

# Dodge Ram 2004-2008 System **Installation Guide**



The **ULTIMATE** Power Adder™

© 2018 Accessible Technologies, Inc.

Accessible Technologies, Inc.  
14801 W. 114th Terrace  
Lenexa, KS 66215  
Phone: 913.338.2886  
Fax: 913.338.2879  
techserv@procharger.com

All rights reserved. Accessible Technologies Inc. hereby grants permission to use and reproduce this document for personal use, provided that all copyright information be retained. Reproduction of this document for unauthorized commercial use is strictly prohibited.

Information in this document is subject to change without notice.

ProCharger® is a registered trademark and The Intercooled Supercharging Experts!™ and Designed to Blow Away the Competition™ are trademarks of Accessible Technologies, Inc. and may not be used without express permission.

## INTRODUCTION

Congratulations on purchasing your ProCharger® Dodge Ram 2004-2008 Supercharger System. Read this entire manual before you attempt to install your ProCharger kit. It is imperative that you follow all of the instructions in the order they appear in this installation guide. If you have any questions regarding any aspect of this installation, call us at (913) 338-3086.

For best results, we recommend reviewing the installation instructions beforehand, and following the installation instructions closely and in sequence. A detailed packing list has been provided to assist you in identifying the components of your ProCharger system.

You should also have the following gauges available to properly check the finished installation and monitor your vehicle's performance (especially for testing):

- Manifold Boost Pressure Gauge
- Fuel Pressure Gauge
- Wide Band Oxygen Sensor and Gauge

Gauges should be of a type that can be read from the cockpit while performing a wide-open throttle road test. Cockpit or hood-mounted gauges are preferable. In order to obtain usable readings, the gauges should measure pressure at the intake manifold and fuel rail. IF VEHICLE DOES NOT MAINTAIN PROPER FUEL PRESSURE (50-65 PSI), DECREASE THROTTLE APPLICATION IMMEDIATELY. In some cases, extra vehicle modifications can strain the stock fuel pump. If your vehicle has difficulty retaining adequate fuel pressure, contact ATI ProCharger about the availability of an upgraded fuel system.

The engine on which the ProCharger® is to be installed should retain the factory compression ratio. If it has been modified in any way, please consult ProCharger staff before proceeding with the installation. This supercharger system is intended for use on STOCK, strong, well-maintained engines/transmissions. Installation on a worn or troublesome powertrain should be reconsidered. ATI PROCHARGER WILL NOT BE HELD RESPONSIBLE FOR DAMAGE TO A VEHICLE'S POWERTRAIN. ATI ProCharger is not responsible for ECM tuning/programming on non-stock vehicles. ATI PROCHARGER recommends verifying that your vehicle has current ECM updates from the vehicle manufacturer before installation.

For best performance and reliability, always use premium grade fuel (91 octane or higher) and listen closely for signs of detonation, which might sound like ball bearings rolling around in a tin can. IF DETONATION SHOULD OCCUR, OR IF YOU ARE UNSURE WHETHER WHAT YOU'RE HEARING IS DETONATION, DECREASE THROTTLE APPLICATION IMMEDIATELY and please consult ATI ProCharger staff. Detonation should not be an issue with a properly installed intercooled supercharger system, though OEM factory-shipped engine and parts inconsistencies are possible on any vehicle.

### Required Tools and Supplies

- 3/8" Socket Set, standard & metric
- Open End Wrench Set, standard & metric
- 3/8" Hex Bit Set (allen head), standard & metric
- Flat Screwdrivers
- Phillips Screwdrivers
- Plier Set



**Warning:** Your supercharged Ram must always be run on 91 octane or higher gas. Do not run vehicle at wide-open throttle if you have less than 1/4 tank of gas.

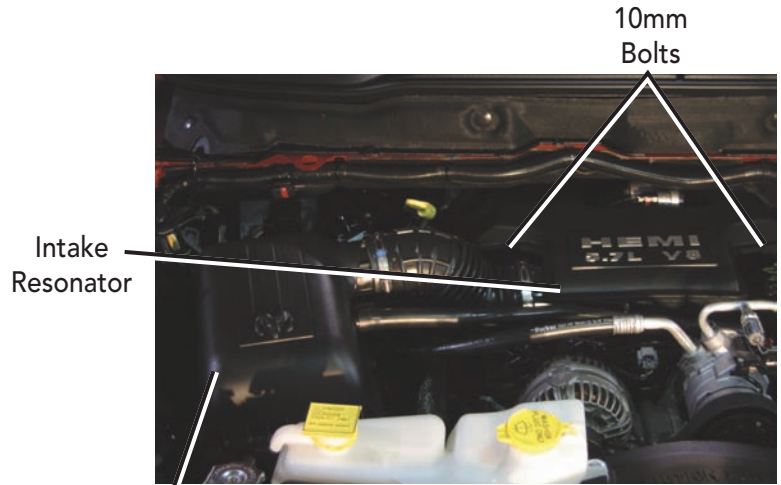
# TABLE OF CONTENTS

Introduction .....	i
Removing Stock Components.....	1
Fuel System .....	2
Intercooler Installation .....	4
ProCharger Installation .....	6
Intercooler Tubing Installation .....	10
Anti-Surge System Installation .....	18
Finishing.....	19
Operation and Maintenance .....	20
Limited Warranty .....	22

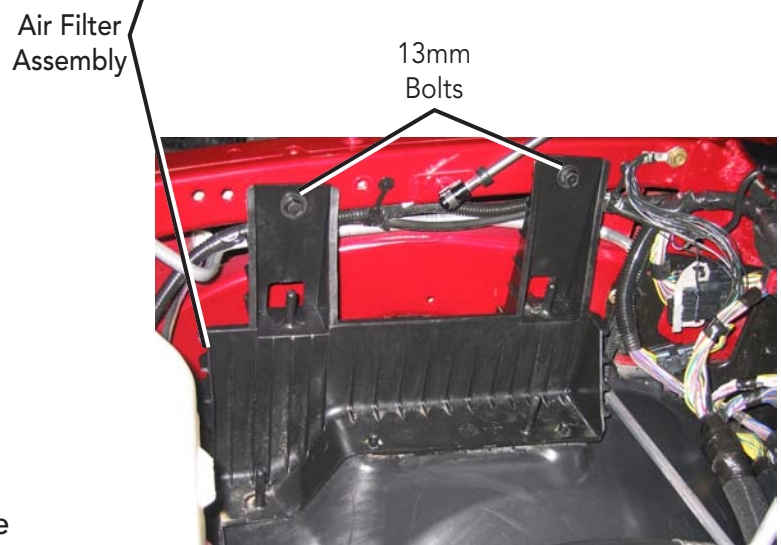
**TUNING IS REQUIRED WHEN INSTALLING YOUR PROCHARGER SYSTEM. IF A COMPLETE SYSTEM WAS PURCHASED. SEE SUPPLEMENTAL TUNING GUIDE. IF A TUNER KIT WAS PURCHASED. TUNING WILL HAVE TO BE PERFORMED BEFORE OPERATING THE VEHICLE.**

# REMOVING STOCK COMPONENTS

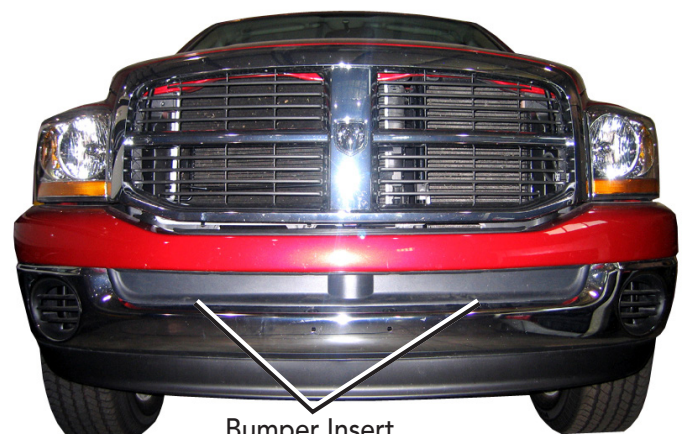
- 1 Remove the engine intake resonator assembly with a 10mm socket and unplug the sensor underneath.
- 2 Remove the engine air filter assembly and related mountings. Use a 13mm socket to remove the (2) top bolts. Remove (2) 8mm bolts from the passenger side wheel well. Remove the fender lining with an 8mm socket and remove the remaining (2) 13mm bolts.
- 3 Re-install the fender lining.
- 4 Using a  $\frac{3}{8}$ " socket wrench as a leverage tool, rotate the automatic belt tensioner clockwise to it's stop and remove the engine's 7-rib serpentine belt.
- 5 For the low mount intercooler, remove the bumper insert. The small body panel fasteners must be removed by placing a flat blade screwdriver under the housing and pulling down on the pin. Once all the fasteners are removed the insert can be pulled out from the front side. Replace the body panel fasteners back into the bumper insert holes.



Resonator Assembly



Air Filter Assembly



Removing Bumper Insert

**!** **Warning:** The bumper insert must be completely removed from the truck in order for the intercooler to function properly. Optional partial bumper inserts can be obtained from Dodge.

## FUEL SYSTEM



**Note:** This section only applies to full systems, which include 39.5 lb/hr fuel injectors and a modified 2-bar MAP sensor. If you do not have a full system, additional fuel system components will be required before starting the vehicle.

### Fuel Injectors

- 1 Remove the fuel cap.
- 2 Disconnect the battery.
- 3 For 2004-2005 models, remove the #17 fuse. For 2006-2007 models, disconnect the harness located underneath the driver's side fender. This disconnects the fuel pump.
- 4 Reconnect the battery.
- 5 Crank the engine to depressurize the fuel rails.
- 6 Disconnect the battery. Leave the battery disconnected for the remainder of the installation.
- 7 Reconnect the harness located underneath the driver's side fender.
- 8 Unclip the wiring harnesses from each injector. Remove the (4) 10mm bolts securing the fuel rails to the manifold. Pull the fuel rails up off of the manifold to gain access to the fuel injectors.
- 9 Remove the fuel injector retaining clips from the injectors and rails. Remove the injectors by pulling them straight out of the rails.
- 10 Install the new injectors, followed by the factory retaining clips.

- 11 Mount the fuel rail spacers on the manifold, push the injector and rail assembly into place, and tighten the rails with the new hardware. Re-install each wiring harness to each injector.



Fuel Rail Spacers Installed

## Map Sensor

- 12 Remove the factory MAP sensor located on the top front of the intake manifold. Remove the electrical harness by sliding the red retaining tab back and disconnecting it from the sensor. Remove the 8mm bolt and pull the factory map sensor out of the vehicle.
- 13 Install the new 2-bar MAP sensor, tighten the 8mm bolt, and connect the harness to the new sensor.



2-Bar MAP Sensor Installed

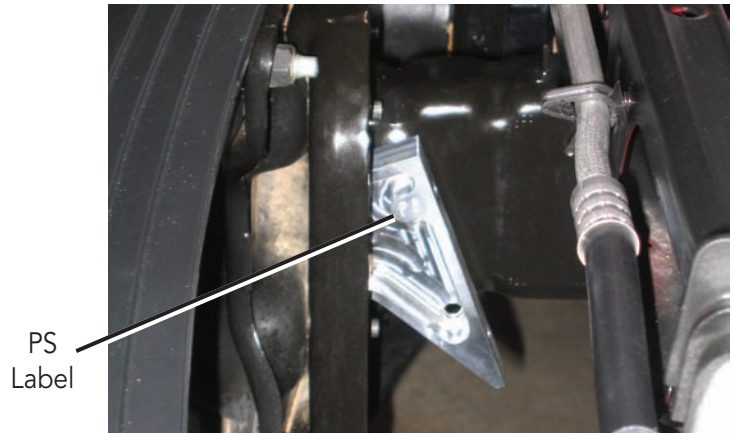
## INTERCOOLER

### Low Mount Intercooler

- 1 Remove the (4) bumper nuts using an 18mm socket or wrench.
- 2 From below the vehicle, install the intercooler brackets, re-using the (4) bumper nuts. Do not tighten.

✓ **Note:** *These are not universal brackets. The driver's side bracket is labeled DS and the passenger's side is labeled PS.*

- 3 Install the intercooler between the frame rail and bumper with the openings towards the passenger's side using the (4)  $\frac{5}{16}$ "-18 x  $\frac{1}{2}$ " bolts. After you have verified the intercooler position, tighten the bumper nuts to 70 ft-lb.



Intercooler Bracket

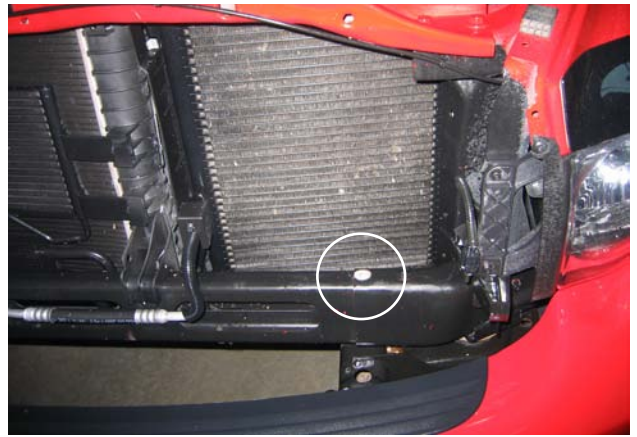


Intercooler Installed

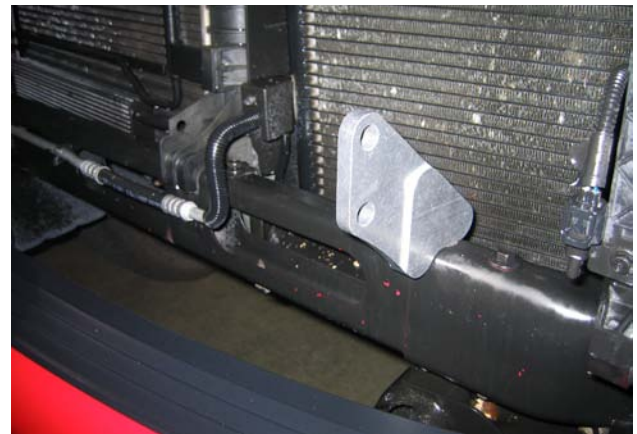


## High Mount Intercooler

- 1 Remove the passenger's and driver's side bolts with a 13mm socket.
- 2 Install the intercooler brackets with a 6mm hex socket. Do not tighten.
- 3 Install the intercooler's top bracket bolts on both the passenger's and driver's side and then install the bottom bolts.
- 4 Tighten all bolts.



Removed Driver's Side Bolt



Installed Driver's Side I/C Bracket



Installed Intercooler

# PROCHARGER HEAD UNIT

## Secondary Bracket Installation

- 1 From above the vehicle, install the sub-bracket directly onto the block using the holes above the engine oil filter mount. Start the M8 SHCS using a 6mm hex bit socket. Use thread locking compound. Install the M10 SHCS with an 8mm hex bit socket.

✓ **Tech Tip:** If required, remove a wiring harness tree lock from the top hole.



Mounting Holes

Mounting Holes



Installed Bracket

## Main Bracket Installation

- 1 Using a 15mm socket or wrench, remove the left hex head bolt from the alternator mounting.
- 2 With an 8mm hex bit socket, hang the main bracket with the M10 SHCS and short spacer in the top hole. Do not tighten.
- 3 With a 6mm hex bit socket, start the M8 x 25mm SHCS in the middle hole. Do not tighten.
- 4 With a 6mm hex bit socket, install the M8 x 130mm SHCS and long spacer in the bottom hole.
- 5 Tighten all fittings.

✓ **Tech Tip:** If required, rotate the clamps on the two smaller water lines so the clamps do not collide with the ProCharger's main bracket.

Hex Head Bolt



Space for Main Bracket



Main Bracket Installed



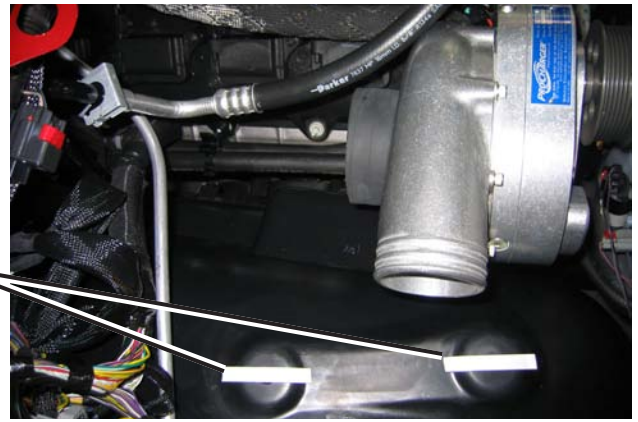
Main Water Line Clamps

## ProCharger Head Unit

**!** **Warning:** The ProCharger® must be filled with oil prior to use. Use only the supplied ATI oil in your supercharger, which has been specially formulated for the bearings in the supercharger. Use of any other oil will void your warranty.

- 1** Position the foam strips according to the photograph at right. Before mounting the ProCharger, install the 3-3/4" diameter hose on the ProCharger intake with a #64 band clamp.
- 2** Place the ProCharger onto the main bracket and screw in all of the 5/16" and the 3/8" SHCS through the main bracket and into the ProCharger. Once all SHCS are in, go back and tighten all fittings.
- 3** Mount the ProCharger intake tube using the previously installed 3-3/4" hose and a #64 band clamp. Do not install the engine air filter at this time.
- 4** Disconnect the PCV hose from the housing and trim the hose as shown. Plug it into the side of the intake.

Foam  
Strips



ProCharger on the Main Bracket



Intake Tube



Original PCV Hose Length



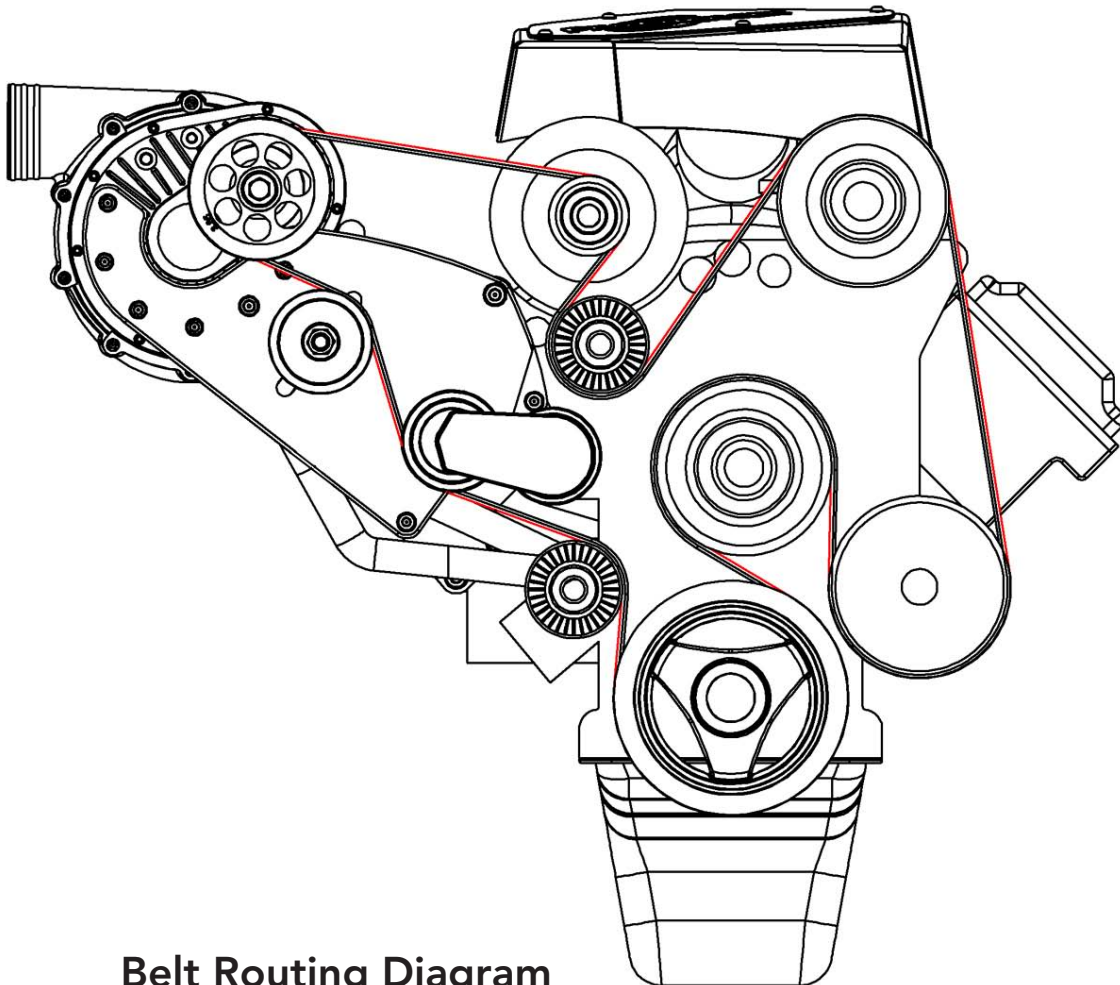
Modified PCV Hose Length

**!** **Warning:** Do not attempt to adjust the idler pulley without loosening the brass lock nut or damage will occur!



Installed Belt

- 5** Using a  $\frac{1}{4}$ " hex bit, adjust the main bracket's idler pulley to the bottom of the slot. Using a  $\frac{3}{8}$ " socket wrench as a leverage tool, rotate the automatic belt tensioner clockwise to it's stop. Install the belt. Tension the belt by adjusting the idler pulley up into the belt. The automatic belt tensioner neutral mark should be approximately  $\frac{1}{8}$ " from the stop mark. After the belt is tensioned, tighten the brass lock nut with a  $\frac{3}{4}$ " wrench to lock the adjustable pulley.



Belt Routing Diagram

# INTERCOOLER TUBING

## Low Mount Intercooler Tubing

Place foam tape between tube AICD1I-015 and the fender.

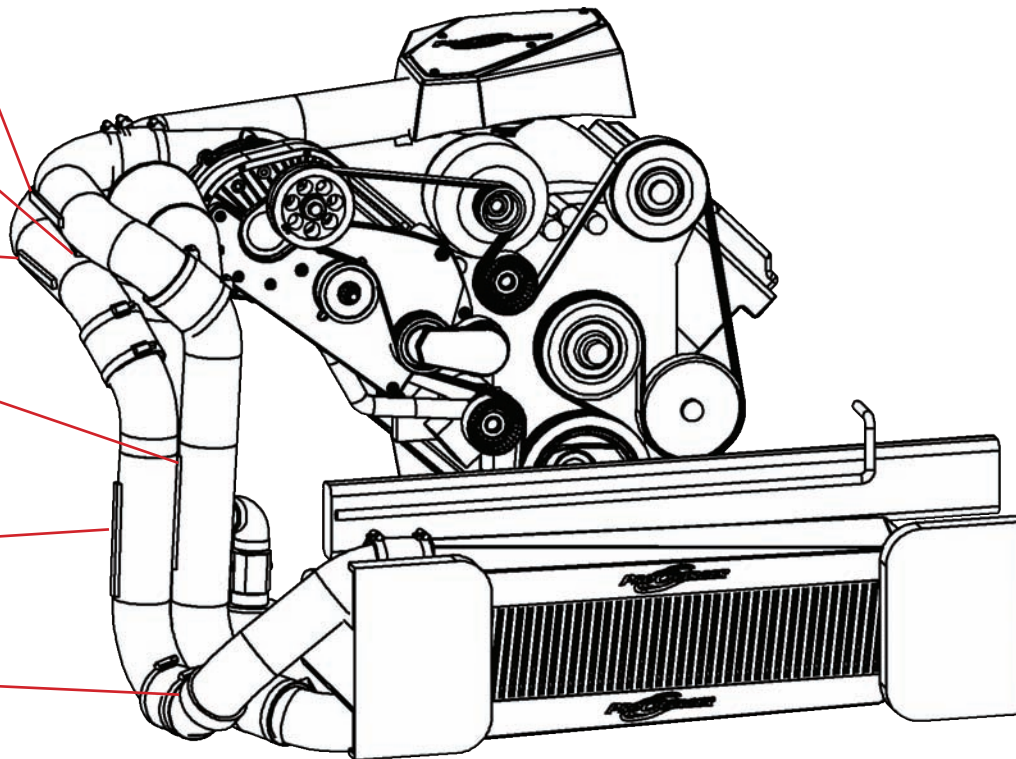
Place foam tape between tube AICD1I-012 and tube AICD1I-015.

Place foam tape between tube AICD1I-012 and the fender.

Place foam tape between tube AICD1I-011 and tube AICD1I-014.

Place foam tape between tube AICD1I-011 and the fender.

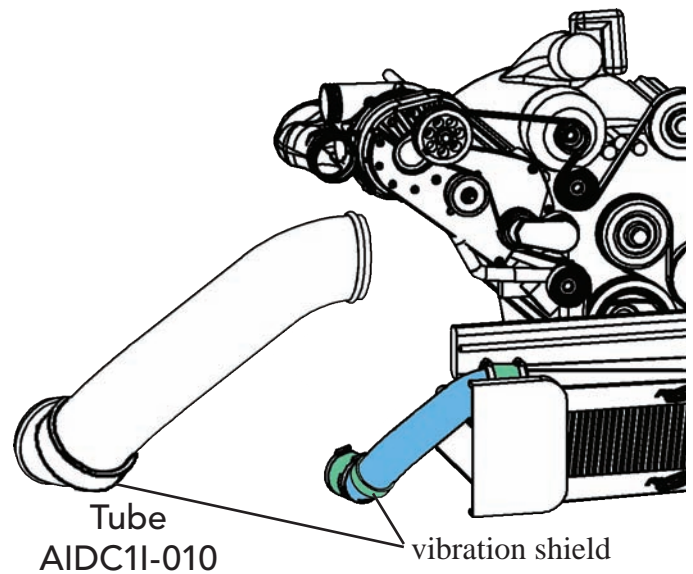
Slide the 3" x 4" rubber hose around tube AICD1I-010 to protect it from the frame and bumper.



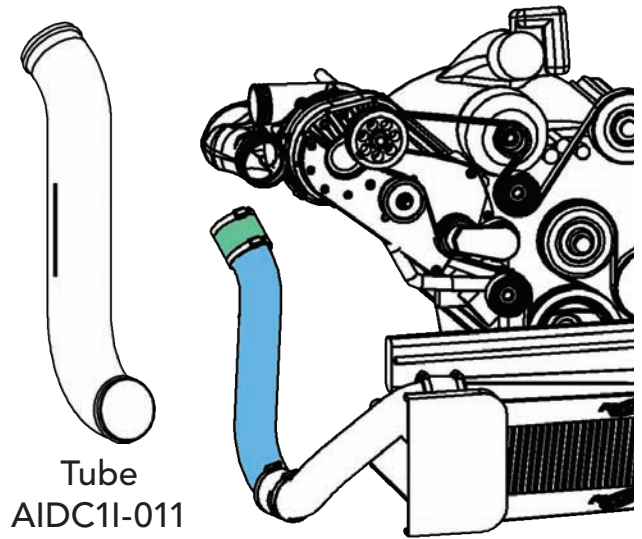
Foam Tape Installation for Vibration Reduction

**Warning:** Inspect the inside of each tube for any foreign debris. Remove any debris from the interior of the tubes before installing.

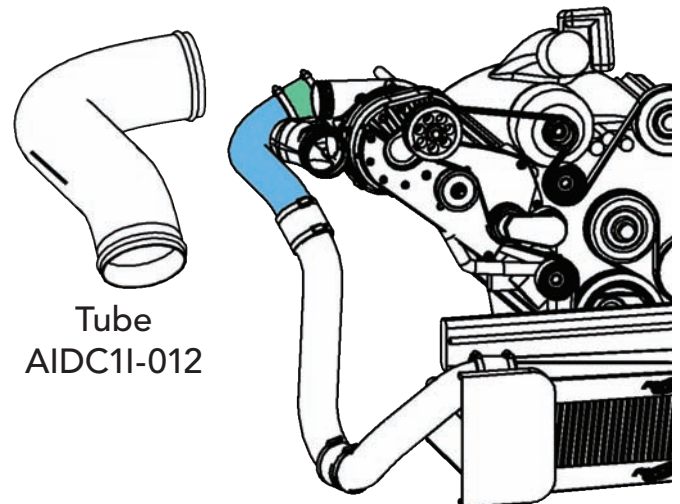
**1** Fasten a 3" x 4" hose to the intercooler's inlet (top tube) with a band clamp. Slide a 3" x 4" section of hose over tube AIDC11-010 to shield the tube from vibrating against the frame or bumper. Slide another band clamp onto the hose and leave loose. From below the vehicle, feed tube AIDC11-010 up through the frame and bumper into the intercooler's hose. Position the tube so it is not touching the frame or bumper and secure with band clamp. Install another coupler and two band clamps.



**2** Place foam tape on the tube to shield against vibration from the fender. From below the vehicle, install tube AIDC11-011 into the previously installed hose. On the tube's exposed end, install another hose and two band clamps.



**3** Place foam tape on the tube to reduce the vibration from the fender. Install tube AIDC11-012 into the previously installed hose. Install a 3"x 4" hose and two band clamps.

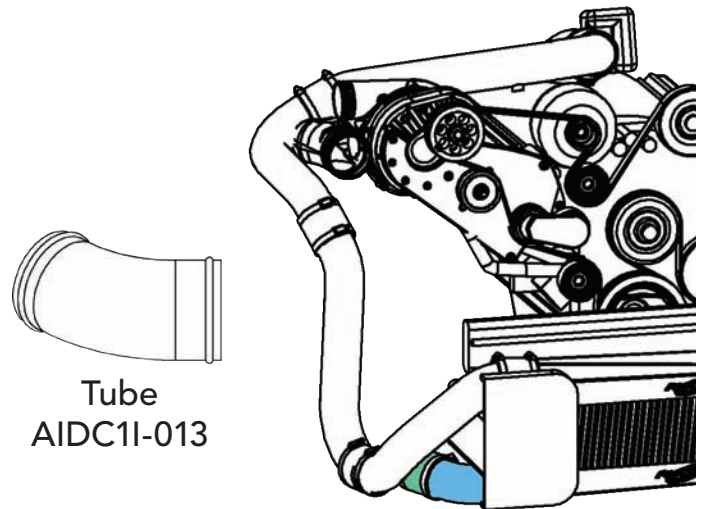
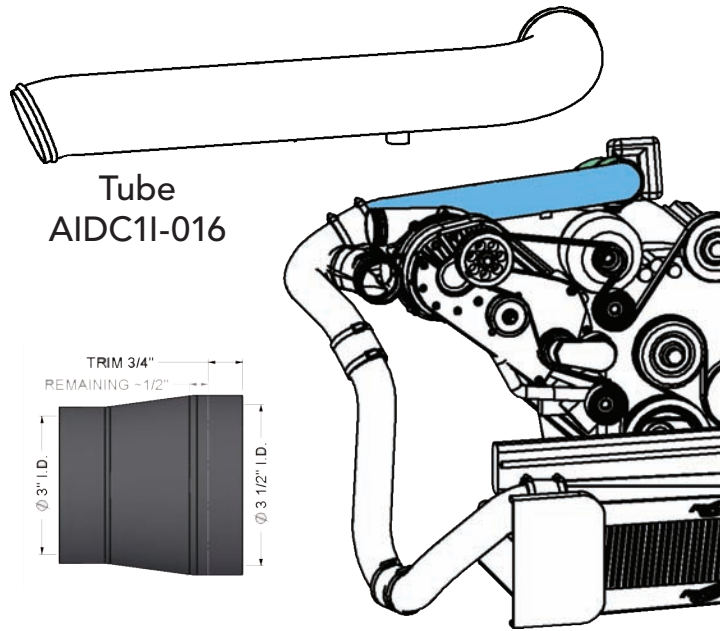


**Tech Tip:** If required, rotate the main water line clamp, on the lower main radiator hose, so the clamp does not collide with intercooler tubing.

## Intercooler Tubing

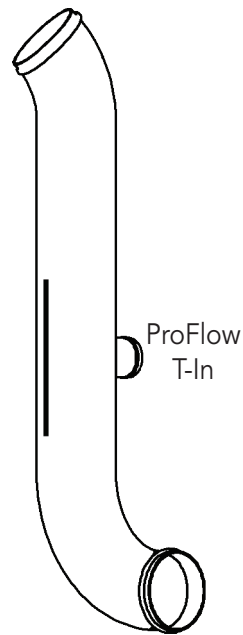
4 Trim  $\frac{3}{4}$ " from the  $3\frac{1}{2}$ " diameter side of the rubber reducer. Connect the rubber reducer to the engine intake. Install tube AIDC11-016 into the previously installed hose and the rubber reducer simultaneously. Insert and twist the intake air temperature sensor into the bung on the bottom of tube AIDC11-016. Align all of the tubes and tighten all of the band clamps.

5 Fasten one 3" hose to the intercooler's outlet (bottom tube) with a band clamp. Slide another band clamp onto the hose and leave it loose. Install tube AIDC11-013, from below the vehicle, into the intercooler's hose and secure with a band clamp. Install another hose and two band clamps.

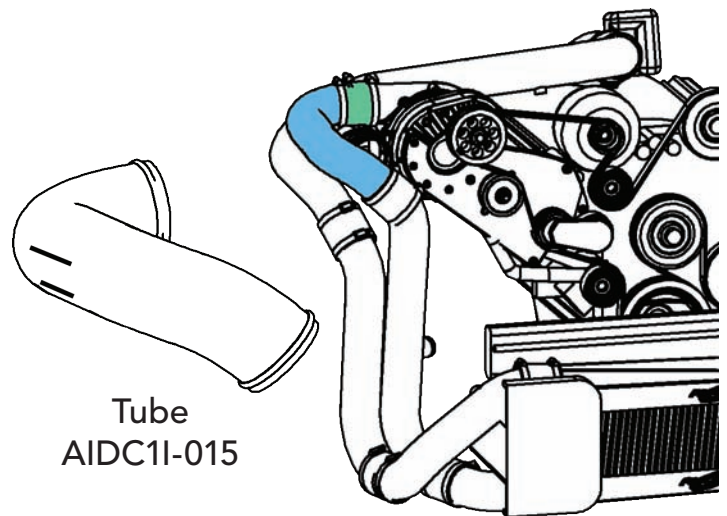
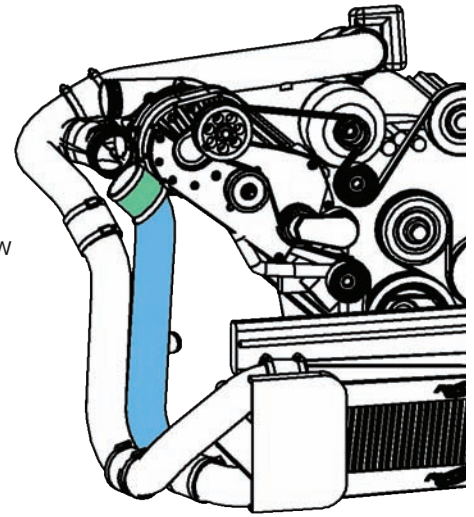




- 6** Place foam tape on the tube to shield against vibration from the fender. Install tube AIDC11-014 into the hose on the end of the previously installed tube. On the exposed end of tube AIDC11-014, install another hose and two band clamps.
- 7** Place foam tape on the tube in two places to shield against vibration from the fender and the other tubes. Install the hose and band clamps over the 90° portion of tube AIDC11-015. Push the hose onto the tube until it is flush with the tube end. Install AIDC11-015 into the previously installed hose. Slide the hose and band clamps off the 90° portion of the tube and onto the ProCharger discharge. Align all tubes and tighten all band clamps.



Tube  
AIDC11-014



Tube  
AIDC11-015

### High Mount Intercooler Tubing

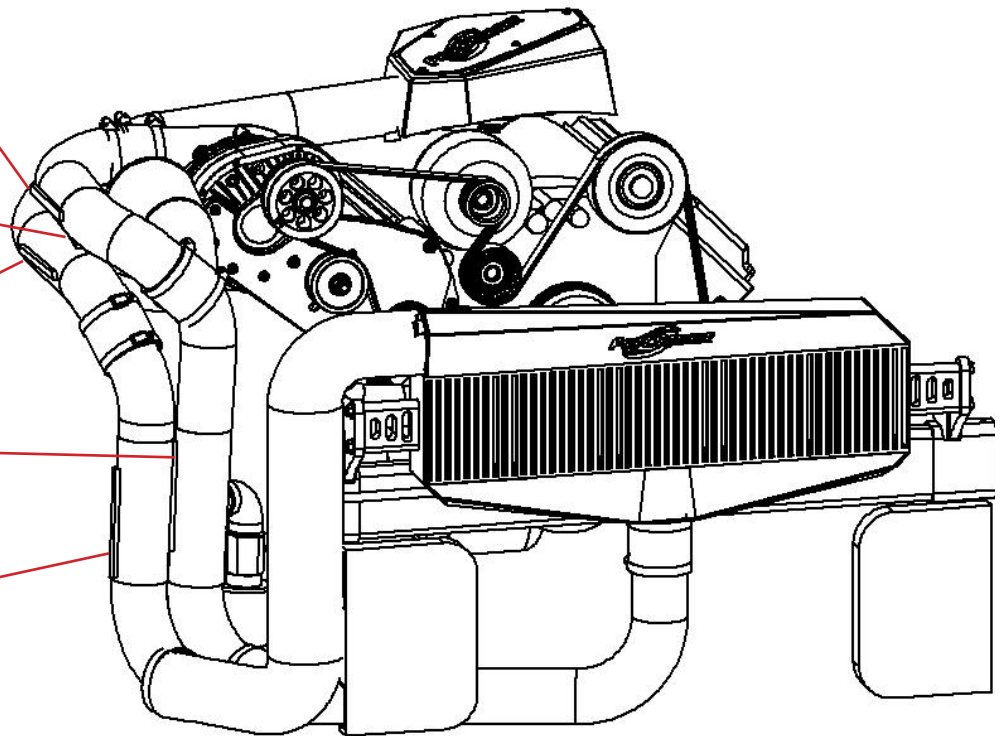
Place foam tape between tube AICD1I-015 and the fender.

Place foam tape between tube AICD1I-012 and tube AICD1I-015.

Place foam tape between tube AICD1I-012 and the fender.

Place foam tape between tube AICD1I-011 and tube AICD1I-014.

Place foam tape between tube AICD1I-011 and the fender.



Foam Tape Installation for Vibration Reduction

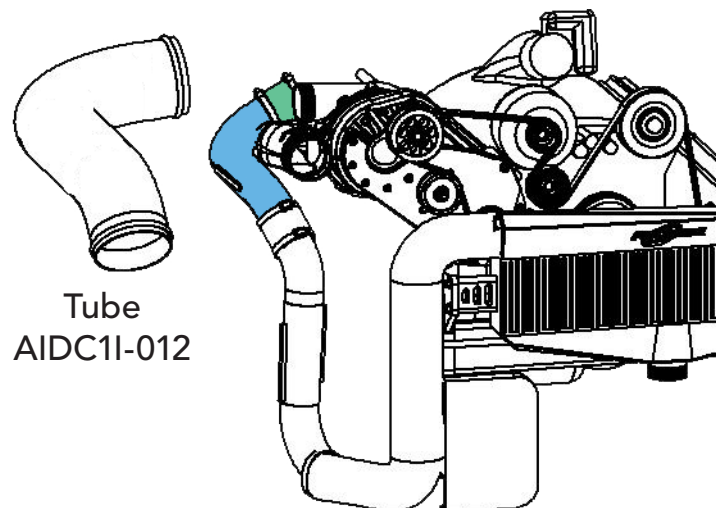
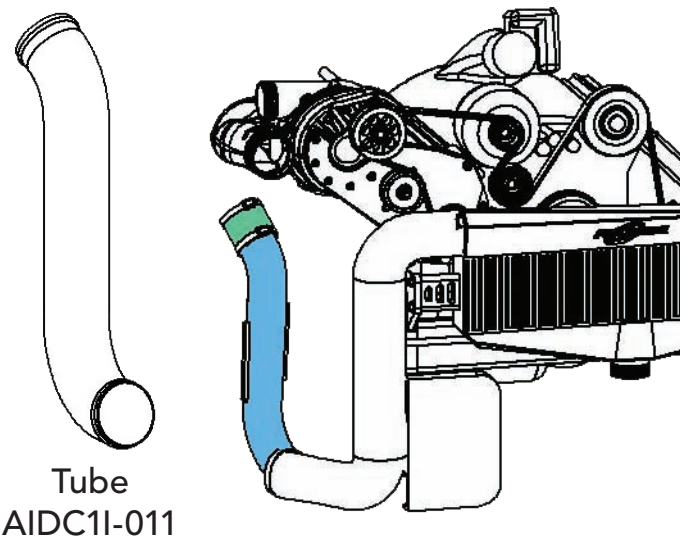
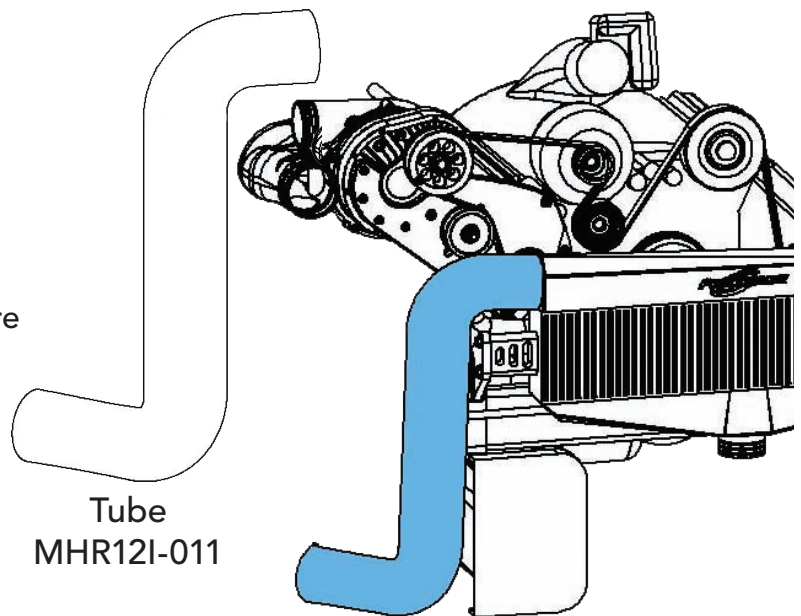
**Warning:** *Inspect the inside of each tube for any foreign debris. Remove any debris from the interior of the tubes before installing.*

**1** Slide the molded tube MHR12I-011 through the opening beside the intercooler and behind the frame. Secure the tube to the intercooler inlet with a band clamp.

**2** Place foam tape on the tube to shield against vibration from the fender. From below the vehicle, install tube AIDC1I-011 into the previously installed hose. On the tube's exposed end, install another hose and two band clamps.

**3** Place foam tape on the tube to reduce the vibration from the fender. Install tube AIDC1I-012 into the previously installed hose. Install a 3"x4" hose and two band clamps.

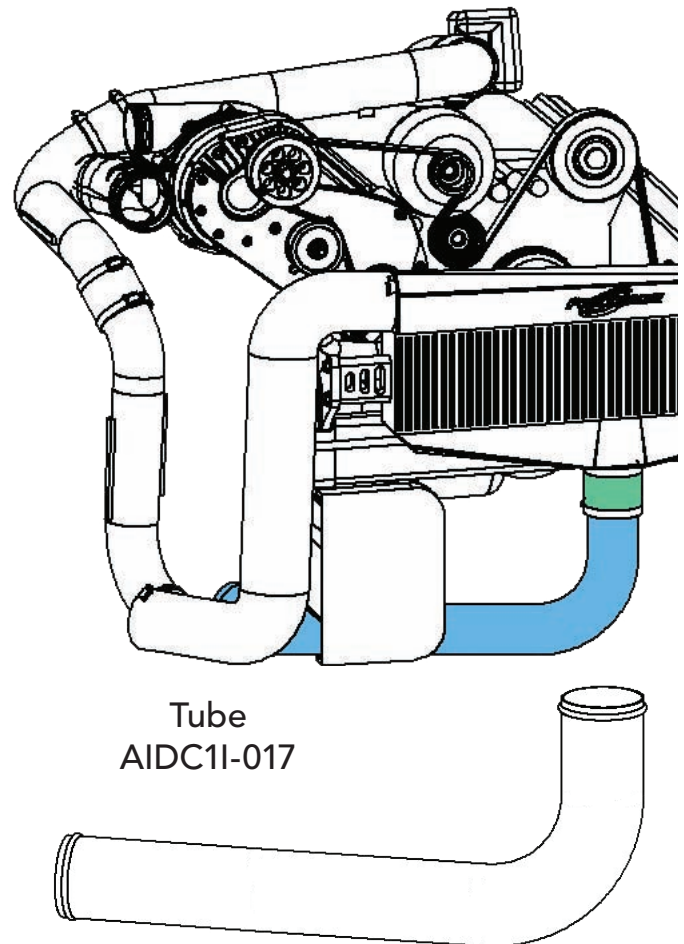
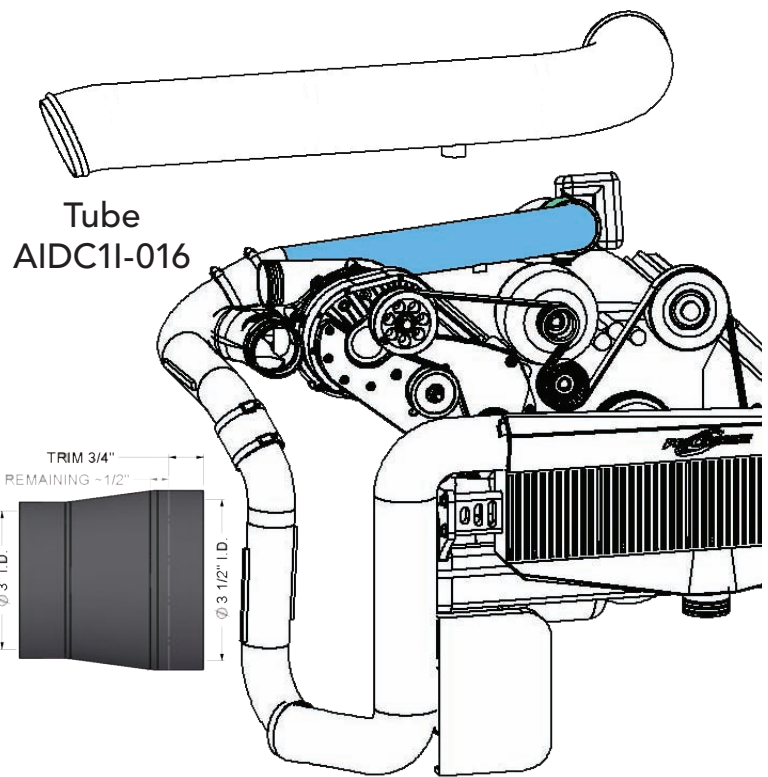
**Tech Tip:** *If required, rotate the main water line clamp, on the lower main radiator hose, so the clamp does not collide with intercooler tubing.*



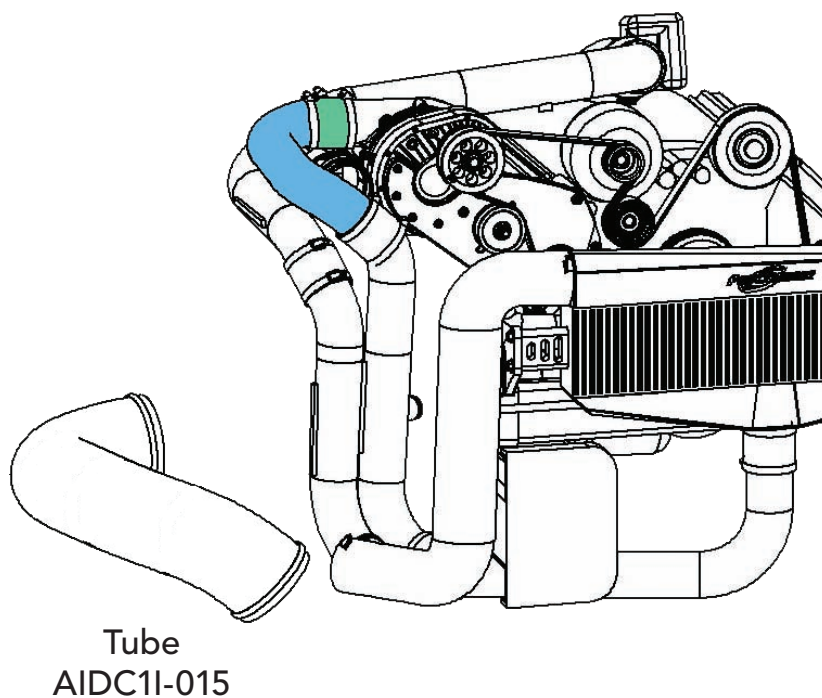
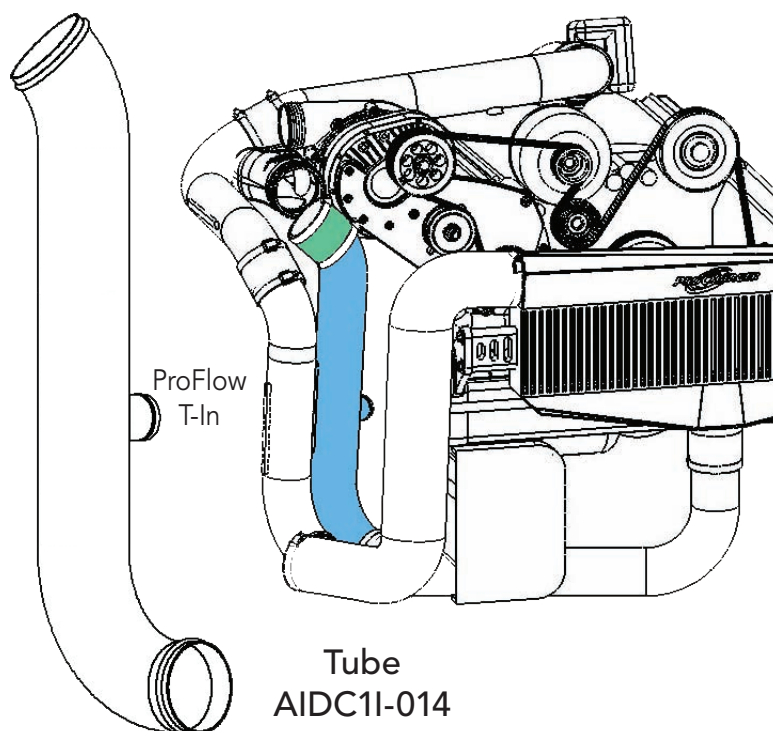
## Intercooler Tubing

- Trim  $\frac{3}{4}$ " from the  $3\frac{1}{2}$ " diameter side of the rubber reducer. Connect the rubber reducer to the engine intake. Install tube AIDC11-016 into the previously installed hose and the rubber reducer simultaneously. Insert and twist the intake air temperature sensor into the bung on the bottom of tube AIDC11-016. Align all of the tubes and tighten all of the band clamps.

- Fasten one 3" hose to the intercooler's outlet (bottom tube) with a band clamp. Slide another band clamp onto the hose and leave it loose. From below the vehicle, install tube AIDC11-017 into the intercooler's outlet hose and secure with a band clamp. Install another hose and two band clamps.

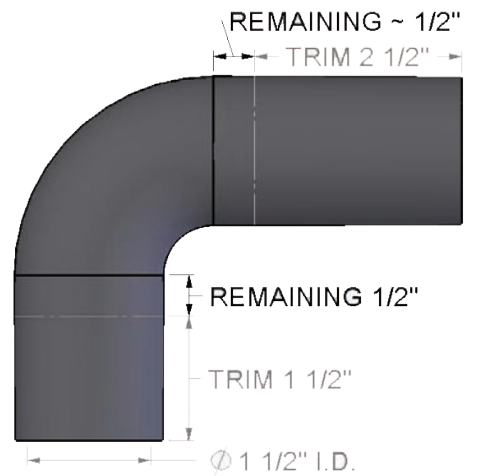


- 6** Place foam tape on the tube to shield against vibration from the fender. Install tube AIDC11-014 into the hose on the end of the previously installed tube. On the exposed end of tube AIDC11-014, install another hose and two band clamps.
- 7** Place foam tape on the tube in two places to shield against vibration from the fender and the other tubes. Install the hose and band clamps over the 90° portion of tube AIDC11-015. Push the hose onto the tube until it is flush with the tube end. Install AIDC11-015 into the previously installed hose. Slide the hose and band clamps off the 90° portion of the tube and onto the ProCharger discharge. Align all tubes and tighten all band clamps.

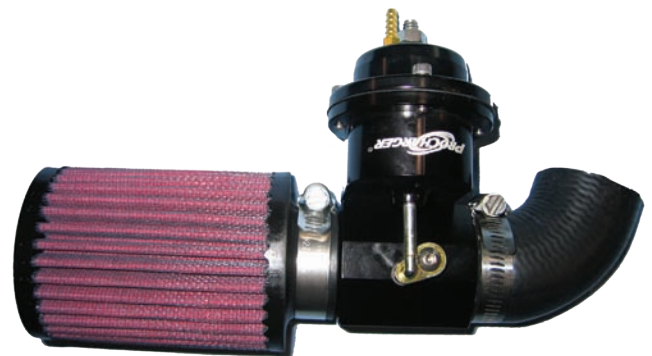


# ANTI-SURGE SYSTEM

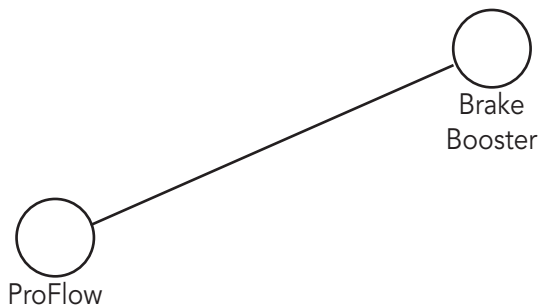
- 1 Trim the elbow hose  $\frac{1}{2}$ " on each end.
- 2 Align the hose to the ProFlow as shown. Use two #24 band clamps to install the ProFlow according to the photo.
- 3 Route the vacuum line from the brake booster and connect it to the to the ProFlow.



Elbow Hose



ProFlow Unit



Vacuum Line Route



ProFlow Unit Installed

## FINISHING

### Air Filter and Intake Cover

- 1 Secure the air filter onto the supercharger intake tube and tighten the band clamp.
- 2 Install the engine intake cover with two #52 band clamps.
- 3 Install the engine intake cover top with (4) 1/4"-20 x 3/4" BHCS screws.



### Finishing Up

- 1 Reconnect the battery.
- 2 Check all of the fluid levels.
- 3 Verify you are only using 91 octane or higher fuel.
- 4 Start your vehicle and check for fuel leaks.



# OPERATION AND MAINTENANCE

## Cold Starting

Never race your engine and ProCharger supercharger when your engine is cold. Allow the water temperature to climb into operating range for several minutes before driving above 2,500 rpm, to ensure adequate oil lubrication.

## Fuel Quality

With a properly installed intercooled ProCharger supercharger system, detonation should not occur. For the best performance and reliability, use premium grade fuel (91 octane or higher). Listen for signs of detonation after refueling, and after replacement or modification of any fuel system component(s). If detonation occurs, reduce the throttle and locate the source.

## Ignition System Maintenance

If your spark plugs are more than a year old or have more than 10,000 miles logged, you should consider changing them before driving your vehicle under load. Spark plug wires should be changed if visibly damaged or when resistance exceeds factory specifications.

## Air Filter Maintenance

Your air filters should be cleaned periodically, potentially as often as every 10,000 miles or 6 months, even though a service interval of 50,000 - 100,000 miles is quoted by the manufacturer under normal driving conditions. A clogged air filter will result in decreased boost levels and vehicle performance. Be sure to re-oil the cleaned filter before re-installing. Always operate your vehicle with an air filter, failure to do so may result in damage to your ProCharger supercharger and personal injury!

## Belt Replacement

The serpentine belt, which turns your ProCharger supercharger, will stretch after initial run-in, and should be retightened after the first hundred miles. Tighten the belt sufficiently to avoid slippage, but do not overtighten. Overtightening the belt could cause damage to the ProCharger supercharger's precision bearings. When re-installing the belt, use the belt routing diagram in this manual. If you reuse a thrown belt and find that it needs frequent re-tightening, the belt is damaged and should be replaced. Gates Micro-V belts can be bought from ATI or from your local parts store.

## ProCharger Oil Change Intervals

The first oil change should be performed at 500 miles and at 6,000 mile intervals thereafter. Clean drain plug after every oil change. Drain oil by removing the drain plug. Clean off drain plug before re-installing.



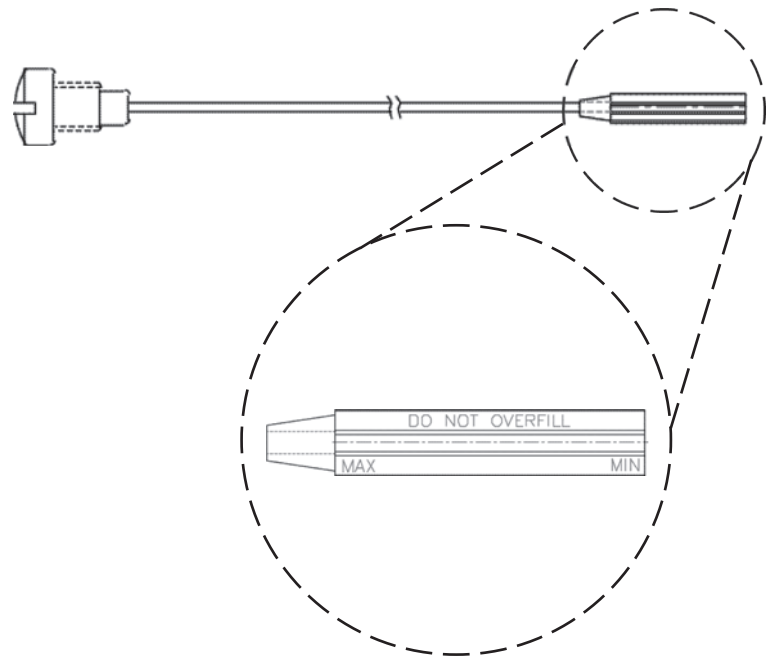
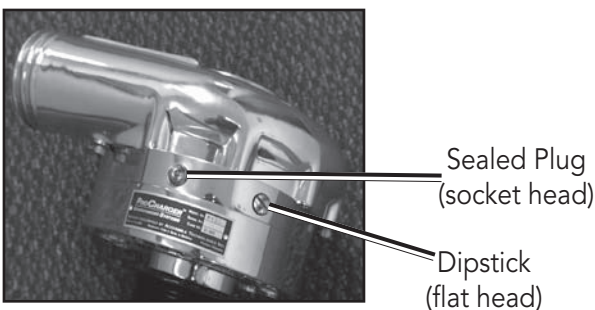
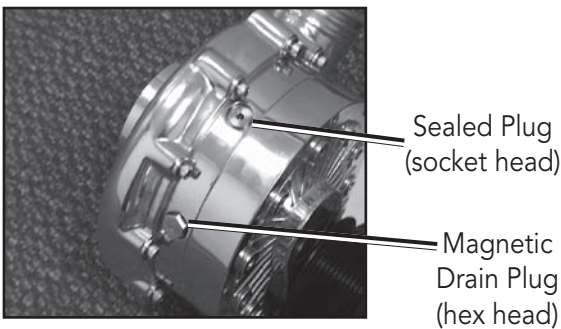
## ProCharger Oil Level

The ProCharger supercharger's oil level must be checked periodically to ensure the proper lubrication. The dipstick can be loosened using a flat blade screwdriver or a coin. When installed, the oil level should remain between the minimum (MIN) and maximum (MAX) indicators at all times.

**!** **Warning:** *Filling the ProCharger higher than the maximum level on the dipstick can lead to bearing and seal damage. The supercharger is a sealed unit and should not normally require the addition of oil between service intervals. If excessive usage is noted, the unit should be sent to ATI for inspection and repair. The dipstick fitting should be firmly tightened after changing or checking the oil level.*

## General

When removing the warning tag from the dipstick, be sure to retain the nylon washer. A spare nylon washer and o-ring is included. Use only the ATI supplied nylon washer and o-ring when servicing the oil dipstick and drain plug. A discoloration of the oil and residue on the drain plug may occur during the initial oil changes. This is normal and will gradually decrease. For the proper positioning of the ProCharger supercharger, the serial tag should be pointing upwards. Installing the ProCharger supercharger in another position will cause inadequate oiling and supercharger failure. If you have any questions about the maintenance of your supercharger, contact ATI.



# LIMITED WARRANTY

Accessible Technologies, Inc. (ATI) provides a limited twelve (12) month warranty on the ProCharger supercharger against defects in materials and workmanship unless otherwise specified. This limited warranty starts on the date of original purchase from your local dealer, or date of shipment from the factory. This limited warranty coverage is extended only to the original owner and excludes hoses, sleeves, and electronic components manufactured by other companies. IF THE SUPERCHARGER'S DRIVE RATIO IS ALTERED IN ANY WAY FROM THE FACTORY SETTING, WARRANTY COVERAGE IS VOID. USE OF ANY PULLEY NOT MANUFACTURED OR SUPPLIED BY ATI VOIDS ALL WARRANTY COVERAGE.

ATI's warranty obligations are limited to the terms below:

ATI agrees to honor a warranty claim at its sole discretion and only after inspection at the ATI factory. No warranty will be honored if any part of the product is found to have been improperly installed, tampered with, mishandled, or misused in any way. Disassembly of the ProCharger supercharger or removal of the ProCharger supercharger's serial plate voids all warranties. Claims for freight damages should be directed to the freight company.

If ATI's limited warranty applies, your product will be repaired or replaced at ATI's discretion and shipped back. If the limited warranty does not apply, ATI will advise you of the specific reason, cost of the repair, and delivery time. After advising you of this information we will, at your option, either proceed with repairs or return your product to you in the state in which it was received. In either case the product will be shipped to you, insured at replacement value. Therefore, you will pay the return shipping and insurance charges if ATI's limited warranty does not apply to your product.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, ORAL OR WRITTEN, EXPRESS OR IMPLIED. THE DURATION OF ANY AND ALL WARRANTIES ON THE PRODUCTS DISCUSSED ARE LIMITED TO THE PERIOD IDENTIFIED ABOVE. ATI IS NOT RESPONSIBLE IN ANY EVENT FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. No ATI dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

To obtain service under this warranty you must do the following during the warranty period:

Phone ATI (913-338-3086) and provide us with the following information:

- ProCharger supercharger serial number.
- Vehicle year, make, model, engine modifications, and other modifications.
- Description of perceived issue.

If a solution to your issue can not be found after the above phone consultation, you will be assigned a return authorization number (RMA). You must then properly package and ship your product, at your expense, to the ATI factory. The product should be carefully packaged in a rugged box.

Include the following information inside the box with your product:

- Copy of your original invoice or receipt.
- Name, address, and daytime telephone number.
- Return authorization number (RMA).
- Vehicle year, make, model, engine modifications, and other modifications.
- Description of perceived issue.

Clearly mark the warranty claim number on the top and one side of the box in characters at least 2" tall. Properly package the product and ship it, prepaid and insured for the retail value of the component(s) being returned, to the following address:

**Accessible Technologies, 14801 West 114th Terrace,  
Lenexa, Kansas 66215**

This Page is Intentionally Left Blank



**Accessible Technologies, Inc.  
14801 W. 114th Terrace  
Lenexa, KS 66215  
Phone: 913.338.2886  
Fax: 913.338.2879  
techserv@procharger.com**

**Accessible Technologies, Inc.  
©2018 ATI, All Rights Reserved  
Part Number PMDC1A-001 Rev. F**

