08963
3M™ Do-It-Yourself Fuel System Tune-Up Kit FAQ's

Technical Service Bulletin No. 472

3M™ Do-It-Yourself Fuel System Tune-Up Kit

About this Document
This document has been created as a supplement to the Intended Use, Safety, Detailed Instructions, and Troubleshooting Information found on the printed insert in each 3M™ Do-It-Yourself Fuel System Tune-Up Kit. Users should thoroughly read all of the information on the insert and on the individual product labels before attempting to use these products.

The "**PREPARING THE VEHICLE**" section has been added as a necessary step to perform prior to using any of the products in the Do-It-Yourself Fuel System Tune-Up Kit. If needed, please print this additional information and retain it for future reference.

The information in the **"Frequently Asked Questions**" section is a compilation of common questions that have been received. This section does not address every conceivable situation that can be encountered. Due to numerous reasons that are beyond 3M's control, there can be certain instances where it may be difficult or even impossible to properly or safely use this product on a particular engine configuration. If users are not certain about the procedures needed to properly and safely use these products they should consult a professional technician or not use these products. This information is not intended for use as a substitute for the specific safety, service or repair information provided by your vehicle manufacturer. Users are expected to possess the necessary knowledge and training needed to safely and properly work on vehicles.

3M does not support the use of the 3M™ Do-It-Yourself Fuel System Tune-Up Kit on vehicles that have been customized, "Off-road" vehicles, or vehicles that have been altered or modified with aftermarket systems, components, or parts. If users find information in this supplement that they feel is inaccurate or if they need assistance, they are encouraged to call: 1-800-3MHELPS (1-800-364-3577), or e-mail us through our web site: www.3m.com/automotive

PREPARING THE VEHICLE

- Inspect the vehicle for illuminated warning lights on the dash. Correct any preexisting conditions that are causing illuminated warning lights.
    - Serious emissions and driveability problems (Gross polluter, check engine light, Service Engine Soon, hard miss-fires, overheating catalytic converter, unexpected stalling, etc...) should be properly and completely diagnosed to determine whether the use of a 3M cleaner is needed to help resolve or correct the problem. Do not expect these 3M products to cure an unknown emissions, driveability, or loss of fuel economy problem.
- Inspect the engines oil level, top off as needed prior to using these products.
- Inspect the engines cooling system for leaks, coolant level, and proper cooling system operation, top off or repair as needed prior to using these products.
- Inspect the vehicle's entire exhaust system for leaks, deterioration or damage to ensure that adequate exhaust ventilation can be maintained throughout the application of the cleaner. DO NOT use these products if adequate exhaust ventilation cannot be assured or serious personal

injury or death can occur (Carbon Monoxide Poisoning).

NOTE: If an oil change is going to be done or if spark plugs or oxygen sensors are going to be replaced, it's recommended that these be replaced AFTER the use of the 3M™ Do-It-Yourself Fuel System Tune-Up Kit.

Frequently Asked Questions:

Q. How frequently can I use the 3M™ Do-It-Yourself Fuel System Tune-Up Kit?
A. The 3M™ Do-It-Yourself Fuel System Tune-Up Kit can be used as frequently as once every 3,000 miles. Most vehicles don't need treatments with the entire kit this frequently. If your vehicle has never been treated and it has a lot of miles on it, several treatments can be performed to remove the majority of the deposits. After that, most vehicles only require a treatment once every 6,000 to 10,000 miles to keep them clean. Treatments with the 3M™ Fuel System Cleaner Tank Additive, PN 08813, should be used at shorter cycles, as often as once every 1,000 miles, to aid in keeping your engine clean in-between treatments with the Do-It-Yourself Fuel System Tune-Up Kit.

Q. My vehicle has failed an emissions test. Will this product clean my engine so that it'll pass?
A. There can be numerous things that can cause emissions failures. Without a proper diagnosis there's no way of knowing whether these products will correct or even affect the failure. If the failure was due to fuel injector fouling or carbon/coking inside the combustion chambers, the cleaner should help to lower harmful tailpipe emissions. In severe cases of fuel injector fouling or carbon/coking inside the combustion chambers, it may be necessary to use stronger cleaners like the 3M™ Fuel Injector Cleaner, PN 08956, or 3M™ Fuel System Cleaner, PN 08955, to correct the emissions failure. If you do use these products to correct emissions failures, make sure to drive the vehicle at least 15 to 20 minutes at varying speeds to blow out residual cleaner before re-testing tailpipe emissions.

Frequently Asked Questions Before or During Step 1: How to Apply 3M™ Intake System Cleaner, PN 08954

Q. What if I don't have an exhaust ventilation system to hook up to the vehicle's exhaust when I'm using 3M™ Intake System Cleaner?
A. When using 3M™ Intake System Cleaner, the vehicle's exhaust must be adequately ventilated to avoid serious personal injury or death (Carbon Monoxide Poisoning). If you don't have an exhaust ventilation system that can adequately remove the tailpipe fumes from your working environment, position the vehicle outdoors in an area where there is adequate ventilation with the tailpipe ***down-wind*** from where you will be working. For the courtesy of others, do not use in residential areas, areas where children are playing, or in areas with heavy pedestrian traffic as obnoxious fumes will occur and should be avoided.

Q. Why do I need to check my vehicle's engine oil, coolant, and other fluid levels before I use the 3M™ Do-It-Yourself Fuel System Tune-Up Kit?
A. It's never good to operate your vehicle's engine with low oil or low coolant levels. If you've decided to use the 3M™ Do-It-Yourself Fuel System Tune-Up Kit it's apparent that you want to take steps to pro-actively and properly maintain your vehicle. Take the opportunity before you use this product to perform these basic inspections.

Q. Why does the engine need to be warmed up before I use the 3M™ Intake System Cleaner?
A. By design, when your vehicle's engine is cold it runs rich. The engine management systems on your vehicle may not be able to optimize the air/fuel trim for lean emissions until it reaches its ideal operating temperature. When intake system cleaner is applied, the cleaner will further enrich the air/fuel ratio. Running a cold engine, rich air/fuel mixture, in addition to loading it with the intake system cleaner, additional air/fuel enrichment, can cause damage to the engine or catalytic converter. 3M™ has put a long hose on the can of intake system cleaner to control the rate at which the cleaner will be delivered over a controlled period of time to prevent overly excessively rich conditions. Users however, must precondition (warm) the engine so that excessively rich conditions, via the vehicle's own engine management system, are avoided.

Q. I just bought a 3M™ Do-It-Yourself Fuel System Tune-Up Kit and when I took it out of the box I found some white crust or white staining around the top of the can of 3M™ Intake System Cleaner. What is this? Is the can leaking?
A. Some cans of intake system cleaner may have a white crust or white stain around the locking actuator. This white crust or stain is residual glue that was used to glue the cleaner hose into the actuator opening. It is not due to leakage from the can. The dried glue is not dangerous to touch.

Q. How can I locate the throttle body and throttle plate on the engine?
A. If you can find your car's air filter, you can follow the tube or hose that routes the filtered air into the engine. The throttle body is always mounted on the engine. The throttle plate is accessible by removing this tube or hose at the throttle body assembly.

Q. Why is the cleaner hose so long? Can I remove it before using the product?
A. The cleaner hose is specifically designed to control the delivery rate of the cleaner over a calibrated period of time. We DO NOT recommended that you completely remove or significantly shorten the cleaner hose – serious engine damage may occur if too much liquid is sprayed into the engine too quickly, this calibrated length of hose is designed to avoid this safety concern.

Q. Why do I need to position the cleaner hose at the 12:00 position and within ¼" in front of the throttle plate?
A. Hose placement is important so that the cleaner can atomize properly and be carried with the incoming air to equally disperse throughout the engine. If the end of the cleaner hose is positioned too far back from the throttle plate the cleaner might not get sucked into the engine. If the cleaner hose sprays the cleaner against the wall of the throttle body, it may become more difficult to re-atomize.

Q. The cleaner hose is difficult to position in front of the throttle plate, can I cut it to shorten it?
A. Yes, you can trim the cleaner hose near the "U" shaped end to get good placement in the throttle body. DO NOT cut the cleaner hose beyond the "U" shaped bend as this will cause the delivery rate to increase and may lead to engine or catalytic converter damage.

Q: How can I keep the cleaner hose in place while I apply the product?
A: There are a number of ways to secure the cleaner hose: use tape, wire tie, cable tie, rubber band, or simply use the engine's clean air hose to hold the "U" shaped end of the cleaner hose in place. NOTE: Be careful not to let any foreign objects get sucked into the engine!

Q: What if my engine has two or more throttle bores?
A: Some engines, especially "V" type engines, have multiple primary throttle bores which are unique. They're split to deliver air into only certain cylinders. If your vehicle's engine has more than one primary throttle bore, the cleaner should be sprayed equally into each so that the entire engine is treated with the cleaner.

Q. What should I do if my engine has a hard air boot at the throttle body that pinches the hose and stops cleaner from spraying?
A. The 3M™ Intake System Cleaner can be applied to the engine through a vacuum port, but we recommend you select one that is as close to the back side of the throttle plate as possible so that the cleaner is distributed evenly throughout your engine.

Q: What if there's a screen in front of the throttle plate?

Photo 1

Some engines have a screen in front of the throttle plate as shown above (photo 1).
A: If the screen can be removed the intake system cleaner hose can be properly placed in front of the throttle plate and applied. With the screen out you can then use 3M™ Throttle Plate & Carb Cleaner to thoroughly clean the visible areas of the throttle plate and throttle body. If the screen can't be removed, the intake system cleaner can be sprayed into the engine through one of the vacuum ports near the back side of the throttle plate. If the screen is not removed, cleaning the throttle plate will be difficult as you will not be able to see whether all of the deposits have been removed.

Q. What if my engine has a throttle body injection system or carburetor?
A. Engines with either a throttle body injection systems or carburetor can be cleaned with the 3M™ Intake System Cleaner. Simply fasten the end of the cleaner hose in the throttle bore of the throttle body or carburetor housing, directly over the throttle plate. Then set the engine's RPM to a high idle and spray the cleaner into the engine.

Q. How can I tell if my engine uses a Mass Airflow Sensor (MAF)?
A. Refer to the manufacturer's service and repair information to determine this.

Q. Where is the Mass Airflow Sensor (MAF) on my engine?
A. Each vehicle can be different, refer to the manufacturer's service and repair information to determine this.

Q. Why should I NOT spray the cleaner through or across the Mass Airflow Sensor (MAF)?
A. The engine's computer uses the MAF signal to determine the volume of the incoming air. If the cleaner is sprayed into the MAF sensor it will not be able to accurately measure the incoming air. Spraying the cleaner through or across the MAF sensor may result in a no-start or hard start condition, starting and stalling condition, rough running or unstable idle condition, and will likely cause the "Check Engine" or "Service Engine Soon" warning light to turn on.

Q: What if my vehicle has an "Electronically controlled" or "Drive-by-Wire" gas pedal?
A: If your vehicle has an Electronic Throttle DO NOT attempt to manually open the throttle plate or serious damage to the throttle body may occur. Electronic throttles should only be controlled from the vehicles gas pedal. Turn the ignition to run (engine off) and depress the gas pedal to electronically open the throttle plate.

Q. How can I tell whether my vehicle uses an "Electronically controlled" or "Drive-by-Wire" gas pedal?
A. Look on the engine to see which type your vehicle has been built with. If it's not obvious, use the manufacturer's service and repair information to determine this. If in doubt, always use the gas pedal to control the engine speed and open the throttle plate while cleaning it.

Q. Why doesn't the throttle plate on my "Electronically controlled" or "Drive-by-Wire" throttle open when I press on the gas pedal?
A. Vehicles equipped with "Electronically controlled" or "Drive-by-Wire" throttle controls must have the key

turned to the run position (engine not started) in order to use the gas pedal to open the throttle plate for cleaning.

Q: I've positioned the cleaner hose in front of the throttle plate but now I can't get the engine to re-start so that I can proceed to the next step and increase the idle speed?
A: If the engine has a mass airflow sensor, make sure the engine's air boot is in place and there are no major air leaks between the sensor and throttle body. Also check to make sure nothing else has been inadvertently disconnected such as a vacuum hose or electrical connector.

Q: I've positioned the cleaner hose but when I start the engine it races uncontrollably!?
A: Immediately turn off the engine. Re-check the positioning of the cleaner hose to make sure that the hose hasn't been trapped between the throttle plate and the throttle bore. Correct as needed.

Q: Why do I need to increase the idle speed 500 to 1000 Revolutions per Minute (RPM)?
A: Increasing engine RPM is important so that:

- The cleaner is evenly distributed
- The cleaner fully atomizes
- The cleaner goes through the throttle body, not the air by-pass

At base idle speed, the throttle plate is fully closed. The computer controls all of the incoming air through the idle air by-pass that bypasses the throttle plate. By slightly increasing the RPM's (opening the throttle plate) the cleaner is drawn into the engine past the throttle plate and through the throttle bore. When using the intake system cleaner, we rely on air volume and velocity to evenly deliver the cleaner throughout the engine.

Q: How can I set the engines idle speed to run at high Revolutions per Minute (RPM)?
A: There can be a number of ways to set the engines RPM to a high speed. The single most universal way is to use the vehicle's gas pedal. Either get someone to help by sitting in the car and increasing the speed via the gas pedal or use a stick between the gas pedal and the seat. Care should be taken not to excessively race the engine.

Q. How do I know if the engine is running 500 to 1000 Revolutions per Minute (RPM) faster?
A. The engine speed doesn't have to be increased precisely 500 or 1000 RPM's. The goal is simply to increase the speed up so that the cleaner can pass through the throttle bore not the idle air by-pass. If your vehicle isn't equipped with a tachometer, a hand-held one can be used. (See the manufacturer's recommendation for connection it to your car.) When the RPM's are raised, the air volume and velocity into the engine is increased, the cleaner is more thoroughly atomized, and the cleaner is more evenly distributed throughout the engine. Most engines can be safely operated in park or neutral with no or little load up to 2000 RPM's for the period of time that it'll take to apply the intake system cleaner.

Q: What should I do if I need to *STOP* the flow of cleaner from the can of 3M™ Intake System Cleaner?
A: The flow of cleaner can be easily stopped by pressing on the "PUSH TO RELEASE" tab on the back of the locking actuator.

Q: How can I tell if the cleaner is flowing through the 3M™ Intake System Cleaner hose and being sprayed into the engine?
A: The cleaner has a red dye in it to help see if it is moving through the cleaner hose. You may notice a change in the engines idle speed or idle quality once the cleaner enters the combustion chambers. If you don't see cleaner flowing through the hose, make sure the "PRESS FIRMLY TO LOCK" button on the top of the actuator is locking when pressed down or check the cleaner hose to see if it has been pinched or kinked.

Q: What if the can of 3M™ Intake System Cleaner isn't emptying?
A: The cleaner has a red dye in it to help see if it's moving through the cleaner hose. Check to make sure that the lock on the locking actuator has been engaged, check to make sure that the cleaner hose has not been pinched or kinked.

Q: What should I do if the engine dies every time I try to apply the 3M™ Intake System Cleaner?

A: Check to ensure that the cleaner is not being sprayed across or through the mass airflow sensor. Check to make sure no electrical connections or vacuum hoses have been inadvertently left off. You can try to increase engine speed slightly if you've only increased it 500 to 1,000 RPM's over base idle speed, but avoid excessive engine racing. If troubles persist, stop the application of the cleaner and consult a professional.

Q: What should I do if the cleaner isn't going into the engine?
A: It is essential to get the end of the cleaner hose as close to the throttle plate as possible so that the cleaner gets sucked into the engine. If the end of the cleaner hose is not close enough to the throttle plate, the cleaner may not get drawn in by the incoming air.

Q: What if the engine runs really rough while I try to apply the 3M™ Intake System Cleaner?
A: Check to ensure that cleaner is not being sprayed across or through the mass airflow sensor. Check to make sure no electrical connections or vacuum hoses have been inadvertently left off. If you can't determine why the engine is running rough, we recommend that you stop using the intake system cleaner on this engine and consult a professional.

Q. What should I do if the engine somehow dies while the 3M™ Intake System Cleaner is being applied?
A. Immediately stop the cleaner from spraying into the engine by pushing on the "PUSH TO RELEASE" tab. Get the engine restarted and then continue with the application of the intake system cleaner.

Q. Why is there more smoke coming out the tailpipe when I use the 3M™ Intake System Cleaner?
A. While the cleaner is sprayed into the engine, and for a short period afterwards, the air/fuel ratio inside the engine will be rich. Whenever an engine runs rich some of the air/fuel ratio may not be fully burned in the combustion chamber. These unburned or partially burned by-products along with the deposits that the cleaner is removing may be more visibly apparent in the exhaust emissions.

Q. What if it's taking more than 15 minutes for the can of cleaner to empty?
A. There could be several reasons why the can of cleaner won't empty, check for the following: Pinched cleaner hose, cold can of cleaner (less than 60° F causes low pressure), can is not set vertically upright (interferes with correct operation of dip tube), or locking actuator not fully depressed (try unlocking and re-locking).

Q. Why are there still deposits on the throttle plate after I apply the 3M™ Intake System Cleaner?
A. When the intake system cleaner is applied, it is sprayed against only a small area of the throttle plate. Engine vacuum pulls most of the cleaner deep down into the engine. Use the 3M™ Throttle Plate & Carb Cleaner after applying the intake system cleaner (with the engine off) to completely clean all areas of the throttle body and the front and back side of the throttle plate.

Frequently Asked Questions Before or During Step 2: How to Spray Clean Throttle Plate with 3M™ Throttle Plate & Carb Cleaner PN's 08866, 08182, 08185, 08989

Q. I can't get the can of 3M™ Throttle Plate & Carb Cleaner to spray. What's wrong?
A. The can of throttle plate & carb cleaner has a "TEAR OFF TAB" on the top of the actuator that needs to be removed (breaks off) so that the cleaner can be sprayed.

Q. Can I spray the can of 3M™ Throttle Plate & Carb Cleaner up-side-down?
A. The can of throttle plate & carb cleaner has a large dip tube that allows it to be sprayed up-side-down for limited periods of time. If you want or need to spray the cleaner up-side-down, simply rotate the can upright to refill the dip tube.

Q. Do I need to use the whole can of 3M™ Throttle Plate & Carb Cleaner?
A. This is a very effective cleaner. Because of this, we put a can with only 4 ounces of cleaner into the Do-It-Yourself Fuel System Tune-Up Kit. Most people can clean the throttle plate and all visible areas of

the throttle body without using the whole 4 ounce can of throttle plate cleaner.
NOTE: Users should avoid spraying large amounts or the whole can of this cleaner into the deep interior areas of engines. Some engine designs will allow the cleaner to run directly into piston cylinders thus causing fouled spark plugs, flooding or a Hydro-Lock. If the deposits are not being dissolved and washed away by just spraying with the cleaner, a clean rag or soft bristle brush (tooth brush) can be used to agitate and remove stubborn deposits.

Q: What if I can't get the engine to start after I've sprayed the 3M™ Throttle Plate & Carb Cleaner?
A: If, while spraying the throttle plate cleaner, most of the cleaner runs into the engine, the engine may become flooded. If this happens, hold the gas pedal to the floor to put the engine into its "Clear Flood" mode while attempting to start. Once the engine starts and the RPM's begin to flare, release the gas pedal. Caution should be used not to race or over-rev the engine.

Frequently Asked Questions Before or During Step 3: How to Pour in 3M™ Fuel System Cleaner Tank Additive, PN 08813

Q. How much 3M™ Fuel System Cleaner Tank Additive should I add to my vehicle's gasoline?
A. The recommended dilution ratio for the fuel system cleaner tank additive is 1 ounce cleaner per each gallon of gasoline (8 ml per Liter). This product contains 16 ounces of cleaner, a package size that will allow it to be used on most vehicles in a single application.

Q. What if my vehicle has a fuel tank that holds less than 16 gallons of gasoline?
A. You can mix the 3M™ Fuel System Cleaner Tank Additive at higher concentrations – up to 2 ounces of cleaner per each gallon of gasoline (16 ml per Liter). It is not recommended that you mix at higher concentrations. Benefits taper off as concentrations approach 2 ounces per gallon (16 ml per Liter).

Q. What if my vehicle has a fuel tank that holds more than 16 gallons of gasoline?
A. We recommend that you buy more 3M™ Fuel System Cleaner Tank Additive and treat your gasoline to at least 1 ounce of cleaner per each gallon of gasoline (8 ml per Liter) to reach the ideal mix ratio.

Frequently Asked Questions After Using the 3M™ Do-It-Yourself Fuel System Tune-Up Kit, PN 08963

Q. Why is there still smoke coming out of my vehicles tailpipe after I used the cleaner kit?
A. There may still be smoke from the tailpipe for a period of time as the cleaner continues the cleaning process inside the engine. We recommend that you take your vehicle for about a 10 to 15 minute drive after the application of the 3M™ Intake System Cleaner and 3M™ Throttle Plate & Carb Cleaner to help blow out deposits that have been loosened. The 3M™ Complete Fuel System Cleaner Tank Additive will continue the cleaning process while you use your tank of treated fuel.

Q: What if the "Check Engine" or "Service Engine Soon" warning light comes on after I use the product?
A: If something was disassembled, unplugged, or inadvertently knocked loose during the application it may have caused this. Recheck everything on the engine to ensure that all has been properly reassembled and returned to its intended working condition.
Some vehicles have electronics that are sensitive enough to detect the presence of the cleaner while it is being applied or even for a short period after the cleaner was applied. A normal 10 to 15 minute road test may be all that's necessary for the light to go off by itself.
Use a code reader to access and record any codes that have been set and then erase them from the computers memory. Take the vehicle on a road test to see if the warning light turns back on. If the light turns back on, use the code reader again to access and record any codes that have reset. Use these codes, and any of the previously recorded codes (if necessary), along with the manufacturer's service and repair information to correct the problem.

Warranty and Limited Remedy

Technical Information: The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product
in a particular application Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating
the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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