



**2015 + FORD MUSTANG GT350**

**2020 FORD MUSTANG GT500**

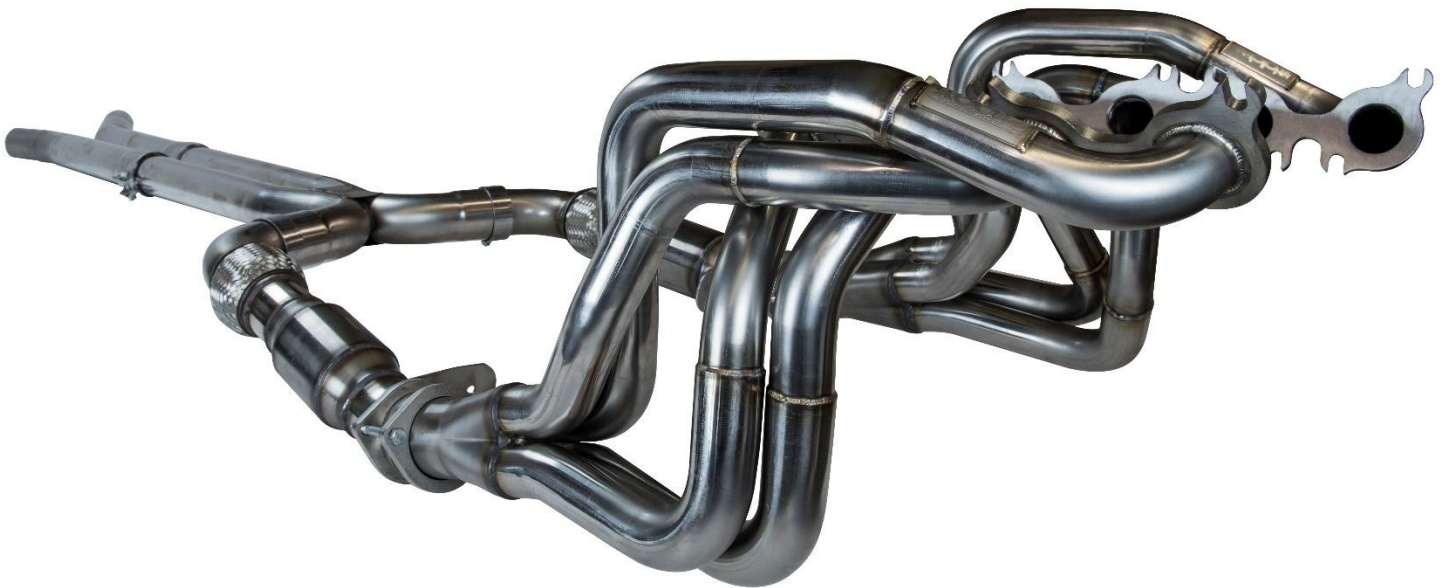
**Header, Connection & X-Pipe**

**Installation Instructions**

**Offroad**

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**Thank you for your purchase, we appreciate your business.  
If additional assistance is needed, please contact Kooks Headers and Exhaust  
Toll free at 1-866-586-KOOK or contact your local dealer.**



**Do not attempt this installation if proper safety equipment isn't available to you - seek the assistance of a professional installer.**

**Read and understand all instructions before beginning.**

**To install this system, the following tools are suggested:**

- Vehicle Lift or Jack and 4 Jack Stands
- Engine Cradle
- Ratchet Set ( $\frac{1}{4}$ " &  $\frac{3}{8}$ " Drive)
- Metric Socket Set ( $\frac{1}{4}$ " &  $\frac{3}{8}$ " Drive)
- Extensions ( $\frac{1}{4}$ " &  $\frac{3}{8}$ " Drive)
- Pry Bar Set
- $\frac{7}{8}$ " O<sub>2</sub> Socket ( $\frac{7}{8}$ " Wrench)
- T-40 Torx Bit
- Gasket Scraper
- Exhaust Tubing Cutter or Saw
- Metric Wrench Set
- Standard Screwdriver Set
- Safety Glasses
- Paint Pen (Marker)
- Service Manual
- Thread Locker
- Anti-seize
- Zip Ties
- WD-40 (Penetrating Oil)

**Vehicle Preparation**

**\*\*Raise and Support Vehicle (Refer to Owner's Manual for specified jacking points) \*\***

**\*Always disconnect the battery before performing this type of work on any vehicle\***



## STOCK MANIFOLD AND CATALYTIC CONVERTER REMOVAL

**\*\*To aid disassembly, steps #1 - #3 should be performed from the topside of the engine bay. \*\***

### STEP 1. Battery, Battery Tray and Inner Panel

- Disconnect the negative and positive battery terminals (10mm).
- Remove the battery tie down strap and remove the battery (8mm).
- Remove the three 8mm bolts in the Battery Tray and remove the Battery Tray.
- Remove the 10 bolts on the Inner Panel and remove it (eight 10mm & two 13mm).

### STEP 2. Engine Mounts

- Remove the 15mm Engine Mount Nut from both Drivers Side and Passenger Side mounts
- **NOTE – Do NOT rock the Engine excessively after removing Engine Mount Hardware**

### STEP 3. Exhaust Manifolds

- Remove all 15mm Exhaust Manifold Nuts visible from above the engine compartment. The Remaining Exhaust Manifold Hardware can be removed at a later time.

### STEP 4. Starter

- Disconnect Starter Wires, remove the 13mm nut on the positive wire, the 10mm nut on the jumper wire. **\*\*Note the location of each wire\*\***
- Remove the three 10mm Bolts from Starter & remove starter.

### STEP 5. O<sub>2</sub> Sensors

- Note and mark the position of each O<sub>2</sub> sensor (left front, left rear, etc.).
- Disconnect all O<sub>2</sub> sensors from wiring harness & remove them (<sup>7</sup>/<sub>8</sub>" wrench or O<sub>2</sub> socket).

### STEP 6. Factory Catalytic Converters

- Remove the OEM barrel clamps that connect the factory front connections to cat back.
- Supporting the weight of the catalytic converter assemblies, loosen the nuts at the manifold to converter flange junction and remove the factory catalytic converters.

### STEP 7. Factory Exhaust Dampers

- Remove the OEM exhaust damper on each catalytic converter assembly; be sure to save the nut. These will be reinstalled on the Kooks provided front connection assemblies.

### STEP 8. Engine

- Raise Engine approximately 1½". **\*\*DO NOT SUPPORT ENGINE ON OIL PAN\*\***
- Kooks recommend the use of an Engine Cradle for safety and ease of installation.

### STEP 9. Engine Mount Bracket (Drivers Side and Passenger Side)

- Remove the 15mm nut attached to engine mount bracket, the four 13mm Bolts attaching engine mount bracket to engine and then remove engine mount bracket.

### STEP 10. Exhaust Manifolds

- Remove the remaining 15mm exhaust manifold nuts & remove Exhaust Manifold.



- Remove all exhaust manifold studs. (They will be replaced with Kooks supplied hardware.)

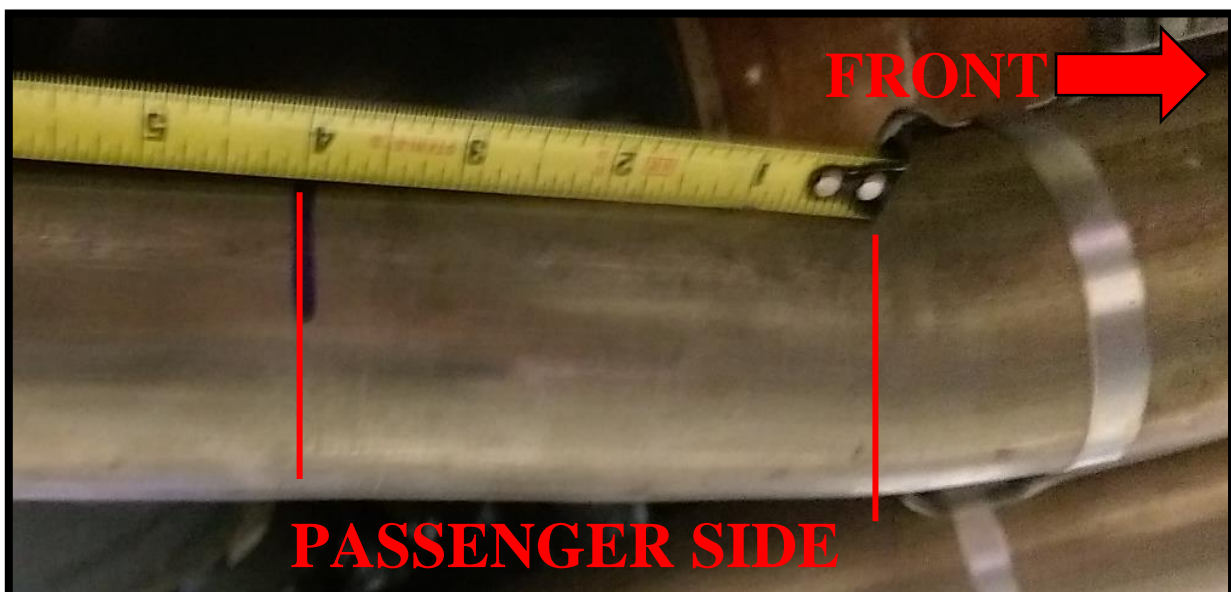
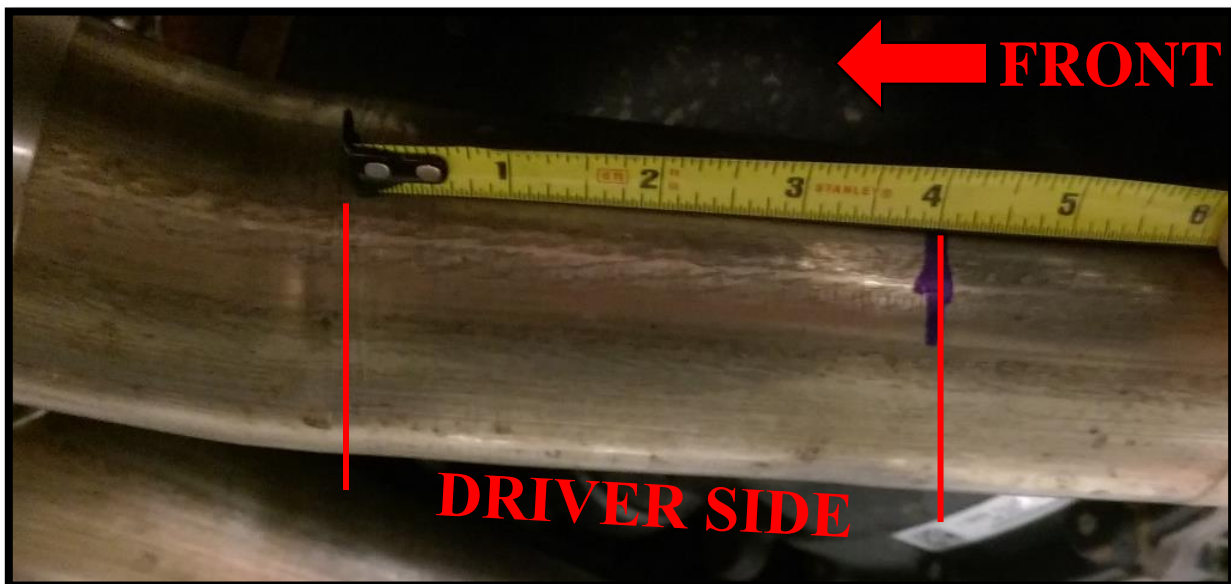
## STEP 11. Cylinder Heads

- Clean Cylinder Head.

### Modifying Factory Exhaust

#### STEP 1. Cut Line

- Using the reference pictures below, carefully measure and mark the location of the cut lines on each exhaust pipe in the straight past the first bend after the x-pipe assembly.
- Measure back 4" from tangent of the bend on both pipes.
- Use tape or another means to mark each pipe completely to ensure a square cut.





## STEP 2. Removal of Existing X-pipe Assembly

- Once marked, support the weight of the factory x-pipe section and cut the pipes.
- Remove existing x-pipe.
- Clean and deburr the cut surface of remaining exhaust pipes.

### **Kooks Header, Connection & X-Pipe Installation**

**\*\*All hardware should be tightened to factory specifications\*\***

## STEP 1. Kooks Headers

- Align supplied gasket and start all of the top header bolts. Do not start the passenger side rear header bolt.
- Align headers on top header bolts and start remaining header bolts.
- Lower engine enough to allow for tightening of headers without header interfering with vehicle floor.
- Tighten headers to factory exhaust manifold torque specs, working from the center out in a circular pattern.

## STEP 2. Engine Mounts

- Apply thread locker to engine mount hardware.
- Lower engine onto engine mounts and center it in the vehicle.
- Tighten all engine mount hardware to factory spec.

## STEP 3. Starter

- Align Starter and start all three mounting bolts; then tighten bolts.
- Reinstall starter wires back in their original location. **\*\*Do Not over tighten\*\***

## STEP 4. Kooks Connection Pipes & X-Pipe

- Attach (1) connection pipe assembly to a header - doesn't matter which – and fasten loosely.
- Slide a supplied 3" band clamp over both inlets of the X-pipe assembly; the bolts should be pointing down and to the front/inside.
- Note orientation of X-Pipe: longer outlet leg must be on the Driver side when installed.
- With some means of support ready, raise X-Pipe assembly into place and slip over outlet of the installed connection pipe. Hold X-Pipe in position.
- Take the other connection pipe and slide its outlet into the other X-pipe inlet; rotate it up into position with the header. Attach loosely with supplied 2-bolt flange hardware.

## STEP 5. Kooks Mid-Pipes

- Slide the supplied 2-3/4" x 3" L barrel clamps over the factory exhaust at the cut location, with the bolts to the inside and facing down. These will be tightened later.
- On each of the Mid pipes, slide a 3" band clamp over the expanded end.
- Install the shorter Mid pipe on the left side exhaust, and the longer one on the right. When installed correctly, the outlet ends will align with the cut location of the factory exhaust.



- Slide the 2-3/4" barrel clamps over the outlets of the Mid pipes, centering their width over the pipe junction; do not tighten. This is a butt-joint and the pipes should meet end-to-end when the system is installed correctly.

#### **STEP 6. Tightening Exhaust**

- Once all of the exhaust components are installed, adjust their position:
  - Ensure all slip-joints are seated past the notches.
  - Ensure fitment clearance is maximized.
  - Ensure barrel clamps are positioned correctly at OEM exhaust connection joint.
- Working from front to back, tighten connection hardware and clamps to spec.

#### **STEP 7. O<sub>2</sub> Sensors**

- Apply Anti Seize to the threads of all O<sub>2</sub> Sensors.
- Install O<sub>2</sub> Sensors noting their original location.
- 2015 – 2017 Install supplied O<sub>2</sub> Extension on front passenger side.
- 2018+ Install supplied O<sub>2</sub> Extensions on both upstream sensors.

#### **STEP 8. Battery and Battery Tray**

- Reinstall Inner Panel and Tighten Bolts.
- Align the Battery Tray and Tighten Bolts.
- Replace the Battery and Battery Hold Down Strap.
- Connect the Positive Battery Cable.
- Assure all steps have been completed and connect the negative Battery Cable.

#### **STEP 9. Inspection**

- Start Engine and check for any Exhaust Leaks.
- Allow Vehicle to complete one heat cycle (Heat to temp and allow for cooling).
- Re-torque Header Bolts and Header Hardware.