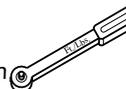




Congratulations, you have purchased the finest exhaust system for your motorcycle on the market. Your Vance & Hines exhaust system is designed and crafted for maximum performance, a perfect fit, a great sound and unbeatable style. Please follow the installation instructions below and if you have any 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" & 7/8" or 22mm Combination wrench
-  3/8" Allen wrench
-  Snapping pliers
-  Ft./Lb. Torque wrench
-  3/8" Ratchet & extensions, 1/2" Socket, 7/16", 1/2" & 9/16" deep sockets, 1/4" & 3/8" Allen sockets

READ ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION

STOCK EXHAUST SYSTEM REMOVAL

1. Remove both left and right saddlebags and set them aside.
2. Loosen the bolt from the pinch clamp on the front end of each muffler.
3. Remove the two 5/16" bolts that mount the muffler to the saddlebag supports. Repeat this step on the opposite muffler (save these parts, they will be re-used).
4. Remove the stock mufflers with sliding hangers and set them aside.
NOTE: It may be necessary to use a penetrating lubricant to loosen the muffler from the head pipe.
5. Find and unplug the O2 sensor wires from the wiring harness and remove cable tie holding front wire to frame. Feed the end of the wires through the frame so they are free from the motorcycle. NOTE: Pay attention to wire routing for re-installation.
6. Remove the right hand floor board.
7. Remove both passenger floor boards.
8. Loosen the heat shield clamps on both front and rear exhaust pipes.
9. Loosen the rear head pipe clamp located behind the rear cylinder. Remove the section of head pipe connecting the left side muffler.
10. Remove the nut and carriage bolt holding the front head pipe to the

11. Remove the two mounting nuts from each head pipe, located at the cylinder head. Carefully remove the head pipes and set them aside.
12. 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.
13. Remove the rear cylinder bracket by removing the two starter mounting bolts. Install new bracket (stamped 422-P)(supplied) and torque to 13-16 ft. lbs. (Figure 1). NOTE: Twist breather hose down towards the left hand side to get it as far away from the pipe as possible.
14. Install mounting post (from stock system) so the nut is accessible from right side of motorcycle and saddle will support underside of exhaust pipe.
15. Replace the bracket on the transmission housing with new bracket (stamped 423-P)(supplied) and torque to 13-16 ft. lbs. (Figure 2).
16. Carefully remove the exhaust port flanges and circlips from the stock exhaust system using snapping pliers. NOTE: If circlips look bent or twisted, replace them.

FIGURE 1

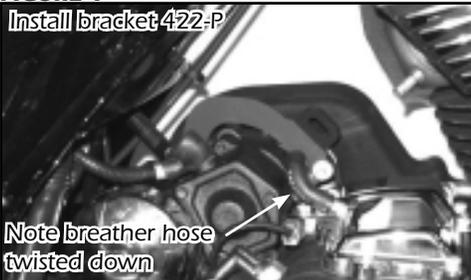


FIGURE 2



FIGURE 3

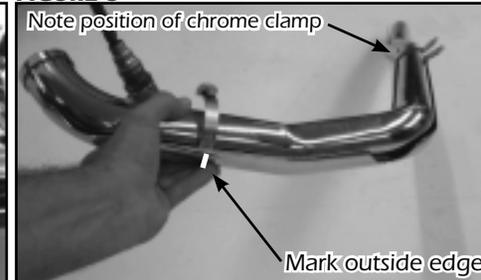


FIGURE 4

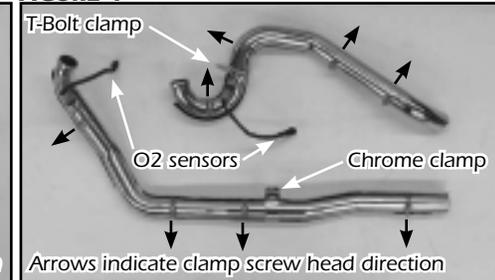


FIGURE 5

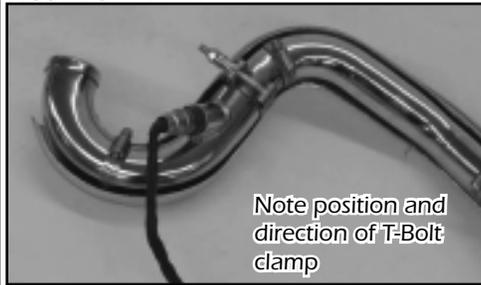


FIGURE 6

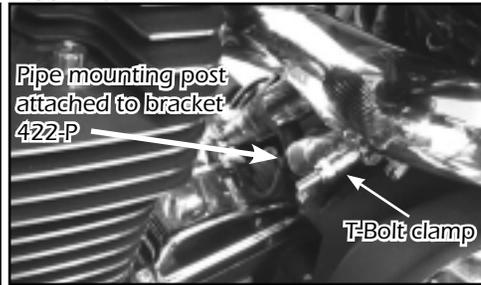


FIGURE 7

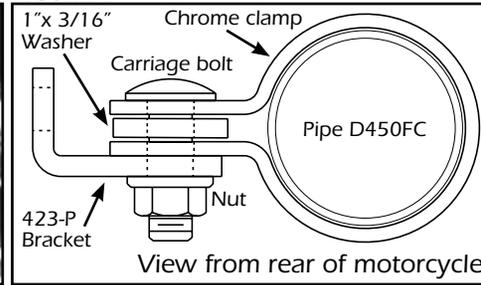
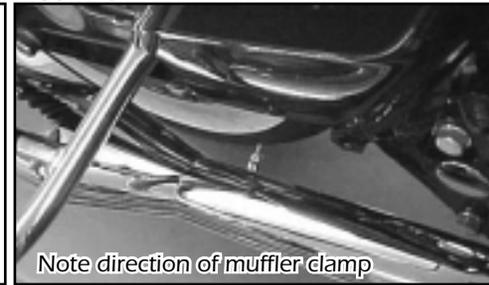


FIGURE 8



VANCE & HINES EXHAUST SYSTEM INSTALLATION

- Remove head pipes and 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 (supplied) will loop through (Figure 3).
- Slide the chrome clamp (supplied) onto the front head pipe (D450FC) (supplied) so it sits near its installed position (Figure 3 & 4).
- On the rear head pipe (D451FC)(supplied) slide the T-bolt clamp (Size #58)(supplied) up the pipe so it sits on the straight section of pipe closest to the cylinder head. When pipe is installed, clamp nut should hang under head pipe and point towards the engine (Figure 5).
- Lay the head pipes into the heat shields and install each hose clamp by feeding tail end of clamps into heat shield clips. Take note of location of clamp screw head direction (Figure 3) (screw head must be accessible when system is installed for adjustment purposes).
- Apply a small amount of anti-seize compound to the threads of the oxygen sensors and install them into the new head pipes. NOTE: Be careful not to get anti-seize on sensor tip, it may affect sensor function.
- Install exhaust port flanges and circlips (from stock system) onto head pipes.
- Check the stock exhaust gaskets to be sure they are in good shape. If you have any doubts as to their condition, replace them. Recommended replacement exhaust port gaskets, Harley part number: 17048-98 or 65324-83A.
- Install rear head pipe assembly into exhaust port. Use stock flange nuts, do not tighten at this time.
- Slide T-bolt clamp (supplied) into position on pipe mounting post attached to bracket 422-P, do not tighten at this time (Figure 6).
- Install front head pipe assembly into exhaust port, using the stock flange nuts. Do not tighten at this time.
- Install chrome clamp (supplied) to bracket 423-P under the transmission cover while sandwiching one of the 1"x3/16" washers (supplied) (Figure 7) . Do not tighten at this time. On bikes equipped with hydraulic clutches it may be necessary to loosen the bracket in order to slip the carriage bolt through the clamp and bracket.
- Install T-bolt clamp (Size #58)(supplied) over the front (notched end) of each muffer so the nut faces inward toward the motorcycle (Figure 8).
- Slip the muffer over the head pipe and under the heat shield. Mount the muffer to the saddlebag support using the stock 5/16" bolts and tighten. NOTE: There is a different muffer for the left and right side of the motorcycle. The dent in each canister should always face in.
- Tighten the exhaust port flange nuts.
- Tighten the chrome and T-bolt clamps on the head pipes.
- Adjust the rear cylinder support bracket (if necessary) and tighten the securing nut. NOTE: This nut is difficult to reach and you may have to determine the mounting post location, remove the pipe and then tighten this nut.
- Tighten the two muffer clamps.
- Tighten the hose clamps securing the heat shields.
- Plug O2 sensor wires back into wiring harness and route wires away from hot areas of motorcycle. Use nylon cable tie (supplied) to replace removed tie on the front head pipe O2 sensor wire.
- Reinstall the right hand floor board using two 1"x3/16" washers (supplied) and 1/2"x1 1/4" Allen bolts (supplied) to space the floorboard away from the front head pipe.
- Reinstall both passenger floor boards. NOTE: Floorboards can be installed in three positions. Install both floorboards at the same height.
- Wipe any finger prints or oil off the exhaust system before starting your motorcycle.
- Be sure to tighten all hardware before starting your motorcycle.

EXHAUST CARE - HELPFUL HINTS TO AVOID DISCOLORATION OF EXHAUST SYSTEM

- 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.
- Avoid long periods of idling as this can cause discoloration.
- Intake leaks can cause the engine to run lean and overheat, this could lead to discoloration.
- 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



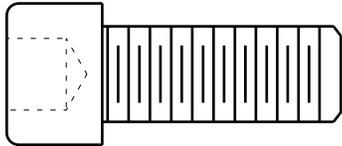
FUEL MANAGEMENT:
Take the guess work out of fuel injection with the new Fuelpak Fuel Management System, P/N 61003. Contact your local dealer or call (562) 921-7461 to order. Visit vanceandhines.com for more information.

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.



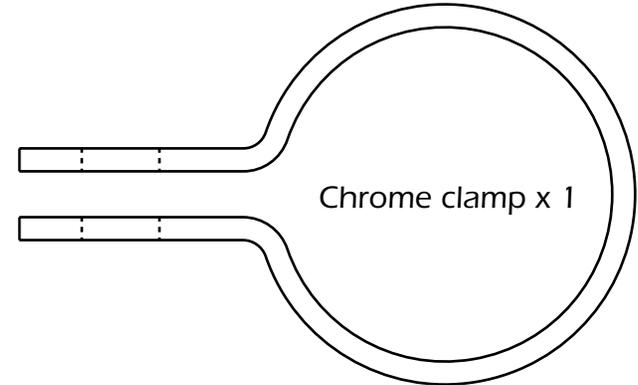
PACKING LIST



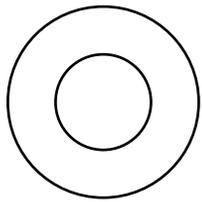
1/2" x 1 1/4" Allen bolt x 2



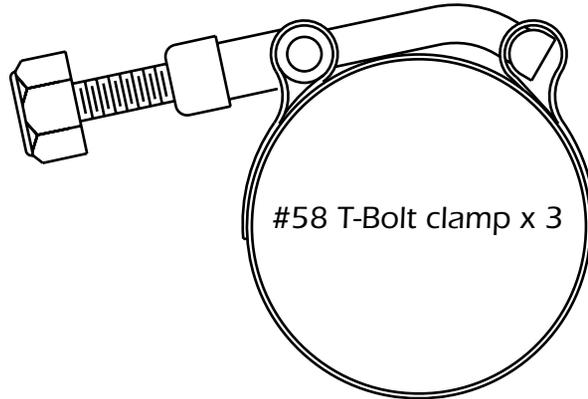
#20 Hose clamps x 8



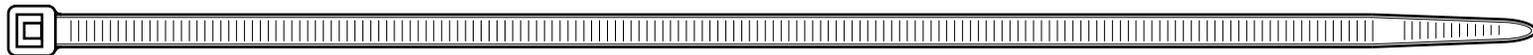
Chrome clamp x 1



1" x 3/16" Washer x 3



#58 T-Bolt clamp x 3



Nylon cable tie x 1

PARTS NOT SHOWN:

- 422-P Bracket x1
- 423-P Bracket x1
- D450FC Front head pipe x1
- D451FC Rear head pipe x1
- D450HC Front heat shield x1
- D451HC Rear heat shield x1

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.

FUELPAK

GET THE MOST OUT OF YOUR RIDING EXPERIENCE...

AN AFTERMARKET EXHAUST SYSTEM IS ONLY YOUR FIRST STEP, NOW YOU NEED FUEL MANAGEMENT.

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 vanceandhines.com/fuelpak.



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