COYOTE ENGINE OIL PAN
P/N 302-50

Included Hardware:
(1) Oil Pick-Up Tube O-ring, (1) 3/8 NPT Drain Plug, & (5) 1/4-20 Bolts

Thank you for using the Holley® 302-50 Coyote oil pan as part of your engine swap project. Considerable time and effort was expended on the development of this oil pan to enable the user to obtain lower installed engine height and better component clearances and serviceability than is available from any other Coyote oil pan. Should you need information or parts assistance, please contact our Technical Service Department at 1-866-464-6553 or 1-270-781-9741, Monday through Friday, 8 a.m. to 6 p.m. CST. Please have the part number of the product you purchased on hand when you call.

WARNING! These instructions must be read and fully understood before beginning installation. Failure to follow these instructions may result in poor performance, vehicle damage, personal injury, or death. If these instructions are not fully understood, installation should not be attempted.

Never use the oil pan as a support stand for working on, or transporting the engine before its installation in the car, or as a jacking point from which to lift the engine during, or after its installation. The oil pan can be deformed from such actions and can possibly lead to oil starvation of the engine.

The pick-up tube to sump clearance must be verified by the installer as part of the installation process to prevent possible engine damage.

INTRODUCTION:

Holley® Performance Products has written this instruction sheet specifically for the installation of this Coyote swap oil pan. This instruction sheet contains all the information needed to install the oil pan. Holley® Performance Products cannot and will not be responsible for any alleged or actual engine or other damage, or other conditions resulting from misapplication of the oil pan described herein. However, it is our intent to provide the best possible products for our customer; products that perform properly and satisfy your expectations.

APPLICATIONS:

This oil pan is intended for use in street/strip and light competition applications as-shipped and was specifically designed to enable Coyote Gen 1 and 2 engine swaps in 1979-2004 Ford Mustangs using a **stock (1984-2004)**, **AJE MU40-UM**, **Team Z Motorsports TZM-KM-SWAP, or Maximum Motorsports MMKM-2.1 (for Fox Body cars)** or **MMKM 2 (for SN95/New Edge cars)** K-member and Hooker Blackheart engine mounting brackets. This pan is not compatible with the Maximum Motorsports MMKM-1 K-member.

The unique fitment geometry of this pan may also be suitable for use in other fitment challenged Coyote swap applications

IMPORTANT DESIGN FEATURES AND INSTALLATION NOTES:

- Maintains the 8 quart nominal capacity of the stock 2011-2017 Mustang Coyote oil pan
- Provides more header, steering rack, and intake manifold clearance than any other Coyote oil pan
- Provides compatibility with stock Fox Body/SN95 Mustang clutch release cables
- Provides compatibility with the stock 2011-2017 Mustang Coyote engine low-oil level sensor
- Provides convenient drain-back bung for turbo applications
- Installs using the OE 2011-17 Mustang Coyote engine pan gasket/baffle assembly/ Ford part number- BR3Z-6710-A

The equipped turbo drain-back bung requires the use of an -10 AN O-ring boss (ORB) port adapter fitting, or plug, such as those available from Earl's Plumbing Information on Earl's plumbing products can be found at www.holley.com (Earl's -10 AN ORB plug is part number AT981410ERL).

If the oil pump pick-up tube O-ring requires replacement in the future, use a stock Ford F5RZ-6626-B O-ring for that purpose.

NON-INCLUDED PARTS/SUPPLIES NEEDED:

- Oil Pan Gasket/Baffle – Ford part number- BR3Z-6710-A (new recommended)
- Oil – 8 to 9 quarts required for system fill, depending on the specific oil filter used
- Oil Filter – Ford part number AA5Z-6714-A/ Motorcraft FL-500S or equivalent
- Oil Pan Bolts – Re-use stock bolts
- Oil Level Sensor – Ford part number BL3Z-6C624-A, or plug (M20 x 1.5) if desired
- Blue Medium-Strength Loctite Thread Locking Compound
- RTV Silicone Sealant
- Thread Sealant

REMOVAL OF EXISTING OIL PAN:

1. Drain the engine oil.
2. Disconnect the oil level sensor electrical connector (if equipped).
3. Remove the oil level sensor from the oil pan and set it aside.
4. Remove the oil pan bolts and set them aside.
5. Remove the oil pan and set it aside (removal of the oil pan may not be possible with the engine in the vehicle).
6. Remove the fasteners attaching the pick-up tube assembly to the oil pump/engine and then remove it and set it aside.
7. Remove the oil pan gasket/baffle assembly from the engine.

INSTALLATION:

1. Remove the new Holley® oil pan, baffle plate, parts kit, and pickup tube from the box.
2. Place the Holley oil pan on a table or workbench (flange facing up).
3. Install the baffle plate onto the sump shelf of the Holley oil pan using the supplied 1/4-20 bolts. See **Image 1** below for a visual representation of the baffle plate positioning on the sump shelf. Apply a drop of blue medium strength Loctite thread locking compound to the bolt threads before installing them.

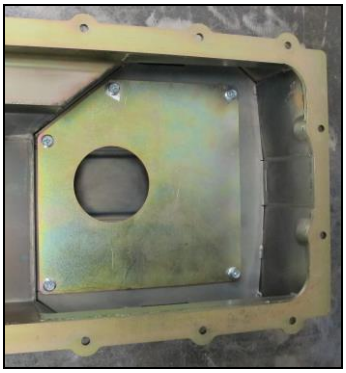

Image 1

4. Scrape/clean the oil pan gasket surfaces on the engine block and front and rear covers.

5. Apply a thin bead of RTV silicone sealant over the joining seams of the engine block and the front and rear covers. Refer to **Image 2** below for a visual representation of these four locations that require the RTV sealant.

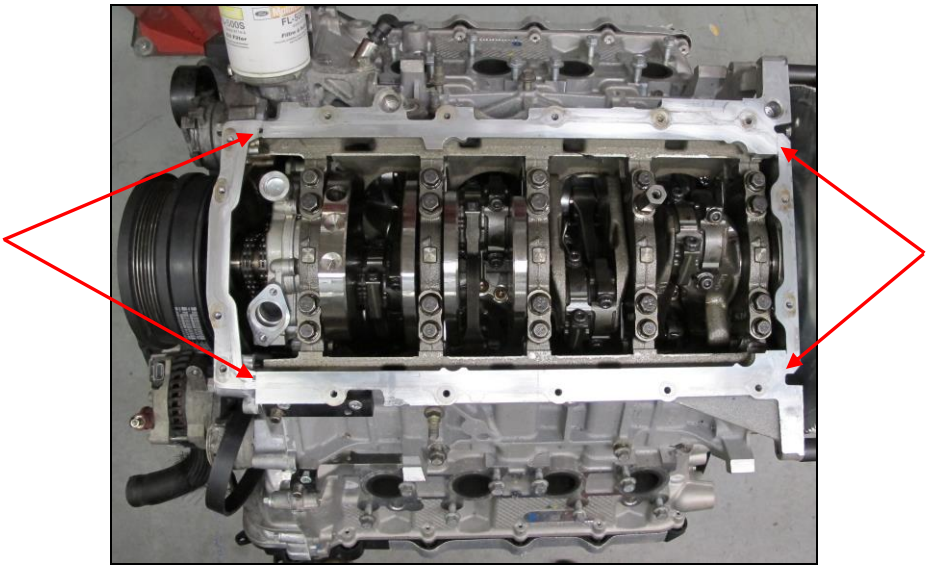

Image 2

6. Lay the stock Ford gasket/baffle assembly in place on the engine block.

7. Lubricate the included O-ring with engine oil and install it onto the supplied oil pump pick-up tube assembly.

8. Engage the pick-up tube assembly with the oil pump inlet bore and check to see that the slot in the foot of the pick-up tube support leg is lining up with the threaded hole in the main cap stud stand-off. At this stage, the oil pan gasket/baffle and the pick-up tube assembly should appear on the engine as they do in **Image 3** below.

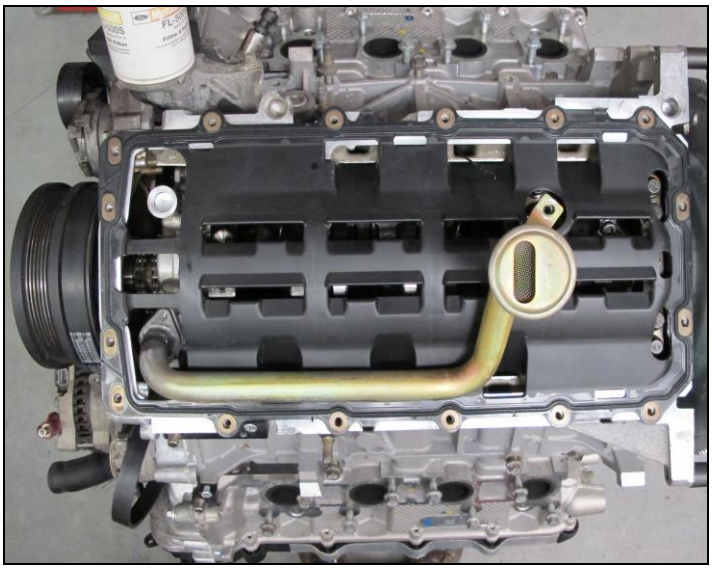

Image 3

9. Attach the pick-up tube assembly flange to the oil pump using the two factory M6 bolts removed from that location and torque them to the factory specification (10 N·m + 45°). You may need to make a custom tool from an inexpensive 1/4" drive 10mm deep socket to tighten the outer bolt. The basic form to grind into the socket for clearance is depicted in **Image 4** below.

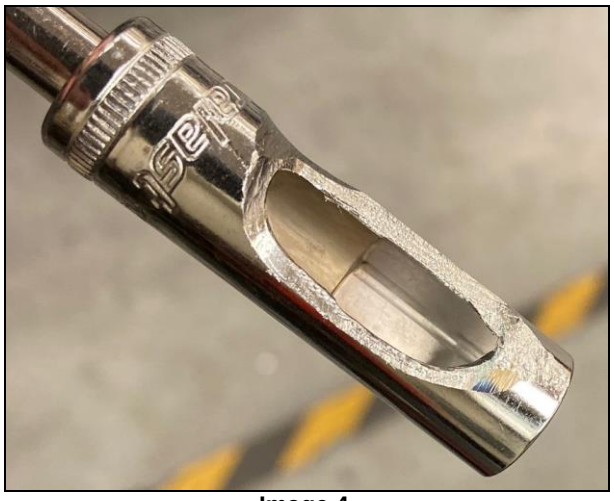

Image 4

10. Attach the oil pick-up tube support leg to the threaded stand-off on the crankshaft main cap bolt using the bolt previously used to attach the stock pick-up tube to that location. Torque the bolt to the factory specification.

11. Validate the clearance between the pick-up tube intake head and the bottom of the oil pan by placing an approximately ¾" thick layer of modeling clay on top of the intake head of the pick-up tube and temporarily installing the oil pan on the engine to fully compress the clay. **NOTE:** Only the four pan bolt positions that immediately surround the pick-up intake head need to be installed to accomplish this task. Remove the pan and measure the thickness of the clay. It may help to put a slice through the clay with a razor blade to create a well-defined cross-section sample. The clearance gap, as represented by the thickness of the clay sample, should measure 1/4" to 3/8".

12. Inspect the interior of the Holley oil pan one last time and ensure it is free of any type of debris. Then, install it onto the engine using the stock oil pan bolts previously removed. Torque the bolts to the factory specification.

13. Install the included drain plug into the bung on the rear wall of the oil pan, and the user-supplied oil level sensor (or plug). Install -10 AN ORB turbo drain-back fitting (or plug) into the bungs on the side and front of the oil pan respectively.

14. Rotate the engine into the upright position, if on an engine stand.

15. Remove the engine from the stand with an engine hoist and install it in the intended vehicle.

16. If using, connect the wiring harness plug to the oil level sensor and/or connect the turbo drain line to the fitting at the front of the pan.

17. Replace the oil filter and fill the oil pan with oil. The nominal capacity of the Holley pan is 8 quarts, but you'll need to gauge the specific quantity needed (up to 9 quarts is possible without an oil cooler, depending on the filter used) on your first fill by monitoring the level on the dipstick.

18. Start the engine, check for leaks and perform a final engine oil level check following engine shut-down.

Holley® Technical Support
270-781-9741 or www.holley.com

199R11402
Revision Date: 2-17-20