



**EXHAUST SYSTEM # HD00042
AMENDMENT (2-2)**

Feel the Power of Freedom

Congratulations, you have acquired the finest aftermarket performance exhaust system available for your motorcycle. Your FREEDOM PERFORMANCE exhaust system was designed to perform fit and give the optimum sound and style at a very affordable price

Please follow the installation instructions and please do not hesitate to call us for any technical questions at (310) 324-0415



PACKAGING HD00042-HW (*) =ASSEMBLED

PART NUMBER	DESCRIPTION	QTY	PART NUMBER	DESCRIPTION	QTY
S245-F1	FRONT HEAD PIPE*	1	HWC0002	HOSE CLAMP # 24 STAINLESS STEEL	3
S236-F1	REAR HEAD PIPE*	1	HWC0003	HOSE CLAMP # 28 STAINLESS STEEL	4
S245-F3	FRONT HEAT SHIELD**	1	HWB0008	3/8"-16X3/4" CARRIAGE BOLT ZINC PLATED	2
S246-F3	REAR HEAT SHIELD*	1	HWN0004	3/8"-16 TRI-LOCK FLANGE NUT ZINC PLATED	2
MBK-S101-F4	MOUNTING BRACKET	1	HWB0013	3/8"-16 X 2-1/2" SOCKET CAP SCREW ZINC	1
A110-O2-F14	M12 X 1.25 SENSOR BUNG PLUG	2	HWB0010	3/8"-16X3/4" SERRATED FLANGE SCREW ZINC	2
A125-O2-F14	OXYGEN SENSOR ADAPTER (18-12)	2	HWB0001	1/4"-20X3/8" BUTTON HEAD SCREW ZINC PLATED	2
A100-LCB-F8	11.750" LONG LOUVERED BAFFLE	2	HD00042-HW	HARDWARE BOX	1
	PLSTIC TIE DOWN 7" LONG BLACK	1	HD00042-INS	INSTRUCTION MANUAL	1

REMOVING THE STOCK EXHAUST SYSTEM

1. Disconnect Oxygen sensors: Some models (18MM sensors) have the sensor underneath the oil tank, on the right hand side, find the rear oxygen sensor connector and disengage from harness. Other models (12MM sensors) it's necessary to remove the seat from motorcycle refer to owner's manual for the proper procedures to remove it. Once the seat has been removed locate the harness and unplug sensor from harness. Make sure to remember the path of the wire as it will be re-routed thru the same path. Models without oxygen sensors skip steps 1, 2 and 3)
2. Unlock the plastic cover above the rectifier right in front of the frame of the motorcycle to get access to the front oxygen sensor connector. (18MM sensors) Unplug sensor from harness. Now remove cable tie which is holding sensor wire to the motorcycle frame and feed it the end of the wire through releasing it from the motorcycle.
3. Models with (12mm sensors) locate harness underneath the rectifier and disengage sensor. Note: most of the cases, (86-06) there are no Oxygen sensors (07-12) have 18 mm sensors and (13-up) have 12mm sensors consult your owner's manual for more information.
4. If equipped, loosen the floor boards to gain clearance for exhaust removal and installation.
5. Loosen heat shield clamps on both the front and rear head pipes.
6. If equipped, loosen crossover pipe clamp, located between front and rear head pipes.
7. Remove two cylinder exhaust port flange nuts from each head pipe, located at the cylinder head.
8. Remove the bolts that attach mufflers to the frame.
9. Remove the complete exhaust system and set aside. Assistance may be required.
10. On models (07-12) use a 7/8" or 22mm wrench, carefully remove the O² sensors from the stock head pipes and save for re-use with the new Freedom Performance exhaust system, on models (13-up) use a 14mm wrench. It may be necessary to use penetrating oil to ease the removal.
11. Now remove exhaust port flanges and retaining rings from the stock exhaust system using snap ring pliers. It is best to wear safety glasses when removing retaining rings to prevent eye injuries.

Note: use good and safe practices when removing and installing your new exhaust system to prevent injuries that includes but is not limited to such safety glasses and gloves. When installing make sure gloves are not abrasive or damage may occur like scratching parts. Always secure motorcycle before any work is done.

12. Lastly remove the two lower mounting studs from the frame

FREEDOM PERFORMANCE EXHAUST SYSTEM INSTALLATION

1. Remove exhaust system from protective packaging it has been pre-assembled for easy installation. Place them in a non-abrasive surface such as a blanket or carpet. By doing this you can avoid scratching the parts in the in installation process. We recommend using painters tape to cover parts and accessories on areas where damage can occur during installation.
2. Install exhaust port flanges and retaining rings (from stock system) onto head pipes. (FREEDOM PERFORMANCE recommends replacement of exhaust port gaskets if damaged or worn out, Harley part number: 17048-98 or 65324-83A
3. Models without O2 sensors a plug must be installed in the header bung. The headers have an 18mm x 1.50 threads use the adapter and plug included in the kit to plug Oxygen sensor bungs. Models equipped with oxygen sensors Install oxygen sensor (from stock). If you have 18mm sensor just install the sensor, if you have 12mm sensors install the adapter first then the sensor, apply a small amount of anti-seize compound to the threads of the O2 sensors and install them into the new head pipes. NOTE: Be careful not to get anti-seize on sensor tip, it may affect sensor functionality.
4. Attach mounting bracket **MBK-S101-F2** using a 9/16 socket or wrench to motorcycle frame using 3/8-16 x 3/4" flange bolts (supplied) (If equipped, plastic plugs must be removed).
5. Attach two carriage bolts 3/8-16 x 3/4" and lock nuts to bracket slots with the head of the bolt facing outwards.
6. Install front head pipe **S245-F1** into exhaust ports by first carefully sliding the channel bracket welded on the head pipe to the head of the carriage bolt (on the mounting bracket) to engage and function as support as the header is aligned with the exhaust port. Install port flange nuts **NOTE: DO NOT TIGHTEN AT THIS TIME YET.**
7. Repeat step 6 with the rear header **S236-F1**
8. Align both pipes (headers run parallel to the frame) tighten to the mounting bracket first using a 9/16" wrench then to the exhaust port flanges using a 1/2" socket.
9. Install heat shields. For these steps it is imperative to use caution, space is very tight and scratches may occur. We recommend to use painters tape, cut a small piece and tape it to the edge of the heat shield where the clips are located (these are the clips inside the heat shield) now mark the center of the clip with a pen or marker. Slide the front shield (**S245-F3**) over the front pipe and carefully align it. Now insert the worm clamps in a way that they can be accessed to be tightened. Use clamps as follow: (#24) over the header (#28) over the muffler.
10. Repeat step # 9 with the rear heat shield (**S246-F3**) Note: we recommend for you to cover the heat shield on top right below where the rear pipe system is to be installed with a non-abrasive rag or painters tape to prevent scratches during installation of rear shield.
11. Tighten all hose clamps holding the shield to the head pipe using a 5/16" nut driver or flat screw driver.
12. If equipped re-install Oxygen sensor harness.
13. Models using a floor board and passenger floor board reinstall it.
14. Check for adequate clearance between all exhaust system components and motorcycle accessories prone to heat damage.
15. If equipped with sensor, use the plastic tie to hold the cable of the sensor against the frame as it was before installation.
16. Clean exhaust system with some chrome cleaner and remove painters tape (if used during installation) before turning on engine. Failure to follow this procedure may result in damages to the chrome finish as oils burn out leaving permanent marks.

Note: Be sure to tighten all hardware before starting your engine. Retighten after the first 100 miles.

Re-jetting the carburetor or re-mapping is strongly recommended by FREEDOM PERFORMANCE

Every attempt has been made to provide improved cornering Clearance. However, due to design and space boundaries on some motorcycle models, ground and cornering clearance may not be improved and in some cases may even be reduced.

WARNING!

FREEDOM PERFORMANCE DOES NOT WARRANTY ANY CHROME OR CERAMIC BLACK PRODUCTS AGAINST DISCOLORATION.

Note: use good and safe practices when removing and installing your new exhaust system to prevent injuries that includes but is not limited to such safety glasses and gloves. When installing make sure gloves are not abrasive or damage may occur like scratching parts. Always secure motorcycle before any work is done.