

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-257  
Relating to Exemptions Under Section 27156  
of the Vehicle Code

Z-TEK INDUSTRIES  
FUEL TWEAK DEVICE

WHEREAS, Vehicle Code Section 27156 and Title 13 California Code of Regulations (hereafter "CCR") Section 2222(e), authorizes 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, Z-TEK Industries has applied to the ARB for exemption from the prohibitions of Vehicle Code Section 27156 for the Fuel Tweak 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 Fuel Tweak is an add-on device that is attached to the fuel line in a motor vehicle.
2. The fuel line is part of the required motor vehicle pollution control system.
3. The Fuel Tweak is intended for use with a required pollution control system.
4. The Fuel Tweak by being installed on the fuel line alters the original design of a motor vehicle pollution control system.
5. The Fuel Tweak 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).
6. The Fuel Tweak does not reduce the effectiveness of any required motor vehicle pollution control device.
7. The Air Resources Board, in the exercise of technical judgement, is aware of no basis on which the Fuel Tweak will provide either a decrease in emission or an increase in fuel economy.
8. It has not been determined what effect use of the Fuel Tweak may have on any warranty, either expressed or implied, by the manufacturer of a motor vehicle on which the device is installed.

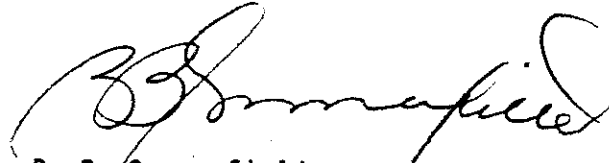
9. The Fuel Tweak is not a certified motor vehicle pollution control device pursuant to Health and Safety Code Section 43644.
10. The Air Resources Board by granting an exemption to Z-TEK Industries for the Fuel Tweak does not recommend or endorse in any way the Fuel Tweak for emissions reduction, fuel economy, or any other purpose.

IT IS HEREBY RESOLVED that the Fuel Tweak is exempt from the prohibitions of Vehicle Code Section 27156 for installation on 1992 and earlier model-year light-duty vehicles as listed in Exhibit A, which is attached hereto and incorporated herein, 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 the Z-TEK Industries, 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 Fuel Tweak 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.

iolation of any of the above conditions shall be grounds for revocation of  
- this order. The order may be revoked only after a 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 2<sup>nd</sup> day of June, 1992.



R. B. Summerfield  
Assistant Division Chief  
Mobile Source Division

List vehicle names, model years, engine displacements and systems that are compatible with the device, and for which exemption is requested. Specify the correct device model for each vehicle.

The Fuel Tweak is designed for 1992 and older light-duty vehicles with multi-point fuel-injection and carburetion as listed below. Fuel Tweak is not for use on single-point injection, throttle-body injection, or diesel engines.

Fuel rail-type injection systems.

This system uses one incoming rubber fuel line to feed all injectors via a common fuel rail or fuel collection tube.

VW: With Digifant\* fuel-injection including: Jetta, Golf, Fox, 8V GTi, Cabriolet, Corrado G-60, Corrado VR-6. Manual transmission is preferred for performance reasons.

BMW: 318, 325, 525, 535 with Motronic\* fuel rail injection.

GM: V-6's (2.8 liter, 3.0 lt., 3.1 lt., 3.4 lt.) with multi-point fuel injection.

HONDA/ACURA: Multi-point injection, 5-speed only.

MAZDA: MX-6, Miata, 323-GTX. 5-speed only.

MITSUBISHI: Eclipse, EAGLE: Talon, PLYMOUTH: Laser with multi-point injection, 5-speed only.

PORSCHE: 944. 5-speed only.

SAAB: 900, 900 Turbo, 9000, 9000 Turbo. 5-speed only.

TOYOTA: Celica, Celica All-track, and MR2. 5-speed only.

C.I.S. and C.I.S.E. injection systems.

This system uses individual braided stainless-steel fuel lines for each injector.

VW: Jetta, Rabbit, 8V GTi, Scirocco, Fox, Cabriolet, and Quantum. Manual shift only.

AUDI: Five-cylinder engines. 5-speed only.

#### CARBURETION SYSTEMS

Fed by a rubber fuel line only.

BMW: 2002

State of California  
AIR RESOURCES BOARD

EVALUATION OF Z-TEK INDUSTRIES' FUEL TWEAK DEVICE  
FOR EXEMPTION FROM THE PROHIBITIONS OF VEHICLE CODE SECTION  
27156 IN ACCORDANCE WITH SECTION 2222, TITLE 13, OF THE  
CALIFORNIA CODE OF REGULATIONS

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by

Mobile Source Division  
State of California  
Air Resources Board  
9528 Telstar Avenue  
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

Z-TEK Industries of P.O. Box 381, Devault, Pennsylvania 19432, has applied for exemption from the prohibitions in Section 27156 of the California Vehicle Code for the Fuel Tweak device. The device is designed for installation on 1992 and older model-year light-duty vehicles with multi-point fuel injection and carburetion as listed in Appendix A.

Previously the Air Resources Board (ARB) exempted three similar devices; "Fuel Charger" by J. A. Lance Company, Inc., "Fuel-Energizer" by the Magnetizer Group, Inc. and "Magna Charger" by B & D Research and Development. Based on the engineering evaluation of the Fuel Tweak device and exemptions issued for the devices that operate in a manner similar to the Fuel Tweak, the staff believes that the Fuel Tweak will not have any adverse effects on the exhaust emissions from light-duty vehicles with multi-point fuel injection and carburetion as listed in Appendix A.

The staff recommends that the Fuel Tweak device be exempted from the prohibitions in Vehicle Code Section 27156 and that Executive Order D-257 be issued.

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I. INTRODUCTION

Z-TEK Industries of P.O. Box 381, Devault, Pennsylvania 19432, has applied for an exemption from the prohibitions of Vehicle Code Section (VC) 27156 for the Fuel Tweak device. The device is designed for installation on 1992 and older model-year light-duty vehicles with multi-point fuel injection and carburetion as listed in Appendix A. The applicant submitted installation instructions and specifications of the device for our evaluation.

II. CONCLUSION

Previously, the Air Resources Board (ARB) exempted three similar devices; "Fuel Charger" by J. A. Lance Company, Inc., "Fuel-Energizer" by the Magnetizer Group, Inc. and "Magna Charger" by B & D Research and Development". Based on the engineering evaluation of the device and the exemptions issued to other devices that operate in a manner similar to the Fuel Tweak, the staff has determined the Fuel Tweak will not have any adverse effects on the exhaust emissions from light-duty vehicles with multi-point fuel injection and carburetion as listed in Appendix A.

III. RECOMMENDATION

The staff recommends that Z-TEK Industries be granted an exemption from the prohibitions in California Vehicle Code Section 27156 for the Fuel Tweak device and that Executive Order D-257 be issued.

IV. DEVICE DESCRIPTION

The Fuel Tweak consists of two magnets secured on opposite sides of the vehicle's fuel line. Each Fuel Tweak magnet is a three, four or high-powered two inch long, depending upon the model, with a 1/2 inch square cross-section enclosed in an aluminum bracket. The assemblies are covered with vinyl protective coating. The brackets are designed to attach to the fuel line with nylon ties. The device's installation instructions and a drawing are shown in Appendices B and C respectively.

V. DISCUSSION

Z-TEK Industries claims that the Fuel Tweak, when installed on a vehicle's fuel line, magnetically treats fluid hydrocarbon fuels. The manufacturer stated the device is configured so two different magnetic fields act upon the incoming fuel charge. The manufacturer also claims this device increases horsepower. The ARB did not perform any testing on the device to substantiate the claims made by the manufacturer. However, it is the staff's opinion that the technical principles underlying the stated function of the device are not capable of producing any effects on emissions or engine horsepower.

The ARB previously exempted three similar devices; "Fuel Charger" by J. A. Lance Company, Inc., "Fuel-Energizer" by the Magnetizer Group, Inc. and "Magna Charger" by B & D Research and Development". Because of previous exemptions issued to similar devices with the same operating principle as the Fuel Tweak and the fact that qualifying for an exemption is based on not adversely affecting exhaust emissions, the staff recommends that Z-TEK Industries be granted an exemption as requested.

APPENDIX

9. List vehicle names, model years, engine displacements and systems that are compatible with the device, and for which exemption is requested. Specify the correct device model for each vehicle.

The Fuel Tweak is designed for 1992 and older light-duty vehicles with multi-point fuel-injection and carburetion as listed below. Fuel Tweak is not for use on single-point injection, throttle-body injection, or diesel engines.

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BMW: 2002



FUELTWEAK™  
Installation procedure for  
VW JETTA, GOLF, 8V GTI  
with Digifant® fuel injection.

### STEP THREE : DETERMINING THE PROPER LOCATION OF FUEL TWEAK™ PLACEMENT ON THE INCOMING FUEL LINE.

Diagram one shows the measurement points on the incoming fuel line where the protective tape is to be applied. Use a tape measure to determine the exact locations.

This tape protects the fuel line from possible wear from the plastic cable ties used to hold the FUEL TWEAK™ in place.

### STEP FOUR : INSTALL THE FUEL TWEAK™ ON THE INCOMING FUEL LINE.

Using the four shorter plastic cable ties as shown in diagram two, install the unit loosely around the incoming fuel line. For now, leave plenty of slack in the cable ties to allow for unit positioning.

It is best to position the locking tabs at the corners of the unit, not halfway up the sides. This will minimize any slack once the cable ties are tightened in STEP SIX.

### STEP FIVE : ALIGNMENT OF THE FUEL TWEAK™ ON THE FUEL LINE. THIS IS VERY IMPORTANT.

Section A : Position the FUEL TWEAK™ unit so that the outer two cable ties go around the two protective tape strips that you just installed. See diagram three.

Section B: The FUEL TWEAK™ is designed so that the two opposing halves of the unit are offset lengthwise by about 1/2 inch. This overhang must be adjusted to exactly 1/2 inch if measured from the ends of the FUEL TWEAK™. See diagram three. This adjustment is done by sliding the units slightly together or apart lengthwise along the fuel line. This overhang of exactly 1/2 inch optimizes the unit's effectiveness and provides maximum power output from the treated fuel.

Section C : Twist the unit on the fuel line so that it is in a horizontal position and will lie flat against the bottom of the air duct when it is replaced.

### STEP SIX : TIGHTENING THE CABLE TIES.

Keeping the above mentioned sections from STEP FIVE in mind, carefully tighten the cable ties to remove cable tie slack from around the unit. Now the unit should not be able to slide along the fuel line. **DO NOT OVER-TIGHTEN** - this could pinch or squeeze the fuel line. The rubber fuel line should maintain a round shape under the cable tie tension.



FUEL TWEAK™  
Installation procedure for  
VW JETTA, GOLF, 8V GTI  
with Digifant® fuel injection.

### STEP SEVEN : CUT OFF EXCESS CABLE TIE TAB LENGTH.

Use wire cutters to trim cable tie ends. You may want to leave 1/2 inch tabs. This will be helpful if further tightening is required in the future. Periodically check the cable ties for excessive looseness. Make sure that no sharp edges from the cable ties will rub against other rubber lines or wires.

- Check the unit once more to be sure that the overhang is exactly 1/2 inch.

The FUEL TWEAK™ unit should be installed in such a way that it does not magnetically stick to any steel brackets or engine parts. This would detract from the unit's effectiveness. Again, keep the unit at least six inches away from the engine's computer brain at all times.

### STEP EIGHT : SECURE THE FUEL TWEAK™ FROM ANY MOVEMENT. RE-INSTALL AIR DUCT.

The weight of the FUEL TWEAK™ unit must be suspended to keep it and the fuel line from sagging or swaying during spirited driving.

Section A : Thread the fifth and longest cable tie through the two central cable ties on the bottom of the unit that have just been tightened. This cable tie will loop up and around the air duct after it has been replaced.

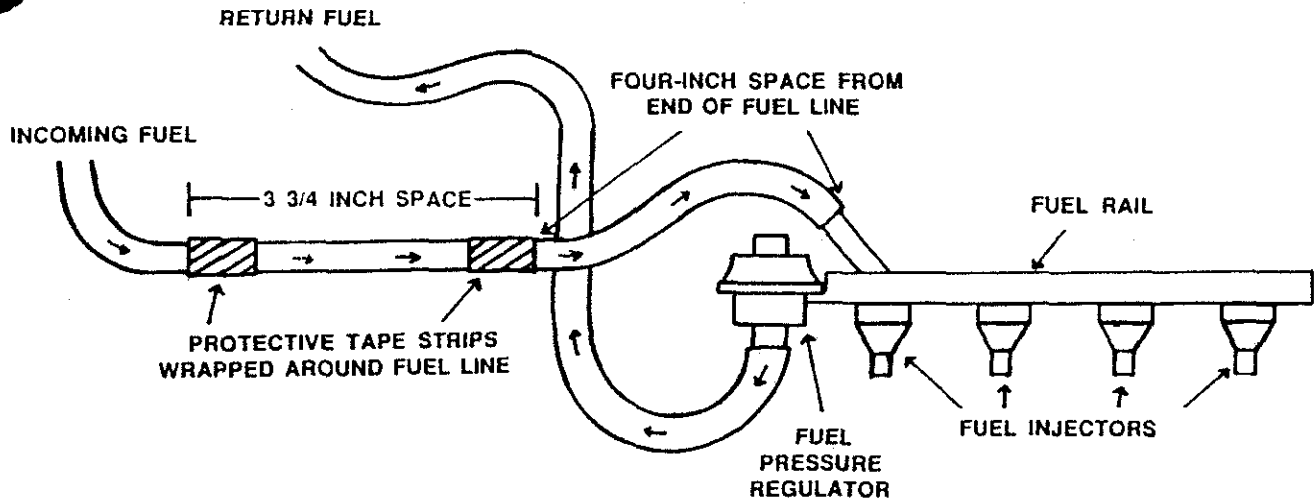
Section B : Remove the two rags covering the openings of the intake manifold and air filter housing. Re-install the air duct and properly tighten the hose clamps.

Section C : Loop the cable tie up and around the air duct. Tighten it securely to eliminate any movement of the unit or the fuel line during driving. Cut off excess cable tie tab length.

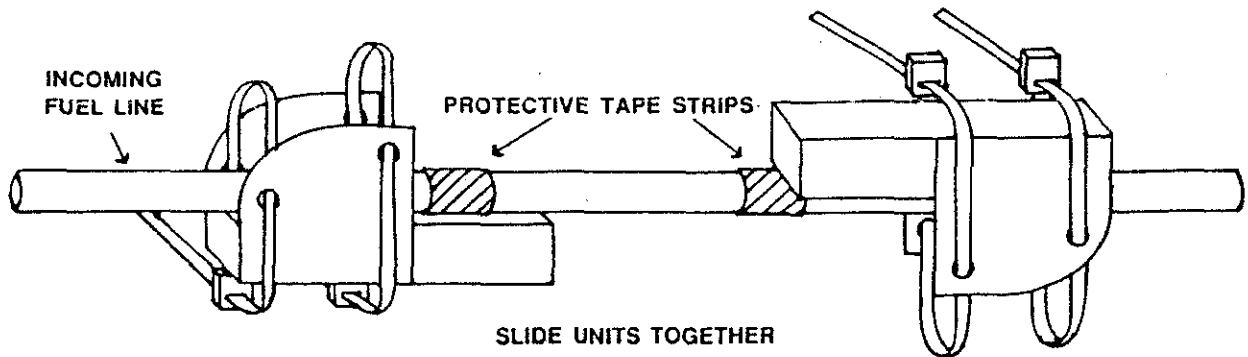
Double check the work you've done. Re-inspect your installation after a week's worth of driving has passed. Check to see that the unit is secure and is not slipping along the fuel line. Tighten the cable ties more if necessary but make sure that the fuel line maintains its round shape.

### DIAGRAM ONE

VW JETTA, GOLF, 8V GTI



### DIAGRAM TWO



### DIAGRAM THREE

