

PATRIOT™

Exhaust Products

Corporate Office: PerTronix Inc. 440 E. Arrow Highway, San Dimas, California 91773 * Phone 909.599.5955 * FAX 909.599.6424 * www.patriopipest.com

MOTORCYCLE EXHAUST SYSTEM INSTALLATION INSTRUCTIONS

Harley Davidson®
Softail® Models 1986-2009
Part Number: M101110S, X, B & M101112S, X, B

WARNING:

*Not legal for use on catalyst-equipped vehicles except for racing vehicles which may not be operated on a highway. This exhaust may not meet State or Federal Noise Emissions standards and may not be used on any vehicle if such use is in violation of State or Federal Noise Emission standards.
Not Legal for Sale or Use in California on Emissions Controlled Vehicles*

**Please read and understand these instructions completely prior to attempting installation.
Check the parts list and tools required to be sure all you have all the necessary items.**

REMOVAL OF STOCK EXHAUST

**Make sure the motorcycle is completely cool before starting
Hot Exhaust can, and will, burn you**

1. If you are not familiar with the basic mechanical workings of your motorcycle, please refer to a Factory Shop Manual or consult a Professional Mechanic
2. On models with Floor Boards, remove the Right Side Floor Board and Bracket.
3. Oxygen Sensor equipped models; unplug the sensors from the wiring harness and remove any cable ties to free the wiring. The rear sensor is plugged in under the oil tank on the right side. The front sensor is plugged in inside of the plastic box above the voltage regulator. See Shop Manual for details if you are unsure of how or where to unplug the sensors.
4. Remove the two nuts that attach each exhaust flange to the cylinder head. Save these nuts for installation. It may be easier to loosen or remove the stock heat shields for better access.
5. Remove the two bolts or nuts (depending on year) that attach the exhaust mounting brackets to the frame. If your bike has studs here, remove them.
6. If so equipped, unbolt the clamp that attaches the front pipe to the bracket under the transmission. Not all years and models will have this bracket.
7. Remove the stock exhaust system from the motorcycle. Depending on the year and model of your bike it may be easier to separate the front and rear pipes before removing.
8. If your bike has Oxygen Sensors, use a 22mm (or 7/8") wrench to remove them from the exhaust, being careful not to damage them. Set sensors aside for re-installation.
9. If so equipped, remove the bracket from the right side lower transmission cover.
 - a. On Fat Boy®, Deluxe, and Nostalgia models with Shot Gun style exhaust, remove the rear bracket from the swing arm pivot area. See shop manual for details

INSTALLATION

Notice: Chrome and Stainless can be easily scratched during installation if you are not careful.
Warranty does NOT cover this type of damage.

1. Check the condition of the Exhaust gaskets and Replace as necessary. Patriot™ recommends Harley® part #17048-98 or equivalent.
2. Using a pair of Lock Ring Pliers, remove the Snap Rings and Flanges from your original exhaust. Check that the snap rings and flanges are in good condition and flat. Replace any parts that are bent or corroded.
3. Install the flanges and snap rings onto your new Patriot™ Exhaust.
4. If your motorcycle is equipped with Oxygen Sensors, Install them into the bungs on the Patriot Exhaust using Anti Seize on the threads (Note: Apply Anti Seize to threads only, contamination of the sensor probe can harm the Oxygen Sensor and affect engine performance). If you do not have Oxygen Sensors, install the supplied plugs into the bungs.
5. Slip the Patriot™ Exhaust up to the cylinder heads, carefully placing the pipes in the exhaust ports without damaging the exhaust gaskets.
6. Slide the flanges over the exhaust studs and loosely install the original exhaust flange nuts, DO NOT tighten at this time.
7. The Pipe to frame bracket is adjustable to allow for a tight fit. Leave the two pivot bolts loose, and install the 3/8" Serrated Flange Bolts to hold the bracket to the frame. Snug the pivot bolts when you are happy with the alignment of the pipe. See photo 3.
8. Tighten all flange nuts to the motor evenly to a final torque of approximately 18-20 ft. lbs. You will notice as you tighten the flange nuts that the exhaust will tend to move one way or another. Tightening them evenly will allow the pipes to seat square to the gasket and remain flush with the frame.
9. Tighten the Exhaust to Frame bolts to 25-30 ft. lbs. and the pivot bolts to 15-18 ft. lbs.
10. Reconnect the oxygen sensor wiring in the opposite manner to which it was removed.
11. Reinstall the right side floorboard if this was removed. Check for clearance between the Floor Board or Foot peg mounts. This can be slightly adjusted by loosening the flange nuts and retightening one slightly more than another if necessary. The heat shields can also be loosened and moved for clearance as necessary.
12. Insert the straight end of the lock cable through the adjuster on the SFI Valve. The SFI Adjustment cable mounts to the muffler using the included 10-32 Stainless Allen Screw, lock washer, and a drop of Loctite. See photo.
13. Carefully clean all Dirt, Oil, and Fingerprints from your Patriot™ Exhaust. These things can permanently discolor your exhaust and are not covered by warranty.

The Patriot Defender™ exhaust will increase the performance of your motorcycle, however due to increased efficiency it will be necessary to re-jet your Carburetor or recalibrate your Fuel Injection. Failure to do so can cause improper performance, overheating, and/or discoloration of your exhaust.

Patriot's Top Fueler is pre programmed for use with your Defender Exhaust System and is user adjustable to accommodate other changes to your motorcycle.

Fuel injected Harley-Davidson's® are equipped with an ECU (computer) that's programmed to deliver proper fuel/air mixture for a stock bike. The Patriot Defender™ changes the flow characteristics of the motor, requiring a change to the fuel requirements. The Patriot Top Fueler adjusts the fuel flow by

sensing the load being placed on the motor for proper and accurate fuel mixture at all times. The Top Fueler is easily adjustable to compensate for changes in Cams, Air Filters, even Big Bore and Stroker motors without the need for hooking up to a computer or making cumbersome downloads.

Visit www.patriotpipes.com for more information on the Finest Fuel Injection Controller available.



STARTING THE ENGINE

Start the engine and allow it to warm up to operating temperature, but do not allow idling for an excessive period of time as this can cause overheating and discoloration of the exhaust. Check for any unusual noises or exhaust leaks.

NOTE: On carbureted bikes DO NOT run with the choke on for any longer than necessary as this can cause discoloration to the exhaust.

For the first few miles you may see an abnormal amount of smoke from your exhaust, especially if riding with the SFI™ Valve in the closed position. **Do Not Panic**, this is normal as the silencing material breaks in. This will usually stop after the first 10 miles. During this time the cable may also be a little harder to operate than normal. Riding with SFI™ valve in the Open (Loudest) position it will create more Horsepower. It is possible to ride with the valve at any position between Open & Closed to suit the sound preferred and your riding style

NOTE: Re-tighten all hardware after the first 20 miles and then again at each scheduled service.

PARTS LIST

| Qty | Description |
|-----|---|
| 1 | 2 into1 Header System |
| 1 | Front Heat Shield (Installed) |
| 1 | Rear Heat Shield (Installed) |
| 2 | Oxygen Sensor Plugs (Installed) |
| 1 | Adjustment Lock Rod |
| 1 | 10-32 X 3/8" Stainless Steel Allen Head Cap Screw |
| 1 | Stainless Steel Lock Washer |
| 2 | 3/8-16 X 3/4" Serrated Flange Bolt |
| 2 | 5/16-18 X 3/4" Hex Head Bolts (Installed) |
| 2 | 5/16-18 Ny Lock Nuts (Installed) |
| 2 | 5/16" Flat Washer (Installed) |

TOOLS REQUIRED

Flat Blade Screwdriver
5/16" Nut Driver
1/2" Combination Wrench
9/16" Combination Wrench
22mm or 7/8" Wrench for Oxygen Sensors
5/32" Allen Wrench
1/8" Allen Wrench
1/4" or 3/8" Drive Ratchet and Extension
1/2" and 9/16" Sockets
45 Torx (for 2000-09 Floorboard models)
Anti Seize
Loctite® 222 or Equivalent
Lock Ring Pliers

LIMITED ONE YEAR WARRANTY

All Patriot Defender™ Exhaust are guaranteed, to the original purchaser, to be free of defects in materials and workmanship for one year. This warranty covers the replacement or repair of the product only and does not cover the cost of removal and installation. **Discoloration or "Bluing" is caused by Excessive Heat or Improper Tuning and IS NOT covered by this warranty. Patriot Defenders are made from Stainless Steel and WILL turn Gold in color over time. This is normal and is a characteristic of Stainless Steel.** It is possible to use Stainless Steel Polish to return to a bright and shiny finish. Use regular Chrome Polish on the heat shields

Damage or product failure resulting from collision, improper installation, off-road use, road hazards, the use of exhaust insulating wrap or like products or rust occurring after installation, is not covered by the warranty. Should a part become defective it should be returned to the original selling retailer and must be accompanied with the sales receipt. If there is no retailer in your area, call the factory for a return authorization and return your part prepaid to the factory for inspection. PerTronix reserves the right to replace or repair the alleged defective part at our discretion and return the part freight collect

