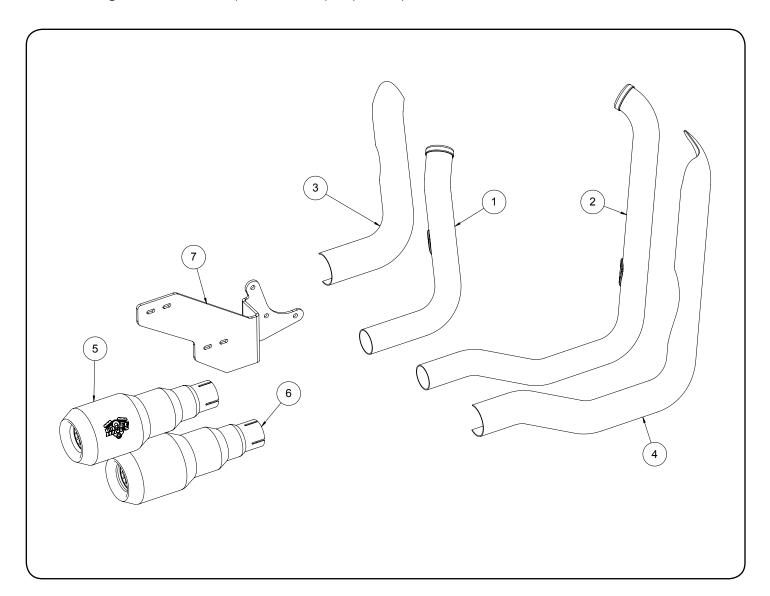


# INSTALLATION INSTRUCTIONS: HARLEY-DAVIDSON DYNA HI-OUTPUT GRENADES 2-INTO-2 PART# 16899/16896/46896/46899

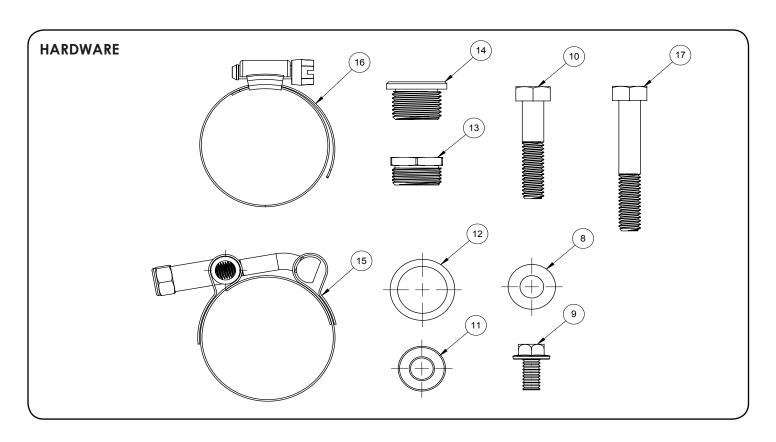
<u>Congratulations, you have purchased the finest exhaust system available for your motorcycle.</u> Your Vance & Hines exhaust is designed and crafted for performance, quality, and style.

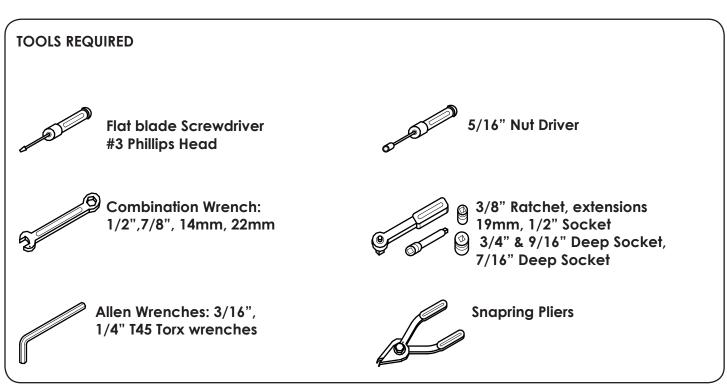


# **PARTS LIST**

NO.	Description	Qty.
1	Rear Head Pipe	1
2	Front Head Pipe	1
3	Rear Heat Shield	1
4	Front Heat Shield	1
5	Rear Muffler (Logo)	1
6	Front Muffler	1
7	Muffler Support Bracket	1
8	5/16 Washer	3
	·	

9	1/4-20 x 1/2 Flange Bolt	4
10	5/16-18 x 1 1/2 In. SHCS	3
11	Bracket Spacer	1
12	18mm X 24mm Washer	2
13	18-12mm O2 Adapter	2
14	18mm X 1.5mm X10mm Plug	2
15	T-Bolt Clamp	2
16	#20 Hose Clamp	7
17	5/16-18 x 2 IN. Hex Bolt	1





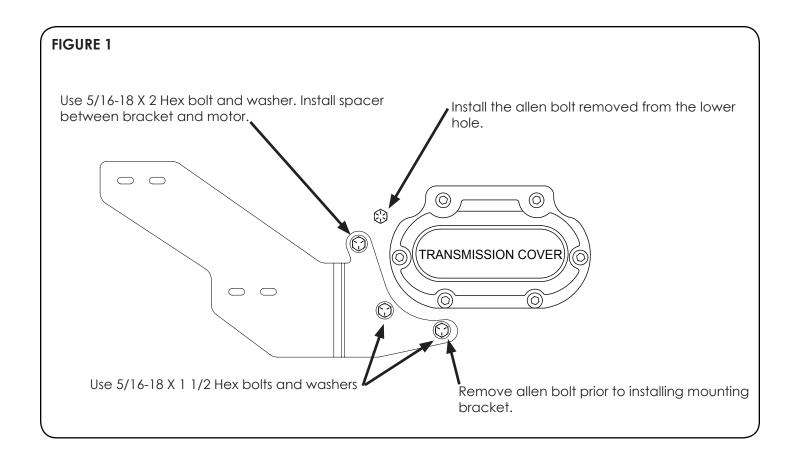
## STOCK EXHAUST SYSTEM REMOVAL

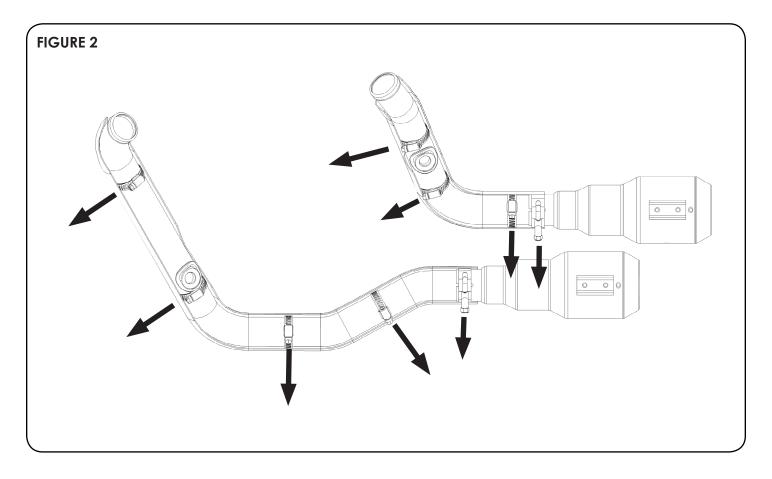
- Remove seat to gain access to rear oxygen sensor connector. Unplug sensor and feed end
  of wire through frame to free it from motorcycle. NOTE: Pay attention to wire routing for reinstallation.
- 2. For 2006 to 2011 models remove two bolts holding rectifier onto front of frame (near front tire). Open plastic cover to gain access to front oxygen sensor connector. Unplug sensor from harness and feed end of wire through to free it from motorcycle. For 2012 to 2015 models the connector is located under the rectifier at the front of the motorcycle.
- 3. Loosen the heat shield clamps on both the front and the rear head pipes.
- **4.** If equipped, remove the front head pipe clamp carriage bolt.
- 5. Remove the bolt that attaches the mufflers to the frame mounting bar.
- Remove the two cylinder exhaust port flange nuts from each head pipe, located at the cylinder head.
- 7. Remove the complete exhaust system and set aside (Assistance may be required).
- 8. Remove the left bolt below the transmission cover. Position the muffler support bracket over mounting location to determine which bolts to remove (**Figure 1**). Install removed bolt in the top hole left vacant by the new bracket.
- 9. Remove passenger foot peg mounting bracket.
  - NOTE: Passenger foot pegs must be removed to install system.
- **10.** Carefully remove the flanges and circlips from the stock exhaust system using snapring pliers. NOTE: Replace bent or damaged circlips.
- 11. Remove stock oxygen sensors.
- 12. Examine stock exhaust gaskets and replace them if they are worn or damaged.

NOTE: Replacement Gasket HD #65324-83B.

## VANCE & HINES EXHAUST INSTALLATION

- 1. Attach the muffler support bracket to transmission and tighten to 12-15ft/lb torque. (**Figure 1**). NOTE: 2006 to 2007 models use three 5/16" x 1 1/2" hex head bolts and washers. 2008 to 2011 models use three 5/16" x 1/12" hex head bolts, washers, and 11/16" spacer between the bracket and transmission in top hole. 2012 to 2015 models use one 5/16" x 2" hex head bolt, washers, 11/16" spacer in top hole and two 5/16" x 1 1/2" hex head bolts and washers in remaing holes.
- 2. Remove head pipes and heat shields from protective packaging. Place each heat shield on a non-abrasive surface such as a blanket or carpet. For chrome use a felt tip pen and mark the outside edge of each heat shield to show the location of the hose clamp mounting clips. (Figure 2). For black systems use a pencil or tape to mark the outside of the heat shields.
- 3. Lay header assembly into head pipe heat shields respectively. Loosely install #20 hose clamps by feeding the tail end of the clamp into heat shield clips. Take note of screw head direction (Figure 2). Screw head should be accessible when system is installed on motorcycle for adjustment purposes. NOTE: Do not tighten at this time.
- **4.** Apply a small amount of anti-seize compound to the threads of the oxygen 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 2015 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.
- 5. Install exhaust port flanges and circlips (from stock system) onto head pipes.
- **6.** Using stock flange nuts, carefully install head pipes into exhaust ports, starting with the rear cylinder. Assistance may be required. NOTE: Do not tighten at this time.
- 7. Slide the T-bolt clamps onto each muffler. Make sure that the nut on the clamps are accessible when installed on the bike. **Figure 2**. Install the mufflers on the head pipe assemblies (V&H stamped logo on the top, no logo on the bottom.)
- 8. Attach the muffler bodies to the bracket using the four 1/4-20 x 1/2 flange head bolts, leave loose at this time.
- 9. Tighten exhaust port flange nuts first then tighten 5/16" x 5/8" flange bolts.
- 10. Tighten the head pipe heat shields, then adjust the mufflers so that there is no gap between the heat shield and beginning of grenade muffler. Tighten the mufflers once they are aligned correctly.
- 11. Feed the wire for the front oxygen seensor through the frame and into the plastic holder on the frame. Plug the sensor into the stock harness.
- 12. 2006 to 2011 models put the toothed edge of the wiring holder into the slot in frome. Re-install rectifier so that it fits under tooth of wiring holder, keeping it in place in the frame. Tighten both the bolts.
- **13.** Feed connector for rear oxygen sensor through frame and into under seat compartment. Plug sensor into stock harness.
- 14. Reinstall the seat.
- **15.** Check for adequate clearance between all exhaust system components and motorcycle accessories prone to heat damage.
- 16. Be sure to tighten all hardware before starting your motorcycle.





# **EXHAUST CARE**

- 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 cleasner, 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 junchtion of the exhaust pipes and cylinder head. We recommend replacing gaskets if they are worn.

# **EXHAUST CARE (BLACK)**

- 1. When installing a new set of black pipes, make sure your hands are clean and free of oil. After installation, thoroughly clean pipes with warm soapy water and a soft cloth. Dry with a clean towel to remove any residue before starting the motorcycle. Do NOT use anything abrasive to clean the pipes.
- 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 exhuast pipes and the cylinder head. We recommend replacing gaskets if they are worn.

#### **Emissions Notice:**

In California, in order to meet Air Resources Board emissions requirements, certain aftermarket part applications have been identified as replacements, and others have received ARB Executive Orders. All other emissions related aftermarket parts are for competition use only.

#### Warranty:

All Vance & Hines products are warranted against defects in material and workmanship for a period of 90 days. This warranty does not cover discoloration or rust. This warranty shall be limited to the repair or replacement of the product, which may be proven defective under normal use. Vance & Hines will not warranty any system that has been abused, misused, improperly installed or modified.

Dealers or distributors are not authorized to make dispositions binding upon Vance & Hines. Vance & Hines will not be responsible for any labor charges incurred in removing or replacing any system under warranty. A return authorization number and a copy of the original purchase invoice must accompany all returns. Parts returned without a return authorization may be refused.

#### THE NEXT GENERATION OF FUEL MANAGEMENT IS HERE

The Fuelpak FP3 will revolutionize fuel management for all new Harley-Davidson models now using the HDLAN (CAN Bus) system. Connecting wirelessly by Bluetooth to iPhone or Android Smartphones, Fuelpak FP3 uses Flash technology to recalibrate engine parameters and mapping for Vance & Hines exhaust systems downloaded from the expansive library of calibrations developed by Vance & Hines.

- Smartphone App User Interface (iOS and Android)
- Recalibrates ECM by Flash Tuning
- Autotune Feature for Added Tuning Precision
- Displays Live Sensor Data
- App Links Direct to Customer Service Site

### FITMENT NOTES:

- FUELPAK FP3 IS COMPATIBLE WITH CAN BUS MODELS ONLY (TOURING, SOFTAIL, DYNA & SPORTSTER)
- FUELPAK FP3 IS NOT COMPATIBLE WITH V-ROD MODELS.
- MAPS ARE CURRENTLY AVAILABLE FOR: SPORTSTER, DYNA, SOFTAIL, TOURING AND TRIKE MODELS.
- MAPS FOR 110CI CVO MODELS COMING SOON.

#### **EMISSIONS NOTICE:**

FUELPAK IS INTENDED FOR RACING USE ONLY, AND IS NOT LEGAL FOR SALE OR USE IN CALIFORNIA ON POLLUTION-CONTROLLED VEHICLES.

