

2019 F-150 Raptor 3.5L Performance Pac2 Full Exhaust

Installation Instructions
P/N: 422177 (1119HO-PERFPK3)



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Application: 2019 Ford F-150 Raptor 3.5L Performance Pac2 Full Exhaust

Important Note:

Before installing the ROUSH Performance Product, please read through the installation procedure and verify that all items are present. If you are missing hardware or have any questions, please contact ROUSH Performance at 1-800-59-ROUSH, 9:00 AM to 5:00 PM EST.

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PACKING LIST FOR F-150/RAPTOR 3.5L

Description	Part Number	Quantity
Upper Air Box Cover Assembly	1118-9643HC	1
Air Box Tray	1115-9A612	1
MAP Tube (Insert for MAP Sensor)	1115TT-12B579	1
Clean Air Tube (Blow Molded)	1115TT-9B659	1
Air Filter - Conical Red	131550-9601R	1
Hardware Kit	1118TT-CAKHWK	1
Self Tapping Screw M6 x 25 mm	W506976-S437	6
Bolt - MAF Tube to Air Box (M8 x 1.25 x 25)	W500224-S437	2
EPDM Coupler – Air Box to Tube	1115TT-9B661	1
EPDM Coupler – CAT to DR	1115TT-9B662	1
EPDM Coupler – CAT to PS	1115TT-9B663	1
Clamp - Worm Drive (110-130 mm) MAF Tube to Air Tube/Air Tube	R07130015-13	1
Clamp - Worm Drive (100-120 mm)	R07130028-13	3
Clamp - Worm Drive (3-1/16" to 4") (Clamp Dia. 12 mm)	308707426	2
Harness IAT Jumper	1117-12A690	1
Air Box Tray Bracket	1117-9B611	1
Bolt (M6 x 1.0 x 16)	W500013-S307	2
ROUSH Sticker	ROUSH-STKR-7X1.25	1
Installation Manual	1315-P1INST	1
Muffler Assembly Bullet RH	1117HO-5230	1
Muffler Assembly Bullet LH	1117HO-5231	1
Clamp 3"	10-0439	4
Clamp 2.75"	10271	2
Over Axle Pipe Driver Side	1117HO-5C264	1
Over Axle Pipe Passenger Side	1117HO-5C265	1
Exhaust Tip 4.5" Black Coated with ROUSH Logo	1117HO-5230TIPB	2
Stickers	ROUSH-STKR-7x1.25	2

EQUIPMENT AND SUPPLIES REQUIRED

- Metric 1/4" Drive Socket Set
- Trim Tool
- Drill
- Center Punch
- Ratchet with Extensions
- Torque Wrench
- Flat-head Screwdriver
- Pliers
- 17/64" Drill Bit
- Torx Screwdriver
- Metric Socket Sets (deep recommended)

If you are missing any items, please call us toll free at 1-800-59-ROUSH.

LIMIT OF LIABILITY STATEMENT

The information contained in this publication was accurate and in effect at the time the publication was approved for printing and is subject to change without notice or liability. ROUSH Performance Products (RPP) reserves the right to revise the information presented herein or to discontinue the production of parts described at any time.

SAFETY PRECAUTIONS



CAREFULLY READ THE IMPORTANT SAFETY PRECAUTIONS and WARNINGS BEFORE PROCEEDING WITH THE INSTALLATION!

Appropriate disassembly, assembly methods and procedures are essential to ensure the personal safety of the individual performing the kit installation. Improper installation due to the failure to correctly follow these instructions could cause personal injury or death. Read each step of the installation manual carefully before starting the installation.

- Always wear safety glasses for eye protection.
- Place ignition switch in the OFF position.
- Always apply the parking brake when working on a vehicle.
- Block the front and rear tire surface to prevent unexpected vehicle movement.
- If working with a lift, always consult vehicle manual for correct lifting specifications.
- Operate the engine only in well-ventilated areas to avoid exposure to carbon monoxide.
- Do not smoke or use flammable items near or around the fuel system.
- Use chemicals and cleaners in well-ventilated areas.
- Batteries produce explosive gases, which can cause personal injury. Therefore, do not allow flames, sparks or flammable substances to come near the battery.
- Keeps hands and any other objects away from the radiator fan blades.
- Keep yourself and your clothing away from moving parts when the engine is running.
- Do not wear loose clothing or jewelry that can get caught in rotating parts or scratch surface finishes.
- Allow the engine, cooling system, brakes and exhaust to cool before working on a vehicle.

WORK SAFELY!

Perform this installation on a good clean level surface for maximum safety and with the engine turned off.

SECTION A — REMOVAL

The following section will guide you through the removal of the stock components. Special care should be taken to label fasteners and parts that are taken off during this procedure since many will be reused.

1. Cover both fenders with fender covers to protect the vehicle finish.
2. Disconnect the battery ground cable.
3. Release both clips holding the lid on the air box.



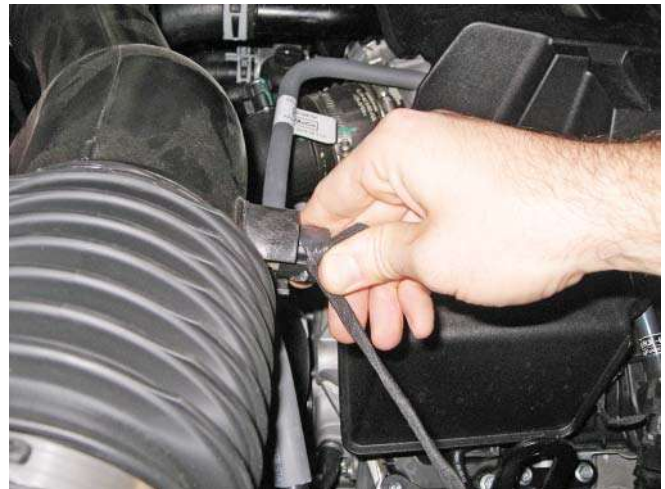
4. Loosen the clamp between the clean air tube and the passenger side turbo inlet.



5. Loosen the clamp between the clean air tube and the driver side turbo inlet.



6. Remove the IAT by twisting the sensor.



7. Remove the clean air tube and air box lid from the vehicle.



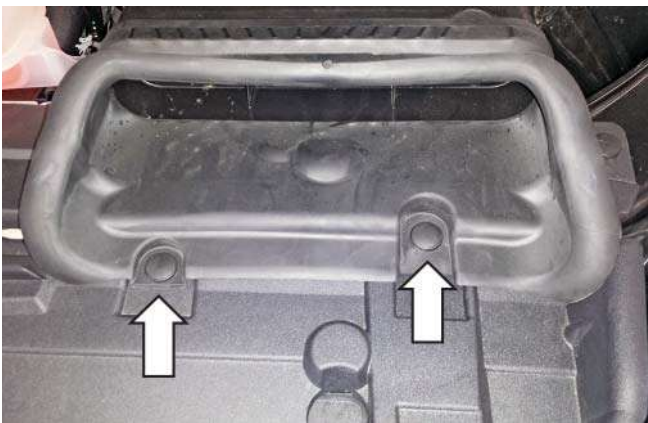
8. Remove the bolt retaining the stock air box to the inner driver side fender. Retain the bolt, sleeve and grommet for later use.



11. Remove the self-tapping screw retaining the dirty air inlet onto the lower air box.



9. Remove the two (2) push clips retaining the dirty air inlet duct to the grill closeout.



12. Remove the dirty air inlet from the lower air box.



10. Remove the lower air box and dirty air duct from the vehicle.



13. If necessary, remove the two (2) rubber grommets from the bottom of the air box and reinstall them into the tray below the air box.

SECTION B — INSTALLATION

1. Insert the dirty air inlet into the Roush air box (P/N: 1115-9A612). Reuse the self-tapping screw that was removed earlier. Tighten to 3 Nm.



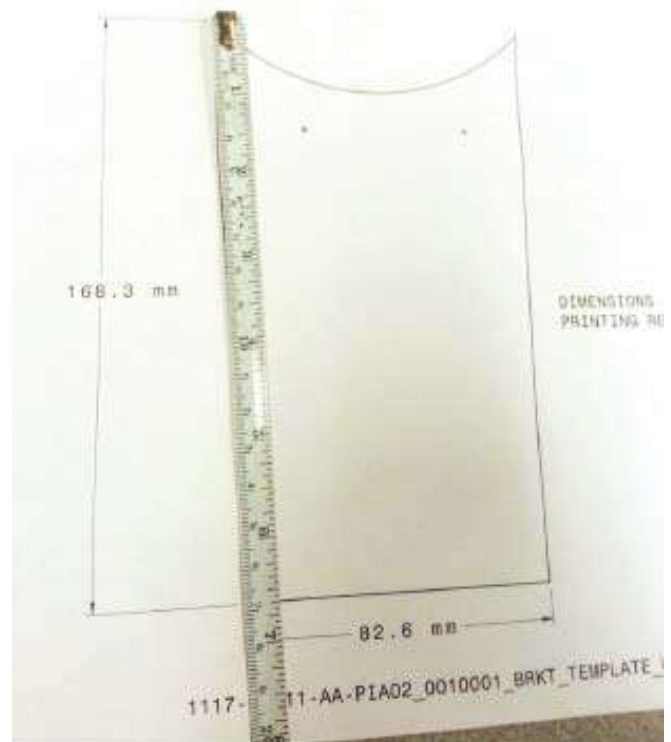
IMPORTANT: Do not remove the shown silencer rings.



2. Reinstall the bolt, grommet and sleeve into the driver side fender. Tighten the bolt to 17.5 Nm.



3. Print out the template and make sure the dimensions are correct. Cut out the template.



4. Tape the template to the side of the air box. Use a punch to mark the two (2) drill holes.



5. Drill the holes out using a 17/64" drill bit.



7. Install the Roush airbox into the truck by locating the two (2) bosses on the bottom of the box while aligned to the grommet.



6. Mount the bracket (P/N: 117-9B611) to the outside of the air box using two (2) M6 bolts (P/N: W500013-S307). Torque to 10 Nm.



8. Install the air filter (P/N: 131550-9601R) onto the filter tube (P/N: 111550-12B579) and tighten the clamp to 3 Nm. Make sure the filter is installed (as shown) with the metal rib down.



9. Slide the filter and tube assembly into the air box. Twist the IAT sensor into the port as shown.
NOTE: 2017 F-150 use the IAT sensor jumper harness (P/N: 117-12A690) to connect the IAT sensor.



11. Install couplers and clamps onto the clean air tube (P/N: 1115TT-9B660) as shown. Tighten the clamps retaining the coupler to the tube to 3 Nm, Leave the outside clamps loose (coupler: top P/N: 1115TT-9B663, bottom P/N: 1115TT-9B661, left P/N: 1115TT-9B662) (clamps: top P/N: R07130028-13, bottom P/N: R07130015-13 and P/N: R07130028-13, left P/N: 308707426).



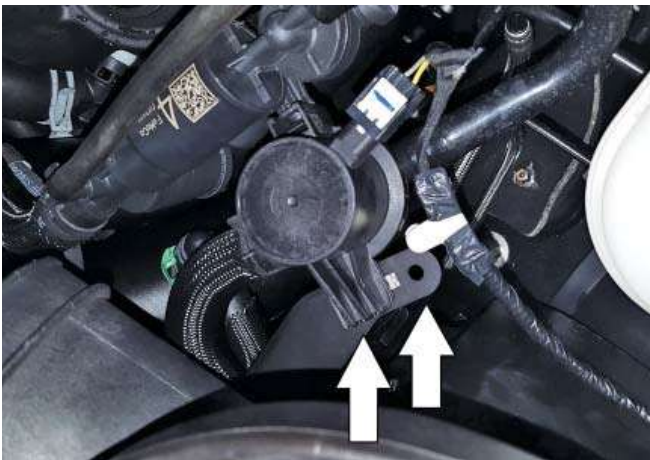
10. Install the two (2) M8 bolts (P/N: W500224-S437) and tighten to 10 Nm.

12. Install the clean air tube assembly between the throttle body and the air box. Tighten the clamps to 3 Nm.



13. Clip the harness and vacuum line into position on the air box bracket.

15. Install the air box cover (P/N: 1118-9643HC) as shown. Fasten to the air box tray using the provided six (6) self tapping screws (P/N: W506976-S437).

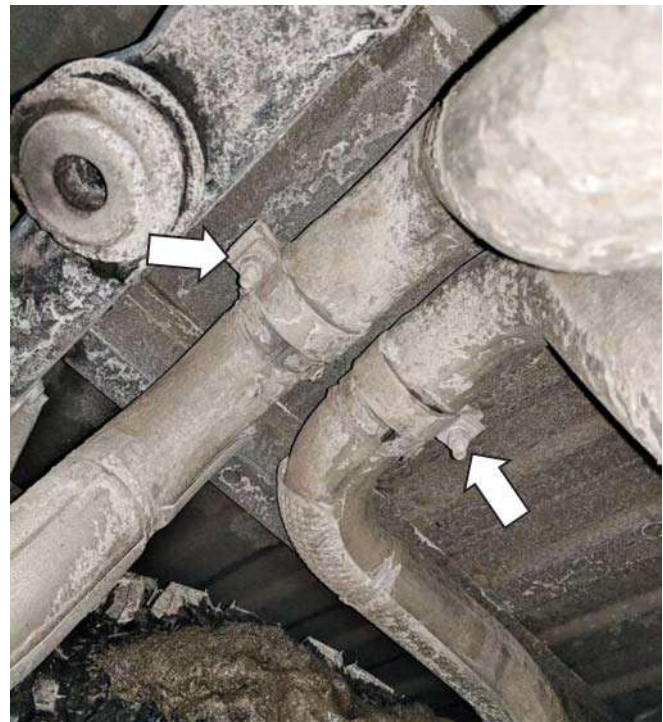
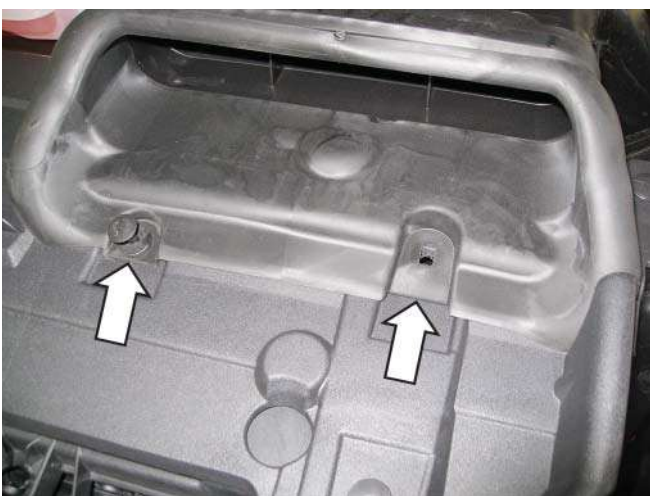


14. Reinstall the two (2) push pins into the dirty air inlet.

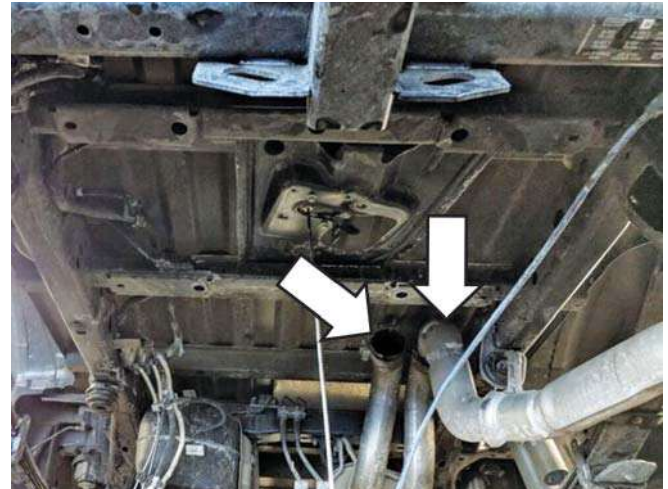
SECTION C — DISASSEMBLY

The following section will guide you through the disassembly and removal of the stock components. Longer wheelbase vehicles will also have an intermediate pipe (not shown) between the factory resonator and the muffler.

1. Lower the spare tire according to the owner's manual.
2. Loosen the clamps that separate the intermediate pipes to the over-axle rear tailpipes and slide out of the way. (15 mm socket)



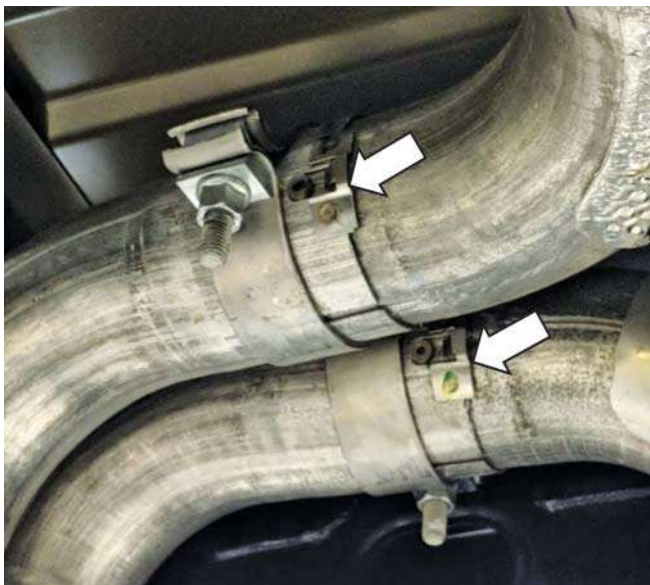
3. Remove the rear exhaust hangers holding the tips to the rear bumper bracket, and slide off of the hanger. (10 mm socket)



Driver side removed; remove passenger side

5. Loosen the front intermediate pipe clamps. (15 mm socket)

4. Remove the driver and passenger side of the over-axle pipe from the vehicle by using a flat-head screwdriver to bend up the tab on the exhaust alignment feature. Proceed with the removal process.



Front of vehicle

6. Remove the intermediate pipe and the muffler from the vehicle by sliding towards the rear of vehicle.

SECTION D — ASSEMBLY

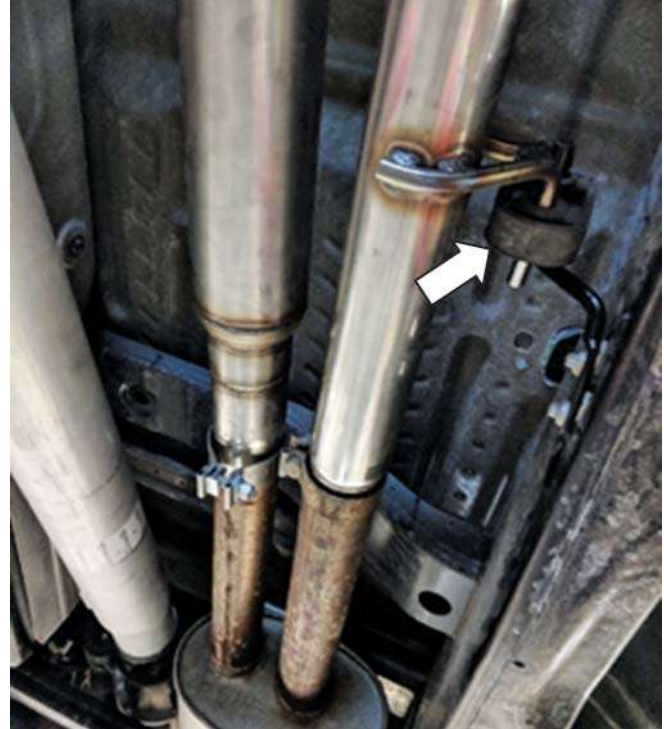
The following section will guide you through the assembly and installation of the ROUSH components.

EXHAUST HARDWARE INSTALL

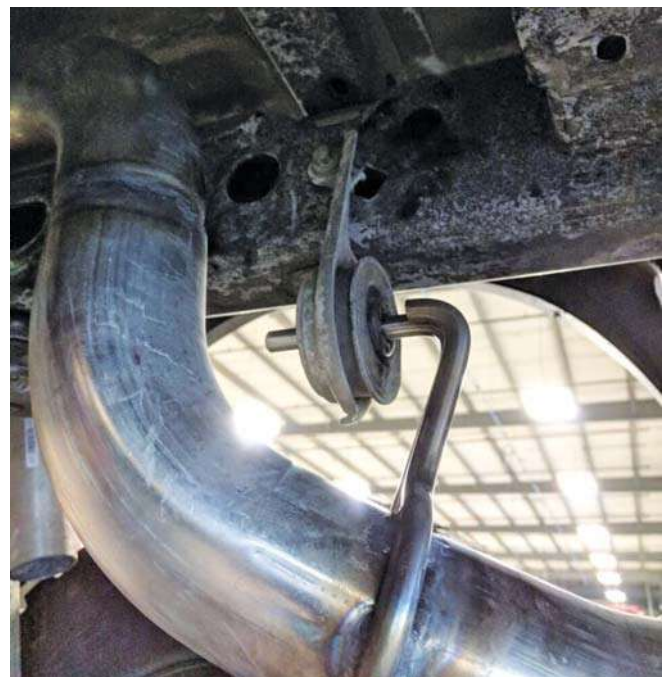
1. Slide the new 2.75" clamp (PN: 10271) onto the driver side bullet muffler (PN: 1117HO-5231) and insert it into the factory system as shown. Be sure to insert the new hanger onto the over-axle isolator before sliding it onto the front axle pipe.



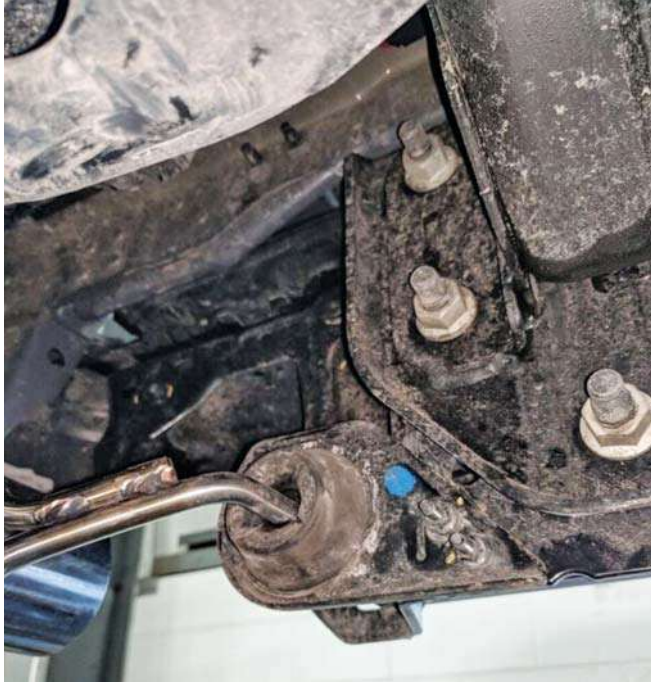
2. Install the passenger side bullet muffler (PN: 1117HO-5230) onto the OEM front section of the exhaust as shown. Be sure to align the exhaust hanger in the isolator.



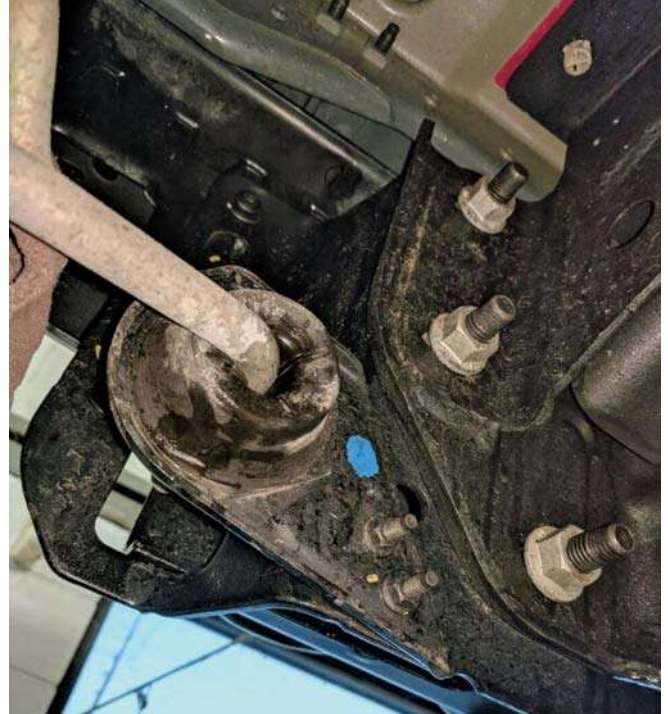
3. Install a new 3" clamp (PN: 10-0439) over the passenger over-axle pipe (PN: 1117HO-5C265) and install the passenger over-axle pipe onto the vehicle. Be sure to first align the hanger to the isolator.



- Slide the hanger removed during step 3 of the Disassembly procedure and install it on the new rear hanger. (10 mm socket) Torque the bolts to 25 Nm.



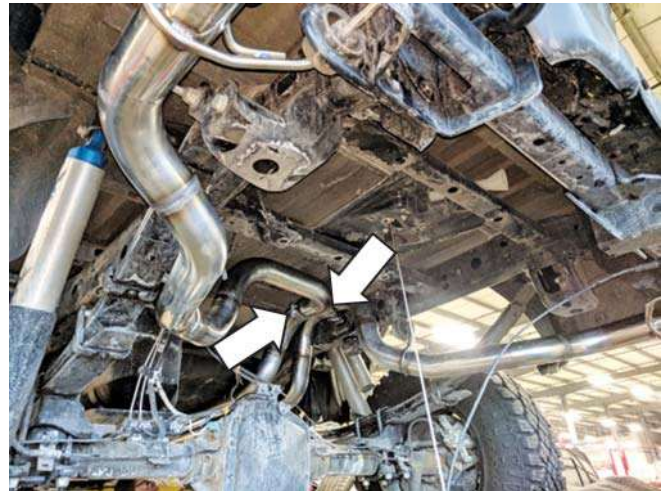
- Slide the driver side hanger removed during step 3 of the Disassembly procedure onto the new rear hanger. (10 mm socket) Torque the bolts to 25 Nm.



- Slide a new 3" clamp (PN: 10-0439) onto the passenger side over-axle pipe (PN: 1117HO-5C264). Insert the hanger through the isolator before aligning the system to the driver side bullet muffler.



The clamp orientation is shown.



- Slide the 3" clamps (PN: 10-0439) onto the exhaust tips and slide onto the rest of the system. Align the tips evenly on both sides of the vehicle.



2. Once the PCM has been successfully recalibrated, start the engine and check for unusual noises, dash service lights, and unusual operation. If problems are detected, immediately stop the engine or vehicle, diagnose and repair the problem.



8. Starting from the front of the vehicle, tighten the clamps in the following order with the torque values. Be sure the system is aligned properly:
 - a. Front 2.75" and 3" clamps: 55 Nm
 - b. Over-axle 3" clamps: 55 Nm
 - c. Tip 3" clamps: 55 Nm
9. Reinstall the spare tire according to the owner's manual.

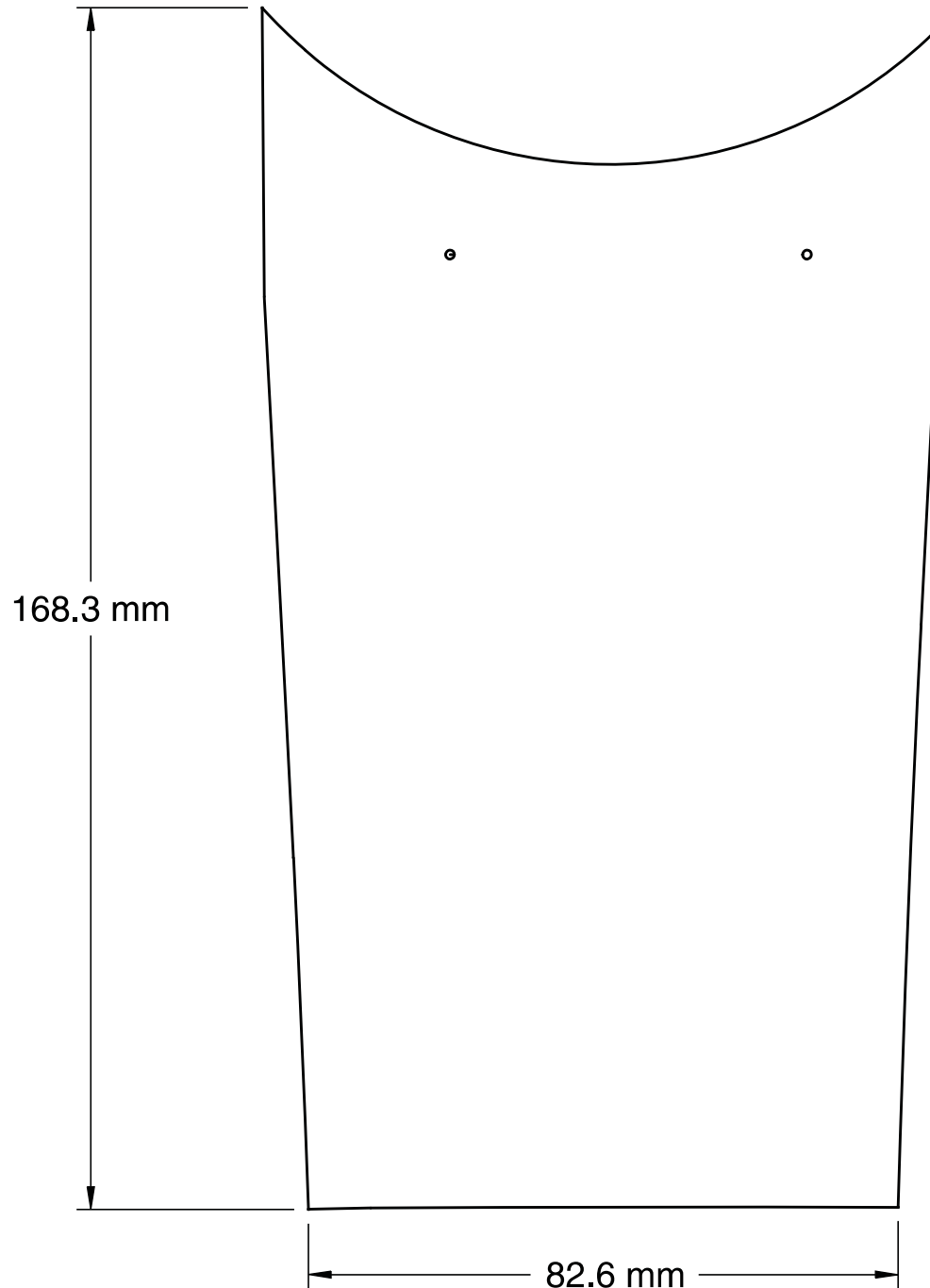
Congratulations, the installation is complete!

SECTION E — PCM FLASHING

Proceed with steps 1-2 if you have a SAE J2534 pass through device (Puma, VCM I, VCM II).

If you do not have a SAE J2534 device, visit your local ROUSH Dealer or Performance Shop with the appropriate tools for PCM Calibration.

1. If equipped with a SAE J2534 pass through device, refer to the RDT-CALIM manual found on our website <http://rdt.roush.com>. The RDT-CALIM manual will guide you through the ROUSH Diagnostic Tool (RDT) software installation process and the ROUSH PCM flashing procedure detailed in the RDT-CALIM.



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