



10-RIB BELT SYSTEM UPGRADE INSTALLATION MANUAL

2011-2017 AND UP FORD MUSTANG GT 5.0L COYOTE



WHIPPLE SUPERCHARGERS

3292 NORTH WEBER AVE

FRESNO, CA 93722

TEL 559.442.1261

FAX 559.442.4153

WWW.WHIPPLESUPERCHARGERS.COM

*A COLOR PDF OF THIS MANUAL IS AVAILABLE, EMAIL
TECH@WHIPPLESUPERCHARGERS.COM FOR A COPY*

INTRODUCTION

Before beginning installation, please read this manual and important notes:

- Please read the installation manual and verify that all items are present. If you are missing hardware or have any questions, please contact your dealer or Whipple Superchargers.
- COMPETITION BASED PRODUCT MAY BE USED SOLELY ON VEHICLES USED IN SANCTIONED COMPETITION WHICH MAY NEVER BE USED UPON A PUBLIC ROAD OR HIGHWAY, UNLESS PERMITTED BY SPECIFIC REGULATORY EXEMPTION (VISIT THE "EMISSIONS" PAGE AT [HTTP://WWW.SEMASAN.COM/EMISSIONS](http://www.semasan.com/emissions) FOR STATE BY STATE DETAILS.
- COMPETITION BASED PRODUCT IS LEGAL IN CALIFORNIA ONLY FOR RACING VEHICLES WHICH MAY NEVER BE USED, OR REGISTERED OR LICENSED FOR USE, UPON A HIGHWAY.
- IT IS THE RESPONSIBILITY OF THE INSTALLER AND/OR USER OF THIS PRODUCT TO ENSURE THAT IT IS USED IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

RECOMMENDED TOOLS AND SUPPLIES

The following items are not included in this supercharger kit and it is strongly recommended that they're used for ease of installation or maximum performance:

Torque Wrench

3/8" and 1/2" torque wrenches are required during installation.

Tools

Safety glasses, 3/8", 1/2" assorted metric socket set, 5mm ball head allen, 1/2" breaker bar.

Clean Shop Towels

Use these to keep the installation area clean.

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 personally injury or death. Read each step of the installation manual carefully before starting the installation.

- Always wear safety glasses for eye protection.
- Place the ignition switch in the off position.
- Always apply the parking brake when working on vehicle.
- Block the front and rear tire surfaces to prevent unexpected vehicle movement.
- Operate the engine only in well-ventilated areas to avoid exposure to carbon monoxide.
- Do not smoke or use flammable items near or around fuel system.
- Use chemicals and cleaners only in well-ventilated areas.
- Batteries can produce explosive hydrogen gas which can cause personal injury. Do not allow flames, sparks or flammable sources to come near the battery.
- Keep 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 be caught in rotating or moving parts.

GLOSSARY OF TERMS

ABBREVIATION	DESCRIPTION
ACT	Air Charger Temperature
DTC	Diagnostic Trouble Code
ECT	Engine Coolant Temperature
EGR	Exhaust Gas Recirculation
ETC	Electronic Throttle Control
EVAP	Evaporative emissions system
FHSCS	Flat Head Socket Cap Screw
IAT	Inlet Air Temperature
IC	Intercooler
ID	Internal Diameter
LB-IN	Pound-force inch
LB-FT	Pound-force foot
LTR	Low temp radiator
MAF	Mass Air Flow
MAP	Manifold Absolute Pressure
MY	Model Year
OBD	On Board Diagnostics
OD	Outside Diameter
PCV	Positive Crankcase Ventilation
PSI	Pound per Square Inch
SC	Supercharger
SHCS	Socket Head Cap Screw
TPS	Throttle Pressure Sensor
TRQ	Torque



****NOTICE:** Installation of Whipple Supercharger products signifies that you have read this document and have agreed to the terms stated within.

It's the purchaser's responsibility to follow all installation instruction guidelines and safety procedures supplied with the product as it's received by the purchaser to determine the compatibility of the product with the vehicle or the device the purchaser intends to install the product on.

Whipple Superchargers assumes no responsibility for damages occurring from accident, misuse, abuse, improper installation, improper operation, lack of reasonable care or all previously stated reasons resulting from incompatibility with other manufacturer's products.

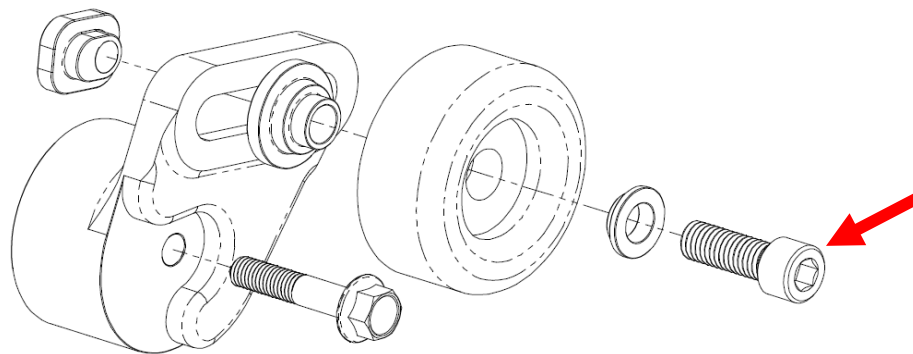
There are no warranties expressed or implied for engine failure or damage to the vehicle in any way, loss of use or inconvenience or labor reimbursement. This includes merchantability and fitness.

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. Whipple Superchargers reserves the right to revise the information presented herein or to discontinue the production of parts described at any time.

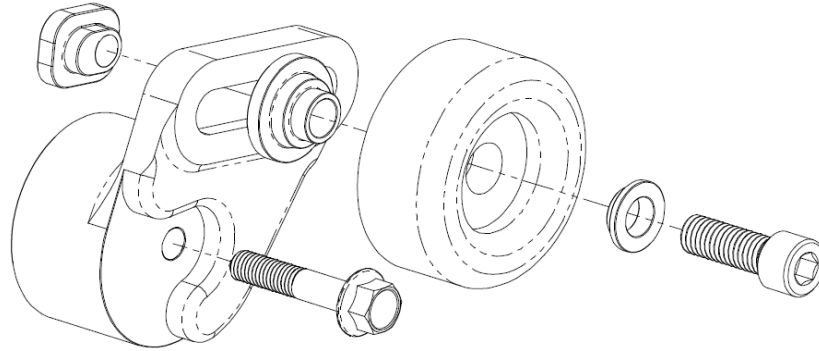
10-RIB BELT SYSTEM INSTALLATION INSTRUCTIONS

It is strongly recommended that you read through this guide **before** you begin installing the 10-Rib upgrade.

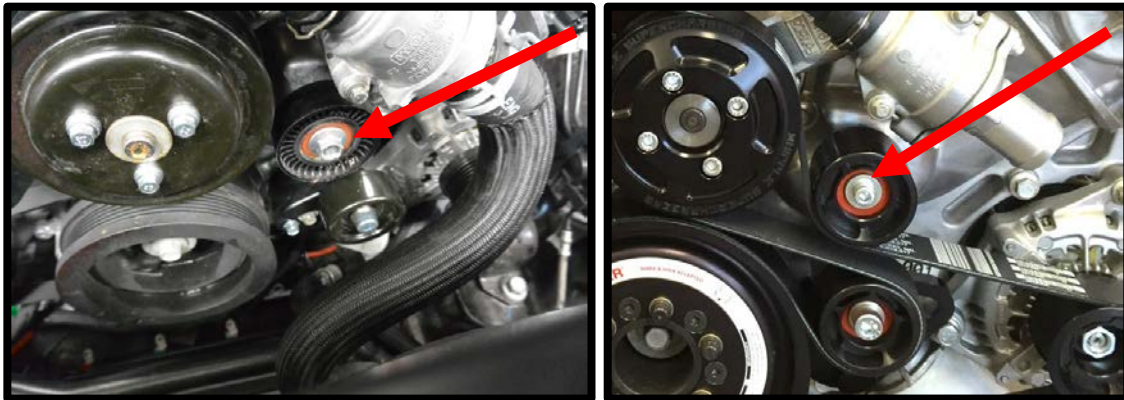
1. Using an air hose, blow off any loose dirt or debris from engine compartment. If really dirty, then steam clean the engine compartment before proceeding to the next step.
2. Lift the front of the vehicle using the Ford recommended lifting points and place on to safety stands.
3. Loosen the factory water pump pulley, do not remove until after removing the belt.
4. Remove the supercharger pulley by removing the (4) 6mm x 12mm SHCS. To remove, loosen the (4) 6mm bolts but do not remove. Use a ½" breaker bar to loosen the tension on the spring loaded tensioner. Remove the SC belt. Remove the (4) 6mm x 12mm SHCS.
5. Remove the water pump pulley from the engine.
6. Remove the spring loaded tensioner from the Whipple idler bracket, this will not be reused.
7. Remove the alternator pulley from the alternator by removing the factory nut.
8. Using a puller, remove the factory balancer from the engine.
9. Install the supplied ATI hub using a long reach installer or the supplied 12mm x 130mm bolt and washer from the ARP bolt kit.
10. Install the supplied ATI balancer to the ATI hub and torque to the ATI specs (use supplied ATI manual). Use the supplied ARP #156-2502 12mm bolt and washer to secure balancer to engine.
11. Remove the adjustable idler pulley and step spacer from the adjustable idler arm by removing the ½"-13 x 1 ¾" SHCS.



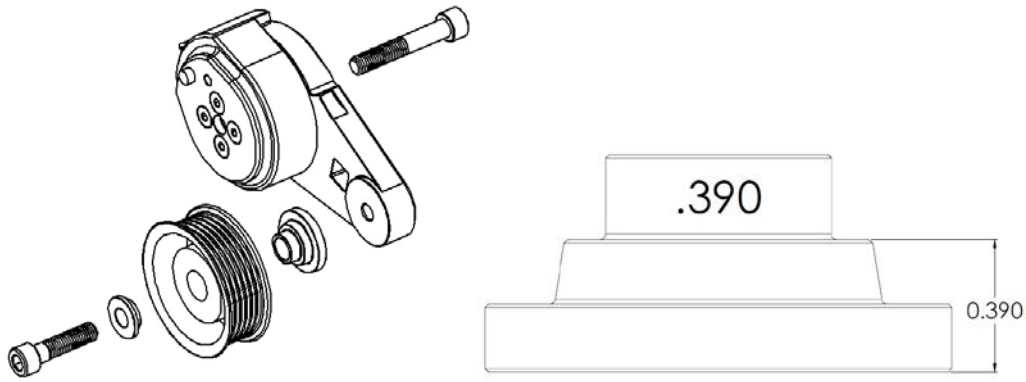
12. Install the supplied billet 10-rib smooth idler pulley (snap ring faces the engine) to the adjustable idler position using the supplied .250" step spacer against the adjustable idler arm. Sandwich the billet smooth idler pulley to the step spacer and the supplied step washer to front side of idler. Install the supplied "tee" nut to the back side with the offset hole facing the driver side. Secure with the supplied ½"-13 x 2" SHCS and torque to 30 lbs-ft. Use light amount of anti-seize on threads.



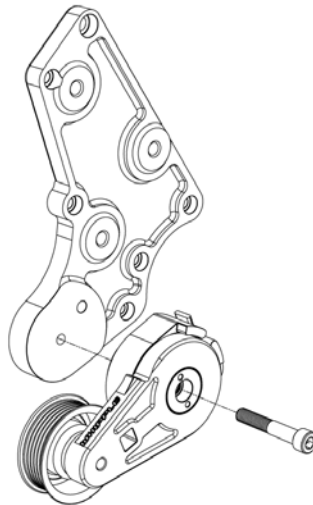
13. Remove the 6-rib smooth idler pulley from the engine. Replace with the supplied 10-rib billet smooth idler pulley with the .260" back spacing to the factory location, with the snap ring facing the engine. Use the supplied 8mm x 35mm SHCS with the 8mm step washer to secure. Torque to 22 lbs-ft.



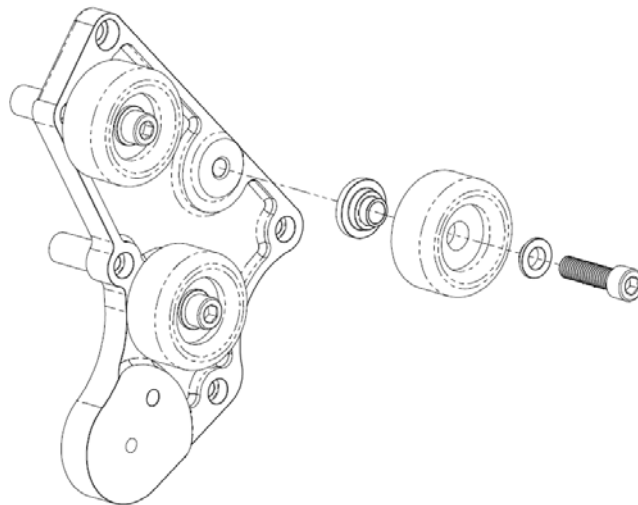
14. Assemble the spring-loaded tensioner by mounting the supplied .390" spacer with the female register to the spring-loaded tensioner. Install the grooved idler pulley to the spring-loaded tensioner and spacer. Use the supplied step washer to center the bearing and the 10mm x 60mm SHCS bolt to secure idler to tensioner. Use light amount of anti-seize on threads. Torque to 18 lbs-ft.



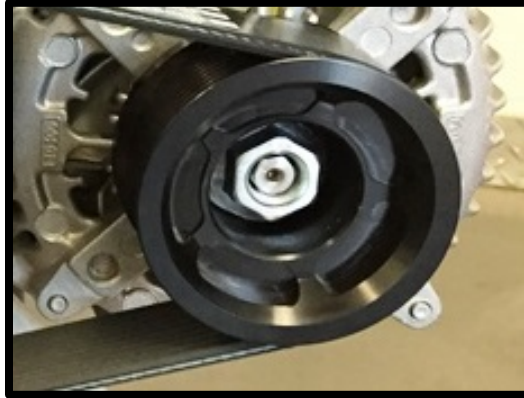
15. Install the spring-loaded tensioner to idler plate, locating the tang into position. Secure with the supplied 10mm x 60mm SHCS. Use light amount of anit-seize on threads. Torque to 25 lbs-ft.



16. Install the supplied (3) billet smooth idler pulleys to the idler plate using the (3) .250" step spacers with the snap ring facing the engine. Sandwich the idler pulley to the step spacer using the supplied (3) step washer and (3) 1/2"-13 x 2 1/4" SHCS and torque to 30 lbs-ft. using a 3/8" allen socket. Use light amount of anit-seize on threads.



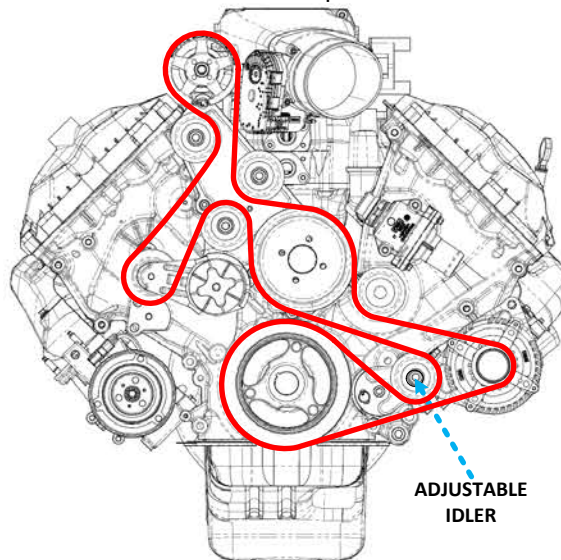
17. Install the supplied billet 10-rib grooved alternator pulley and secure using the supplied steel nut.



18. Install the supplied 10-rib water pump pulley. Use the supplied (3) 8mm x 20mm SHCS. (11-14 uses 4qty).



19. Install the supercharger pulley using the supplied (4) 6mm x 12mm SHCS using a 5mm allen socket. Leave hand tight until belt installation.
20. Install the supplied supercharger belt by following the routing diagram. Once in position, lock the adjustable idler pulley by torqueing the SHCS to 30 lbs-ft. **NOTE:** It's good to set the tensioner at 75-80% of its travel when belt is cold. If setup at max open position, the tensioner will consistently hit its stop. If setup near its full close position, then the tensioner will not continue to apply torque to the belt during belt stretch and will allow it to jump or walk. Use the adjustable idler to set the tensioner in its correct position.



21. Torque the supercharger (4) 6mm x 12mm SHCS bolts to 130 lbs-in using a 5mm allen socket.
22. Inspect belt system, readjust if necessary. It's common for the belt to stretch after first use.
23. After the initial test drive, go through the belt tensioner process again. When next you start driving, gradually work the vehicle to wide open throttle runs. Listen for any engine detonation (pinging). If engine detonation is present, let up on the throttle immediately. Most detonation causes are low octane gasoline still in the tank.
24. If you have questions about your vehicles performance, please check with your installation facility or call Whipple Superchargers at 559.442.1261, Monday through Friday from 8am to 5:00pm, pacific time or email questions to tech@whipplesuperchargers.com.

PULLEY/BELT LENGTH GUIDE	
6-RIB	
SC Pulley	Stock Balancer
4.000"	103.3"
3.875"	103.3"
3.750"	103.1"
3.625"	103.1"
3.500"	102.5"
3.375"	102.5"
3.250"	102.0"
3.125"	102.0"
3.000"	101.5"
2.875"	101.5"
2.750"	101.0"

PULLEY/BELT LENGTH GUIDE		
10-RIB		
SC Pulley	Stock Balancer	20% Balancer
4.000"	101.0"	103.9"
3.875"	101.0"	103.9"
3.750"	101.0"	103.9"
3.625"	101.0"	103.9"
3.500"	100.0"	102.5"
3.375"	100.0"	102.5"
3.250"	100.0"	102.5"
3.125"	100.0"	102.5"
3.000"	99.0"	101.5"
2.875"	99.0"	101.5"
2.750"	99.0"	101.5"

BOOST CHART		
PULLEY/BOOST/132MM TB		
SC Pulley	Stock Balancer	20% Balancer
4.000"	9.5	15
3.875"	10.5	16
3.750"	11.5	17
3.625"	12.5	18
3.500"	13.5	19
3.375"	14.5	20
3.250"	15.5	21
3.125"	16.5	22
3.000"	17.5	23
2.875"	18.5	24
2.750"	19.5	25

BELT OPTION GUIDE		
6-Rib	10-Rib	10-Rib (20%)
K061033	K101015HD	K101039
K061031HD	K101010	K101039HD
K061031	K101010HD	K101025
K061031HD	K100994HD	K101025HD
K061025		K101015HD
K061025HD		
K061020		
K061020HD		
K061015		
K061015HD		
K061010		
K061010HD		
K061005		
K061005HD		