

# **FLOW TECH™**

**A Holley Performance Brand**

## **P/N 12114FLT & 12114-1FLT 1996-01 Ford Mustang 4.6L (4 valve) Instruction Sheet**

**NOTE: X-PIPE P/N 12114XFLT OR 12114X-1FLT IS RECOMMENDED TO BE USED AND INSTALLED WITH HEADER P/N 12114FLT OR 12114-1FLT.**

**WARNING!** Breaking in an engine with ceramic-coated headers WILL result in damage to the coating and will VOID all warranties. Ceramic-coated headers require several heat cycles to fully cure before they will withstand extreme heat. Flowtech™ recommend using cast iron exhaust manifolds or old headers to break in new engines to avoid coating damage. Please call tech service at 270-781-9741 or 1-866-GOHOLLEY for additional information regarding ceramic-coated exhaust products.

### **INTRODUCTION:**

Thank you for making Flowtech™ Headers your choice in a high-performance exhaust system. Extensive dyno/track testing has enabled Flowtech™ to offer the most advanced design in headers for your application. Due to the restricted room available in the engine compartment, your headers may be close to some body and chassis components. This condition is normal. While the installation is not complex, it may be time consuming. However, as soon as you start your engine, the additional horsepower and improved performance will more than justify your efforts. Proper installation and maintenance will ensure a long life and maximum performance from your Flowtech™ Headers. If you have any questions, please call Technical Support at 1-270-781-9741 or 1-866-GOHOLLEY.

### **BEFORE STARTING:**

Your vehicle must be raised a minimum of 36 inches. A floor hoist is ideal. If no hoist is available, we strongly urge the use of axle stands as a safety measure.

**CAUTION!** Your car should not be supported on a bumper jack. Prior to installing the headers, take the time to make a careful and complete inspection of both the engine and transmission mounts. Replace them, if they look worn or damaged. Otherwise, this may affect the header fitting into your vehicle properly.

### **HELPFUL HINTS FOR HEADER INSTALLATION AND MAINTENANCE:**

1. Verify the header part number with the part number on the box and invoice.
2. Unless otherwise noted, Flowtech™ Headers are designed to fit without modifying the header (denting, cutting). **DO NOT** modify the header. **Call the Holley Technical Department at 1-270-781-9741 or 1-866-GOHOLLEY.**
3. Unless otherwise noted, Flowtech™ Headers are designed to fit with original equipment (i.e. oil pan, cylinder heads, mounts, bell housings, starter, etc.).
4. When using Flowtech™ Headers, it is recommended to use Flowtech™ gaskets for correct port match. When using other than the recommended Flowtech™ gaskets, match the gaskets to the head ports for a good seal.
5. Heat wrapping the header is not recommended, because it will prematurely fatigue the header.
6. We recommend high-temperature, red RTV silicone (sensor-safe) on both sides of the gasket to further ensure a proper seal.
7. Headers that are subjected to extreme conditions (mud, road salt, etc.) should be cleaned on a regular basis to help prevent corrosion.
8. When installing headers, use anti-seize on header bolts and Y-pipe bolts.

## **DISASSEMBLY & HEADER INSTALLATION PROCEDURE:**

**CAUTION! PLEASE READ NOTES AND TEXT THOROUGHLY & CAREFULLY!**

**NOTE 1:** A disconnected steering shaft must not be rotated more than 360 degrees.

**NOTE 2:** The starter solenoid must be reinstalled with solenoid shaft key-way inserted behind fork in starter motor properly.

**NOTE 3:** Some manifold bolts are only accessible by lifting the engine on one side after the engine mount bolts are removed.

**NOTE 4:** Some header flange bolt holes are slotted for the ease of bolt installation and are not intended to be installed before the header is inserted into the engine bay. Only the bolts specified in the installation procedure should be installed before the header is inserted into the engine bay.

## **SPECIAL COMPONENTS NEEDED FOR ASSEMBLY:**

1. Oxygen Sensor Simulator: May be purchased from the following:

RPM Outlet.com  
P.O. Box 1556  
Houston, TX 77411  
Phone # 713-858-8095  
**Part # RPMf046**

2. Oxygen Sensor Wire Extension(s)—2 each ----- 18" Long (Included with Header)

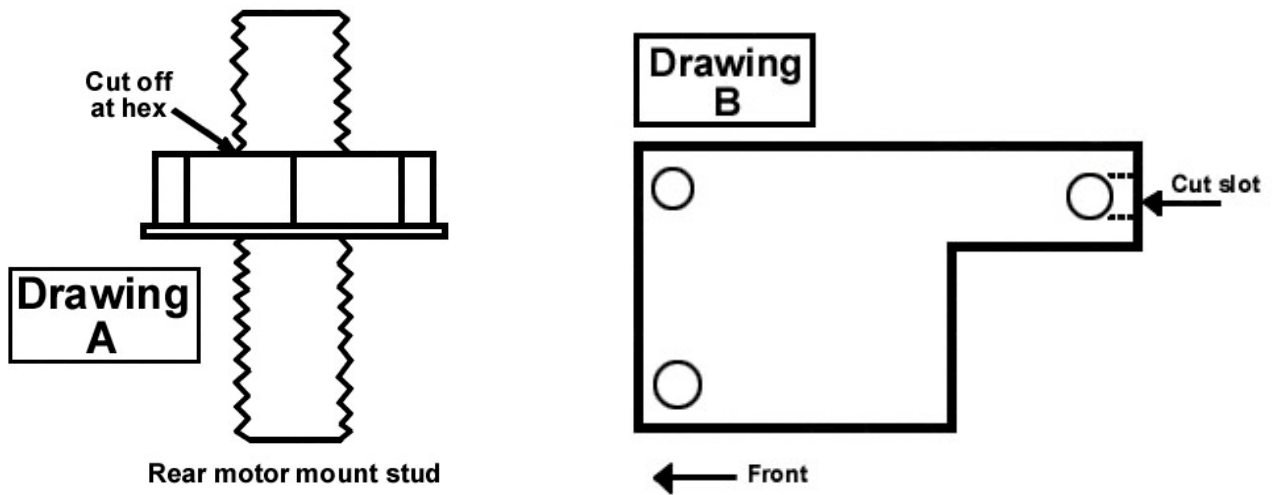
**NOTE:** These Oxygen Sensor Wire Extensions are made long enough to use either the Oxygen Sensor with the 8" wire length or the Oxygen Sensor with the 12" wire length. Any excess wire length after installation should be looped and secured into a non-used and non-heated cavity or pocket.

## **DISASSEMBLY:**

1. Disconnect the battery.
2. Disconnect the E.G.R. tube from the throttle body.
3. Remove the cold air inlet tube from the air cleaner and throttle body.
4. On Cobra models, remove the upper tower support bracing.
5. Remove the bolt from the oil dipstick tube.
6. Raise the car and support it with axle stands.
7. Remove the oil filter.
8. On hard-top models, remove the A-arm brace.
9. Disconnect the (4) O<sub>2</sub> sensor wires from the H-pipe. Remove the R/S O<sub>2</sub> sensor next to the starter motor.
10. Remove the H-pipe assembly.
11. Disconnect the E.G.R. tube from the rear of the manifold (left side).
12. Disconnect the steering shaft.

**NOTE:** A disconnected steering shaft must not be rotated more than 360 degrees.

13. Remove the O<sub>2</sub> sensor bracket from the engine mount (left side).
14. Remove the engine mount nut. Raise the engine on the left side and remove the mount. Cut a slot in the motor mount as shown in Drawing B. Modify the mount stud, as shown in Drawing A.



15. After the mount has been modified, insert it back into the engine bay. Do not mount at this time.
16. Disconnect the A.I.R. tube from the front of the manifold, if applicable (left side).
17. Remove the manifold (left side). Remove all the manifold studs.

**NOTE:** Some manifold bolts are only accessible by lifting the engine on one side after the engine mount bolts are removed.

18. Remove the A.I.R. tube from the front of the manifold, if applicable (right side).
19. Remove the starter.
20. Remove the engine mount nut. Raise the engine. Loosen and remove the manifold (right side).
21. Remove all the manifold studs (right side).
22. On standard shift models, remove the clutch fork shield (left side).

## **A.I.R. (Air Injection Reaction) SYSTEM ACCOMODATIONS:**

### **1996-1998:**

Fittings on this product are designed to accommodate several year model variations.

### **1996-1997:**

1. Vehicles that are equipped with an A.I.R. system will need to install the supplied fitting into the header and tighten.
2. Insert a 3/8" drill bit into the fitting and drill the tube on the left and right side header before installing the headers into the engine compartment.
3. Install the supplied plug into the fitting between the first and second primary tube on the left side header and tighten.

### **1998:**

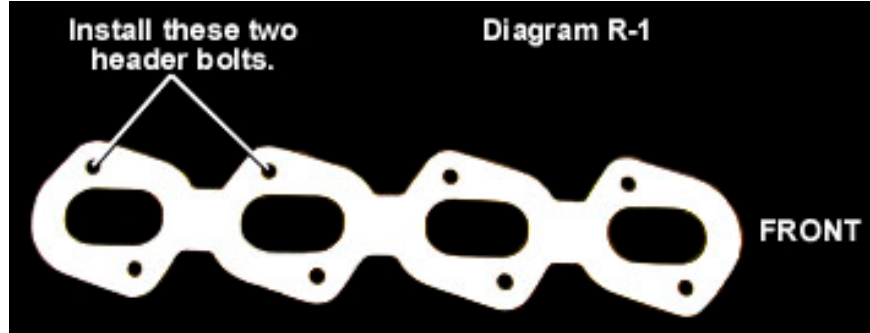
1. Vehicles that are equipped with an A.I.R. system will need to install the supplied fitting into ONLY the right side header and tighten.
2. Insert a 3/8" drill bit into the fitting and drill the tube on the right side header before installing the headers into the engine compartment.
3. Install the supplied fitting into the 1" tube located between the first and second primary tubes and tighten.

### **1999-2001:**

1. These vehicles were not equipped with A.I.R. system.
2. Install the supplied plug into the 1" tube located between the first and second primary tubes and tighten.

## HEADER INSTALLATION:

1. The right side header must go on first.
2. Install the top #3 & #4 header bolts with the header gasket. (See Diagram R-1.)

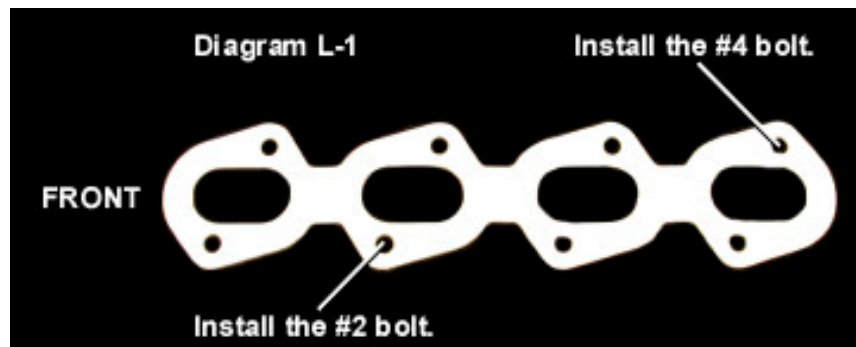


**NOTE:** Some header flange bolt holes are slotted for the ease of bolt installation and are not intended to be installed before the header is inserted into the engine bay. Only the bolts specified in the installation procedure should be installed before the header is inserted into the engine bay.

3. Raise the engine on the right side and insert the header into the engine bay.
4. If applicable, reconnect the A.I.R. tube on the front of the header at this point.
5. Lower the engine down on the right side. Slip the header onto the installed bolts and start the #4 lower bolt.
6. Install and snug all the accessible bolts on the right side of the head at this point.
7. Raise the engine on the right side. Install and tighten all the remaining bolts.
8. Lower the right side of the engine down onto the engine mount. Install the mount bolts, but don't tighten at this time.
9. With the engine in the lowered position, unlock the steering wheel.
10. Swing the steering shaft back and to left for access to the engine bay.

**NOTE:** A disconnected steering shaft must not be rotated more than 360 degrees.

11. Install the #2 bottom bolt and the #4 top bolt with the header gasket. (See Diagram L-1.)



**NOTE:** Some header flange bolt holes are slotted for the ease of bolt installation and are not intended to be installed before the header is inserted into the engine bay. Only the bolts specified in the installation procedure should be installed before the header is inserted into the engine bay.

12. Insert the rear section of the left side header into the engine bay. (See Photo 1.)



**Photo 1**



**Photo 2**

13. Insert the front section of the left side header into the engine bay. (See Photo 2.)
14. Swing the steering shaft between the two sections. The steering shaft is telescopic. (See Photo 3.)



**Photo 3**

15. Slide the two split sections of the header fully together at the slip joint.
16. Raise the engine slightly.
17. Install the rear engine mount bolt and screw it in until approximately 1/4" from tight.
18. Do not install the engine mount behind the bolt at this point.
19. Slip the slotted header flange over the installed bolts, leaving the steering shaft loose.
20. Lower the engine.
21. Start and snug a few of the header bolts.
22. Raise the engine. Install and tighten all accessible header bolts.
23. Slide the slotted engine mount behind the rear bolt and install the front engine mount bolts.
24. Lower the engine. Install and tighten all the remaining header bolts.
25. Install and tighten the engine mount nut (right side).
26. Tighten all the engine mount bolts.
27. Install the starter motor and tighten. Install the wires on the starter and tighten.

28. Install the steering shaft and tighten the bolt.
29. Install and tighten the engine mount nut (left side).
30. Tighten all the engine mount bolts, reconnecting any ground straps to the studs.
31. Install the oil filter.
32. On standard shift models, install the clutch fork shield (left side).
33. On hard-top models, install the A-arm brace.
34. Install the E.G.R. tube at the rear of the engine to the header.
35. Install the O<sub>2</sub> sensors to the headers, if applicable.
36. Install the cold air inlet tube to the throttle body and the air cleaner.
37. Install the E.G.R. tube to the throttle body.
38. Reconnect the battery. Start the vehicle and check for leaks.

### **PRIOR TO FINISHING CHECK LIST:**

1. Inspect the steering shaft for proper installation.
2. Check to ensure that no wires will come in contact with the headers.
3. Check to ensure that no heat shields (left and right sides) come in contact with the headers.
4. Check to ensure that all emission A.I.R. hoses are clamped properly.
5. Check to ensure that any and all electrical connections that were disconnected are properly reconnected.
6. Check to ensure that all oxygen sensor wires are looped and secured in a non-used and non-heated cavity or pocket.
7. **NOTE: X-PIPE P/N 12114XFLT OR 12114X-1FLT IS RECOMMENDED TO BE USED AND INSTALLED WITH HEADER P/N 12114FLT OR 12114-1FLT.**
8. Reconnect the battery. Start the car and check for leaks.

## **12114FLT Instructions**

**Date: 9-26-03**