

State of California
AIR RESOURCES BOARD

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

POLLUTION CONTROL AUTO PARTS

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, excluding all Ford pick-up trucks, Broncos, Lincolns, 1975-1977 Monarch and Granada and 1975-1978 Ford LTD.

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.

Executed at El Monte, California, this 14th day of April, 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

April 1986

April, 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 exemption from the prohibitions of California Vehicle Code Section 27156 for its model 278 Tank Sentry device, to be used for repairing damaged or tampered unleaded fuel fill pipe restrictors on catalyst equipped California-certified Ford Motor Company vehicles with stepped-in diameter fill pipes. Section 27156 prohibits modifications to emission controlled vehicles which cause a reduction in the effectiveness of the vehicle's emission control systems.

The applicant submitted the specifications of the model 278 device and two (2) samples of the device, one of which was installed in a stepped-in diameter fill pipe.

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 model 278 Tank Sentry device meets the exemption requirements for installation on specified Ford vehicles.

The staff recommends that the Pollution Control Auto Parts be granted an exemption from the prohibitions in California Vehicle Code Section 27156 for their model 278 Tank Sentry device and that Executive Order D-154 be issued.

TABLE OF CONTENTS

	<u>Page No.</u>
SUMMARY	i
CONTENTS	ii
I. INTRODUCTION	1
II. CONCLUSION	1
III. RECOMMENDATION	1
IV. DEVICE DESCRIPTION	2
V. DEVICE EVALUATION	2
VI. DISCUSSION	4
VII. APPENDICES	6
APPENDIX A Drawings and Specifications of model 278 of the Tank Sentry Device	7
APPENDIX B Installation Instructions	12
APPENDIX C New Pollution Control Product Release	13

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 exemption from the prohibitions of California Vehicle Code Section 27156 for its model 278 Tank Sentry device. This device is designed to replace the damaged or tampered original equipment manufacturer (OEM) unleaded fuel fill pipe restrictors on catalyst equipped 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 two samples, one of which was installed in a fill pipe, 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 model 278 Tank Sentry device meets the Vehicle Code Section 27156 requirements for exemption, for installation on specified Ford vehicles.

III. RECOMMENDATION

The staff recommends that the Pollution Control Auto Parts be granted an exemption from the prohibitions of California Vehicle Code Section 27156 for their model 278 Tank Sentry device, for installation on certain 1975 and newer Ford Motor Company vehicles with stepped-in diameter fill pipes and Executive Order D-154 be issued.

IV. DEVICE DESCRIPTION

The Pollution Control Auto Parts' Tank Sentry device 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 excluding all Ford pick-up trucks, Broncos, Lincolns, 1975-1977 Monarch and Granada and 1975-1978 Ford LTD. 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 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 2.072 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 back 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.

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.

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 sample of the device was installed in a fill pipe with a stepped-in diameter. The fill pipe was 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 of Minnesota, has applied for exemption from the prohibitions in California Vehicle Code Section 27156 for the model 278 Tank Sentry device. The device is designed to replace damaged or tampered OEM fuel fill pipe restrictors in fuel fill pipes with stepped-in diameters on 1975 and newer catalyst equipped Ford Motor Company vehicles.

Pollution Control Auto Parts previously applied for exemption for their two earlier Tank Sentry device models, 200 and 216. The body of these two models was 0.020" thick and the flapper door was 0.018" thick. During durability tests the following problems were encountered:

1. Both aftermarket restrictors were dislodged from a fill pipe having partial remains of the original lead restrictor with the use of a fuel nozzle without damaging the restrictor.
2. The flapper door spring on both models lost their elasticity during the test.
3. When the OEM restrictors were completely removed from the fill pipe and the two models were installed, the Tank Sentry devices did not remain locked in the fill pipe and the devices fell through to the tank.

Based on the above, the staff concluded that a permanent installation of these models could not be achieved. Therefore, they should not be allowed to replace damaged or missing OEM restrictors which are welded to the filler pipes.

The applicant modified the design of the device and submitted an application for exemption for a new Tank Sentry model 278 device. The thickness of the device and its flapper door has been increased from 0.020" to

0.028" and from 0.018" to 0.028", respectively. The applicable model vehicles are now limited to Ford Motor Company vehicles with stepped-in diameter fill pipes (see Appendix B for Installation Instructions and Appendix C for "New Pollution Control Product Release").

The staff is of the opinion that the improved 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 vehicles. The staff recommends that Executive Order D-154 be issued.

Appendices

Page No.

APPENDIX A

7

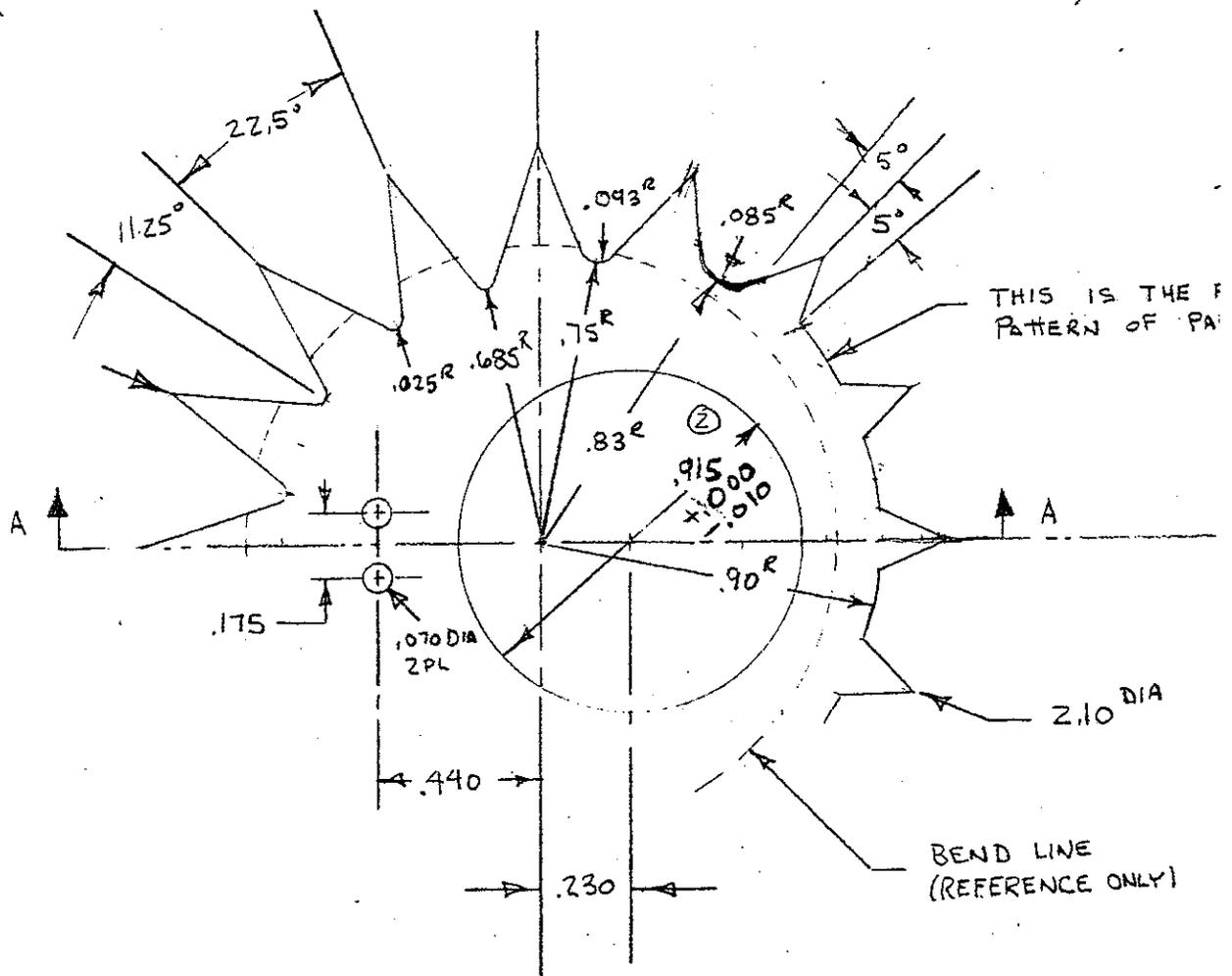
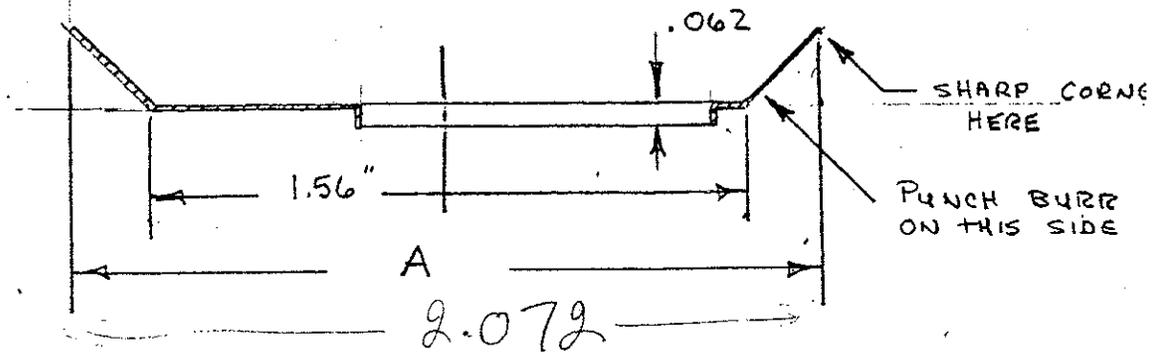
APPENDIX B

12

APPENDIX C

13

SECT A-A

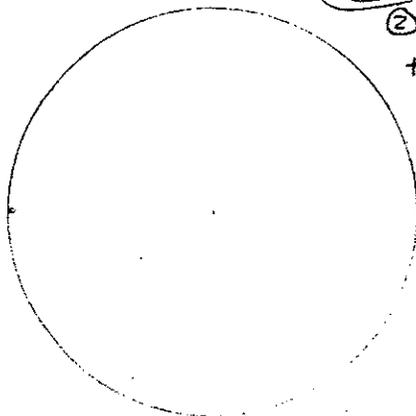


HEAT TREAT TO
RC 44-48
SPRING TEMPER

APPENDIX A
Continued

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

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



ACTUAL ENVELOPE
OF FLAT PATTERN

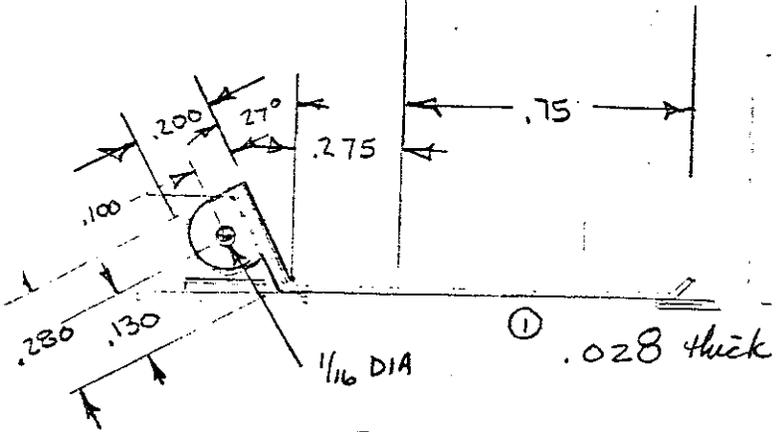
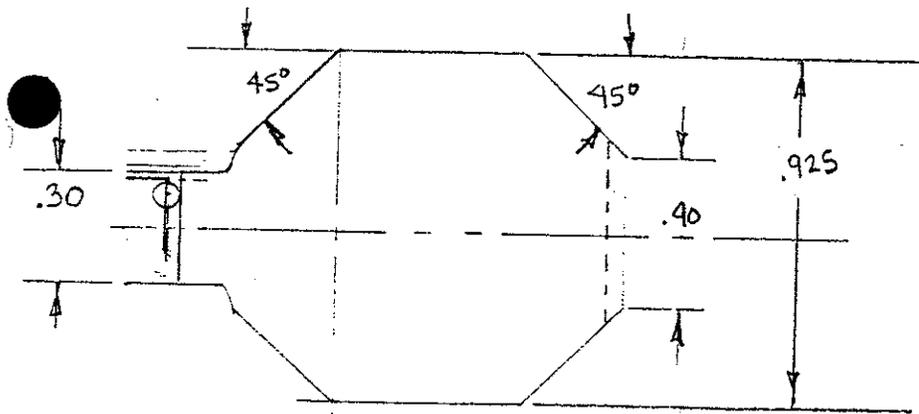
①
MATERIAL 1075 THICKNESS .022 - .028 WT
REFER TO PART NO'S M-DOC 1016 & 1020
FOR ADDITIONAL SPECIFICATIONS

FINISH: BLACK OXIDE AND OIL

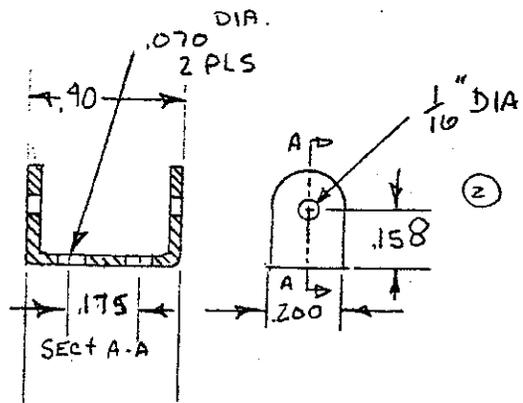
DR LAK 9/22/85
CIC
SCALE: 1" = 1/2"

TITLE: TANK SENTRY WITH LIP AND FLAPPER
PART NUMBER M-DOC 1014-0

APPENDIX A
Continued



PN M-DOC 1012-0
FLAP.



PN M-DOC 1013-0
U-BRACKET

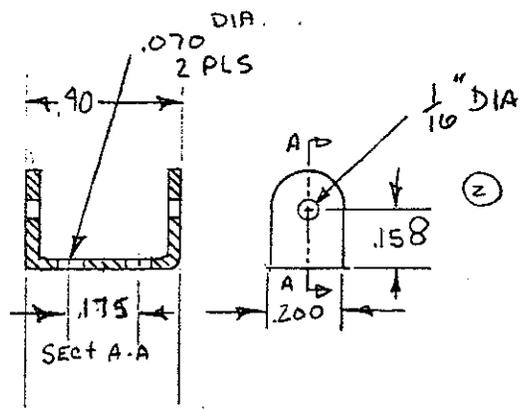
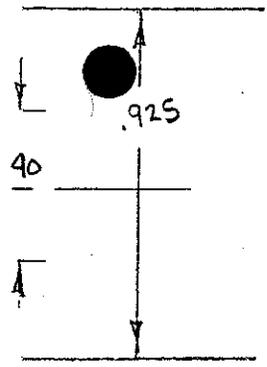
MATERIAL 300 SERIES
STAINLESS STEEL

FL
SC

APPENDIX A
Continued

① CHANGED FROM .020 +
.028 10-31-85

② CHANGED FROM .150 +
.158 10-31-85



PIW M DDC 1013-0
U-BRACKET

MATERIAL 300 SERIES
STAINLESS STEEL

FLAPPER SPRING ASSY
SCALE = 2X

7/21/85
LAK

APPENDIX A
Continued

USE PART NUMBER M-DOC 1014-0 PRINT

"A" DIMENSION = 2.072

HEAT TREAT ~~51-53~~
OR
R15N70 > w/.028 thick mat'l

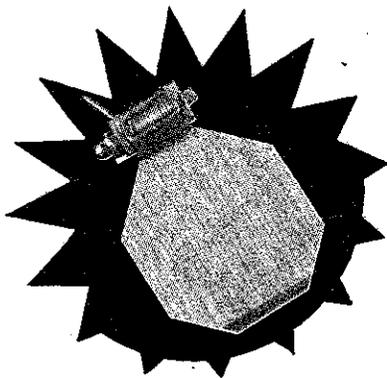
USED ON

				ISSUE	ISSUE DATE AND CHANGE RECORD	REV.	CHG.			
TOLERANCE AND SURFACE ROUGHNESS UNLESS NOTED				TITLE						
OPERATION	PLACES IN DIMENSION			MAXIMUM SURFACE ROUGHNESS	#216 SEUTER WITH LIP AND FLAPPER					
	.0	.00	.000							
MACHINING	±.1	±.02	±.005	✓						
CUT-OFF (SAW, BURN, SHEAR)	±.1	±.04	////							
Y. DR.	±	±	±							
Y. DR.	±.1	±.06	DR. WAK	11/01/85						
ANGULAR DIM.	±		CH.	A	PART NO:					
SCALE			APP.		M-DOC 1014					

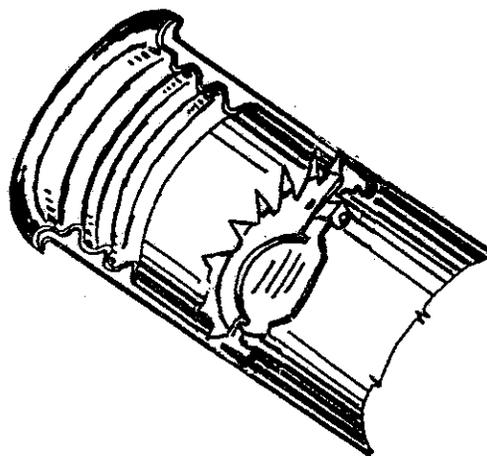
Tank Sentry With Flapper Installation/Instruction Sheet

The 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 1/4" 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

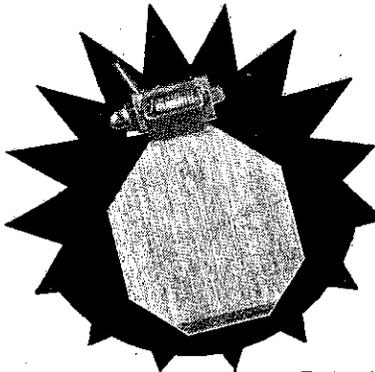
The #278 Tank Sentry fits most Ford Motor Co. vehicles except the following:

- 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.

★ ★ NEW POLLUTION CONTROL PRODUCT RELEASE ★ ★

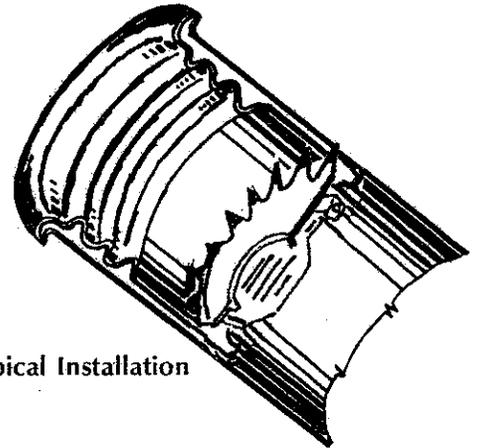
Unleaded Gas Inlet Restrictor For Existing Gas Filler Tubes

- Sensible approach to preventing the use of regular gasoline. Reduces nozzle size opening to unleaded only.
- Repair damaged or tampered unleaded gas tank filler tube restrictor quickly and inexpensively.
- 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.
- Eliminates the necessity of replacing the entire gas tank neck on most Ford Motor Co. vehicles. **Save \$50 to \$75.00**



#216 Tank Sentry with Flapper—Fits Ford Motor Co. vehicles with "stepped" double flange on inside of tube

RECEIVED
MAR 12 1985
AFTER
MODIFIC
ENCL



Typical Installation

Patent Pending
Serial Number
669,379

Limitations

The #216 Tank Sentry fits most Ford Motor Co. vehicles except the following:

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

Broncos
1975-78 LTD's

- 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

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POLLUTION CONTROL AUTO PARTS 10470 Grey Cloud Trail South • Cottage Grove, MN 55016
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CALL TOLL FREE

(Dial All Numbers Below)

1-800/525-0016 Pause 687314

SHIP TO	
Firm Name	
Attention	
Street Address	
City	Zip

How Many?	Unit Each	Part Number	Description	Unit Price	Total Price
		#216	Tank Sentry with Flapper		