State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-267
Relating to Exemptions Under Section 27156
of the Vehicle Code

KID
CYCLONE DEVICE

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 Cyclone device, manufactured by KID, of 21308 Pathfinder #208, Diamond Bar, California, 91765, has been found not to reduce the effectiveness of the applicable vehicle pollution control system and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for installation on the vehicles listed in Exhibit A which is attached hereto and incorporated herein.

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

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

Marketing of this Cyclone device, using an identification other than that shown in this Executive Order or marketing of this Cyclone device, for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the ARB.

In addition to the foregoing, the ARB reserves the right in the future to review this Executive Order and the exemption provided herein to assure that the exempted add-on or modified part continues to meet the standards and procedures of Title 13, California Code of Regulations, Section 2222 et seq.

This Executive Order does not constitute any opinion as to the effect the use of this Cyclone 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 CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF KID CYCLONE DEVICE.

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 the hearing that grounds for revocation exist.

Executed at El Monte, California, this 20th day of August, 1992.

R. B. Summerfield
Assistant Division Chief
Mobile Source Division

State of California
AIR RESOURCES BOARD

EVALUATION OF KID'S CYCLONE DEVICE FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA CODE OF REGULATIONS

August 1992

State of California
AIR RESOURCES BOARD

EVALUATION OF KID'S CYCLONE DEVICE FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA CODE OF REGULATIONS

by

Mobile Source Division
State of California
Air Resources Board
9528 Telstar Avenue
El Monte, CA 91731-2990

SUMMARY

KID, of 21308 Pathfinder #208, Diamond Bar, California, 91765, has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for their Cyclone device. The Cyclone device is designed for installation on vehicles as listed in Appendix A.

KID has submitted a completed application and all required information including samples of the individual models. Based on an engineering evaluation, it was determined that the Cyclone device would not have any significant adverse effects in emissions if tested in accordance with the Cold-Start CVS-75 Federal Test Procedure.

The staff recommends that KID be granted exemption as requested and that Executive Order D-267 be issued for the Cyclone device.

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I. INTRODUCTION

KID, of 21308 Pathfinder #208, Diamond Bar, California, 91765 has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code (VC) for their Cyclone device. The Cyclone device is designed for installation on the vehicles listed in Appendix A.

KID has submitted a complete application and all the required information including samples of the individual models.

II. CONCLUSIONS

Based on an engineering evaluation of the device, the staff concludes installation of the KID Cyclone device will not adversely affect exhaust emissions from vehicles for which an exemption is requested.

III. RECOMMENDATION

The staff recommends that KID be granted an exemption as requested and that Executive Order D-267 be issued for the Cyclone device.

IV. DEVICE DESCRIPTION

The Cyclone device is a vehicle-specific component used to increase turbulence in the air intake passage. It is cylindrical in shape with six (6) blades connecting at the cylinder's center (see drawing in Appendix B). It is constructed using copper sheet, cut to shape, and tack welded together.

The device is inserted into the air intake passage between the air filter and the throttle body, upstream of the air metering device. No sensors are relocated or altered by the device's installation. The tension of the device's outer surface holds the device in place.

V. CYCLONE DEVICE EVALUATION AND DISCUSSION

An engineering evaluation was conducted to evaluate the impact of the Cyclone device on emissions.

The manufacturer claims the Cyclone device creates turbulence in the intake air. In the staff's evaluation, the device is located relatively far upstream from the air flow metering device, therefore, the induced turbulence will not affect the air flow measurement. The manufacturer supplied CVS-75 FTP test results conducted at the Automobile Club of Southern California using a 1991 Ford Taurus tested with and without the device.

The results are as follows:

Test	HC gm/mi	CO gm/mi	NOx gm/mi
Baseline #1	0.324	3.437	0.206
Baseline #2	0.302	3.201	0.202
With Device	0.309	3.224	0.204

These test results support staff's opinion that turbulence induced in the intake tract have no significant effect on the emissions. Based on engineering evaluation of the supplied information, staff determined the Cyclone device will not increase emissions.

APPENDIX

APPENDIX A:

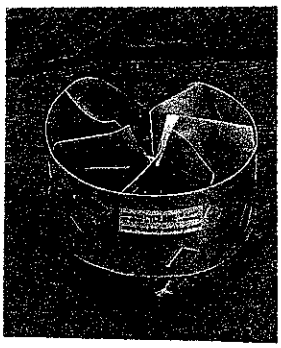
EXHIBIT "A"

MODEL	OUTSIDE DIMENSION OF THE DEVICE	PARTIAL APPLICATION LIST	DISPLACEMENT(L)/ # OF CYLINDER
CYCLONE KI-50	50mm	1991 TOYOTA TERCEL	1.5/4
CYCLONE KI-55	55mm	1991 TOYOTA CAMRY DX (JAPAN BUILT)	2.0/4
		1989 PLYMOUTH VOYAGER	3.0/6
		1985 VW VANAGON GL	2.1/4
CYCLONE KI-58	58mm	1991 MAZDA MPV	3.0/6
CYCLONE KI-60	60mm	1984 BMW 528E	2.5/6
		1990 DODGE CARAVAN	3.0/6
		1989 ISUZU I-MARK	1.6/4
		1990 JEEP CHEROKEE	4.0/6
		1987 MITSU LS WAGON	2.4/4
		1988 VOLVO 740 TURBO	2.3/4
CYCLONE KI-65	65mm	1991 BMW 325i	2.5/6
		1986 NISSAN STANZA 4WD	2.4/4
		1987 OLDS DELTA 88	3.5/6
		1991 TOYOTA CAMRY (US BUILT)	2.0/4
		1991 TOYOTA PREVIA	2.5/4
		1990 VOLVO 740 GL	2.3/4
CYCLONE KI-70	70mm	1991 ACURA LEGEND	3.2/6
		1988 CHEV CELEBRITY	2.8/6
		1991 FORD TAURUS	3.0/6
		1987 FORD MUSTANG	2.3/4
		1992 MITSU MONTERO	3.0/6
		1989 NISSAN STANZA E	2.4/4
		1988 OLDS CUTLASS CRUISE	2.8/6
CYCLONE KI-75	75mm	1991 HONDA ACCORD EX	2.2/4
		1991 HYUNDAI ELANTRA GLS	1.6/4
		1990 JEEP GRAND WAGONEER	4.0/6
		1992 MAZDA MPV	3.0/6
CYCLONE KI-80	80mm	1988 OLDS DELTA 88	3.8/6

ATTACHMENT "A"

MODEL	OUTSIDE DIMENSION OF THE DEVICE	PARTIAL APPLICATION LIST DISPLACEMENT(L)/ # OF CYLINDER		
CYCLONE KI-50	50mm	1991	TOYOTA TERCEL	1.5/4
CYCLONE KI-55	55mm	1991	TOYOTA CAMRY DX (JAPAN BUILT)	2.0/4
		1989	PLYMOUTH VOYAGER	3.0/6
		1985	VW VANAGON GL	2.1/4
CYCLONE KI-58	58mm	1991	MAZDA MPV	3.0/6
CYCLONE KI-60	60mm	1984	BMW 528E	2.5/6
		1990	DODGE CARAVAN	3.0/6
		1989	ISUZU I-MARK	1.6/4
		1990	JEEP CHEROKEE	4.0/6
		1987	MITSU LS WAGON	2.4/4
		1988	VOLVO 740 TURBO	2.3/4
CYCLONE KI-65	65mm	1991	BMW 325i	2.5/6
		1986	NISSAN STANZA 4WD	2.4/4
		1987	OLDS DELTA 88	3.5/6
		1991	TOYOTA CAMRY (US BUILT)	2.0/4
		1991	TOYOTA PREVIA	2.5/4
		1990	VOLVO 740 GL	2.3/4
CYCLONE KI-70	70mm	1991	ACURA LEGEND	3.2/6
		1988	CHEV CELEBRITY	2.8/6
		1991	FORD TAURUS	3.0/6
		1987	FORD MUSTANG	2.3/4
		1992	MITSU MONTERO	3.0/6
		1989	NISSAN STANZA E	2.4/4
		1988	OLDS CUTLASS CRUISE	2.8/6
CYCLONE KI-75	75mm	1991	HONDA ACCORD EX	2.2/4
		1991	HYUNDAI ELANTRA GLS	1.6/4
		1990	JEEP GRAND WAGONEER	4.0/6
		1992	MAZDA MPV	3.0/6
CYCLONE KI-80	80mm	1988	OLDS DELTA 88	3.8/6

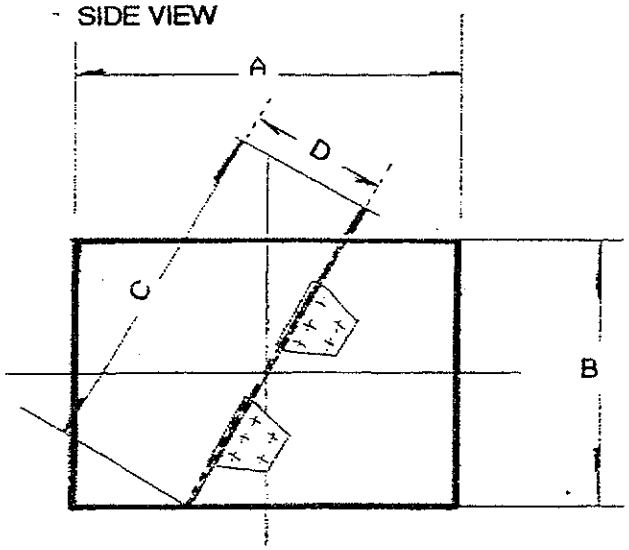
APPENDIX B:



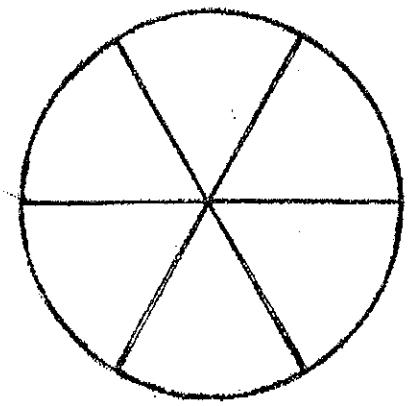
ATTACHMENT "B"

ENGINEERING DRAWING

SIDE VIEW



TOP VIEW



MODEL	A	B	C	D	THICKNESS OF COPPER (RING/BLADE)
KI-50	50	35	45	20	0.35
KI-55	55	35	45	22	0.35
KI-58	58	35	45	24	0.35
KI-60	60	35	45	25	0.35
KI-65	65	35	45	27	0.35
KI-70	70	40	50	30	0.35
KI-75	75	40	50	33	0.35
KI-80	80	40	50	35	0.35

*NOTE : (mm)
A: DIAMETER OF CYLINDER
B: HEIGHT OF CYLINDER
C: LENGTH OF BLADE
D: WIDTH OF BLADE

APPENDIX C:

ATTACHMENT "C"

INSTALLATION DIAGRAM

* TOOLS REQUIRED: SCREW DRIVER
* INSTALLATION TIME: ABOUT 15 MINUTES

1. LOCATE ENGINE AIR INLET HOSE.
2. REMOVE HOSE CLAMP AT END CLOSEST TO AIR CLEANER.
3. DISENGAGE HOSE.
4. INSERT "CYCLONE" .
5. MAKING SURE THAT THE ARROW IS POINTING IN THE DIRECTION OF AIR FLOW. (AWAY FROM THE AIR CLEANER, AND TOWARDS THE ENGINE)
6. REPLACE HOSE AND SECURE CLAMP.