	Water thermo switch (Radiator)	PTC heater	PTC heater relay
Page	4A—43	4A—95	4A—43	4A—44
Checking order	1	2	3	4

76G04A-072



76G04A-073

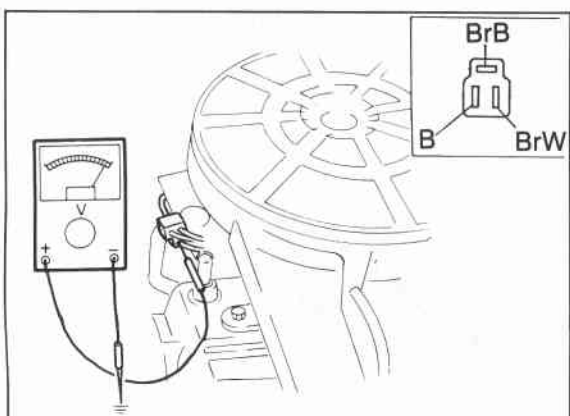
System Inspection

Except FE 8Valve—Unleaded Fuel

1. Connect a voltmeter to the PTC heater connector.
2. Start the engine and measure the voltage.

Specification

Radiator coolant temperature	Below 17°C (63°F)	Above 17°C (63°F)
Voltage	Approx. 12V	0V



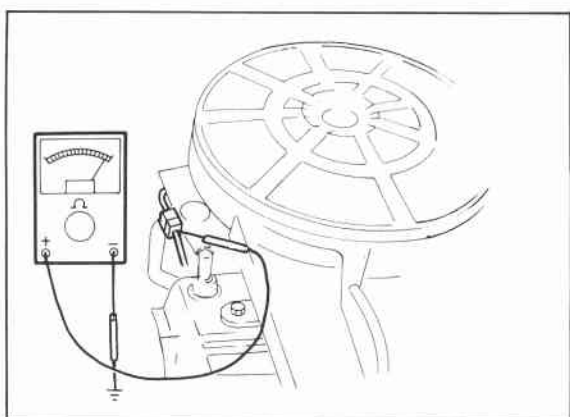
76G04A-074

FE 8Valve—Unleaded Fuel

1. Start the engine.
2. Connect a voltmeter to the PTC heater connector terminals and measure the voltage.

Voltage

Engine coolant temperature	Below 67°C (152°F)		Above 67°C (152°F)
Radiator coolant temperature	Below 17°C (63°F)	Above 17°C (63°F)	—
Terminal	BrB	Approx. 12V	0V
	BrW	Approx. 12V	0V

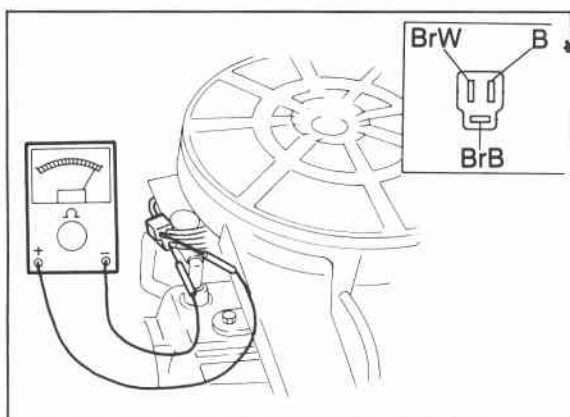


76G04A-075

PTC Heater

Except FE 8Valve—Unleaded Fuel

1. Disconnect the PTC heater connector.
2. Check for continuity of the heater with an ohmmeter.

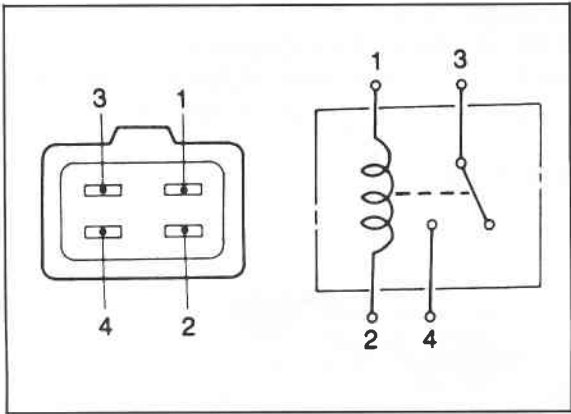


76G04A-076

FE 8Valve—Unleaded Fuel

1. Disconnect the PTC heater connector.
2. Check for continuity between terminal wire (**BrW**) and a ground.
3. Check for continuity between terminal wire (**BrB**) and (**B**).

4A PTC HEATER SYSTEM



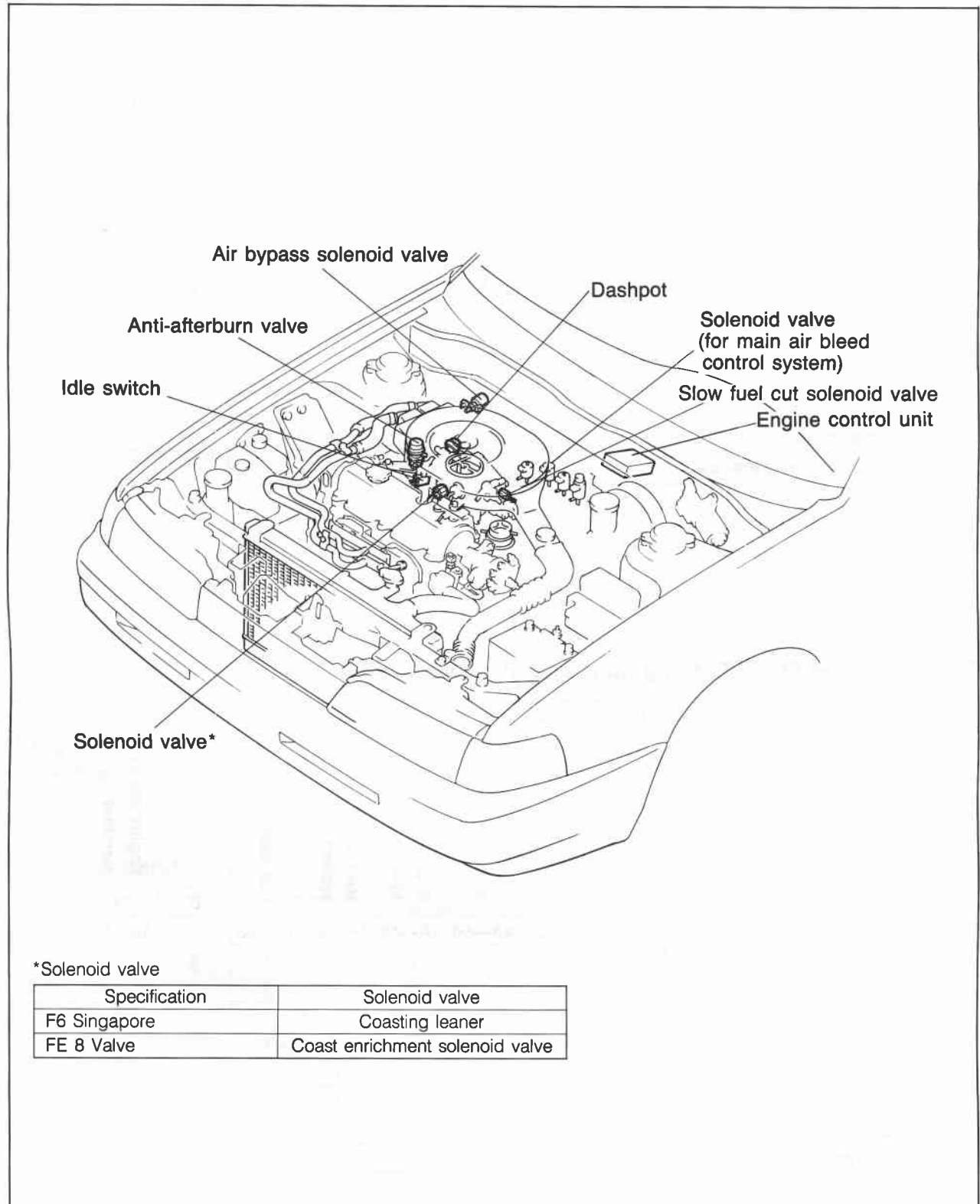
76G04A-077

PTC Heater Relay

- 1. Apply 12V to No. 1 terminal and ground No. 2 terminal).
- 2. Check for continuity at terminals 3 and 4 with an ohmmeter.

Operation	0V	12V
Terminals 3—4	No continuity	Continuity

DECELERATION CONTROL SYSTEM



76G04A-078

This system improves driveability during deceleration.

4A DECELERATION CONTROL SYSTEM

TROUBLESHOOTING

Check the condition of the wiring harness and connectors before checking the engine control unit or switches.

FE 12Valve and F8 (ECE, Hong Kong and Singapore)—MTX

Possible cause Page	Anti-afterburn valve	Dashpot	Bypass air control system	Idle switch	main air bleed control system	Engine control unit terminal		
						E	L	M
Symptom	4A—50	4A—50	4A—48	4A—93	4A—51	4A—88		
Runs rough on deceleration			2	1	3	5	4	
Afterburn in exhaust system	1	2	4	3			5	6
Poor fuel consumption		1	2					3
Fails emission test	7		6	1	2	3	4	5
High idle speed after warm up		1			2	3		
Engine stalls during warm up					1			
Rough idle during warm up					1			
Poor acceleration, hesitation, or lack of power					1			

76G04A-079

FE 12Valve and F8 (ECE, Hong Kong and Singapore)—ATX

Possible cause Page	Anti-afterburn valve	Bypass air control system (Only FE)	Main air bleed control system	Idle switch (Only FE)	Engine control unit terminal		
					B	D	2N
Symptom	4A—50	4A—48	4A—51	4A—93	4A—86		
Runs rough on deceleration		2	3	1	5		4
Afterburn in exhaust system	1	2		3		4	5
Poor fuel consumption		1				2	
Fails emission test	7	6	2	1	3	4	5
High idle speed after warm up			1		2		
Engine stall during warm up			1				
Rough idle during warm up			1				
Poor acceleration, hesitation, or lack of power			1				

76G04A-080

DECELERATION CONTROL SYSTEM 4A

FE 8Valve—Unleaded Fuel

Possible cause	Slow fuel cut system	Coast enrichment system	Idle switch	Anti-afterburn valve	Bypass air control system	Dashpot (only MTX)	Engine control unit terminal			
							A	C	G	I
Page	4A—53	4A—54	4A—93	4A—50	4A—48	4A—50	4A—91			
Symptom										
Runs rough on deceleration	8	6	1		7		3	4	5	2
Afterburn in exhaust system	7		3	1	4	2		5	8	6
Poor fuel consumption		2	1		6		5	4		3
High idle speed after warm up		2				1	3			
Fails emission test	4	2	1	5	3		6	7	8	9

76G04A-081

FE 8Valve (General)

Possible cause	main air bleed control solenoid valve	Engine control unit terminal				
		MTX		ATX		
		E	F	B	2F	2I
Page	4A—51	4A—90		4A—89		
Checking order	1	2				

76G04A-082

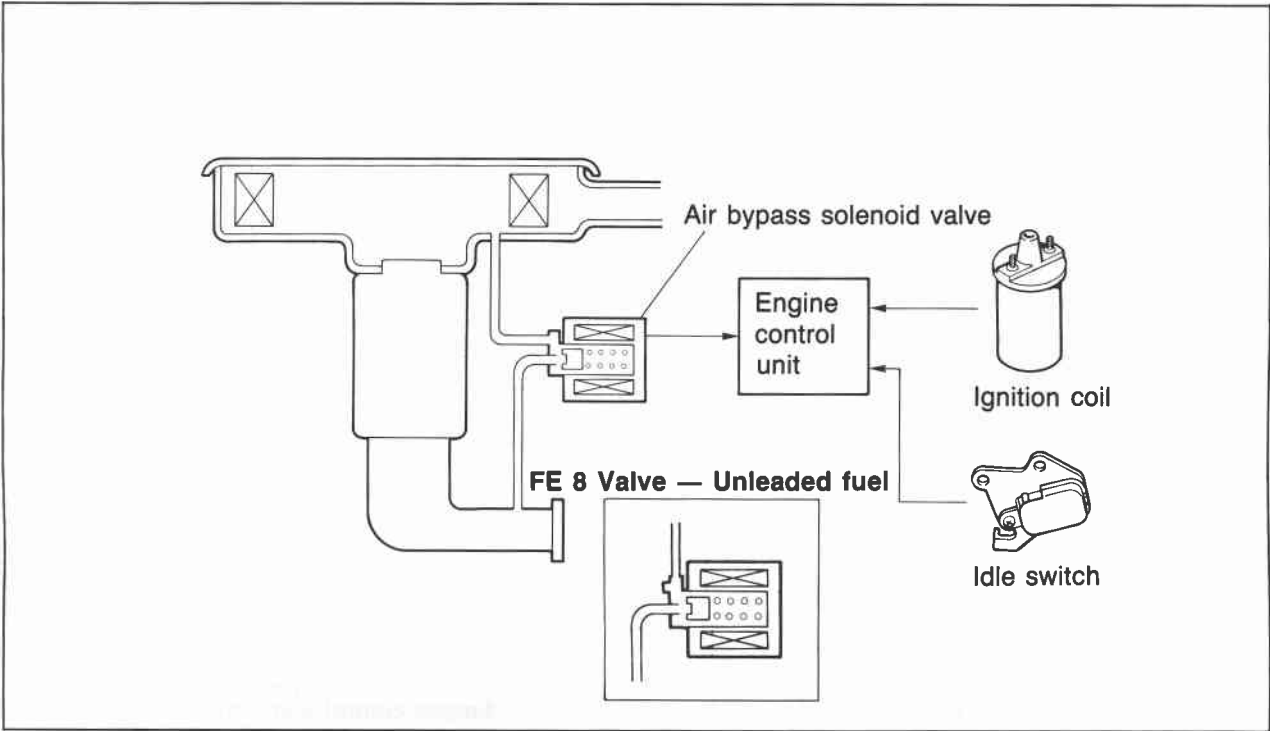
F6 (Singapore)

Possible cause	Dashpot (Only MTX)	Anti-afterburn valve	Idle switch	Coasting leaner solenoid valve	Engine control unit terminal	
					B	D
Page	4A—50	4A—50	4A—93	4A—56	4A—92	
Symptom						
High idle speed after warm up	1					
Runs rough on deceleration			1	2	3	
Afterburn in exhaust system	5	4	1	2	3	
Fails emission test		4	1	2	3	

76G04A-083

4A DECELERATION CONTROL SYSTEM

BYPASS AIR CONTROL SYSTEM FE and F8 [Except General and Middle East]



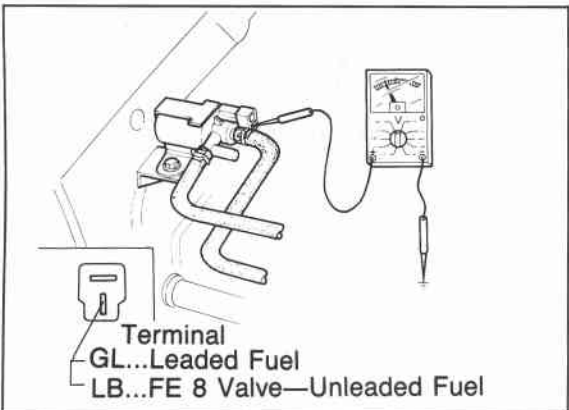
76G04A-084

The bypass air control system consists of the bypass solenoid valve, idle switch, ignition coil, and engine control unit. This system opens the bypass air passage to the intake manifold during deceleration above approx. **2,300 rpm** (ECE, Hong Kong, and Singapore), or above **approx. 3,500 rpm** (FE 8 Valve—Unleaded fuel).

Note
Make the system inspection first. If no problem is found, continue with the next inspection of the Troubleshooting. (Refer to page 4A—46 or 47.)

Troubleshooting

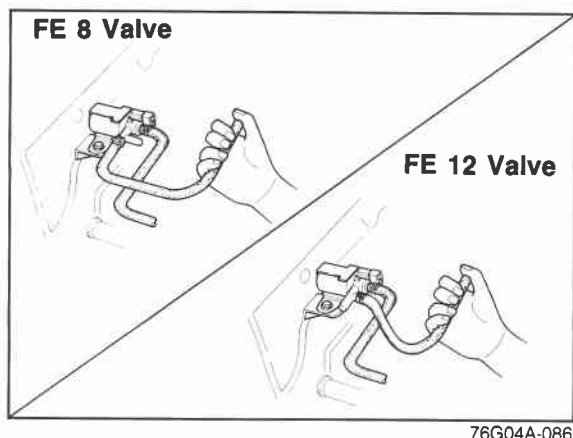
Possible cause	System inspection	Air bypass solenoid valve
Page	4A—48	4A—49
Checking order	1	2



76G04A-085

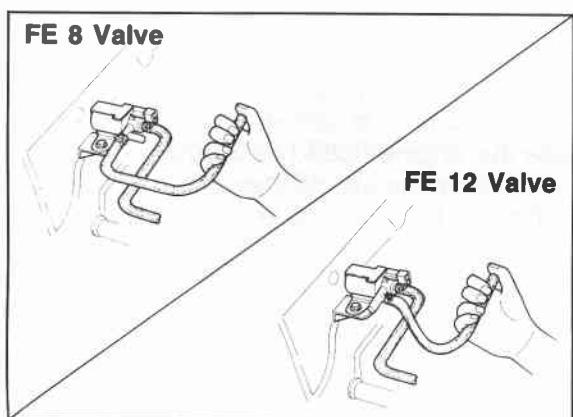
System Inspection

1. Warm up the engine and run it at idle.
2. Connect a tachometer.
3. Disconnect the bypass air hose from the air cleaner and place a finger over the hose opening.



76G04A-086

5. Increase the engine speed to 4,000 rpm.
6. Check that no vacuum is felt.

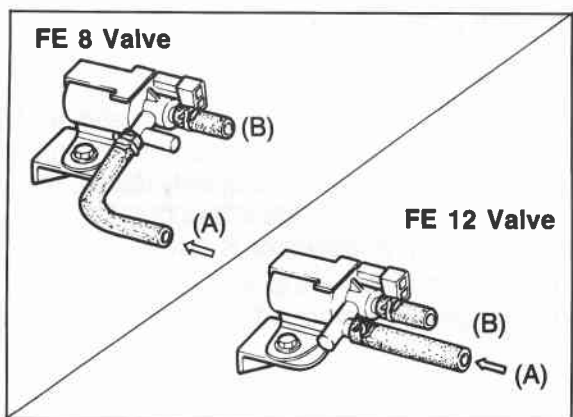


76G04A-087

7. Quickly decrease the engine speed and check that vacuum is felt during above specified engine speed.

Specification

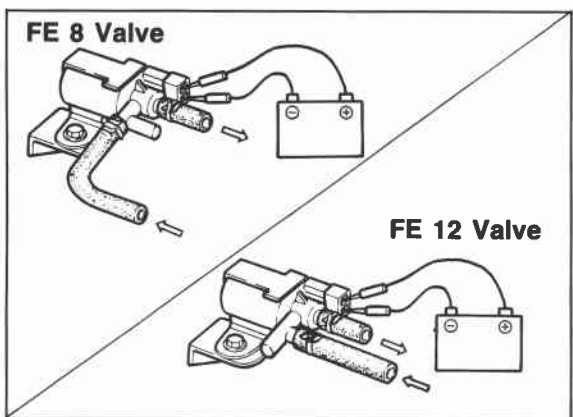
FE 8 Valve	Approx. 3,500 rpm
Others	Approx. 2,100 rpm



76G04A-088

Air Bypass Solenoid Valve

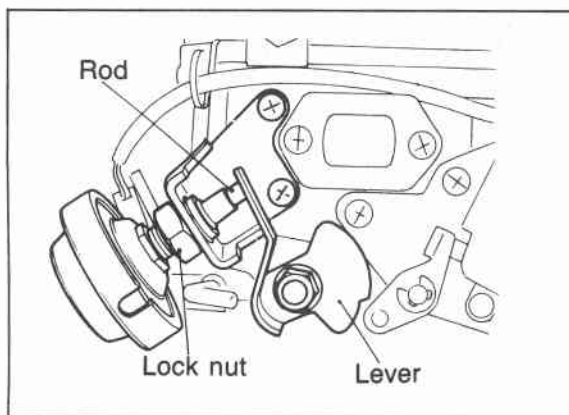
1. Disconnect air hose (A) from the air cleaner.
2. Disconnect air hose (B) from the intake manifold.
3. Disconnect the connector from the solenoid valve.
4. Blow air through the solenoid valve from (A) and check that air does not come out from (B).



76G04A-089

5. Apply 12V to the connector terminal with jumper wire.
6. Blow air through the solenoid valve from (A) and check that air comes out from (B).
7. If the solenoid valve does not operate properly, replace it with a new one.

4A DECELERATION CONTROL SYSTEM

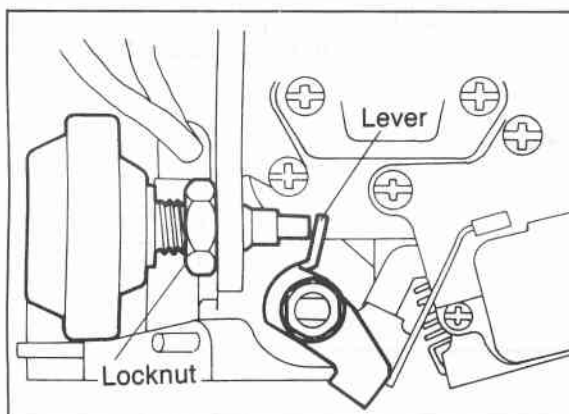


76G04A-090

DASHPOT (MTX)

Inspection

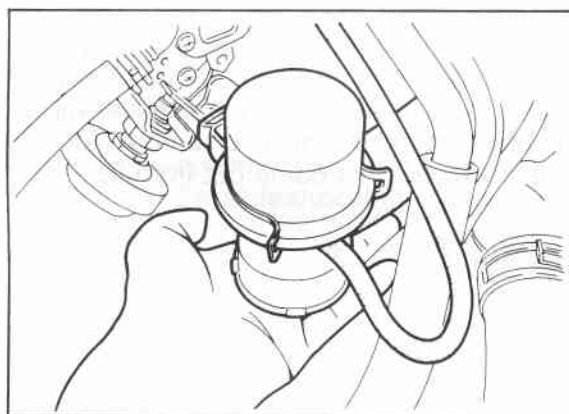
1. Suddenly move the throttle lever and check that the dashpot rod comes out to its full stroke with the throttle lever.
2. Release the throttle lever and check that it returns slowly to the idle position after contacting the dashpot rod.



76G04A-091

Adjustment

1. Warm up the engine to the normal operating temperature and run it at idle.
2. Connect a tachometer to the engine.
3. Increase the engine speed to **3,000 rpm**.
4. Slowly decrease the engine speed and check that the dashpot rod touches the lever at **2,200 ± 100 rpm**.
5. If not within specification, loosen the locknut and turn the dash pot to adjust.



76G04A-092

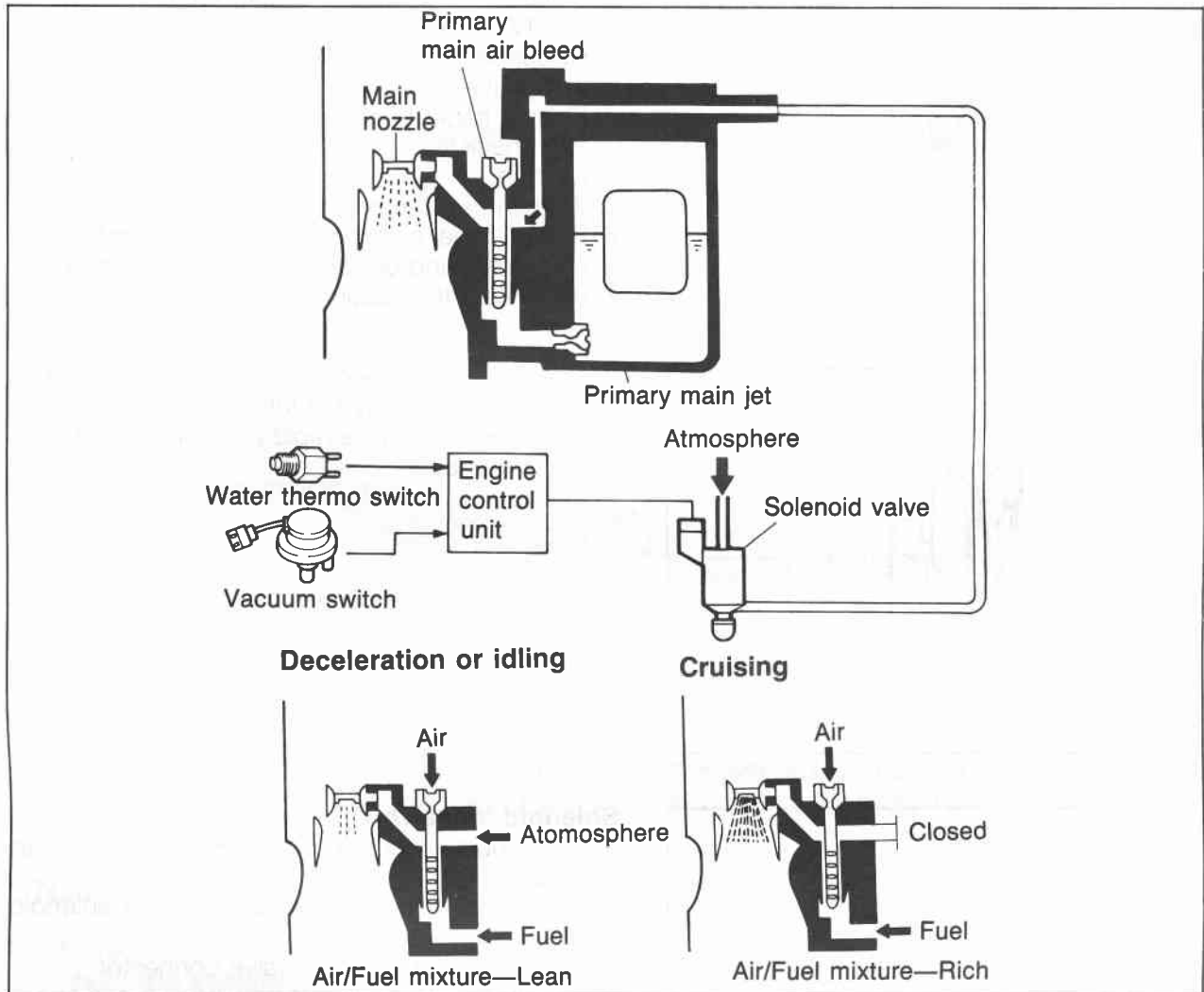
ANTI-AFTERBURN VALVE

Inspection

1. Start the engine and let it idle.
2. Block the intake port of the anti-afterburn valve and check that the engine speed does not change.
3. Increase the engine speed and quickly decelerate.
4. Check that air is pulled into the intake port for **1—2 seconds** after the accelerator is released.

MAIN AIR BLEED CONTROL SYSTEM

FE and F8 (ECE, Hong Kong, Singapore, and General)



76G04A-093

This system prevents the additional air from being fed to the primary air bleed circuit and causes the air/fuel mixture to become rich, improving acceleration.

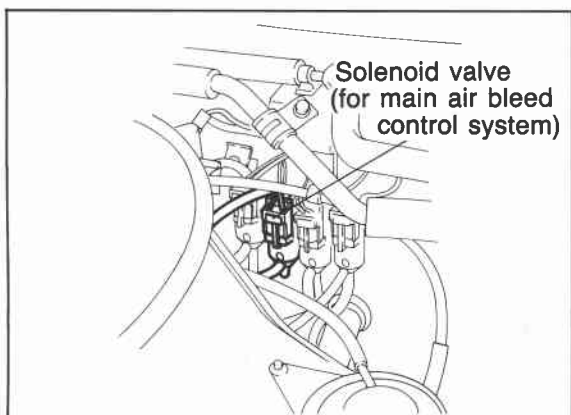
Troubleshooting

Possible cause	System inspection	Solenoid valve	Vacuum switch	Water thermo switch (Radiator)
Page	4A—52	4A—52	4A—94	4A—95
Checking order	1	2	3	4

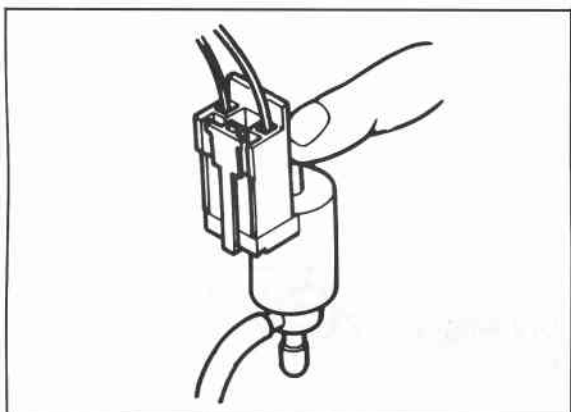
Note

Make the system inspection first. If no problem is found, continue with the next inspection of the Troubleshooting. (Refer to pages 4A—46 or —47.)

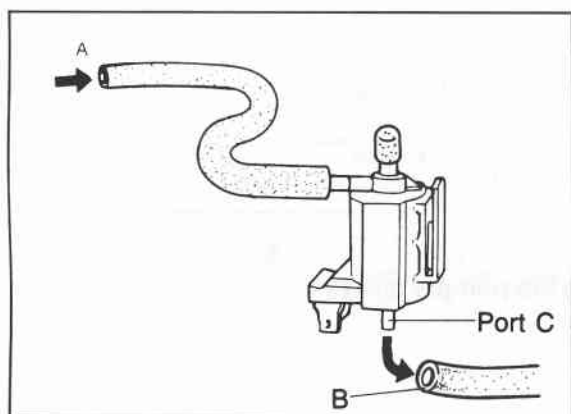
4A DECELERATION CONTROL SYSTEM



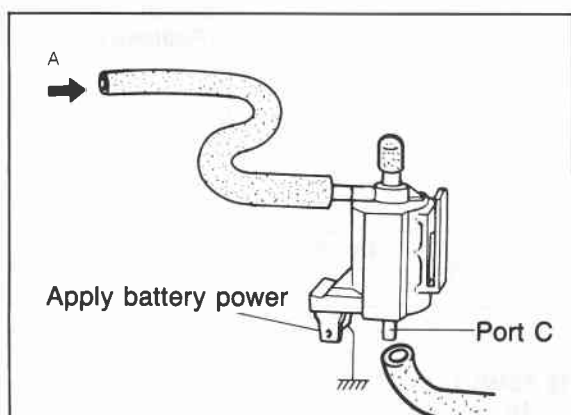
76G04A-094



76G04A-095



76G04A-191



76G04A-192

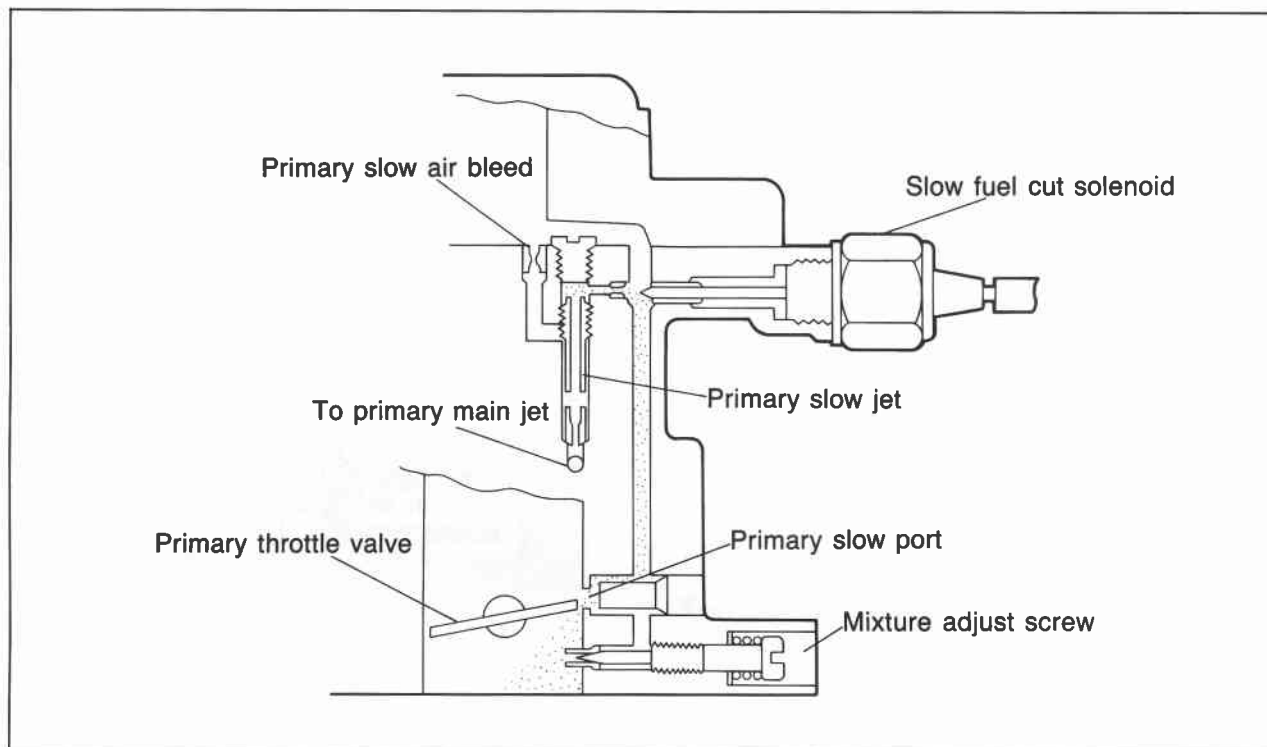
System Inspection

1. Disconnect the vacuum switch connector.
2. Make sure that radiator coolant temperature is below 17°C (63°F).
3. Disconnect the upper vacuum hose from the solenoid valve.
4. Place a finger over the solenoid valve open port and check that vacuum is not felt when engine is running.
5. Warming up the engine.
6. Place a finger over the same open port of the solenoid valve and check that weak vacuum is felt.
7. Reconnect the vacuum switch connector.
8. Check that weak vacuum is felt at the open port of the solenoid valve at idle.
9. Accelerate the engine rapidly and check that vacuum is not felt.

Solenoid Valve (A/C)

1. Disconnect vacuum hose A (White) from the carburetor.
2. Disconnect vacuum hose B from the solenoid valve.
3. Disconnect the solenoid valve connector.
4. Blow air through the valve from hose A and check that it comes out of port C.
5. Apply 12V and ground to the solenoid valve with jumper wires.
6. Blow air through the valve from hose A and check that air not come out.
7. Replace if necessary.

SLOW FUEL CUT SYSTEM [FE 8VALVE—UNLEADED FUEL]



76G04A-096

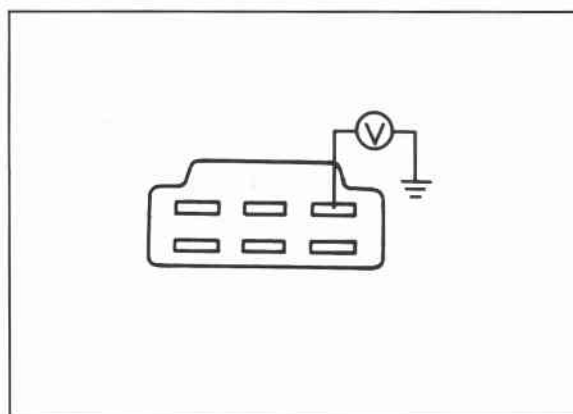
This system shuts the primary slow fuel passage to prevent run-on and overheating of the exhaust system when the ignition switch is turned OFF or during deceleration (engine speed **above 2,300 rpm** and idle switch ON). The slow fuel cut solenoid is actuated by the engine control unit and ignition switch.

Troubleshooting

Note

Make the system inspection first. If no problem is found, continue with the next inspection of the Troubleshooting Guide. (Refer to page 4A—47.)

Possible cause	System inspection	Slow fuel cut solenoid valve
Page	4A—53	4A—34
Check order	1	2



76G04A-097

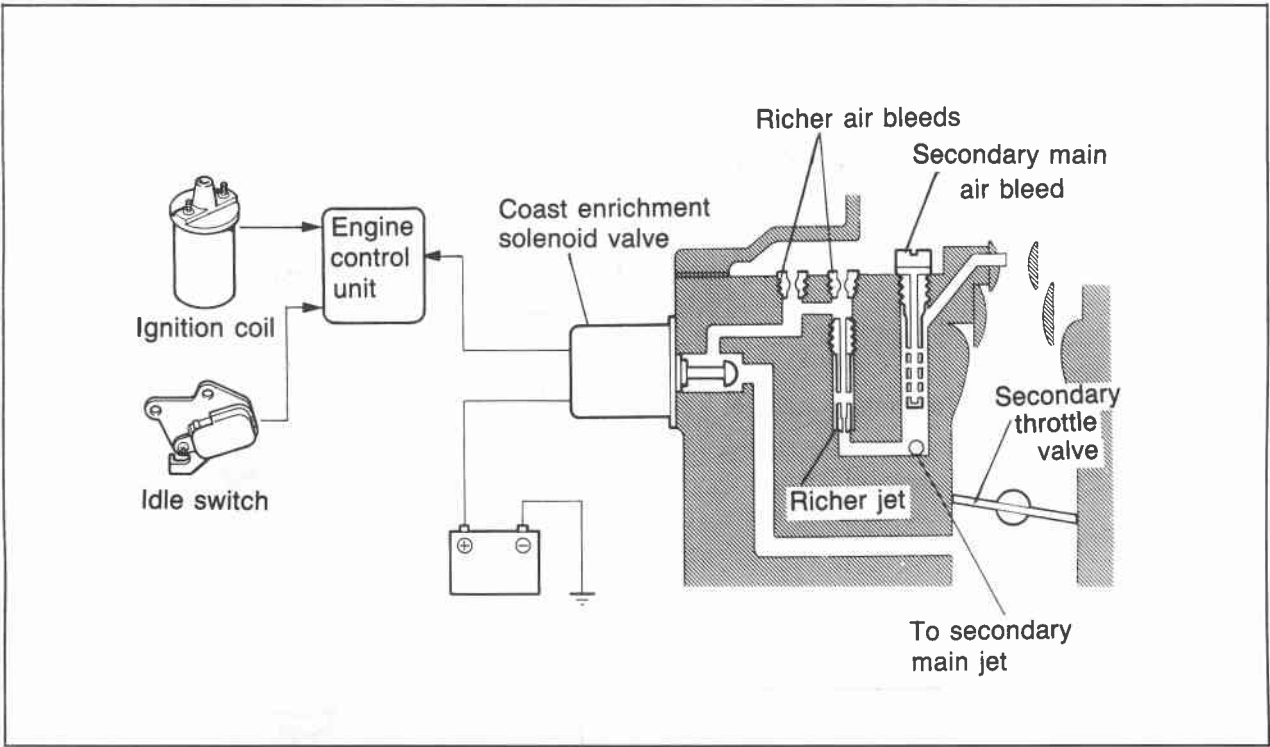
System Inspection

1. Warm up the engine and run it at idle.
2. Connect a tachometer to the engine.
3. Connect a voltmeter to the carburetor connector terminal (**BW** wire).
4. Increase the engine speed to 4,000 rpm; then release the throttle lever.
5. Measure the terminal voltage.

Engine speed	Voltage
Above approx. 2,300 rpm	Approx. 12V
Below approx. 2,300 rpm	Below 1.5V

4A DECELERATION CONTROL SYSTEM

COAST ENRICHMENT SYSTEM [FE 8VALVE—UNLEADED FUEL]

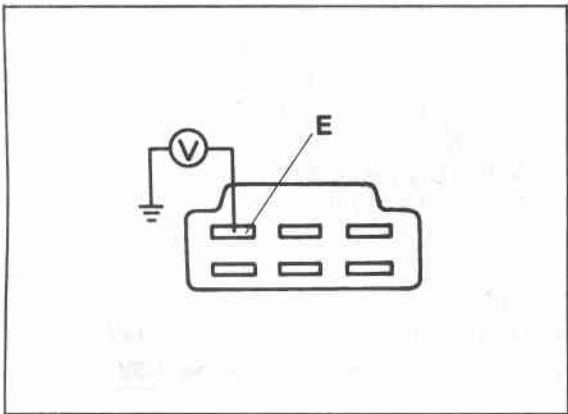


76G04A-098

This system opens the fuel passage to the secondary stage of the carburetor during deceleration at engine speeds of **2,300—1,500 rpm**. The coast enrichment solenoid valve is actuated by the engine control unit.

Troubleshooting

Possible cause	System inspection	Coast enrichment solenoid valve	Engine control unit terminal			
			A	B	D	I
Page	4A—54	4A—55	4A—91			
Checking order	1	3	2			

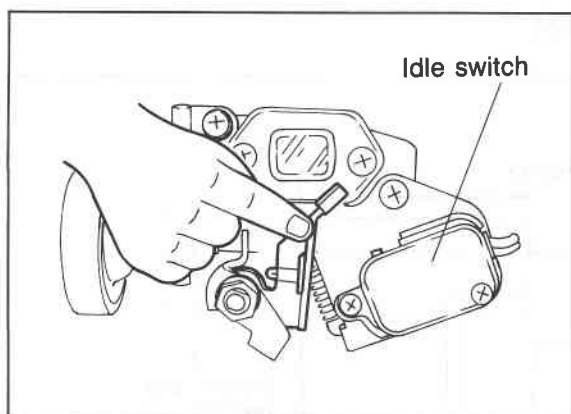


76G04A-099

System Inspection

1. Warm up the engine to the normal operating temperature and run it at idle.
2. Connect a voltmeter to the carburetor connector terminal **E**.
3. Connect a tachometer to the engine.

DECELERATION CONTROL SYSTEM 4A

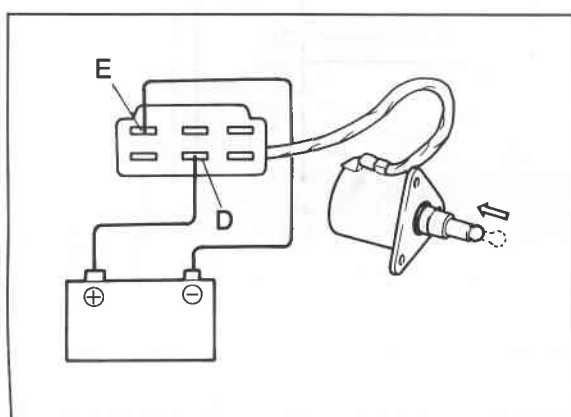


76G04A-100

4. Lift the idle switch lever. (Idle switch ON.)
5. Increase the engine speed to 3,000 rpm then decelerate.
6. Check the terminal voltage as shown.

Voltage:

Above approx. 2,300 rpm	Approx. 12V
Approx. 2,300 rpm—1,500 rpm	Below 1.5V
Below approx. 1,500 rpm	Approx. 12V



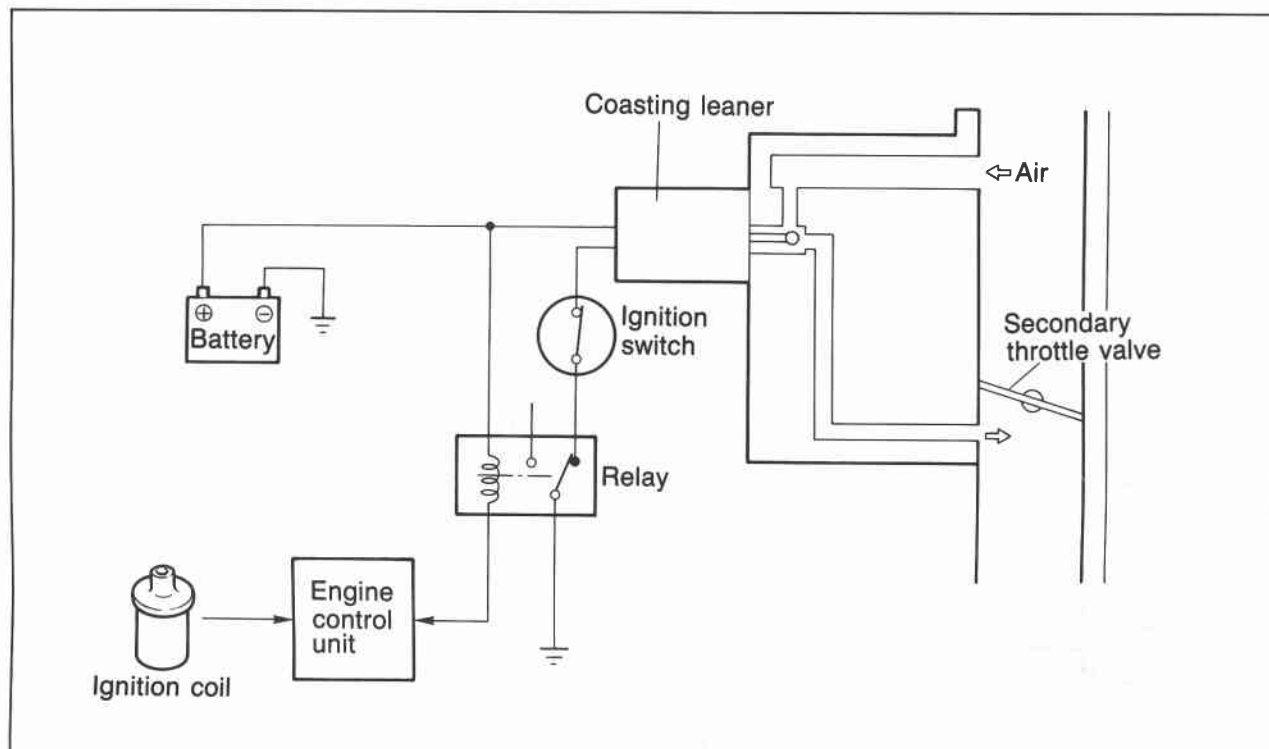
76G04A-101

Coast Enrichment Solenoid Valve

1. Disconnect the connector of the coast enrichment solenoid valve.
2. Apply 12V to the carburetor connector terminal **D** and ground terminal **E** as shown in the illustration.
3. Check that the coast enrichment solenoid valve "clicks" when making and breaking the circuit. Replace, if necessary.

4A DECELERATION CONTROL SYSTEM

COASTING LEANER SYSTEM (F6 SINGAPORE MTX)



76G04A-102

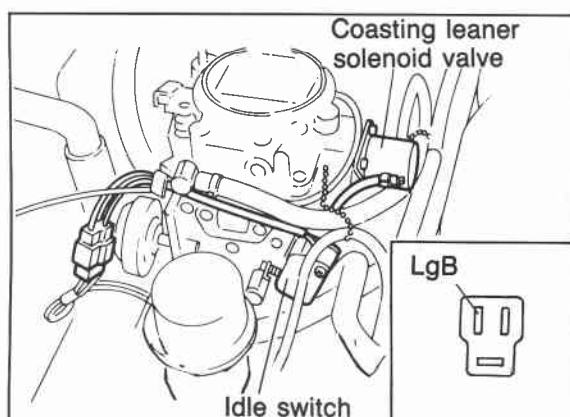
This system consists of the coasting leaner solenoid valve, engine control unit, ignition coil, and idle switch. When the idle switch is ON and the engine speed is more than approx. **2,100 rpm** (deceleration), the coasting leaner solenoid valve opens the air passage port to prevent afterburn in the exhaust system.

Troubleshooting

Note

Make the system inspection first. If no problem is found, continue with the next inspection of the Troubleshooting. (Refer to page 4A—47)

Possible cause	System inspection	Coasting leaner solenoid valve	Relay
Page	4A—56	4A—57	4A—57
Checking order	1	2	3

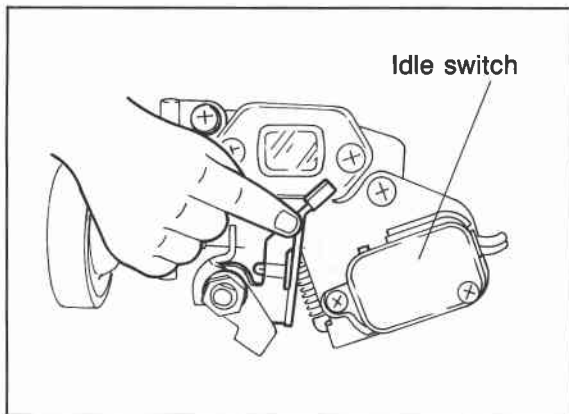


76G04A-103

System Inspection

1. Warm up the engine and run it at idle.
2. Connect a tachometer to the engine.
3. Connect a voltmeter to the coasting leaner solenoid valve connector (**LgB wire**).

DECELERATION CONTROL SYSTEM **4A**

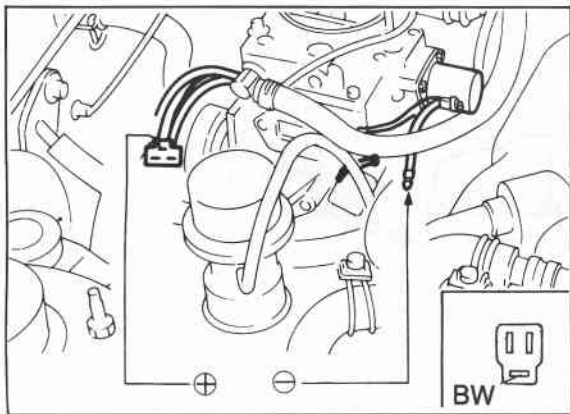


76G04A-104

- lift the idle switch lever. (Idle switch ON).
- Increase the engine speed to 3,000 rpm and then decelerate.
- Check the terminal voltage.

Voltage:

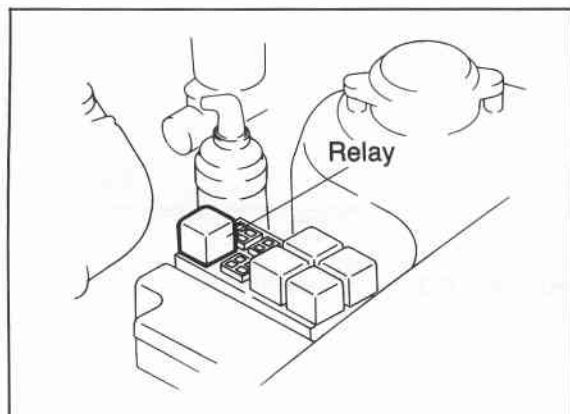
Above approx. 2,100 rpm	Below 1.5V
Below approx 2,100 rpm	Approx. 12V



76G04A-105

Coasting Leaner Solenoid Valve

- Disconnect the connector of the coasting leaner solenoid valve.
- Disconnect the connector of the idle switch.
- Apply 12V to terminal (**BW wire**) and ground with a jumper wires as shown in the illustration.
- Check that the coasting leaner solenoid valve "clicks" when making and breaking the circuit. Replace, if necessary.



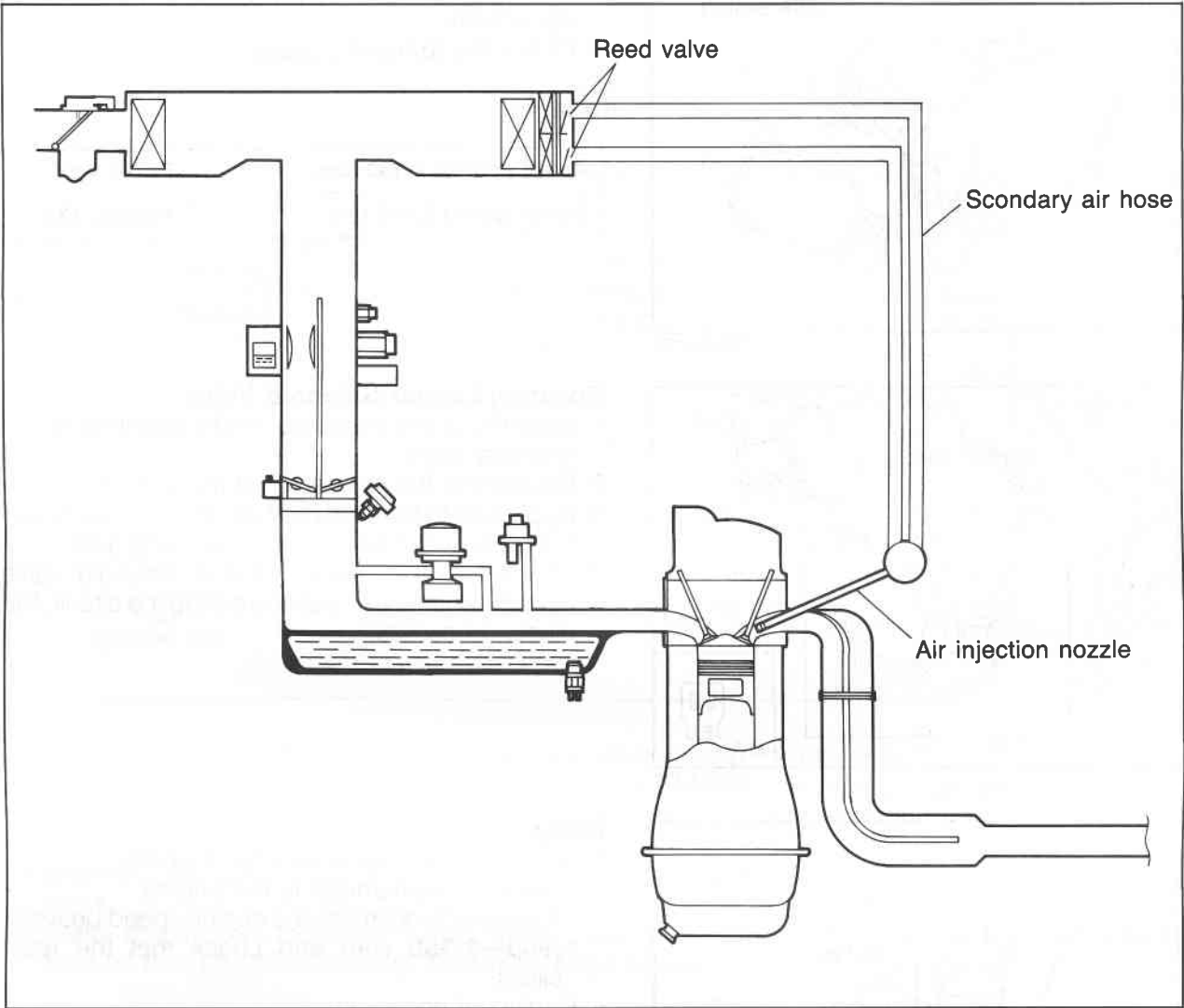
76G04A-106

Relay

- Warm up the engine and run it at idle.
- Connect a tachometer to the engine.
- Increase and decrease the engine speed between **1,900—2,300 rpm** and check that the relay "clicks".
- Replace if necessary.

4A AIR INJECTION SYSTEM

AIR INJECTION SYSTEM (EXCEPT GENERAL AND MIDDLE EAST)



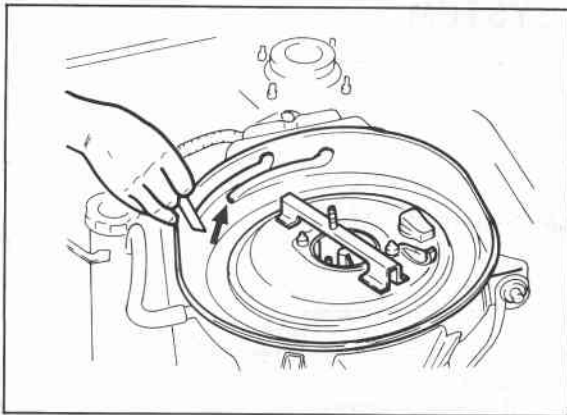
76G04A-107

To achieve oxidization of CO and HC, the reed valve injects secondary air into the exhaust manifold.

TROUBLESHOOTING

Possible cause	Page	
	Reed valve	Air injection pipe
Symptom	4A—59	4A—59
Fails emission test	1	2

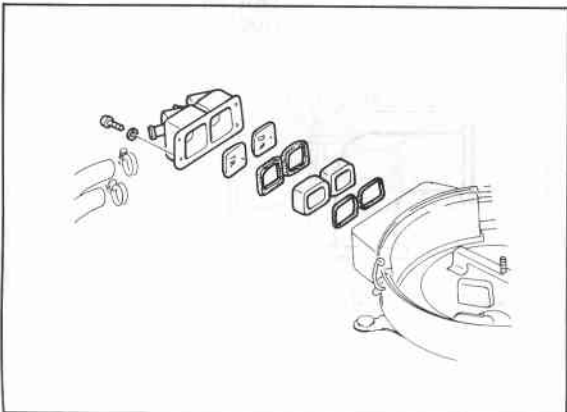
76G04A-108



76G04A-109

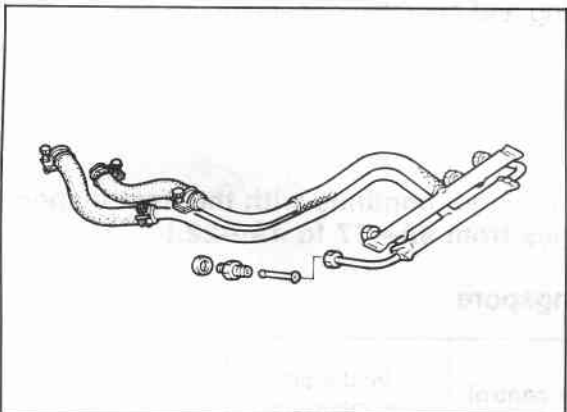
Reed Valve

1. Warm up the engine to the normal operating temperature, and then stop the engine.
2. Remove the air cleaner cover and element.
3. Start the engine and run it at idle.
4. Place a thin paper over the reed valve inlet port and check that air is pulled in.
5. Increase the engine speed to **1,500 rpm** and check that there is no exhaust gas leakage at the inlet by placing a thin paper over the port.



76G04A-110

6. Replace the reed valve, if necessary.



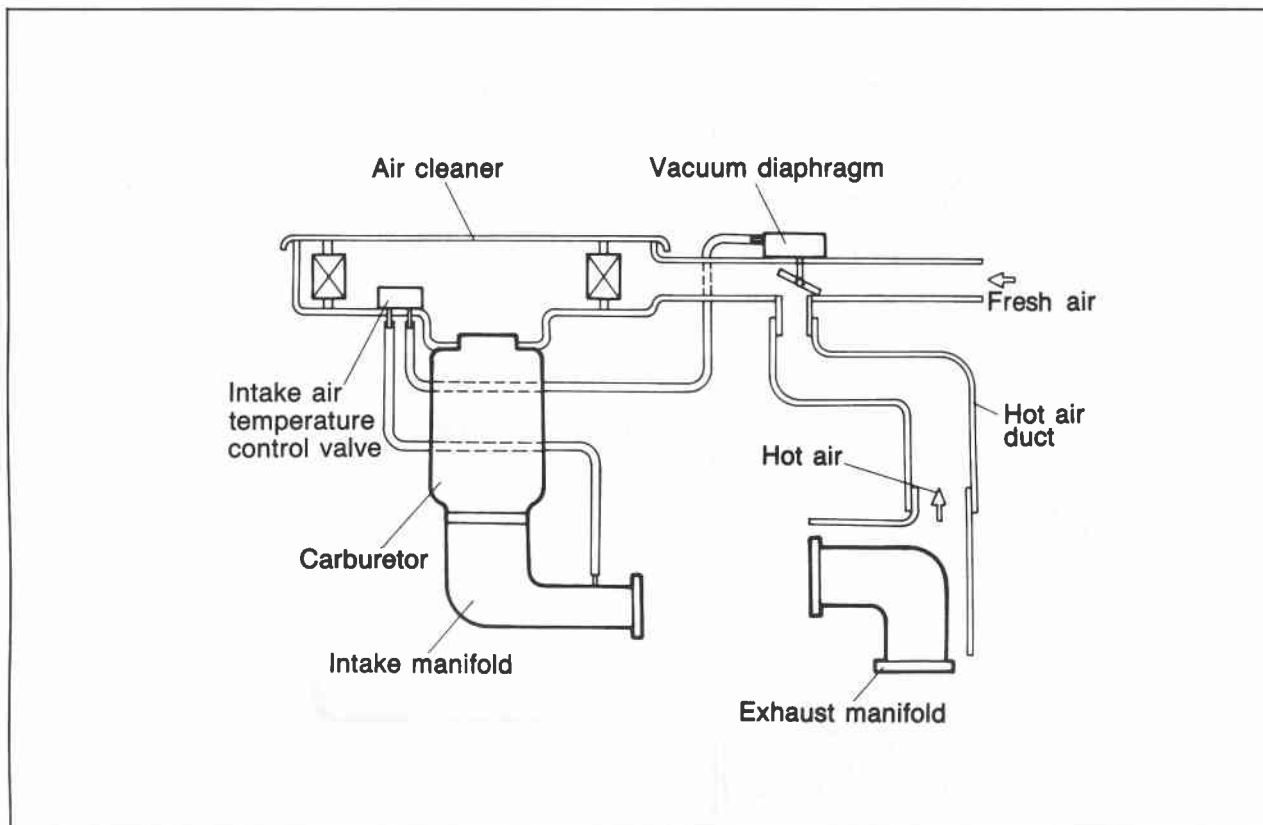
76G04A-111

Air Injection Nozzle and Pipe

1. Disconnect the hoses from the air cleaner.
2. Loosen the nuts and remove the air injection nozzle and air pipe.
3. Visually check the air injection nozzle and pipe.
4. Replace if necessary.

4A INTAKE AIR TEMPERATURE CONTROL SYSTEM

INTAKE AIR TEMPERATURE CONTROL SYSTEM



76G04A-112

This system controls air intake temperature to prevent icing and operates depending on air temperature around the control valve.

TROUBLESHOOTING

Note

Make the system inspection first. If no problem is found, continue with the next inspection of the Troubleshooting Guide. (Refer to pages from 4A—17 to 4A—22.)

FE and F8 (General, ECE, and Hong Kong) and Singapore

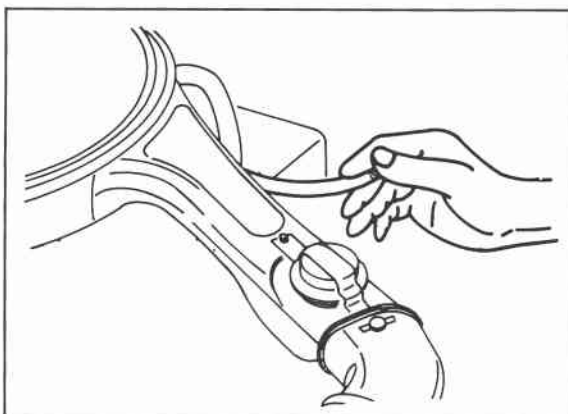
Possible cause Page	System inspection	Vacuum control diaphragm	Intake air temperature control valve
	4A—61	4A—61	4A—61
Symptom			
Checking order	1	2	3

FE 8 Valve—Unleaded Fuel, Middle East, and F6—General

Possible cause	System inspection
Page	4A—62
Checking order	1

76G04A-113

INTAKE AIR TEMPERATURE CONTROL SYSTEM 4A

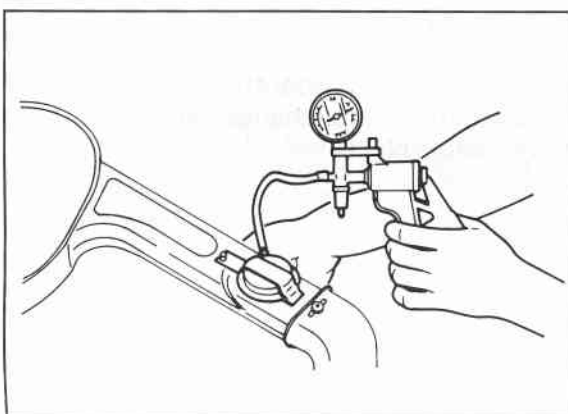


76G04A-114

System Inspection

[Except Manual and Bimetal Type]

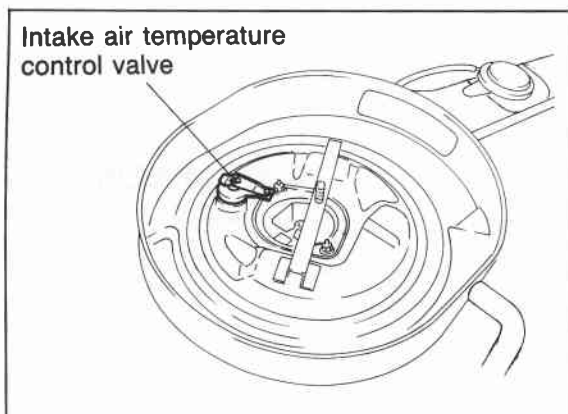
1. Disconnect the vacuum hose from the vacuum control diaphragm.
2. Start the engine and check that vacuum is felt while the engine is still cold.
3. Warm up the engine to the normal operating temperature and check that vacuum is not felt.



76G04A-115

Vacuum Control Diaphragm

1. Remove the air cleaner.
2. Connect the vacuum pump to the vacuum control diaphragm.
3. Apply **160 mmHg (6.3 inHg)** vacuum and check that the shutter valve is opened to the hot position.
4. Replace the air cleaner if necessary.

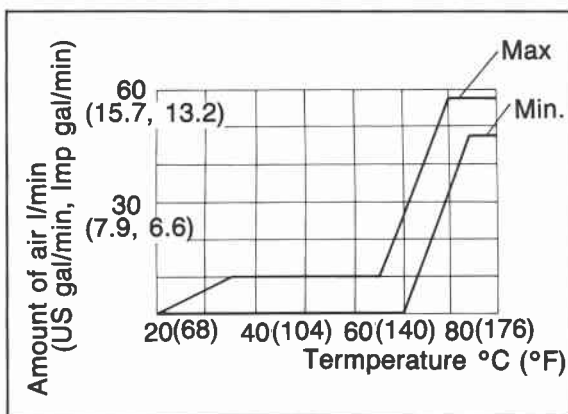


76G04A-116

Intake air temperature control valve

1. Check that the valve is closed when the bimetal temperature is lower than specified.

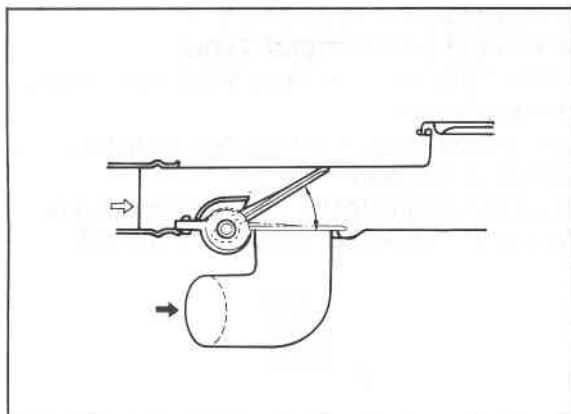
Operating temperature: 30°C (86°F)



76G04A-116

2. To check, suck air through the tube. If excessive air leakage is found, replace the valve as an assembly.
3. Check that the valve opens when heated.
4. Replace if necessary.

4A INTAKE AIR TEMPERATURE CONTROL SYSTEM



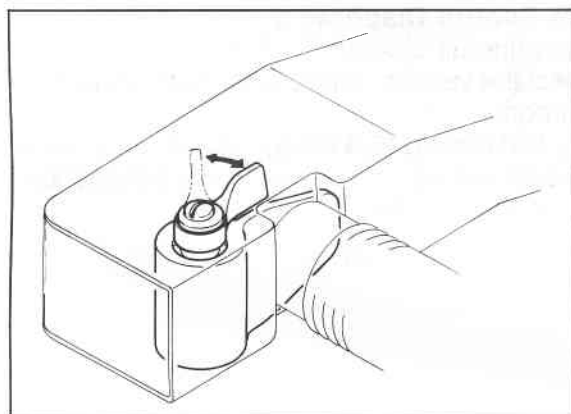
76G04A-118

System Inspection

Bimetal type

[FE 8 Valve—Unleaded Fuel]

Move the control valve inside the air cleaner, and check that it moves freely and that spring force is felt.



76G04A-119

System Inspection

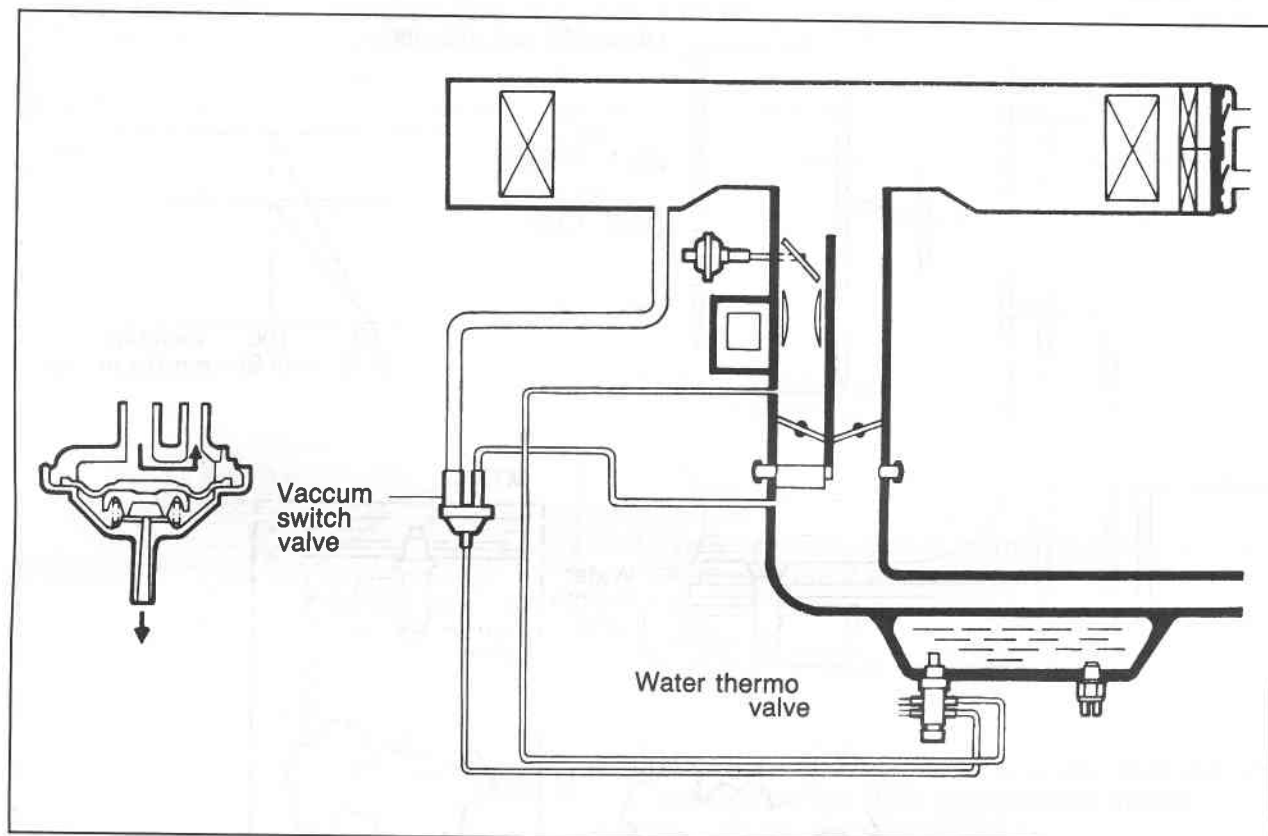
Manual type

[Middle East and F6—General]

Change the summer-winter change lever and check that it moves smoothly.

PURGE CONTROL SYSTEM

[FE 8VALVE—UNLEADED FUEL]

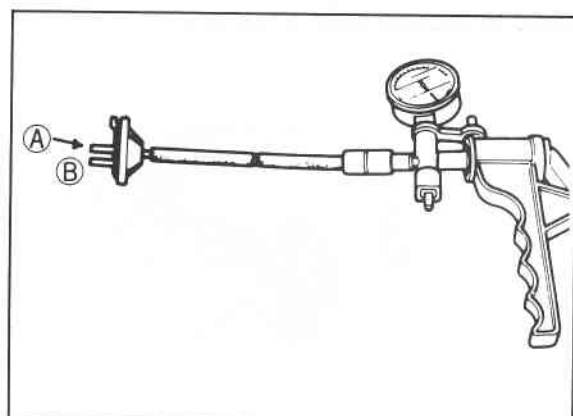


76G04A-120

This system supplies additional air to the intake manifold to improve the driveability when the engine coolant temperature is above **50°C (122°F)**.

TROUBLESHOOTING

Possible cause	Vacuum switch valve	Water thermo valve
Page	4A—63	4A—66
Checking order	1	2



76G04A-121

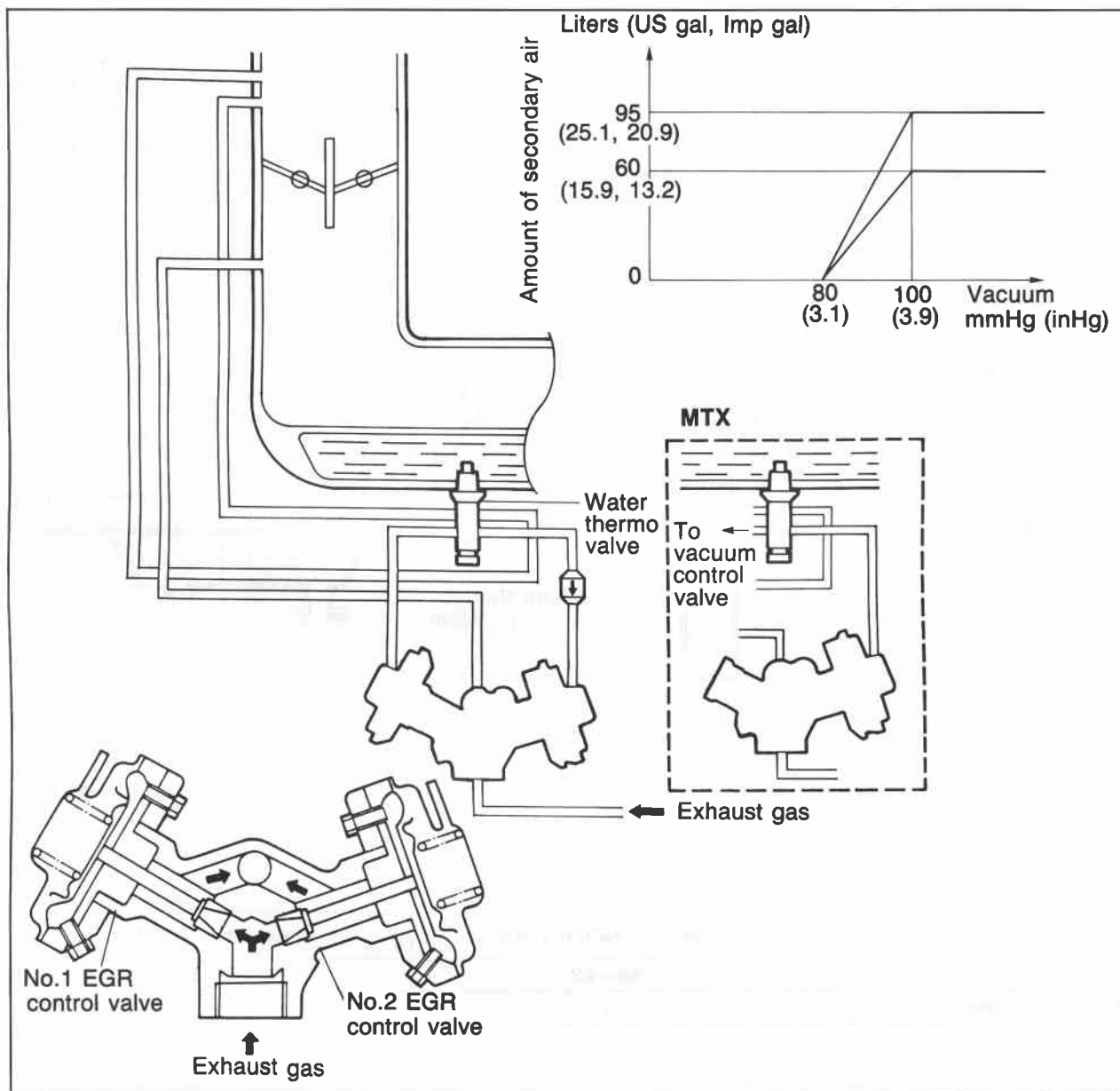
VACUUM SWITCH VALVE

1. Connect a vacuum pump to the purge control valve as shown in the figure.
2. Blow through the valve from port A and check that air does not come out of port B.
3. Apply **100 mm-Hg (3.94 inHg)** vacuum.
4. Blow through port A and check that air comes out of port B.
5. Replace if necessary.

4A EGR SYSTEM

EXHAUST GAS RECIRCULATION (EGR) SYSTEM

FE 8VALVE—UNLEADED FUEL



76GJ4A-122

This system introduces exhaust gas into the intake manifold to reduce NOx emissions.

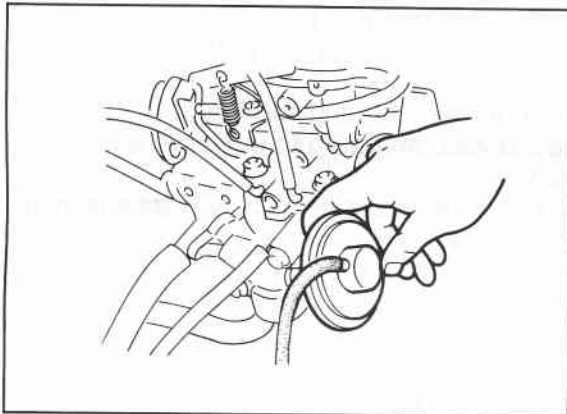
TROUBLESHOOTING

Note

Make the system inspection first. If no problem is found, continue with the next inspection of the Troubleshooting Guide. (Refer to pages 4A—22.)

Possible cause	System inspection	EGR control valve	Water thermo valve
Page	4A—65	4A—65	4A—66
Checking order	1	2	3

76G04A-123



76G04A-124

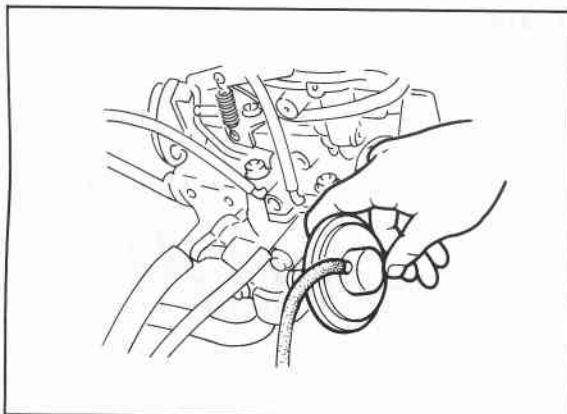
System Inspection

1. Start the engine.
2. Accelerate the engine while it is still cold and check that the diaphragm of the EGR control valve does not move.
3. Warm up the engine to normal operating temperature and run it at idle.

Warning

Be careful when checking the EGR control valve, the surrounding area is very hot.

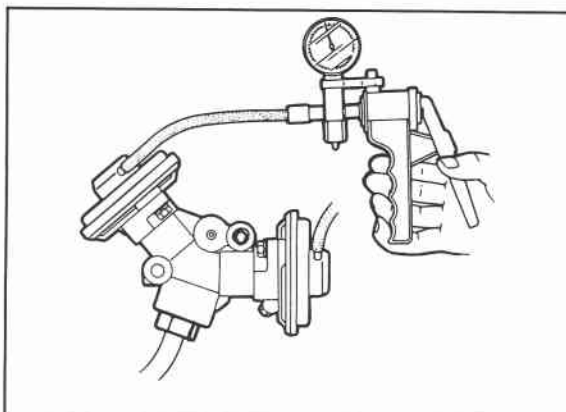
4. Accelerate the engine and check that the diaphragm of the EGR control valve moves.



76G04A-125

EGR Control Valve (ATX) (No. 1)

1. Manually actuate the valves by pushing on the diaphragm with finger.
2. Check that the spring resistance is present and the diaphragm moves freely with no sticking or binding.



76G04A-126

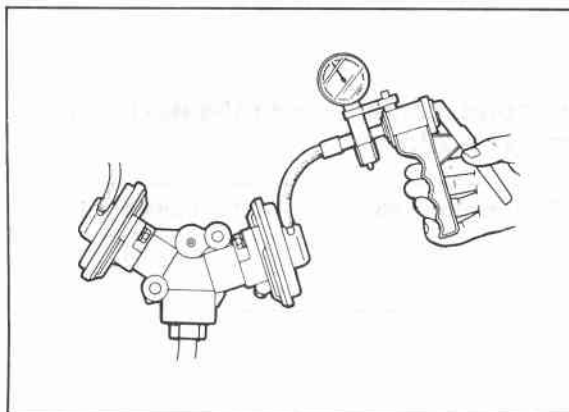
3. Warm up the engine and run it at idle.
4. Connect a vacuum pump to the valve and apply vacuum.
5. Check that the engine runs roughly or stalls at more than the specified vacuum.

Specification:

70—90 mmHg (2.8—3.5 inHg)

6. If not correct, replace the EGR control valve.

4A EGR SYSTEM



76G04A-127

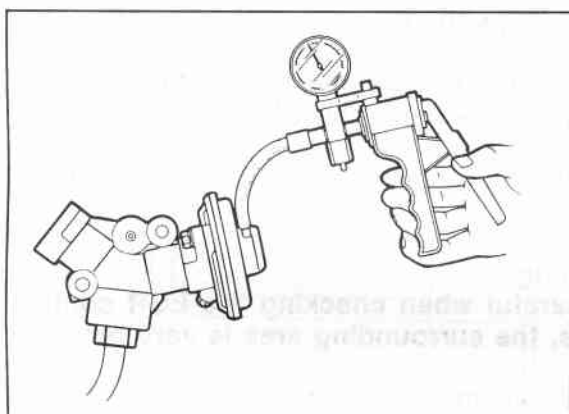
(No. 2)

1. Check the EGR control valve manually (same as No. 1 valve).
2. Warm up the engine and run it at idle.
3. Connect a vacuum pump to the valve and apply vacuum.
4. Check that the engine runs roughly or stalls at more than the specified vacuum.

Specification:

70—90 mmHg (2.8—3.5 inHg)

5. If not correct, replace the EGR control valve.



76G04A-128

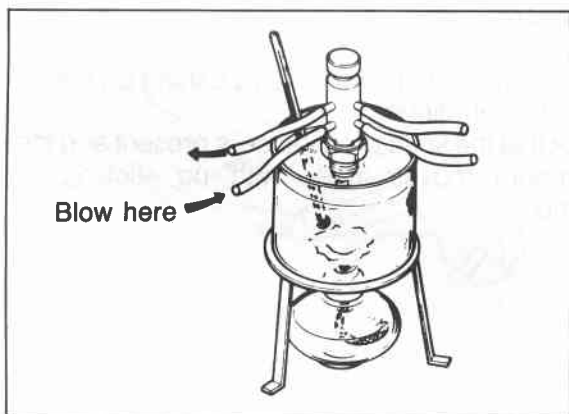
EGR Control Valve (MTX)

1. Check the EGR control valve manually (same as above).
2. Warm up the engine and run it at idle.
3. Connect a vacuum pump to the valve and apply vacuum.
4. Check that the engine runs roughly or stalls at more than the specified vacuum.

Specification:

70—90 mmHg (2.8—3.5 inHg)

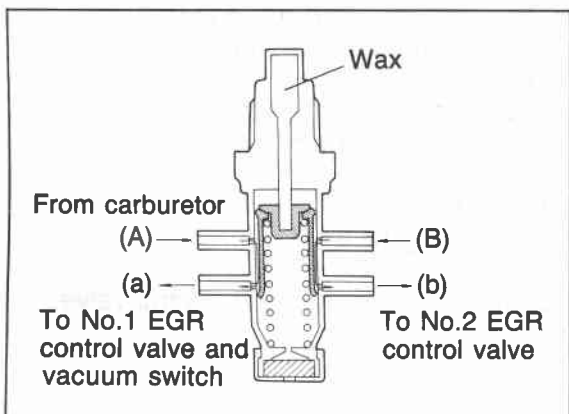
5. If not correct, replace the EGR control valve.



76G04A-129

Water Thermo Valve

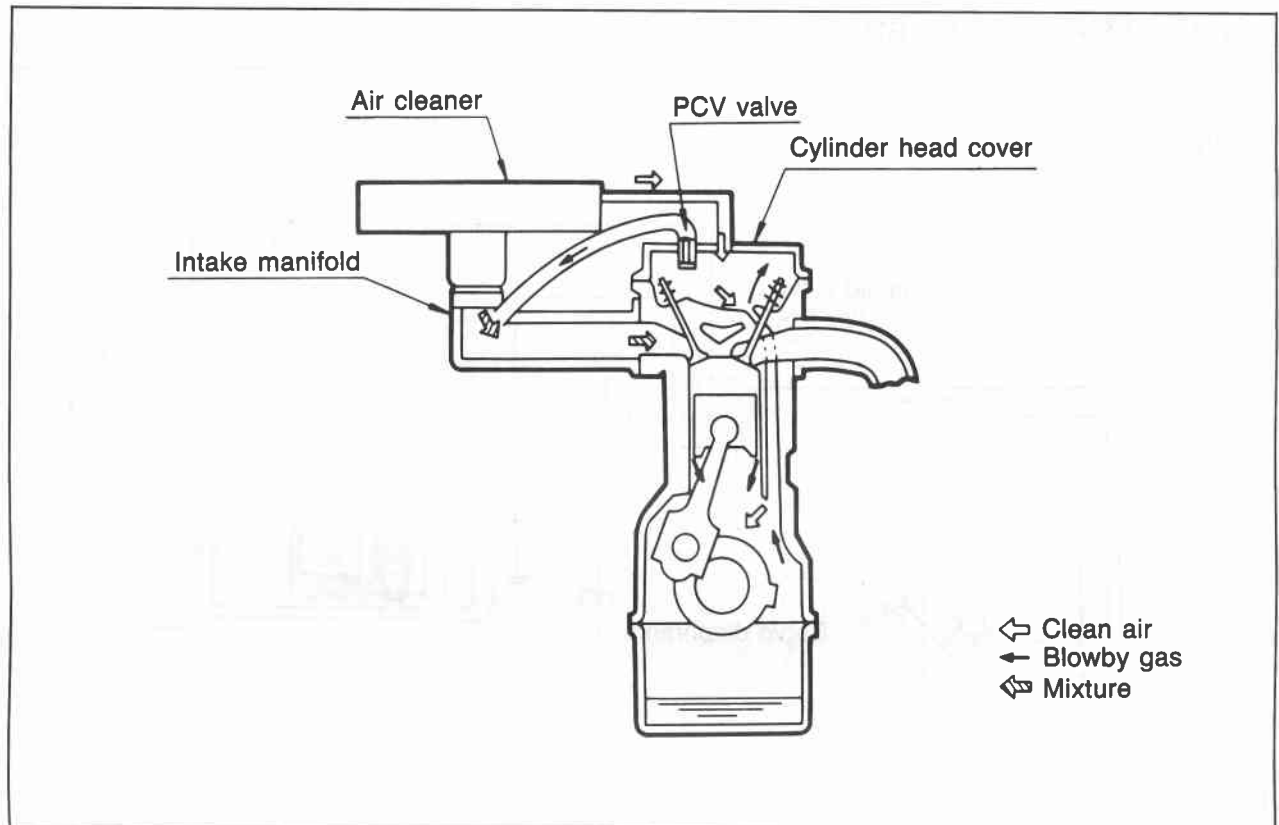
1. Remove the water thermo valve from the bottom of the inlet manifold.
2. Place the water thermo valve in a container with water and a thermometer.
3. Gradually heat the water to **50°C (122°F)**.



76G04A-130

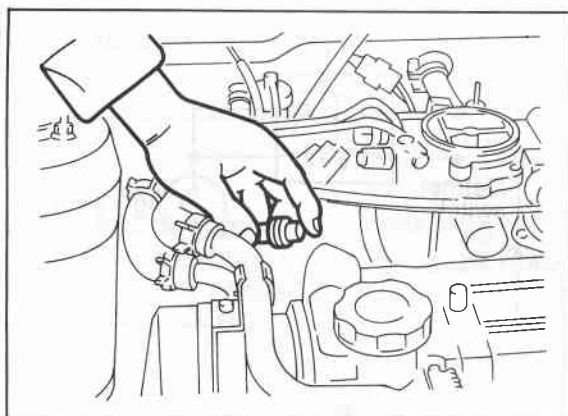
4. Blow air through the water thermo valve from (A), and check that air comes out from (a).
5. Blow air through the water thermo valve from (B) and check that air comes out from (b).
6. Replace if necessary.

POSITIVE CRANKCASE VENTILATION (PCV) SYSTEM



76G04A-131

This system reburns the blow-by gases and operates while the engine is running to reduce emissions.



76G04A-132

PCV VALVE Inspection

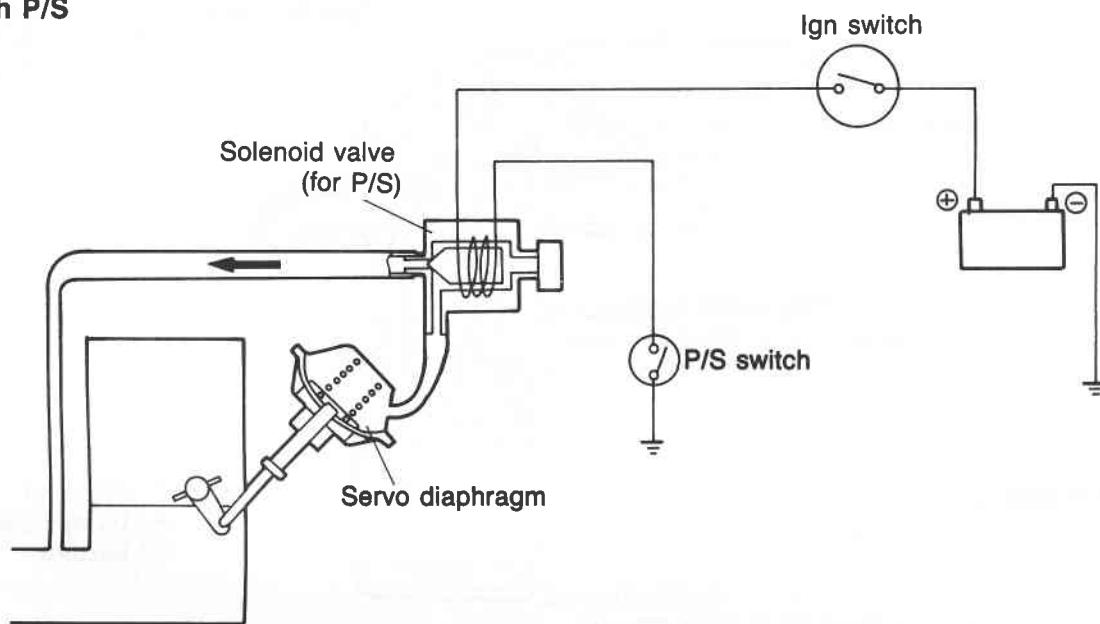
1. Warm up the engine to the normal operating temperature and run it at idle.
2. Disconnect the PCV valve and the ventilation hose from the cylinder head cover.
3. Block the PCV valve and check that the engine speed drops.
4. Replace the PCV valve if necessary.

4A IDLE-UP CONTROL SYSTEM

IDLE-UP CONTROL SYSTEM

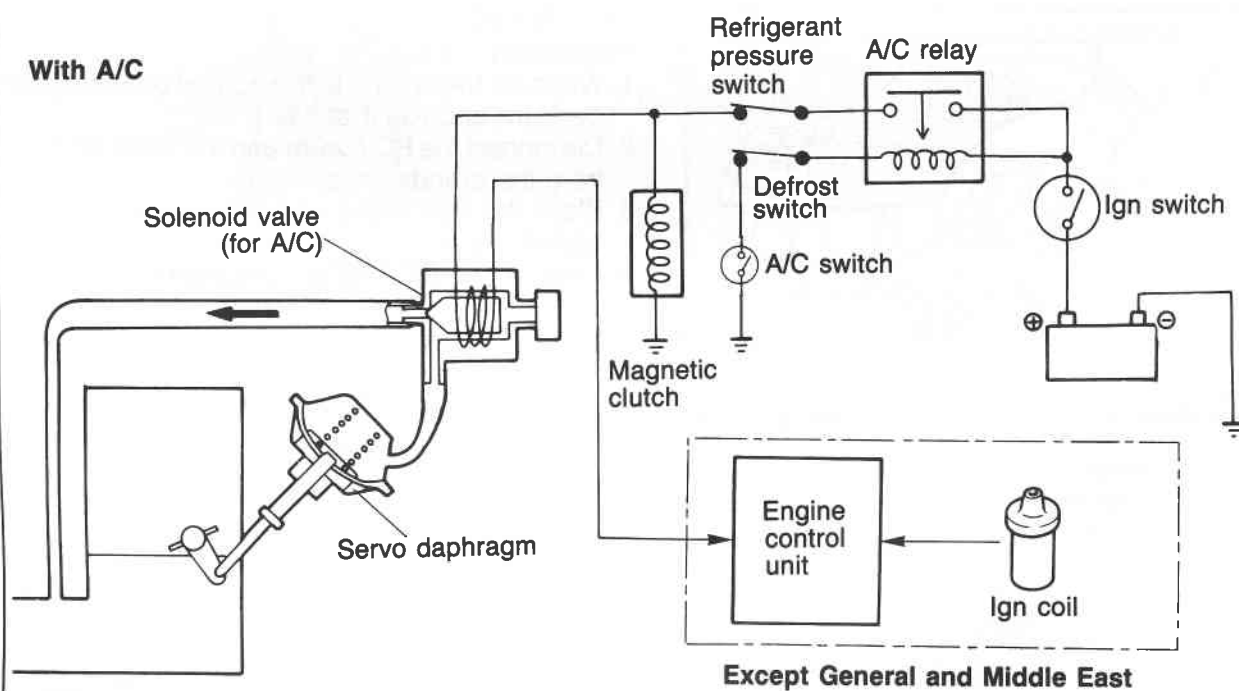
SINGLE-SERVO DIAPHRAGM TYPE

With P/S



69G04B-122

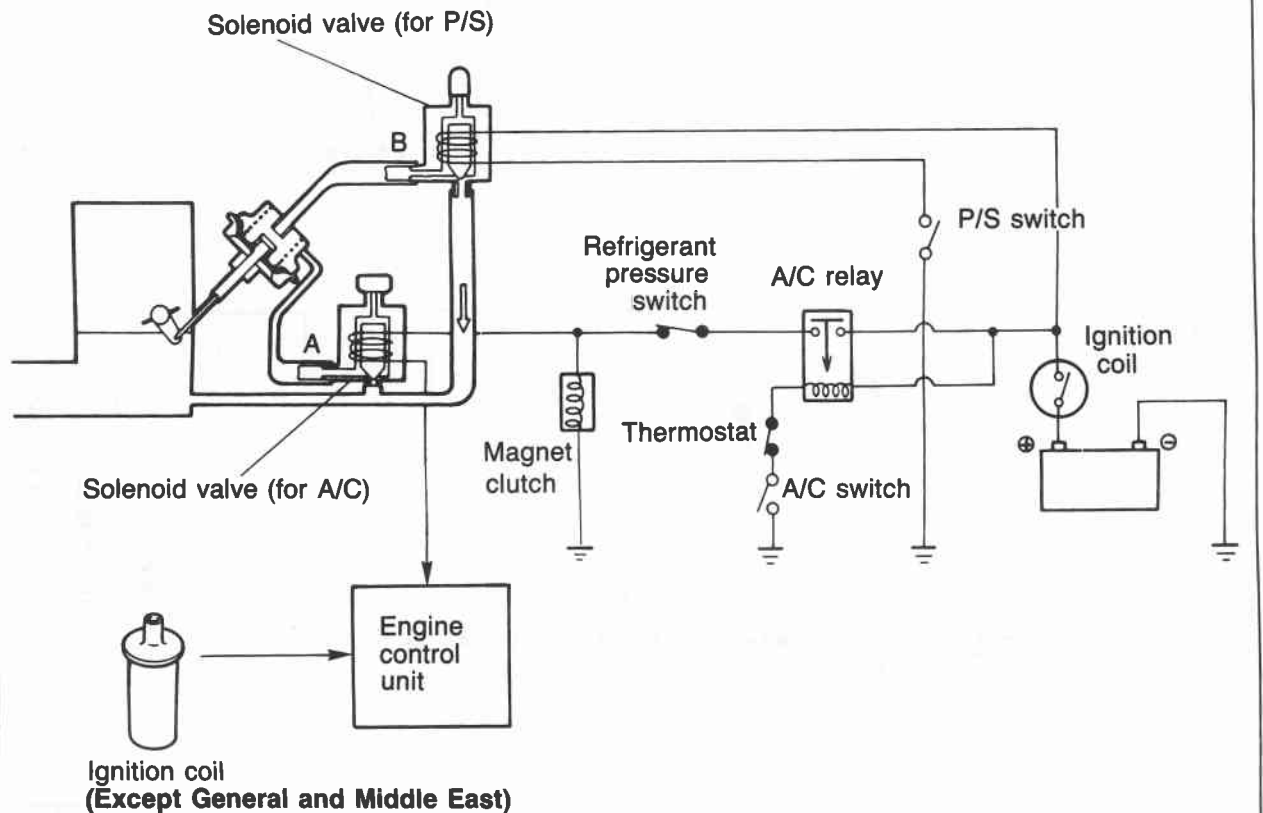
With A/C



69G04B-123

DUAL-SERVO DIAPHRAGM TYPE

With P/S and A/C



69G04B-124

Operation

A/C ON and compressor operating

Current flows through the A/C relay to the two-way solenoid valve for the A/C. Vacuum port A is opened, and vacuum is applied to the servo diaphragm, which in turn pulls the throttle plates slightly open at low speeds.

P/S operating

Current flows through the P/S switch to the three-way solenoid valve for power steering. Vacuum port B is opened and vacuum is applied to the servo diaphragm, which in turn pulls the throttle plates slightly open.

Relationship

Equipment	P/S	A/C	P/S & A/C
Type			
Single-servo diaphragm type	○	○	
Dual-servo diaphragm type			○

4A IDLE-UP CONTROL SYSTEM

TROUBLESHOOTING

FE and F8 (ECE, Hong Kong, and Singapore)

Possible cause	Engine control unit terminal		Servo diaphragm	Vacuum signal	Solenoid valve	P/S switch	Idle-up solenoid valve	Relay (for A/C)	Thermostat	Refrigerant pressure switch
	ATX	MTX								
	H	P								
Page	4A—86	4A—88	4A—72	4A—74	4A—74	4A—75	4A—76	Section 16		
Checking order	9		2	3	4	5	1	6	7	8

76G04A-133

F6 (Singapore)

Possible cause	Relay	Engine control unit	Servo diaphragm	Vacuum signal	Solenoid valve	A/C switch	P/S switch	Relay (for A/C)	Thermostat	Refrigerant pressure switch
		All terminal								
Page	4A—57	4A—92	4A—72	4A—74	4A—74	Section 15	4A—75	Section 16		
Checking order	9	10	1	2	3	4	5	6	7	8

76G04A-134

FE and F8 (General)

Possible cause	Engine control unit terminal		Servo diaphragm	Vacuum signal	Solenoid valve	P/S switch	Idle-up solenoid valve	Relay (for A/C)	Thermostat	Refrigerant pressure switch
	ATX	MTX								
	H	P								
Page	4A—89	4A—90	4A—72	4A—74	4A—74	4A—75	4A—76	Section 16		
Checking order	9		2	3	4	5	1	6	7	8

76G04A-135

FE (Middle East) and F6 (General)

Possible cause	Servo diaphragm	Vacuum signal	Solenoid valve	A/C switch	P/S switch	Relay (for A/C)	Thermostat	Refrigerant pressure switch
Page	4A—72	4A—74	4A—74	Section 15	4A—75	Section 16		
Checking order	1	2	3	4	5	6	7	8

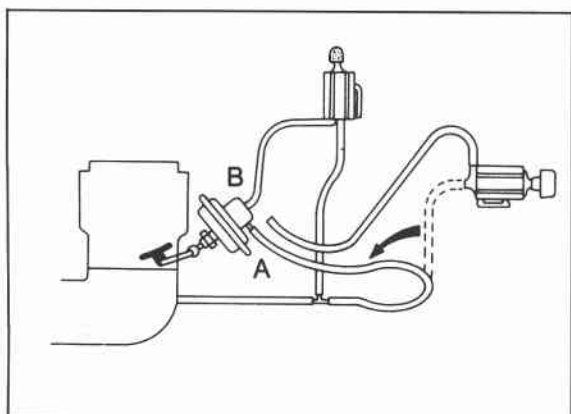
76G04A-136

FE 8Valve—Unleaded Fuel

Possible cause	Engine control unit terminal			Servo diaphragm	Vacuum signal	Solenoid valve	A/C switch	P/S switch	Relay (for A/C)	Thermostat	Refrigerant pressure switch
	H	D	I								
Page	4A—91			4A—72	4A—74	4A—74	Section 15	4A—75	Section 16		
Checking order	9			1	2	3	4	5	6	7	8

76G04A-137

4A IDLE-UP CONTROL SYSTEM



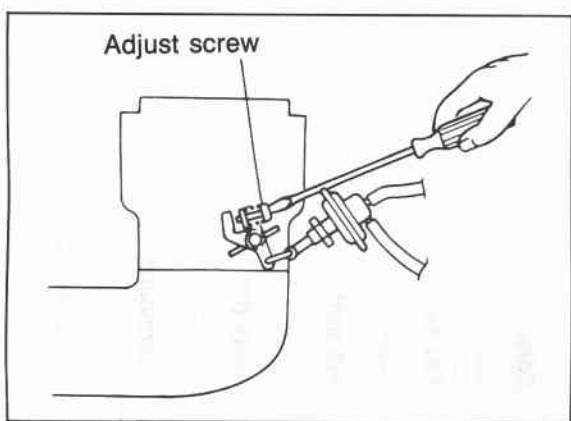
76G04A-138

Servo Diaphragm Dual servo diaphragm type

1. Warm up the engine and run it at idle.
2. Connect a tachometer to the engine.
3. Disconnect the vacuum hose from the servo diaphragm port A.
4. Apply intake manifold vacuum directly to the diaphragm.

Caution

All accessories must be OFF.

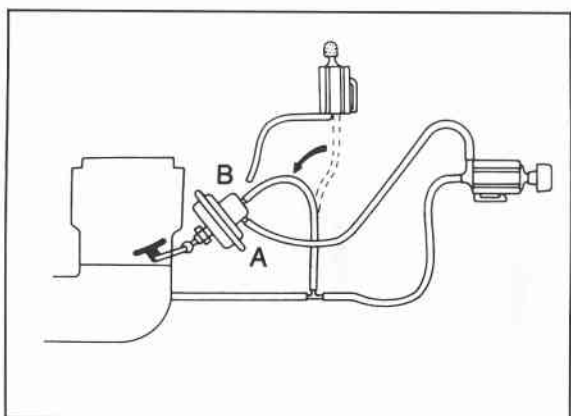


76G04A-139

5. Check that the engine speed is within the specification.

Engine speed: 1,200—1,400 rpm

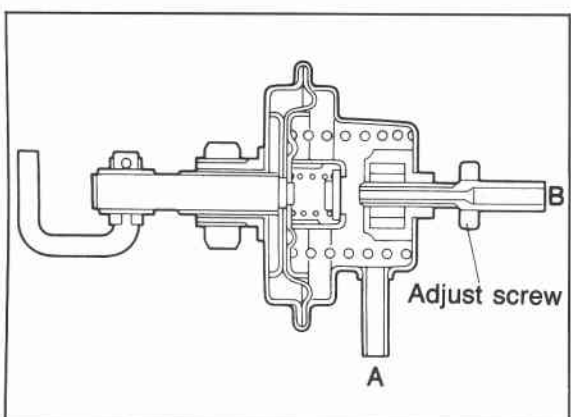
6. If not within specification, turn the adjust screw to adjust.
7. Reconnect the vacuum hoses.



76G04A-140

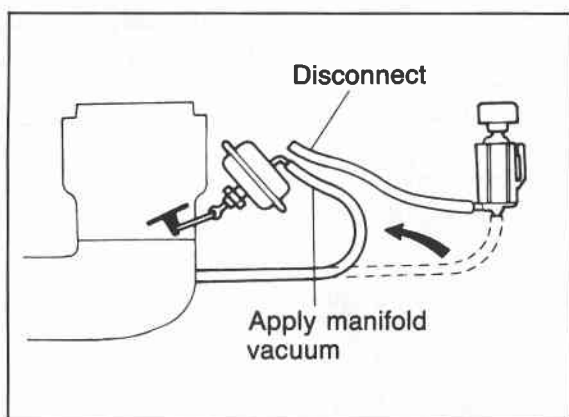
8. Disconnect the solenoid valve vacuum hose from the servo diaphragm port B.
9. Apply intake manifold vacuum directly to the diaphragm.
10. Check that the engine speed is within specification.

**Engine speed: 800—1,000 rpm (MTX)
1,050—1,250 rpm (ATX)
(in N range)**

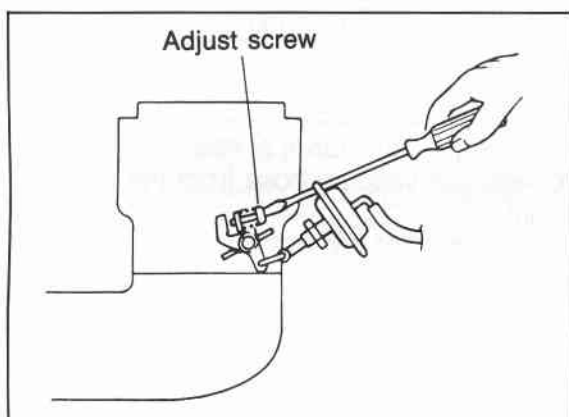


76G04A-141

11. If not within specification, turn the adjust screw to adjust.
12. Reconnect the vacuum hoses.



76G04A-142



76G04A-143

Single servo diaphragm type

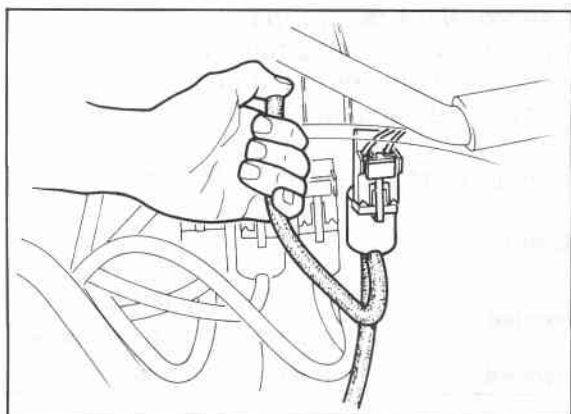
1. Warm up the engine and run it at idle.
2. Connect a tachometer to the engine.
3. Disconnect the vacuum hose from the servo diaphragm.
4. Check that the engine speed is within specification.

Engine speed:

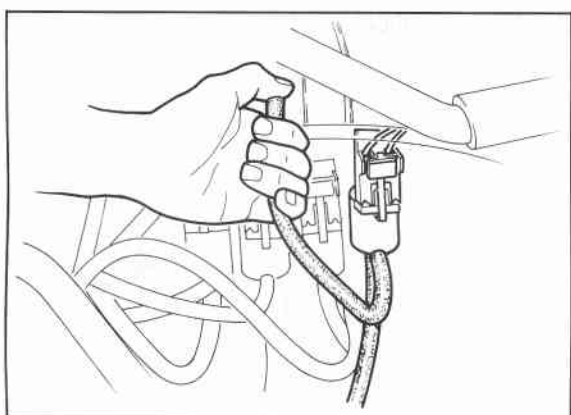
P/S operated	800—1,000 rpm (MTX)
	1,050—1,250 rpm (ATX) (in N range)
A/C operated	1,200—1,400 rpm

6. If not within specification, turn the adjust screw to adjust.

4A IDLE-UP CONTROL SYSTEM



76G04A-144



76G04A-145

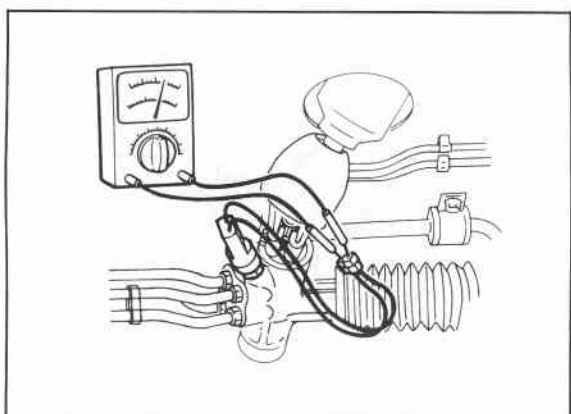
Vacuum Signal [Equipped with A/C, only FE and F8 (Except Middle East and General)]

1. Start the engine and run it at idle.
2. Disconnect the vacuum hose from the servo diaphragm.
3. Place a finger over the hose.
4. Increase the engine speed, and check for vacuum.

Engine model	Engine speed	Vacuum
FE F8 (Except Middle)	Below 2,300 rpm	Yes
	Above 2,300 rpm	No
FE (Unleaded fuel)	Below 1,500 rpm	Yes
	Above 1,500 rpm	No
F6 (Singapore)	Below 2,100 rpm	Yes
	Above 2,100 rpm	No

General and Middle East

1. Start the engine and run it at idle.
2. Disconnect the vacuum hose from the servo diaphragm.
3. Place a finger over the hose.
4. Operate the A/C or P/S.
5. Check that vacuum is felt.



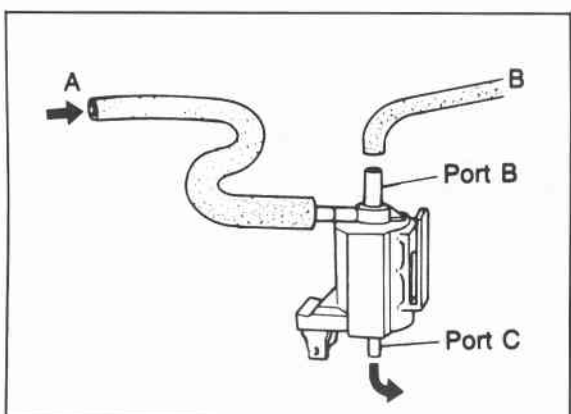
76G04A-146

P/S Switch

1. Start the engine and run it at idle.
2. Disconnect the power steering switch connector.
3. Connect an ohmmeter to the power steering switch.
4. Turn the steering wheel all the way to either the right or left, and check for continuity.

P/S	Continuity
Operated	Yes
Not operated	No

5. Replace if necessary.

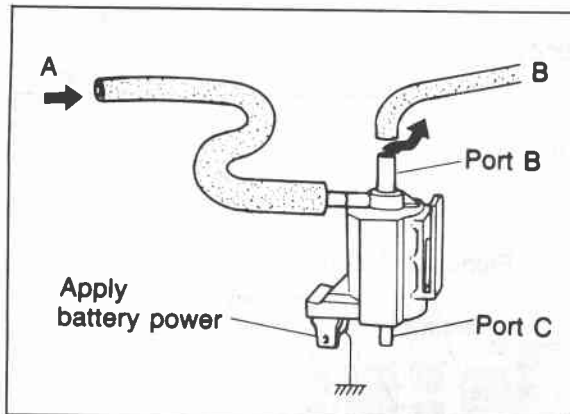


76G04A-147

Solenoid Valve (A/C)

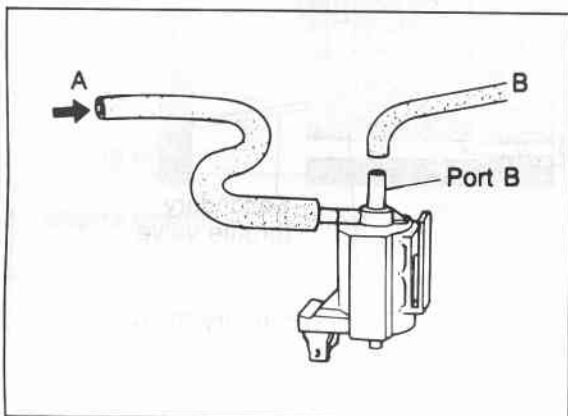
1. Disconnect vacuum hose A from the servo diaphragm.
2. Disconnect vacuum hose B from the solenoid valve.
3. Disconnect the solenoid valve connector.
4. Blow air through the valve from hose A and check that it comes out of port C.

IDLE-UP CONTROL SYSTEM 4A



76G04A-148

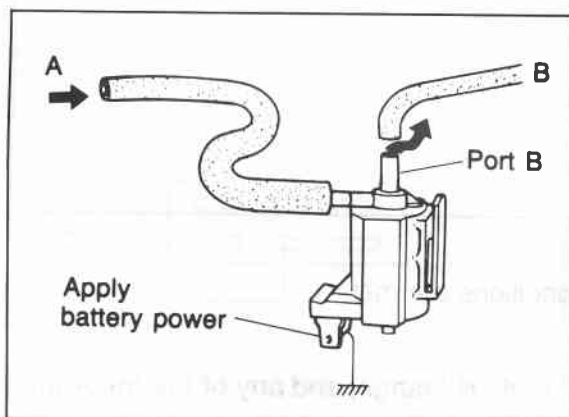
5. Apply 12V and ground to the solenoid valve with jumper wires.
6. Blow air through the valve from hose A and check that it comes out of port B.
7. Replace if necessary.



76G04A-149

Solenoid Valve (P/S)

1. Disconnect vacuum hose A from the servo diaphragm.
2. Disconnect vacuum hose B from the solenoid valve.
3. Disconnect the solenoid valve connector.
4. Blow air through the valve from hose A and check that it not come out of port B.



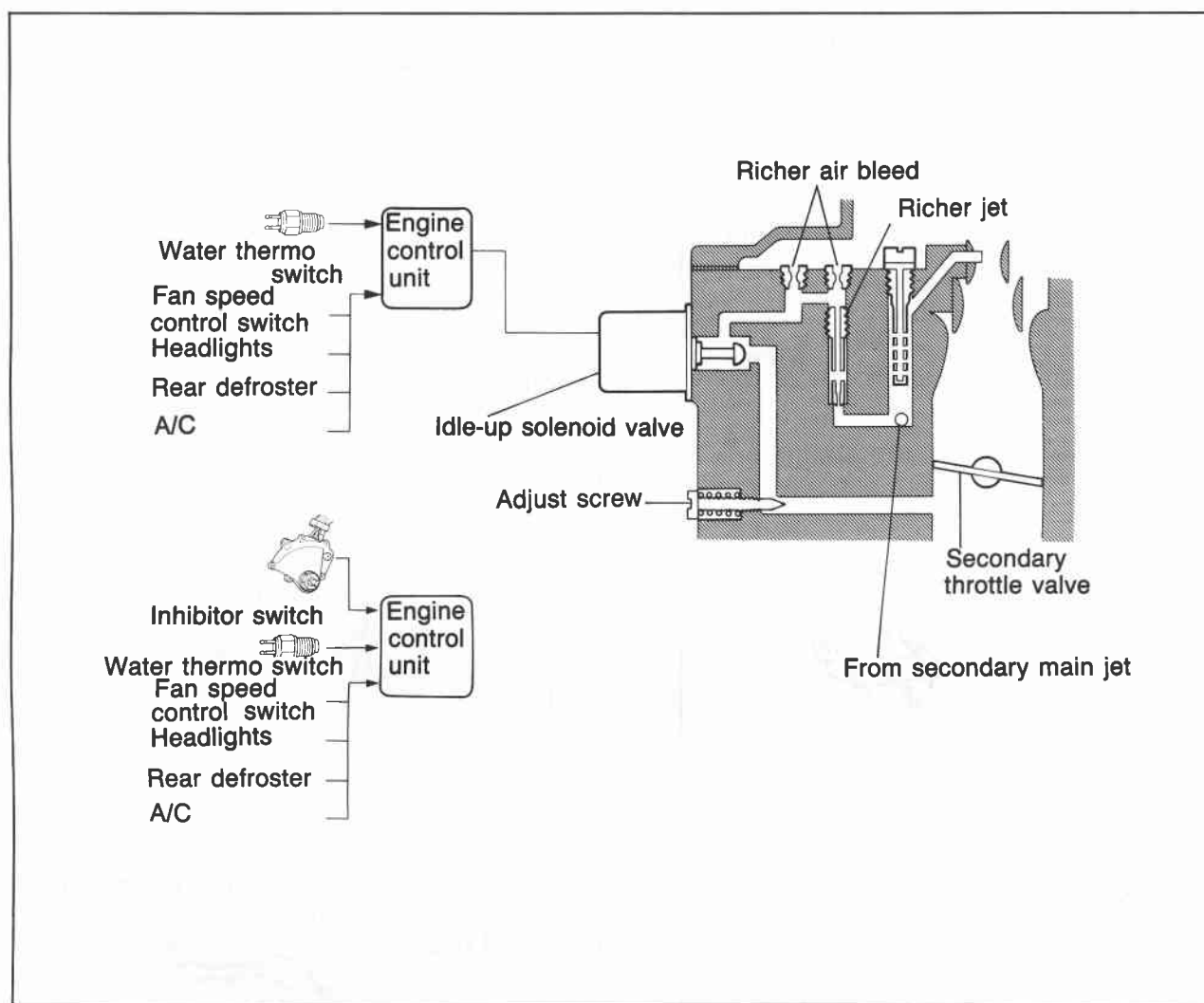
76G04A-150

5. Apply 12V and a ground to the solenoid valve with jumper wires.
6. Blow air through the valve from hose A and check that it comes out of port B.
7. Replace if necessary.

4A IDLE-UP CONTROL SYSTEM

IDLE-UP SOLENOID VALVE

FE and F8 (General, ECE, Hong Kong, and Singapore)



76G04A-151

The idle-up solenoid valve opens when the following conditions are met.

Condition

When inhibitor switch is OFF (ATX—other than “P” and “N” range) and any of the following:

- Engine coolant temperature less than 72°C (162°F).
- A/C operated.
- Fan speed control switch 3rd or 4th position.
- Headlights turned on.
- Rear defroster turned on.

Troubleshooting

Note

Make the system inspection first. If no problem is found, continue with the next inspection of the Troubleshooting. (Refer to page 4A—70.)

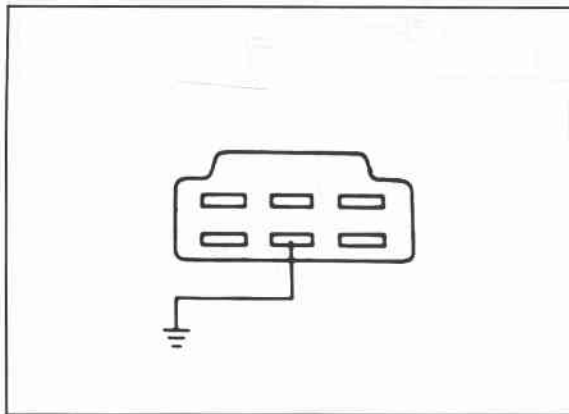
Possible cause	Combination switch	Rear defroster switch	Fan speed control switch	Water thermo switch	Inhibitor switch (ATX)	A/C switch	Idle-up solenoid valve	Engine control unit terminal	System inspection
	Section 15	Section 15		4A—95	4A—93	Section 15	4A—77	4A—86—4A—91	4A—77
	Symptom	3	4	5	6	7	8	2	9
Checking order									

76G04A-152

*Engine control unit terminal

Check the following terminal voltages

Transmission	Terminal
MTX	A, C, D, H, Q, R
ATX	I, 2B, 2C, 2D, 2E, 2H, 2M



76G04A-153

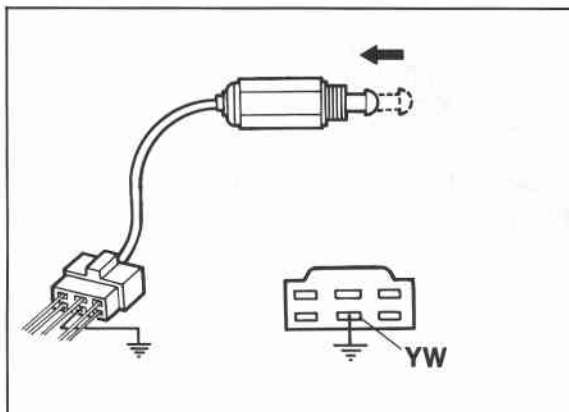
System Inspection

1. Warm up the engine and run it at idle.
2. Connect a jumper wire to the carburetor connector terminal wire (YW) and ground.
3. Connect a tachometer to the engine.
4. Turn all accessories off.
5. Verify that the engine speed is within specification.

Engine speed: 900—950 rpm (MTX)

Engine speed: 1,000—1,050 rpm (ATX; in N range)

6. Disconnect the tachometer.



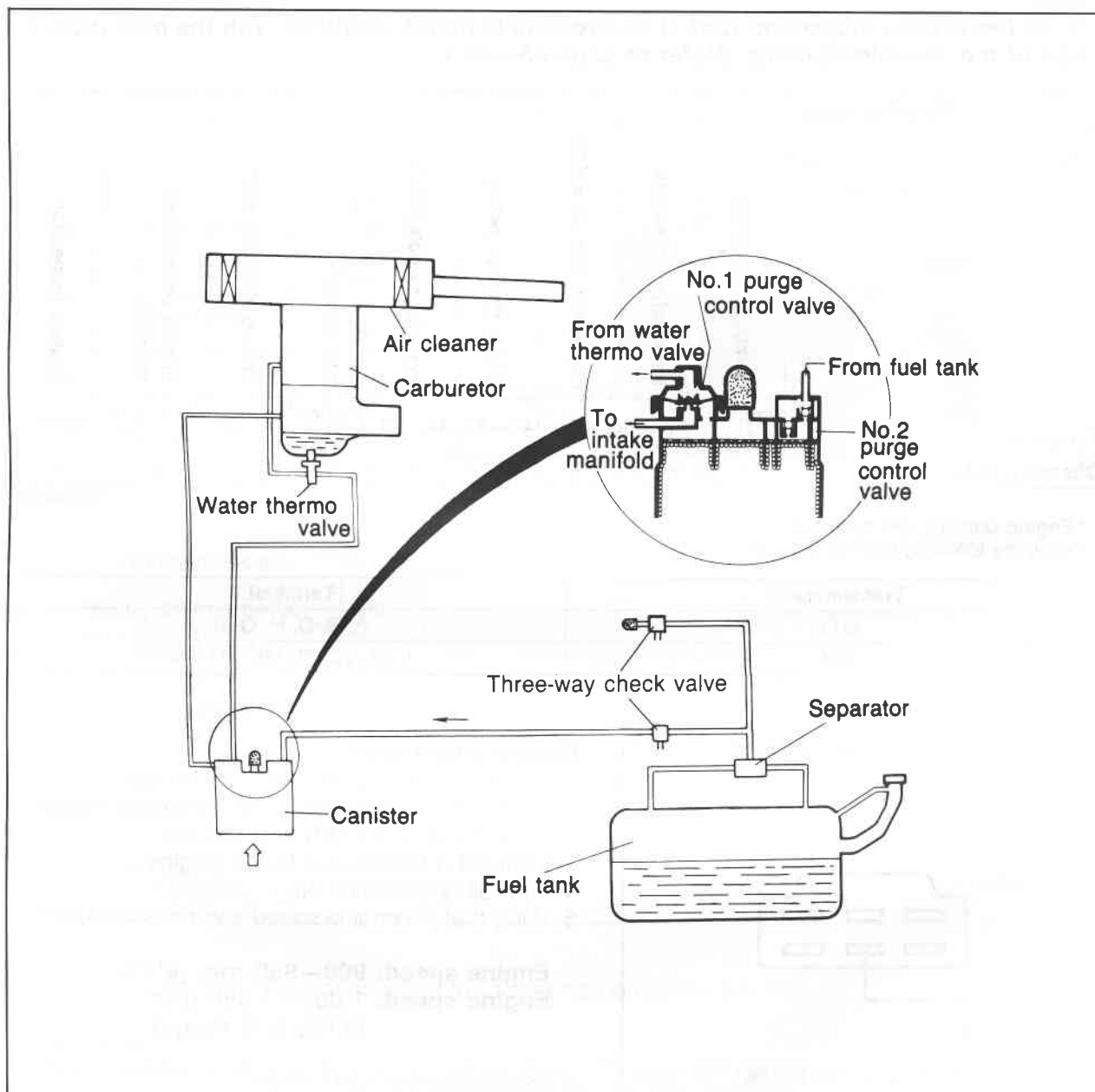
76G04A-154

Idle-up Solenoid Valve

1. Turn all accessories OFF and turn the ignition switch ON.
2. Disconnect the idle-up solenoid valve connector.
3. Ground the carburetor connector terminal wire (YW) using with a jumper wire.
4. Check the rod is drawn into the valve.
5. Replace if necessary.

4A EVAPOTATIVE EMISSION CONTROL SYSTEM

EVAPORATIVE EMISSION CONTROL SYSTEM (MIDDLE EAST)



76G04A-155

Operation

Cold engine — below 50°C (122°F)

The No. 1 purge control valve does not operate because the vacuum passage of the water thermo valve is opened to the atmospheric air side.

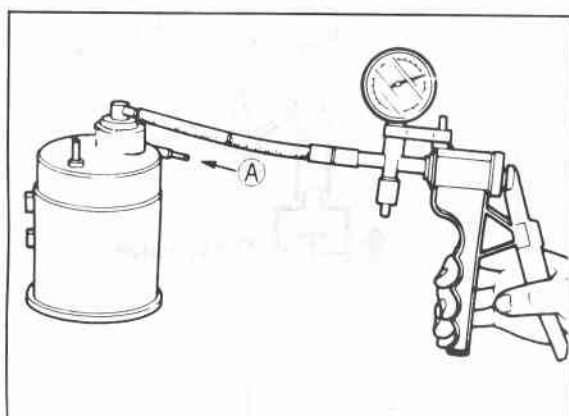
Warm engine — above 50°C (122°F)

1. During normal driving, the carburetor vacuum signal is led to the No. 1 purge control valve with the result that fuel vapors are drawn into the intake manifold.

Troubleshooting

Possible cause	No. 1 purge control valve	No. 2 purge control valve	Water thermo valve	Three-way check valve
Page	4A—79	4A—79	4A—79	4A—37
Checking order	1	2	3	4

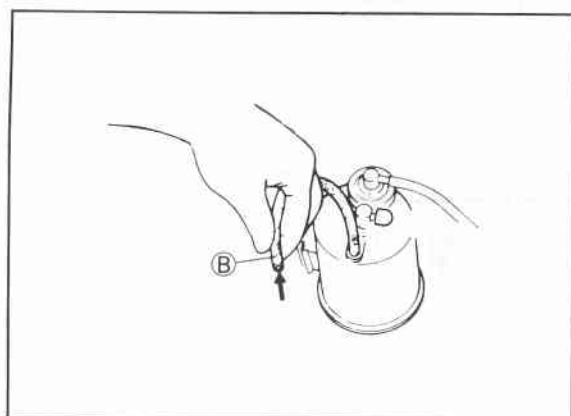
76G04A-156



76G04A-157

No. 1 Purge Control Valve

1. Blow through the purge control valve from port A and check that air does not flow.
2. Connect a vacuum pump to the purge control valve.
3. Apply **110 mmHg (4.29 inHg)** vacuum with a vacuum pump, and blow through port A again; air should flow.



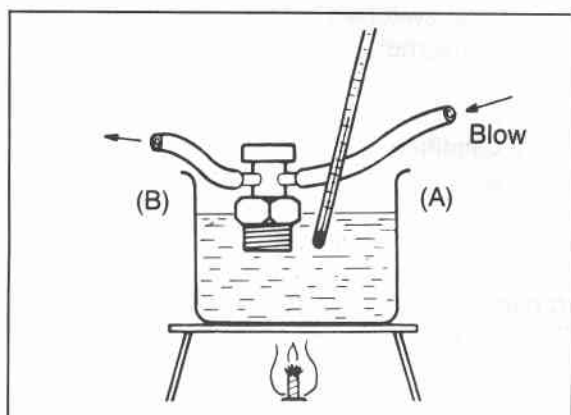
76G04A-158

No. 2 Purge Control Valve

1. Disconnect vacuum hose A from the pipe.
2. Check the air flow of the No. 2 purge control valve.

Specification:

15—35 mmHg (0.6—1.4 inHg): Below
-8—-18 mmHg (0.3—0.7 inHg): Suck



76G04A-159

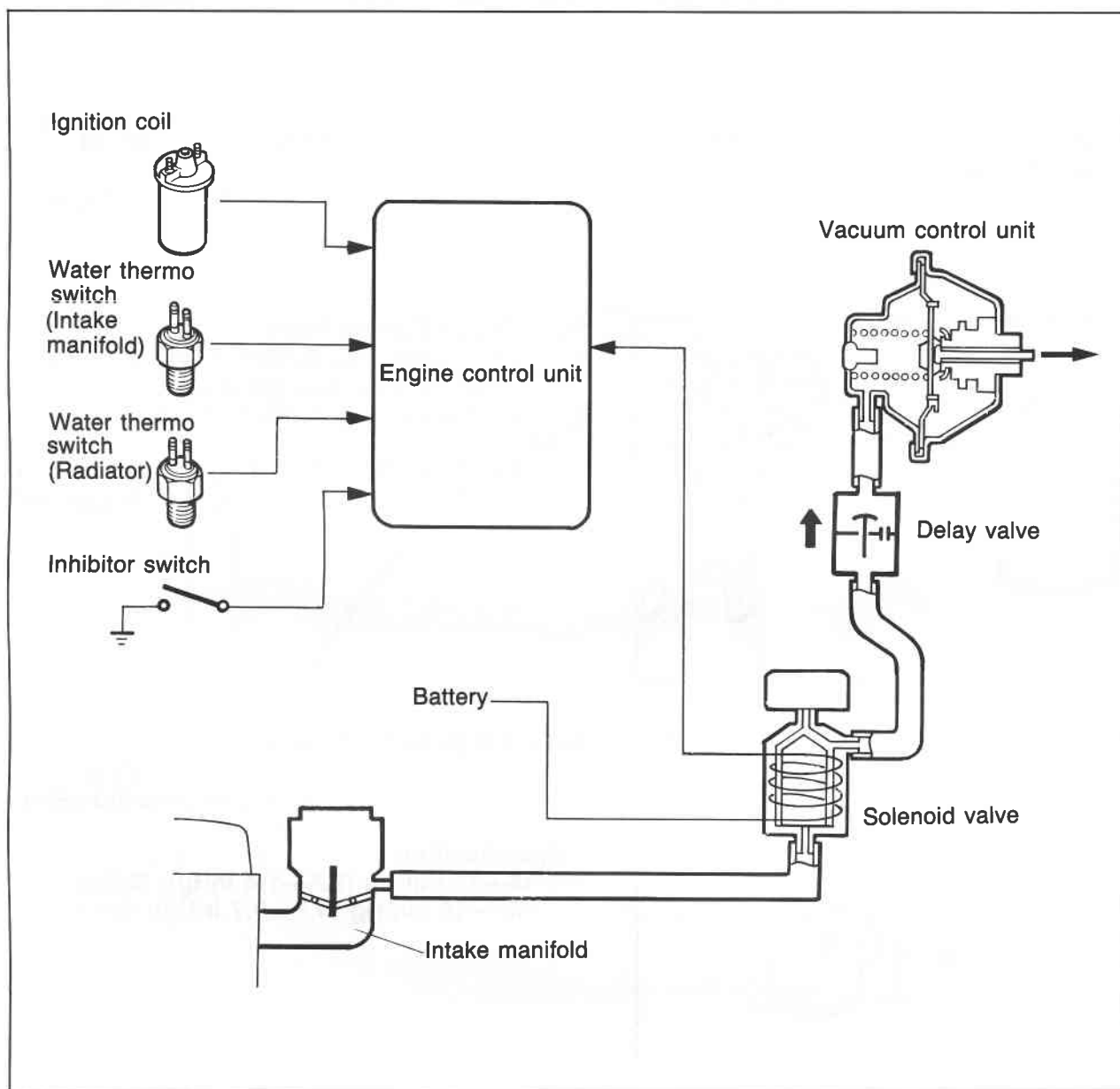
Water Thermo Valve

1. Remove the water thermo valve.
2. Place the valve in water with a thermometer.
3. Heat the water gradually to **50°C (122°F)**.
4. Blow through the valve from hose A and check that air comes out of port B.

4A IGNITION TIMING CONTROL SYSTEM

IGNITION TIMING CONTROL SYSTEM

F8 and FE (12-VALVE)—ATX (ECE, Singapore, and Hong Kong)



76G04A-160

This system consists of the distributor, solenoid valve, and several switches, vacuum to the vacuum control unit of the distributor is cut when the conditions below are met.

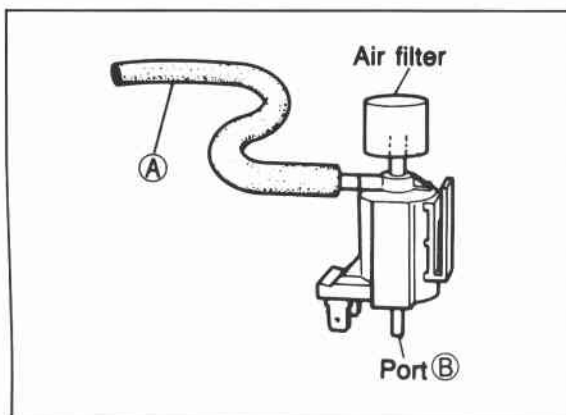
Item	Condition
Engine speed	Below 2,300 rpm
Selector lever position	Other than P and N range
Coolant temperature	Engine coolant: below 72°C (162°F) Radiator coolant: above 17°C (65°F)

TROUBLESHOOTING

Check the condition of the wiring harness and components before checking the sensors or switches.

Possible cause	Water thermo switch (Intake manifold)	Water thermo switch (Radiator)	Inhibitor switch	Solenoid valve (Ignition timing control)	Delay valve	Vacuum control unit (Distributor)	Engine control unit terminal				
							1F	2A	2F	2H	2M
Symptom	4A-95	4A-95	4A-93	4A-81	4A-82	Section 5	4A-85	4A-86			
Poor acceleration, hesitation, or lack of power	5	6	4	2	3	1	11	7	8	9	10
Fails emission test	4	5	3	2	—	1	10	6	7	8	9

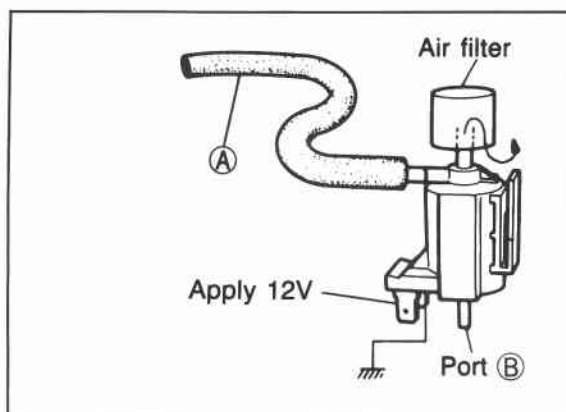
76G04A-161



76G04A-162

Solenoid Valve (Ignition Timing Control)

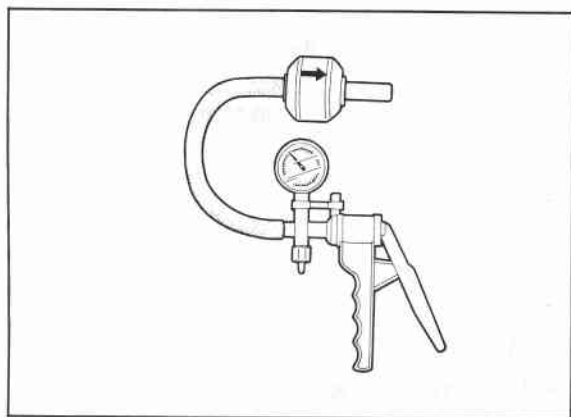
1. Disconnect the vacuum hose from the solenoid valve and vacuum pipe.
2. Blow through the solenoid valve from vacuum hose A.
3. Check that air flows from port B.



76G04A-163

4. Disconnect the solenoid valve connector.
5. Connect 12V and a ground to the terminals of the solenoid valve.
6. Blow through the solenoid valve from vacuum hose A.
7. Check that air flows from the valve air filter.

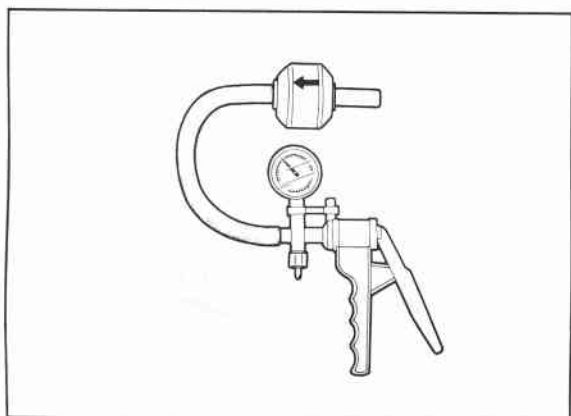
4A IGNITION TIMING CONTROL SYSTEM



76G04A-164

Delay Valve

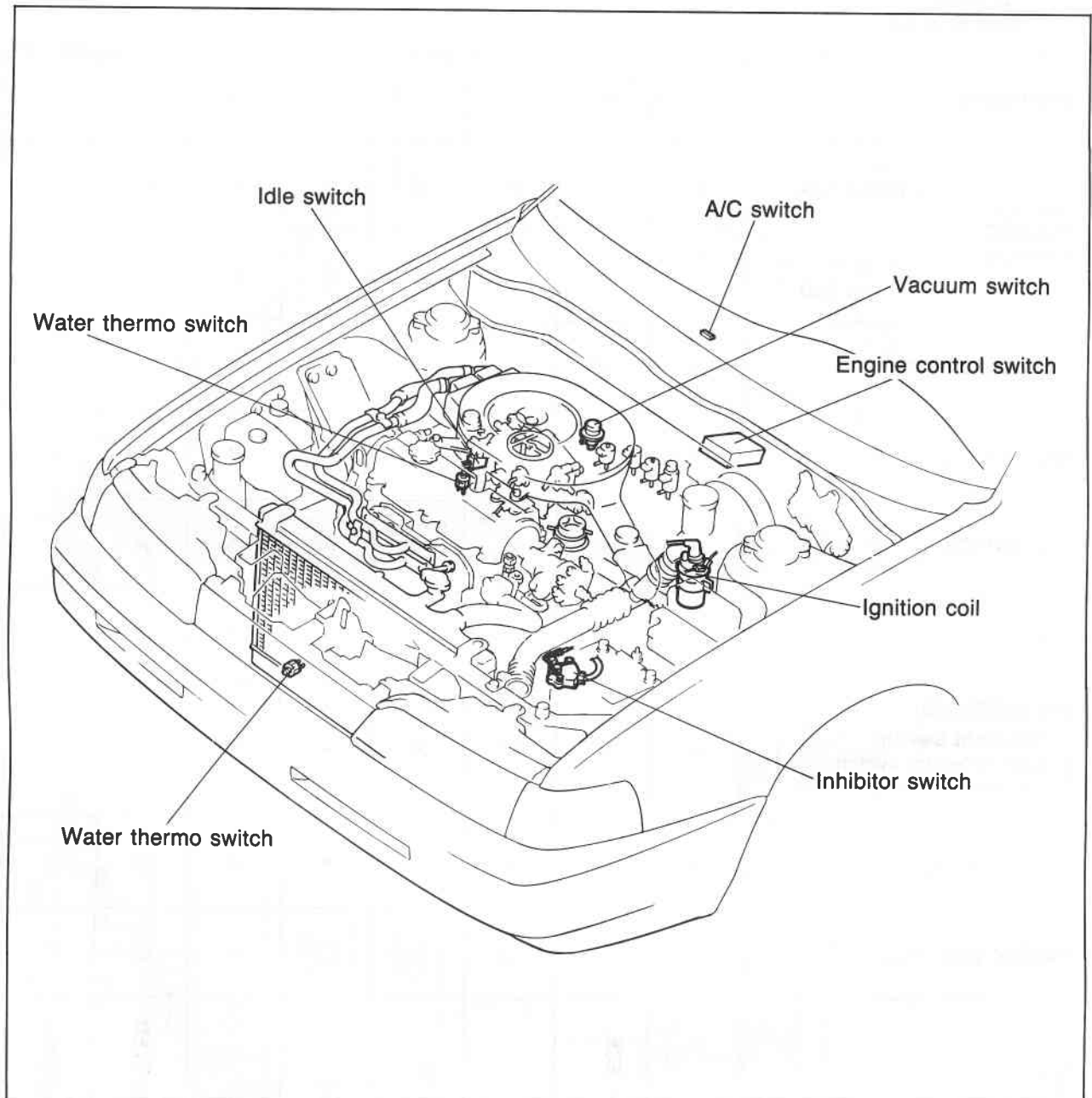
1. Remove the delay valve.
2. Connect a vacuum pump to the valve as shown in the figure.
3. Apply vacuum and check that it is released gradually.
4. If not correct, replace the delay valve.



76G04A-165

5. Connect a vacuum pump to the valve as shown in the figure.
6. Apply vacuum and check that it is not held.
7. If not correct, replace the delay valve.

CONTROL SYSTEM



76G04A-166

The control system consists of the engine control unit, water thermo switches, A/C switch, P/S switch, inhibitor switch, vacuum switch, and idle switch.

4A CONTROL SYSTEM

RELATIONSHIP CHART

○: Related

X: Not related

IGNITION COIL		X	X	○	○	○	X	○	X
WATER THERMO SWITCH	RADIATOR	○	○	X	X	X	X	○	○
	INTAKE MANIFOLD	* ○	X	X	X	X	○	○	X
VACUUM SWITCH		X	X	X	X	X	X	X	○
IDLE SWITCH		X	X	○	○	○	X	X	X
A/C SWITCH		X	X	X	X	X	○	X	X
P/S SWITCH		X	X	X	X	X	X	X	X
E/L SWITCHES (Headlight Switch Rear defroster switch Fan speed control switch)		X	X	X	X	X	○	X	X
INHIBITOR SWITCH		X	X	X	X	X	○	○	X
ENGINE CONTROL UNIT		X	○	○	○	○	○	○	○
INPUT DEVICE AND ENGINE CONTROL UNIT	OUTPUT DEVICE								
	PTC HEATER								
	CHOKE OPENER (FE and F8 — ECE, Hong Kong, & Singapore)								
	COASTING LEANER								
	COAST ENRICHMENT SOLENOID VALVE								
	AIR BYPASS SOLENOID VALVE								
	IDLE-UP SOLENOID VALVE								
	IGNITION TIMING CONTROL SYSTEM								
	MAIN AIR BLEED CONTROL SYSTEM								

* FE 8Valve—Unleaded Fuel: ○ (Related)

General and FE 12Valve—ECE, Hong Kong, Singapore: X (Not related)

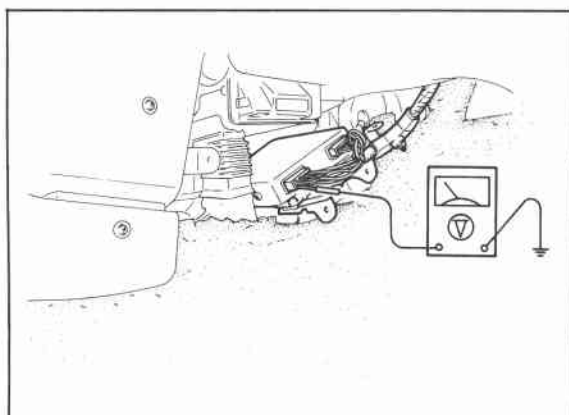
OUTPUT DEVICE AND ENGINE CONDITIONS

ENGINE CONDITION OUTPUT DEVICE	CRANKING (COLD ENGINE)	WARMING UP (DURING IDLE)	MEDIUM LOAD		ACCELER- ATION	HEAVY- LOAD	DECELER- ATION	IDLE (THROTTLE VALVE FULLY CLOSED)	IGN: ON (ENGINE NOT RUN- NING)	REMARK
			COLD	WARM						
PTC HEATER	ON*1	OFF	ON*1			OFF			OFF	*1 Radiator coolant temperature less than 17°C (63°F)
SOLENOID VALVE (CHOKE OPENER)	ON	OFF	ON*1			OFF				
COASTING LEANER			OFF				ON*2 (Mixture lean)	OFF		*2 Engine speed more than approx. 2,100 rpm
COAST ENRICH- MENT SOLENOID VALVE			OFF				ON*3 (Mixture rich)	OFF		*3 Engine speed 1,500 — 2,300 rpm
AIR BYPASS SOLENOID VALVE			OFF				ON*4	OFF		*4 Engine speed more than approx. 2,100 rpm*8 or approx. 3,500 rpm*9
SOLENOID VALVE (IGNITION TIMING CONTROL SYSTEM)	OFF	ON*5 (Vacuum cut)				OFF				*5 Engine coolant temperature less than 72°C (162°F), radiator coolant temperature more than 17°C (63°F), engine speed less than approx. 2,300 rpm, and in gear condition
EGR CONTROL VALVE	CLOSED	OPEN*6	CLOSED		(Supplies exhaust gas into intake manifold)	OPEN		CLOSED		*6 Engine coolant more than 50°C (122°F)
MAIN AIR BLEED CONTROL SOLE- NOID VALVE	CLOSED	OPEN*7			CLOSED (Mixture rich)		OPEN (Mixture lean)	DOES NOT OPERATE		*7 Radiator coolant temperature less than 17°C (63°F)

*8 FE 12 Valve and F8

*9 FE 8 Valve

4A CONTROL SYSTEM



76G04A-169

ENGINE CONTROL UNIT

Check the engine control unit terminal voltages with a voltmeter.

Caution

- Warm up the engine before checking the control unit.
- If the proper voltage is not obtained, check the wiring, connections and finally, check the component.

FE and F8 Engine — ATX (ECE, Hong Kong, and Singapore)

Terminal (Wire color)	Connected to	Condition	Voltage
1A (BW)	Ignition switch	Ignition switch ON.	Battery voltage
1B (GR)	Solenoid valve (Main air bleed control)	Others	Battery voltage
		Radiator coolant temperature below 17°C (63°F) or intake manifold vacuum more than 200 mmHg (7.9 inHg)	Below 1.5V
1C (GO)	Solenoid valve (Choke opener)	Radiator coolant temperature below 17°C (63°F) or during cranking and 27 sec. after engine starts	Below 1.5V
		Others	Battery voltage
1D (GL)	Air bypass solenoid valve	Idle switch OFF and engine speed above approx. 2,100 rpm	Below 1.5V
		Others	Battery voltage
1E	—	—	—
1F (G)	Solenoid valve (Ignition timing control system)	Radiator coolant temperature above 17°C (63°F), engine coolant temperature below 72°C (162°F), inhibitor switch OFF and engine speed below 2,300 rpm	Below 1.5V
		Others	Battery voltage
1G	—	—	—
1H (LW)	Solenoid valve (A/C)	A/C switch ON and engine speed below approx. 2,300 rpm	Below 1.5V
		Others	Battery voltage
1I (YW)	Idle-up solenoid valve	Inhibitor switch OFF and, headlight switch ON, rear defroster switch ON, fan speed control switch is 3rd or 4th position, A/C operated, or engine coolant temperature below 72°C (162°F)	Below 1.5V
		Others	Battery voltage
1J (B)	Ground	—	Below 1.5V

Terminal (Wire color)	Connected to	Condition	Voltage
2A (YL)	Ignition coil	Ignition switch ON or engine running	Battery voltage
2B (LB)	Fan speed control switch	Fan speed control switch in 3rd or 4th position	Below 1.5V
		Fan speed control switch OFF	Battery voltage
2C (BL)	Rear defroster switch	Rear defroster switch ON	Below 1.5V
		Rear defroster switch OFF	Battery voltage
2D (LG)	A/C switch	A/C operated	Below 1.5V
		A/C not operated	Battery voltage
2E (RG)	Headlight switch	Headlight switch OFF	Below 1.5V
		Headlight switch ON	Battery voltage
2F (GW)	Water thermo switch (Radiator)	Radiator coolant temperature below 17°C (63°F)	Below 1.5V
		Radiator coolant temperature above 17°C (63°F)	Battery voltage
2G	—	—	—
2H (L)	Water thermo switch (In- take manifold)	Engine coolant temperature below 72°C (162°F)	Below 1.5V
		Engine coolant temperature above 72°C (162°F)	Battery voltage
2I (LY)	Vacuum switch	Vacuum less than 200 mmHg (7.9 inHg)	Below 1.5V
		Vacuum more than 200 mmHg (7.9 inHg)	Battery voltage
2J (RL)	OD release solenoid valve	Engine coolant temperature below 72°C (162°F)	Below 1.5V
		Engine coolant temperature above 72°C (162°F)	Battery voltage
2K (—)	—	—	—
2L (BR)	Inhibitor switch	"N" or "P" range	Below 1.5V
		Others	Battery voltage
2M (BY)	Ignition switch (START position)	Ignition switch ON	Below 1.5V
		Cranking	Battery voltage
2N (LsB)	Idle switch	Idling	Battery voltage
		Accelerator pedal depressed	Below 1.5V

76G04A-170

2M	2K	2I		2F	2C	2A
2N	2L	2J	2H	2F	2D	2B

1I			1C	1A
1J	1H	1F	1D	1B

FE and F8 Engine — MTX (ECE, Hong Kong, and Singapore)

Terminal (Wire color)	Connected to	Condition	Voltage
A (RG)	Headlight switch	Headlight switch ON	Below 1.5V
		Headlight switch OFF	Battery voltage
B (B)	Ground	—	Below 1.5V

4A CONTROL SYSTEM

Terminal (Wire color)	Connected to	Condition	Voltage
C (BL)	Rear defroster switch	Rear defroster switch ON	Below 1.5V
		Rear defroster switch OFF	Battery voltage
D (LG)	A/C switch	A/C operated	Below 1.5V
		A/C not operated	Battery voltage
E (LY)	Solenoid valve (Main air bleed control)	Intake manifold vacuum more than 300 mmHg (11.8 inHg), and radiator coolant temperature above 17°C (63°F)	Battery voltage
		Others	Below 1.5V
F (GW)	Water thermo switch (Radiator)	Radiator coolant temperature below 17°C (63°F)	Below 1.5V
		Radiator coolant temperature above 17°C (63°F)	Battery voltage
G (YL)	Ignition coil	Ignition switch ON or engine running	Battery voltage
H (L)	Water thermo switch (Intake manifold)	Engine coolant temperature below 72°C (162°F)	Below 1.5V
		Engine coolant temperature above 72°C (162°F)	Battery voltage
J (BW)	Ignition switch	Ignition switch ON	Battery voltage
K (GO)	Solenoid valve (Choke opener)	Radiator temperature below 17°C (63°F) or during cranking and 27 sec. after engine starts	Below 1.5V
		Others	Battery voltage
L (LsB)	Idle switch	Idling	Battery voltage
		Accelerator pedal depressed	Below 1.5V
M (GL)	Air bypass solenoid valve	Idle switch OFF and engine speed above approx. 2,100 rpm	Below 1.5V
		Others	Battery voltage
O (BY)	Ignition switch (START position)	Ignition switch ON	Below 1.5V
		Cranking	Battery voltage
P (LW)	Solenoid valve (A/C)	A/C switch ON and engine speed below approx. 2,300 rpm	Below 1.5V
		Others	Battery voltage
Q (YW)	Idle-up solenoid valve	Headlight switch ON, rear defroster switch ON, fan speed control switch is 3rd or 4th position, A/C operated, or engine coolant temperature below 72°C (162°F)	Below 1.5V
		Others	Battery voltage
R (LB)	Fan speed control switch	Fan speed control switch in 3rd or 4th position	Below 1.5V
		Fan speed control switch OFF	Battery voltage

76G04A-171

Q	O	M	K	I	G	E	C	A
R	P	N	L	J	H	F	D	B

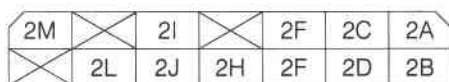
FE and F8 Engine — ATX (General)

Terminal (Wire color)	Connected to	Condition	Voltage
1A (BW)	Ignition switch	Ignition switch ON	Battery voltage
1B (GR)	Solenoid valve (Main air bleed control)	Others	Battery voltage
		Radiator coolant temperature below 17°C (63°F) or intake manifold vacuum more than 200 mmHg (7.9 inHg)	Below 1.5V
1C	—	—	—
1D	—	—	—
1E	—	—	—
1F	—	—	—
1G	—	—	—
1H (LW)	Solenoid valve (A/C)	A/C operated	Below 1.5V
		Others	Battery voltage
1I (LW)	Idle-up solenoid valve	Inhibitor switch OFF and, headlight switch ON, rear defroster switch ON, fan speed control switch is 3rd or 4th position, A/C operated, or engine coolant temperature below 72°C (162°F)	Below 1.5V
		Others	Battery voltage
1J (B)	Ground	—	Below 1.5V
2A (YL)	Ignition coil	Ignition switch ON or engine running	Battery voltage
2B (LB)	Fan speed control switch	Fan speed control switch in 3rd or 4th position	Below 1.5V
		Fan speed control switch OFF	Battery voltage
2C (BL)	Rear defroster switch	Rear defroster switch ON	Below 1.5V
		Rear defroster switch OFF	Battery voltage
2D (LG)	A/C switch	A/C operated	Below 1.5V
		A/C not operated	Battery voltage
2E (RG)	Headlight switch	Headlight switch ON	Below 1.5V
		Headlight switch OFF	Battery voltage
2F (GW)	Water thermo switch (Radiator)	Radiator coolant temperature below 17°C (63°F)	Below 1.5V
		Radiator coolant temperature above 17°C (63°F)	Battery voltage
2G	—	—	—
2H (L)	Water thermo switch (Intake manifold)	Engine coolant temperature below 72°C (162°F)	Below 1.5V
		Engine coolant temperature above 72°C (162°F)	Battery voltage
2I (LB)	Vacuum switch	Vacuum less than 200 mmHg (7.9 inHg)	Below 1.5V
		Vacuum more than 200 mmHg (7.9 inHg)	Battery voltage
2J (RL)	OD release solenoid	Engine coolant temperature below 72°C (162°F)	Below 1.5V
		Engine coolant temperature above 72°C (162°F)	Battery voltage

4A CONTROL SYSTEM

Terminal (Wire color)	Connected to	Condition	Voltage
2K	—	—	—
2L (BR)	Inhibitor switch	"P" or "N" range	Below 1.5V
		Others	Battery voltage
2M (BY)	Ignition switch (START position)	Ignition switch ON	Below 1.5V
		Cranking	Battery voltage
2N	—	—	—

76G04A-172



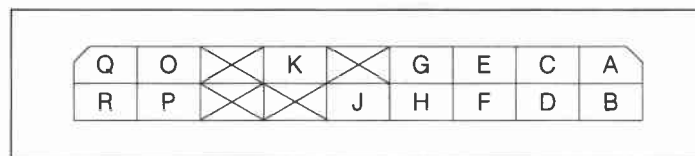
FE and F8 Engine — MTX (General)

Terminal (Wire color)	Connected to	Condition	Voltage
A (W)	Headlight switch	Headlight switch ON	Below 1.5V
		Headlight switch OFF	Battery voltage
B (B)	Ground	—	Below 1.5V
C (BL)	Rear defroster switch	Rear defroster switch ON	Below 1.5V
		Rear defroster switch OFF	Battery voltage
D (LG)	A/C switch	A/C operated	Below 1.5V
		A/C not operated	Battery voltage
E (LB)	Solenoid valve (Main air bleed control)	Intake manifold vacuum more than 300 mmHg (11.8 inHg), and radiator coolant temperature above 17°C (63°F)	Battery voltage
		Others	Below 1.5V
F (GW)	Water thermo switch (Radiator)	Radiator coolant temperature below 17°C (63°F)	Below 1.5V
		Radiator coolant temperature above 17°C (63°F)	Battery voltage
G (YL)	Ignition coil	Ignition switch ON or engine running	Battery voltage
H (L)	Water thermo switch (Intake manifold)	Engine coolant temperature below 72°C (162°F)	Below 1.5V
		Engine coolant temperature above 72°C (162°F)	Battery voltage
I	—	—	—
J (BW)	Ignition switch	Ignition switch ON	Battery voltage
K	—	—	—
L	—	—	—
M	—	—	—
N	—	—	—

Terminal (Wire color)	Connected to	Condition	Voltage
O (BY)	Ignition switch* (START position)	Ignition switch ON	Below 1.5V
		Cranking	Battery voltage
P (LW)	Solenoid valve (A/C)	A/C switch ON and engine speed below approx. 2,300 rpm	Below 1.5V
		Others	Battery voltage
Q (YW)	Idle-up solenoid valve	Headlight switch ON, rear defroster switch ON, fan speed control switch is 3rd or 4th position, A/C oper- ated, or engine coolant temperature below 72°C (162°F)	Below 1.5V
		Others	Battery voltage
R (LB)	Fan speed control switch	Fan speed control switch in 3rd or 4th position	Below 1.5V
		Fan speed control switch OFF	Battery voltage

* Not used

76G04A-173



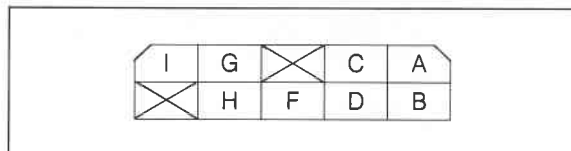
FE 8Valve — Unleaded Fuel

Terminal (Wire color)	Connected to	Condition	Voltage
A (L)	Coast enrichment solenoid valve	Engine speed approx. 1,500—2,300 rpm and idle switch ON	Below 1.5V
		Others	Battery voltage
B (B)	Ground	—	Below 1.5V
C (LB)	Air bypass solenoid valve	Engine speed above approx. 3,500 rpm and idle switch ON	Below 1.5V
		Others	Battery voltage
D (YL)	Ignition coil	Ignition switch ON or engine running	Battery voltage
E	—	—	—
F (BW)	Ignition switch	Ignition switch ON	Battery voltage
G (YW)	Slow fuel cut solenoid valve	Engine speed above approx. 2,300 rpm and idle switch ON	Battery voltage
		Others	Below 1.5V
H (LW)	A/C switch	A/C operated and engine speed above approx. 1,500 rpm	Battery voltage
		A/C not operated or engine speed below approx. 1,500 rpm	Below 1.5V

4A CONTROL SYSTEM

Terminal (Wire color)	Connected to	Condition	Voltage
I (LgB)	Idle switch	Idle switch ON	Below 1.5V
		Idle switch OFF	Battery voltage
J	—	—	—

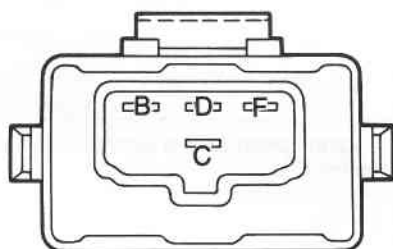
76G04A-174

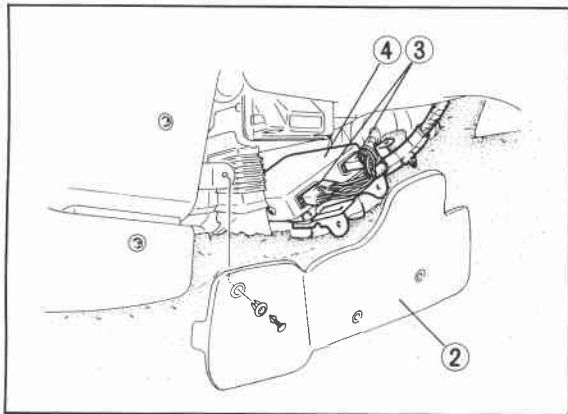


F6 Engine (Singapore)

Terminal (Wire color)	Connected to	Condition	Voltage
A	—	—	—
B (YL)	Ignition coil	Ignition switch ON and engine running	Battery voltage
C (B)	Ground	—	—
D (GB)	Relay	Engine speed below approx. 2,100 rpm	Below 1.5V
		Engine speed above approx. 2,100 rpm	Battery voltage
F (BW)	Ignition switch	Ignition switch ON	Battery voltage

76G04A-175

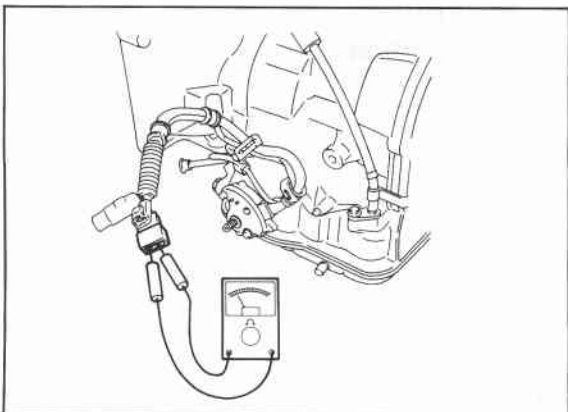




76G04A-176

Replacement

1. Disconnect the negative battery cable.
2. Remove the front console covers (right or left).
3. Disconnect the connectors from the control unit.
4. Remove and replace the control unit.



76G04A-177

INHIBITOR SWITCH

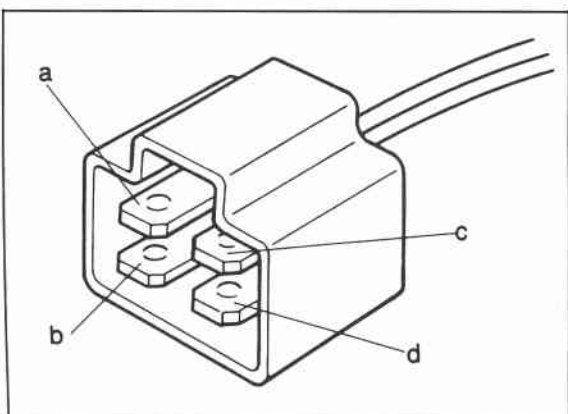
Inspection

1. Verify that the starter operates with the ignition switch at START position in P and N positions only.
2. Check that the back-up lights illuminate when R position selected and the ignition switch is ON.
3. If not as specified, check the following:
 - (1) Jack up the vehicle and support it with safety stands.
 - (2) Disconnect the inhibitor switch connector.
 - (3) Check continuity of the switch with an ohmmeter.

Connecting guide

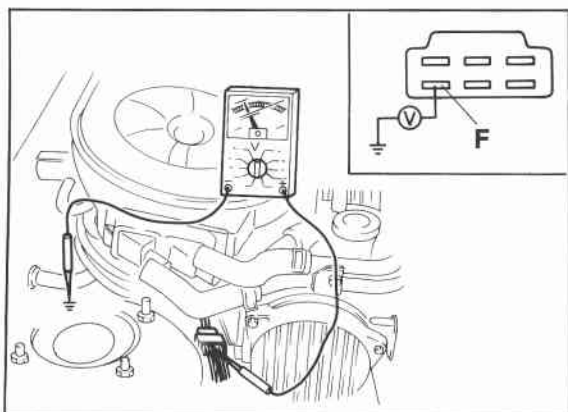
Position	Connector terminal			
	a	b	c	d
P			○—○	
R	○—○			
N			○—○	
D,1,2				

○—○: indicates continuity



76G04A-178

4. Replace if necessary.



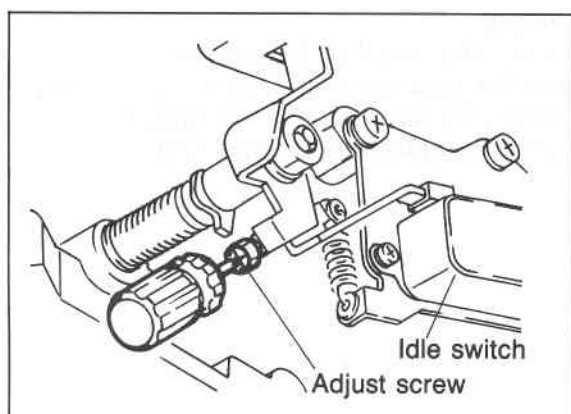
76G04A-179

IDLE SWITCH

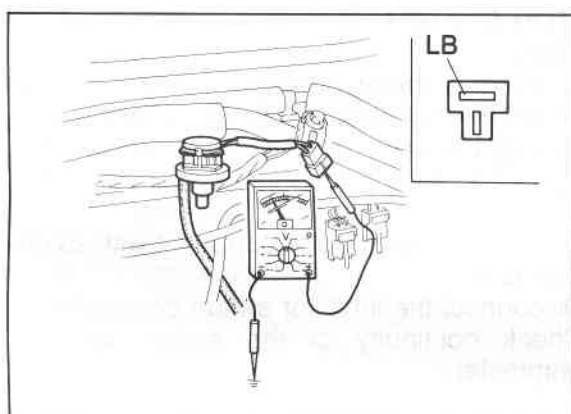
Inspection

1. Warm up the engine and run it at idle.
2. Turn all accessories OFF.
3. Connect a tachometer to the engine.
4. Connect a voltmeter to the carburetor connector F terminal.

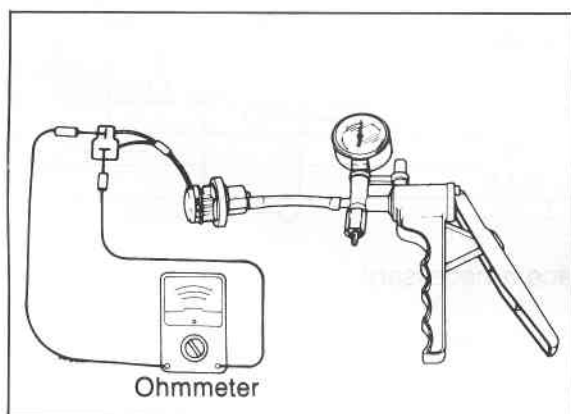
4A CONTROL SYSTEM



76G04A-180



76G04A-181



76G04A-182

5. Increase the engine speed to more than **2,000 rpm** and decelerate gradually.
6. Check the voltage.

Specification	FE 8Valve— Unleaded Fuel & F6 Sin- gapore	Others
Engine speed		
At idle	below 1.5V	Battery voltage
Above 1,000—1,100 rpm	Battery voltage	below 1.5V

7. If the voltage is not within specification, turn the adjust screw to adjust.

VACUUM SWITCH

On-Vehicle Inspection

1. Run the engine at idle.
2. Connect a voltmeter to the vacuum switch connector terminal wire (LB).

Voltage: Approx. 12V

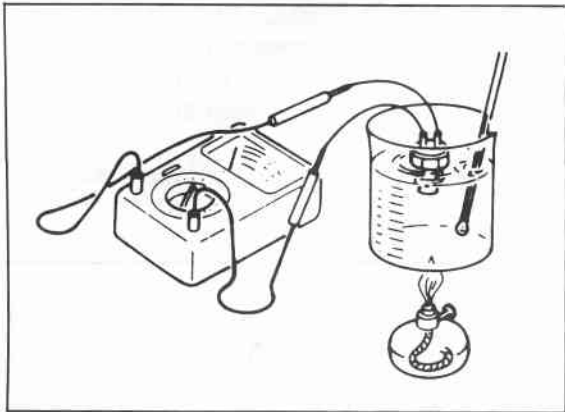
3. Disconnect the vacuum hose from the vacuum switch, and plug it.
4. Check the voltage.

Voltage: Less than 1.5V

Off-Vehicle Inspection

1. Remove the vacuum switch.
2. Connect a vacuum pump to the vacuum switch.
3. Connect an ohmmeter to the vacuum switch, and check the continuity between the switch terminals.

Vacuum	Continuity
MTX: More than 300 mmHg (11.8 inHg)	No
ATX: More than 200 mmHg (7.9 inHg)	
Others	Yes



76G04A-183

WATER THERMO SWITCH (RADIATOR)

Inspection

1. Remove the switch from the radiator.
2. Place the switch in water with a thermometer and gradually heat the water.
3. Check for continuity of the switch with an ohmmeter.

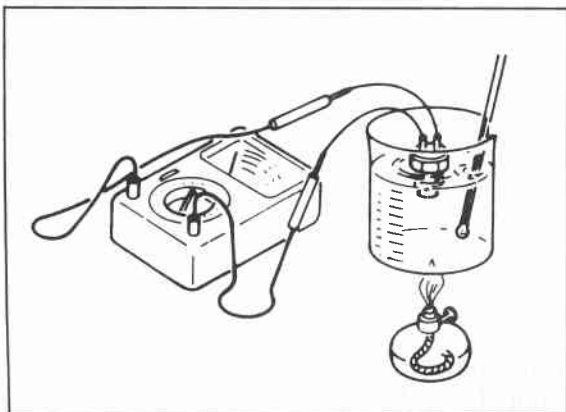
Coolant temp.	Continuity
More than approx. 17°C (63°F)	Yes
Less than approx. 17°C (63°F)	No

4. If not as specified, replace the water thermo switch.

Note

- a) Apply sealing tape to the threads of the switch before installing it.
- b) After installation, check the coolant level and check for leaks.

76G04A-184



76G04A-185

WATER THERMO SWITCH (INTAKE MANIFOLD)

Inspection

1. Remove the switch from the intake manifold.
2. Place the switch in water with a thermometer and gradually heat the water.
3. Check for continuity of the switch with an ohmmeter.

Coolant temp.	Continuity
More than approx. 72°C (162°F)	Yes
Less than approx. 72°C (162°F)	No

4. If not as specified, replace the water thermo switch.

Note

- a) Apply sealing tape to the threads of the switch before installing it.
- b) After installation, check the coolant level and check for leaks.

76G04A-186

4A EXHAUST SYSTEM

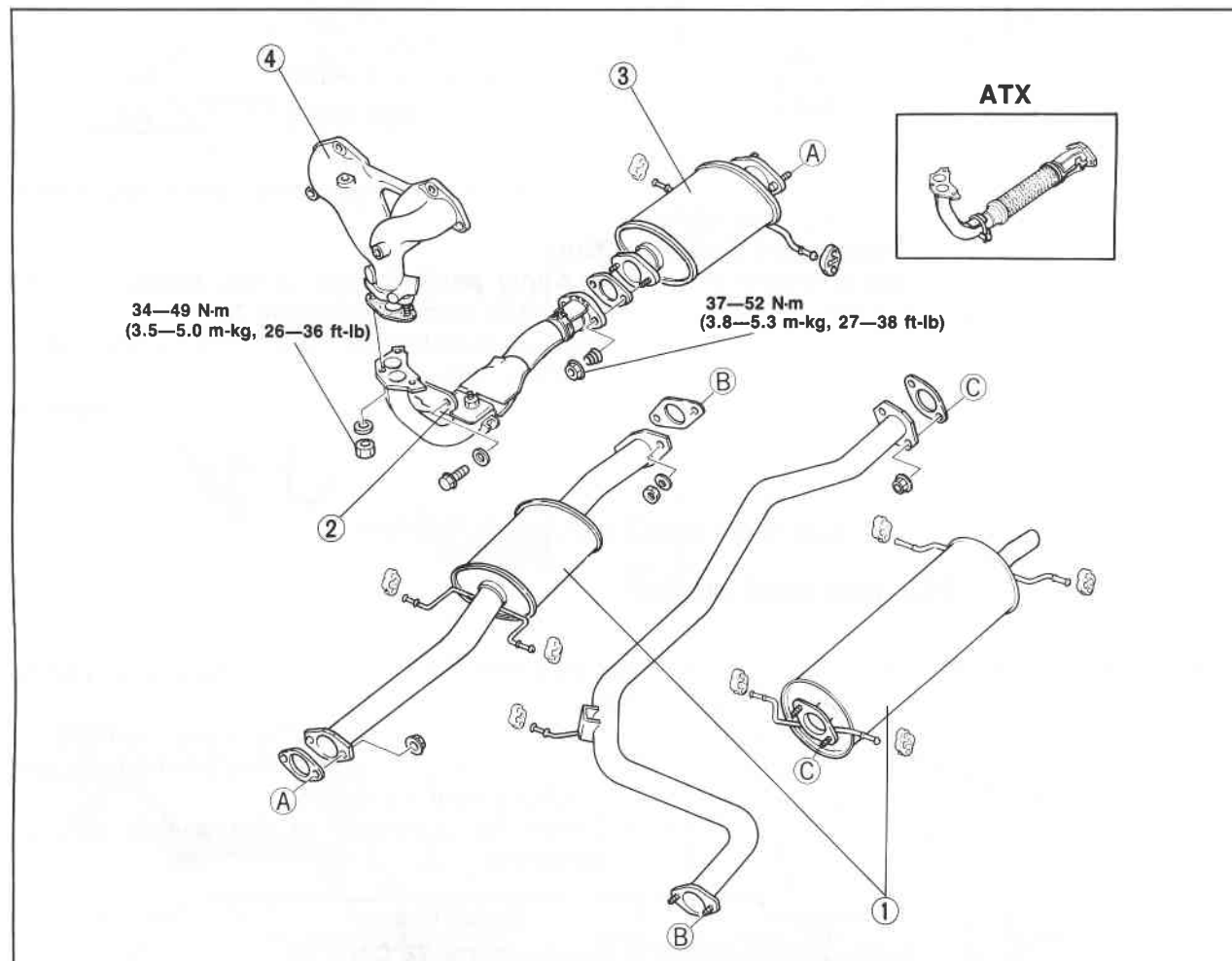
EXHAUST SYSTEM

EXCEPT FE 8VALVE—UNLEADED FUEL

Removal and Installation

1. Remove in the sequence shown in the figure.
2. Install in the reverse order of removal.

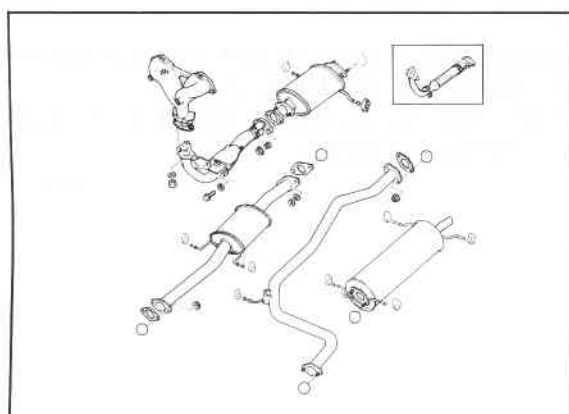
Torque specifications



76G04A-187

1. Center silencer and main silencer
2. Brackets

3. Front silencers
4. Exhaust manifolds



76G04A-188

Inspection

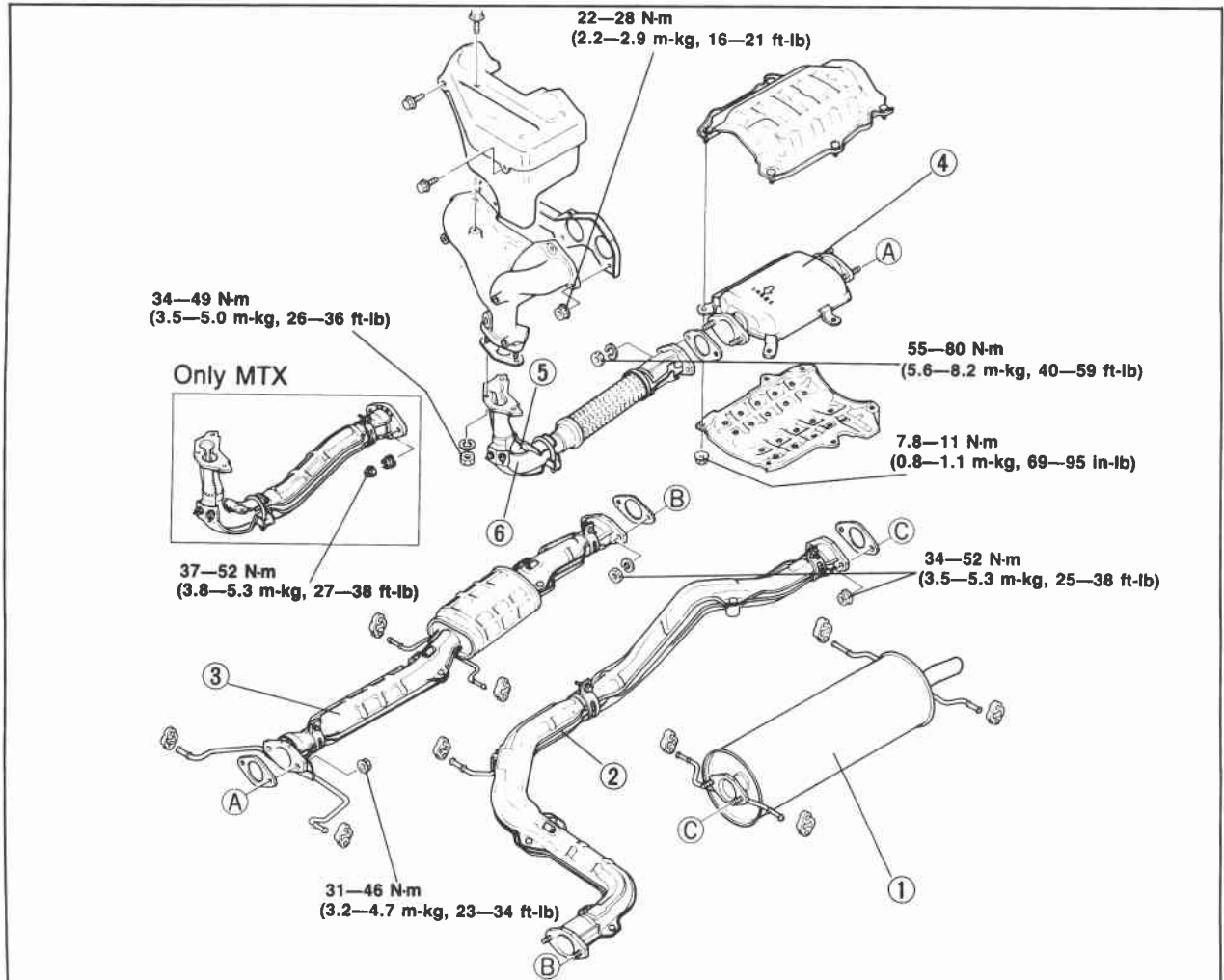
Visually check the exhaust system for cracks or damage.

FE 8 VALVE-UNLEADED FUEL

Removal and Inspection

1. Remove in the sequence shown in the figure
2. Install in the reverse order of removal.

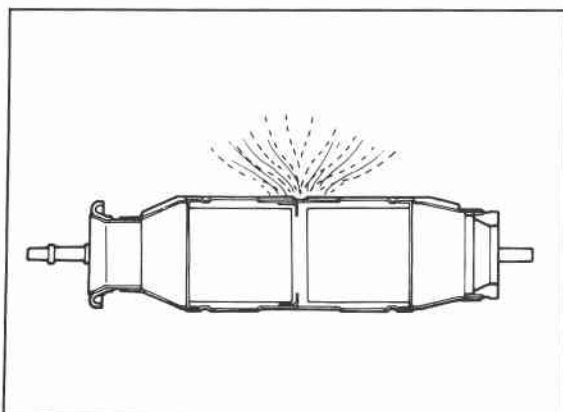
Torque Specifications



76G04A-189

1. Main silencer
2. Middle pipe
3. Pre-silencer

4. Catalytic converter
5. Bracket
6. Front pipe



76G04A-190

Inspection

1. Check the catalytic converter and exhaust pipe for deterioration or restriction.
2. Check the insulation covers welded onto the catalytic converter for damage.

Note

If the insulation cover is touching the catalytic converter housing, excessive heat at the floor will occur.