

Shark InjectorTM

by

Bonneville Motor Werks

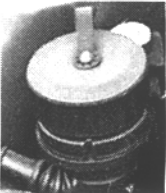
User's Guide

Current ***Shark Injector***TM Applications:

<u>Series</u>	<u>Vehicle</u>	<u>Model Years</u>	<u>Injector #</u>
E36	328i, 328iA, 328iS, 328iSA	1996-1998	INJ2-M41
E36	328iC, 328iCA	1996-1999	INJ2-M41
E36	M3, M3A, M3C, M3CA	1996-1999	INJ2-M41
E36	Z3 Roadster 2.8, 2.8A	1997-1998	INJ2-M41
E36	M Roadster & Coupe	1998-2000	INJ2-M41
E36	Z3 Roadster 2.3, 2.3A, 2.8, 2.8A	1999-2000	INJ2-M42
E36	Z3 Coupe 2.8, 2.8A	1999-2000	INJ2-M42
E46	323i, 323iA, 323Ci, 323CiA	1999-2000	INJ2-M42
E46	328i, 328iA, 328Ci, 328CiA	1999-2000	INJ2-M42
E46	323iC, 323iCA, 328iC, 328iCA	2000	INJ2-M42
E39	528i, 528iA	1997-1998	INJ2-M41
E39	528i, 528iA, 528iT, 528iTA	1999-2000	INJ2-M42

Please follow the instructions below to insure the simple, safe, and effective upgrade of your vehicle in less than 20 minutes!

*Failure to follow all of the instructions explicitly and correctly may result in damage to your BMW's computer. Please note that we are **not** responsible for damage due to improper operation or use of the **Shark Injector™**.*

1. Take a minute and read thru ALL the steps of this instruction sheet. ☺
 2. Locate the round 20-pin diagnostic port in the engine compartment of your BMW. It will be found in close proximity to either the driver's or passenger's side front shock tower or in the vicinity of the intake manifold and is covered by a tethered screw-on cap. Remove the cap by turning the ribbed lock ring and tucking it to the side. The tether should keep the cap attached to the base of the connector housing;
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3. If your vehicle is an E36 M3 with Automatic Transmission, at this time you should consult the *supplemental instruction sheet* enclosed for assistance in temporarily disconnecting your Transmission Electronic Control Unit (EGS) prior to upgrading. **If you have an M3/A, you must complete this step prior to continuing!!** Owners of manual transmission equipped M3's, BMW M Coupes, M Roadsters and any other's may simply continue onward;
 4. If your vehicle is **MY 1999-2000** and listed on the front cover as using **Shark Injector™** Part # **INJ2-M42**, please ensure that you have previously had the **(SI 12 15 99) 00E-A01: Fault Readiness / O2 Readiness Codes Not Set** emissions recall update, if applicable. The reverse side of the M3/A *supplemental instruction sheet* has further information on this update for your perusal. Failure to update your BMW as suggested may cause unnecessary delay in having to temporarily return your **Shark Injector™** for a "code 147 analysis";
 5. If your vehicle is a **1999-2000** E39 528i/iA/iT/iAT, at this time you should disconnect fuses 17 and 31 in the Glove Box fuse panel. This is to temporarily remove power to the DSC 3 module to allow upgrading of your DME per BMW bulletin **SI 12 16 99**;
 6. To ensure a constant voltage for proper operation of the **Shark Injector™**, attach a high quality battery charger (ex: Sears DieHard 71210, 310, 320, etc.) to the vehicle, **at the battery itself**, observing all necessary safety precautions such as the wearing of safety goggles;
 7. Turn charger on at a minimum of the 10 amp setting and insure that charging is occurring;
 8. Lower drivers and passengers window, open hood and insure proper hood support;
 9. Wait a minimum of 10 minutes to cool engine & charge the vehicle battery with ample reserve power;
 10. Exercise the buttons on the **Shark Injector™** by pushing and releasing each 4-6 times;
 11. Uncap the diagnostic port and insert the **Shark Injector™** into the port by aligning the center index pin properly while rotating the locking collar so that the entire device lowers and locks into position. Usually you will hear a slight "click" as the locking ring seats fully on the port's housing.
 12. Turn the ignition switch to the ON position but **DO NOT** start (**Check Engine** lamp **must** light up);
 13. **Assure that ALL electrical loads are OFF** (Radio, Climate Control, Courtesy Lamps, etc); **and that those capable of turning themselves on** (Cell Phone) **are disabled temporarily**;

14. Check your **Shark Injector™**, the **green STATUS** LED should now be illuminated SOLID green.
15. Press the **UPGRADE** button and within 3 seconds, the **green STATUS** LED will begin to *pulsate* indicating the transfer of programming data between the vehicle's ECU and the **Shark Injector™** internal electronics package;
16. Sit back, relax, watch, but **DO NOT TOUCH** anything inside the vehicle or the **Shark Injector™** itself under **any** circumstances. **DO NOT OPEN THE VEHICLE DOORS** as this can disturb programming!;
17. In approximately 1¼ to 2½ minutes, the **red ACTIVE** LED will turn on while the **green STATUS** LED continues to *pulsate* indicating that the **Shark Injector™** is entering the REPROGRAMMING phase;
18. In approximately another 1¼ to 2½ minutes, the **red ACTIVE** LED will turn off, while the **green STATUS** LED will continue to *pulsate*, this is the final CHECK phase of reprogramming your vehicle;
19. Finally, in about 1¼ minute, the **green STATUS** LED will stop *pulsating* and illuminate **SOLIDLY**, this is your indication that performance programming has been successfully verified;
20. 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 **Shark Injector™** at this time;
21. If your vehicle is an E36 M3 with Automatic Transmission, at this time you should reconnect the transmission ECU that was previously disconnected in step #3 above before proceeding. ***If you have an M3/A, you must complete this step prior to continuing!!*** Owners of manual transmission M3's, M Coupes/Roadsters and other BMW's may simply continue onward;
22. If your vehicle is a **1999-2000** E39 528i/iA/iT/iAT, and you previously removed fuses 17 and 31 in step #5 above, you should reinstall them before proceeding;
23. At this point, some people like to have an assistant watching the **Shark Injector™** for peace-of-mind during the next two steps as things happen both subtly and quickly!
24. With the **Shark Injector™** still connected to the vehicle, turn the ignition switch to the ON position but **DO NOT** start (***Check Engine*** lamp **must** light up);
25. Watch (but **DO NOT** touch!) your **Shark Injector™**, the **green STATUS** LED will begin to *pulsate* almost immediately indicating the transfer of some final information to the vehicle's ECU. This phase only lasts about 10-15 seconds before the **green STATUS** LED illuminates SOLID green. (In other words, if you are slow getting from the ignition switch around to the **Shark Injector™** you may miss this short-lived event.) Once the **green STATUS** LED is illuminated SOLID green you may proceed. (Even if you didn't get to see it flash)
26. You may now turn the ignition completely off. Please wait at least 30 seconds;
27. Remove the **Shark Injector™** from the diagnostic port, and recap the port;
28. Turn off and remove the battery charger;
29. Close and secure the hood;
30. Start and enjoy your newly Sharked vehicle!!

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

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** insure at least 12.5v for programming!! The Vehicle battery is not sufficiently charged, the charger is not working or has insufficient output;
- 142 **DME Hardware Unknown** – Return **DME** and **Shark Injector™** for analysis (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!! The **Shark Injector™** can only function on a stock programmed DME.
- 147 **DME Software Unknown** – Return **Shark Injector™** for analysis (your car may have a old, new, or unusual version of BMW software installed)
- 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!
- 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 verify 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**