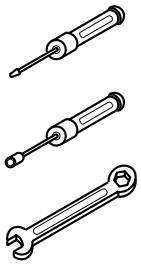
HARLEY-DAVIDSON® SOFTAIL BIG RADIUS 2-INTO-1 INSTALLATION INSTRUCTIONS PART# 28023

MORE POWER : LESS NOISE

Congratulations, you have purchased the finest exhaust system for your motorcycle on the market. Your Vance & Hines exhaust system is designed and crafted for maximum performance, a perfect fit, a great sound and unbeatable style. Please follow the installation instructions below and if you have any questions, please call our technical support line at (562) 926-5291.

Attention installer (if other than owner), please forward this instruction sheet to the owner of this product. These instructions contain valuable information to the end user.

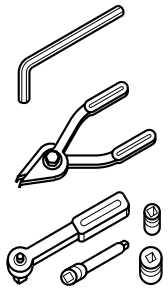
TOOLS REQUIRED



Flat blade screwdriver

5/16" Nutdriver

1/2", 9/16" & 7/8" or 22mm, 14mm Combination wrenches



5/16" & 3/8" Allen wrenches T45 & T50 Torx wrenches

Snapring pliers

3/8" Ratchet, Extensions, 1/2" & 9/16", 3/4" sockets

READ ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION

STOCK EXHAUST SYSTEM REMOVAL

NOTE: These instructions are written for late model motorcycles equipped with O2 sensors. If you are installing these pipes on a bike which is not equipped with O2 sensors, ignore all instructions which reference them. Additionally you will need to purchase an O2 sensor block off kit P/N 16925. However this kit does contain all necessary hardware to install the right side passenger footpeg on '00-'06 model softails (see packing list).

1. Under the oil tank on the right hand side, locate the rear O2 sensor connector. Unplug sensor and feed the end of wire through the frame freeing it from motorcycle. NOTE: Pay attention to wire routing for re-installation.
2. Open the plastic cover above the rectifier on front of the frame to gain access to the front O2 sensor connector. Unplug sensor from harness. Remove cable tie holding wire to frame and feed the end of the wire through, freeing it from motorcycle.
3. On FLSTC, FLSTF, FLSTN and FLSTSC models, loosen the right hand floor board mounting bolts to gain clearance for exhaust removal and installation.
4. Loosen the heat shield clamps on both front and rear exhaust pipes.
5. Remove the two mounting nuts from each head pipe, located at the cylinder head.
6. Remove the nuts attaching the exhaust mount bracket to the frame.
7. Remove the right side passenger footpeg and hanger bracket. Leave them off, additional reinstallation instructions to follow.
8. If equipped, unbolt the carriage bolt and clamp attached to the bracket under the right side transmission cover.
9. Remove the entire exhaust system and set it aside.
10. If equipped, remove the bracket from under the right side transmission cover.
11. Using a 7/8" or 22mm wrench, carefully remove the O2 sensors from the stock head pipes and save for re-use with the new system.
12. Remove the two lower mounting studs from the frame (Figure 1).
13. Carefully remove exhaust port flanges and circlips from the stock exhaust system using snapring pliers. NOTE: Replace the exhaust gaskets with the supplied gaskets.

FIGURE 1

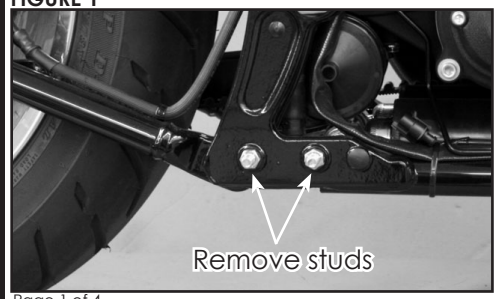


FIGURE 2

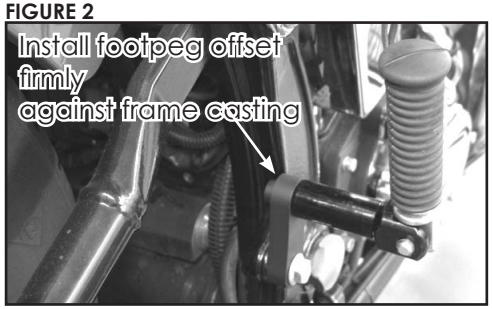


FIGURE 3

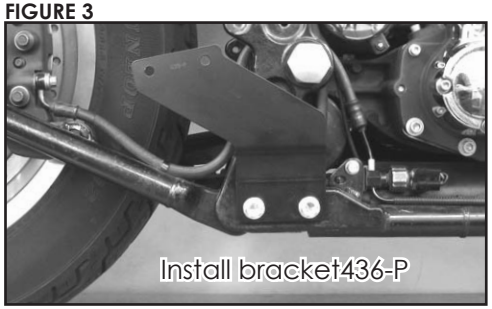
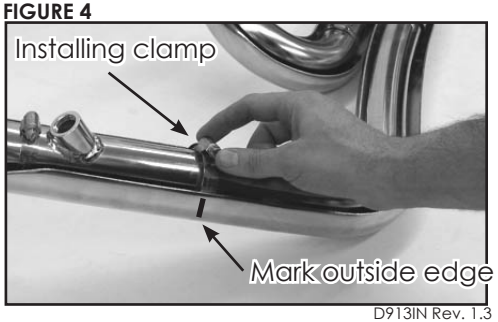


FIGURE 4



MORE POWER : LESS NOISE

FIGURE 5

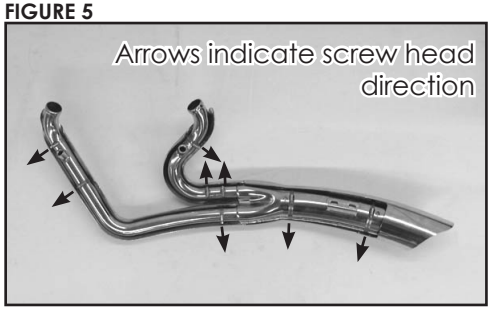


FIGURE 6

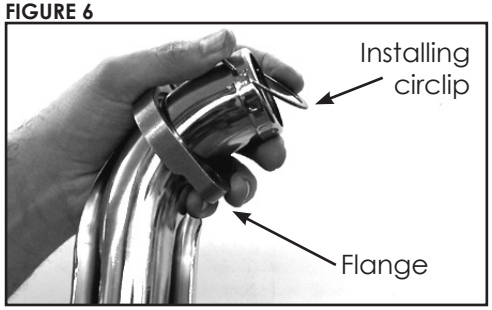
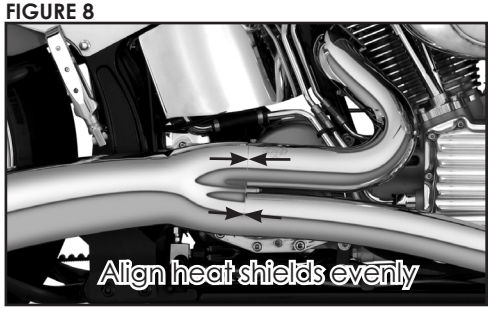


FIGURE 7

FIGURE 8



VANCE & HINES EXHAUST SYSTEM INSTALLATION

1. Replace the passenger footpeg and hanger using the supplied footpeg offset bracket, 3/8" x 1-1/4" flange head bolt and 3/8" x 2-1/2" Allen bolt (Figure 2). NOTE: The threaded insert on the footpeg offset bracket should rest firmly against the frame casting, be sure to tighten this bolt firmly and check from time to time. OPTIONAL KIT: If you would like to raise the left hand passenger footpeg to match the right please order Vance & Hines kit number 16927. On 1986 to 1999 models the passenger footpeg will be eliminated.
2. Attach mounting bracket 436-P to frame using two 3/8" x 3/4" flange head bolts (supplied)(Figure 3). If equipped, plastic plugs must be removed.
3. Remove head pipe assembly and head pipe heat shields from protective packaging. Place each heat shield on a non-abrasive surface such as a blanket or carpet. Using a felt tip pen, mark outside edge of each heat shield to show location of mounting clips that hose clamps will loop through (Figure 4).
4. Lay head pipes into their respective heat shields.
5. Install #20 hose clamps by feeding tail end of clamps into heat shield clips (Figure 4). Take note of clamp screw head direction (Figure 5). Screw head must be accessible when system is installed on motorcycle for adjustment purposes.
6. Using #56 hose clamps (supplied) and, following the same procedures as steps 3,4 & 5 install the muffler body heat shield onto muffler body.
7. Apply a small amount of anti-seize compound to the threads of the O2 sensors and install them into the new head pipe. NOTE: **2006 to 2011 models** or models using 18mm wideband oxygen sensors install sensor directly into head pipe. **2012 to 2014 models** install supplied 18mm to 12mm oxygen sensor adapter then install 12mm oxygen sensors (Grey connector into front head pipe, Black connector into rear head pipe.) All models not using oxygen sensors install 18mm plug with copper crush washer.
8. Install exhaust port flanges and circlips (from stock system) onto head pipes (Figure 6).
9. Using stock flange nuts, carefully install head pipe assembly into exhaust ports, starting with the rear cylinder. Assistance may be required. NOTE: Do not tighten at this time.
10. Slide the nut plate (supplied) into the bracket that is welded to the back side of the muffler. Loosely install two 5/16" x 5/8" flange head bolts (supplied)(Figure 7).
11. Tighten the exhaust port flange nuts and 5/16" flange head bolts.
12. Tighten all hose clamps securing heat shields. NOTE: Align head pipe heat shields evenly with muffler heat shield (Figure 8).
13. Feed wire for the front O2 sensor through the frame and into the plastic holder on the frame. Plug the sensor into the stock wiring connector. Snap the plastic holder closed to hold the connector in place.
14. Install a new nylon cable tie (supplied) to hold the wires onto the frame in the original location.
15. Feed connector for the rear O2 sensor through the frame under the oil tank on the right hand side. Plug the sensor into the stock wiring connector.
16. Tighten the right floor board mounting bolts on models so equipped. NOTE: Three 1" x 3/16" washers are supplied to space the floor board away from the front heat shield if necessary. On 1986 to 1999 models only two of these washers will be used.
17. Check for adequate clearance between all exhaust system components and motorcycle accessories prone to heat damage.
18. Be sure to tighten all hardware before starting your motorcycle.
19. After installation and before starting motorcycle, completely clean pipes and mufflers with cleaning solvent and a clean soft cloth that will not leave a residue. NOTE: Any residue, oil, or fingerprints will stain the chrome when the metal heats up.

EXHAUST CARE - HELPFUL HINTS TO AVOID DISCOLORATION OF EXHAUST SYSTEM

1. When installing a new set of chrome pipes, make sure your hands are clean and free of oil. After installation, thoroughly clean pipes with a soft cloth and cleaning solvent that will leave no residue (chrome wax / polish, glass cleaner, alcohol, ammonia, etc...) before starting the motorcycle.
2. Avoid long periods of idling as this can cause discoloration.
3. Intake leaks can cause the engine to run lean and overheat, this could lead to discoloration.
4. Make sure there are no exhaust leaks at the junction of the exhaust pipes and cylinder head. We recommend replacing gaskets if they are worn.

VANCE & HINES OPTIONAL ACCESSORIES

FUELPAK

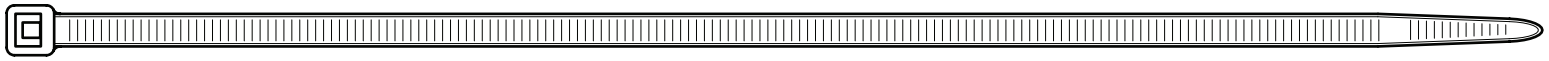
FUEL MANAGEMENT:
Take the guess work out of fuel injection with Fuelpak Fuel Management. Contact your local dealer or call (562) 921-0071 to order. Visit fuelpakfi.com for more information. Fuelpak is intended for racing or off-highway use only, and is not legal for sale or use in California on pollution-controlled vehicles.

PLEASE NOTE: Every effort is made for Vance & Hines Exhaust Systems to provide improved cornering clearance. However, due to design and space limitations on some motorcycle models, ground and cornering clearance may not be improved and in some cases may be reduced. Be sure to follow proper installation instructions.

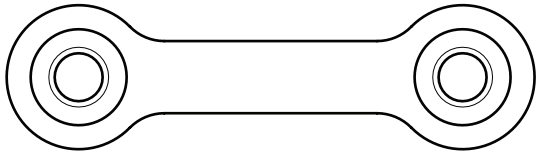
MORE POWER : LESS NOISE

ALL PARTS SHOWN ARE ACTUAL SIZE

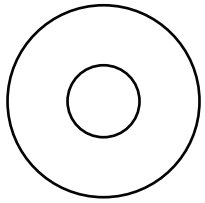
PACKING LIST



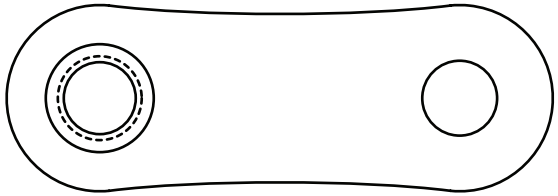
Nylon cable tie x 1



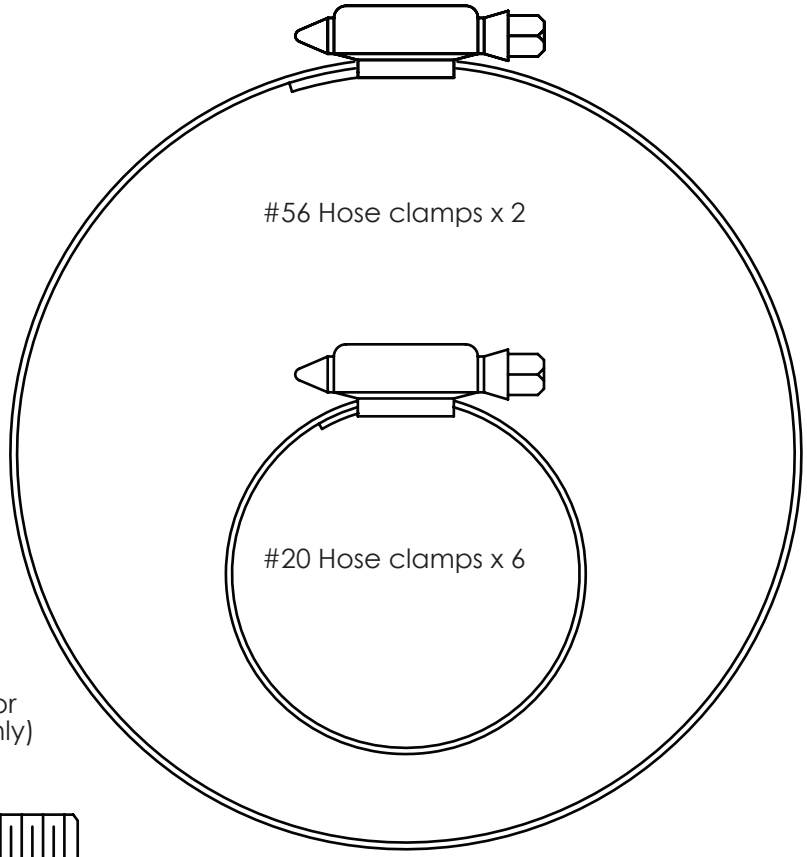
Nut plate x 1

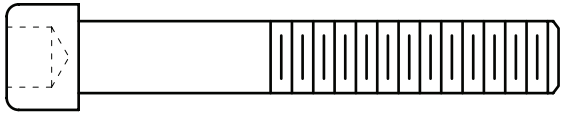


1" x 3/16" Washers x 3

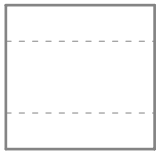


Footpeg offset bracket x 1

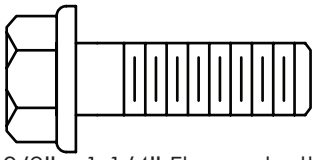




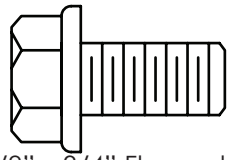
3/8" X 2-1/2" Allen bolt x 1



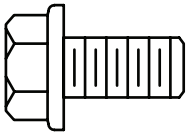
3/8" Spacer x 1(for '00-'06 models only)



3/8" x 1-1/4" Flange bolt x 1



3/8" x 3/4" Flange bolts x 2



5/16" x 5/8" Flange bolts x 2

PARTS NOT SHOWN:

435-P	Bracket	x1
D779FC	Head pipe assembly	x1
D779HC	Front heat shield	x1
D481HC	Rear heat shield	x1
D482HC	Muffler heat shield	x1
A644ST	18-22mm O2 Adaptor	x2
A167HW	Exhaust Gasket	x2

WARRANTY

Vance & Hines exhaust systems are warranted against defects in material and workmanship for a period of 90 days from the date of purchase from an authorized dealer. This warranty does not cover discoloration of chrome finishes. This warranty is limited to the repair or replacement of a product proven to be defective from normal use. Vance & Hines exhaust systems are designed to fit and operate on OEM motor and chassis. This warranty does not cover any product subject to abuse, misuse, improper installation or modification.

MORE POWER : LESS NOISE

GET THE MOST OUT OF YOUR RIDING EXPERIENCE...
AN AFTERMARKET EXHAUST SYSTEM IS ONLY YOUR FIRST STEP, NOW YOU NEED FUEL MANAGEMENT.

NOW YOU NEED FUELPAK.

Your fuel injected Harley-Davidson® is equipped with an ECU (electronic control unit) that's programmed to deliver fuel to the motor based on an air/fuel ratio for a stock air filter and stock exhaust system. When you install a performance exhaust system, your airflow changes, so you need a fuel management system that adjusts your air/fuel ratio to match the changes. That fuel management system is Fuelpak. Fuelpak adds and takes away fuel, allowing for a more precise range of refinement in your air/fuel ratio. Get the perfect fuel management combination with your Vance & Hines exhaust system, get Fuelpak. For more information visit the tuning center at fuelpakfi.com

NOTICE: Fuelpak is intended for racing or off-highway use only, and is not legal for sale or use in California on pollution-controlled vehicles.

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