

Supplemental Harley-Davidson Universal Carburetor Instructions **Installation Guide**



PROCHARGER[®]
V-TWIN

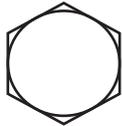
The **ULTIMATE** Power Adder[™]

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

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Torque Specification Chart			
	18-8 Stainless Steel	Grade 5	Grade 8
Thread Size	Torque (lb. ft.)	Torque (lb. ft.)	Torque (lb. ft.)
1/4-20	6.3	6.3	9
1/4-28	7.8	7.3	10
5/16-18	11	13	18
5/16-24	11.8	14	20
3/8-16	20	23	33
3/8-24	22	26	37
7/16-14	31	37	52
7/16-20	33	41	58
1/2-13	43	57	80
1/2-20	45	64	90

INTRODUCTION

Congratulations on the purchase of your ProCharger® Blown+Intercooled® centrifugal 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) 338-2886.

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.



Warning: *Your supercharged Harley-Davidson must always be run on 91 octane or better gas. The best way to ensure this is to run the tank near empty (below 1/4) and fill with 91 octane for several tanks prior to installing the supercharger. If this is not possible, a single fillup with higher octane fuel will help. Example: 1/4 tank 87 octane + 3/4 tank 93 octane = 91.5 octane.*

Ideally, you should also have the following gauges available to properly check the finished installation and monitor your motorcycle's performance (especially for racing applications):

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

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. Installation on a worn or troublesome engine should be reconsidered. **ATI PROCHARGER WILL NOT BE HELD RESPONSIBLE FOR DAMAGE TO AN ENGINE.**

- Current plugs should be replaced if they have more than 10,000 miles of use.
- Motorcycle baseline horsepower should be obtained before installation.
- Perform a compression test to verify it is within stock specifications.

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 *Read and understand all safety precautions in this manual before installation. Failure to comply with instructions in this manual could result in personal injury, property damage, and/or voiding your warranty.*

GETTING STARTED



This is a universal kit designed to fit multiple carbureted Harley-Davidson applications. Because of this, installations will vary depending on each specific model. These supplemental instructions will cover the installation of the new carburetor, fuel pump, carburetor bonnet, and all necessary lines and wiring. Refer to the included manual for all other aspects of the kit installation.



All fuel line routing is subject to the installer. Routing that could cause chaffing (rub through) and routing near exhaust components should be avoided.

- 3 The fuel tank should be vented by either the stock vent or another fuel tank vent. This kit should not be installed if the fuel tank is not vented.
- 4 A programmable ignition system/modulator with the ability to raise the rev limit and/or timing is recommended but not required.

- 1 For ease of installation, the fuel tank should be drained prior to working on the motorcycle, since new fuel lines will be installed. The fuel system should be purged prior to installation. After the fuel tank has been drained, run the engine until it stalls. Then turn the engine over for 5 seconds to ensure all fuel is purged from the system.
- 2 A non-vacuum operated fuel valve must be used. The stock fuel valve is vacuum operated so it must be replaced in order to use the ProCharger Universal Carbureted Kit.

CARBURETOR AND FUEL PUMP



WARNING: Do not use teflon tape on any of the fuel connections. It is recommended that you use liquid thread sealant or teflon paste.

Carburetor Removal

- 1 Remove the stock air cleaner assembly.
- 2 Loosen the stock throttle cable, remove the choke cables, and remove the fuel line that enters the carburetor.
- 3 Remove the stock carburetor.

New Carburetor and Fuel Pump Installation

- 4 Inspect the stock carburetor-to-intake manifold gasket and replace if worn.
- 5 Install the new carburetor per the manufacturer's instructions, then re-install the throttle cables.
- 6 Route and install the choke cable.
- 7 Install the Mikuni air cleaner adapter. It may be necessary to rotate the adapter upon installation of the bonnet assembly.
- 8 Install the fuel pump and regulator assembly in the desired location. This should be installed securely in a location that is protected from road debris or other potentially harmful situations.

Fuel Pump Wiring

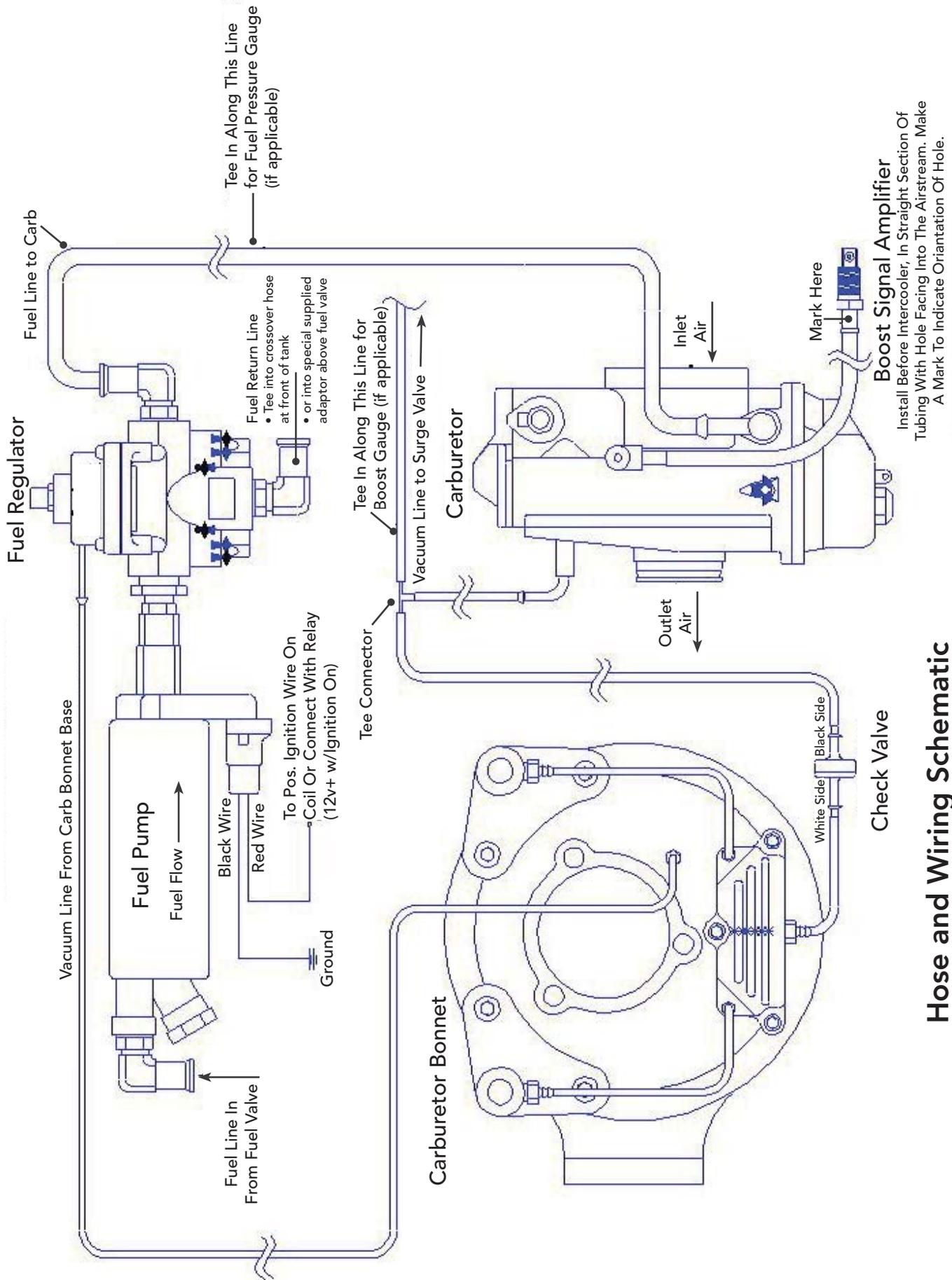
- 9 Determine the power source for the fuel pump. The power source should only be on when the ignition and the handlebar mounted on/off switch is on (hot side of coil). Splice the red wire from the fuel pump into the power source. Be sure to install the in-line fuse included with the kit.
- 10 Find a location for the black ground wire and install.

Fuel Line Routing



Note: Refer to the schematic for fuel line routing.

- 11 Route the fuel line from the fuel valve to the fuel pump inlet. Cut the fuel line to length.
- 12 Route the fuel line from the carburetor location on the fuel regulator to the fuel inlet port on the carburetor.
- 13 Route the fuel line from the return location on the fuel regulator to the area of the fuel tank crossover using the supplied brass T fitting.

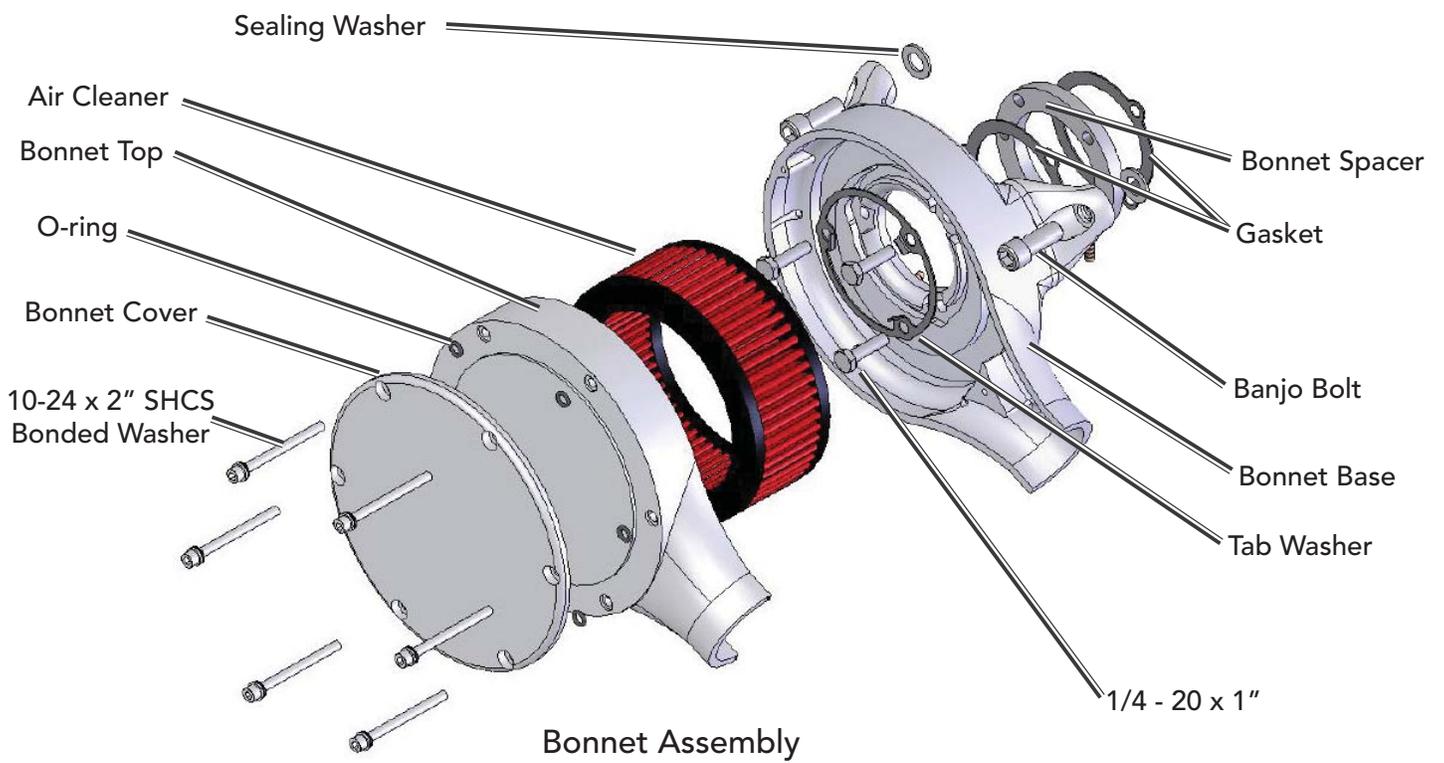


CARBURETOR BONNET



Note: *The air cleaner bonnet assembly is shipped assembled; it's necessary to disassemble the bonnet cover, bonnet base, and air cleaner from the bonnet assembly before proceeding.*

- 1 Remove the NPT plug on the back of the bonnet base. Replace it with the supplied NPT barbed fitting.
- 2 Install the tab washer into the bonnet base and insert three 1/4-20 x 1" hex head fasteners through the mounting holes. Place the bonnet spacer onto the protruding fasteners. Align the bonnet base with the throttle body and start the fasteners but do not tighten.
- 3 Place Loctite 242 thread locker onto the 3/8-16 x 1" banjo bolts and insert them through the cylinder head mounts. Insert sealing washers between the bonnet base and the cylinder head mating surfaces. Install the banjo bolts into the cylinder heads.
- 4 Torque the bonnet-to-carb fasteners to 108 in-lbf and the cylinder head fasteners to 180 in-lbf.
- 5 Rotate the throttle to ensure that the throttle linkage doesn't interfere with the breather tubes.
- 6 Bend the tab washer's locking tabs over the hex head fasteners (pliers work well for this).
- 7 Place the air cleaner into the bonnet base air cleaner receptacle. Press firmly until the air cleaner is seated in the bonnet base.
- 8 Install the bonnet top by aligning the air cleaner with the bonnet top air cleaner and firmly seat both surfaces together.
- 9 Install the six bonded washers, rubber facing away from the fastener head, onto the six 10-24 x 2 1/4" SHCS, until they mate with the back of the bonnet cover.
- 10 Tighten the fasteners until the bonded washers are fully compressed.



VACUUM LINE

- 1** Vacuum line routing (refer to schematic on page 3):
- Route the vacuum line from the vacuum port on the fuel regulator to the fitting on the back of the carburetor bonnet.
 - Route the vacuum line from the bottom of the breather on the carburetor bonnet to the white side of the check valve.
 - Route the vacuum line from the black side of the check valve to one of the straight ends of the supplied plastic T connector.
 - Route the vacuum line from the perpendicular side of the supplied T connector to the MAP port on the back of the carburetor.
 - Route the vacuum line from the other straight end of the supplied T connector to the vacuum port on the surge valve.
 - Drill and tap a hole for the boost signal amplifier. This should be located before the intercooler in a straight section of tubing with the hole facing into the airstream. To ensure that the hole is facing into the airstream, make a mark on the body of the fitting that is in-line with the hole and align with the tube.
 - Route the vacuum line from the boost signal amplifier to the float bowl vent on the left side of the carburetor.



Boost Signal Amplifier (Front Mount Intercooler)



Boost Signal Amplifier
(Touring Style Intercooler)



Warning: Be sure to check all fuel lines and fittings for leaks before starting the motorcycle. Fuel leakage could result in a fire.



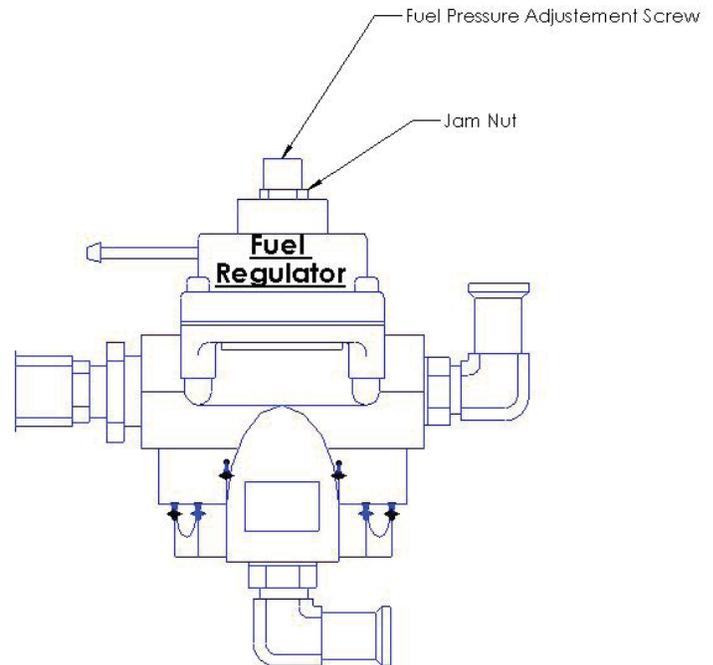
For instructions on the remaining parts in this kit, refer to the supplied owner's manual. Ignore sections that have already been covered by these supplementary instructions.

TUNING TIPS

Fuel Pressure

The fuel system is designed to be rising rate, which means the fuel pressure will rise as boost pressure increases. Fuel pressure should rise at the same rate as boost pressure, but roughly 2 psi greater than boost pressure. For example, when the system is making 5 psi of boost pressure, the fuel pressure should be 7 psi.

Recommended fuel pressure at idle should be 1.5-2.0 psi. Fuel pressure is adjusted by loosening the jam nut on the top of the fuel pressure regulator, and turning the screw (clockwise increases fuel pressure.) When the desired fuel pressure is achieved, hold the adjusting screw in place using an allen wrench, and tighten the jam nut (see schematic at right).



1 If fuel pressure cannot to be set to the recommended idle specification, perform the following checks to locate the problem:

- Verify there are no restrictions to the fuel lines.
- Verify that the fuel return line is not pinched.
- Verify that the vacuum lines are not pinched.

✓ *The use of fuel pressure and boost gauges is highly recommended.*

2 If fuel pressure does not rise with boost, or rises too much under boost, perform the following checks to locate the problem:

- Verify that the return fuel line from the lower port of the regulator is not pinched or restricted.
- Verify that the vacuum line to the regulator is connected to the proper location.
- Verify that the fuel tank is vented properly.



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