State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-133-2
Relating to Exemptions under Section 27156
of the Vehicle Code

REDLINE, INC., A SUBSIDIARY OF IMPAC
WEBER CARBURETOR MODEL 32/36 DGAV 33B1 AND 32/36 DGEV 33B1

Pursuant to the authority vested in the Air Resources Board by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-5;

IT IS ORDERED AND RESOLVED: That the installation of Redline Kit Numbers K8746, K8747, K8748, and K8749 using Weber 32/36 DGAV 33B1 and 32/36 DGEV 33B1 carburetors has been found not to reduce the effectiveness of required motor vehicle pollution control devices and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for the vehicles listed below:

Year	Make	Model	Engine (CID)	Redline Kit No.	Weber Carburetor
1975-1977	Toyota	Celica, Corona, 2&4WD Pick-up	20R (133.6)	K8746	32/36 DGAV 33B1
1978-1980	Toyota	Celica, Corona, 2&4WD Pick-up	20R (133.6)	K8747	32/36 DGAV 33B1
1981-1983	Toyota	Celica	22R (144.4)	K8748	32/36 DGEV 33B1
1981-1984	Toyota	2&4WD Pick-up	22R (144.4)	K8749	32/36 DGEV 33B1

This Executive Order is valid provided that installation instructions for this device will not recommend tuning the vehicle to specifications different from those submitted by the device manufacturer.

Changes made to the design or operating conditions of the device, as exempted by the Air Resources Board, that adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of this device using an identification other than that shown in this Executive Order or marketing of this device for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the Air Resources Board. Exemption of a kit shall not be construed as an exemption to sell, offer for sale, or advertise any component of a kit as an individual device.

This Executive Order does not constitute any opinion as to the effect that the use of this device may have on any warranty either expressed or implied by the vehicle manufacturer.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF THE WEBER 32/36 DGAV 33B1 OR 32/36 DGEV 33B1 CARBURETORS.

No claim of any kind, such as "Approved by Air Resources Board" may be made with respect to the action taken herein in any advertising or other oral or written communication.

Section 17500 of the Business and Professions Code makes untrue or misleading advertising unlawful, and Section 17534 makes violation punishable as a misdemeanor.

Section 43644 of the Health and Safety Code provides as follows:

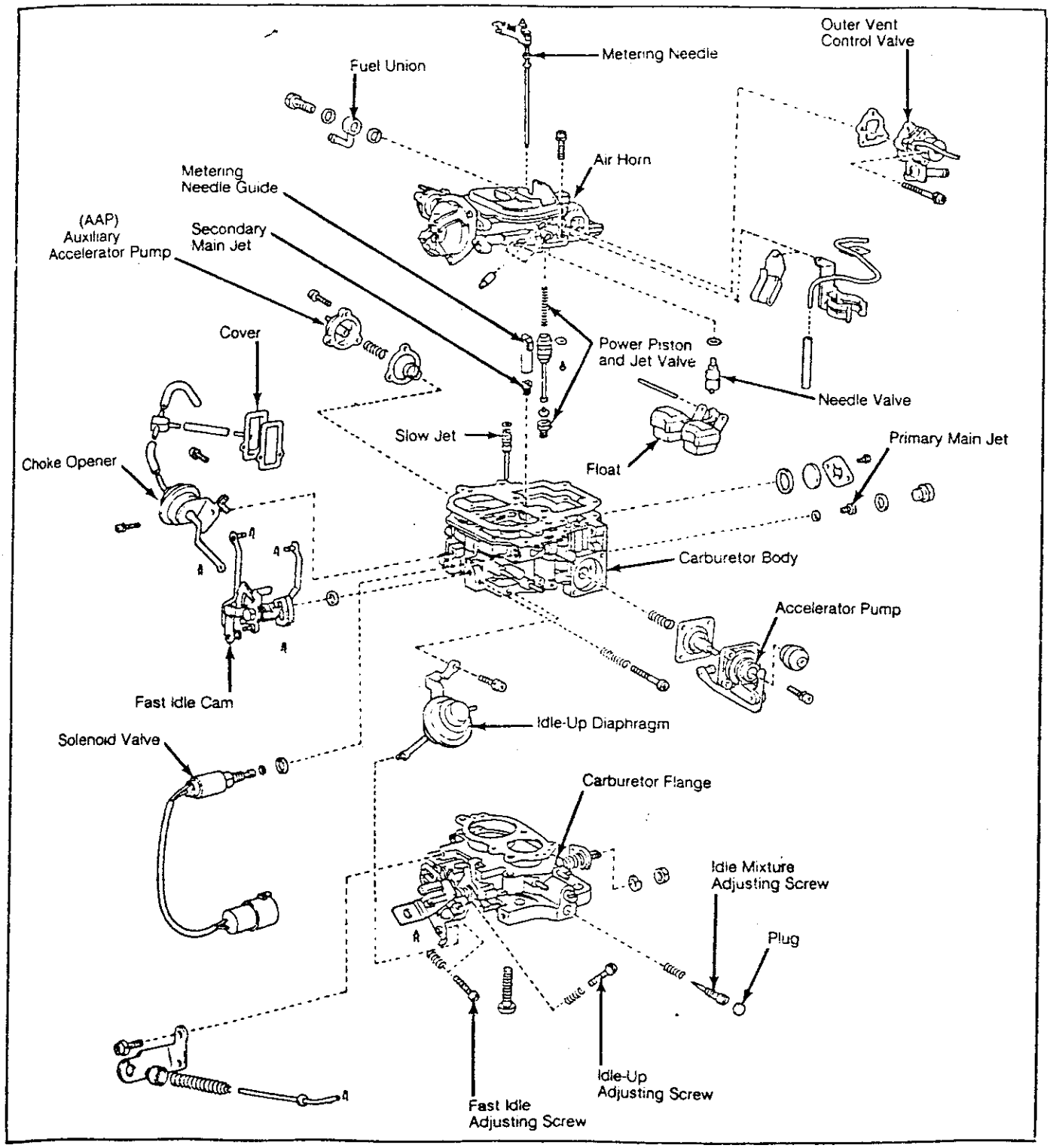
> "43644. (a) No person shall install, sell, offer for sale, or advertise, or, except in an application to the state board for certification of a device, represent, any device as a motor vehicle pollution control device for use on any used motor vehicle unless that device has been certified by the state board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as a certified device which, in fact, is not a certified device. Any violation of this subdivision is a misdemeanor."

Any apparent violation of the conditions of this Executive Order will be submitted to the Attorney General of California for such action as he deems advisable.

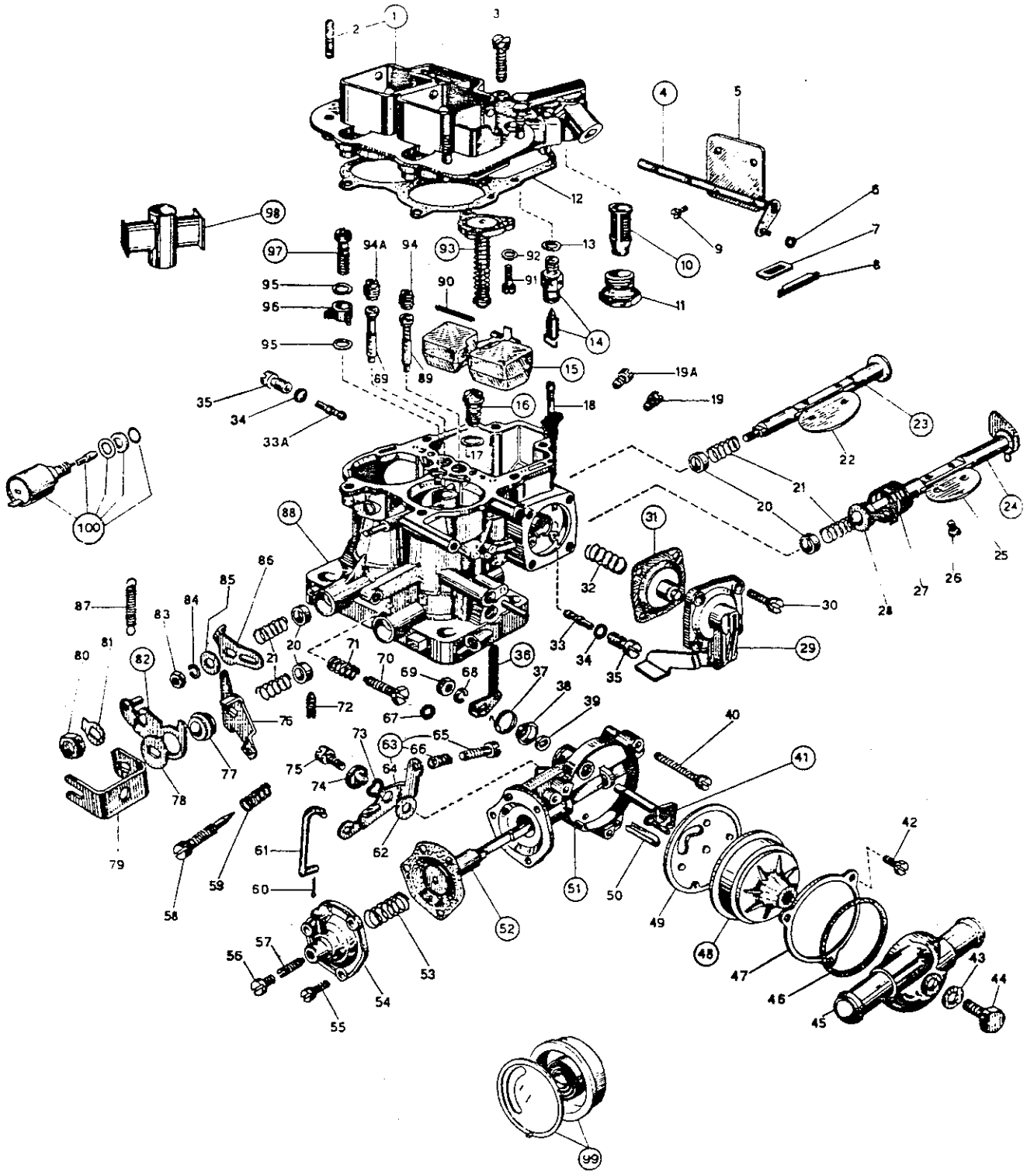
Executed at El Monte, California, this 11th day of March, 1985.

K. D. Drachand, Chief
Mobile Source Division

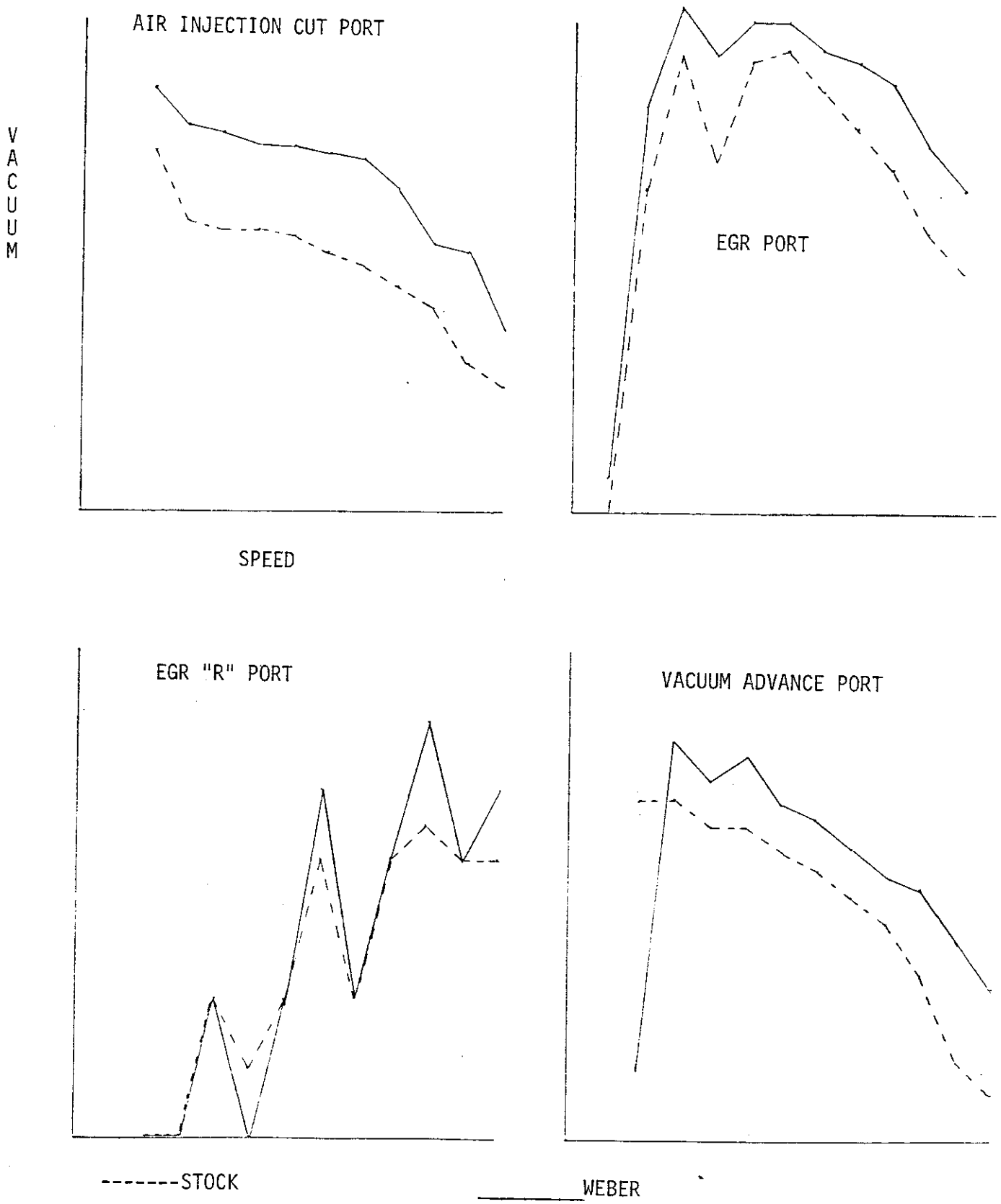
AISAN 2-BARREL



TYPICAL VIEW 32/36 DGAV/EV



APPENDIX B
CARBURETOR VACUUM SIGNAL



STATE OF CALIFORNIA
AIR RESOURCES BOARD

EVALUATION OF THE MODEL 32/36 DGAV 33B1 AND 32/36 DGEV 33B1 WEBER CARBURETORS FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13 OF THE CALIFORNIA ADMINISTRATIVE CODE

MARCH, 1985

STATE OF CALIFORNIA
AIR RESOURCES BOARD

EVALUATION OF THE MODEL 32/36 DGAV 33B1 AND 32/36 DGEV 33B1 WEBER CARBURETORS FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13 OF THE CALIFORNIA ADMINISTRATIVE CODE

by

Mobile Source Division
State of California
AIR RESOURCES BOARD
9528 Telstar Avenue
El Monte, CA 91731

SUMMARY

Redline, Inc., a distributor of Italian made Weber carburetors, has applied for exemption from the prohibitions of Vehicle Code Section 27156 for their Redline kit numbers K8746, K8747, K8748, and K8749 using Weber 32/36 DGAV 33B1 and 32/36 DGEV 33B1 carburetors.

Comparative exhaust emission tests demonstrate that the aftermarket Redline kits using Weber carburetor model 32/36 DGAV 33B1 or 32/36 DGEV 33B1 do not adversely affect emissions. Based on the results of the tests and the Board's evaluation of the Redline kits, the staff recommends that the exemption be granted for the vehicles as requested.

CONTENTS

EVALUATION OF THE MODEL 32/36 DGAV 33B1 AND 32/36 DGEV 33B1 WEBER CARBURETORS FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13 OF THE CALIFORNIA ADMINISTRATIVE CODE

I. INTRODUCTION

Redline, Inc. of Torrance, California, a subsidiary of Imported Parts and Accessories Corporation (IMPAC), is a distributor of Italian-made Weber carburetors and has applied for exemption from the prohibitions of Vehicle Code Section 27156 for aftermarket carburetor kits designated as the kit numbers K8746, K8747, K8748 and K8749 using Weber 32/36 DGAV 33B1 and 32/36 DGEV 33B1 carburetors. Exemption is sought as an exchange carburetor for the original equipment Aisan 21100 carburetor as found on limited 1975-1984 Toyota vehicles equipped with the 20R and 22R engines.

This report describes the evaluation of the Redline kits using Weber 32/36 DGAV 33B1 and 32/36 DGEV 33B1 carburetors and the findings.

II. CONCLUSIONS

Comparative exhaust emission data submitted by the applicant demonstrated that the Weber model 32/36 DGAV 33B1 and 32/36 DGEV 33B1 carburetors have similar emission characteristics as that of an Aisan 21100 carburetor. The applicant also submitted carburetor flow curves, and EGR and spark advance signal curves of the model 32/36 DGEV 33B1 to demonstrate that the Weber aftermarket carburetor functions in a like manner as to similar Aisan counterparts. Weber 32/36 DGAV 33B1 and 32/36 DGEV 33B1 carburetors simply exchange the existing carburetor with only linkage and adaptor modifications and the stock air cleaner housing is retained. The idle mixture screw has a limiting adjustment cap to prevent tampering. Confirmatory testing at the ARB Haagen-Smit Laboratory indicated reduced hydrocarbon and carbon monoxide emissions and only a slight increase (0.05 gm/mi) in oxides of nitrogen.

III. RECOMMENDATIONS

Based on the submitted comparative data of the Weber carburetors, the staff recommends that Redline, Inc. be granted exemption from the prohibitions of Vehicle Code Section 27156 for the Weber aftermarket carburetor models 32/36 DGAV 33B1 and 32/36 DGEV 33B1 for the years, make, and models of vehicles listed below:

Year	Make	Model	Engine	Carburetor
1975-1980	Toyota	Celica	20R (133.6 CID)	32/36 DGAV 33B1
1975-1980	Toyota	Corona	20R (133.6 CID)	32/36 DGAV 33B1
1975-1980	Toyota	2WD and 4WD Pick-Up	20R (133.6 CID)	32/36 DGAV 33B1
1981-1983	Toyota	Celica	22R (144.4 CID)	32/36 DGEV 33B1
1981-1984	Toyota	2WD and 4WD Pick-Up	22R (144.4 CID)	32/36 DGEV 33B1

IV. DEVICE DESCRIPTION

Both the Weber 32/36 DGAV 33B1 and 32/36 DGEV 33B1 (32/36 DGAV/EV 33B1) and Aisan 21100 carburetors are progressive two-barrel down draft designs. Appendix A shows typical views of the Aisan and Weber carburetors. The main differences between the carburetors are the manner in which the secondary throttle is activated, jet sizes, and certain ancillary features. The Weber carburetors use a manually-operated secondary which starts to open after a primary throttle opens approximately 68 percent. The Aisan carburetor uses a vacuum operated secondary which starts to open after 50° of primary throttle opening. The secondary fuel cut system and the auxiliary accelerator pump features of the Aisan carburetors are not utilized in the Weber. The Weber carburetor uses an internal choke pull down rather than the external system of the Aisan.

The DGAV carburetor utilizes engine coolant to activate the choke and the DGEV carburetor choke is electrically activated. Page A-2 of Appendix A indicates the differences in choke actuation mechanism. Part numbers 45-48

show the choke used on the DGAV carburetor and part number 99 is used on the DGEV carburetor. The Redline kits use electrically actuated chokes for vehicles in which the original equipment choke is electrically actuated (on later model-year Toyotas) and coolant actuated chokes for vehicles in which the original equipment choke is coolant actuated (on older model-year Toyotas). With the exceptions noted in Table 1 and the choke actuation mechanism, the carburetors are identical for all vehicles for which the Vehicle Code Section 27156 exemption is requested.

Three Weber carburetor configurations are used in the four kits utilized to cover the vehicles for which exemption was requested. Each kit contains appropriate linkage, and carburetor and air cleaner adaptors. Internal carburetor differences are given in Table 1.

Table 1

Kit Number Vehicle Model Engine Model Years	K8746, K8747 Celica, Corona All Trucks 20R 75-80	K8748 Celica 2X4 Trucks 22R 81-83/84	K8749 4X4 Trucks 22R 81-84
Jet Size (mm)			
Main	1.40/1.40	1.45/1.40	1.47/1.40
Air Corrector	1.60/1.60	1.55/1.60	1.60/1.60
Idle	0.57/0.50	0.60/0.50	0.60/0.50
Accel. Pump	0.50	0.40	0.40
Accel. Pump Delivery (cm^3)	8.5 - 13.0	8.5 - 10.0	8.5 - 10.0
Choke Settings (mm)			
Fast Idle	1.0 - 1.1	1.2 - 1.4	1.2 - 1.4
Pull Down	4-6	6-8	4.5 - 6.5

V. EVALUATION PROGRAM

The applicant performed comparative CVS-75 exhaust emission tests at Import Certification Laboratories in Anaheim, California. A 1982 Toyota Celica equipped with a 22R (2366 cc) engine and automatic transmission, and a

1983 Toyota 4X4 pick-up truck equipped with a 22R (2366 cc) engine and manual 5-speed transmission, were used for the tests.

During the evaluation, testing was performed on 2 representative production carburetors to show that the exhaust emission levels would not be adversely affected by the use of the Weber 32/36 DGEV 33B1 carburetor. Baseline tests with the Aisan carburetors were performed to show that the stock vehicles were in proper working order and that emissions of the vehicle were within the applicable state standards.

The comparative exhaust emission and derived fuel economy data are given in Table 2.

Table 2

Comparative Test Data
1982 Toyota Celica

Condition	Exhaust Emissions gm/mi HC	CO	NOx	Fuel Economy mi/gal City
Baseline	0.34	3.7	0.16	20.9
Weber Carburetor	0.22	3.0	0.11	20.7
1982 Passenger Car Std.	0.39	7.0	0.7	-

1983 Toyota 4X4 Pick-Up

Condition	Exhaust Emissions gm/mi HC	CO	NOx	Fuel Economy mi/gal City
Baseline	0.31	3.3	0.39	18.1
Weber Carburetor	0.31	3.3	0.39	18.1
1983 Light-Duty Truck Std.	0.39	9.0	1.0	-

Confirmatory testing of the Weber 32/36 DGEV 33B1 carburetor was conducted at the ARB Haagen-Smit Laboratory. The 1982 Toyota Celica was used for these tests. The tests results are contained in Table 3.

Table 3

1982 Toyota Celica

Condition	Exhaust Emissions gm/mi HC	CO	NOx	Fuel Economy mi/gal City
Baseline	0.19	3.0	0.20	23.8
Weber Carburetor	0.14	2.5	0.25	23.0
1982 Passenger Car Std.	0.39	7.0	0.7	-

VI. DISCUSSION

The applicant's submitted comparative emission and bench test data is generally acceptable. The submitted emission test data showed no significant increase in emissions. The ARB confirmatory tests indicated no significant increase in emissions. Although there are some differences in the operation of the Aisan and Weber carburetors, as described in Section IV of this report, the Weber 32/36 DGEV 33B1 does not adversely affect exhaust emissions.

The two 1982 and 1983 model-year vehicles selected for testing use the electrically actuated choke. There were no significant emission differences between the baseline and Redline kit tests for carburetors using the electric choke. No testing was conducted on vehicles using the coolant actuated choke. Redline kit chokes are designed to have similar choke opening times as the original equipment chokes. Therefore, it is to be expected that the Redline kits with coolant actuated choke systems will exhibit similar emission characteristics as the original equipment Aisan carburetors with hydraulic choke systems and will have no significant effect on emissions.

Driveability was not evaluated during the testing of the Weber 32/36 DGAV/EV 33B1 carburetors. However, if driveability was adversely impaired, emissions would have more than likely increased.

Although the test data of the Weber 32/36 DGEV 33B1 carburetors reveals them to be functionally similar with regard to emissions to the later models of the Aisan carburetors, they cannot be classified as an Aftermarket Replacement Part as differences are found in the bench air flow data, emission controls vacuum signals, and the carburetor choke and power circuits.

The Weber 32/36 DGAV 33B1 and 32/36 DGEV 33B1 carburetors are packaged in four separate kits identified as kits K8746, K8747, K8748, and K8749. The same carburetor is used in each kit except the connective throttle arrangements differ to facilitate various configurations found on the vehicle models, and various jet and choke parameters vary among the carburetors.

INSTALLATION INSTRUCTIONS

READ & UNDERSTAND ALL STEPS OF THESE INSTRUCTIONS BEFORE BEGINNING THIS INSTALLATION. After unpacking, examine the carburetor and other components for shipping damage. If any damage is found, notify shipper/supplier immediately.

TOYOTA
20R ENGINES (1975-1977)
For Kit Nos. K8746 and 52-51502
Using Weber 32/36 DGAV 33 B

TOOLS AND EQUIPMENT NEEDED:

Combination, box or open end wrenches (metric)
Socket set with 12 mm socket
Screwdriver (regular and Phillips)
Pliers
Gasket Scraper
Rags
Cleaning Solvent
Knife
Gasket Sealer

PARTS SUPPLIED WITH INSTALLATION KIT:

1 - 32/36 DGAV 33B Weber Carburetor
1 - Carburetor Adaptor
1 - Linkage Kit
2 - Tubes Thread Locking Compound

TUNE-UP SPECIFICATIONS

All tune-up specifications for the Weber Carburetor remain the same as those specified by the Factory for the original unit. Emissions tune-up should be carried out by a suitably qualified Dealer or Independent garage, using infrared gas analyzing equipment.

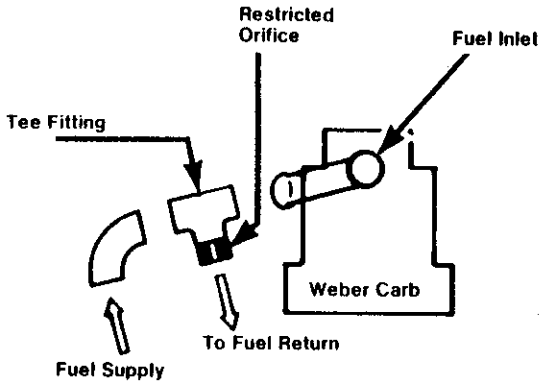
N TE: Late model vehicles fitted with Emission Control Systems have many vacuum lines and electrical connections in their fuel systems. It is essential when dismantling, that disconnected lines be identified with a corresponding number tag or label system. To establish function, locate and identify the source of each line.

N TE: This kit is particularly complex. It is imperative that you familiarize yourself with the glossary of abbreviations and the schematics of vacuum lines and emissions control components included with these instructions BEFORE you begin the installation.

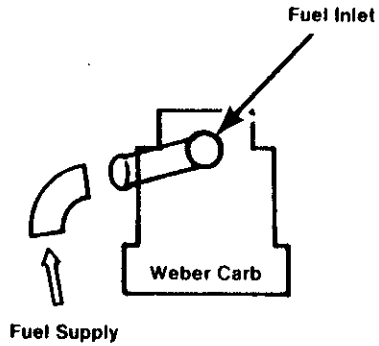
1. Disconnect battery.
2. Drain approximately 1 quart of water from the cooling system (on original equipment water choke only). **CAUTION: *Hot Water May Be Present.***
3. Remove gas cap.
4. Remove Factory air filter assembly and all attaching hardware and hoses. Use a corresponding number system to identify hoses for reinstallation.
5. Refer to the vacuum-line diagram applicable to your year/model to identify and label the vacuum lines that are to be removed from the original carburetor.
6. Remove fuel inlet line and fuel return line from the original carburetor. The inlet is the line closer to the fender and the return is the line closer to the valve cover. Some Toyota vehicles have the fuel return on the fuel pump and only the fuel inlet hose will have to be removed from the carburetor.
7. Disconnect the throttle linkage from O.E. carburetor. Save the linkage clip for use with the Weber carburetor.
8. Remove water choke hoses from O.E. carburetor. The water choke hose closer to the valve cover is removed from the vehicle and will be replaced with the hose supplied in the kit.
9. Disconnect the idle cutoff wire(s) by separating the wires at the connector to the electrical source.

FUEL-LINE SYSTEM SCHEMATIC

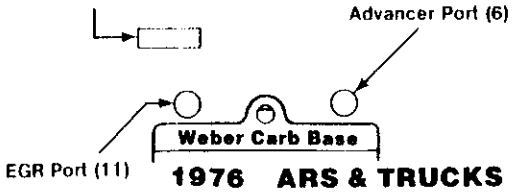
1975-1979

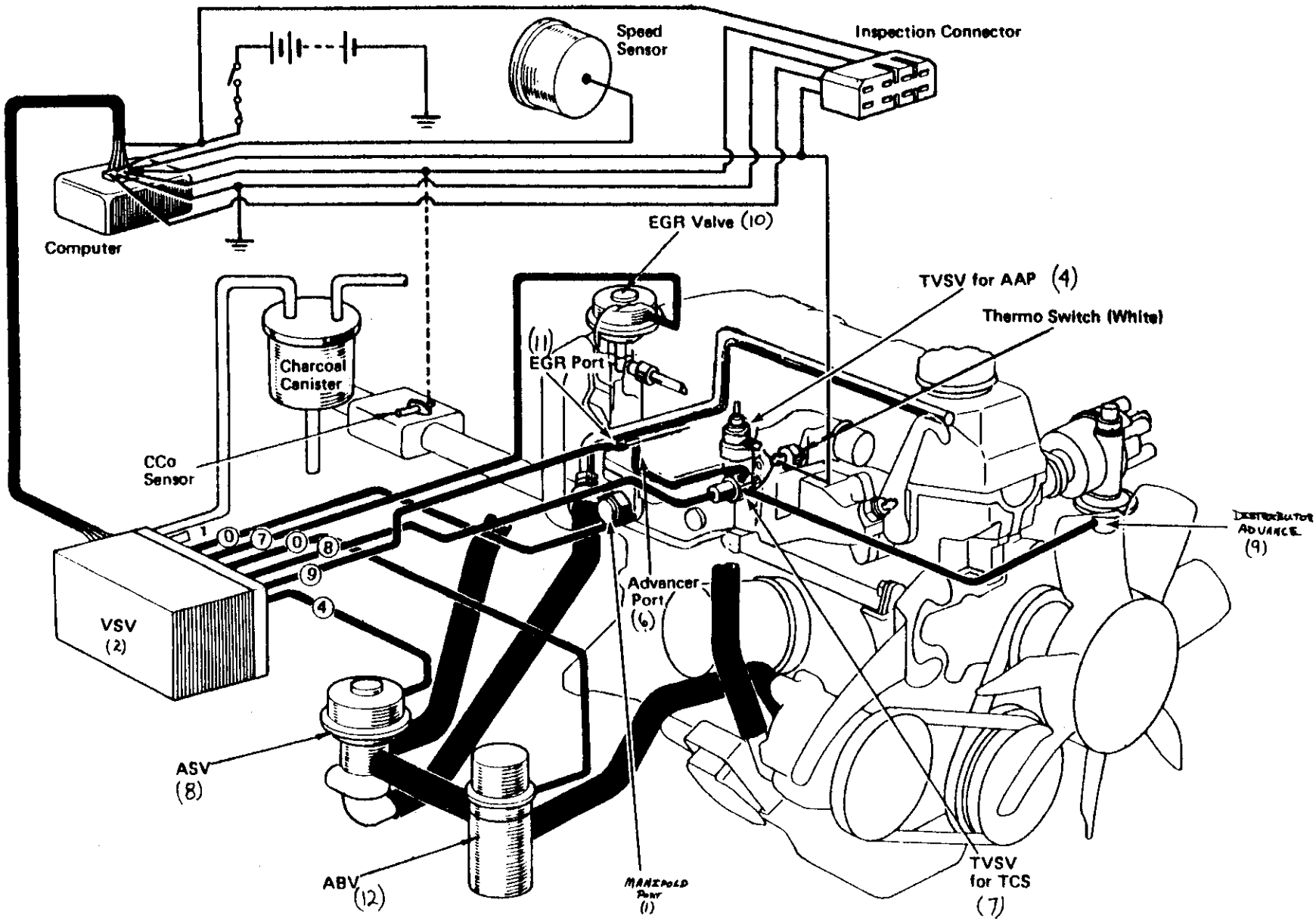


1980

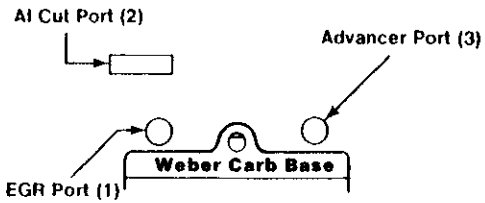


VACUUM LINE ROUTING
1976 Cars & Trucks With Weber Carb.

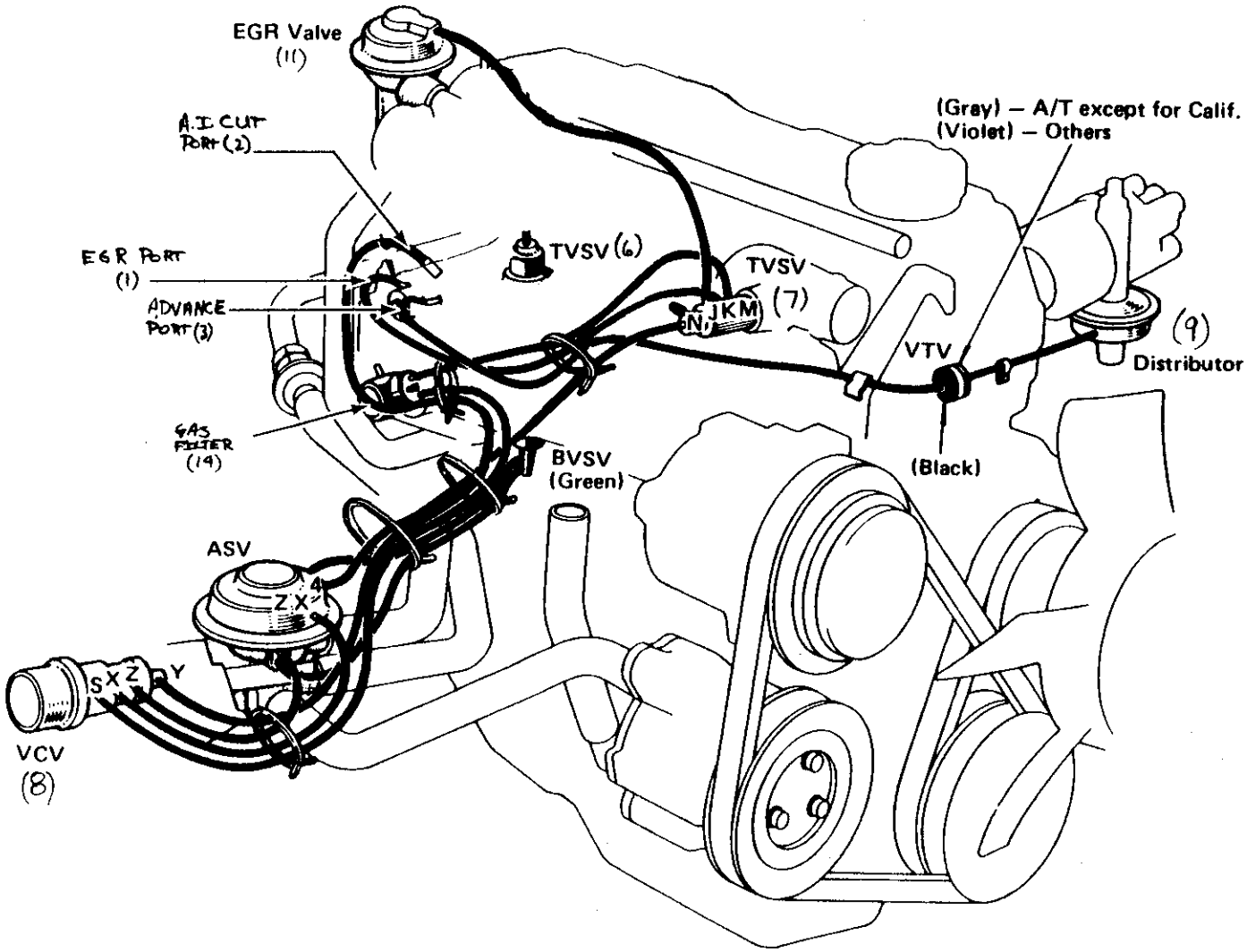




VACUUM LINE ROUTING
1977 Trucks With Weber Carb.



1977 TRUCKS



INSTALLATION INSTRUCTIONS

WEBER CARBURETORS

READ & UNDERSTAND ALL STEPS OF THESE INSTRUCTIONS BEFORE BEGINNING THIS INSTALLATION. After unpacking, examine the carburetor and other components for shipping damage. If any damage is found, notify shipper/supplier immediately.

TOYOTA
20 R ENGINES (1978-1980)
For Kit Nos. K8747 and 52-51505
Using Weber 32/36 DGAV 33 B

TOOLS AND EQUIPMENT NEEDED:

Combination, box or open end wrenches (metric)
Socket set with 12 mm socket
Screwdriver (regular and Phillips)
Pliers
Gasket Scraper
Rags
Cleaning Solvent
Knife
Gasket Sealer

PARTS SUPPLIED WITH INSTALLATION KIT:

1 - 32/36 DGAV 33 B Weber Carburetor
1 - Linkage Kit
1 - Tube Thread Locking Compound
1 - Carburetor Adapter

TUNE-UP SPECIFICATIONS

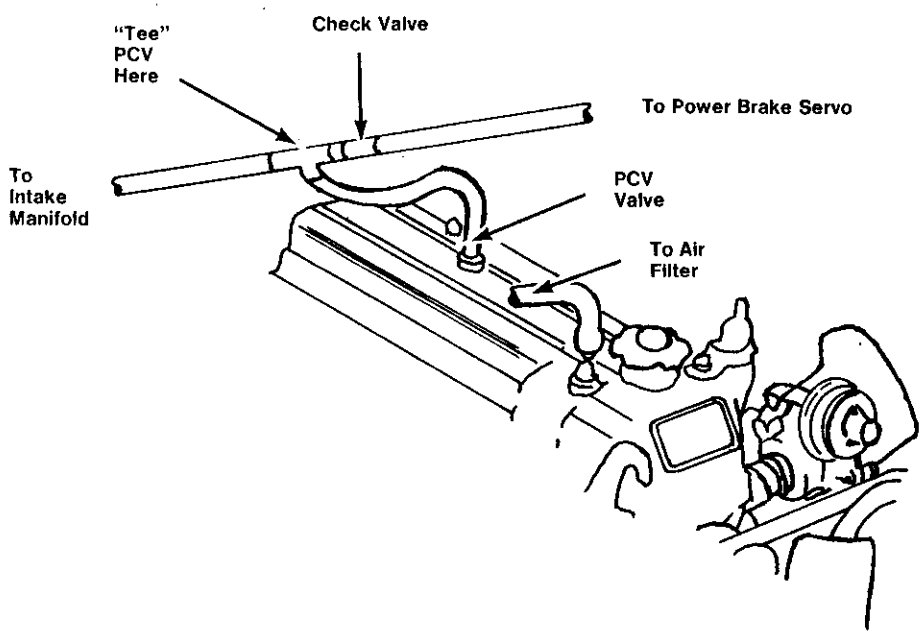
All tune-up specifications for the Weber Carburetor remain the same as those specified by the Factory for the original unit. Emissions tune-up should be carried out by a suitably qualified Dealer or Independent garage, using infrared gas analyzing equipment.

NOTE: Late model vehicles fitted with Emission Control Systems have many vacuum lines and electrical connections in their fuel systems. It is essential when dismantling, that disconnected lines be identified with a corresponding number tag or label system. To establish function, locate and identify the source of each line.

NOTE: This kit is particularly complex. It is imperative that you familiarize yourself with the glossary of abbreviations and the schematics of vacuum lines and emissions control components included with these instructions BEFORE you begin the installation.

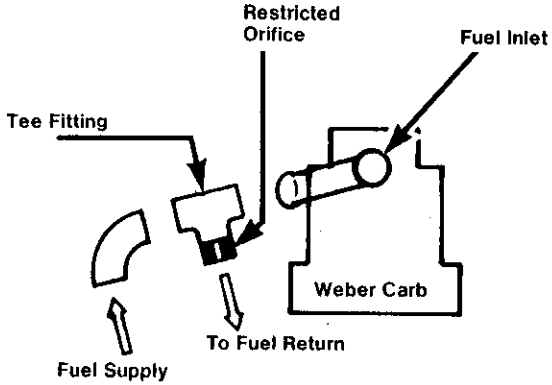
1. Disconnect battery.
2. Drain approximately 1 quart of water from the cooling system (on original equipment water choke only). **CAUTION:** ***Hot Water May Be Present.***
3. Remove gas cap.
4. Remove Factory air filter assembly and all attaching hardware and hoses. Use a corresponding number system to identify hoses for reinstallation.
5. Refer to the vacuum line diagram applicable to your year & model to identify and label the vacuum lines that are to be removed from the original carburetor.
6. Remove fuel inlet line and fuel return line from the original carburetor. The inlet is the line closer to the fender and the return is the line closer to the valve cover. Some Toyota vehicles have the fuel return on the fuel pump and only the fuel inlet hose will have to be removed from the carburetor.
7. Disconnect the throttle linkage from the original carburetor. Save the linkage clip for use with the Weber carburetor.
8. Remove water choke hoses from original carburetor. The water choke hose closer to the valve cover is removed from the vehicle and will be replaced with the hose supplied in the kit.
9. Disconnect the idle cut-off wire(s) by separating the wires at the connector to the electrical source.

TOYOTA 20R
PCV ROUTING
(1975-1980)



FUEL-LINE SYSTEM SCHEMATIC

1975-1979



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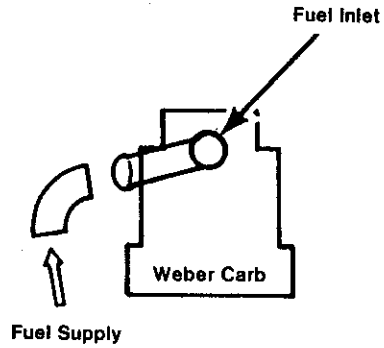
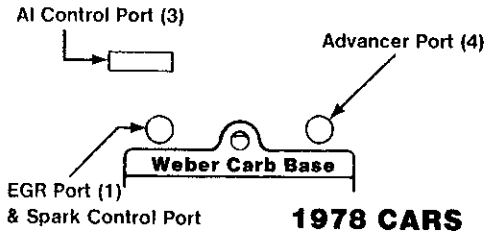
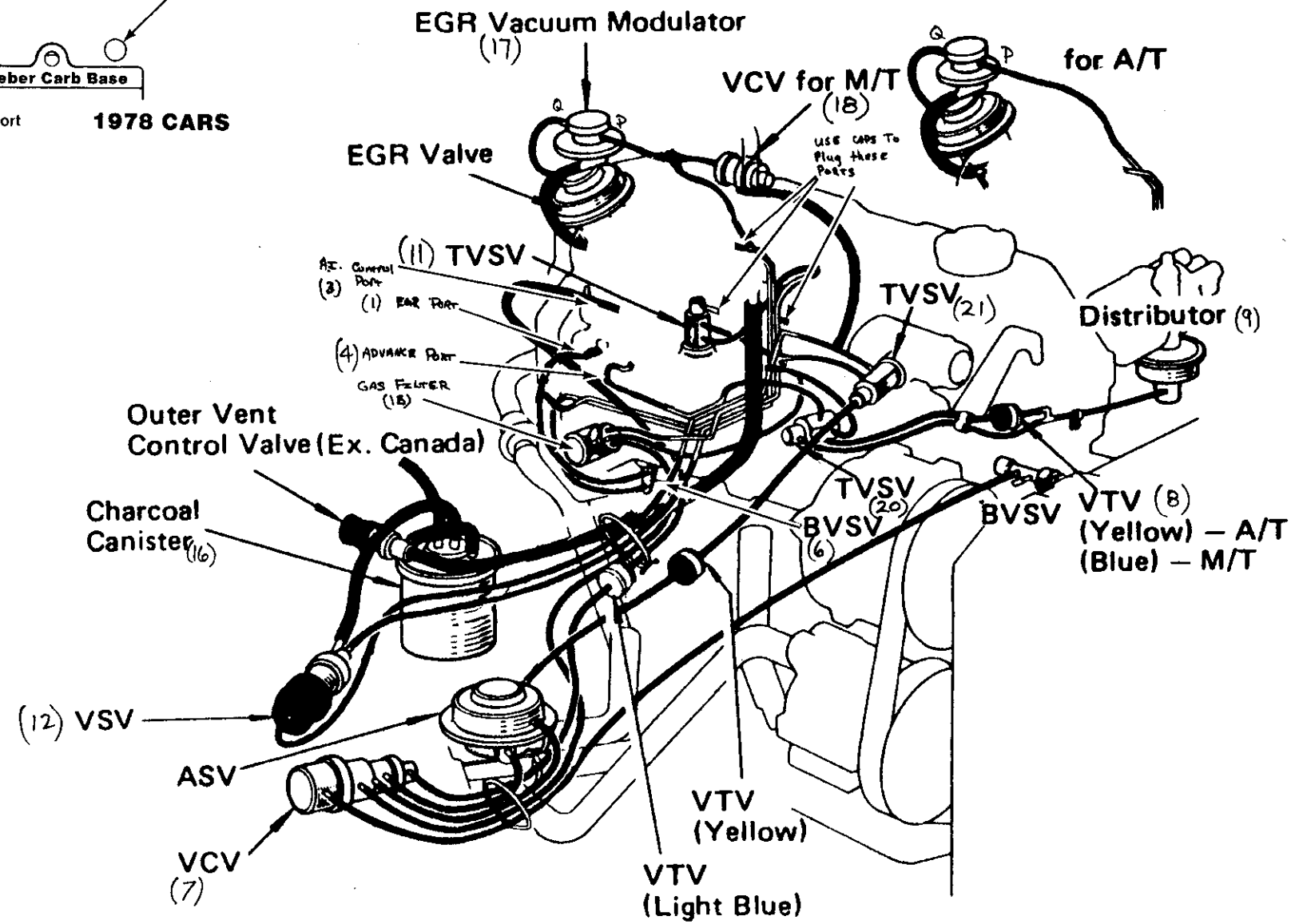
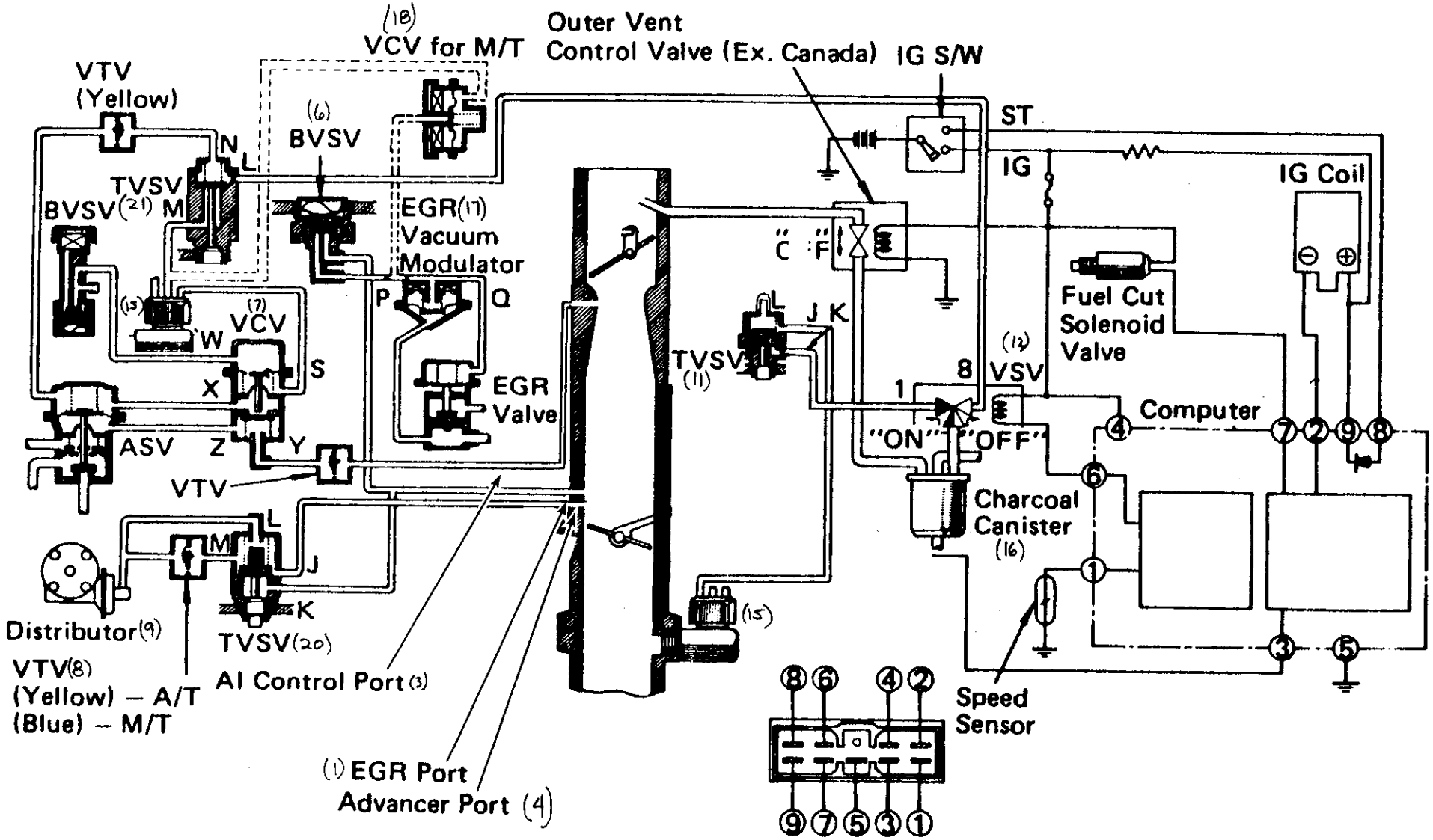


VACUUM LINE ROUTING
1978 Cars With Weber Carb.





EMISSI N CONTR L COMP NENT
SCHEMATIC
1978 Cars With Weber Carb.



VACUUM LINE
ORIGIN/TERMINUS CHART
For Toyota 20 R Engines
1978 Trucks

NOTE	STOCK		With WEBER "033 B"	
	ORIGIN (Goes From)	TERMINUS (Goes To)	ORIGIN (Goes From)	TERMINUS/DISPOSITION (Goes To)
	EGR Port (1)	BVSV (6)	EGR Port (1)	NO CHANGE
	A.I. Control Port (3)	Port "Y" on VSV (7)	A.I. Control Port (3)	NO CHANGE
	Advancer Port (4)	Distributor Advance (9)	Advancer Port (4)	NO CHANGE
	Fuel Cut Port (5)	Vacuum Switch (10)	Fuel Cut Port (5) is removed w/orig. carb.	Vacuum Switch (10) is removed from vehicle
	VSV (12) (large hose)	Charcoal Canister (16)	VSV (12) (large hose)	NO CHANGE
	VSV (12) (small hose)	Port "K" on TVSV (11) + TP (13)	VSV (12) (small hose) TP (13) is removed w/orig. carb.	Port "K" on TVSV (11). Plug open TP (13) vacuum line
	Port "L" on TVSV (11) (top)	AAP (14)	Plug Port "L" on TVSV (11) (top)	AAP (14) is removed w/orig. carb.
	Port "J" on TVSV (11) (middle)	Gas Filter (15)	NO CHANGE	NO CHANGE
	Port "K" on TVSV (11) (bottom)	VSV (12)	NO CHANGE	NO CHANGE

VACUUM LI
ORIGIN/TERMINUS CHART
For Toyota 20 R Engines
1979 Cars & Trucks, Con't.

	STOCK		With WEBER "033 B"	
NOTE	ORIGIN (Goes From)	TERMINUS (Goes To)	ORIGIN (Goes From)	TERMINUS/DISPOSITION (Goes To)
	VSV (12A)	Gas Filter (28), via Tee fitting	VSV (12A) is removed from vehicle	Plug Tee fitting in line from Gas Filter (28)
A/C	VSV (12B)	Gas Filter (28), via Tee fitting	VSV (12B) is removed from vehicle	Plug Tee fitting in line from Gas Filter (28)
	Port "L" on TVSV (11) (top)	AAP (14)	Plug Port "L" on TVSV (11) (top)	AAP (14) is removed w/orig. carb.
	Port "J" on TVSV (11) (middle)	Manifold Vacuum Source (22)	NO CHANGE	NO CHANGE
	Port "K" on TVSV (11) (bottom)	Part "3" on VSV (12)	NO CHANGE	NO CHANGE
A/T	Port "Q" on EGR Vacuum Modulaotr (17)	EGR Valve (29)	NO CHANGE	NO CHANGE
	Port "P" on EGR Vacuum Modulator (17)	BVSV (25)	NO CHANGE	NO CHANGE
M/T	Port "Q" on EGR Vacuum Modulator (17)	EGR Valve (29)	NO CHANGE	NO CHANGE
	Port "P" on EGR Vacuum Modulator (17)	BVSV (25) + VCV for M/T (18)	NO CHANGE	NO CHANGE
M/T	VCV (18) (firewall side)	Port "P" on EGR Vacuum Modulaotr (17)	NO CHANGE	NO CHANGE
	VCV (18) (radiator side)	Carb Air Inlet	VCV (18) (radiator side)	Port "M" on TVSV (21)

VACUUM LINE
ORIGIN/TERMINUS CHART
For Toyota 20 R Engines
1979 Cars & Trucks

NOTE	STOCK		With WEBER "033 B"	
	ORIGIN (Goes From)	TERMINUS (Goes To)	ORIGIN (Goes From)	TERMINUS/DISPOSITION (Goes To)
	Choke Opener Port (1)	BVSV (26)	Choke Opener Port is removed w/orig. carb.	BVSV (26) is removed w/orig. carb.
	Fuel Cut Port (2)	Vacuum Switch (10)	Fuel Cut Port is removed w/orig. carb.	Vacuum Switch (10) is removed from vehicle
	Spark Control Port (3)	Port "K" on TVSV (20) (bottom)	Spark Control Port (3) is removed w/orig. carb, Tee line into EGR Port (4) line	NO CHANGE
	EGR Port (4)	BVSV (25)	EGR Port (4)	NO CHANGE
	A.I. Control Port (5)	Port "Y" on VCV (7)	A.I. Control Port (5)	NO CHANGE
	Advancer Port (6)	Port "J" on TVSV (20) (2nd from bottom)	Advancer Port (6)	NO CHANGE
	VSV (12)			
	Port "*"	Charcoal Canister (16)	NO CHANGE	NO CHANGE
	Port "3"	Port "K" on TVSV (11)	NO CHANGE	NO CHANGE
	Port "1"	Choke Breaker (19)	Plug Port "1" w/cap supplied	Choke Breaker (19) is removed w/orig. carb.
	Port "6"	Port "L" on TVSV (21) + Port "5" on VSV (12)	Plug Port "6" w/cap supplied	Plug open end of Tee fitting in line from Port "5" on VSV (12)
	Port "5"	Port "L" on TVSV (21)	Port "5"	NO CHANGE
	Port "4"	ASV (27)	NO CHANGE	NO CHANGE

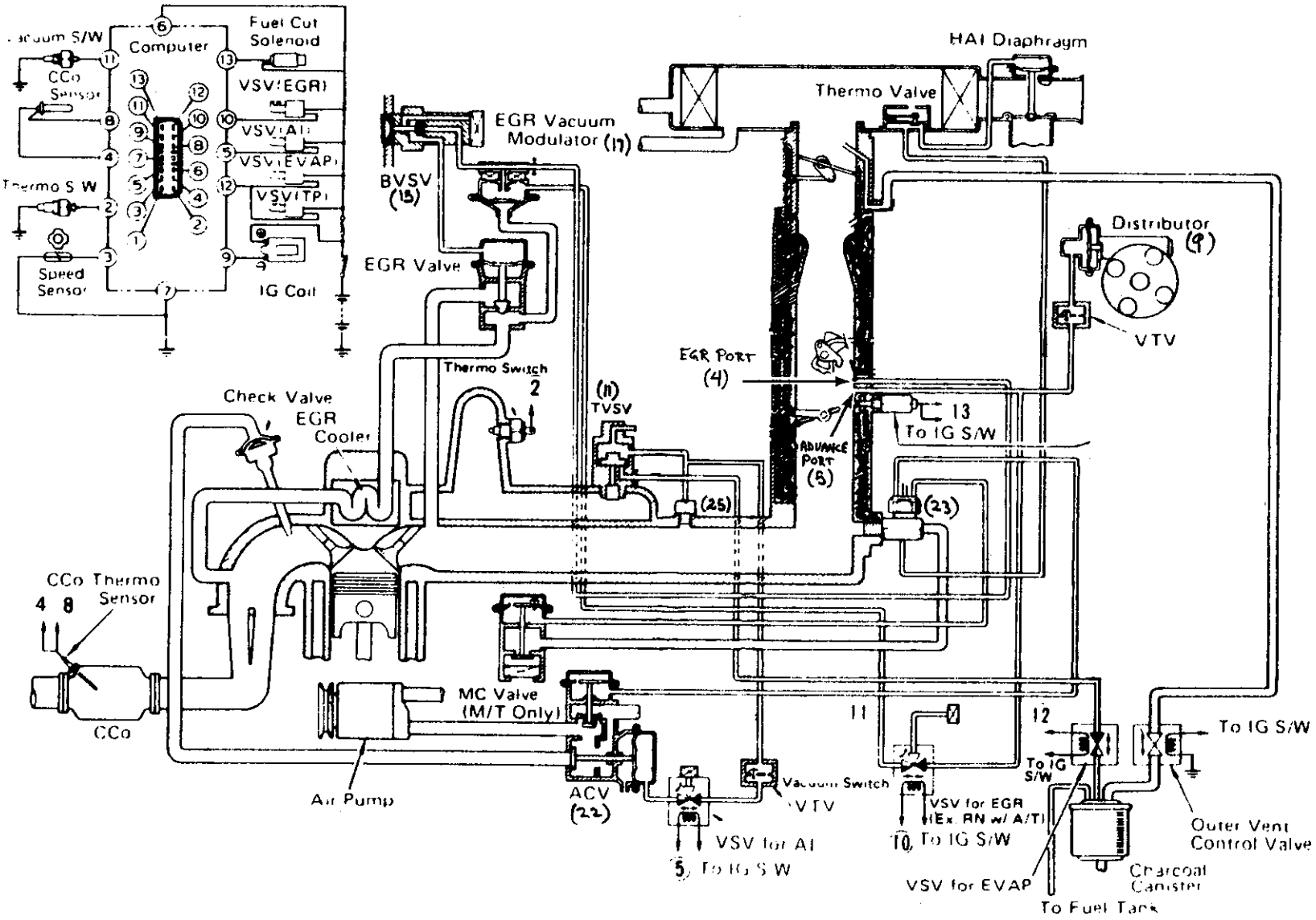
NOTE	STOCK ORIGIN (Goes From)	STOCK TERMINUS (Goes To)	With WEBER "033 B" ORIGIN (Goes From)	With WEBER "033 B" TERMINUS/DISPOSITION (Goes To)
A/C	bottom port	VSV for A/C (12)	Plug bottom port of VSV for TP (7)	VSV for A/C (12) is removed from vehicle, the TP (13) is removed w/orig. carb.
	VSV for EVAP (10): top port	FICB (20) + Bottom Port on TVSV (11) + Choke Breaker	VSV for EVAP (10): top port	Bottom Port of TVSV (11). FICB (20) + CB (19) are removed w/orig. carb. Plug open vacuum lines from these.
	bottom port	Charcoal Canister (16)	NO CHANGE	NO CHANGE
A/C	VSV for A/C (12): top (double port end)	Manifold Vacuum Tee (26)	Plug bottom port of VSV for TP (7)	VSV for A/C is removed from vehicle. Plug Manifold Vacuum Tee (26)
	bottom (double port end)	TP (13)	Removed	Removed
	single port end	Bottom Portion VSV for EVAP (10)	Removed	Removed
Exc. A/T Truck	VSV for EGR (18) (double end): top port	EGR Port "R" (3)	VSV for EGR (18) (double end): top	Advancer Port (5)
	bottom port	Port "R" on EGR Vacuum Modulator (17)	NO CHANGE	NO CHANGE
	VSV for EGR (18) (single end)	Air Filter (24)	NO CHANGE	NO CHANGE
	TVSV (11):		TVSV (11):	AAP (14) is removed w/orig. carb.
	top port	AAP (14)	Plug top port of TVSV (11) w/cap supplied	
	middle port	Manifold Vacuum Source (25)	NO CHANGE	NO CHANGE
	bottom port	Choke Breaker (19) + FICB (20) + VSV (10) (top port)	bottom port	Top Port of VSV (10). FICB (20) and (BC 19) are removed w/orig. carb. Plug open vacuum lines

VACUUM LINE
ORIGIN/TERMINUS CHART
For Toyota 20 R Engines
1980 Cars & Trucks

	STOCK		With WEBER "033 B"	
NOTE	ORIGIN (Goes From)	TERMINUS (Goes To)	ORIGIN (Goes From)	TERMINUS/DISPOSITION (Goes To)
	Fuel Cut Port (1)	Vacuum Switch (21)	Fuel Cut Port (1) is removed w/orig. carb.	Vacuum Switch (21) is removed from vehicle
	A.I. Port (2)	VSV For A.I. (6)	A.I. Port (2) is removed w/orig. carb., Tee into Manifold Vacuum Source (25)	NO CHANGE
Exc. A/T Truck	EGR Port "R" (3)	VSV for EGR (18) (top port on double end)	EGR Port "R" (3) is removed w/orig. carb., Tee into Vacuum Advance Port (5)	NO CHANGE
A/T Truck	EGR Port "R" (3)	Port "R" on EGR Vacuum Modulator (17)	EGR Port "R" (3) is removed w/orig. carb., Tee into Vacuum Advance Port (5)	NO CHANGE
	EGR Port (4)	Port "P" on EGR Vacuum Modulator (17)	EGR Port (4)	NO CHANGE
	Advancer Port (5)	Distributor Advance (9)	Advancer Port (5)	NO CHANGE
	VSV for A.I. (6): top	A.I. Port (2)	VSV for A.I. (6): top	Manifold Vacuum Source (25)
	bottom	ACV (22)	bottom	NO CHANGE
	VSV for TP (7): top port	Gas Filter	Plug top port of VSV for TP (7)	Remove vacuum line to Gas Filter (22)
	bottom port	TP (13)	Plug bottom port of VSV for TP (7)	TP (13) is removed w/orig. carb.

EMISSION CONTR L COMPONENT SCHEMATIC

1980 Cars & Trucks With Weber Carb.



NOTES

THIS PAGE PROVIDED FOR YOUR CONVENIENCE

INSTALLATION INSTRUCTIONS

READ & UNDERSTAND ALL STEPS OF THESE INSTRUCTIONS BEFORE BEGINNING THIS INSTALLATION. After unpacking, examine the carburetor and other components for shipping damage. If any damage is found, notify shipper/supplier immediately.

TOYOTA
CARBURETED 22R ENGINES (1981-1984)
For Kit Nos. K8748, K8749, 52-51506 and 52-51510
Using Weber 32/36 DGEV 33B

TOOLS AND EQUIPMENT NEEDED:

Combination, box or open end wrenches (metric)
Socket set with 12 mm socket
Screwdriver (regular and Phillips)
Pliers
Gasket Scraper
Rags
Cleaning Solvent
Knife
Gasket Sealer

PARTS SUPPLIED WITH INSTALLATION KIT:

1 - 32/36 DGEV 33B Weber Carburetor
1 - Air Cleaner Adaptor
1 - Hardware Kit & Hoses

NOTE: It is recommended to obtain a new fuel filter and install it when installing this kit.

TUNE-UP SPECIFICATIONS

All tune-up specifications for the Weber Carburetor remain the same as those specified by the Factory for the original unit. Emissions tune-up should be carried out by a suitably qualified Dealer or Independent garage, using infrared gas analyzing equipment.

NOTE: Late model vehicles fitted with Emission Control Systems have many vacuum lines and electrical connections in their fuel systems. It is essential when dismantling, that disconnected lines be identified with a number tag or label system. To establish function, locate and identify the source of each line.

NOTE: It is imperative that you familiarize yourself with the glossary of abbreviations and the schematics of vacuum lines and emissions control components included with these instructions BEFORE you begin the installation.

1. Remove vehicle's gas cap.
2. Disconnect the battery.
3. Remove factory air filter assembly and attached components. Tag hoses for proper identification during reassembly.
4. Disconnect the fuel line from the carburetor and plug off to prevent dirt from entering the system.
5. Using either the map inside your engine compartment, or a factory service manual for your year/model vehicle; tag each vacuum line attached to the original carburetor with its proper identification.
6. Disconnect the throttle linkage from the original carburetor. Save the linkage clip for use with the Weber carburetor.
7. Disconnect the idle cutoff and choke wire(s) by separating the wire(s) at the connector to the electrical source.
8. Disconnect the PCV hose from base of the original carburetor.
9. Loosen the four mounting nuts and remove carburetor along with the plastic heat spacer and retain hardware for later use.
10. Insert a clean rag in the intake manifold ports to prevent dirt and loose gasket material from entering the engine. Clean the carburetor mounting surface with a gasket scraper. Remove the rag when the surface is clean.

ABBREVIATIONS

System

AAP	Auxiliary Acceleration Pump
AI	Air Injection
AS	Air Suction
CB	Choke Breaker
CCo	Catalytic Converter
EGR	Exhaust Gas Recirculation
EVAP	Evaporative (Emission Control)
HAC	High Altitude Compensation
HAI	Hot Air Intake
MC	Mixture Control
PCV	Positive Crankcase Ventilation
SC	Spark Control
TP	Throttle Positioner

Parts

ABV	Air By-pass Valve
ASV	Air Switching Valve
AS Valve	Air Suction Valve
A/T	Automatic Transmission
BVSV	Bi-metal Vacuum Switching Valve
CCo	Catalytic Converter
EACV	Electronic Air Control Valve
EX.	Exhaust (Manifold, Valve)
FICB	Fast Idle Cam Breaker
HAC Valve	High Altitude Compensating Valve
IN.	Intake (Manifold, Valve)
M/T	Manual Transmission
PTC Thermistor	Positive Temperature Coefficient Thermistor
S/W	Switch
T/M	Transmission
TVSV	Thermostatic Vacuum Switching Valve
TVTV	Thermostatic Vacuum Transmitting Valve
VCS	Vacuum Control Switch
VCV	Vacuum Control Valve
VSV	Vacuum Switching Valve
VTV	Vacuum Transmitting Valve

Others

BTC or BTDC	Before Top Dead Center
C&C	Cab & Chassis
Ex.	Except
IG	Ignition
OE	Original Equipment
W/	With
W/O	Without

Chemical Symbol

C	Carbon
CO	Carbon Monoxide
CO_2	Carbon Dioxide
H	Hydrogen
HC	Hydrocarbon
H_2O	Water
N	Nitrogen
NOx	Nitrogen Oxides
O	Oxygen

1983 Pickup (4x2) & 4x4 Truck & C lica
1984 4x4 Truck

Stock Configuration

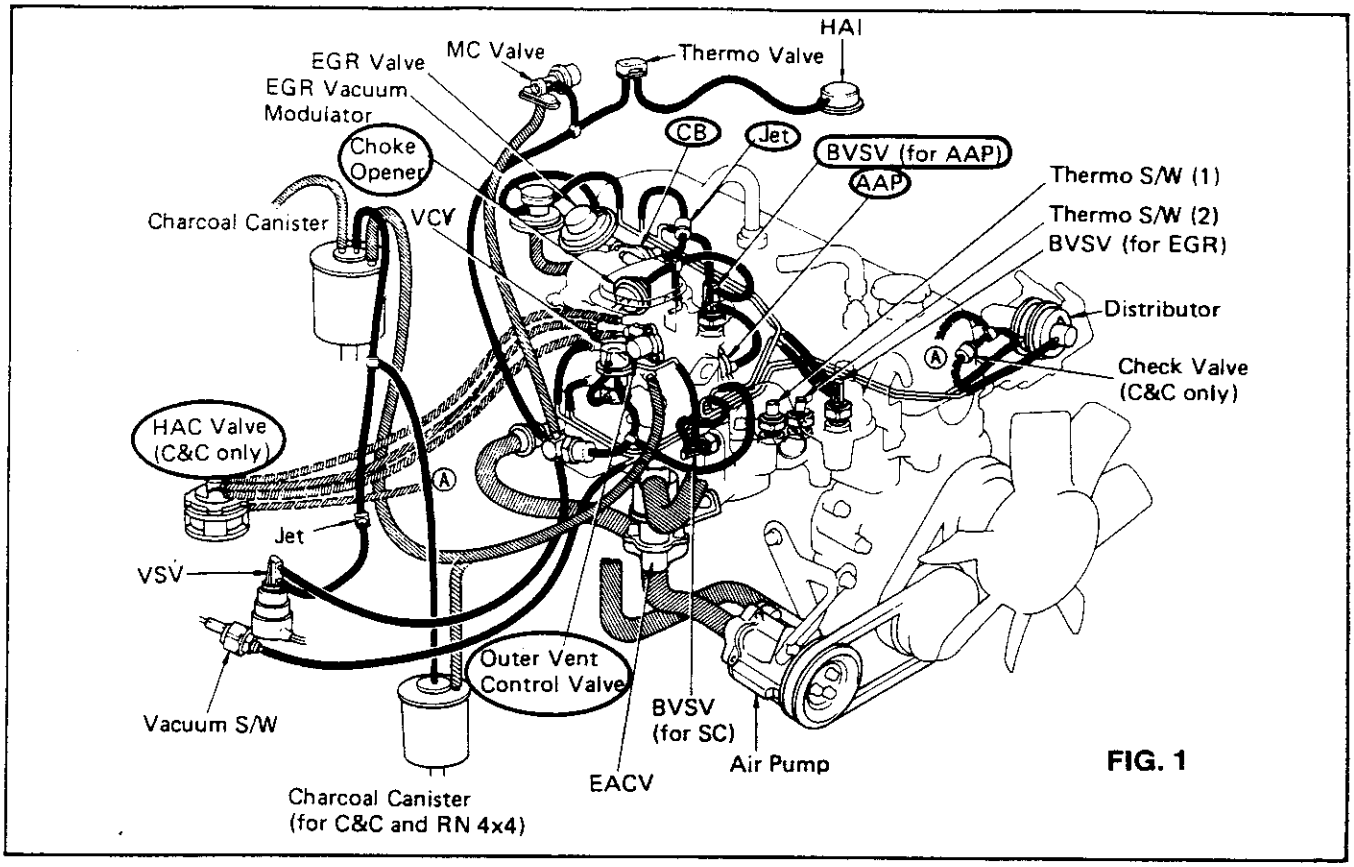


FIG. 1

NOTE: ALL 1981-84 MODEL 4 x 4 TRUCKS WILL HAVE THE DISTRIBUTOR ADVANCE AND EGR VACUUM HOSES IN REVERSE ORDER FROM THIS ILLUSTRATION (VACUUM ADVANCE CONNECTS TO LARGE FITTING ON CARB. EGR CONNECTS TO SMALL FITTING).

Weber Configuration

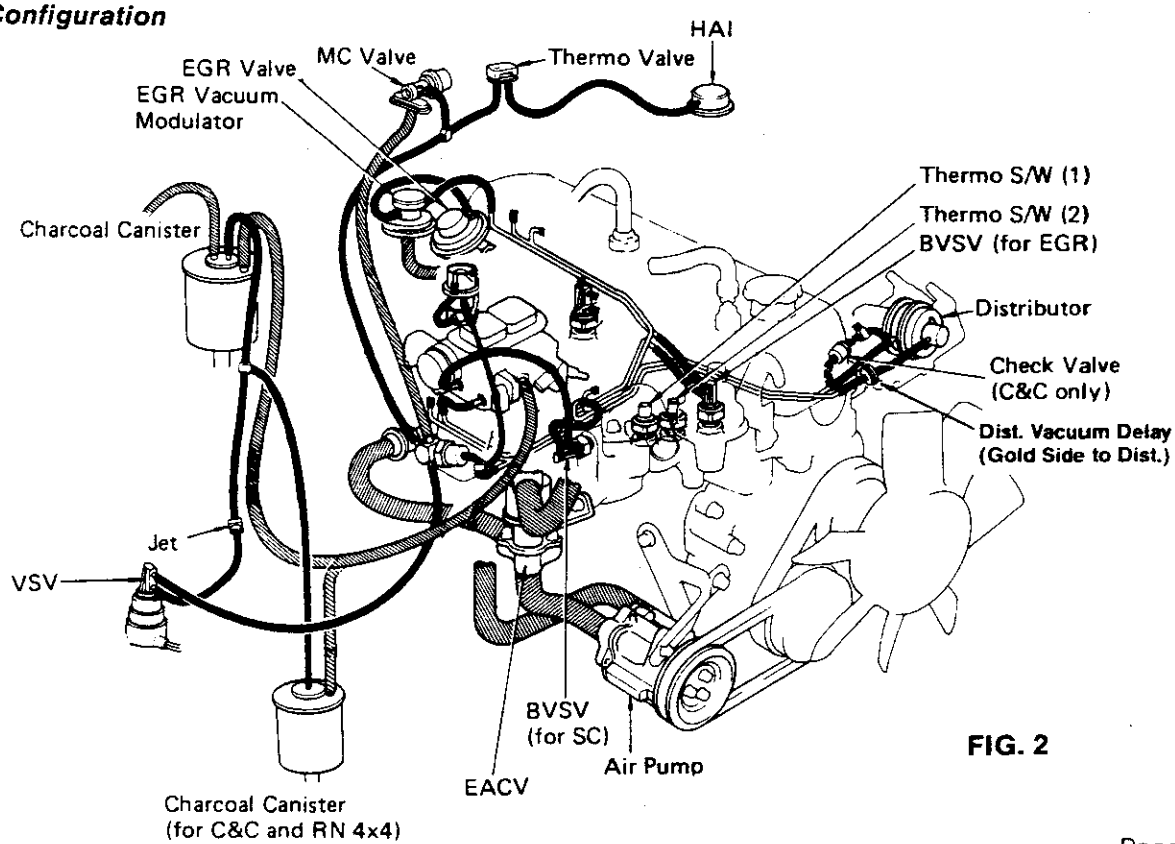


FIG. 2

1982 Pickup (4x2) & Cab & Chassis

Stock Configuration

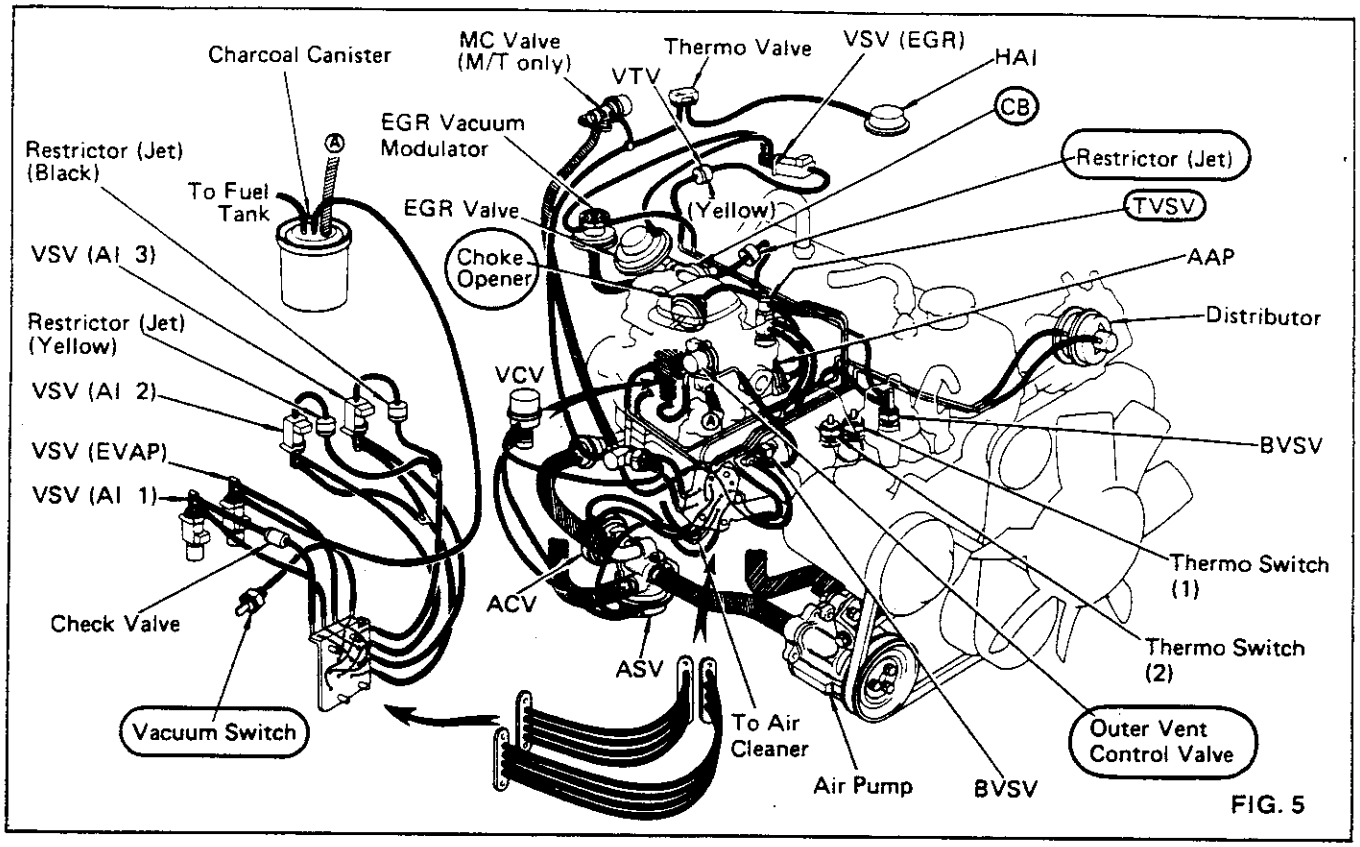


FIG. 5

Weber Configuration

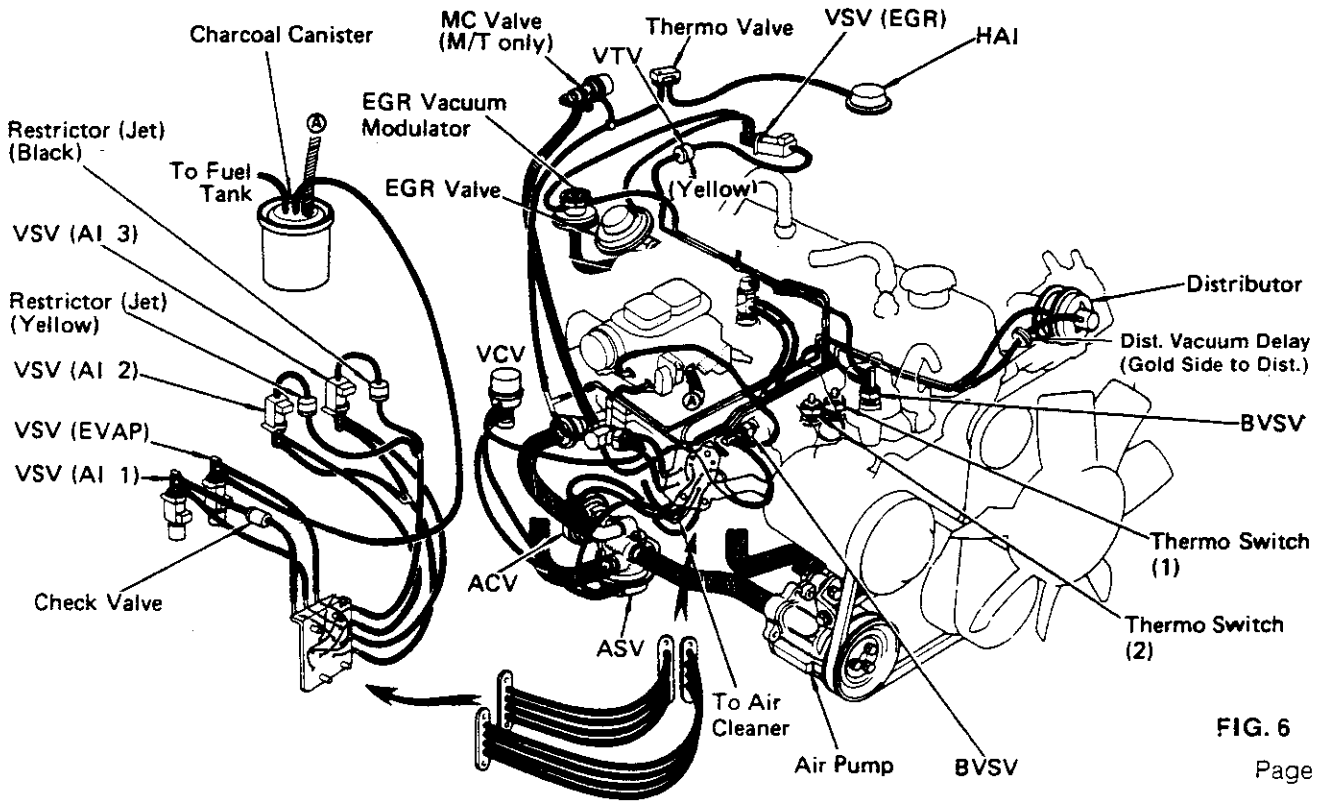


FIG. 6

1982 C lica

Stock Configuration

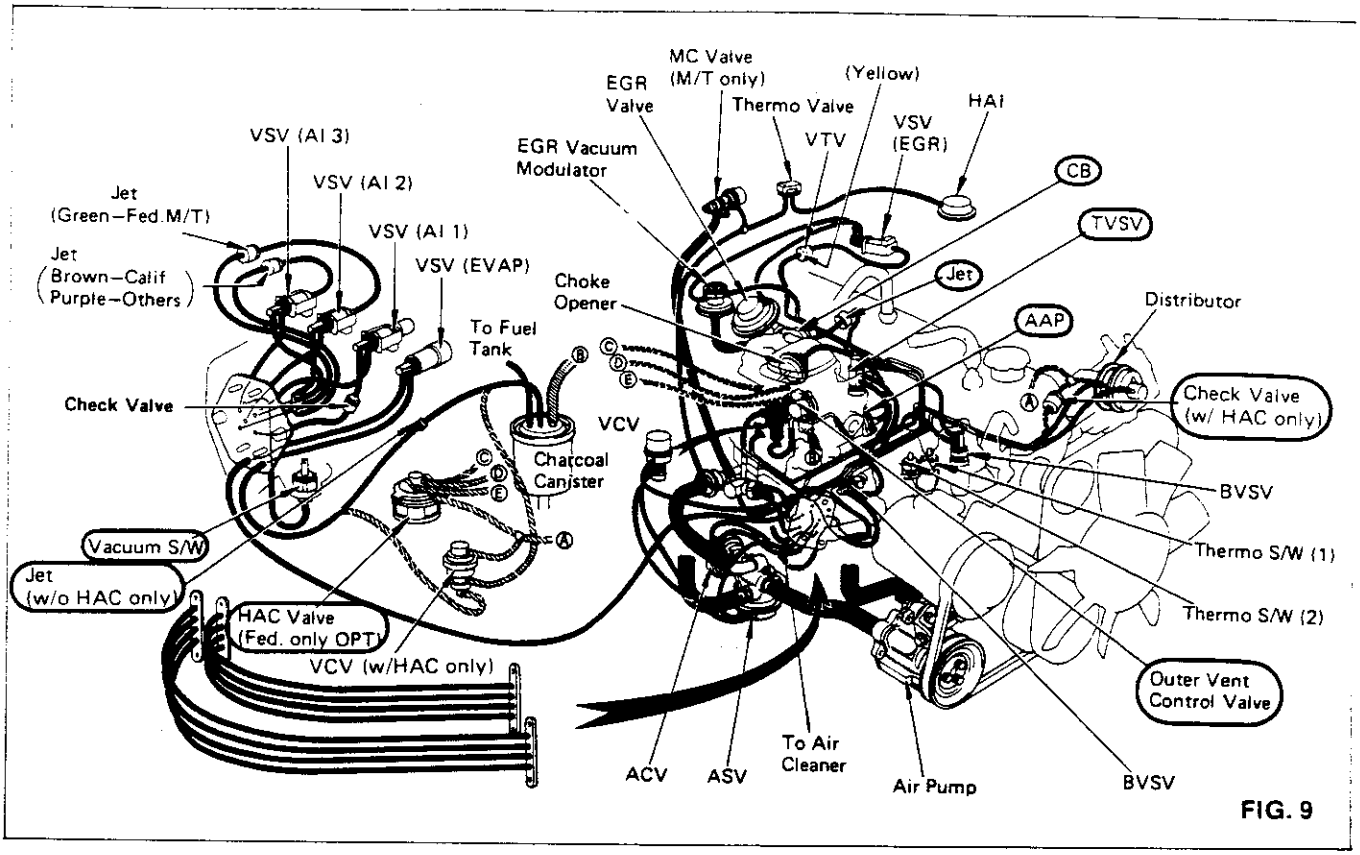


FIG. 9

Weber Configuration

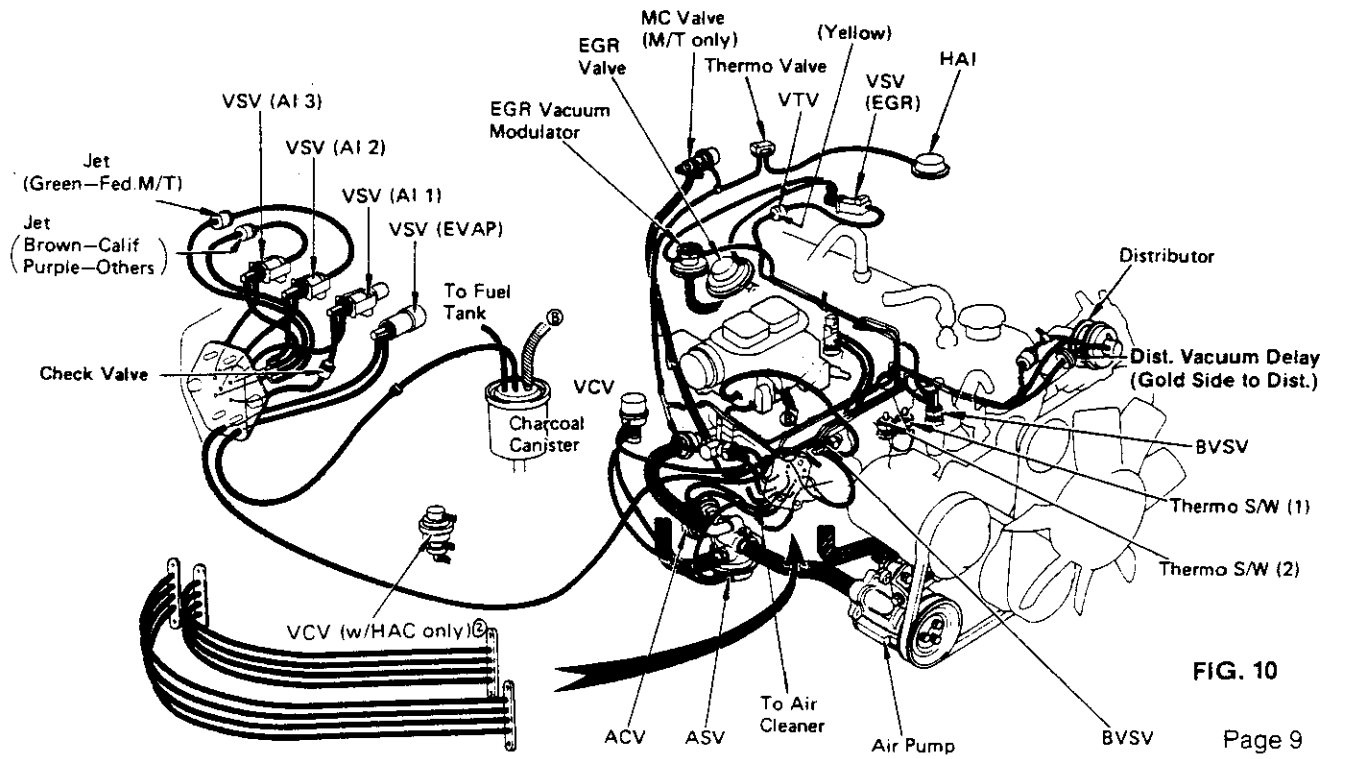


FIG. 10

1981 All Trucks (except Cab & Chassis)

Stock Configuration

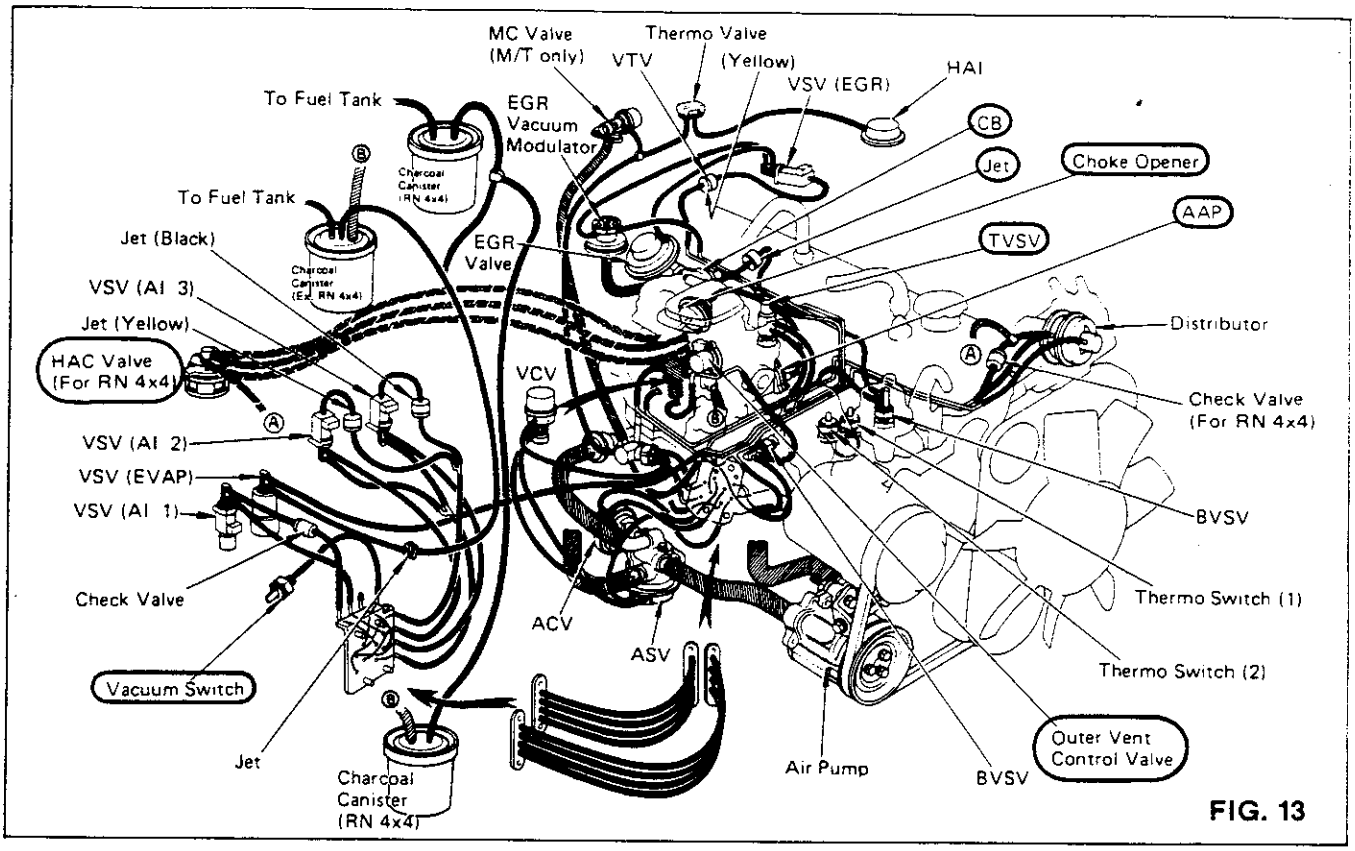


FIG. 13

NOTE: ALL 1981-84 MODEL 4 x 4 TRUCKS WILL HAVE THE DISTRIBUTOR ADVANCE AND EGR VACUUM HOSES IN REVERSE ORDER FROM THIS ILLUSTRATION (VACUUM ADVANCE CONNECTS TO LARGE FITTING ON CARB. EGR CONNECTS TO SMALL FITTING).

Weber Configuration

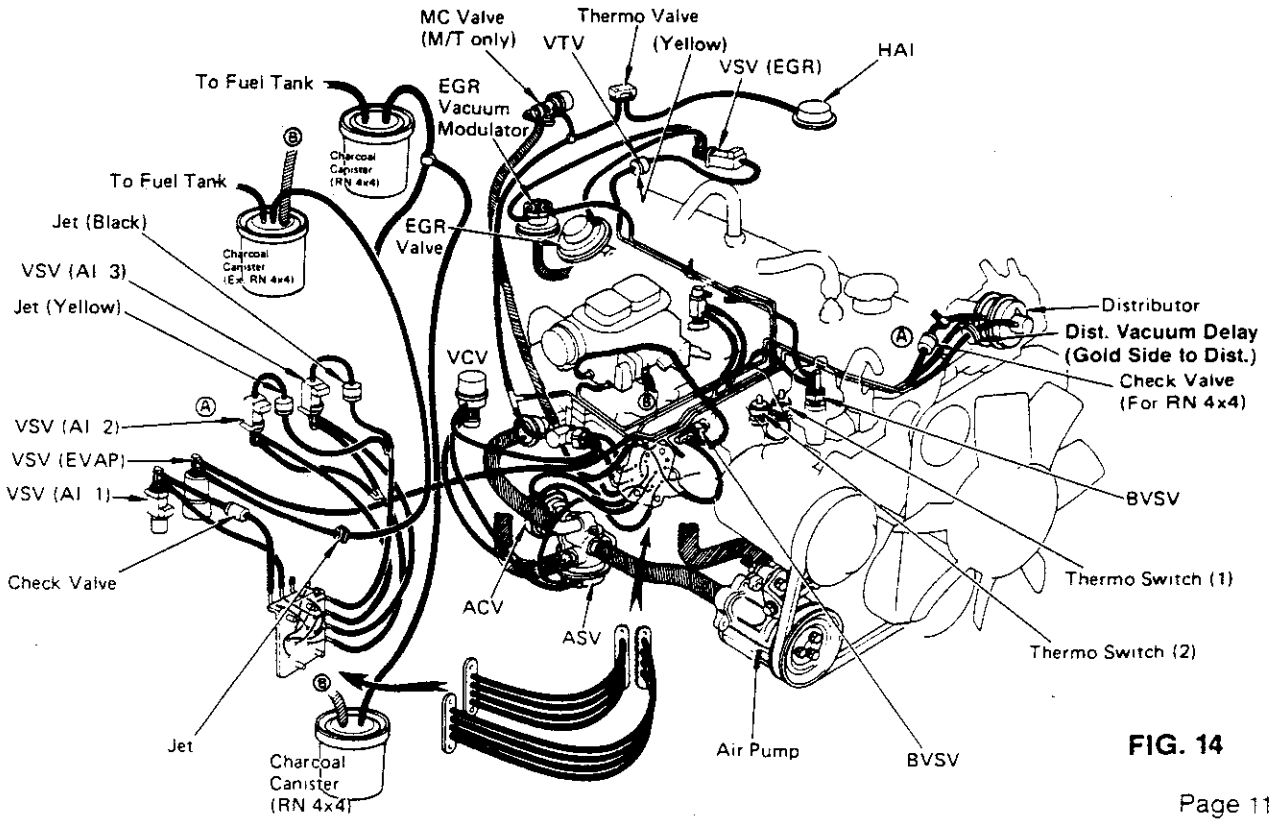


FIG. 14