

PowerMax Direct Fit Performance Intercooler 2011-2019 3.2L Ford Ranger PXI PXII & Mazda BT-50

Bill of Materials and Precautions

Application: 2011-2019 3.2L Ford Ranger PXI PXII & Mazda BT-50

Part Number: 881649-6001

Part List:			Tools Needed
Item	Description	QTY	<ul style="list-style-type: none"> • Ratchet and metric sockets: 10mm, 8mm, 7mm • Socket extensions, various sizes • Screwdrivers and pick tools: flat blade and Phillips, various sizes, • Floor jack and 2 jack stands rated for weight of vehicle, or vehicle lift
1	Intercooler	1	
2	Bolt	1	

IMPORTANT INFORMATION - PLEASE READ CAREFULLY



We recommend that this Garrett product be installed by a qualified automotive technician. If you have any doubts as to your ability to install this product, consult with a local automotive repair company. Please be sure to carefully read all of the attached instructions prior to starting the installation process. If you have any questions about the enclosed parts or the instructions, call the distributor that you purchased the kit from for clarification. Prior to the Garrett product installation, be sure that the vehicle is parked on a level surface and the engine is cool. Engine fluids and components can be extremely hot following normal vehicle operation. Avoid direct contact of engine fluids or components with your skin which may cause personal injury.

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Import Information – Please Read Carefully

Return Policy Only unused and complete merchandise will be accepted for return subject to inspection and acceptance by Garrett - Advancing Motion. No goods will be accepted without prior return authorization from Garrett - Advancing Motion. No returns are accepted after thirty (30) days from original ship date from Garrett. All accepted returns are subject to a 20% restocking charge - NO EXCEPTIONS.

Damaged Shipments The customer must file a claim with the shipping company if goods arrive in a damaged condition. The customer must also notify the distributor from which the goods were purchased with pertinent information.

Refused Shipments Sending a shipment back to Garrett Advancing Motion does not automatically give rise to a complete refund or credit. Garrett Advancing Motion may, at its sole discretion require different payment means for any shipment refused and then reshipped. It is the customer's responsibility to make all arrangements with Garrett Advancing Motion for disposition of refused shipments.

Shortage or Discrepancy Claim Shortage or Discrepancy claims must be reported within forty-eight (48) hours of receipt of goods to the distributor from which the goods were purchased. The Garrett distributor will determine the best solution on how to address shortages or discrepancies.

Limited Warranty Garrett Advancing Motion warrants to the original purchaser of its Products that such Products will, for a period of 1 year from date of shipment and subject to the Limitations on Warranty, be free from defects in materials and workmanship. For approved warranty claims Garrett Advancing Motion will, at its sole discretion, either credit the original purchaser in an amount equal to the original purchase price, or replace the applicable product free of charge, within 60 days of Garrett Advancing Motion approval. This is the purchaser's sole and exclusive remedy and provides the complete financial responsibility of Garrett Advancing Motion for a warranty claim. To be eligible for reimbursement, Customer must (a) submit all warranty claims to Garrett Advancing Motion within 30 days of the discovery of the alleged product defect; and (b) complete and return a Returned Material Authorization Form. Consumers are required to work through a Garrett Advancing Motion distributors in order to process any warranty claims. When Garrett Advancing Motion requires the examination of a failed part, Garrett Advancing Motion will promptly notify Customer and will await receipt of the failed part before further processing the warranty claim. If Garrett Advancing Motion ultimately determines that the failed part is covered under the Limited Warranty, Garrett Advancing Motion will reimburse Customer for the actual cost of ground shipment for any part found to be defective.

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Limitations on Warranty The Limited Warranty does not apply to any parts: (a) not used in accordance with Garrett Advancing Motion's written instructions (b) for which no fault is found; (c) that have been modified in any manner not specifically approved by Garrett Advancing Motion; (d) for which an inspection indicates that reasonable and proper installation and/or preventative care and maintenance has not occurred; (e) that have been subject to damage attributable to or caused by misuse, abuse or vandalism; mishandling, improper shipping or other transit related damage; acts of god or insurrection; foreign object entry; any part not supplied by Garrett Advancing Motion; any repair, maintenance or service by anyone other than Garrett Advancing Motion; or any other acts that are beyond Garrett Advancing Motion's reasonable control; or (f) attributable to parts not supplied by Garrett Advancing Motion. Garrett Advancing Motion expressly disclaims any and all warranties relative to the foregoing circumstances.

Garrett Advancing Motion shall not be liable to Customer under any circumstances for any special, incidental or consequential damages, including without limitation, damage to or loss of property other than for Thermal Products; damages incurred in installation, repair or replacement; lost profits, revenue or opportunity; loss of use; losses resulting from or related to downtime of Thermal Products; the cost of replacement transportation, power, or compression; the cost of substitute products; or claims of third parties for such damages, howsoever caused, and whether based on warranty, contract, and/or tort (including negligence, strict liability or otherwise).

The Limited Warranty is the only warranty made by Garrett Advancing Motion for any of its thermal related parts and/or services, and is in lieu of and excludes all other warranties, expressed or implied, including warranties of merchantability or fitness for a particular purpose. Garrett Advancing Motion hereby disclaims all other warranties not expressly set forth. Some jurisdictions do not allow for the exclusion of implied warranties, so the above exclusions may not apply to you, however if implied warranties do apply they are limited to the original purchaser and for a period of one (1) year from the date of shipment.

Diagnosing Your Vehicle Do not rely on diagnostic software without seeking the advice of an ASE certified mechanic. Diagnostic software should only be used as a general guideline to help you facilitate the repair of your car. If you experience or suspect any malfunction of vital safety equipment, such as your brakes, exhaust, motor, transmission, fuel delivery system, your car's structural integrity or any other potentially life threatening malfunction, cease use immediately.

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Other Precautions Observe all safety precautions and warnings contained in the installation instructions. Wear eye and ear protection and appropriate protective clothing. When working under or around the vehicle support it securely with jack stands. Use only the proper tools. Exercise extreme caution when working with flammable, corrosive, and hazardous liquids and materials.

Legal Information You are responsible for ensuring that the use of this product complies with all applicable federal, state or local laws, regulations and ordinances. This product may also be used on racing vehicles that will never be driven on public roads or highways.

Contact Information for Questions Please contact the Garrett distributor from which the equipment was purchased for any questions regarding this Shipping/Returns/Cancellation Policy, for notifications to Garrett Advancing Motion, and for instructions on processing damaged shipments and authorized returns.

Important Product Information: Garrett Vehicle Specific Intercoolers are professional aftermarket products only designed for certain vehicles. Any vehicle modifications using Garrett Vehicle Specific Intercoolers are AT YOUR OWN RESPONSIBILITY and AT YOUR OWN RISK. Only use Garrett Vehicle Specific Intercoolers in compliance with all applicable laws, regulations and ordinances (including but not limited to emission, noise, operating license, performance, safety and type-approval aspects). A vehicle modification using Garrett Vehicle Specific Intercoolers may particularly affect or void a vehicle's warranty, operating license or type-approval. You should particularly consult the owner's manual and service manual of your vehicle. You should also contact your vehicle's manufacturer to determine what effects modifications may have on important aspects such as safety, warranty, performance etc.

Garrett Advancing Motion
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Installation Instructions

Removing the OEM Air Dam

1. With the truck in park, and the engine off, and cool, open the hood and make sure the prop is securely attached. Identify the plastic air dam and remove the pop clips. With a flat head screw driver pop up the head and remove the clip. Set clips aside and do not damage them. You will need them later to re-install the air dam.
2. Once the pop clips are removed, tilt the rear of the air dam up. Reach an arm under the air dam towards the grill and locate the (4) tabs that attach the air dam to the grill. Unlock the tabs and remove the air dam. Use extra caution not to break off the tabs.

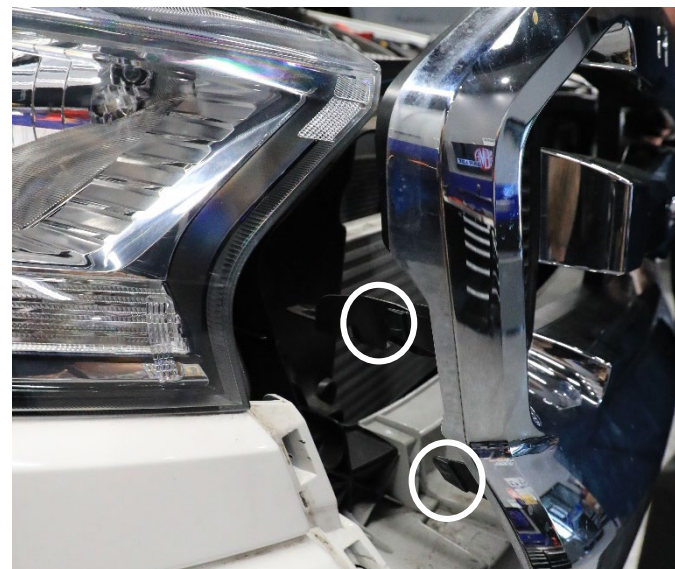


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Installation Instructions

Removing the OEM Grill

3. Using a ratchet and 10mm socket, remove the (2) upper grill bolts.
4. Using a ratchet with a long extension and 10mm socket, remove the (2) lower bolts behind the headlights.
5. With a T-25 torx bit, remove the (2) screws attaching the grill to the bumper. These can be reached from the lower grill opening.
6. There are (4) plastic locking tabs holding the lower grill to the bumper. From the lower bumper opening, locate these tabs and carefully release them. There are (2) additional tabs per side that will need to be released as the grill is removed. Remove grill and detach all locking tabs.



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Installation Instructions

Removing the OEM Bumper

7. Separate the wheel tub liner from the bumper by removing the (3) 7mm bolts, and the (2) plastic push rivets. Repeat process for both sides. Do not remove liner.
8. Separate the lower air dam from the bumper by removing the (4) 10mm bolts along the bottom of the bumper.
9. Remove the (4) pop clips securing the top of the bumper.
10. Reach behind the bumper and disconnect the fog lights and the driver assist sensor if enabled.
11. Starting with the wheel well sides of the bumper, gently unclip the bumper from the fender. Follow the process and work your way towards middle of the grill to detach all points. You are now ready to remove the bumper. Using a helper, support the bumper at each corner and simultaneously separate the bumper from the truck. Ensure no wires are connected as the bumper is separated. Set in a place where the bumper will not get scratched.

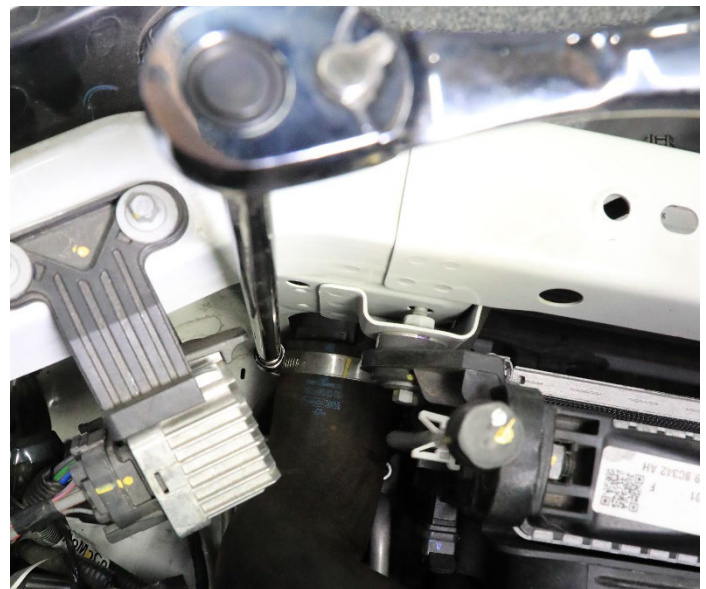
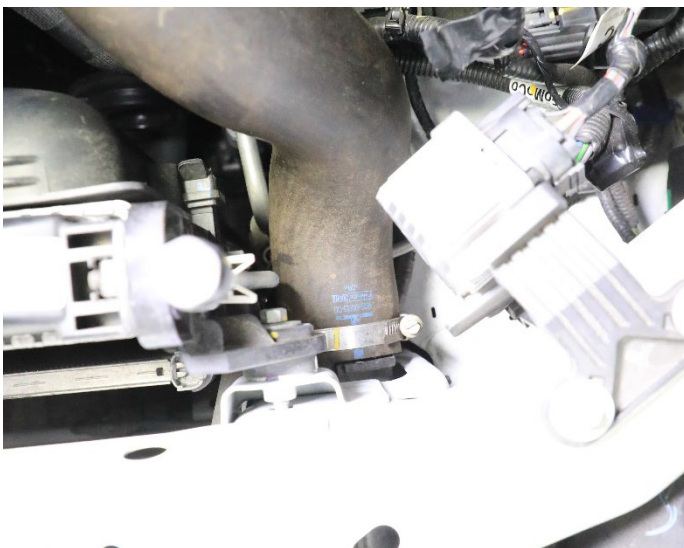
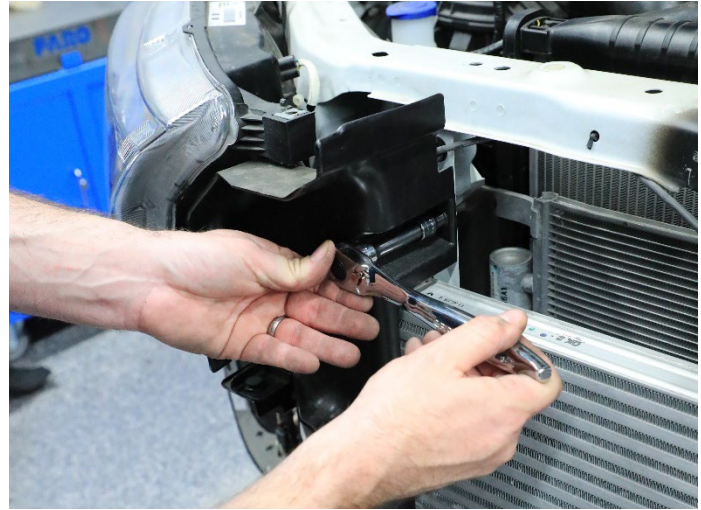


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Installation Instructions

Removing the OEM Intercooler

12. Remove the (2) plastic shrouds covering the intercooler end tanks. Using a ratchet and 8mm socket, remove the (2) bolts that secure each bracket. Repeat for both sides. Remove brackets. The right side bracket has an air temp sensor attached to it. Carefully remove the entire sensor because this will be installed in a different location later in the install process.
13. Remove the intercooler MAP sensor screw using a T-30 torx bit. Remove the screw. Carefully remove the sensor from the end tank and set aside.
14. Detach the left and right charge air tubes from the intercooler ports. Using a 7mm socket and ratchet loosen the worm gear clamps. Use your hand and detach the tube from the intercooler



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Installation Instructions

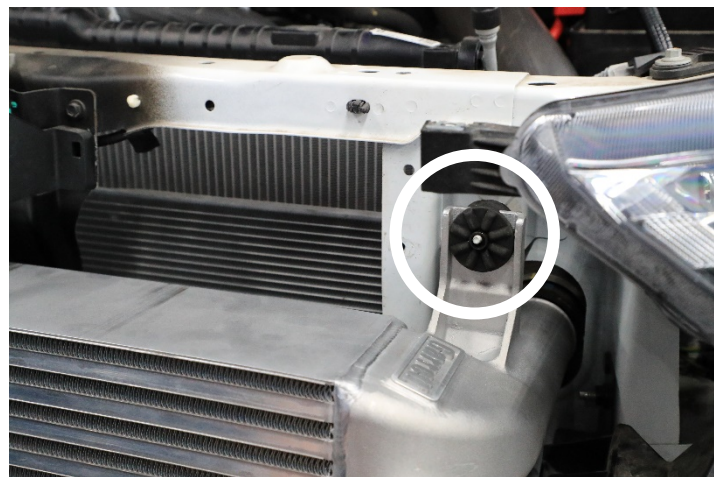
Removing the OEM Intercooler

15. Using a ratchet and 10mm socket, remove the (2) lower intercooler bolts. Remove the (2) upper intercooler nuts. The intercooler should stay supported by the threads from the upper mount. Be cautious it does not slide off. Next remove the OEM intercooler.
16. Remove rubber bushings from the OEM intercooler. Use caution not to tear the rubber. First push out the metal sleeve from all (4) bushings. Next gently roll the bushing out of the tab. Once all (4) bushings are out, put the bushings and sleeves into the Garrett Intercooler Core. Your Garrett cores is ready to be installed.



Installing the Garrett Intercooler

17. Place the Garrett core back into the opening. Align the inlet and outlet tubes with the rubber charge pipes. Make sure the upper tab and metal sleeve are aligned with the threaded rod. Take the (2) upper bracket nuts and hand tighten the nuts to the threaded rod. Once the intercooler is secure, install the (2) lower intercooler bolts using a ratchet and 10mm socket. Tighten the (2) upper intercooler nuts.



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Installation Instructions

Installing the Garrett Intercooler

18. Attach the charge pipes to the intercooler inlet and outlet ports. Double check the rubber is seated over the rib and as much of the rubber charge tube is seated on the inlet and outlet ports. Next, tighten the worm gear clamp for each of the inlet and outlet ports.
19. Install the MAP sensor. Lubricate the o-ring before installing in the intercooler. Once the sensor is in the intercooler port, use a ratchet and (1) supplied 10mm bolt to tighten the sensor to the intercooler.
20. Take the air temp sensor and cut off the non-ribbed barb. Insert the ribbed barb into the existing hole on the grill bracket pictured below in figure A

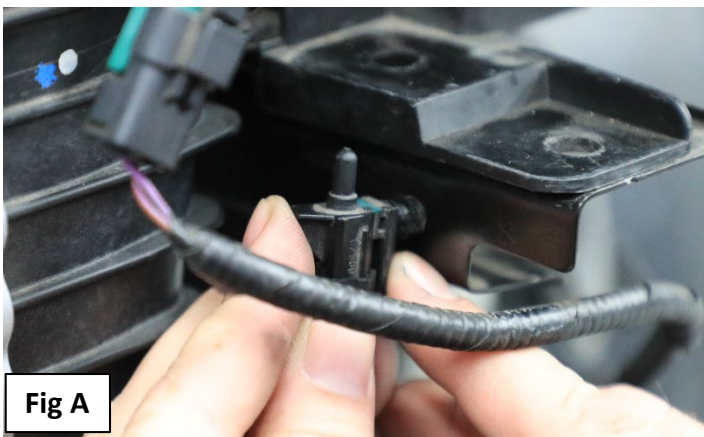
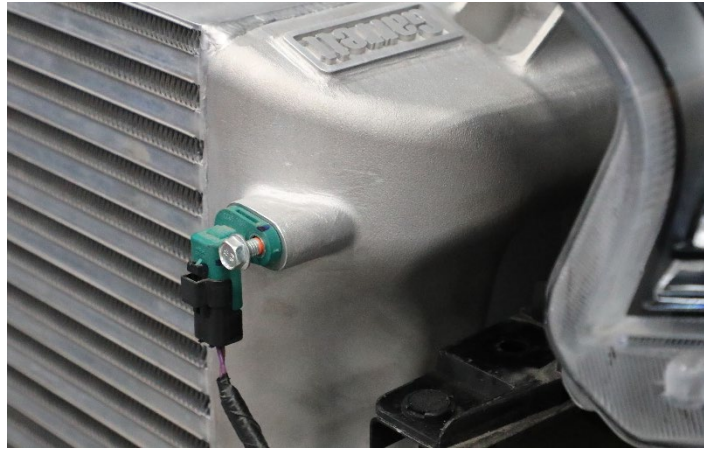


Fig A

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Installation Instructions

Installing the Garrett Intercooler

21. Now that the intercooler is installed. Double check the charge tubes are attached and the clamps are tightened. Check the MAP sensor is attached and tightened and the air temp sensor is connected and attached to the grill bracket.
22. Start the engine and check for air leaks around the charge tubes and MAP sensor. Once satisfied, turn off the engine.



Installing the bumper

23. Using a helper, support the bumper at each corner and simultaneously attach the bumper to truck. Ensure no wires are pinched as the bumper is connected. Starting from the center, gently clip the bumper to the brackets. Work your way towards the wheel wells and clip in the corners.
24. Reach behind the bumper and connect the fog lights and the driver assist sensor if enabled.
25. Attach the (4) pop clips securing the top of the bumper.
26. Connect the lower air dam to the bumper by attaching the (4) 10mm bolts along the bottom of the bumper.
27. Connect the wheel tub liner to the bumper by attaching the (3) 7mm bolts, and the (2) plastic push rivets. Repeat process for both sides.



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Installation Instructions

Installing the OEM Grill

28. Take the OEM grill and align all the tabs to the correct openings. Apply even pressure across both sides of the grill and ensure all tabs are secure. Apply even pressure across the top and bottom of the grill to ensure the upper and lower tabs are in.
29. Using a ratchet with a long extension and 10mm socket, tighten the (2) lower bolts behind the headlights. Using a ratchet and 10mm socket, attach the (2) upper grill bolts.
30. With a T-25 torx bit, tighten (2) screws attaching the grill to the bumper. These can be reached from the lower grill opening.



Installing the OEM air dam

31. To install the air dam, align the tabs on the bottom of the air dam with the slots on the upper grill. Keeping the air dam as flat as possible snap the air dam in place. Install and lock the pop clips into place.
32. The installation is finished. Please double check all connections are securely attached and that there are no "extra" bolts or clamps. There shouldn't be anything besides the torx screw from the sensor that was replaced by the supplied bolt.

