

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-208-1
Relating to Exemptions Under Section 27156
of the Vehicle Code

VENTURES UNLIMITED, INC.
CLEAN AIR VALVE/PCV ENHANCER

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, Ventures Unlimited, Inc. has applied to the ARB for exemption from the prohibitions of Vehicle Code Section 27156 for a device named the Clean Air Valve/PCV Enhancer for all gasoline powered internal combustion engines.

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 Clean Air Valve/PCV Enhancer is a modified device which is part of the PCV valve emission control unit.
2. The Clean Air Valve/PCV Enhancer is intended for use with a required motor vehicle pollution control system.
3. The Clean Air Valve/PCV Enhancer by being installed in the engine alters the original design of a motor vehicle pollution control system.
4. The Clean Air Valve/PCV Enhancer is a device subject to the prohibitions of Vehicle Code Section 27156 and a modified part as defined by 13 CCR Section 1900(b)(10).
5. The Clean Air Valve/PCV Enhancer does not reduce the effectiveness of any required motor vehicle pollution control device.
6. The Air Resources Board, in the exercise of technical judgement, is aware of no basis on which the Clean Air Valve/PCV Enhancer will provide an increase in fuel economy.

7. It has not been determined what effect use of the Clean Air Valve/PCV Enhancer may have on any warranty, either expressed or implied, by the manufacturer of a motor vehicle on which the device is installed.
8. The Clean Air Valve/PCV Enhancer is not a certified motor vehicle pollution control device pursuant to Health and Safety Code Section 43644.
9. The Air Resources Board by granting an exemption to Ventures Unlimited, Inc. for the Clean Air Valve/PCV Enhancer does not recommend or endorse in any way the Clean Air Valve/PCV Enhancer for emissions reduction, fuel economy, or any other purpose.

IT IS HEREBY RESOLVED that the Clean Air Valve/PCV Enhancer is exempt from the prohibitions of Vehicle Code Section 27156 for installation on 1991 and earlier model-year vehicles powered with gasoline internal combustion engines 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 the 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 Ventures Unlimited, 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 Clean Air Valve/PCV Enhancer and is only a finding that the device is exempt from the prohibitions of Vehicle Code Section 27156.

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

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 18th day of April, 1991.



R. B. Summerfield
Assistant Division Chief
Mobile Source Division

State of California
AIR RESOURCES BOARD

EVALUATION OF VENTURES UNLIMITED, INC.'S CLEAN AIR VALVE/PCV ENHANCER
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE
SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE
CALIFORNIA CODE OF REGULATIONS

April 1991

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by

Mobile Source Division
State of California
Air Resources Board
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El Monte, CA 91731-2990

(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

Ventures Unlimited, Inc., of P. O. Box 382, Paulden, AZ 86334, has requested an update to Executive Order D-208 due to design changes made to Clean Air Valve/PCV Enhancer. The Clean Air Valve/PCV Enhancer is designed for installation on 1991 and older model year gasoline powered vehicles.

Ventures Unlimited, Inc. has submitted a set of revised installation instructions accompanied with engineering drawings specifying the changes made to the Clean Air Valve/PCV Enhancer. Based on the engineering evaluation, the staff believes changes to the original design of the Clean Air Valve/PCV Enhancer will not cause any adverse effect on exhaust emissions. The staff recommends the Clean Air Valve/PCV Enhancer be exempted from the prohibitions in Vehicle Code Section 27156 and that Executive Order D-208-1 be issued.

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EVALUATION OF VENTURES UNLIMITED, INC.'S CLEAN AIR VALVE/PCV ENHANCER FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA CODE OF REGULATIONS

I. INTRODUCTION

Ventures Unlimited, Inc., of P. O. Box 382, Paulden, Arizona 86334, has requested an update to Executive Order D-208 due to design changes in the Clean Air Valve/PCV Enhancer. The device is designed for installation on 1991 and older model-year gasoline powered vehicles.

The applicant submitted a set of revised installation instructions and specifications of the design changes to the Air Resources Board (ARB) for evaluation.

II. CONCLUSIONS

Based on the engineering evaluation of the modified design of the Clean Air Valve/PCV Enhancer and the exemption previously issued for this device, the staff believes that the design changes to the Clean Air Valve/PCV Enhancer will not have any adverse effects on the exhaust emissions from gasoline powered vehicles.

III. RECOMMENDATION

The staff recommends Ventures Unlimited, Inc. be granted an exemption from the prohibitions in California Vehicle Code Section 27156 for their Clean Air Valve/PCV Enhancer and that Executive Order D-208-1 be issued.

IV. DEVICE DESCRIPTION

The Clean Air Valve/PCV Enhancer is a modified device designed to replace the PCV valve and filter the crankcase emissions. Illustrations of this device are shown in Appendix A. The Clean Air Valve/PCV Enhancer is a cylindrical device approximately 4 inches long with a 1.75 inches outer diameter. There are three parts to the Clean Air Valve/PCV Enhancer; the PCV/inlet assembly, the filtration assembly and the outlet.

The PCV/inlet assembly consists of a PCV valve and a beveled surface. The PCV valve is .75 inch long with a .75 outer diameter. The valve is a standard PCV valve and replaces the original equipment PCV valve. The PCV valve is then attached to a beveled cylindrical surface in which the outside diameter changes from .75 inch to 1.75 inches.

The filtration assembly is located on top of the beveled surface and is 2.5 inches long with a 1.75 inches outer diameter. The filtration assembly consists of two filters of silica gel and carbon particles which are separated by screens and an air space.

The outlet is a 45 degree angle fitting attached to the top of the filtration assembly and connects to the original equipment PCV hose. The fitting is .75 inch high and 1.33 inches long. The outlet has been changed from the original design of the Clean Air Valve/PCV Enhancer by adding a 5/16" set screw to the opposite side of the 3/8" barb fitting as shown in Appendix B.

V. DISCUSSION

The significant design change to the Clean Air Valve/PCV Enhancer was the addition of an adjustable set screw. Ventures Unlimited, Inc. and the submitted drawings verified that the set screw did not allow any air to escape into the atmosphere. The manufacturer claims the set screw was added to allow HC and CO emissions of the vehicle to be adjusted to the optimum levels. The proper adjustments are made using a gas analyzer. The automobile's emission control components are not tampered with when making the set screw adjustment.

Ventures Unlimited, Inc. claims the device reduces crankcase emissions by means of a filtration system. The crankcase emissions flow up from the bottom of the filter through a silica gel where the liquid portions of the crankcase emissions are prevented from further penetration into the filtration assembly. The penetration is blocked by thousands of jagged edges formed by the silica gel granules. Heavier hydrocarbons are also filtered by these jagged edges; thus, separating noncombustible oils and gases from the lighter, more combustible hydrocarbons. Gases then pass through an air space which aids in preventing further penetration of the heavier hydrocarbons to the silica gel and carbon particles. The combination of silica gel and carbon particles further trap heavier hydrocarbons to prevent their passage into the combustion chamber through the outlet.

The ARB did not perform any emission or fuel economy tests to substantiate the claims made by the manufacturer. No adjustments such as timing, EGR, fuel metering or any other engine adjustments are included in the

installation instructions. Previously, the ARB exempted two similar devices: "Protector '7'" by Energy Innovations U.S.A., Inc. and "Condensator" by Condensator, Inc. The exemptions were granted based on back-to-back CVS-testing, fuel economy testing and engineering evaluation. Because of the previous exemptions issued to similar devices with the same operating principle and the fact that qualifying for an exemption is based on not adversely affecting exhaust emissions, the staff recommends that Ventures Unlimited, Inc. be granted an exemption as requested.

APPENDIX

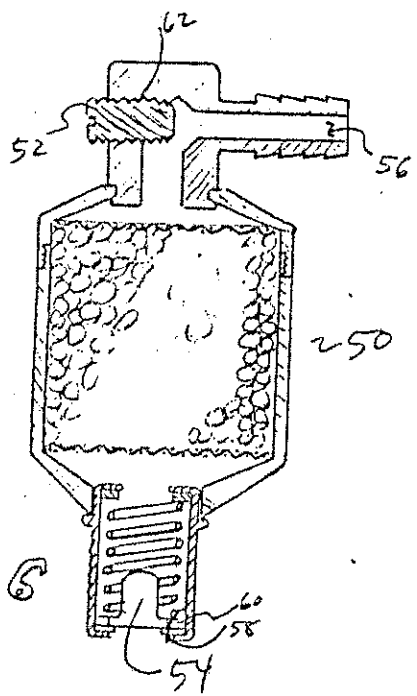


FIG 6

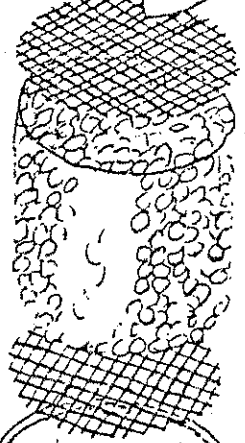
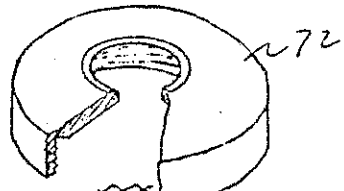
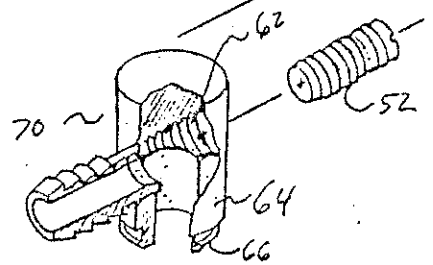


FIG 7

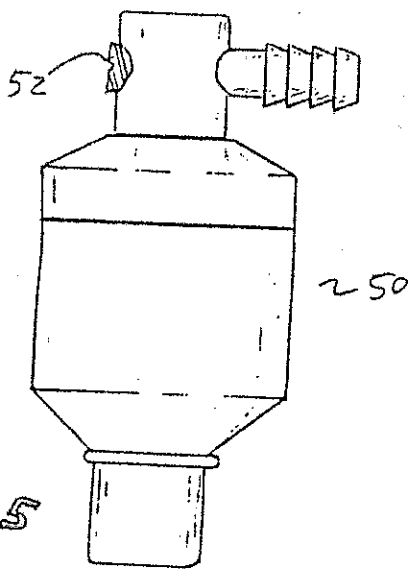
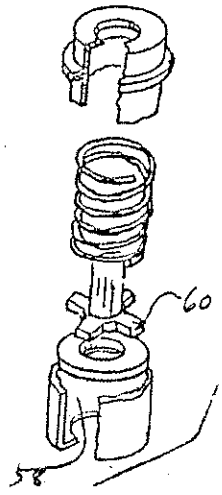


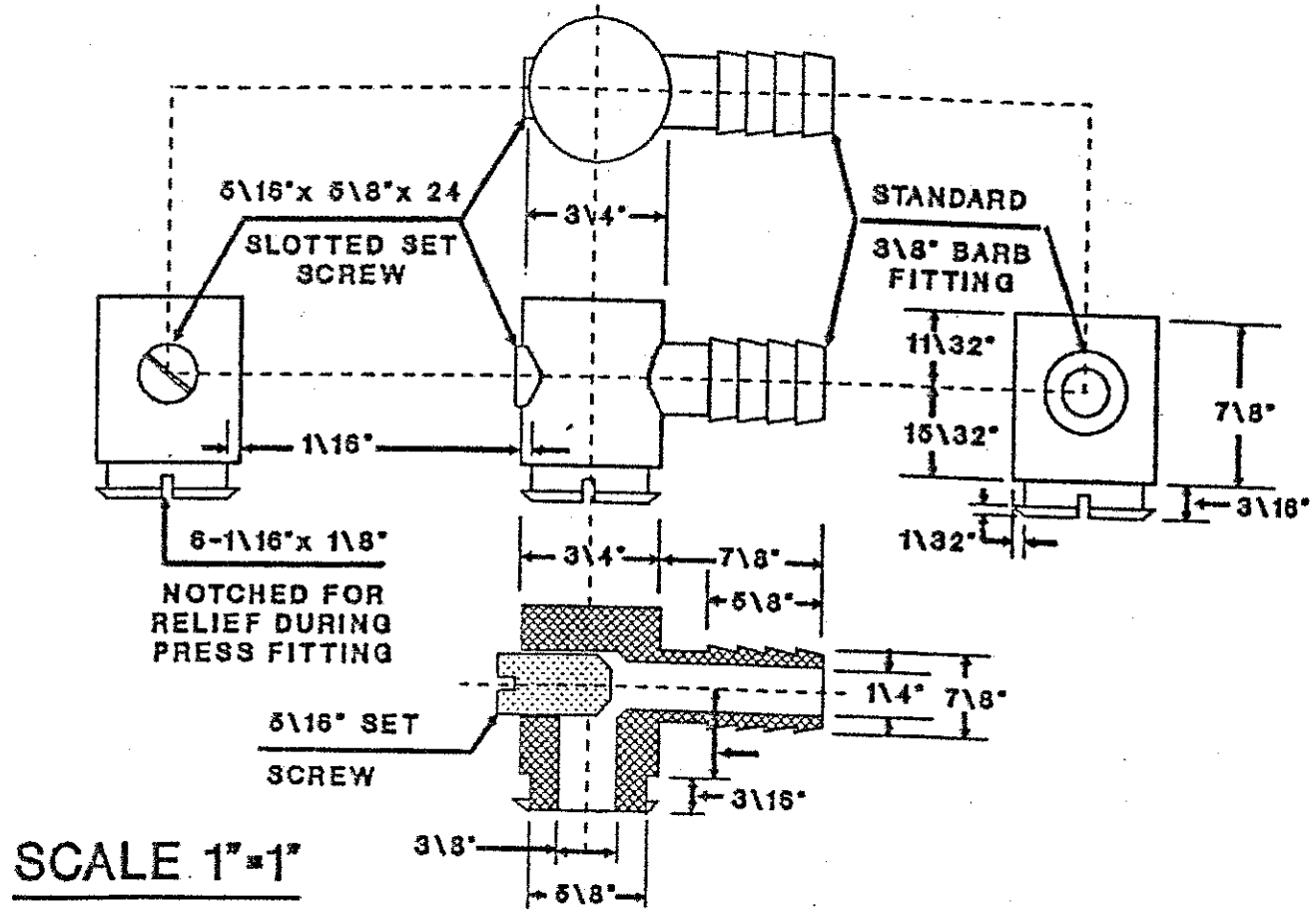
FIG 5



FILE CAU 1

C.A.V. ADJ. AIR FLOW VALVE DESIGN

VENTURES UNLIMITED INC.
1-602-636-2231



SCALE 1" = 1"

PRESS FIT VALVE

PCV-CLEAN AIR VALVE INSTALLATION GUIDE

Your new PCV-CLEAN AIR VALVE reduces harmful crankcase emissions from entering your air/fuel mixture, the stock PCV valve does not.

Cleaner fuel to burn means your engine will have better fuel economy, more power and emit less Hydrocarbons and Carbon Monoxide.

GUARANTEED: YOUR CAR WILL PRODUCE LESS SMOG FORMING EMISSIONS.

NOTICE TO THE HOME MECHANIC:

Installation and scheduled replacement of the PCV-CLEAN AIR VALVE requires adjustments. Carburetor idle speed and air/fuel mixture may also need adjustments. An emission control professional with proper emissions analyzing instruments should install and/or inspect the PCV-CLEAN AIR VALVE. The benefits of optimum emissions reduction depends on professional installation.

INSTALLATION GUIDE: *Step By Step*

1. Remove the old PCV valve.
2. Remove and inspect PCV hose:
 - A. Inspect both ends of the hose for carbon and oil deposits. Clean or replace as needed.
 - B. Inspect the hose for wear, cracks, hard ends and brittleness. Replace if needed.
3. Inspect rubber grommet on valve cover for proper size and condition of rubber, replace if necessary.

OBTAINING LOWEST OPTIMUM EMISSIONS

WITH THE CLEAN VALVE

To obtain the lowest optimum emissions with the Clean Air Valve on the late model vehicles it is best to use a four gas analyzer. This allows you to make proper adjustments and diagnosis on any vehicle. To obtain the best performance from the Clean Air Valve, first bring the engine to operating temperature. If the engine is cold you should run it for at least five minutes before beginning the adjustment of The Clean Air Valve. To begin the adjustment of the valve, the following procedures are recommend:

#1 Disconnect and plug the air pump while making the adjustments to the Clean Air Valve. Note: You must reconnect the air pump when the adjustments are completed.

#2 Install the Clean Air Valve following the instructions carefully.

#3 Begin adjusting The Clean Air Valve adjustment screw by turning the screw counterclockwise until the CO₂ reading is as high as possible and the O₂ is as low as possible. Ideally the CO₂ reading should be 13.9 to 14.3 to 1 and the O₂ should be as close to zero as possible, preferably .01 to .05.

#4 While adjusting ^{Warrant} which the HC and CO level. You will notice that when the CO₂ and O₂ readings have been properly adjusted the HC CO reading will at their lowest level. This means that the engine is burning at peak efficiency.

#5 Reconnect the air pump.

(note: on certain Chrysler models the grommet must be replaced for proper size.)

4. Inspect carburetor base-plate PCV inlet port for hard carbon build up. By using a probe you can tell if there is any carbon build up. The probe should be able to go all the way through the port.

If there is carbon build up, check your service manual for proper cleaning procedure.

5. Connect PCV hose to intake manifold or carburetor base-plate port.

6. Install the PCV-CLEAN AIR VALVE into the valve cover grommet and attach the hose.

7. Connect car to emissions analyzer and bring the engine to normal operating temperature.

CAUTION:

The adjustment screw on the back of the PCV-CLEAN AIR VALVE is preset at the factory in the closed (off) position. The closed position is the starting point for proper adjustments.

8. Begin adjusting the set screw on the back of the PCV-CLEAN AIR VALVE (counter clock wise) until you have reached the optimum HC and CO levels.

9. Adjust idle speed to manufacturers specifications if needed or best operation, smooth idle ect.

Installation is now complete.

PCV SYSTEM TROUBLE SHOOTING:

The life of the PCV-CLEAN AIR VALVE system is the same as with stock PCV valve systems. Therefore, when trouble shooting is needed, test the PCV-CLEAN AIR VALVE the same as stock PCV valve.

1. Connect a tachometer.
2. Run engine to normal operating temperature.
3. ~~With the engine at idle,~~ remove the PCV-CLEAN AIR VALVE with hose still connected. The idle speed should remain normal.
4. Cover the bottom of the PCV-CLEAN AIR VALVE with your finger, (feel some suction.) The idle speed should drop at least 50 RPM.

If the idle speed does not drop by at least 50 RPM, there is a restriction in the system. Check PCV hose and intake manifold or carburetor base-plate port for carbon build up, clean as needed.

5. Repeat test on PCV-CLEAN AIR VALVE.

If RPM still does not drop (step 4.), call service number for assistance.

If you need special help, call our hot line:

1-602-636-2231. Your questions will be answered.

GUARANTEE:

Installer:

Installation date:

Mileage reading:

Your new PCV-CLEAN AIR VALVE is guaranteed against defects in material and workmanship for one year or 10,000 miles, whichever comes first.

We recommend you replace your PCV-CLEAN AIR VALVE once a year or as recommended by vehicle manufacturer for stock PCV valve.

Pollution Control Systems, Inc.

P.O. Box 382

Paulden, AZ 86334

602-636-2231

SERVICE TIP: Always check service manual when installing the Clean Air Valve or servicing a PCV valve.

CHANGES AS MARKED

APPROVED BY

DATE

COPY OK