

OIL FEED KIT

Installation Instructions



2018 MUSTANG GT

P/N: 4FQ230-100

* Legal in California only for racing vehicles which may never be used or registered or licensed for use upon a highway.



1650 Pacific Avenue, Channel Islands, CA 93033-9901 • Phone (805) 247-0226
Fax: (805) 247-0669 • www.vortechsuperchargers.com • M-F 7:00 AM - 3:30 PM (PST)

FOREWORD

All information, illustrations and specifications contained herein are based on the latest product information available at the time of this publication. Changes to the manual may be made at any time without notice. Contact Vortech Engineering for any additional information regarding this kit and any of these modifications at (805) 247-0226 7:00am-3:30pm PST.



Take note of the following before proceeding:

- 1.** Proper installation of this accessory requires general automotive mechanic knowledge and experience. Please browse through each step of this instruction manual prior to beginning the installation to determine if you should refer the job to a professional installer/technician. Please contact your dealer or Vortech Engineering for possible installers in your area.
- 2. This product was designed for use on stock (un-modified, OEM) vehicles. The PCM (computer), engine, transmission, drive axle ratios and tire O.D. must be stock.** If the vehicle or engine has been modified in any way, check with Vortech prior to installation and use of this product.
- 3.** Use only premium grade fuel with a minimum of 91 octane (R+M/2).
- 4.** Always listen for any sign of detonation (knocking/pinging) and discontinue hard use (no boost) until the problem is resolved.
- 5.** Vortech is not responsible for any clutch, transmission, drive-line or engine damage.

Exclusions from Vortech warranty coverage considerations include, but not limited to:

- 1.** Neglect, abuse, lack of maintenance, abnormal operation or improper installation.
- 2.** Continued operation with an impaired vehicle or sub-system.
- 3.** The combined use of Vortech components with other modifications such as, but not limited to, exhaust headers, aftermarket camshafts, nitrous oxide, third party PCM programming or other such changes.

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OIL LINE KIT
Installation Instructions
2018 MUSTANG GT

**Before beginning this installation,
please read through this entire instruction booklet**

This Vortech Oil Line Kit was designed specifically for use on 2018 Ford Mustang GT vehicles equipped with an oil fed V-2 or V-7 supercharger unit. As with any power enhancing product, this kit is intended for use on healthy, well-maintained engines. Vortech Engineering is not responsible for engine damage. Installation on new vehicles will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

For best performance and continued durability, please take a note of the following key points:

1. Perform an oil & filter change upon completion of this installation & prior to test driving the vehicle. Thereafter, always use a high grade SF rated engine oil or a high quality synthetic, and change the oil and filter at least every 3,000 miles.
2. Never attempt to extend the oil change interval beyond 3,000 miles, regardless of oil manufacturer's claims as potential damage to the supercharger may result.

TOOL & SUPPLY REQUIREMENTS:

- 1/4" Drive Ratchet
- 1/4" Drive Sockets - 7mm, 8mm, 10mm
- 1/4" Drive Extensions
- 3/8" Drive Ratchet
- 3/8" Drive Sockets - 10mm, 13mm, 15mm
- 3/8" Drive Extensions
- 14mm Hex Socket OR Short 14mm Hex Key
- Drill Motor
- "Q" Size Drill Bit
- 1/8" NPT Tap
- Tap Wrench
- Panel Removal Tool
- Flathead Screwdriver
- Pipe Sealant
- Red Thread Locker
- Shop Rags

OIL LINE KIT

2018 MUSTANG GT

Part No. 4FQ230-100

PARTS LIST

IMPORTANT: Before beginning installation, verify that all parts are included in the kit. Report any shortages or damaged parts immediately.

PART NO.	DESCRIPTION	QTY
007139	INSTR MAN, OIL LINE KIT, '18 MUST GT	1
4FQ130-126	OIL FEED ASY, '18 MUST GT	1
2A017-031	SPACER, BRASS, .380" L	1
7F006-093	NUT, M6 X 1.0, NYLOCK, PLATED	1
7J006-093	6MM WASHER, PLATED	1
7P125-004	1/8 NPT 90 X -4 JIC FTG STL	1
7P125-101	1/8 NPT 45 X -4 JIC FTG STL	1
7R003-001	ADEL CLAMP, 3/8" ID, 11/32" EYE	2
7U250-090-400	OIL FEED HOSE, 40" -4 X 90	1
4FQ130-136	OIL DRAIN ASY, '18 MUST GT	1
7J750-001	3/4 SEALING WASHER	2
7P500-011	FTG, BULKHEAD, -8AN ALUM	1
7P500-083	-8 HOSE END, STR, ALUM	1
7R001-008	#8 STAINLESS HOSE CLAMP	2
7U030-036	1/2 OIL DRAIN HOSE	3FT
7U100-055	TIE WRAP, 7.5" NYLON	5

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1. OIL FEED INSTALLATION

- A. Remove the battery cover and disconnect both battery leads.

(See Fig. 1-a)



Fig. 1-a: Disconnect Battery

- B. Turn the belt tensioner counterclockwise and slide the belt off. Next, remove the 13mm-headed screw securing the tensioner assembly to the engine. Remove the tensioner assembly from the vehicle and set aside.

(See Fig. 1-b)



Fig. 1-b: Remove Belt Tensioner

- C. Remove the 1x 15mm-headed nut and 1x 15mm-headed screw (not pictured) securing the alternator to the engine. Carefully remove the alternator from the engine. Place a few shop rags under the alternator and carefully set it in the engine compartment. This is done in order allow access to one of the mounting screws for the oil filter mount.

(See Fig. 1-c)

NOTE: Be careful not to drop, hit or damage the alternator during this process as it may permanently damage the alternator.



Fig. 1-c: Carefully Remove Alternator

1. OIL FEED INSTALLATION, cont'd

- D. Remove the oil filter. Place a clean container under the filter before you remove it as there will be oil spillage.

(See Fig. 1-d)



Fig. 1-d: Remove Oil Filter

- E. Once the oil filter is removed, you will need to remove the threaded oil tube that secures the oil cooler to the oil filter mount.

(See Fig. 1-e)

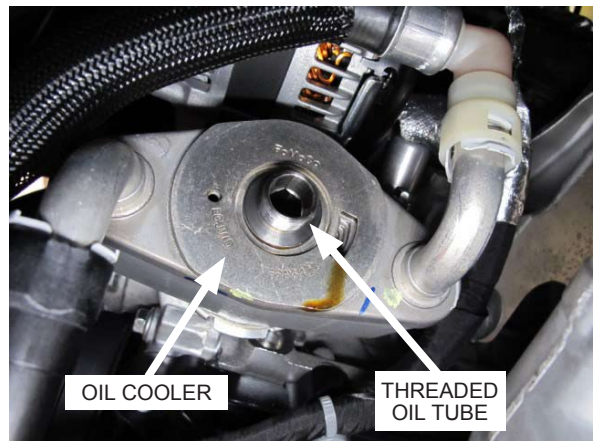


Fig. 1-e: Threaded Oil Tube

- F. Using a 14mm hex key, remove the threaded tube and set it aside. Place a clean container under the oil cooler before you remove it as there will be oil spillage.

(See Fig. 1-f)



Fig. 1-f: Remove Threaded Oil Tube

1. OIL FEED INSTALLATION, cont'd

- G. Once the oil cooler is loose, push it aside. We suggest wrapping the oil cooler in a clean shop rag to keep debris from getting into the oil cooler.

(See Fig. 1-g)

NOTE: There is a rubber gasket mounted to a thin metal ring, which gets sandwiched between the oil cooler and the oil filter mount. Be sure that the rubber gasket remains in place.

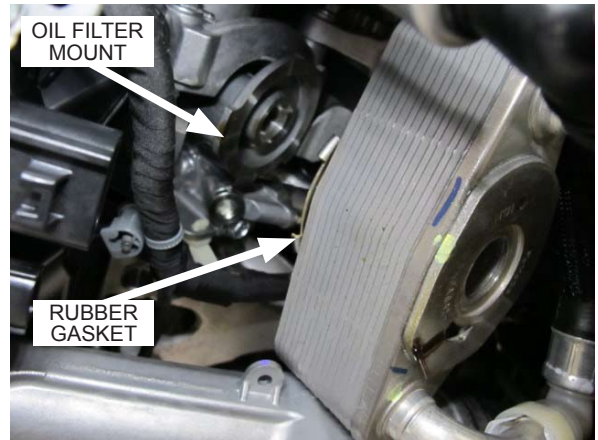


Fig. 1-g: Set Oil Cooler Aside

- H. There is a harness attached to the right side of the oil filter mount. Detach the harness from this mount.

(See Fig. 1-h)



Fig. 1-h: Detach Harness

- I. Mounted on the oil filter mount are the oil sending unit and the oil control solenoid. Pull back the protective covers and unplug both connectors.

(See Fig. 1-i)



Fig. 1-i: Unplug Oil Sending Unit And Oil Control Solenoid

1. OIL FEED INSTALLATION, cont'd

- J. There are 3x 10mm-headed screws and 1x 15mm-headed screw securing the oil filter mount to the engine. Remove these screws, then proceed to remove the oil filter mount from the vehicle. There is a rubber gasket attached to the engine side of the oil filter mount (not shown). Be sure not to damage or lose this rubber gasket.
(See Fig. 1-j)

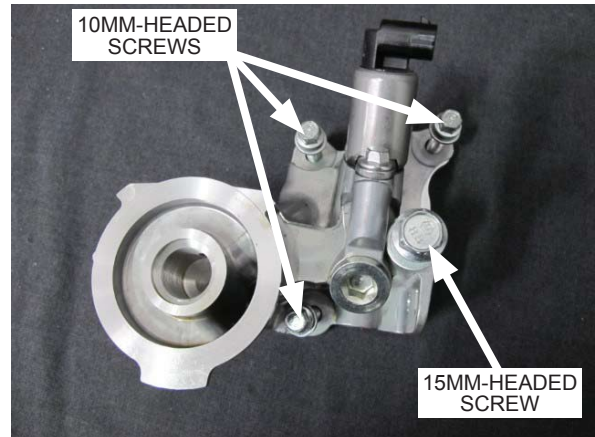


Fig. 1-j: Remove Oil Filter Mount
(Removed From Vehicle For Clarity)

NOTE: Read Steps K through Step O before moving forward. Placement of the drilled and tapped hole is critical.

- K. Using a marker, place a center mark using the dimensions shown in Fig 1-k.
(See Fig. 1-k)

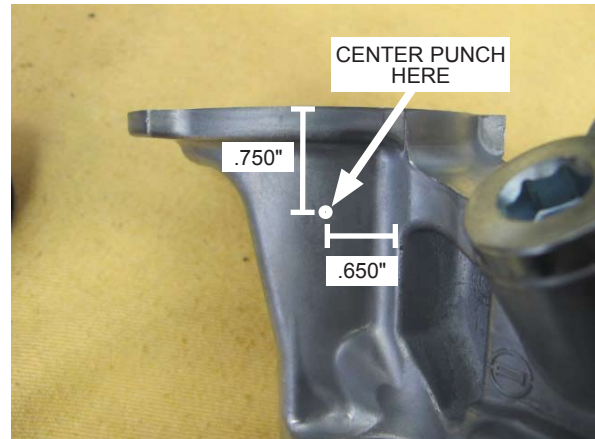


Fig. 1-k: Measure Drill Mark

- L. Looking into the oil filter mount, place a center punch on the marked hole. If positioned correctly, the center punch should offset to the right of the center of the oil passage.
(See Fig. 1-l)



Fig. 1-l: Verify Center Punch Location

1. OIL FEED INSTALLATION, cont'd

- M. Using a "Q" size drill bit, drill through the center punched mark on the oil filter mount. Be careful not to drill into the threaded boss on the oil filter mount.

(See Fig. 1-m)



Fig. 1-m: Drill Through Center Punch

- N. If measured correctly, the drill bit should be offset to the right of the center of the oil passage.

(See Fig. 1-n)



Fig. 1-n: Verify Hole Location

- O. Using a 1/8" NPT tap, begin to tap the drilled hole on the oil filter mount. Periodically remove the tap and test fit the provided 1/8" NPT 45° x -4 JIC fitting. The fitting should be a snug fit and should not bottom out.

(See Fig. 1-o)

NOTE: Do not use the full length of the 1/8" NPT tap. Failure to do so will result in a loose fitting 1/8" NPT 45° x -4 JIC fitting.



Fig. 1-o: Tap Hole Using 1/8" NPT Tap

1. OIL FEED INSTALLATION, cont'd

- P. Locate the provided 1/8" NPT 45° x -4 JIC fitting. Apply pipe sealant to the 1/8" NPT threads, then begin to thread the fitting into the oil filter mount. Temporarily clock the fitting as shown. It will be adjusted in the next few steps. (See Fig. 1-p)



Fig. 1-p: Install 1/8" NPT 45° x -4 JIC Fitting

- Q. Making sure that the rubber gasket on the engine side of the oil filter mount is not damaged and free of any foreign debris, reinstall the oil filter mount to the engine and resecure it using the previously removed 3x 10mm-headed screws and 1x 15mm-headed screw. (See Fig. 1-q)

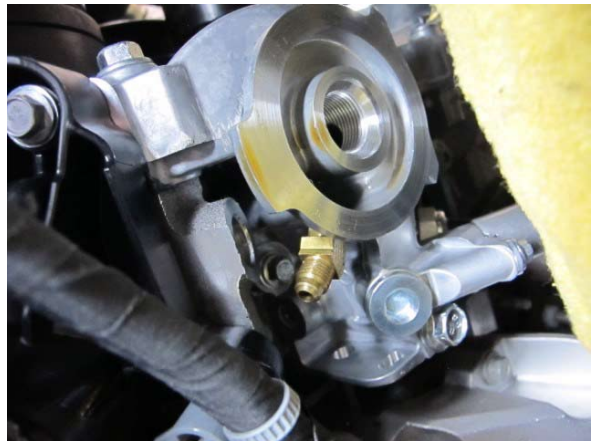


Fig. 1-q: Reinstall Oil Filter Mount

- R. Locate the provided steel braided oil feed line and attach the 90° end of the oil feed hose to the 1/8" NPT 45° x -4 JIC fitting previously installed on the oil filter mount. Next, using the previously removed threaded oil tube, reinstall the oil cooler to the oil filter mount. Make sure that the rubber gasket is sandwiched between the oil cooler and the oil filter mount. Adjust the 1/8" NPT 45° x -4 JIC fitting in a way that will clear the oil cooler and still allow access to the oil feed line should it need to be removed. Be sure that the 1/8" NPT 45° x -4 JIC fitting and steel braided oil feed line are secure at this time. (See Fig. 1-r)



Fig. 1-r: Position 1/8" NPT 45° x -4 JIC Fitting And Install Steel Braided Oil Feed Line

1. OIL FEED INSTALLATION, cont'd

- S. Locate the provided 1x brass spacer, 1x adel clamp, 1x M6 washer, and 1x M6 x 1.00 nylock nut. Located on the front side of the oil pan to the right of the crank pulley is an oil pan fastener with a long stud on the end of it. Insert the steel braided oil feed line through the adel clamp. Slide the brass spacer onto the previously mentioned stud, using the adel clamp to sandwich the brass spacer. Next, secure the brass spacer and adel clamp to the stud using the provided M6 washer and M6 x 1.00 nut. Route the steel braided oil feed line towards the top of the engine, making sure to keep it away from sharp and moving objects.

(See Fig. 1-s)



Fig. 1-s: Route Steel Braided Oil Feed Line Through Adel Clamp

- T. Locate the M8 x 80mm screw and M8 washer that secures the left side of the supercharger mounting plate to the passenger side cylinder head. Remove the M8 x 80mm screw and M8 washer and temporarily set it aside. Be sure that the spacer between the passenger side cylinder head and supercharger mounting plate doesn't get lost. Next, route the steel braided oil feed line towards the supercharger. Locate the remaining adel clamp and insert the steel braided line into the adel clamp, then secure the adel clamp to the supercharger mounting plate using the previously removed M8 x 80mm screw and M8 washer.

(See Fig. 1-t)



Fig. 1-t: Route Steel Braided Oil Feed Line Through Adel Clamp

- U. Mounted on the passenger side of the supercharger is the oil feed fitting. Remove the blue protective cap & discard it. It will not be reused.

(See Fig. 1-u)

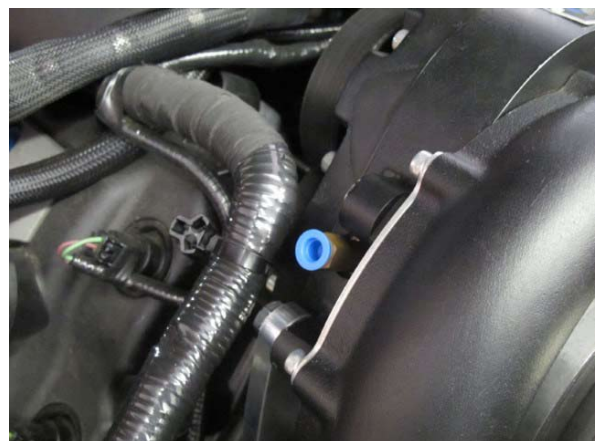


Fig. 1-u: Remove Blue Cap

1. OIL FEED INSTALLATION, cont'd

- V. Locate the provided 1/8" NPT 90° x -4 JIC fitting and install it to the oil feed fitting as shown.

(See Fig. 1-v)

NOTE: Only use clean engine oil on the NPT pipe threads. Teflon tape or pipe sealant is not recommended on this fitting as it might loosen & cause blockage of the small oil feed orifice, which may result in supercharger failure.



Fig. 1-v: Install 1/8" NPT 90° x -4 JIC Fitting

- W. Attach and secure the straight end of the provided steel braided oil feed line to the 1/8" NPT 90° x -4 JIC fitting on the oil feed fitting of the supercharger.

(See Fig. 1-w)



Fig. 1-w: Install Steel Braided Oil Feed Line

2. OIL DRAIN INSTALLATION

- A. The oil pan in 2018+ vehicles are made from a composite material as opposed to the traditional steel engine oil pan. For this reason, it is **NOT** suggested to drill and tap the oil pan as it has the potential to crack when an NPT-style fitting is used. In order to properly install the provided -8AN male bulkhead fitting, it will be necessary to remove the oil pan from the vehicle. Please refer to a factory service manual for the proper oil pan removal procedures, or take the vehicle to a trained professional.

(See Fig. 2-a)

NOTE: Removal of the oil pan is a very labor-intensive process that requires specialty tools in order to be done properly as the engine will need to be raised within the vehicle. We highly suggest having this process done by a trained professional.

- B. The -8AN male bulkhead fitting will be installed on the passenger side of the oil pan. Measure 1.175" down from the underside of the oil pan flange. Next, measure .675" to the left from the oil pan rib as shown.

(See Fig. 2-b)

- C. With the oil pan marked, use an 1/8" drill bit & drill a small pilot hole. Be sure to only drill enough to get through the oil pan and don't allow the full length of the drill bit to go through. Once the pilot hole is drilled, change to the 3/4" drill bit and proceed to drill the larger hole through the oil pan. Be sure to clean any shavings, making sure they don't remain in the oil pan during reinstallation.

(See Fig. 2-c)

NOTE: Using a 3/4" drill bit to make the hole in the oil pan will result in a snug fit between the 3/4" hole and the bulkhead fitting. If the bulkhead fitting doesn't fit into the 3/4" hole, DO NOT force it in. It may be necessary to use a small drum sander to slightly open up the hole.



Fig. 2-a: Engine Oil Pan
(Driver Side View)

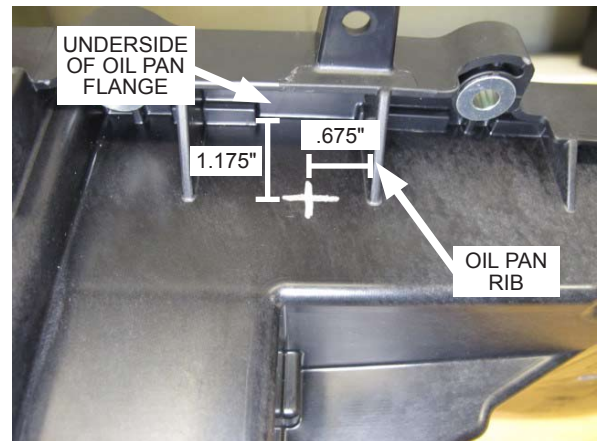


Fig. 2-b: Mark Oil Pan
(Passenger Side)



Fig. 2-c: Drill 3/4" Hole

2. OIL DRAIN INSTALLATION, cont'd

- D. Locate the provided -8AN male bulkhead fitting and 3/4" sealing washer and install them through the previously drilled hole as shown. (See Fig. 2-d)



Fig. 2-d: Install -8AN Bulkhead Fitting

- E. From inside the oil pan, install the other 3/4" sealing washer to the -8AN male bulkhead fitting. **Apply a generous coat of red thread locker onto the threads**, then secure the -8AN male bulkhead fitting using the provided aluminum jam nut. Once complete, verify that the oil pan is clean and free from any debris, then proceed to reinstall it to the vehicle. (See Fig. 2-e)

NOTE: Reinstallation of the oil pan is a very labor-intensive process that requires specialty tools in order to be done properly, as the engine will need to be raised within the vehicle. We highly suggest having this process done by a trained professional.

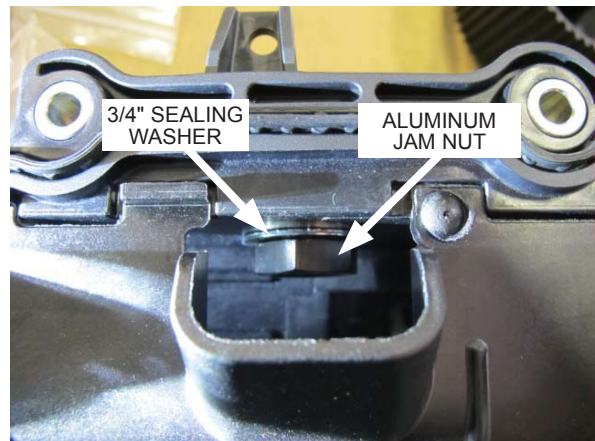


Fig. 2-e:

- F. Locate the oil drain hose previously attached to the barb fitting on the bottom of the supercharger. The oil drain hose should have a -8AN female fitting attached to it. Route the hose towards the -8AN male bulkhead fitting previously installed on the oil pan, making sure to keep the hose routed away from any sharp or moving objects. Secure the -8AN female fitting to the -8AN male bulkhead fitting. **Do not use any thread locker on this side of the fitting.** (See Fig. 2-f)



Fig. 2-f: Secure Oil Drain Line

3. FINAL CHECK

- A. Check all fittings, nuts, bolts and clamps for tightness. Be sure that all oil lines are secured away from moving parts, sharp edges and exhaust system parts. Make sure all wires and lines are properly secured with clamps or tie-wraps.
- B. Perform an oil and oil filter change once all steps in this manual have been completed.
- C. Once the oil and oil filter change are completed, start the vehicle and allow it to idle for a few minutes, then shut off the vehicle.
- D. Recheck all oil lines and check for signs of leakage. Correct any leaks if necessary.
- E. **PLEASE TAKE SPECIAL NOTE:** Operating the vehicle without ALL subassemblies completely and properly installed may cause **FAILURE OF MAJOR COMPONENTS.**



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