

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-36-1
Relating to Exemptions Under Section 27156
of the Vehicle Code

ENERGY INNOVATIONS U.S.A., INC.
"PROTECTOR '7' DEVICE"

WHEREAS, Vehicle Code Section 27156 and Title 13 California Code of Regulations (hereafter "CCR") Section 2222(e), authorize the California Air Resources Board (ARB) and its Executive Officer to exempt add-on and modified parts from the prohibitions of Vehicle Code Section 27156.

WHEREAS, Energy Innovations, U.S.A., Inc. has applied to the ARB for exemption from the prohibitions of Vehicle Code Section 27156 for the "Protector '7' device".

WHEREAS, pursuant to the authority vested in the Executive Officer by Health and Safety Code Section 39515 and in the Chief, Mobile Source Division by Health and Safety Code Section 39516 and Executive Order G-45-5, the Air Resources Board finds:

1. The "Protector '7' device" is an add-on device that is connected to the PCV system in a motor vehicle.
2. The PCV system is part of the required motor vehicle pollution control system.
3. The "Protector '7' device" is intended for use with a required motor vehicle pollution control system.
4. This device consists of a separator-collector housing with a level indicator, mounting bracket, header cover with an inlet and outlet conduit, and a filter assembly within the collector housing. A connector hose is included to fit the device in the PCV line.
5. The "Protector '7' device" by being installed with the PCV system alters the original design of a motor vehicle pollution control system.
6. The "Protector '7' device" is a device subject to the prohibitions of Vehicle Code Section 27156 and an add-on part as defined by 13 CCR Section 1900(b)(1).
7. The "Protector '7' device" does not reduce the effectiveness of any required motor vehicle pollution control device if properly installed and maintained.

8. The Air Resources Board, in the exercise of technical judgment, is aware of no basis on which the "Protector '7' device" will provide emissions reduction or an increase in fuel economy.
9. It has not been determined what effect use of the "Protector '7' device" may have on any warranty, either expressed or implied, by the manufacturer of a motor vehicle on which the device is installed.
10. The "Protector '7' device" is not a certified motor vehicle pollution control device pursuant to Health and Safety Code Section 43644.
11. The Air Resources Board by granting an exemption to Energy Innovations U.S.A., Inc. for the "Protector '7' device" does not recommend or endorse in any way the "Protector '7' device" for emissions reduction, fuel economy, or any other purpose.

IT IS HEREBY RESOLVED that the "Protector '7' device" is exempt from the prohibitions of Vehicle Code Section 27156 for installation on 1972 through 1988 model-year vehicles subject to the following conditions:

1. This exemption shall not apply to any device, apparatus, or mechanism advertised, offered for sale or sold with, or installed on, a motor vehicle prior to or concurrent with transfer to an ultimate purchaser.
2. No changes are permitted to the device as described in the application for exemption. Any changes to the device, applicable model year, or other factors addressed in this order must be evaluated and approved by the Air Resources Board prior to marketing in California.
3. 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 this product shall not be construed as an exemption to sell, offer for sale, or advertise any component of the product as an individual device.
4. Any oral or written references to this Executive Order or its content by Energy Innovations U.S.A., Inc., its principals, agents, employees, distributors, dealers, or other representatives must include the disclaimer that the Executive Order or the exemption it provides is not an endorsement or approval of any fuel economy or emissions reduction claims for the "Protector '7' device" and is only a finding that the device is exempt from the prohibitions of Vehicle Code Section 27156.

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Violation of any of the above conditions shall be grounds for revocation of this order. The order may be revoked only after ten day written notice of intention to revoke the order, in which period the holder of the order may request in writing a hearing to contest the proposed revocation. If a hearing is requested, it shall be held within ten days of receipt of the request and the order may not be revoked until a determination after hearing that grounds for revocation exist.

Executed at El Monte, California, this 2nd day of August, 1988.



K. D. Drachand, Chief
Mobile Source Division

State of California
AIR RESOURCES BOARD

EVALUATION OF ENERGY INNOVATIONS U.S.A., INC.'S PROTECTOR '7' DEVICE
FOR INSTALLATION ON 1972 THROUGH 1988 MODEL-YEAR VEHICLES
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156
IN ACCORDANCE WITH SECTION 2222, TITLE 13,
CALIFORNIA CODE OF REGULATIONS

May 1988

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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

Energy Innovations U.S.A., Inc. has applied for an exemption from the prohibitions in Vehicle Code Section 27156 for their Protector '7' on 1972 through 1988 model-year vehicles.

Energy Innovations U.S.A., Inc. has submitted a complete application with all the required information. This device is used to filter crankcase emissions before passing through the PCV valve. Upon evaluation, it has been determined that the Protector '7' will not significantly increase automotive exhaust emissions.

The staff recommends adoption of Executive Order D-36-1 granting Energy Innovations U.S.A., Inc. exemption for its Protector '7' on 1972 through 1988 model-year vehicles.

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I. INTRODUCTION

Energy Innovations U.S.A., Inc. of 1701 North Greenville, Suite 500, Richardson, Texas 75081, has applied for exemption from the prohibitions of Vehicle Code Section 27156 for their Protector '7' device for 1972 through 1988 model-year vehicles. A complete application has been submitted to the Air Resources Board (ARB) with the required information and a sample of their device.

II. CONCLUSION

Based on the engineering evaluation of the Protector '7' device and other information, staff concludes that the Protector '7' will not have significant adverse effects on exhaust emissions from vehicles for which the exemption has been requested.

III. RECOMMENDATIONS

The staff recommends adoption of Executive Order D-36-1 granting Energy Innovations U.S.A., Inc. exemption from the prohibitions of Vehicle Code Section 27156 for its Protector '7' for 1972 through 1988 model-year vehicles.

IV. PROTECTOR '7' DESCRIPTION AND OPERATION

The Protector '7' is an add-on device used with the PCV system to filter crankcase emissions. Illustrations of this device are shown in Appendix A. The Protector '7' is a cylindrical metallic device which stands approximately 8 inches tall (6 inches internal) and 3 1/2 inches outer diameter (3 inches internal diameter). There are basically three parts to

the Protector '7'; the separator-collector housing, the filter assembly and the inlet-outlet conduit assembly.

The separator-collector housing is an empty bowl with a sight glass to observe sludge level and a drain plug at the bottom. The housing weighs 2 lbs. 12 oz.

The filter assembly is attached to the inlet-outlet conduit assembly. It consists of a hollow pipe with a circular nylon filter on a metallic frame at the base. The frame fits snugly with an 'o' ring in the separator-collector housing. The filter assembly weighs 5.5 oz.

The inlet-outlet conduit assembly directs vapor flow and seals the separator-collector housing. The inlet and outlet conduits are 6/16 inches internal diameter each. A mounting bracket is included. The inlet-outlet conduit assembly weighs 2 lbs. 14.5 oz.

A connector hose made of rubber with a 1/2 inch internal diameter is included to install the Protector '7' in the PCV line.

This device is installed in the PCV line before the PCV valve. Crankcase emissions are collected in the separator-collector housing through the inlet conduit. Heavy impurities and components drop out and collect at the bottom of the collection chamber forming a sludge. The remainder of the emissions mixture passes through a filter where lighter impurities are filtered. The gaseous mixture is then directed to the outlet conduit where it subsequently passes through the PCV valve. See Appendix B for installation instructions.

V. PROTECTOR '7' EVALUATION

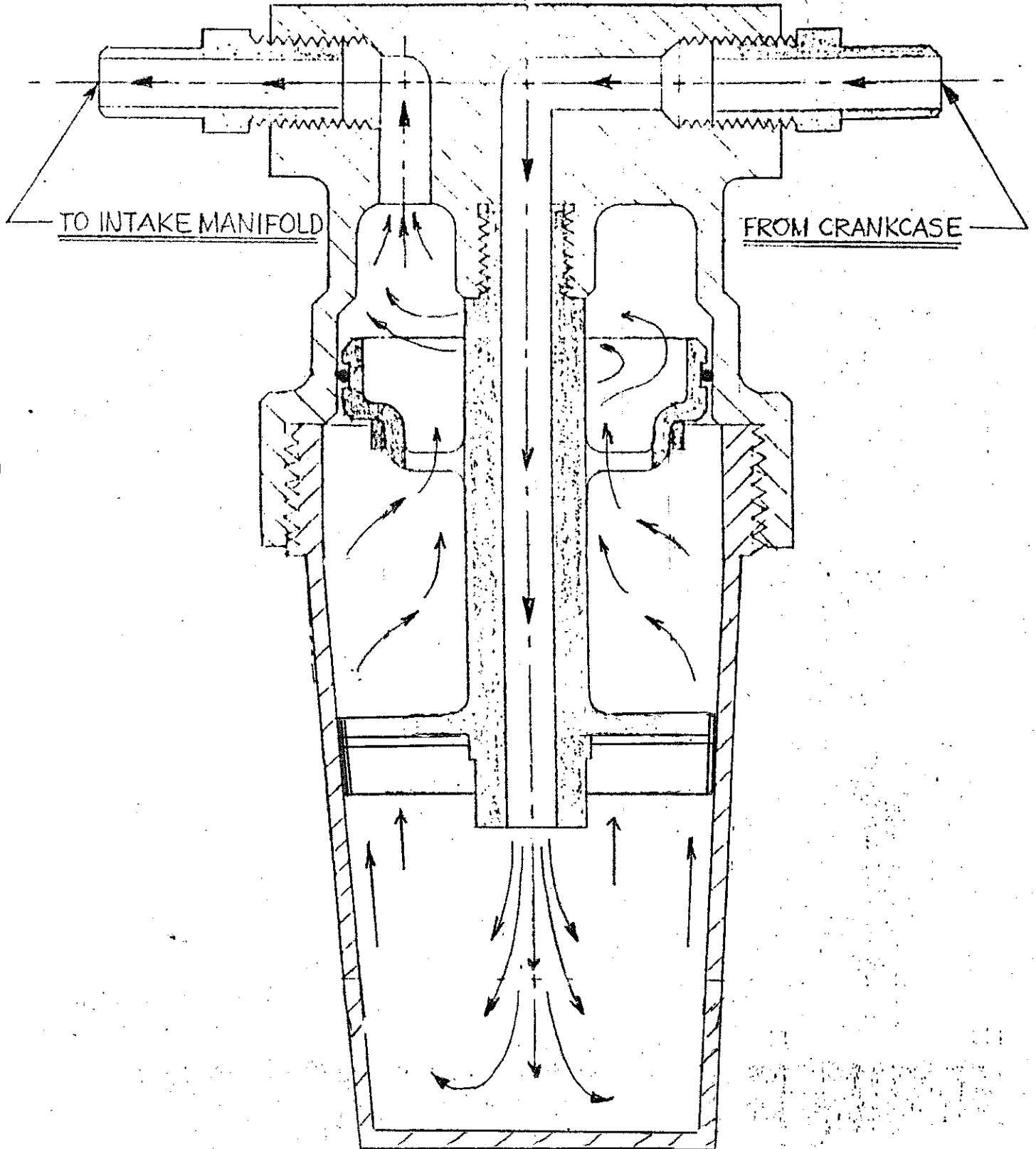
Energy Innovations U.S.A., Inc. claims that by intercepting heavy components of the crankcase emissions there may be a reduced possibility of the PCV valve sticking. Also, if the PCV valve sticks, an imbalance of the air-fuel ratio occurs. This may result in rough idling, stalling or a cut-off of blow-by gases to the intake in which case the crankcase becomes contaminated with sludge causing engine corrosion.

No confirmatory testing was done to justify this. Through engineering evaluation, it was determined that a significant increase in exhaust emissions would not occur and that confirmatory testing would not be necessary.

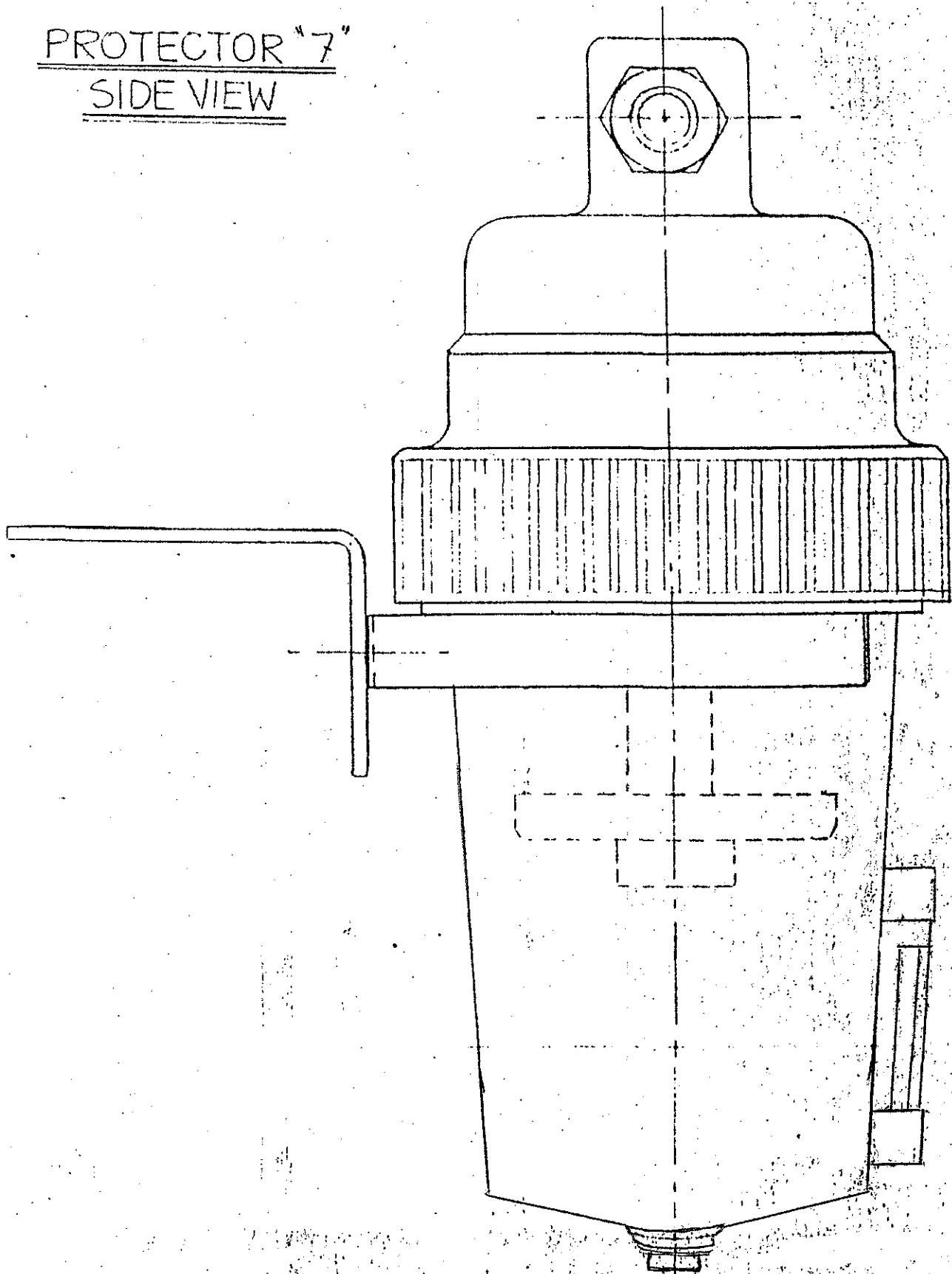
APPENDIX A

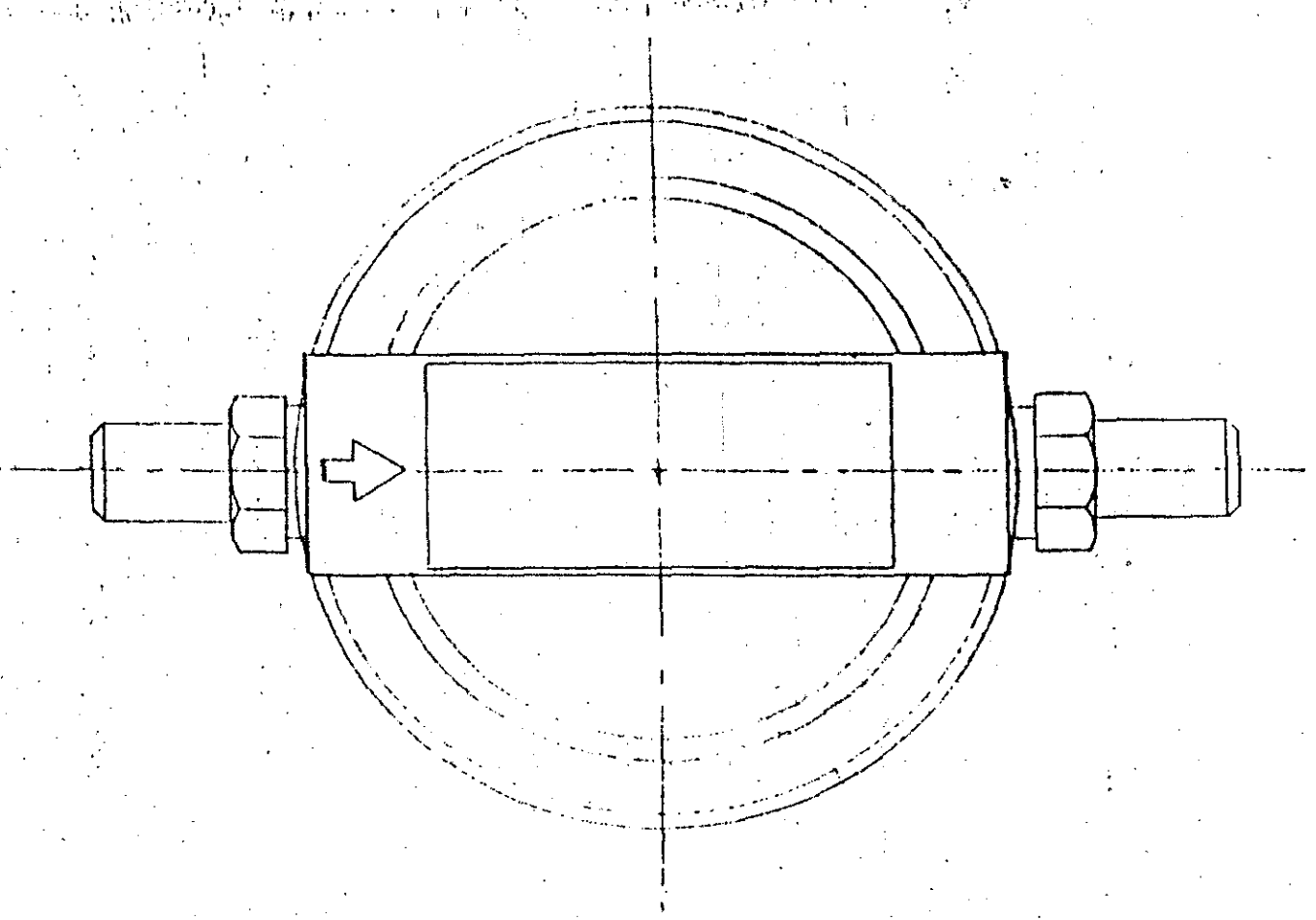
PROTECTOR '7' ILLUSTRATIONS

PROTECTOR "7"
CROSS-SECTION



PROTECTOR "7"
SIDE VIEW





PROTECTOR "7"
TOP VIEW

APPENDIX B
INSTALLATION INSTRUCTIONS

LOCATION INSTRUCTIONS

PLEASE MAKE SURE that you install the Protector "7" at a point in the crankcase emission line prior to where the crankcase emission gases are recycled back into the engine at the PCV valve.

To properly work, the device should be located several inches down the line from the re-entry spot just before the PCV valve.

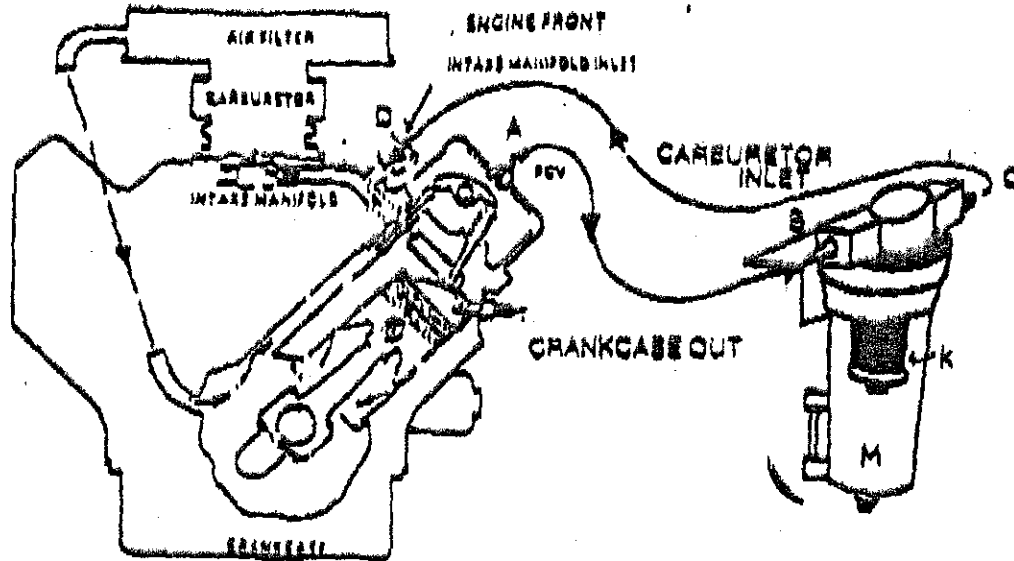
PROTECTOR

"7"

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PROTECTOR "7"

PAIRS, No. D-36-1 - CRANKCASE POLLUTANT COLLECTOR



REVISED INSTALLATION INSTRUCTIONS

1. Find appropriate location under hood on fire wall, fender wall, frame, in front of radiator, on guard or grill - may even be mounted on the outside. Because of the close proximity of some engine parts, certain vehicles may require that engine components be moved to make room for the PROTECTOR 7. If you have difficulty finding a location, write to your PROTECTOR 7 DISTRIBUTOR and give year, make, model and any extra equipment, (i.e. air conditioning, power

2. Inspect complete installation, remove all tools and start engine. When throttle is accelerated and released sharply, fog can be observed in the collector for an instant. This is normal - vacuum being reduced sharply and fog visibly formed due to instant temperature and pressure change in collecting chamber (see Fig. M).

3. If installation is proper, depending upon number of miles on engine, results can be seen after just a few minutes of driving. The engine will continue to