



HARDWARE



BRACKETS

PACKER #: _____

**EXHAUST SYSTEM # HD00836
SHORT MEGAPHONE (2-1)**

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.

WARNING: DUE TO THIS DESIGN SOME ACCESSORIES MAY INTERFERE WITH THIS EXHAUST SYSTEM SUCH AS SADDLE BAGS OR PASSENGER FOOT PEGS IN ORDER TO FIT PROPERLY IN SOME MODELS THEY HAVE TO BE RELOCATED.

Please follow the installation instructions and please do not hesitate to call us for any technical questions at (951) 898-4733 **PACKAGING AND HARDWARE-HD00836-HW (*=ASSEMBLED)**

PART NUMBER	DESCRIPTION	QTY	PART NUMBER	DESCRIPTION	QTY
MFL265-F5	HEADER/MUFFLER ASSEMBLY	1	HWB0030	1/2"-13 X 1-3/4" SOCKET HEAD CAP SCREW ZINC PLATED	2
FL310-F1	FRONT PIPE	1	HWB0062	3/8"-16 X 3-1/2" SOCKET HEAD CAP SCREW ZINC PLATED	1
FL310-F2	FRONT HEAT SHIELD	1	HWB0061	3/8"-16 X 2-1/4" SOCKET HEAD CAP SCREW ZINC PLATED	1
FL311-F2	REAR HEAT SHIELD	1	HWB0007	5/16"-18 X 5/8" SERRATED FLANGE BOLT ZINC PLATED	2
HS140-F2	MUFFLER CONE SHIELD	1	HWB0051	1/4"-20 X 1/2" BUTTON HEAD SCREW ZINC PLATED*	9
SA122-F9	5.7° TURN OUT*	1	HWW0003	1/4" THIN SPLIT WASHER ZINC PLATED	9
A340ECA-F9	SYSTEM END CAP*	1	HWW0007	3/8" FLAT WASHER SMALL DIAMTER	2
A154-LCF-F8	SYSTEM BAFFLE*	1	HWW0010	1/2" SPLIT WASHER ZINC PLATED	2
MBK-FL165-F4	MOUNTING BRACKET	1	A100SP	0.750" X 0.122" X 0.750" ALUMINUM SPACER	2
MBK-M190-F7	BACK PLATE BRACKET	1	A114SP	0.750" X 0.156" X 0.1.000 ALUMINUM SPACER	2
HWC00007	BARREL CLAMP # 64	1	HWM0002	PLASTIC TIE 7" LONG	1
HWC0002	HOSE CLAMP # 24 STAINLESS STEEL	5	HWC0004	HOSE CLAMP # 40	1
A115-O2-F14	M18 X 1.50 BUNG PLUG ZINC PLATED	2	HWC0005	HOSE CLAMP #56	1
A110-O2-F14	M12 X 1.25 BUNG PLUG ZINC PLATED	2	HD00836-HW	HARDWARE BOX	1
			HD00836-INS	INSTRUCTIONS MANUAL	1

REMOVING STOCK EXHAUST SYSTEM

- 1) Place motorcycle on side stand or motorcycle ramp to prevent from falling when performing any work.
- 2) Remove both left and right saddlebags; refer to owner manual for proper procedures.
- 3) Loosen pinch clamp bolts located in front end of each muffler. It may necessary to stretch clamps just sufficient to remove them. In most cases a 9/16" socket or wrench is needed to loosen clamp nuts.
- 4) Remove two 5/16" bolts holding both left and right mufflers to the saddlebag supports bracket using a 1/2" socket or wrench. Note: Models equipped with a (2-1) system have only one muffler on the right side FLTR & FLHX
- 5) Remove stock mufflers. Note: It may be necessary to use a penetrating lubricant on slip joints between mufflers and head pipe to help the removal,
- 6) Models (09-up) loosen pinch clamp behind oil pan using a 5/8" socket or wrench. This clamp holds the crossover pipe section skip this step for models (2009) equipped with (2-1) system and (95-08).
- 7) Remove crossover support clamp and mounting clamp bracket use a 3/16" hex key wrench for the screws and a 1/2" for the clamp. Now remove crossover pipe and reinstall screws back in place. Skip this step for models (2009) equipped with (2-1) system and (95-08).
- 8) Remove right side passenger peg, use a 5/16" hex key wrench.
- 9) Remove right side floorboard, Models (95-08) use a 3/8" hex key wrench, from the inside of the frame remove two screws holding floorboard assembly and save for re-use. Models (09-up) use a 5/16" hex key wrench and remove two screws holding assembly and save for re-use.
- 10) Models (95-08) remove clamp holding system to transmission bracket using a 7/16" socket or wrench, now open clamp to remove it.
- 11) Models (09-up) loosen nut from carriage bolt holding system to transmission bracket using a 9/16 deep socket.
- 12) Models (10-up) remove right side plastic cover, locate and unplug sensor cables from harness follow cable route and disconnect from harness. Pay special attention to the route of the cables for re-installation. Models (07-09) follow sensor cables route and disconnect from harness.
- 13) Loosen all hose clamps holding heat shields in place using a 5/16" nut driver or flat screw driver models (95-08) remove left side heat shield completely.
- 14) Models (95-08) remove left side pipe by loosening clamp holding it with a 9/16" open wrench or socket.
- 15) Remove flange nuts that secure each head pipe to cylinder head, now remove entire exhaust system some assistance may be required.
- 16) Remove flanges and retaining rings from the stock exhaust system using snap ring pliers. If retaining rings are bent or damaged, replace them.
- 17) Remove Oxygen sensors from stock headers (07-09) use a 7/8" or 22mm wrench (10-up) use a 14mm wrench.
- 18) Models (95-08) remove stock exhaust mounting bracket refer to owner's manual for proper removal, this is important as the clutch cable in on the way of one screw and forcing to remove it without removing the clutch cable cover will result in damages to the cable. Bracket must be removed to give way to new mounting bracket. To access standard transmission bracket, first remove oil dip stick cover and clutch release cover. **Note:** If motorcycle is resting in a vertical position, engine/transmission oil must be drained completely before removing covers. Refill after installing new bracket.



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.

- 19) Models (95-UP) remove transmission bracket using a 1/4" inch hex key wrench.

INSTALLATION GUIDELINES

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 parts during the installation process. We recommend using painters tape to cover parts and accessories on areas where damage can occur during installation. Open hardware box and review its contents. **(See figure 2.1)**
2. Install mounting bracket. Using two head cap screws previously removed from stock and the provided **MBK-FL145-F4** mounting bracket; use some type of locking glue, install as shown using a 1/4" hex key wrench. **(See figure 2.2)**
3. Install exhaust port flanges and retaining rings (from stock system) onto head pipes. (FREEDOM PERFORMANCE recommends replacement of exhaust port gaskets and retaining clips if damaged or worn out. **(See figure 2.3)**
4. Install O2 sensors (from stock) **(95-06)** Models do not have Oxygen sensor and therefore plugs must be used. Install 18mm sensors or bung plugs as shown. Using a 7/8" or 22mm wrench, **(See figure 2.3)** install 12mm bung plugs on both headers using a 9/16" wrench **(See figure 2.4)** Models (07-09) install 18mm Oxygen sensors from stock using a 7/8" or 22 mm wrench and 12mm sensor bung plugs using a 9/16" wrench. Models **(See figure 2.5)** (10-UP) install sensors 12mm sensors using a 14mm wrench and 18mm plugs using a 7/8" or 22mm wrench. Make sure you have the correct sensor (front & rear) **(See figure 2.6)** Use anti-seize compound, apply it to the thread only. Be careful not to use too much or to make contact with the tip as it may affect its functionality. Make sure they are installed properly, as they are marked front and rear make sure they match their pipes respectively.
5. Install front header pipe **MFL265-F5** into exhaust port by first and carefully aligning the flange holes with the studs on the engine port, secure it with stock flange nuts using a 1/2" socket and bring nuts all the way finger tight but **DO NOT TIGHTEN AT THIS TIME YET.** **(See figure 2.7)**
6. Insert barrel band clamp over header/muffler assembly as shown finger tighten only note that screw faces just as shown otherwise will be very difficult to reach and tighten after installation. **(See fig 2.8)**
7. Insert rear pipe inside muffler/pipe assembly as shown **DO NOT TIGHTEN CLAMP YET AS YOU WILL NEED TO ADJUST DEPT AND ROTATION WHEN INSTALLING IN ENGINE PORT.** **(See fig 2.9)**
8. Insert barrel band clamp #60 over straight leg of collector as shown finger tighten only make sure the screw head is inserted as shown. **(See fib 2.10)**
9. Install headers/muffler assembly **FL310-F1** into exhaust port by first and carefully aligning flange holes with the studs on rear engine port at the same time guide front pipe into straight/lower leg of collector. secure it with stock flange nuts using a 1/2" socket and bring nuts all the way finger tight but **DO NOT TIGHTEN AT THIS TIME YET.** **(See figure 2.11)**
10. Secure muffler to mounting bracket using a back-plate bracket **MBK-FL265-F4** and two 5/16"-18 x 5/8" serrated flange screws. Finger tight all the way. **(See figure 2.12)**
11. Align system with mounting bracket, NOTE: Both brackets the welded one on the muffler and the mounting bracket, should be flush at the back or at least 1/8" +/- from edge of each other. proceed to tighten muffler using a 1/2" wrench, now tighten headers to engine port using a 1/2" socket.
12. Mark heat shields. Using painter tape cut a piece and stick it over the both shields in the same direction where the shield clip is welded inside. This is so when the shield is installed over the pipe you will know where to insert hose clamps and the direction of insertion for an easier installation, now mark the center of the clip with a marker and the arrow as shown in the picture. **(See figure 2.13)**
13. Install heat shields. Start with front shield first **FL310-F2**, place front shield over front pipe, **(See figure 2.14)** now, insert hose clamps by carefully looping the tail of clamp and engaging the welded clip inside shield use # 24 hose clamp. Use a 5/16" nut driver but do not tighten at this time yet. **(Note: arrow indicates the direction of insertion of clamp)** **(See figure 2.15)**
14. Repeat step with rear shield **FL311-F2** align both shield and tighten using a 5/16" nut driver. **(See figure 2.16)** **make sure both front and rear shields are flush as shown.** **(See fig 2.17)**
15. Install collector shield as shown carefully place shield over muffler **HS140-F2** use #40 clamp on the front and #56 at the back align shield in a way that it has a gap of about 1/8" between pipe shields and muffler shield make sure to engage bigger clamp between welded bracket and tighten using a 5/16 nut driver. **(See figure 2.19)**
16. Most system are shipped with end cap and turn out already installed, if this is not the case proceed to install turn out and end cap. This system baffle is attached to the turn-out tip therefore if you need to install it align baffle with muffler inlet and insert baffle in place secure with 1/4"-20 x 1/2" screws and washers. NOTE: there are different threaded holes for you to choose the desired tip rotation. Now install end cap over turn-out tip using 1/4"-20 x 1/2" button head screws. NOTE: end cap can also be rotated to your choice.
17. Re-install right side floorboard. **(95-08)** use bigger spacers and two 1/2"-13x1-3/4" socket head cap screws with split washer **(09-up)** use smaller 3/8" screws and flat washers. Models (95-08) use a 3/8" hex key wrench and a 5/16" for models (09-17)
18. caps. It is recommended to use some type of locking glue over the screw threads.
19. **Double check all hardware and make sure is all tightened.**
20. Check for adequate clearance between all exhaust system components and motorcycle accessories prone to heat damage.
21. 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-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 BLACK FINISH 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.



Figure 2.1 Hardware and brackets.



Figure 2.2 Install mounting bracket as shown.



Figure 2.3 Install retaining rings & flanges/
install plugs (95-06) (09-16)



Figure 2.4 Install O2 plugs (07-08).



Figure 2.5 Install O2 sensors (07-09).



Figure 2.6 Install O2 sensors (09-17).



Figure 2.7 Install front header pipe.



Figure 2.8 Insert barrel clamp as shown



Figure 2.9 insert rear pipe in curved pipe on
muffler/pipe assembly.



Figure 2.10 insert barrel clamp as shown



Figure 2.11 Install muffler/pipe assembly.



Figure 2.12 attach bracket to mounting
bracket flush or a (+/-) 1/8"

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.

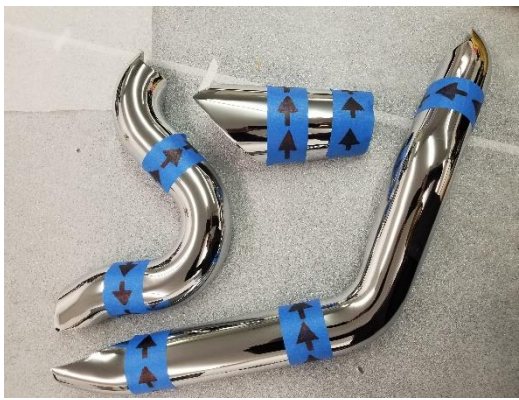


Figure 2.13 Mark shields as shown.



Figure 2.14 Install front heat shield.



Figure 2.15 insertion of clamp arrow indicates direction of insertion.



Figure 2.16 Install rear shield.

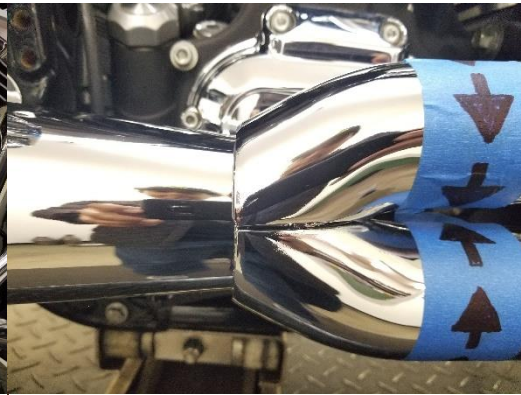


Figure 2.17 make sure shields are flush.



Figure 2.18 Install collector shield.



Figure 2.19 note muffler shield rotation.



Figure 2.20 system installed.



Figure 2.21 shown with turn-out tip



Figure 2.19 spacers shown for (09-16) models.



Figure 2.19 spacers shown for (95-06) models.

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