

Figure 2.1 hardware.

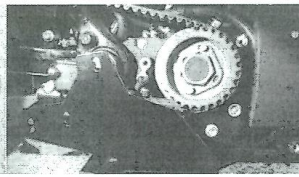


Figure 2.1 Install mounting bracket use stock screws.

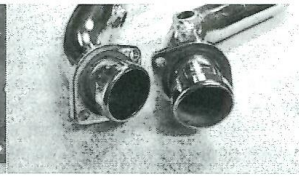


Figure 2.3 Install retaining rings and flanges.

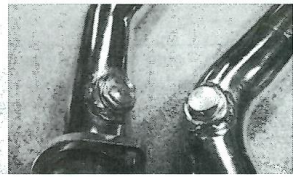


Figure 2.4 Install adapters and plugs (04-06)

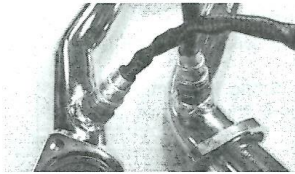


Figure 2.5 Install O2 sensors models (04-13)

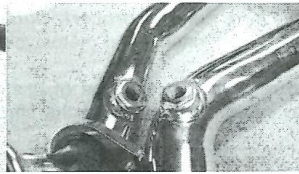


Figure 2.6 Install O2 adaptors (14-up)

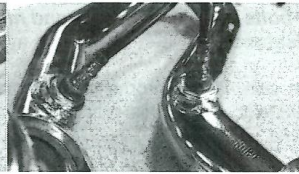


Figure 2.7 Install O2 sensors (14-up)

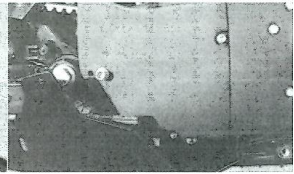


Figure 2.8 Install belt cover.

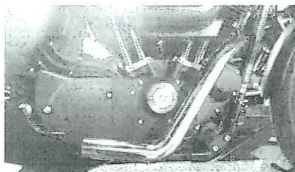


Figure 2.9 Install front head pipe.



Figure 2.10 Install rear head pipe.

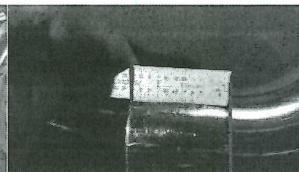


Figure 2.11 Mark a line on both pipes 1-3/8" (1.375").

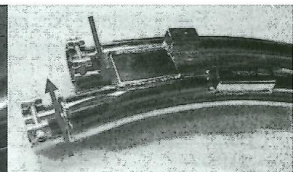


Figure 2.12 Insert barrel clamps over inlets note direction of screw.



Figure 2.13 Install muffler assembly.

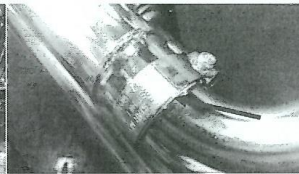


Figure 2.14 barrel clamp flush with inlet edge.



Figure 2.15 (3) screws hold muffler assembly.

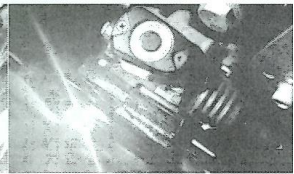


Figure 2.16 mounting bracket is flush to welded brackets.

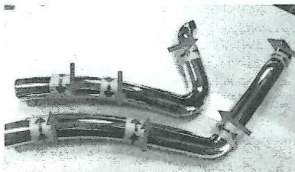


Figure 2.17 Mark center of shield clip with an arrow as shown.

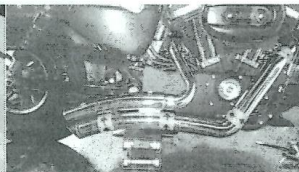


Figure 2.18 Install front shield.



Figure 2.19 Arrow indicates direction of clamp insertion.

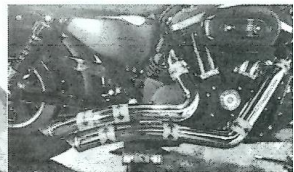


Figure 2.20 Install rear shield.



Figure 2.21 Install end caps using locking glue.

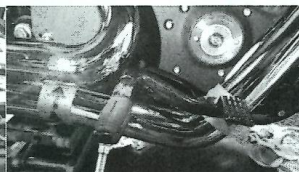


Figure 2.22 Install controls.

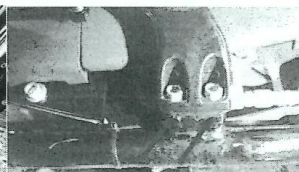


Figure 2.13 a washer can be added as spacer if needed.

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. Route oxygen sensors cables and engage harness, **(04-13)** install a plastic tie down to hold sensor cables to frame and cut-off excess tail on the front sensor and the rear leave it as it was prior to removal. **(14-UP)** both sensors cables should be routed the same way as they were originally, close left side cover.
20. **(04-13)** reinstall brake rod; it is recommended that some type of thread locking compound be used to hold it in place. **(14-UP)** install brake pedal assembly the same way it was before removal, insert pin in brake rod secure it with retaining ring and tighten brake rod assembly (if needed) using a 9/16" and 1/2" open wrenches. Tighten screws holding peg assembly to frame using a 5/16" hex key wrench. (See figure 2.22 and 2.23)
21. NOTE: in some instances the peg may be too close to the shields on mid control models, you can add a washer (3/8") as spacer on the control assembly to space controls outwards.
22. **Re-check all screws, bolts, nuts and clamps and make sure they are properly tightened.**
23. Check for adequate clearance between all exhaust system components and motorcycle accessories prone to heat damage.
24. 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 AGAINST DISCOLARATION

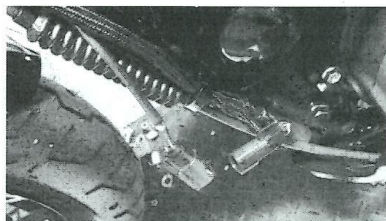


Figure 1.1



Figure 1.2



Figure 1.3

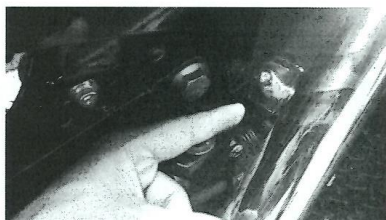


Figure 1.4

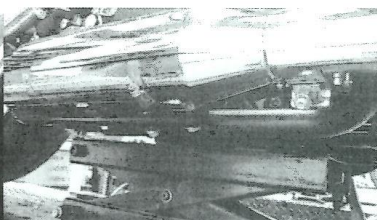


Figure 1.5

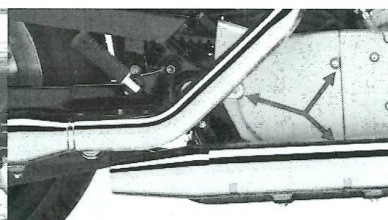


Figure 1.6

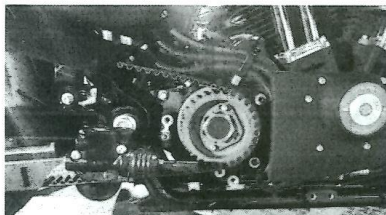


Figure 1.7



Figure 1.8

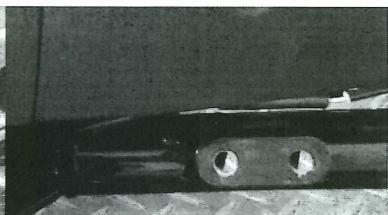


Figure 1.9

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.



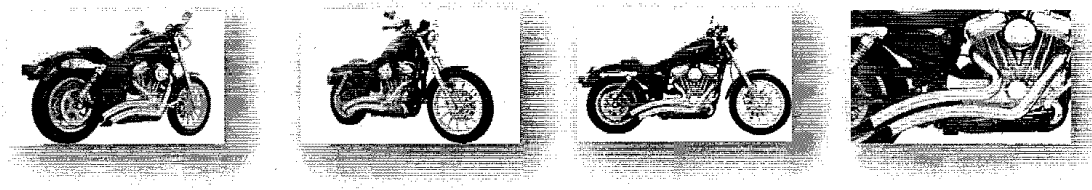
Feel the Power of Freedom

**EXHAUST SYSTEM # HD00434
SHARP CURVE RADIUS WITH
CROSSOVER (2-2)**

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



PACKAGING HD00434-HW (*) =ASSEMBLED

PART NUMBER	DESCRIPTION	QTY	PART NUMBER	DESCRIPTION	QTY
SP230-F1	FRONT HEAD PIPE	1	HWB0007	5/16-18 x 5/8" SERRATED FLANGE SCREW ZINC	3
SP231-F1	REAR HEAD PIPE	1	HWB0001	1/2"-20 X 3/8" BUTTON HEAD SCREW ZINC PLATED	2
SP230-F2	FRONT HEAT SHIELD	1	HWB0012	5/16"-18 SERRATED FLANGE NUT ZINC PLATED	1
SP231-F2	REAR HEAT SHIELD	1	HWB0003	1/2" SPLIT WASHER ZINC PLATED	2
MGS155-F5	TWIN RADIUS MUFFLER	1	HWB0002	HOSE CLAMP # 24 STAINLESS STEEL	3
A225ECA-F10	SYSTEM END CAPS	2	HWB0003	HOSE CLAMP # 28 STAINLESS STEEL	4
MBK-SP175-F4	MOUNTING BRACKET	1	HWB0011	BARREL CLAMP # 60 STAINLESS STEEL	2
MBK-M115-F7	BACK PLATE BRACKET	1	HWB0002	PLSTIC TIE DOWN 7" LONG BLACK	1
A115-O2-F14	M18 X 1.50 SENSOR BUNG PLUG	2	HD00434-HW	HARDWARE BOX	1
A110-O2-F14	12MM SENSOR BUNG PLUG	2	HD00434-INS	INSTRUCTION MANUAL	1

1. Models without oxygen sensors skip step 2.
2. (07-13) unplug front oxygen sensor from harness. Carefully cut the cable tie holding the wiring now remove the rear oxygen sensor connector, unplug the oxygen sensor from harness and guide the wiring out carefully. Make sure to remember the route of the cable for re-installation. (14-UP) these models have a smaller sensor 12mm x 1.25 locate the front sensor disengage from harness, pull the clamps holding the cables and route the sensor cable out. The rear sensor harness is located on the left side of the motorcycle, pull out and fold down the side cover (below the seat) disengage sensor from harness and cable clips. (See fig 1.1, 1.2 and 1.3)
3. If equipped, remove rear carriage bolt, acorn nut and clamp holding the rear head pipe to the belt cover bracket using a 9/16" deep socket or wrench. (See fig. 1.4)
4. Remove bolts holding mufflers to the transmission mounting bracket. Most cases a 1/2" socket or wrench is used. Loosen clamps in front of each muffler using a 9/16" socket or wrench. (04-13) remove mufflers carefully as these models have a crossover system which connects the front of the muffler to the stock crossover mounting bar. (14-UP) don't have the crossover bar remove mufflers and set them aside. (See fig. 1.5)
5. (04-13), remove front and rear headers; (14-UP) remove entire system together as the headers is connected as one assembly. Note: some assistance may be required.
6. If equipped remove oxygen sensors from head pipes (07-13) use a 7/8" or 22mm wrench, models (14-UP) use a 14mm open wrench and save for re-use on your new Freedom Performance exhaust system.

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.

7. Remove drive belt cover to gain access to remove stock mounting bar. You will need two hex keys a 3/16" and a 5/16", remove the three screws 2 of them 1/4" with the 3/16" hex key and the last screw 3/8" with the 5/16" hex key wrench. (See fig. 1.6 and 1.7)
8. (04-13) using a T30 Torx driver, loosen and remove the brake rod from the rear eyelet section. Models (14-UP) remove retaining clip located on the brake rod pin (be careful not to lose the ring as this part is too small) now pull the pin out. Use two open wrenches to remove the rod from the brake system assembly a 9/16" and a 1/2". It may be necessary to remove peg assembly especially on mid control systems, if you decide to remove them use a 5/16" hex key wrench and remove the 2 screws holding assembly together this will make the installation way easier. (See fig. 1.8 and 1.9)
9. (14-UP) remove the stock mounting bar and bracket now set it aside using a 1/2" wrench and 5/16" hex key wrench. (04-UP) using a 5/16" hex key wrench remove stock mounting bracket by removing the three 3/8" screws. **NOTE:** it may be necessary to remove the fuel Remove both retaining rings and flanges from stock exhaust system using snap ring pliers. Inspect retaining rings prior to installation and if they are damaged, replace them. Inspect gaskets if damaged or worn replace them.
10. Remove mid controls (if Applicable) using a 5/16" hex key wrench.

1. Remove exhaust system from protective packaging, it has been pre-assembled for easy installation. Place it in a non-abrasive surface such as a blanket or carpet. By doing this you can avoid scratching the parts in the installation process. We recommend using painters tape to cover parts and accessories on areas where damage can occur during installation. Review your hardware (See figure 2.1)
2. Install mounting bracket using stock screws and a 5/16" 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 if damaged or worn out. (See figure 2.3)
4. If equipped Install O2 sensors (from stock) on head pipes using anti-seize compound apply it to the thread only. Be careful not to use too much or to make contact with the tip of the sensor as it may affect its functionality. Models (04-06) install an adaptor 18mm-12mm then use the 12mm plug. (See figure 2.4) (04-13) install sensor in bong as it is with no adaptors. (See figure 2.5) (14-UP) models install the adaptor to reduce from 18mm to 12mm bung now install the sensors in place. (See figure 2.6 and 2.7)
5. Reinstall drive belt cover using the socket head cap screws from stock. Use a 3/16" and 5/16" hex key wrench. (See figure 2.8)
6. Inspect both gaskets on engine ports and replace if damaged or worn out.
7. Install front header first (SP230-F1) secure it with the stock flange nuts all the way using a 1/2" socket but **DO NOT TIGHTEN AT THIS TIME YET.** (See figure 2.9)
8. Repeat step with rear header (SP231-F1) (See figure 2.10)
9. Before installing muffler use a marker to mark a line on both headers. This is to give you an idea how deep the pipe will go inside the muffler inlet. mark a line approximately 1-3/8" (1.375") (See figure 2.11)
10. Install a # 62 barrel clamp over the slotted sections of the muffler assembly (MGS155-F5) making sure the top bolt faces up and lower faces down and towards the engine. (See figure 2.12)
11. Install muffler assembly by inserting the muffler onto both pipes at the same time, once muffler is in place align with mounting bracket and insert back plate bracket (MBK-M115-F7) and a serrated flange nut into the brackets welded on the muffler and use (3) 5/16"-18 x 5/8" flange serrated bolts to secure muffler body to mounting bracket. **NOTE:** Make sure the rear of the bracket welded to the muffler seats flush with the front of the mounting bracket, bring all the way but **DO NOT TIGHTEN AT THIS TIME YET.** (See figure 2.13)
12. Make sure barrel band clamp is flush with the edge of the inlet as shown to prevent exhausts leakage. (See figure 2.14)
13. Align headers with muffler and bracket. Tighten mounting bracket using a 1/2" wrench (X3), tighten head port flange nuts using a 1/2" socket (X4). **Do not tight barrel band clamps yet.** (See figure 2.15 and 2.16)
14. 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 piece and tape it to 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 rear shield. **NOTE:** The arrows marked on the picture indicate the direction where the head of the screw must be in order to tight them once the system is installed (See figure 2.17)
15. Install front heat shield (SP230-F2) over the front pipe and muffler assembly carefully align shield. Now insert the worm clamps in a way that they can be accessed to be tightened. Use clamps as follow: (#24) over the header and (#28) over the muffler section. (See figure 2.18) and (See figure 2.19)
16. Repeat step with rear heat shield (SP231-F2) it's recommended that a non scratching rag is placed on top of the front shield to prevent scratches when installing and aligning rear heat shield. (See figure 2.20)
17. Align heat shields and tighten worm clamps using a 5/16 nut driver. Tighten to the mounting bracket bolts first using a 1/2" wrench tighten barrel band clamps and with a hex key wrench tighten bolt clamps. Now tighten exhaust port flanges with a 1/2" socket wrench.
18. Install end caps using button head screws and split washers with a 5/32" hex key wrench. It is recommended to use some type of locking glue to prevent end caps from falling off. (See figure 2.21)

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.