

Thank you for choosing Killer B Motorsport!

We recommend professional installation of Killer B Motorsport performance products.

Should you choose to perform the installation yourself, this guide may help.

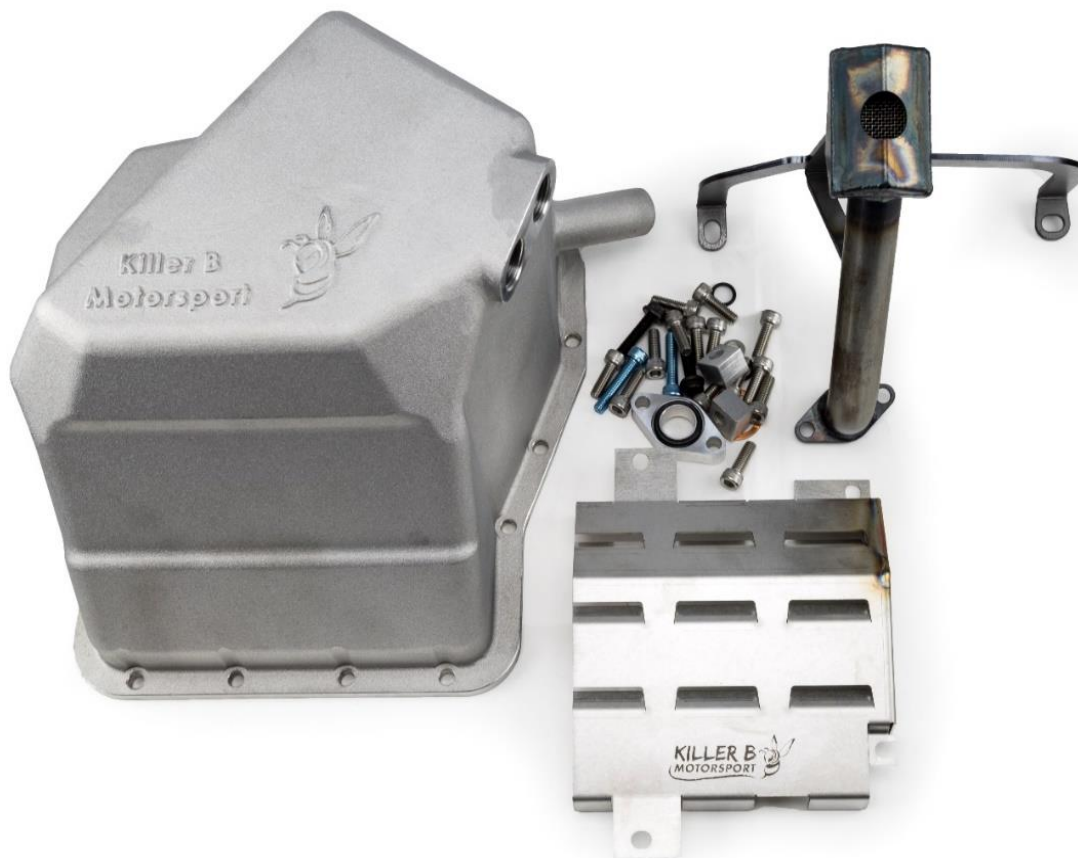
The picture below shows the included Killer B Motorsport Premium Oiling Products for your install.

SUPER G PAN INSTALL NOTES ON LAST PAGE OF THIS GUIDE

A quick note before installation:

THESE INSTRUCTIONS CALL FOR THE REPLACEMENT OF THE FOLLOWING GASKETS:

- Bypass valve gasket (intercooler is removed)
- Exhaust manifold gasket. 1 needed for OE header, 2 needed for NON-OE header.
- Exhaust gasket between exhaust crossover pipe and RH manifold (passenger's side, if applicable)
- **Make sure you have the enough RTV sealer, with oil resistance.**
- Teflon tape or thread sealer used on NPT tapered drain plugs.
- Oil, oil filter and crush ring.
- Used oil drain/catch pan.
- Floor jack AND jack stands
- ½" NPT Fumoto valve or ½" NPT plug for the pan's NPT drain port

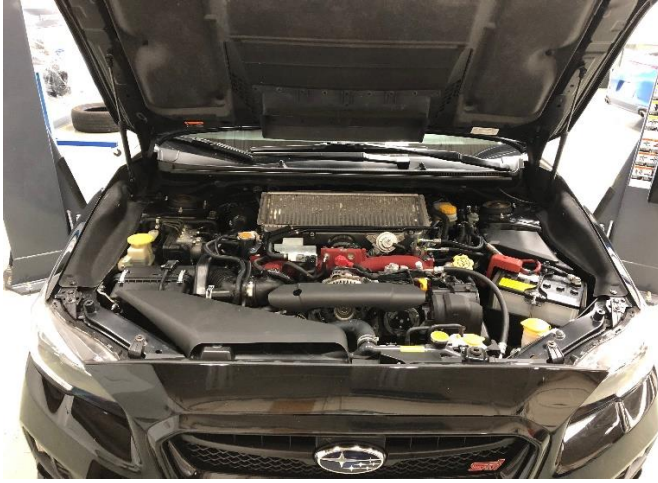


The following is a list of the tools that we use and recommend for installation:



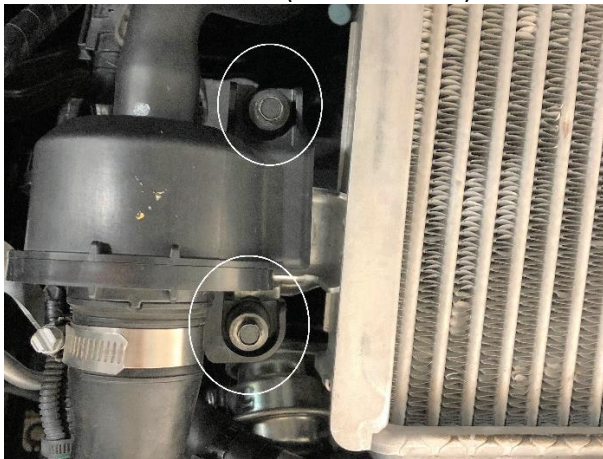
- Oil filter wrench
- Flathead screwdriver
- Pry tool
- Pliers
- assorted wrenches
- assorted 1/4" drive and 3/8" drive sockets/extensions/swivel socket or swivel adaptor
- 5mm hex/bit socket
- 3/8" drive socket wrench/14mm deep socket/extension
- 3/8" drive torque wrench

1. Start by opening the hood. (This installation was performed on a VA chassis STI)



This installation requires temporary removal of your intercooler and pitch mount to raise the engine up from the cradle.

2. With a 10mm socket and socket wrench, remove the two bolts securing the sound generator to the intercooler bracket (IF APPLICABLE). Set aside for reinstallation.



3. With a 12mm socket and socket wrench, remove the bolts on the driver and passenger side of the intercooler.

Passenger's side-

Driver's side-



4. With the same tools, remove the two bolts securing the rocker cover balance pipe to the intercooler.



5. Remove the two bolts securing the bypass valve to the intercooler. Set all bolts aside for reinstallation. You can either perform this step OR you can unclamp the bypass valve recirculatory hose to remove from the bypass valve, disconnect the vacuum reference hose and remove the intercooler/BPV assembly as one. **REPLACE GASKET**



6. With the same 12mm socket and socket wrench, remove the two remaining bolts securing the driver's side intercooler bracket to the intake manifold.



7. With a flathead screwdriver, loosen the worm clamp that secures the intercooler elbow to the turbocharger compressor outlet.



8. Next, loosen the upper worm clamp (closest to the intercooler).



9. Work the intercooler up and out **carefully**.

10. With a 14mm socket and socket wrench, loosen and remove the bolt that secures the pitch mount to the firewall.

Remove the bolt, nut and washer securing the other end of the pitch mount to the transmission bell housing. Use your 14mm wrench in addition to the 14mm socket and socket wrench from the previous step.



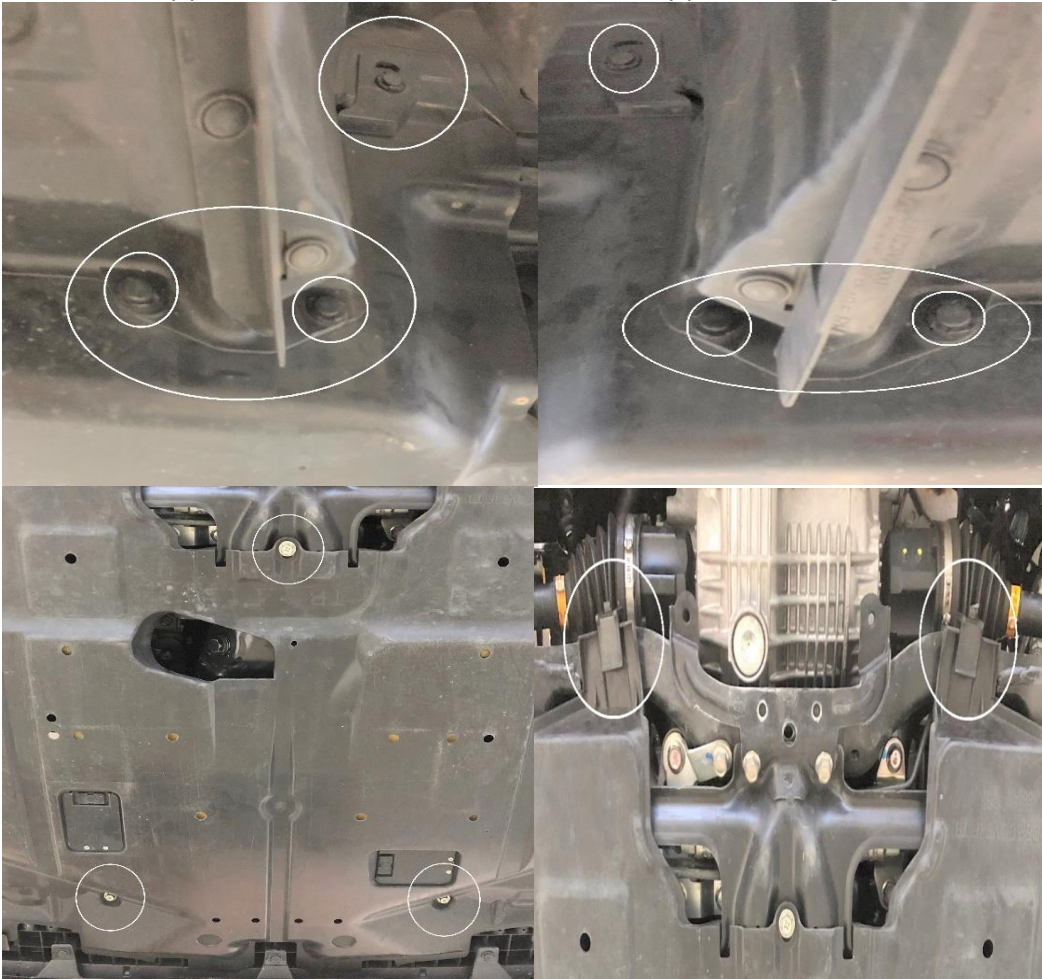
11. Pull the dipstick up 2 inches or remove it completely. Loosen the oil fill cap and raise the vehicle to drain the oil.



12. Once the front of your vehicle is raised off the ground, use a 12mm socket and socket wrench to remove the (3) bolts securing the belly pan to the vehicle. Then remove the plastic push clips that secure the belly pan with a flathead screwdriver. These 6 push clips can be found on the side of the belly pan. Finally, remove the two plastic C-clips from the back of the belly pan. Set the belly pan and hardware aside for reinstallation.

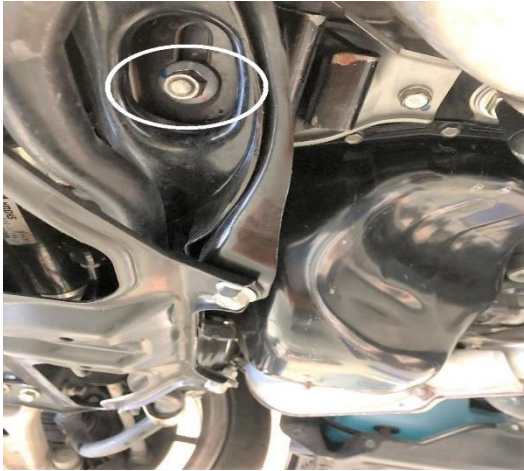
Belly pan: Driver's side-

Belly pan: Passenger's side-

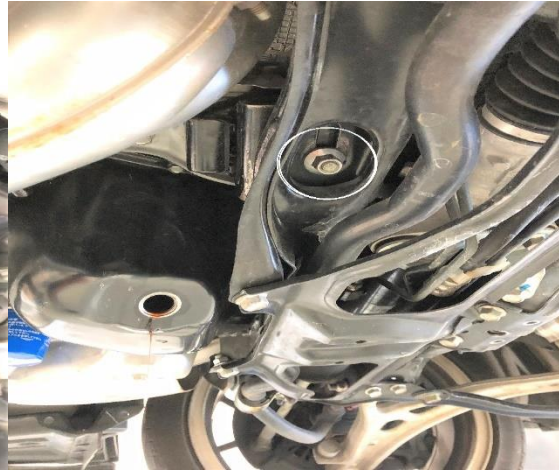


13. Drain the engine oil for as long as possible. The longer it drains, the cleaner your workspace will remain. We recommend changing the filter as well. While the oil drains, remove the two nuts (and washers, if applicable) securing the bottom side of the engine mounts to the engine cradle.

Passenger's side:



Driver's side:



14. Remove the exhaust manifold heat shields.
15. Remove the driver's side exhaust manifold section and the center crossover pipe AS ONE: This will provide you with the necessary amount of space required for pan removal, while minimizing the potential cost for gaskets. Subaru exhaust gaskets are single use only, REPLACE THE REMOVED GASKETS.

There are 3 M8 bolts on the driver's side manifold heat shield and another 4 on the passenger's side shield. Make sure you reinstall the ground strap when you reinstall this heat shield. With a 14mm socket, socket wrench and open end 14mm wrench, remove the crossover pipe and the driver's side section of the exhaust manifold.



16. With a jack, carefully push up from the transmission adaptor plate, raise the engine and transmission until the bottoms of the engine mount studs are flush with the engine cradle. Anticipate seeing between 1" and 1.25" between the engine mounts and the cradle.

Jack point- (trans adaptor plate)

Passenger's side-

Driver's side-



17. You may now begin unfastening the (14) M6 mounting bolts securing the engine oil pan to the engine block. You will need a 10mm socket and socket wrench and a swivel to access all OEM pan hardware.

NOTE: Leave two bolts threaded in a few turns: one on the left side of the pan and one on the right. This prohibits the pan from dropping and splashing oil onto you and your workspace.

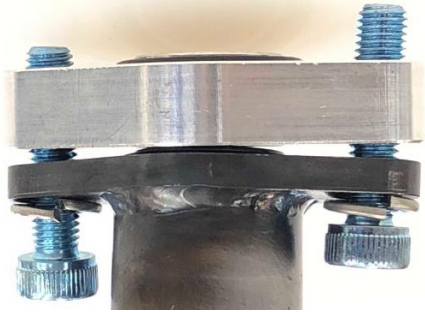
NOTE: It is best to use a soft pry tool when attempting to break the sealer's bond. You may need to get creative for this step. Work the pan back and forth until the sealer no longer holds the pan on. Remove the dipstick tube from the pan and remove the pan. There may still be oil in the pan.

18. With the same 10mm socket and wrench unfasten the hardware securing the OEM oil pickup to the engine block and remove the OEM windage tray.
19. Carefully remove any sealer that hasn't pulled off with the pan. It is best to use a **new** razor blade for this. Wipe off as much residual oil and loose sealer.
20. Discard the (2) OEM red dipstick tube o-rings, wipe the dipstick tube with a clean rag, and install the (2) supplied black o-rings.
21. Install the Killer B Motorsport Oil Baffle (windage tray) reusing the OEM hardware for the two rear most mounting holes, leave the front two holes open until the pickup is installed.



22. In the supplied parts kit there are three different aluminum spacers used for fitting the KBM pan/pickup/baffle combination. Grab the largest spacer, the two blue bolts, and two split-ring lock washers. Ensure you have a new O-ring with the spacer and a new o-ring with the oil pickup. Install the two bolts through the lock-washers (in an upward direction) through bottom side of the oil pickup and finally through the spacer. The o-ring in the pickup is facing upward, make sure that the spacer is installed so that it's o-ring is also facing upward (toward the bottom surface of the engine block). Loosely thread the two blue bolts in by hand. *Do not install them all the way, and do not torque them yet!*

BEFORE TORQUE PROCEDURE-



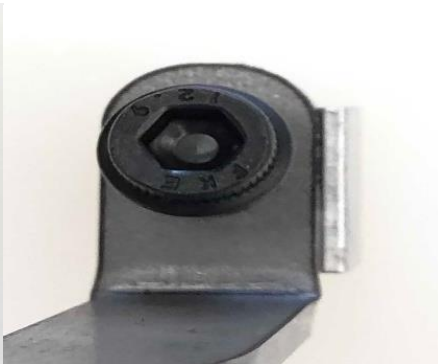
TORQUED TO SPEC- 7.5ft-lbs



23. Grab the second and third oil pickup spacers from the parts kit and install them between the engine block and the oil pickup bracket. Install the (2) black bolts through the pickup and through the spacers. Now that all pickup and baffle hardware is loosely threaded into place, turn them clockwise by hand until they all become seated. Using a torque wrench, tighten the oil pickup and baffle hardware to 7.5 ft-lbs (90 in-lbs).

Passenger's side- BEFORE TORQUE

Driver's side- BEFORE TORQUE



TORQUED TO SPEC- 7.5 ft-lbs

TORQUED TO SPEC- 7.5 ft-lbs



*For the pickup, use the 5mm internal hex socket on supplied bolts.

*For the baffle's rear mounting, use 10mm socket on OEM bolts.

24. To ensure a proper seal, spray some brake clean on a clean shop rag and wipe the mating surfaces clean.
25. Using a gasket sealer rated for oil resistance (threebond, Permatex etc.), apply a 3-4mm bead along the mounting flange of the pan, it does not hurt to further complete coverage by spreading the sealer out with your finger. Do not put an excessive amount of sealer on- once distributed evenly you should only need a 1mm-thick layer. (Use sealer accordingly) Set down the pan before installing and AGAIN wipe off any dripping oil from the mating surface of the engine block.

26. LUBRICATE THE ORINGS WITH ENGINE OIL.

IF YOU HAVE TROUBLE SEATING THE DIPSTICK IN THE PAN, TRY THE FOLLOWING:

27. **Wrap a 1.5" long section of electrical tape above the upper o-ring groove on the dipstick tube. Make sure there is a film of oil in the orings. This will help keep the o-ring from pinching or squeezing out upon installation.**

BEFORE



AFTER



28. Install the oil pan firmly onto the block while guiding the dipstick tube into the pan, loosely install one supplied mounting bolt on the left side of the pan, and one bolt on the right side of the pan. This allows you to hold the pan in place while you install the other 12 mounting bolts. Ensure you have not pinched the o-rings for the dipstick tube. **DO NOT TORQUE ANY OF THE 14 PAN MOUNTING BOLTS UNTIL ALL 14 BOLTS HAVE BEEN STARTED BY HAND.**
29. Once all 14 bolts have been started by hand, set your torque wrench to 5 ft-lbs (60 in-lbs) and torque in a crisscross pattern.

30. Lower the jack that is supporting the engine. This should lower the engine mount studs back through the holes in the engine cradle. Make sure the engine is centered (left to right) in the cradle before installing and torquing the mounting nuts.

Passenger's side-



Driver's side-



31. Reinstall exhaust manifold and crossover pipe with new gasket.
-Torque spec for manifold-to-head: 26 ft-lbs.
-Torque spec for crossover pipe to manifold: 26 ft-lbs.
31. Reinstall both heat shields and torque to 5 ft-lbs.
32. Reinstall engine mount lower nuts and torque to 61 ft-lbs.
33. Make sure you have installed the drain port plugs or a quick drain in the pan.
The M20 OEM drain plug should be torqued to 31 ft-lbs.

For any plugs/adaptors going in the ½ NPT port: only thread in 55-60% of the adaptor's total thread count. (If it has ten threads, expect to see 3-4 threads still. DO NOT ATTEMPT TO SEAT THE ½ NPT FITTING FLUSH WITH THE PAN!



34. Reinstall the belly pan, (3) bolts, (6) push clips and 2 plastic C-clips. Torque bolts to 5 ft-lbs (60 in-lbs)

***Clear out any items from under your vehicle, lower vehicle down to its normal resting position.

35. Reinstall dipstick in its tube. Ensure proper operation and seating.
36. Reinstall the pitch mount and hardware: (big end at firewall, little end at engine)
-Torque spec for little end at engine- 36.9 ft-lbs.
-Torque spec for big end at firewall- 42.8 ft-lbs.
37. Reinstall top mount intercooler. Secure clamps.
38. Loosely install one bolt on either side of the intercooler, the long bolts.
39. Loosely install the bypass valve with the two shorter bolts and a new gasket, OR reinstall recirc hose on BPV elbow with clamp, install vacuum/boost reference hose on BPV.

40. Loosely install the two bolts that secure the rocker cover crossover pipe to the intercooler.

41. Now that all intercooler hardware is in place, tighten to factory specification per factory service manual.

- Ensure all clamps and bolts are fastened securely- Your engine depends on it.
- If you haven't yet installed a new oil filter, install it now.
- Allow ample time for the gasket sealer to cure BEFORE filling with 6 quarts of oil.
- After filling your engine with oil, start the engine and check for oil leaks.

(We recommend priming the engine for oil pressure before starting. With the key off, clutch pedal and accelerator pedal pressed to the floor, crank the engine for no more than 10 seconds at a time. Repeat until the oil pressure lights goes out or you have a known good reading on your pressure gauge.)

- Listen carefully once the engine speed stabilizes, blip throttle lightly to verify there are no exhaust leaks.
- Shut off engine and recheck oil level.

Please obey all traffic laws and regulations.

NOTES FOR INSTALLING THE KILLER B SUPER G OIL PAN

Use a 1-1.5mm layer of RTV sealer for the oil return passage:

