

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-154-2  
Relating to Exemptions under Section 27156  
of the Vehicle Code

POLLUTION CONTROL AUTO PARTS  
MODEL 278 TANK SENTRY 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 Tank Sentry device model No. 278 manufactured by Pollution Control Auto Parts 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 repairing damaged or tampered unleaded fuel fill pipe restrictors on 1975 and newer model-year Ford Motor Company vehicles with stepped-in diameter fill pipes. It is not applicable for replacing original equipment manufacturer restrictors which have been completely removed.

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 POLLUTION CONTROL AUTO PARTS' TANK SENTRY DEVICE.

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.

Executive Order D-154, dated April 14, 1986, is superseded and of no further force and effect.

Executed at El Monte, California, this 15<sup>th</sup> day of ~~December~~, 1986.



K. D. Drachand, Chief  
Mobile Source Division

State of California  
AIR RESOURCES BOARD

EVALUATION OF POLLUTION CONTROL AUTO PARTS' TANK SENTRY DEVICE MODEL 278 FOR  
EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE  
WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA ADMINISTRATIVE CODE

December 1986

December, 1986

State of California  
AIR RESOURCES BOARD

Evaluation of Pollution Control Auto Parts' Tank Sentry Device Model 278 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

(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

Pollution Control Auto Parts of 10470 Grey Cloud Trail South, Cottage Grove, Minnesota 55016, has applied for an update to Executive Order (E.O.) D-154 which exempted their model 278 Tank Sentry device from the prohibitions of California Vehicle Code Section 27156. The device is designed for repairing damaged or tampered original equipment manufacturer (OEM) unleaded fuel fill pipe restrictors on certain catalyst equipped California-certified Ford Motor Company vehicles with stepped-in diameter fill pipes. The outside diameter of the device has been changed from 2.071" to 2.082" to allow its installation on all Ford Motor Company vehicles with stepped-in diameter fill pipes.

The applicant submitted the specifications of the new model 278 device and six samples of the device installed in six different size Ford Motor Company vehicle fill pipes.

The staff evaluated the device in accordance with the Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks. The staff also performed installation experiments and bench tests to determine the durability of the device. Based on the obtained results, the staff concludes that the new model 278 Tank Sentry device meets the exemption requirements for installation on specified Ford Motor Company vehicles.

The staff recommends that the Pollution Control Auto Parts be granted an update to E.O. D-154 for their new model 278 Tank Sentry device and that E.O. D-154-2 be issued.

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EVALUATION OF POLLUTION CONTROL AUTO PARTS' TANK SENTRY DEVICE MODEL 278 FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION 27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE CALIFORNIA ADMINISTRATIVE CODE

I. INTRODUCTION

Pollution Control Auto Parts of 10470 Grey Cloud Trail South, Cottage Grove, Minnesota 55016, has applied for an update to E.O. D-154 which exempted their model 278 Tank Sentry device from the prohibitions of California Vehicle Code Section 27156. This device is designed to replace the damaged or tampered OEM unleaded fuel fill pipe restrictors on certain catalyst equipped Ford Motor Company vehicles with stepped-in diameter fill pipes. The outside diameter of the device has been changed from 2.071" to 2.082" to allow its installation on all Ford Motor Company vehicles with stepped-in diameter fill pipes. Section 27156 prohibits modifications to required vehicle emission control systems. Exemptions to the Section are granted upon demonstration that the device does not increase emissions or reduces the effectiveness of the required emission control systems of applicable vehicles.

The applicant submitted six samples of the device, which were installed in different size Ford Motor Company vehicle fill pipes, for our inspection and evaluation. The applicant also submitted drawings and specifications of the device for evaluation.

II. CONCLUSION

Based on the detailed studies of the design, installation experiments and bench tests to determine durability of the device, the staff concludes that the new model 278 Tank Sentry device meets the Vehicle Code Section 27156 requirements for exemption, for installation on specified Ford Motor Company vehicles.

### III. RECOMMENDATION

The staff recommends that the Pollution Control Auto Parts be granted an update to the existing Air Resources Board's E.O. D-154, as requested, for their new model 278 Tank Sentry device, to be installed on 1975 and newer Ford Motor Company vehicles with stepped-in diameter fill pipes and that Executive Order D-154-2 be issued.

### IV. DEVICE DESCRIPTION

The Pollution Control Auto Parts' Tank Sentry device new model 278 is an unleaded fuel fill pipe restrictor designed to replace damaged or tampered OEM restrictors. The model 278 restrictor fits into a fill pipe with stepped-in diameter on Ford Motor Company vehicles. It is not applicable for replacing OEM restrictors which have been completely removed.

The device is made of 0.028 inch sheet metal (see Appendix A for drawings and specifications of the device). The device has a 0.915 inch diameter filling hole for passing the unleaded fuel nozzle to the required depth in the fill pipe. This filling hole has an eccentricity of .230" with respect to the centerline of the fill pipe neck. The overall diameter of the device is 2.082 inches. Attached to the hind side of the device is a spring loaded 0.028 inch thick flapper door which covers the filling hole and is maintained in the closed position. The model No. "278" will be imprinted on the front side of the flapper door.

The device has sixteen sharp teeth which are unequally spaced around the circumference of the device allowing the device to be pushed into the fill pipe and to sit on top of the remains of the OEM restrictor. The teeth around



the device are longer and less spaced on the far side of the inner filling hole. In some cases it is necessary to bend the side teeth in order to get the model 278 Tank Sentry device to pass the top lip of the fill pipe.

According to the installation instructions, the device can be installed without removing the gas tank or gas filler tube from the vehicle. Once installed it can not be removed since the teeth are all bent upward and the device is squeezed tightly against the fill pipe wall. Appendix B and C show "Installation Instructions" and "Pollution Control Product Release" respectively.

#### V. DEVICE EVALUATION

The device was evaluated for its: 1) ability to restrict leaded fuel nozzles; 2) compliance with the Specifications for Fill Pipe and Openings of Motor Vehicle Fuel Tanks, and 3) durability.

The filling hole diameter of the device is 0.915 inches for passing the unleaded fuel nozzle but restricting the insertion of a leaded fuel nozzle. There are openings between the teeth around the circumference of the device when installed. The openings are not large enough to allow misfueling.

According to the Specification for Fill Pipes and Openings of Motor Vehicle Fuel Tanks, "angle alpha" is the angle between the axial centerline of the fill pipe face and the axial centerline of the test nozzle spout when in its normal resting position. This angle should fall within the range of - 10° and 20° and the penetration of the test fuel nozzle in the fill pipe should be at least 2.25 centimeters. After a review of the company's installation instructions, the staff is of the opinion that the Tank Sentry device, model 278, when installed properly will meet the above requirements.

The submitted six samples of the device were installed in different size Ford Motor Company vehicle fill pipes. The fill pipes were clamped in a vice and tested for durability. The durability test consisted of inserting and removing an unleaded fuel nozzle through the device repeatedly, with an effort to dislocate the restrictor. The restrictor remained in its place during the entire test of simulated filling operation.

Based on the above, the staff concludes that if the device is installed correctly it will function the same as an OEM restrictor and it meets the requirements for exemption from the prohibitions of California Vehicle Code Section 27156.

#### VI. DISCUSSION

Pollution Control Auto Parts' model 278 Tank Sentry device was previously exempted under E.O. D-154 for repairing damaged or tampered OEM unleaded fuel fill pipe restrictors on catalyst equipped California-certified Ford Motor Company vehicles with stepped-in diameter fill pipes, excluding Ford pick-up trucks, Broncos, Lincolns, 1975-1977 Monarch and Granada and 1975-1978 Ford LTD. The applicant modified the outside diameter of the device from 2.079" to 2.085" and applied for an update to E.O. D-154 to include the above mentioned Ford Motor Company vehicles in the exemption.

The staff is of the opinion that the new model 278 of the Tank Sentry device meets the requirements for exemption from the prohibitions of Vehicle Code Section 27156 for the specified Ford Motor Company vehicles. The staff recommends that E.O. D-154-2 be issued.

Appendices

Page No.

APPENDIX A

6

APPENDIX B

11

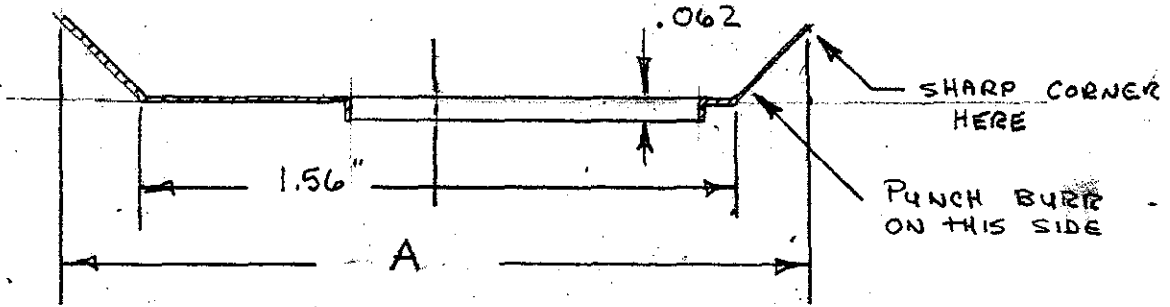
APPENDIX C

12

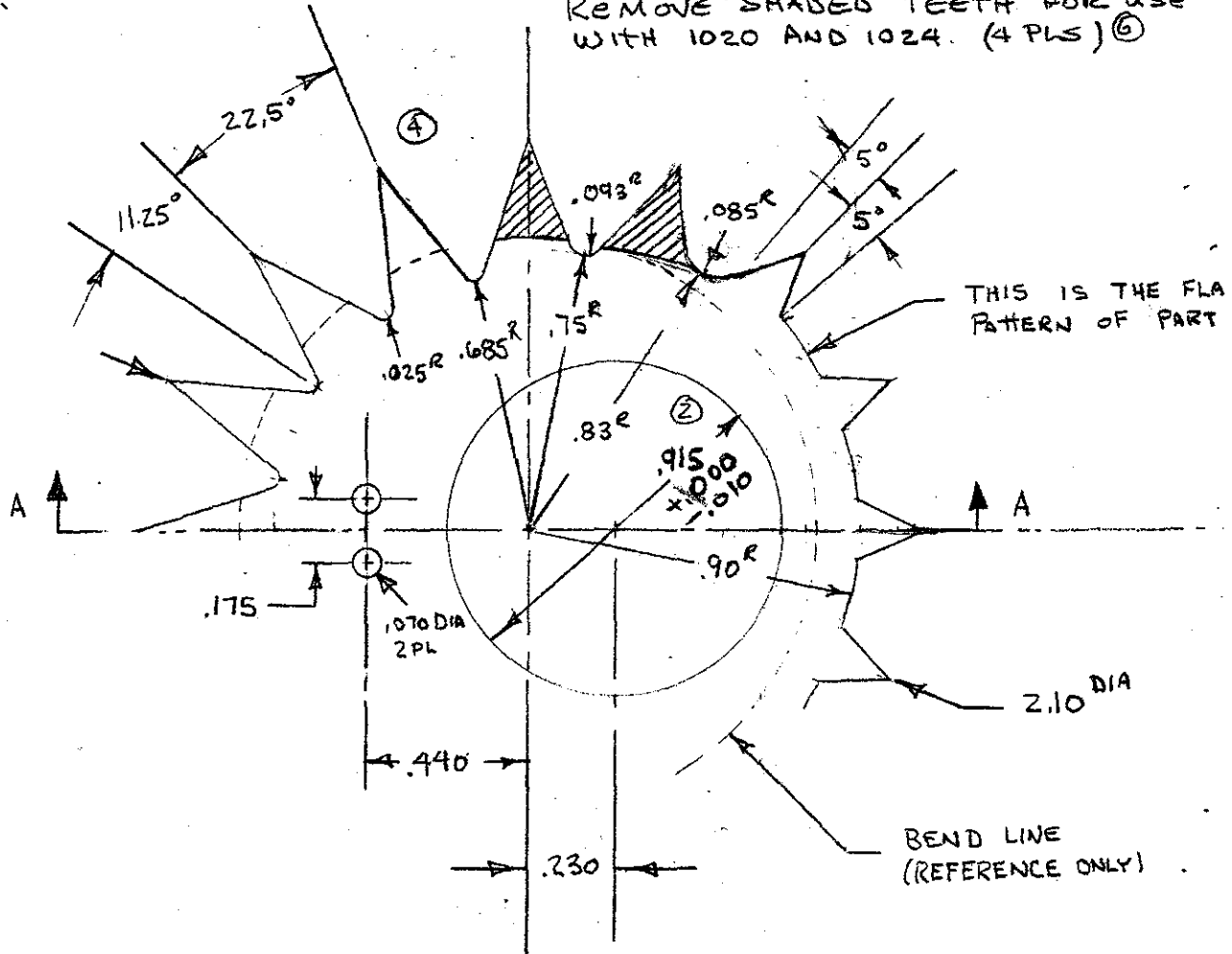
APPENDIX A

Drawings and Specifications of Model 278 Tank Sentry Device

SECT A-A



REMOVE SHADED TEETH FOR USE WITH 1020 AND 1024. (4 PLS) (6)

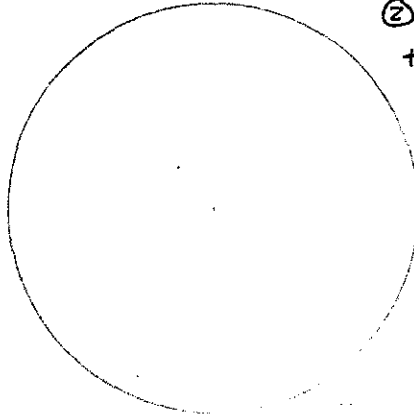


HEAT TREAT SEE  
PRINTS 1020, 1024, 1016, 1017  
SPRING TEMPER

APPENDIX A  
CONTINUED

① MATERIAL THICKNESS  
CHANGED FROM .018 to .022-  
.028 10-31-85

② TOLERANCE ADDITION  
+.000 - .010 10-31-85



ACTUAL ENVELOPE  
OF FLAT PATTERN

③ CHANGE MATL THICKNESS to  
.028

④ ADD ALTERNATE PROFILE for  
P/N 1020, 1024

⑤ CHANGE HEAT TREAT to  
BE SPECIFIC ON 1016, 1020  
1024

⑥ ADD 4 PLS 6-3-86  
6/12/86

① ③

MATERIAL 1075 THICKNESS .028 = 10-31-85  
BASED ON 1020, 1024, 1016

FINISH: BLACK OXIDE AND OIL

TITLE:

TANK SENTRY BLANK  
WITH LIP AND FLANGE

DR LAK 9/22/85

CHK

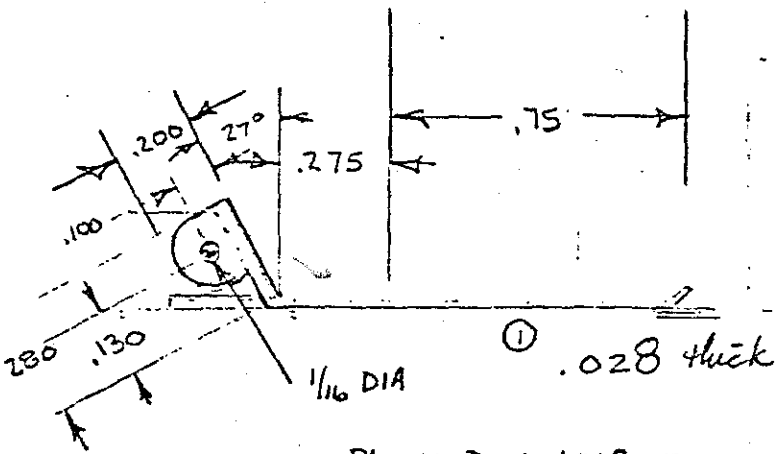
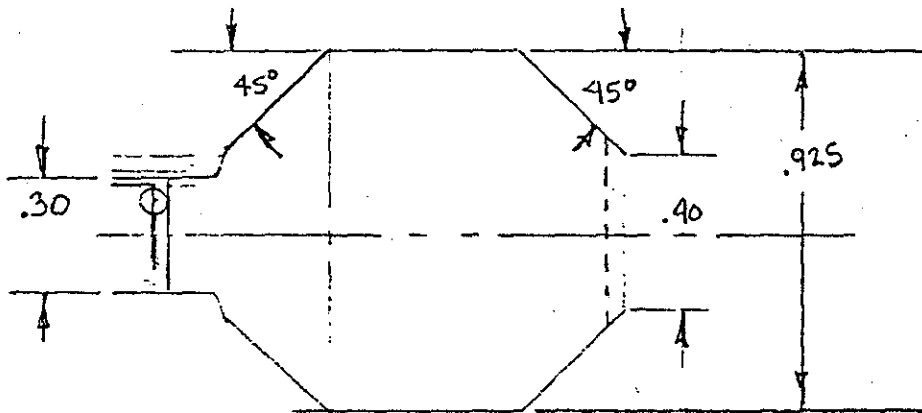
SCALE

1" = 1/2"

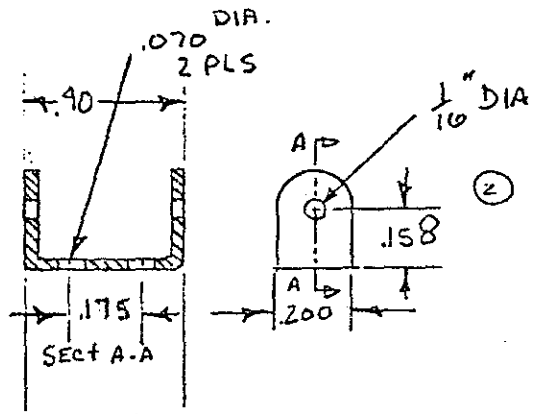
PART NUMBER

M-DOC 1014-O REVC

APPENDIX A  
Continued



① .028 thick  
PIN M-DOC 1012-0  
FLAP.

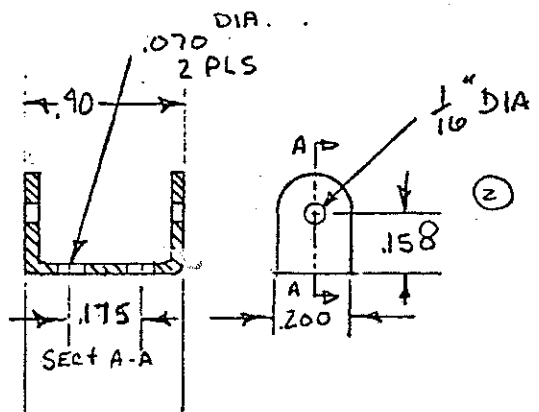
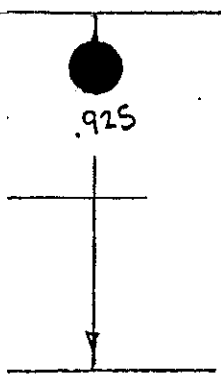


②  
PIN M-DOC 1013-0  
U-BRACKET

MATERIAL 300 SERIES  
STAINLESS STEEL

APPENDIX A  
Continued

① CHANGED FROM .020  
.028 10-31-E  
② CHANGED FROM .150  
.158 10-31-E



P/N M Doc 1013-0  
U-BRACKET

MATERIAL 300 SERIES  
STAINLESS STEEL

FLAPPER SPRING ASSY  
SCALE = 2X

7/21/85  
LAK

6/86  
 done

USE PART NUMBER M-DOC 1014-0 PRINT

"A" DIMENSION = 2.085

HEAT TREAT RC 51-53 > w/.028 TRICK MATL

REV B

- ① CHANGE # 216 TO # 278
- ② CHANGE 2.072 TO 2.085
- ③ CHANGE HEAT TREAT FROM  
 43.45 OR RISN70 TO RC 51-53  
 6-3-86

USED ON

TOLERANCE AND SURFACE ROUGHNESS UNLESS NOTED		TITLE		
OPERATION	PLACES IN DIMENSION			MAXIMUM SURFACE ROUGHNESS
	.0	.00	.000	
MACHINING	±.1	±.02	±.005	✓
(SAW, REAR)	±.1	±.04		
	±	±	±	
WELDING	±.1	±.06	DR. WAK 11/01/85	
ANGULAR DIM.	±	CH.		PART NO.
SCALE	APP.		M-DOC 1014 REV B	

#278  
 SEUTER WITH LIP  
 AND FLAPPER

**A**

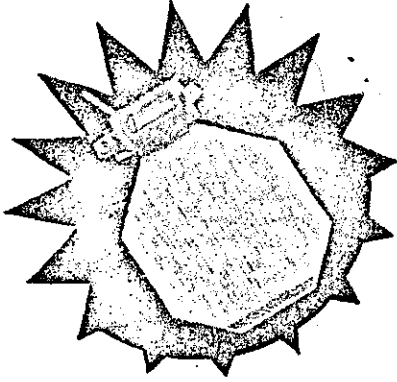


# Tank Sentry With Flapper Installation/Instruction Sheet

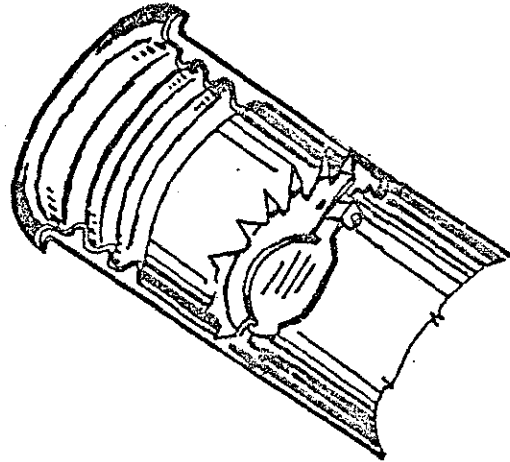
## APPENDIX B

Tank sentry is a convenient, quick and inexpensive way to repair damaged or tampered unleaded gas filler tube restrictors.

The tank sentry can be inserted without removing the gas tank or gas filler tube from the car with a hammer blow to a suitable sized socket or dowel driving restrictor into place.



**Tank Sentry with Flapper**



**Typical Installation**

Install the Ford #278 vertically (on edge) through the two notches in the lip. Sentry will then drop into pipe. After positioning, drive into place using a 1 1/4" socket or dowel.

**CAUTION:** Make sure tampered hole is large enough to accept Tank Sentry with Flapper prior to installation. If the new hole does not align properly use a screwdriver or suitable tool to rotate the Tank Sentry so filler holes do align.

**NOTE:** The Tank Sentry MUST be in alignment with the former restrictor hole and as close as possible in depth to original restrictor to be in compliance. If the former hole does not exist or is greatly enlarged, the Tank Sentry should always be installed so that the offset filler hole is positioned toward the bottom of the filler pipe.

### Limitations

The #278 Tank Sentry fits most Ford Motor Co. vehicles except the following:

- All Ford Pick-Ups  
Lincolns  
1975-77 Monarch & Granada

Broncos  
1975-78 LTD's

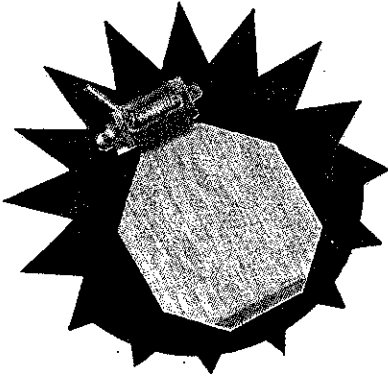
- All makes & models where tampering is so extensive that the O.E. Restrictor metal has been completely removed.
- All Ford Motor Co. vehicles having filler necks without "stepped" diameter in tube.

★ ★ POLLUTION CONTROL PRODUCT RELEASE ★ ★

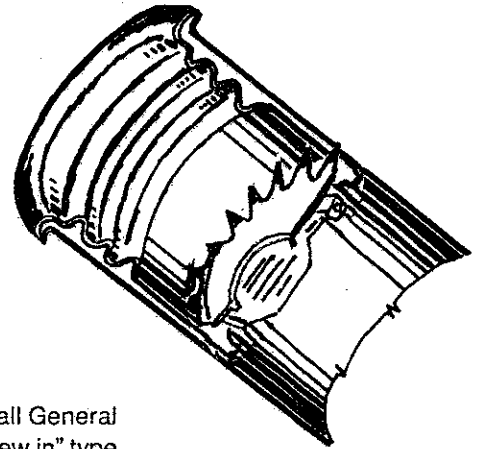
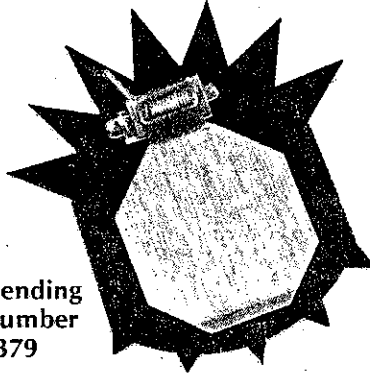
**Unleaded Gas Inlet Restrictor For Existing Gas Filler Tubes**

Eliminates the necessity of replacing the entire gas tank and neck on those General Motors & AMC vehicles having a one piece assembly. Save \$50.00 to \$200.00.

- Can be inserted without removing the gas tank or gas filler tube from car with a hammer blow to a suitably sized socket or dowel driving the restrictor into place.
- Repair damaged or tampered unleaded gas tank filler tube restrictor quickly and inexpensively.
- Sensible approach to preventing the use of regular gasoline. Reduces nozzle size opening to unleaded only.



Patent Pending  
Serial Number  
669,379



Typical Installation

**#278 Tank Sentry with Flapper**—Fits Ford #150 Motor Co. vehicles with “stepped” double flange on inside of tube

**Tank Sentry with Flapper**—Fits all General Motor and AMC vehicles with “screw in” type fuel filler caps

**Limitations To Part #278**

The #278 Tank Sentry fits most Ford Motor Co. vehicles except the following:

- All makes & models where tampering is so extensive that the O.E. Restrictor metal has been completely removed.
- All Ford Motor Co. vehicles having filler necks without “stepped” diameter in tube.

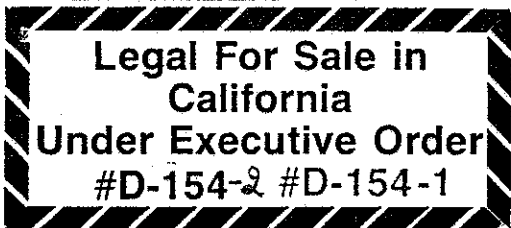
- Passes emission inspections—makes cars legal
- Simple to obtain and keep in stock
- No special tools required
- Satisfaction moneyback guarantee
- Installation instructions provided
- Tamper proof

**CALL TOLL FREE**  
(Dial all Numbers Below)

1-800/525-0016 Pause 687314

POLLUTION CONTROL AUTO PARTS 10470 Grey Cloud Trail South • Cottage Grove, MN 55016  
(612) 459-9213

Tear Off Here and Mail



**To Speed Your Order  
CALL TOLL FREE**  
(Dial All Numbers Below)  
1-800/525-0016 Pause 687314

<b>SHIP TO</b>	
Firm Name	
Attention	
Street Address	
City	Zip

How Many?	Part Number	Description	Suggested Retail	Total Price
	#150	Tank Sentry with Flapper	\$18.95 Each	
	#278	Tank Sentry with Flapper	\$18.95 Each	

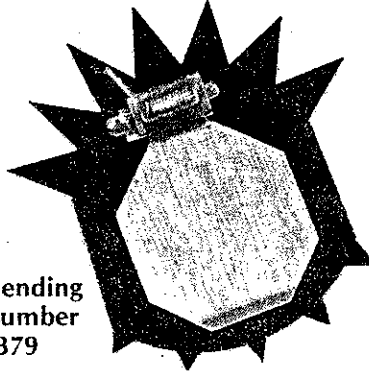
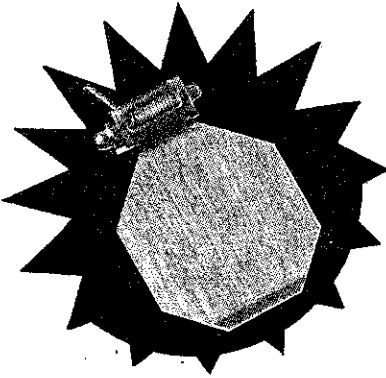
★ ★ POLLUTION CONTROL PRODUCT RELEASE ★ ★

*Patent  
Dec-9-1986*

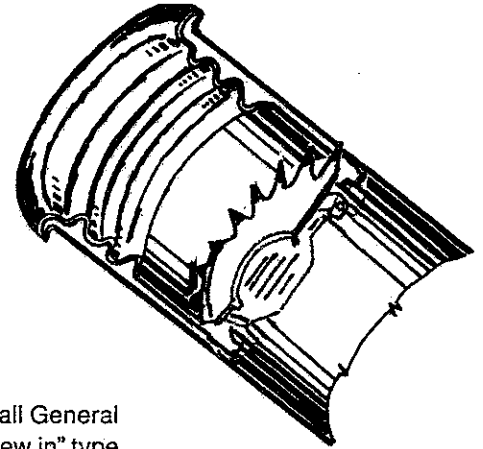
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Eliminates the necessity of replacing the entire gas tank and neck on those General Motors & AMC vehicles having a one piece assembly. Save \$50.00 to \$200.00.

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- Repair damaged or tampered unleaded gas tank filler tube restrictor quickly and inexpensively.
- Sensible approach to preventing the use of regular gasoline. Reduces nozzle size opening to unleaded only.



Patent Pending  
Serial Number  
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**#150 Tank Sentry with Flapper**—Fits all General Motor and AMC vehicles with "screw in" type fuel filler caps

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- All makes & models where tampering is so extensive that the O.E. Restrictor metal has been completely removed.
- All Ford Motor Co. vehicles having filler necks without "stepped" diameter in tube.

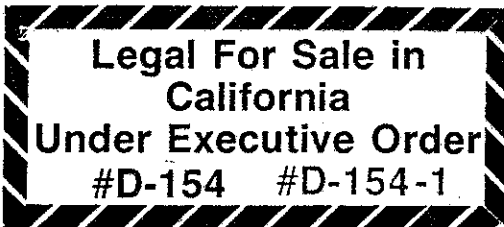
- Passes emission inspections—makes cars legal
- Simple to obtain and keep in stock
- No special tools required
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- Installation instructions provided
- Tamper proof

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(Dial all Numbers Below)

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POLLUTION CONTROL AUTO PARTS 10470 Grey Cloud Trail South • Cottage Grove, MN 55016  
(612) 459-9213

Tear Off Here and Mail



**To Speed Your Order  
CALL TOLL FREE**  
(Dial All Numbers Below)  
**1-800/525-0016 Pause 687314**

<b>SHIP TO</b>	
Firm Name	
Attention	
Street Address	
City	Zip

How Many?	Part Number	Description	Suggested Retail	Total Price
	#150	Tank Sentry with Flapper	\$18.95 Each	
	#278	Tank Sentry with Flapper	\$18.95 Each	