

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-133-6  
Relating to Exemptions under Section 27156  
of the Vehicle Code

REDLINE, INC., A SUBSIDIARY OF IMPAC  
REDLINE CARBURETOR EXCHANGE KIT NO. K8205  
USING ONE (1) WEBER MODEL 32/36 DGAV 33B1 CARBURETOR

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 the Redline Carburetor Exchange Kit No. K8205 using one (1) Weber model 32/36 DGAV 33B1 carburetor 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 1972 through 1976 model-year BMW 2002 vehicles originally equipped with a Solex 32/35 DIDTA carburetor.

The following modifications to the exhaust emission control system are permitted.

- 1) The throttle positioner (dashpot) system, on vehicles so equipped, is removed.
- 2) The electric assist choke, on vehicles so equipped, is disconnected.
- 3) The thermo-starter valve, on vehicles so equipped, is removed along with the original carburetor.
- 4) Vacuum hose routing is changed as specified in the device installation instructions.

All other original equipment manufacturer emission control devices must be retained. The vehicle must be tuned to the vehicle manufacturer's specifications.

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 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 REDLINE CARBURETOR EXCHANGE KIT NO. K8205.

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 8th day of May, 1986.

*Bob Cross for*

K. D. Drachand, Chief  
Mobile Source Division

State of California  
AIR RESOURCES BOARD

EVALUATION OF THE REDLINE CARBURETOR CONVERSION KIT  
NO. K8205 USING ONE (1) MODEL 32/36 DGAV 33B1  
WEBER CARBURETOR FOR EXEMPTION FROM THE  
PROHIBITIONS OF VEHICLE CODE SECTION 27156  
IN ACCORDANCE WITH SECTION 2222, TITLE 13  
OF THE CALIFORNIA ADMINISTRATIVE CODE

MAY, 1986

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OF THE CALIFORNIA ADMINISTRATIVE CODE

by

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

(This report has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.)

## SUMMARY

Redline, Inc., a distributor of Italian made Weber carburetors, has applied for exemption from the prohibitions of Vehicle Code Section 27156 for the Redline Carburetor Conversion Kit No. K8205 using one (1) Weber model 32/36 DGAV 33B1 carburetor.

The Redline Carburetor Conversion Kit replaces the original equipment Solex 32/35 DIDTA carburetor as found on 1972-76 model-year BMW 2002 vehicles.

Comparative exhaust emission tests demonstrate that the aftermarket Redline Carburetor Conversion Kit No. K8205 using one Weber model 32/36 DGAV 33B1 carburetor does not adversely affect emissions. Based on the results of the tests and the evaluation of the Redline Carburetor Conversion Kit, the staff recommends that the exemption be granted as requested for the 1972-76 model-year BMW 2002 vehicles equipped with a Solex 32/35 DIDTA carburetor.

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EVALUATION OF THE REDLINE CARBURETOR CONVERSION KIT NO. K8205 USING MODEL 32/36 DGAV 33B1 WEBER CARBURETOR 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 Compton, California, a subsidiary of Imported Parts and Accessories Corporation (IMPAC), is a distributor of Italian made Weber carburetors. The company has applied for exemption from the prohibitions of Vehicle Code Section 27156 for a Carburetor Conversion Kit designated as Redline Kit No. K8205 utilizing one (1) Weber model 32/36 DGAV 33B1 carburetor. The Carburetor Conversion Kit is designed to replace the original equipment manufacturer (OEM) Solex 32/35 DIDTA carburetor as found on 1972-1976 model-year BMW 2002 vehicles .

This report describes the evaluation of the Redline Carburetor Conversion Kit and the findings.

II. CONCLUSION

Comparative exhaust emission data and other information submitted by the applicant demonstrated that the Redline kit No. K8205 using one (1) Weber model 32/36 DGAV 33B1 carburetor meets the Air Resources Board (ARB) requirements for exemption from the prohibitions of Vehicle Code Section 27156.

III. RECOMMENDATION

Based on the submitted comparative emission data and the confirmatory testing performed by the ARB on the Redline Carburetor Conversion Kit, the staff recommends that Redline, Inc. be granted exemption from the prohibitions of Vehicle Code Section 27156 for the Redline Carburetor Conversion Kit No. K8205 using one (1) model 32/36 DGAV 33B1 Weber carburetor for 1972-1976 model-year BMW 2002 vehicles and that Executive Order No. D-133-6 be issued.

#### IV. DEVICE DESCRIPTION

The Redline Carburetor Conversion Kit No. K8205 uses one (1) Weber model 32/36 DGAV 33B1 carburetor to replace the OEM Solex 32/35 DIDTA carburetor found on 1972-1976 BMW 2002 vehicles.

The Solex 32/35 DIDTA (Solex) is a progressive two-barrel downdraft carburetor. The special features of this carburetor are a vacuum operated secondary, a timed vacuum retard port, a thermo-starter valve and an electrically assisted, engine coolant temperature controlled choke (see Appendix 1). Not all of these features are employed for the earlier model-year vehicles. The 1973-1976 BMW 2002 vehicles also utilize a throttle positioner (dashpot) to control emissions during deceleration.

The Weber 32/36 DGAV 33B1 (Weber) is a progressive two-barrel downdraft carburetor which is similar in basic design to the Solex carburetor (see Appendix 2). The Weber utilizes a mechanically operated secondary which begins to open when the primary throttle is open approximately 70 percent. The Weber does not have a timed vacuum retard port to operate the distributor vacuum retard. Because of this, the distributor vacuum retard is connected to manifold vacuum when the Weber is installed. The Weber does not use a thermo-starter valve so this device is removed along with the Solex carburetor. The Weber utilizes a engine coolant temperature controlled choke only and does not employ an electric assist. The throttle positioner (dashpot) system is not utilized with the Weber and is removed along with the OEM carburetor. Therefore, when the Redline kit No. K8205 is installed, the following modifications to the OEM exhaust emission control system are required:

- 1) The throttle positioner (dashpot) system, on vehicles so equipped, is removed.
- 2) The electric assist choke, on vehicles so equipped, is disconnected.

- 3) The thermo-starter valve, on vehicles so equipped, is removed along with the original carburetor.
- 4) Vacuum hose routing is changed as specified in the device installation instructions.

All other OEM emission control devices are retained. The calibration of the Weber DGAV 33B1 carburetor used in kit No. K8205 is shown in Appendix 3.

The Redline kit No. K8205 comes complete with a Weber DGAV 33B1 carburetor, an air cleaner adaptor, installation instructions (see Appendix 4) and all the gaskets and hardware necessary to properly install the Weber carburetor on the BMW 2002 vehicles.

The facsimile of the identification label displays the required information and is shown in Appendix 5.

#### V. DEVICE EVALUATION

The applicant performed comparative cold-start CVS-75 exhaust emission tests at Import Certification Laboratories (ICL) in Anaheim, California. A 1975 BMW 2002 equipped with a 2.0 liter engine and a 4-speed manual transmission was used as the test vehicle. The 1975 model-year vehicle was accepted as the test vehicle since the 1975 model-year emission control system is identical to the 1976 model-year emission control system. It would be expected that vehicles of previous model-years and the 1976 model-year, would have the same degree of performance/emissions impact as the vehicle tested when using the same Redline Kit. The submitted data showed decreases in all three pollutants from the baseline levels. Confirmatory testing was performed at the Haagen-Smit Laboratory, on the same vehicle, and the results

showed a significant increase in NOx emissions. Redline investigated the cause of the NOx problem and determined that the exhaust gas recirculation (EGR) system was malfunctioning. To solve the problem, the EGR filter, which was dirty, and the EGR inlet tube, which was leaking slightly, were replaced. To verify that these parts were responsible for the high NOx values, Redline again performed comparative cold-start CVS-75 exhaust emission tests at ICL. The results of these tests are shown in Table 1.

Table 1

<u>Condition</u>	Exhaust Emissions gm/mi*			<u>Fuel Economy City mi/gal</u>
	<u>HC</u>	<u>CO</u>	<u>NOx</u>	
Baseline	1.14	9.87	1.00	16.7
Redline Kit	0.58	9.15	0.97	14.4

\*Average of two tests in each condition.

Confirmatory testing was again performed at the Haagen-Smit Laboratory, on the same vehicle and the results of these tests are shown in Table 2.

Table 2

<u>Condition</u>	Exhaust Emissions gm/mi*			<u>Fuel Economy City mi/gal</u>
	<u>HC</u>	<u>CO</u>	<u>NOx</u>	
Baseline	1.11	9.06	0.98	15.3
Redline Kit	0.89	10.28	1.01	14.3

\*Average of two tests in each configuration.

## VI. DISCUSSION

The results of the emissions testing show that the HC emissions of the test vehicle are slightly lower and its CO/NOx emissions remain unchanged from the baseline values. The differences in CO/NOx values between the baseline and the Redline kit test are considered to be within the limits of test variability as determined by the Haagen-Smit Laboratory.

This demonstrates that the installation of the Weber carburetor and the modifications to the original exhaust emission control system required for the installation will not have an adverse effect on emissions from the 1972-1976 BMW 2002 vehicles.

The results of the emissions tests performed after the EGR system was repaired show decreases in NOx emissions for both baseline and device conditions. This demonstrates that the parts which were replaced were most likely responsible for the NOx control problem.

Redline has submitted all the required information and fulfilled the requirements for an exemption.

# INSTALLATION INSTRUCTIONS



**READ & UNDERSTAND ALL STEPS OF THESE INSTRUCTIONS BEFORE BEGINNING THIS INSTALLATION. AFTER UNPACKING, EXAMINE THE CARBURETOR AND OTHER COMPONENTS FOR SHIPPING DAMAGE.**

**NOTE: THESE INSTRUCTIONS SHOULD BE RETAINED WITH VEHICLE RECORDS AFTER INSTALLATION OF THIS KIT FOR SMOG INSPECTION PURPOSES.**

## **BMW 2002** **1972 to 1976** **For Kit Nos. K8205 and 52-52303** **Using Weber 32/36 DGAV-33B1**

### **TOOLS AND EQUIPMENT NEEDED:**

Combination, box or open-end wrenches (metric)  
Socket Set (Metric)  
Screwdrivers (regular and Phillips)  
Pliers  
Wiping Rags  
Knife

Gasket Scraper  
Cleaning Solvent  
Gasket Sealer

### **PARTS SUPPLIED WITH INSTALLATION KIT**

1 — Weber Carb., 32/36 DGAV-33B  
1 — Air Filter Adaptor  
1 — Water Choke Line  
1 — Hardware Kit

**NOTE: A NEW FUEL FILTER SHOULD BE  
INSTALLED WITH 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 corresponding number tag or label system. To establish function, locate and identify the source of each line. Use the factory service manual, or the under hood emissions system diagram for reference when identifying hoses. (MODIFIED VACUUM DISGRAMS SHOWING THE WEBER INSTALLATION ARE PROVIDED IN THESE INSTRUCTIONS.)

1. Remove the vehicle's gas cap.
2. Disconnect the battery.
3. Remove the air filter assembly and attached components. Identify all lines for proper reassembly.
4. Drain the coolant from the radiator and remove the water choke lines from the carburetor and engine block. (New hoses will be installed later.) **CAUTION: Be sure engine is cold when performing this step to avoid injury from hot coolant.**
5. Disconnect the vacuum hoses and electrical wires from the stock carburetor. Use your under hood emissions system diagram or a factory service manual to identify and label the carburetor vacuum hoses for proper reassembly.
6. Remove the fuel line from the carburetor. Plug the end of the fuel line to prevent leakage.
7. Disconnect the throttle linkage from the carburetor. Retain any clips or springs for use later.
8. Remove the carburetor mounting nuts and lift off carburetor. Remove the throttle shaft nut from the original carburetor and retain for use later. Insert a clean rag in the intake ports and thoroughly clean the carburetor mounting surface.
9. Remove the stock throttle positioner (dashpot) and bracket from the intake manifold. The vacuum hose for this device should be removed and the vacuum source should be capped-off, using the rubber plug provided in the kit. (This part will not be used on the Weber carburetor.) Remove the throttle shaft nut from the Weber carburetor and replace it with the original throttle shaft nut removed in step # 8. **CAUTION: Do not over-tighten the nut.** Proper tightness can be achieved by installing the nut just slightly more than finger tight. After tightening, open the choke by hand and check for full throttle operation from the idle position to wide open throttle. If any sticking or binding occurs, loosen the nut and retighten with reduced torque. Recheck throttle operation. When proper tightness has been achieved, secure the nut by bending the tab on the lock washer.

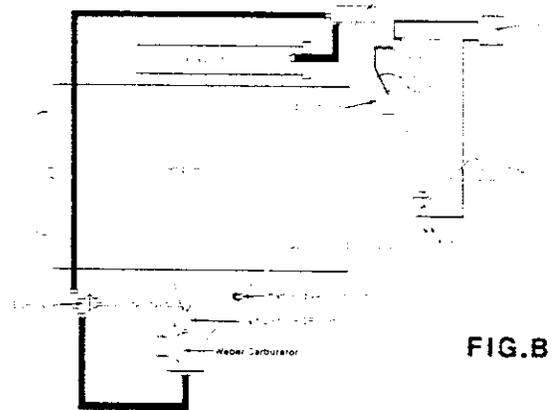
This kit is sold under the provisions of California Air Resources Board Executive Order No. D-133-6 (C.A.R.B.E.O. No. D-133-6) Products with C.A.R.B.E.O. numbers are exempt from the prohibitions of Section 27156 of the California Vehicle Code. Performance kits so noted are legal for use on public highways in California.

**SIDE VIEW**



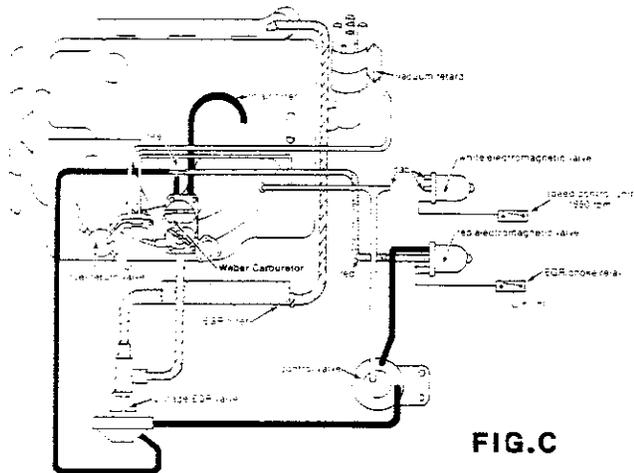
**FIG.A**

**1972-73 50 STATES**



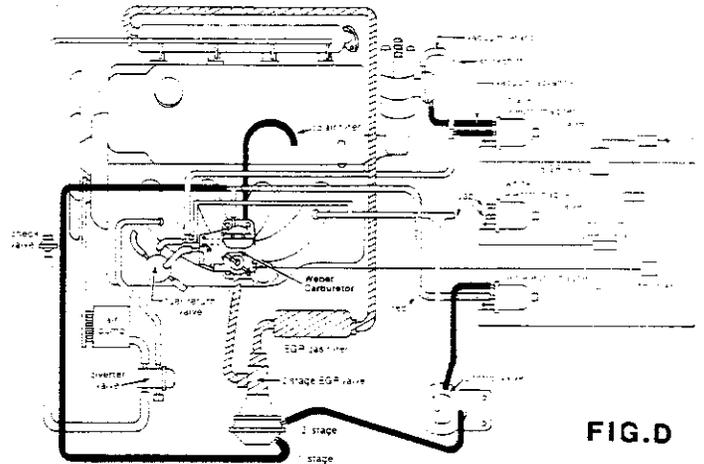
**FIG.B**

**1974 50 STATES**



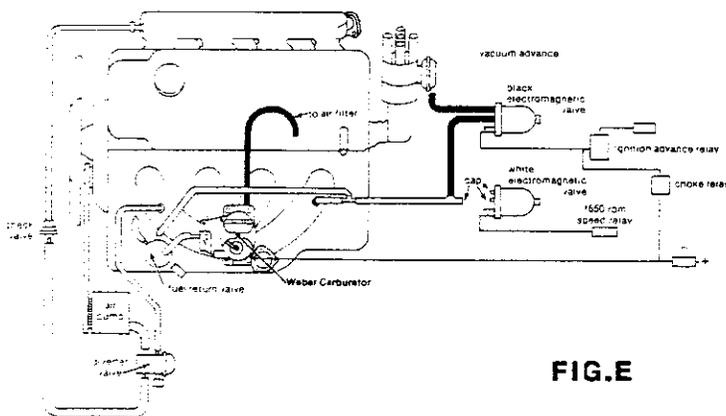
**FIG.C**

**1975 50 STATES  
1976 CAL. ONLY**



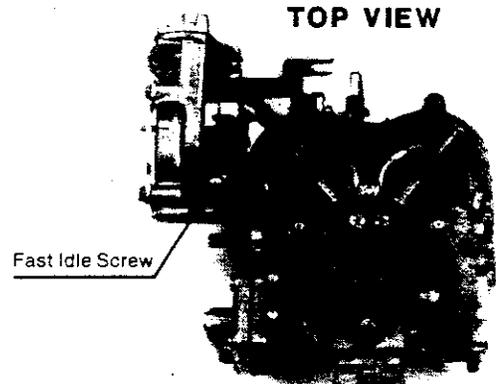
**FIG.D**

**1976 49 STATES**



**FIG.E**

**TOP VIEW**



**FIG.F**

**(CARB.TOP COVER REMOVED)**

# INSTALLATION INSTRUCTIONS



READ & UNDERSTAND ALL STEPS OF THESE INSTRUCTIONS BEFORE BEGINNING THIS INSTALLATION.

**BMW 2002**  
**1972 to 1976**  
 For Kit Nos. K8203 and 52-52303  
 Using Weber 32/36 DGAV-33B

25 @ 2500

## TOOLS AND EQUIPMENT NEEDED:

Combination, box or open-end wrenches (metric)  
 Socket Set (Metric)  
 Screwdrivers (regular and Phillips)  
 Pliers  
 Wiping Rags  
 Knife  
 Gasket Scraper  
 Cleaning Solvent  
 Gasket Sealer

## PARTS SUPPLIED WITH INSTALLATION KIT:

1 - Weber Carb., 32/36 DGAV-33B  
 1 - Air Filter Adaptor  
 1 - Water Choke Line  
 1 - Hardware 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.

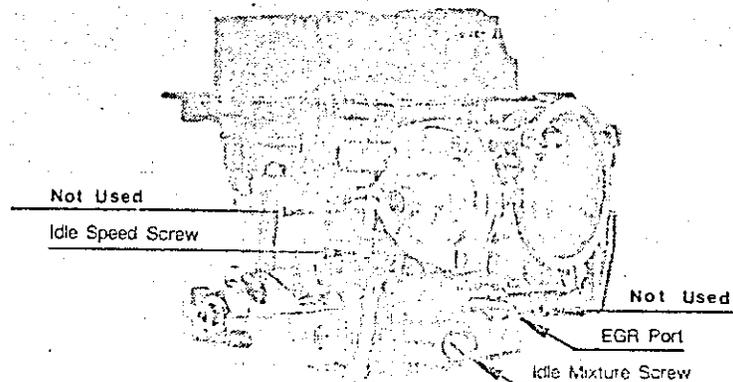
**NOTE:** Late model vehicles fitted with Emission Control Systems have many vacuum lines and electrical connections in their fuel systems. It is essential when dismantling, that disconnected lines be identified with a corresponding number tag or label system. To establish function, locate and identify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

1. Remove the vehicle's gas cap.
2. Disconnect the battery.
3. Remove the air filter assembly and attached components. Identify all lines for proper reassembly.
4. Drain the coolant from the radiator and remove the water choke lines from the carburetor and engine block. (New hoses will be installed later)  
**CAUTION:** Be sure engine is cold when performing this step to avoid injury from hot coolant.
5. Disconnect the vacuum lines from the stock carburetor. Use your under hood emissions system diagram to identify and label the carburetor vacuum lines for proper reassembly.
6. Remove the fuel line from the carburetor. Plug the end of the fuel line to prevent leakage.
7. Disconnect the throttle linkage from the carburetor. Retain any clips or springs for use later.

This kit meets original equipment performance levels and is offered as a direct replacement

- clean rag in the intake ports and thoroughly clean the carburetor mounting surface.
9. Remove the stock throttle positioner (dashpot) and bracket from the intake manifold. (This part will not be used on the Weber carburetor)
  10. Remove the rags from the intake ports and install the new flange gasket and Weber carburetor. (Linkage facing the firewall). Tighten the flange nuts down in a criss-cross pattern.
  11. Check throttle operation for free movement. If there is any indication of binding or sticking, correct as necessary BEFORE proceeding.
  12. Connect the original idle cut-off solenoid wire to the Weber idle cut-off solenoid.
  13. Remove the plug from the end of the fuel line and connect it to the Weber carburetor. A new in-line filter is recommended to be installed with this kit. New fuel hose and clamps are provided in the kit.
  14. Using the new water hose and clamps supplied in kit, reconnect the choke hoses to the engine block.
  15. Electric assist choke will not be used with this conversion. If the vehicle was equipped with electric assist choke (EAC) the wire that provided power to the EAC must be insulated to prevent a short circuit.
  16. 1972-73 Vehicles (50 States): Remove the threaded plug from the EGR port on the Weber carburetor. (Fig. A) Connect the EGR valve vacuum hose to this port.
- 1974-76 Vehicles, All (except 1976 Fed.): Remove the threaded plug from the EGR port on the Weber carburetor. (Fig. A) Cut a 2 inch length of vacuum hose (provided in kit) and install it on the vacuum port. Install the plastic vacuum tee fitting provided in the kit in the hose. Connect the orange control valve vacuum line and the first stage EGR vacuum line to the tee.
- 1976 Fed. Vehicles, Only: Do not remove the threaded plug from the EGR port. This vacuum connection is not required.

FIG. A SIDE VIEW



Vacuum Port under fuel bowl not shown

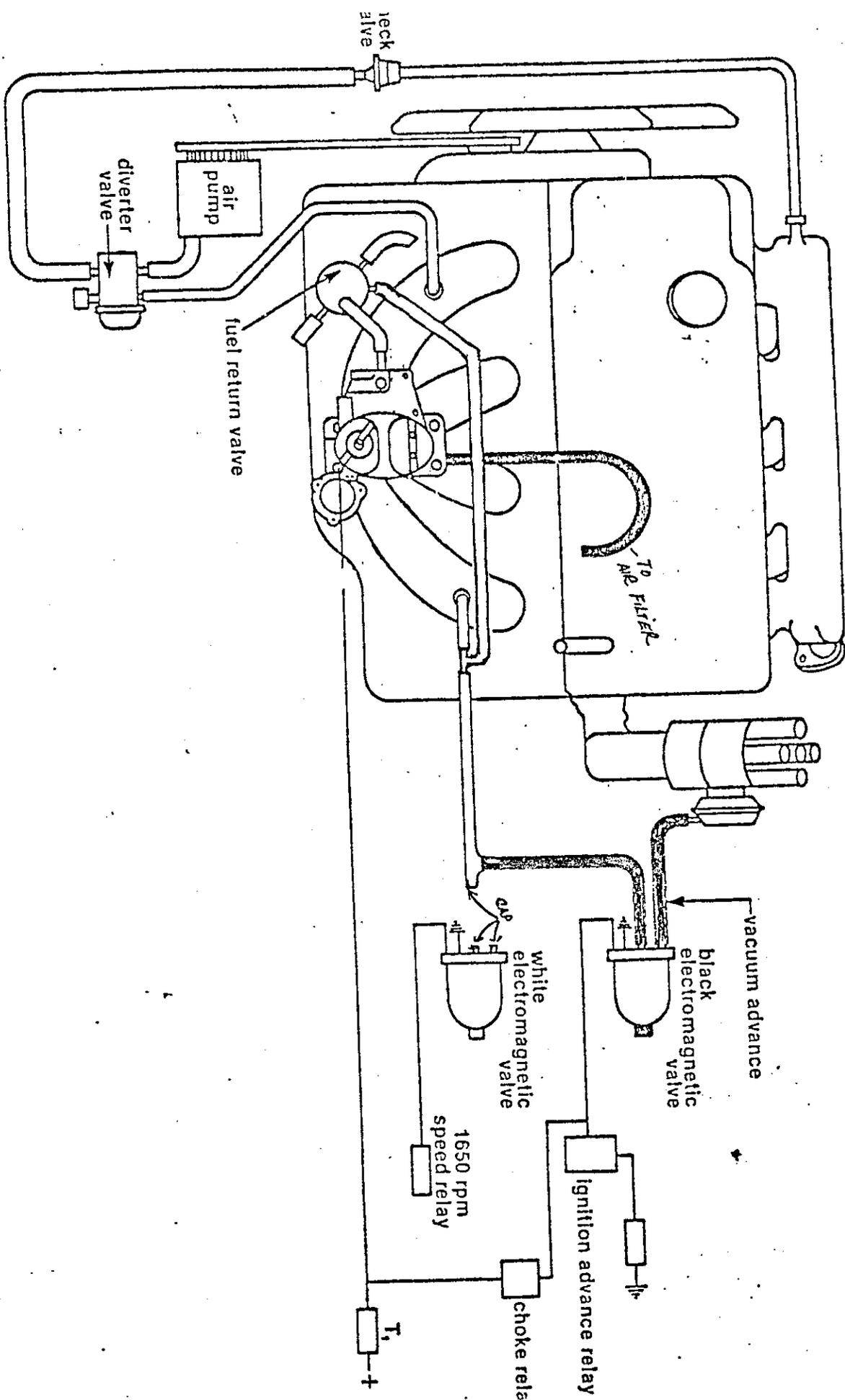
17. Using the vacuum hose and tee supplied connect the vacuum retard line to the vacuum fitting located on the number four runner of the intake manifold.
18. Install the air filter adapter on the Weber carburetor using the four long bolts and lockwashers supplied in the kit.
19. Reconnect the throttle linkage to the carburetor using the original clips and springs removed in step 7. Check throttle operation for free movement. If there is any indication of binding or sticking, correct as necessary BEFORE proceeding.
20. Remove the carburetor air horn flange from the bottom of the air filter assembly by separating the spot welds.
21. Install the air filter assembly on the carburetor using the original mounting hardware.
22. Replace the engine coolant.
23. Reconnect the battery and replace the gas cap.
24. Start the engine and check for any fuel or vacuum leaks. Correct as necessary.
25. Check for adequate hood clearance BEFORE closing hood.
26. Adjust idle speed and idle mixture using factory idle mixture setting procedure.

If after following these instructions, you require further assistance, please call the Weber Tech. Service Dept. at the phone numbers listed below, during normal business hours.

1-800-WEBER US (Outside CA)  
(932-3787)

1-800-WEBER CA (CA Only)  
(932-3722)

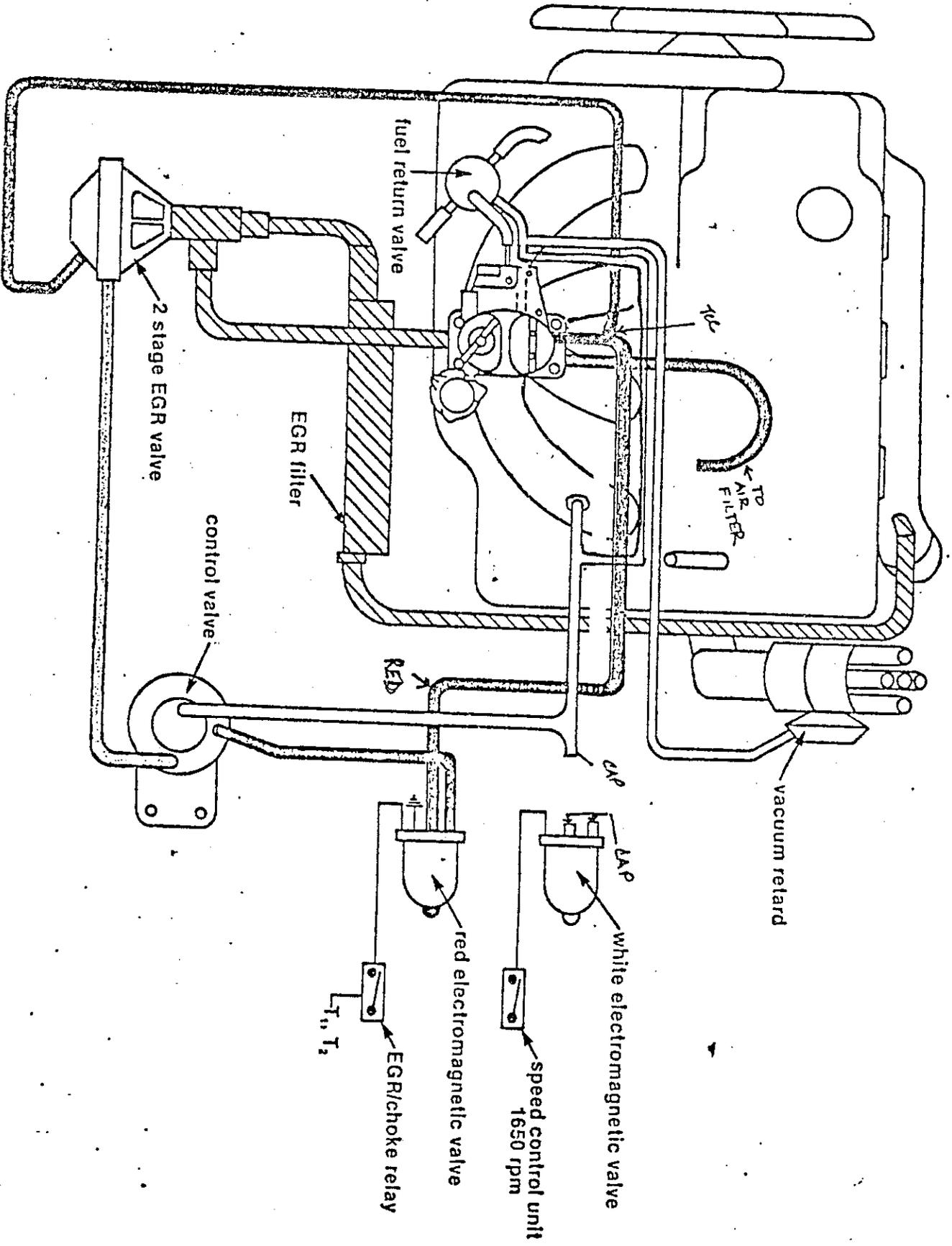
1976 49 STATES



Remove the carburetor mounting nuts and lift off carburetor. Insert a...

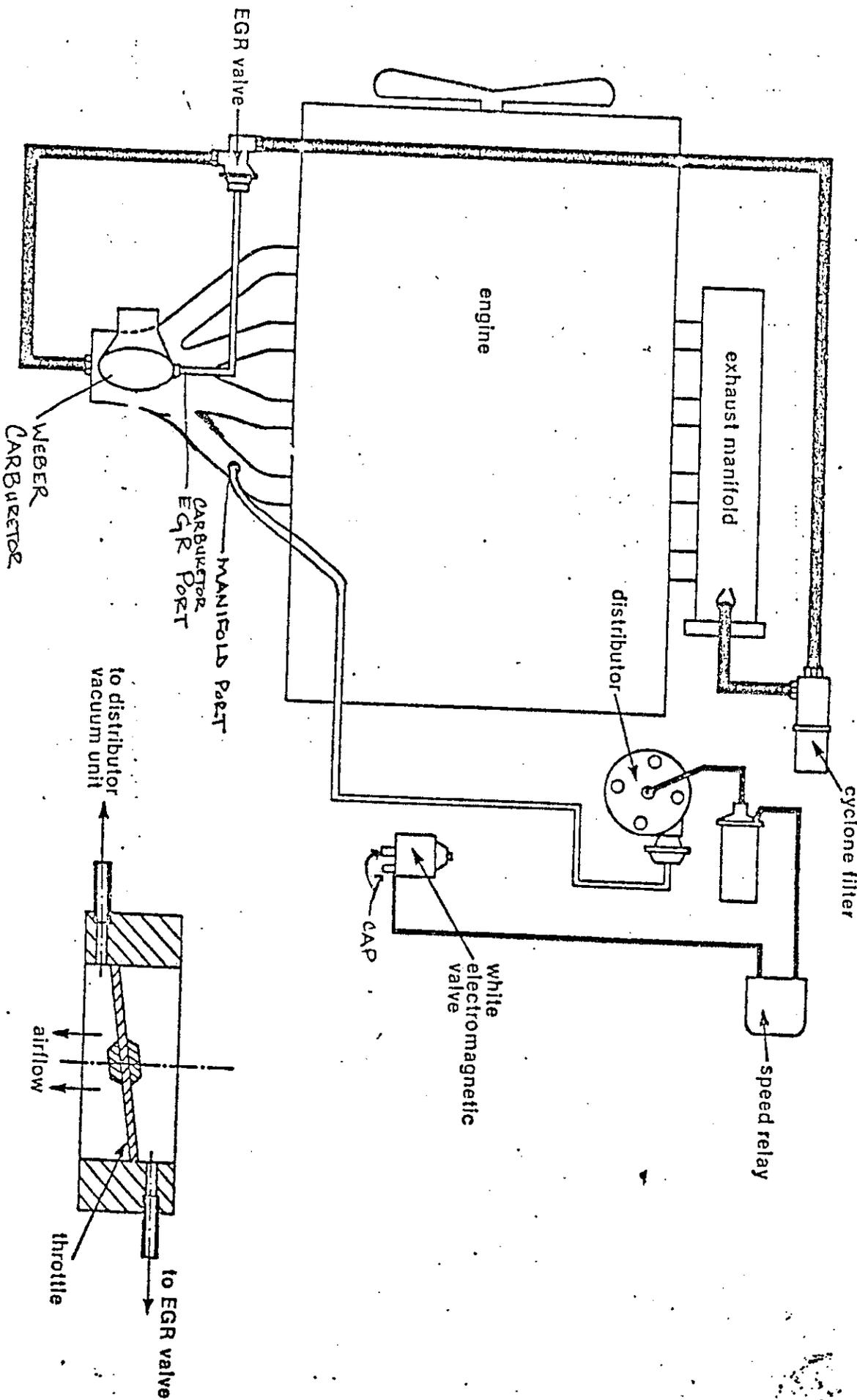
Fig. 2





Remove the carburetor mounting nuts and lift off carburetor. Insert a

1972/1973 50 STATES



Remove the carburetor mounting nuts and lift off carburetor. Insert a

1-2-D