

# INSTALLATION INSTRUCTIONS

## FUEL PUMP SLEEVE, 96-06 BMW M3

P/Ns: 20-0880, 20-0882, 20-0883, 20-0884

Document# 19-0258

Support: [info@radiumauto.com](mailto:info@radiumauto.com)

1. From inside the cabin, pull up to unclip the rear bench seat and remove from vehicle. Pull the carpet over the metal seat tabs.

Underneath the bench, there are rubber mat insulation. These are used for sound deadening and are very brittle. Fold the right side mat back carefully to expose the fuel pump hanger metal cover.

Remove the four M6 nuts (shown) on the cover using a 10mm socket. It is a good idea to clean this area as it will be dirty.



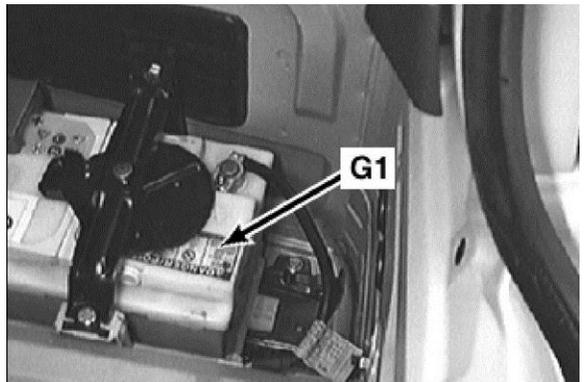
2. Find the sliding fuel pump connector. Slide the connector to the right side of the vehicle to unlock. Now, pull upwards to release it (as shown).

Start the vehicle and allow the engine to stall.



3. Unscrew and disconnect the negative battery terminal (G1).

Caution: Disconnecting the battery (G1) may cancel the fault memories of some control units.



4. BMW E36 Only

*ALERT: If the top of the fuel pump module has 2 fuel hoses as shown, you have an 92-95 OBD1. This Radium Engineering kit may not work for your application.*

Loosen the clamp and pull the single "feed" hose off the barb. Have a rag handy as fuel will instantly leak out of this connection.



### 5. BMW E46 Only

To release the factory quick connect fitting, simply rotate the connector until both outer tabs can be accessed with a thumb and index finger. First, push the connector towards the center of the hanger. Next, squeeze the 2 tabs and then gently pull away from the mating tube, as shown.

Have a rag handy as fuel will instantly leak out of this connection.



6. To unfasten the ring connection, BMW sells a special tool, P/N: 16 1 020. If not available, a rubber mallet hammer and punch will suffice. When spinning the ring counterclockwise a dab of glue will break free. If the ring is stubborn, get a second person to hit the opposing side of the ring simultaneously.

Pull the assembly out of the vehicle being careful not to damage the fuel level sensor arm and set onto a work bench.



7. Remove the convoluted fuel hose from the unit.

**NOTE: If installing one of the discontinued kits listed below, do NOT cut or damage the OEM fuel hose as it will be reused.**

#### **Part Numbers:**

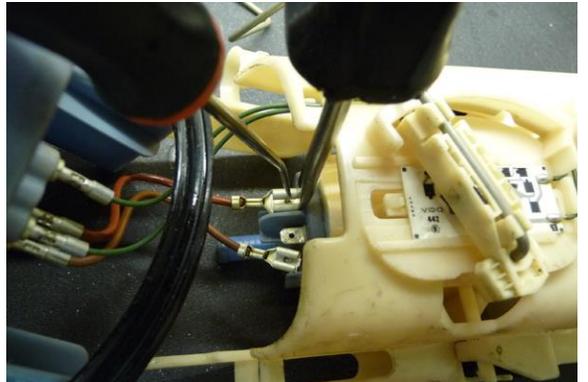
**20-0082, 20-0083-01, 20-0083-02, 20-0083-03, 20-0083-04, 20-0084, 20-0085, 20-0086**



8. To remove the female spade connections on the BMW fuel pump, a pick and flat head screwdriver will be used.

Press the center tab lock downwards with the pick and simultaneously pry the spade connector away from the fuel pump with the flat blade (as shown).

Do this for both the positive (1/4") and negative (3/16") terminals.



9. Carefully pry the rubber isolation grommets off each side of the fuel pump using your fingers and a screwdriver, as shown. These will be reinstalled later.

The BMW fuel pump should now be able to be removed from the factory unit.



10. Take note of the clocking orientation of the plastic holder in respect to the fuel pump's outlet barb. To release the BMW fuel pump, pull the plastic tabs downward (as shown). The holder will come out the bottom of the pump.

NOTE: A second person makes this job much easier.

The plastic pump holder will be reused. The BMW fuel pump can always be reinstalled easily as this kit is reversible.



11. Before connecting the electrical wires, understand how the spade terminals lock into place. There are holes in the male terminals. These are visible on the OEM fuel pump terminals, as shown.



12. If the blue insulation were removed on the included male spade terminals, you would also see these same holes.

NOTE: The picture at right is only to show the metal terminals. Do not remove the terminals from the blue insulation as shown.



13. The OEM fuel pump wires use female spade terminals. Each of these terminals have tabs that lock into the holes of the male connectors. Depending on the force applied to the tabs when the terminals were removed, it is possible for them to be over bent. In this case, use a small pick to press the tab downwards (as shown in top picture).

At this time, also make sure the OEM female connectors are not too "open". This can result in a loose connection. Use some pliers and gently compress each terminal as shown in bottom picture.

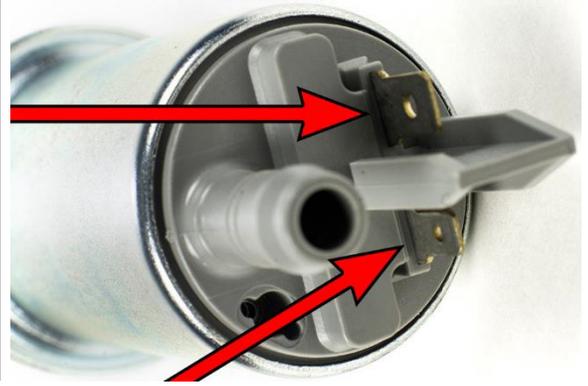


14. The picture at right shows how the spade terminals will properly lock together in later steps. Do not perform this step yet.

***It is the INSTALLERS RESPONSIBILITY to ensure a tight electrical connection is achieved. Failure to do so will result in melted wires and pump failure. This type of damage is NOT covered under warranty.***

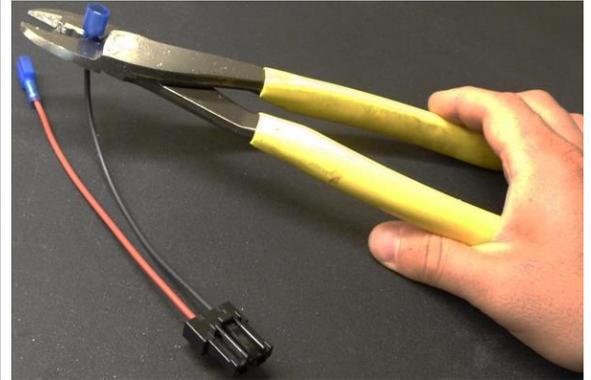


15. If using a Walbro F90000262 Fuel Pump, no adapter wiring harness is required as it uses the same terminals (shown) found on the BMW fuel pump. Skip to Step 18.



16. If the Walbro F90000274 E85, Walbro GSS342 255LPH, AEM 50-1000 Gas, AEM 50-1200 E85, etc. was purchased, it's required to crimp the included male spade connectors to the included flying lead harness.

Use the small 3/16" male spade on the black "-" wire and the larger 1/4" male spade on the other "+" wire. Gently give the wires a tug to confirm the crimp.

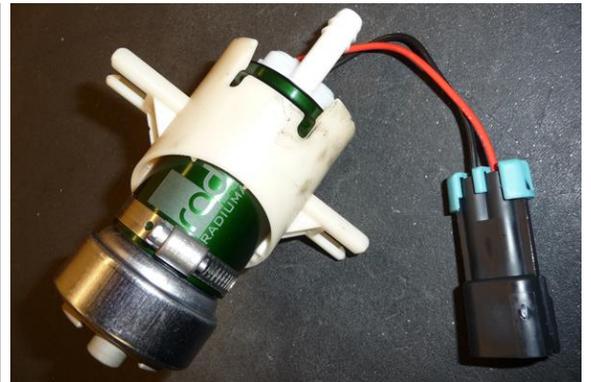


17. Slide the billet sleeve into the BMW plastic holder.

Insert the large worm drive clamp into the recess of the billet sleeve.

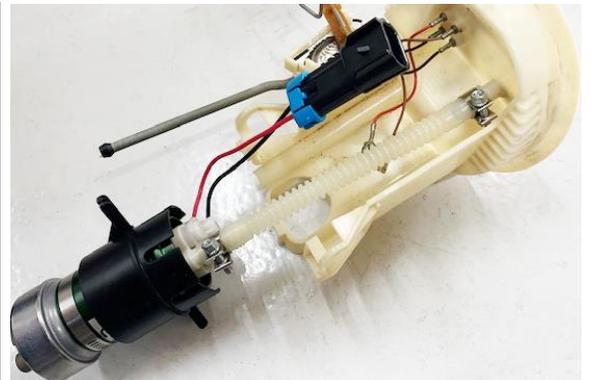
Next, slide the fuel pump into the billet sleeve.

Using a flat head screwdriver tighten the clamp but do not torque yet.



18. Unscrew the small included EFI hose clamps to make the diameter as large as possible. Heat the ends of the provided convoluted tubing with hot water (or cautiously with a heat gun). Quickly put the EFI clamps on the ends and push the tubing onto the fuel pump outlet barb and the barb on the OEM unit.

Secure the EFI clamps using a Phillips head screwdriver.

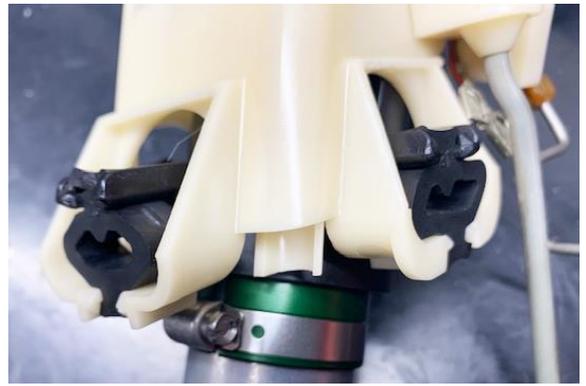


19. Push the fuel pump up into the OEM unit WITHOUT the rubber grommets installed.

Orient the plastic OEM pump holder so the 3 pegs are in the proper position within the unit.



20. From the outside, push the 3 rubber grommets inwards to secure the fuel pump to the OEM unit, as shown.



21. Locate the new fuel pump sock filter and the metal lock washer. Insert the sock onto the bottom of the pump. This installs only one way. NOTE: filter sock may differ than picture.

Press the lock washer onto the pump outlet barb until it has fully seated, as shown.



22. Locate the 2 sections of heat shrink in the kit and slide them over each BMW female spade terminal.

Plug the male spade connectors into the respective BMW female spade connectors. As a test, give the connectors a tug to verify the female spade tab has locked into the male spade hole.

Position both heat shrink tubes so they are covering the exposed BMW female terminals (as shown) and apply heat to shrink.



23. Plug in the connector. Compress the entire spring-loaded hanger to check for wiring or tubing interference. NOTE: For proper height clearance, the sleeve should bottom out on the Walbro DCSS pumps (with large base). For other standard 39mm pumps, slide the pump around to achieve the proper height.

Once it is known how the pump should be orientated and positioned within the billet sleeve, tighten the large worm-drive hose clamp using a flat head screwdriver.



24. Be sure the gasket is installed before reinstalling into the tank.

Properly orient the unit and push downwards. Reinstall the locking ring. If using the BMW tool, torque to 58 in-lbs (6.5 Nm).

Reinstall the OEM feed line next. Before plugging in the electrical connector, slide its tab outwards for initial engagement.



25. Connect the battery and turn the key to the ON position. Listen for the new fuel pump to confirm the electrical was performed properly and check for fuel leaks. If no leaks are found, start the vehicle. The engine may run rough for a few seconds until the air is bled from the system.

Lastly, reinstall the metal cover and pop-in the carpet and seat.

**INSTALLATION COMPLETE**

