



DINAN

**HIGH PERFORMANCE THROTTLE BODY
INSTALLATION INSTRUCTIONS**

Part Number: D760-3900

Applications: 2008-13 BMW M3 (S65 4.0L V8)

PARTS LIST

<u>Qty</u>	<u>Description</u>
1	#1 Throttle Body
1	#2 Throttle Body
1	#3 Throttle Body
1	#4 Throttle Body
1	#5 Throttle Body
1	#6 Throttle Body
1	#7 Throttle Body
1	#8 Throttle Body
8	collar gaskets
8	Rubber O-rings (for bases)
6	Hex Bolts (for actuating levers)
10	Hex Nut (for pinch bolts)
4	Fit Bolt (for throttle actuators)

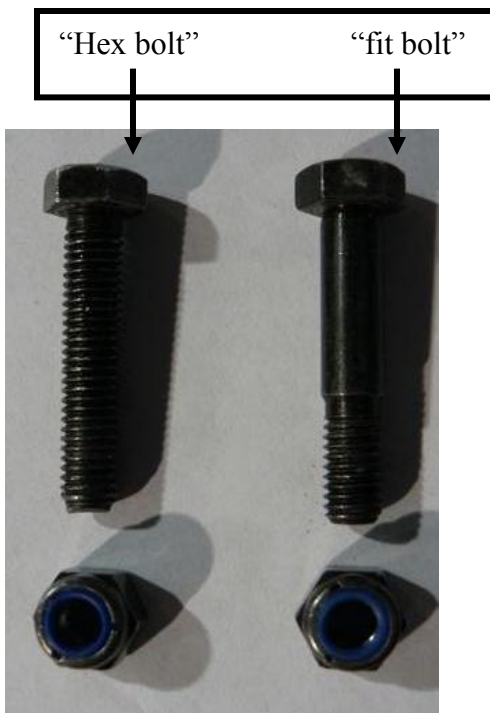
PLEASE NOTE:

A high level of mechanical skill is required to install these throttle bodies. Proper installation of the throttle bodies requires **complete understanding** of the recommended BMW throttle body removal and installation procedures. If you are not familiar with this BMW procedure, we strongly recommend that you arrange for a qualified BMW repair facility to perform this installation.

- **IMPORTANT! The entire synchronization procedure is based on the correct positioning of the throttle stop screws on each throttle body. These are preset at Dinan in several steps using sophisticated measuring equipment. Please do not move these screws or the throttles will not be properly “synched”. The Dinan warranty will also be voided if the throttle stop screws appear to be tampered with in any way!**

REMOVE THE THROTTLE BODIES

1. Read fault memory to assure no pre-existing throttle component codes exist, such as failed sensors.
2. Before using the TIS procedure for throttle body removal you should read the following suggestions we believe will help you do the job faster and better.
3. Remove the “additional air pump” and tube from the engine.
4. All eight throttle bodies can be removed at one time using two people without disconnecting the idle air hose.
5. To ease the removal of the #4 throttle body you may need to bend the small bracket next to the throttle body first.
6. Remove the original throttle bodies following recommended BMW procedure for throttle body removal (**TIS #: 13 54 045**). **PLEASE NOTE** location of special shouldered Fit bolts on the throttle shafts. These special shouldered bolts are placed in 4 locations on the throttle actuation shafts. You will find these on CYL 4 and 5 throttle arms (throttle bodies with TPS mounted) and both of the actuation arms that connect to the EDK throttle motors. Please take note of their location before removal of throttle bodies. **If these shouldered bolts are not placed in the proper location during installation, you will not be able to properly synchronize basic setting and WILL cause throttle faults, misfires, & surging.**

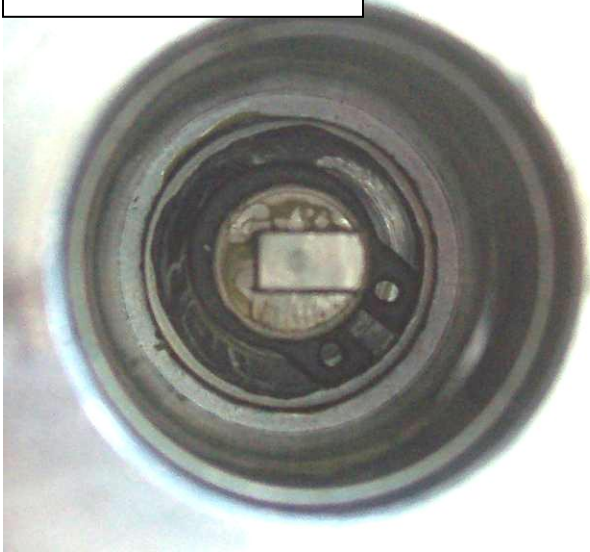


7. You will need to remove the TPS's from your throttle bodies and install them on the new Dinan Throttle Bodies **AFTER READING THE FOLLOWING INSTRUCTIONS ON #4 & #5!** Be careful to not lose the two plastic shaft couplers that go between the throttle shafts and the TPS's. Also note how the plastic couplers index on the throttle bodies. It is easy to place them on the shaft 180 degrees out, **causing throttle faults and TPS faults.**

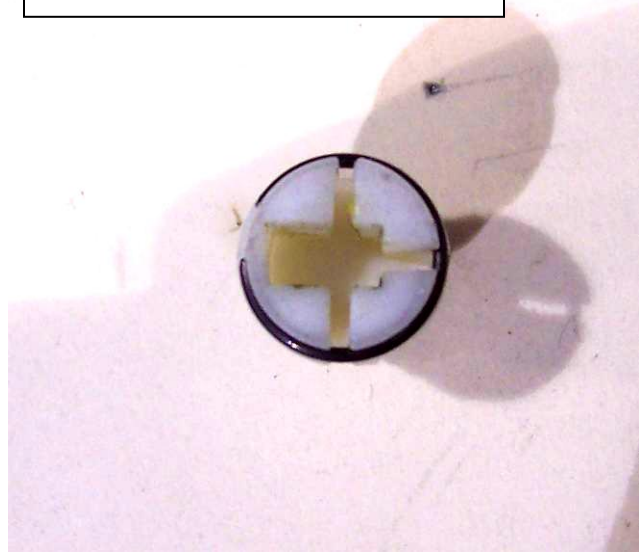
INSTALLING THE TPS's ON #4 & #5

- See photos below. Note: the throttle bodies you receive will not have a TPS on them. Look closely at the close-up photo to notice that the shaft end has a flat end and a rounded end, more noticeable is the offset of the "aligning peg". You may need magnifying glasses (reading glasses) to see these differences. The larger end of the plastic coupler (pictured below) has the same offset and roundness on one end of the peg slot. Also notice that the flat ends of the peg slots have an open slit in them. These two ends will go together first.
- Use needle nose pliers to install the plastic couplers with the offsets lined up to each other.

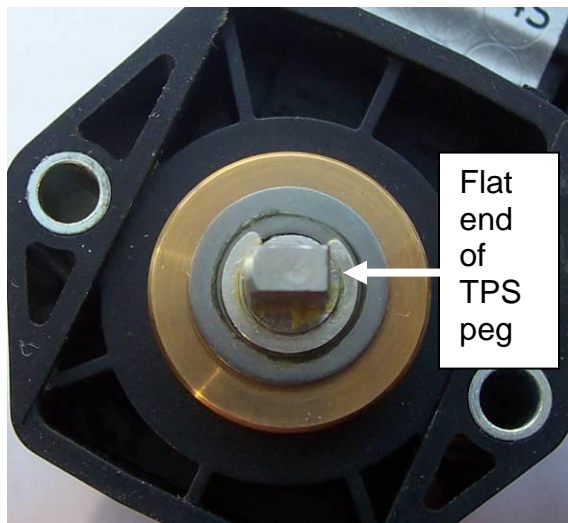
Throttle shaft end peg



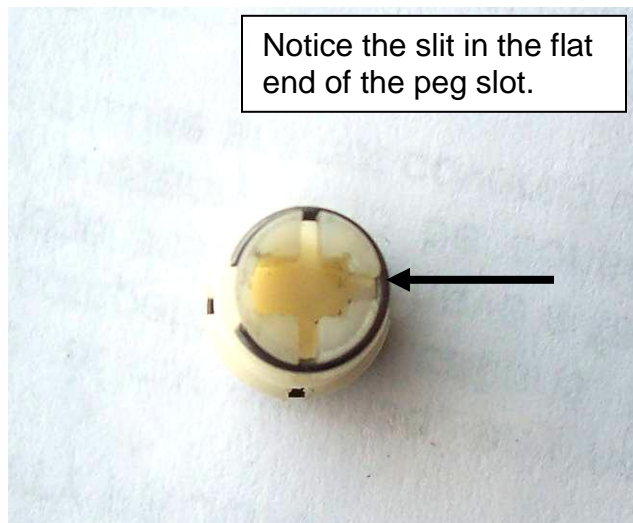
Plastic coupler offset peg slot



- Next you will install the TPS's with the pegs and slots lined up. Unlike the throttle shaft, the TPS peg is not offset so you must verify the flat and curved ends of the peg and coupler slot. Visual magnification is advised for this step. It is possible to install the TPS's 180° off although it takes a little more pressure to insert. **Please take the time to verify the proper installation now so you do not put the car together, make it a runner, then find out you have to take it all apart again!**



Flat end of TPS peg

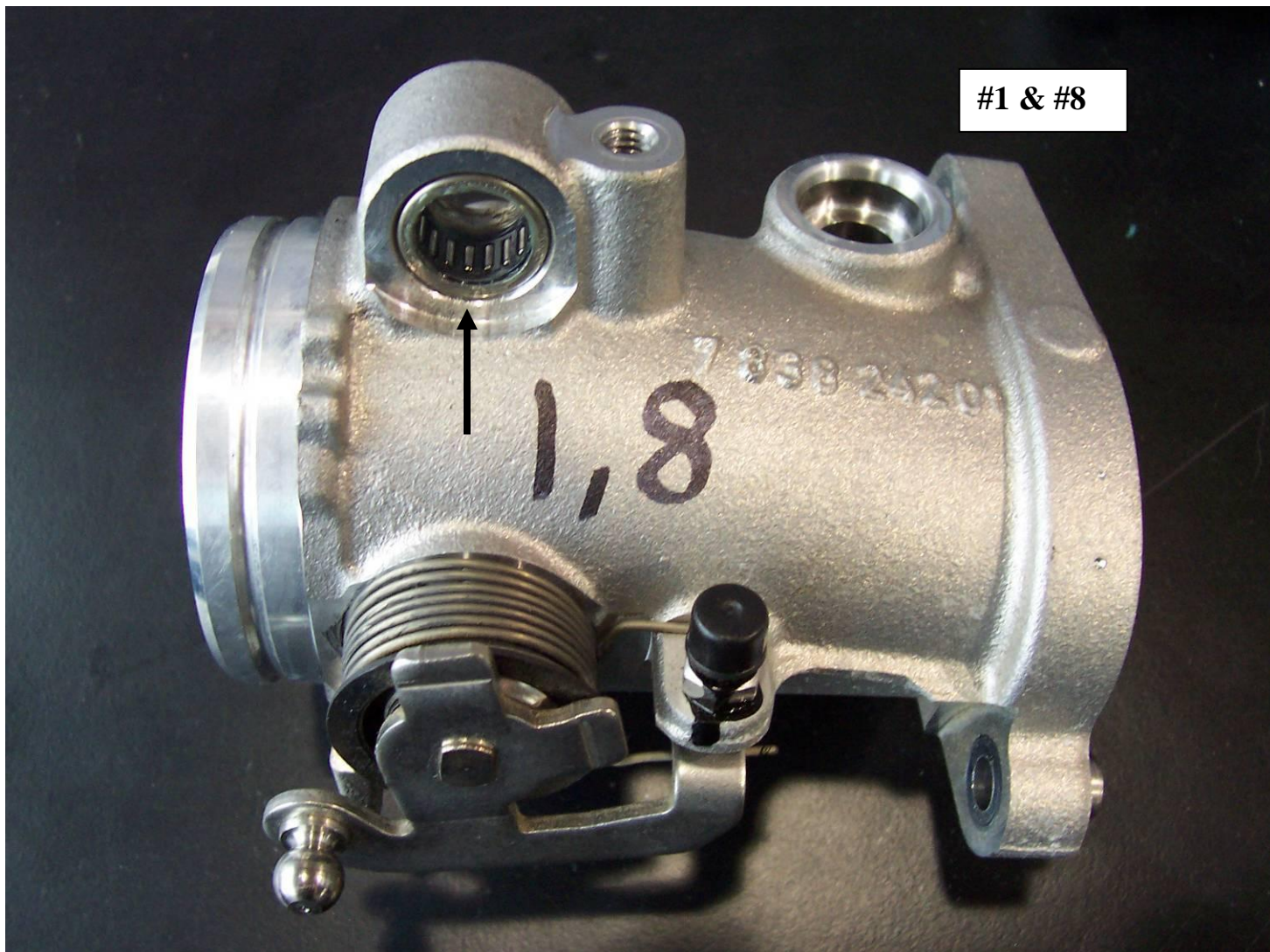


Notice the slit in the flat end of the peg slot.

11. Mount the TPS's to the throttle bodies in the stock position.
12. **AFTER INSTALLING BOTH TPS TO THE NEW THROTTLE BODIES**, you **MUST** check the throttle plates on #4 and #5 for binding. If the throttle plate binds or sticks after the TPS has been installed, the plastic shaft couplers are NOT installed correctly. Next you **MUST** use status request through the GT1 to see if the TPS are at or near 0%. If it is not, the TPS is 180° out. Recheck your work. Checking/correcting this now will save you hours of wasted diagnostic time when the car returns with faults.
13. View the following photos to determine what cylinder #'s the different TB's should be marked as. There are only four versions of the TB's used on the 8 cylinder engine. They are grouped as follows: **#2, #3, #6 & #7** are the four most basic TB's without shaft bearings in the bored flanges atop the TB's. See photo. Notice that all eight TB's have the same linkage and return spring setup.



14. #1 & #8 are two basic TB's with needle bearings (see arrow) in the bored flanges on top. See photo.



15. Install the Dinan Throttle Bodies using the BMW procedure (TIS #: 13 54 045). The only difference between a Dinan throttle body and an original unit is the size of the bore and throttle plate. The installation procedure is exactly the same.
16. Now is the time to make sure that the four special shouldered Fit bolts were installed in their proper locations as stated earlier (EDK arms and CYL 4 and 5 arms).
17. Use the BMW procedure when synchronizing the throttle bodies together (TIS #13 54 010).
Carry out adjustment with a second person if possible.

PLEASE PAY ATTENTION TO THIS STEP CAREFULLY. IT IS CRUCIAL THAT THIS IS DONE CORRECTLY THE FIRST TIME.

18. If TPS faults occur, most likely the plastic couplers are installed improperly. By checking throttle position % using GT1 or Autologic, you will most likely see one throttle bank at 0% and the other bank will not match and will be 20+%.

IF YOU HAVE ANY QUESTIONS, PLEASE CALL TECH SUPPORT (408-779-8584 ext. 115) AND WE WILL WALK YOU THROUGH THIS PROCEDURE.

19. Reassemble the intake plenum assembly as per BMW procedure (TIS #: 11 61 050).
20. We recommend checking system for leaks with smoke machine, focusing on hoses in rear of the intake plenum, which are easy to miss.
21. **During test drive** pay special attention to engine surging, misfires and for a check engine light. If they occur you must check your installation and basic setting. Common fault codes that result from an improper installation and setup are:
 - Misfires
 - TPS faults
 - #2737 & #2738 Filling plausibility bank 1 or 2 cross-section not plausible
 - #2771 & #2772 Oxygen sensor dynamic diagnosis before cat bank 1 or 2 reaction too slow

If any of these faults are present, then either the Shouldered Fit bolts are in the wrong locations, or the basic settings were not performed properly. Go back and check your work.

NOTE:

Your stock throttle bodies must be returned to Dinan Engineering within **30 Days** to receive your core refund. Please place the core voucher and throttle bodies in an appropriately sized box and use sufficient padding to protect them from damage during shipping. Insure the package and ship to:

**Dinan Performance Engineering
Attn: Core Return
865 Jarvis Drive
Morgan Hill, CA 95037**

Please call your Dinan representative @ (408) 779-8584 if you have any questions regarding your core exchange.