

MINI Shark Injector

Instructions for
Upgrading & Restoring

MINI S (all R53), 2002-2006
(RECTANGLE Injector)

Follow the enclosed instructions to ensure the prompt and effective upgrade of your vehicle in less than 40 minutes!

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*Failure to follow all of the instructions explicitly and correctly may result in damage to your BMW's computer. Please note that due to the technical nature of flash reprogramming, we are **not** and will **not** be held responsible for any damage due to nor any damages arising from your use or attempted use of the **Shark Injector™!!!***

By your use of the **Shark Injector™** you hereby agree to waive, release and discharge the manufacturer, resellers, and all other entities, persons and associations connected therewith from any and all claims arising out of, or relating to, the parts purchased including said parts fitness for any particular purpose. If residing in, or currently located in the State of California, you further waive and disclaim the provisions of California Civil Code Section 1542, which provides: "A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known to him must have materially affected his settlement with the debtor".

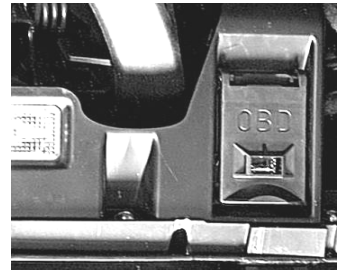
Please read and understand the conditions of sale set forth above. You further understand that any performance products are to be used on your off-highway racing vehicle in compliance with California State Health and Safety Code Sections 39048 and 43001(a).

If this legal waiver is unacceptable to you, please return the unused Shark Injector™ to your retailer for a prompt refund.

THE PROCEDURES FOR UPGRADING AND RESTORING ARE THE SAME.
IF THE SHARK INJECTOR ENCOUNTERS ANY DIFFICULTY DURING INSTALLATION, THE RED LED
WILL FLASH AN ERROR CODE INDICATING THE CAUSE OF THE PROBLEM –
REFER TO PAGE 4 FOR FURTHER EXPLANATION.

Step-By-Step Installation



1. **STOP!!** – Please read thru ALL of the steps of this instruction sheet! If you are not comfortable with this procedure please return your Shark Injector™ to your retailer for a prompt refund;
2. Set the vehicle parking brake for safety, also disabling US/Canadian-spec Daytime Running Lamps;
3. Locate the rectangular 16-pin OBD-II port in the interior of your Mini. It will be found in the driver's under-dash area near the drivers left knee, just to the left of the under-dash vanity lamp. It is covered by flip-top plastic cover engraved with the word "OBD". Open the flip-top cover to gain access to the OBD-II diagnostic port *carefully* using your fingers, or a screwdriver if necessary;
4. Note the direction that the LED's on the end of the Shark Injector™ will point when inserted in the OBD-II port. You will need to see these LED's from outside the vehicle for guidance during the installation. In many cases a mirror such as the back of a CD/DVD or a piece of cardboard wrapped in aluminum foil will work just fine. ***This is NOT optional!!***
5. Open the hood, and turn the ignition key two clicks forward to ON (but do not start your Mini). Some Mini vehicles actuate the electro-hydraulic power steering pump when the vehicle is NOT running. You'll hear an electric whine under the hood if this is the case. If you hear a distinctive whine, which changes pitch when you move the steering wheel, but your car is NOT running (Key On, Engine Off) you will need to remove a fuse in step #11 below. Again, only SOME Mini vehicles have this issue;
6. Lower driver and passenger windows, ensuring that you have easy access to reach the OBD-II port. You may wish to place a 100% cotton towel over the open door to prevent scratches when leaning in;
7. At this time, ensure that the vehicle ignition is OFF and the key is temporarily removed;
8. To ensure a constant voltage for proper operation of the Shark Injector™, attach a high quality battery charger (ex: Vector 1090A or Sears DieHard 71230, 310, 320, etc.) to the vehicle, **at the battery itself**, observing all necessary safety precautions such as the wearing of safety goggles;
9. Turn charger on at a minimum of the 10 amp setting (*20 amp setting if your vehicle is equipped with Daytime Running Lights – DRL's*) and ensure that charging is occurring;
10. The importance of proper battery voltage cannot be emphasized enough. ***Failure to maintain proper battery voltage throughout the procedure may result in an inoperable vehicle***, where the only solution would be the physical replacement of control modules ***at owner expense***. Voltage below **12.5v** as a minimum can cause permanent failure. **Owners should evaluate the age and condition of the vehicle battery before proceeding;**



NOTE: so-called "trickle chargers" or chargers that shut down after a certain period of time are not acceptable. The charger must be on and provide a continuous 10-20amp charge throughout the procedure!

Step-By-Step Installation, continued

11. If, in step #5 above, you noticed the electro-hydraulic power steering pump actuating when the key is on, but the engine is off, open the fuse panel near the driver's left leg/foot area and **remove FUSE #39**.

F38	
F39	
5A	
F40	
5A	

12. It may be necessary to wait a minimum of 20 minutes for the vehicle battery to charge with ample reserve power. The Shark Injector will tell you right away if there is not sufficient power to continue;

13. Open the driver's door and insert the Mini Shark Injector™ into the OBD-II diagnostic port making sure not to depress the button while doing so. Note that the port is keyed, and the Mini Shark Injector™ will positively “snap” or “click” into the port when fully seated. At this time, the **green** LED should now be illuminated **SOLID green**. If the **green** LED or **red** LED is flashing or *pulsing*, remove the Mini Shark Injector™, count to 10, and reinsert it into the port without depressing the button. The Mini Shark Injector™ will be powered via the OBD-II port, even with the vehicle ignition (and ECU) switched off, and **the button must not be depressed during insertion into the port**;

14. At this time, position the mirror so that you can see both the **green** LED and its **red** counterpart from outside the vehicle. Test close the doors and ensure that you can see the LED's from a window;

15. Turn the ignition switch two clicks forward to the ON position but DO NOT start the engine (**Check Engine** lamp **must** light up);

16. Assure that ALL electrical loads are OFF (Navigation, Radio, Climate Control, Courtesy Lamps, etc); and that those capable of turning themselves on (Cell Phone) are disabled temporarily. Note that the Navigation System display sometimes needs to be turned off (via “Monitor Off”) twice.

17. *Exit the vehicle at this time and close all doors*, wait at least 30 seconds, and then press the button on the Mini Shark Injector™ and within 3 seconds, the **green** LED will begin to *pulsate* indicating the transfer of programming data between the vehicle's ECU and the Mini Shark Injector™ internal electronics package. Please note that **NO ONE** should remain inside the vehicle during this procedure;

18. Sit back, relax, and watch, but **DO NOT TOUCH** anything inside the vehicle or the Mini Shark Injector™ itself under any circumstances. **DO NOT OPEN THE VEHICLE DOORS** as this can disturb programming!;

19. In approximately 4¼ minutes, the **red** LED will turn on **SOLID** while the **green** LED continues to *pulsate* indicating that the Mini Shark Injector™ is entering the REPROGRAMMING phase;

20. In approximately another 4¼ minutes, the **red** LED will turn off, while the **green** LED will continue to *pulsate*, this is the final CHECK phase of reprogramming your vehicle;

21. Finally, in about 2 minutes, the **green** LED will stop *pulsating* and illuminate **SOLIDLY**, this is your indication that a performance programming UPGRADE has been successfully completed and verified. If you see a solid **green** and solid **red** LED, this indicates that a RESTORE to stock was successfully completed and verified;

22. You may now open the vehicle door and turn the ignition completely off. Wait at least 30 seconds, but **DO NOT** remove or disconnect your Mini Shark Injector™ at this time;

Step-By-Step Installation, continued

23. If, in step #11 above, you removed **FUSE #39**, replace it at this time, **but do not attempt to replace the fuse panel cover** as it will be very hard to do without dislodging the Mini Shark Injector™;
24. With the Mini Shark Injector™ still connected to the vehicle, turn the ignition switch two clicks forward to the ON position but **DO NOT** start the engine (**Check Engine** lamp **must** light up);
25. Wait at least 30 seconds; then again press the button on your Mini Shark Injector™, the **green** LED will begin to *pulsate* indicating the transfer of some final information to the vehicle's ECU. This phase only lasts about 10-15 seconds before the **green** LED illuminates SOLID green. Once the **green** LED is illuminated SOLID green you may proceed. If you are performing the RESTORE function, you will again see a solid **green** and solid **red** LED as in step #21 above;
26. You may now turn the ignition completely off. Please wait at least 30 seconds;
27. Remove the Mini Shark Injector™ from the OBD-II port, and recap the port. If necessary, replace the cover of the internal fuse panel;
28. Turn off and remove the battery charger;
29. We include a label for you to apply to the cover of your OBD port. This is to warn technicians and mechanics not to install new versions of MINI software without consulting with you first.



If new MINI software is installed over the Shark Injector, you should attempt re-installation of the Injector. If it cannot re-install for any reason, it will flash an error code. Contact your Shark Injector retailer with this Error Code and they can assist you.

For more information, refer to page 5 in these instructions and the FAQ section at the back.

30. Last step! Start and enjoy your newly Sharked vehicle!!

Shark Injector Error Codes

Should the Shark Injector™ encounter any exceptions or difficulties, the red LED will flash out a 3-digit code at a pace of 0.5 sec per flash with 2 seconds pause between digits. All codes begin with a single flash, and none of the digits will repeat. If you encounter any flash codes, refer to the list below!

IF YOU ENCOUNTER ANY CODES WHATSOEVER, do not simply un-plug the Shark Injector. Turn the ignition off, wait at least 30 seconds, and then un-plug the Injector from your car. Failure to properly remove the Injector could result in damage to the Injector itself or to your vehicle!

The following codes indicate that your vehicle is now drivable, but could NOT be successfully programmed for some reason – follow the advice below to correct the situation. If you must return the DME and/or Shark Injector™ for analysis, please contact your Shark Injector™ dealer first for shipping instructions.

- 123 **Vehicle voltage too low** – You ***MUST*** ensure at least 12.5v for programming!! Most likely, your battery charger is not charging at 10amps or above. It may have shut off or reduced its output.
- 124 **Programming voltage too low** – You ***MUST*** ensure sufficient charge for programming!! Most likely, your battery charger is not charging at 10amps or above. It may have shut off or reduced its output.
- 125 **Programming voltage needed, not present** – Contact your Shark Injector™ dealer
- 142 **DME Hardware Unknown** – Your DME hardware is different from any one we have seen to date.
- 143 **DME Contents not stock** – Your existing DME programming is not stock!! It may already have performance software installed. The Shark Injector™ can only function on a stock programmed DME.
- 147 **DME Software Unknown** – Return Shark Injector™ for analysis (your car may have an old, new, or unusual version of BMW software installed). Most likely your dealer has installed a new version of BMW software. You will have to send your Injector back for an update. Contact your Shark Injector dealer for further details.
- 152 **Injector Stock Storage failure** – Return Shark Injector™ for analysis
- 153 **Injector not Prepared** – Return Shark Injector™ for analysis
- 162 **Vehicle Mismatch** – Shark Injector™ was previously used or attempted to be used on a different BMW!! The unit will only work on one car. This code could also be the result of BMW's new system of re-programming cars. Contact your Shark Injector dealer for more info.
- 163 **Bad User Request** – User requested an UPGRADE when already upgraded, or a RESTORE when already restored to stock.

The following codes indicate that your vehicle could NOT be successfully programmed for some reason, and that it's drivability is in question due to the failure – Please note WHEN and/or WHERE this failure occurred in the process, the state of the **red ACTIVE** and **green STATUS** LEDs and Contact your Shark Injector™ dealer IMMEDIATELY!!

- 132 **DME Not Responding**
- 134 **DME Message Checksum Error**
- 135 **Protocol Error Busy**
- 136 **Protocol Error Rejected**
- 137 **Protocol Error Parameter**
- 138 **Protocol Error Function**
- 139 **DME reply is not known**
- 145 **DME Final Verify failure**
- 146 **DME Erase failure**

At The MINI Dealer

Any time that you take your car to the dealer you should have the Performance Software removed from your car by doing a RESTORE function (the procedure is the same as an UPGRADE except for Step 25 which is slightly different). Failure to RESTORE the vehicle could result in the dealer erasing your Shark Injector software. In most cases the Injector can simply be re-installed. However, it is possible that the dealer did something that will prevent re-installation. To avoid losing the Shark Injector software altogether, it is strongly recommended that you RESTORE back to stock.

If you took the car to the dealer and they installed a new version of MINI software, it may be necessary to have your Shark Injector updated to recognize the latest MINI software. You will know if an update is necessary because you will get a Code 147 error during the UPGRADE process. At this point you can send the Injector back for an update. In some cases a fee may apply for the update.

If there is ever a need for the Shark Injector to be updated, follow the steps on the last page of these instructions.

Shark Injector FAQ

How does the Shark Injector work exactly?

The Shark Injector's software replaces the stock MINI software but not all of MINI's programming is changed. When plugged in and the button is pressed, the Injector reads the stock software and stores it for later retrieval if necessary. It also records the VIN number and other required information. Then it programs the DME with its new Shark Injector files. After programming, the Shark Injector verifies that the transfer of data was completed.

What octane must be used?

The minimum octane rating for the Injector is 91. However, on certain models the Shark Injector is offered in a "high octane" setting of 93. It is recommended that you purchase the version that you will use now and possibly in the future. Many states are abandoning 93 octane in favor of 91.

Do I really need a battery charger?

Yes! The installation of the Shark Injector requires power from the battery. It needs more power than the battery can provide without the alternator generating a charge (and it's obviously not possible to have the engine running). This is why a battery charger is necessary. Can you install the Shark Injector without the charger? No. The Injector checks for voltage several times during its programming. If at any time it detects voltage levels are too low it will give you an Error Code (123 or 124).

Does the Shark Injector void my warranty?

No. Federal law prohibits a manufacturer from voiding a warranty simply because aftermarket parts are present. The installed aftermarket part has to be the cause of a failure on the warranty part (the Magnuson-Moss Warranty & Federal Trade Commission Improvement Act). Oftentimes, it's not MINI themselves that say a warranty is voided, but rather an uninformed or stubborn dealer that is unwilling to support the owner.

According to BMW's own literature on the subject, "the BMW warranty on a component is void due to a modification where *the modification, alteration or installation of an aftermarket part was directly responsible for the failure*" [emphasis added]. In other words, the aftermarket part has to be the direct cause of a failure; its presence alone is not grounds for voiding the warranty.

Shark Injector FAQ, continued

Is the Shark Injector tuned for a CAI and exhaust?

Yes. The Shark Injector is compatible with most Cold Air Intakes. It is assumed that software will not be the only modification that you make to your vehicle and the Shark Injector software takes that into account. Cat-back exhaust modifications do not need special programming.

Is it possible to “share” the Shark Injector?

No. Because the Shark Injector needs information from the car's DME that is *specific* to the car itself, the unit cannot be used on another car. The Shark Injector will give you Error Code 162 if it has been previously installed on another vehicle.

A note about eBay or buying from classifieds: the Shark Injector is designed to be used on one car and only one car. Once it is used on a car the Shark Injector cannot be used on a different car. Even if the Injector was removed from the car, specific vehicle info is stored for the next time and the Injector will not work on another car. In other words, once it has been plugged into the car and the button is pushed, it stays with that car.

Does the Shark Injector cause any Check Engine lights?

No. The Shark Injector is only refining certain parts of the MINI software to maximize the greater potential of higher octane fuel. Changes are made to the timing and fuel maps to achieve this. If the Check Engine light does appear, it is the MINI software telling you there is a problem with something else – not caused by the Shark Injector.

Does the software “go away” over time and will the Shark need to be re-installed?

No. MINI software is adaptive to your driving habits but, no, the Shark Injector software never disappears from the computer.

Will the Shark Injector work on a car with an automatic transmission?

Yes, but it does not alter the transmission's programming. In other words, the shift points and maximum allowed rev limit remain the same as before. All of the benefits of the Shark Injector are there – including the horsepower gains.

Can the Shark Injector damage my ECU?

No. The procedure that the Shark Injector follows is really no different than the one MINI uses to update your car. As long as you follow and understand the instructions the procedure is painless and transparent. In the end, this is software that is being loaded into the car; the hardware remains the same.

Will my car ping with the Shark Injector?

No. Pinging/detonation/knocking can occur with or without the Shark Injector installed. The greater cause of this issue is the quality of the fuel available to you. The vast majority of customers with the Shark Injector. However, there have been instances with other aftermarket products which have led to pinging when used with this poor quality fuel. Your car is equipped with knock sensors, however, so the risk of permanent damage to the engine is kept very low.

Shark Injector FAQ, continued

How do I know if my car has been Sharked?

At the end of the procedure, one or both of the LED's will illuminate. For an UPGRADE, the green LED will shine. For a RESTORE, the green and the red LED's will be on. Without the Injector, the only way to tell, other than the increase in power, is by probing the new rev limit. On the MINI this is raised to 7000 rpm. On cars equipped with automatic transmissions it will difficult or impossible to reach this point without performance software for the transmission. For added confirmation you can always repeat the UPGRADE process.

How do I un-install the Injector?

Follow the same procedure as you did for installation. When doing a Restore function you will see both the green and red LED lights light up at the end.

Do I ever need to get the Shark Injector updated?

No. Generally speaking, the MINI engine is so finely tuned from the factory that further updates are not usually necessary. Jim Conforti has spent many years tweaking the MINI software to the point that the engine is at its peak efficiency when the Shark Injector is installed. As a general rule, updates to the Injector are not necessary.

What do I do when I have to take the car to the dealer?

If your car needs to visit the dealer for a new upload of MINI software you should perform a Restore function with the Shark Injector. This will allow the MINI dealer to upgrade your software without over-writing the Shark Injector's performance software. New software is not always strictly necessary and you can always refuse when the dealer wants to install new software.

What should I do when my Check Engine light or Service Engine light comes on?

A) You can bring your car to a MINI service facility and have them read the trouble codes from the car's computer. Or B) you can purchase the Peake Fault Code Reader from any number of aftermarket retailers and save yourself a trip to the MINI dealer. This will tell you exactly what is wrong with the car; however, it will not be caused by the Shark Injector.

Is it legal in California?

These products are not CARB-certified or legal for sale or use in the state of California on any pollution-controlled motor vehicles.

Will the Shark Injector work on a Euro-spec car?

No. European-spec cars – and the software used on them – are not available in the U.S. The software in a European DME will be different than on a US car and the Injector will not install. The Shark Injector works on cars that are sold for the U.S. and Canadian markets only.

For *US-spec* cars in a foreign country (people in the military, business overseas, etc) it is recommended NOT to have the local MINI dealer perform any software updates on your car. This can lead to the Shark Injector not re-installing after the MINI update. MINI may have different versions of their software in a foreign country than in the U.S. and Canada. And these foreign versions of the software are not available to Turner Motorsport or Jim Conforti.

Updating the Shark Injector

Do I ever need to get the Shark Injector updated?

As a general rule, updates to the Injector are not necessary unless your MINI dealer has installed a new version of MINI software and your Shark Injector is no longer compatible. You will know if the Injector needs to be updated because you will get a Code 147 error during re-installation.

If you encountered a Code 147 error during re-installation of the Shark Injector, it means that the dealer installed a new version of MINI software and your Injector needs to be updated to be compatible with it. In some cases a fee may apply for the update. Follow these steps to have the Injector updated:

1. the Shark Injector MUST have recorded the Code 147 error, or the Shark Injector software must have been removed from the car by using the Restore feature before going to the dealer. Only under these two circumstances can the Injector be updated.
2. call 800-280-6966 to obtain a Return Authorization number. Enter that number in the form below
3. ship the Shark Injector back to the distributor at the following address:

SHARK INJECTOR UPDATE C/O TMS
16 SOUTH HUNT RD.
AMESBURY, MA 01913

4. make sure the package is insured for \$370 and is packaged with plenty of newsprint, paper, or cardboard (no bubble wrap or Styrofoam)
5. include your contact information (name, phone number, e-mail address) and a return shipping address

Cut or tear along this line and send the bottom portion back with your Injector

YOUR NAME:

YOUR PHONE:

YOUR E-MAIL:

YOUR RETURN ADDRESS:

RETURN AUTHORIZATION #:

MINI YEAR:

MINI MODEL:

SHIP YOUR INJECTOR TO:

SHARK INJECTOR UPDATE C/O TMS
16 SOUTH HUNT RD
AMESBURY, MA 01913