



## EXHAUST SYSTEM # MS00006 SHARP CURVE RADIUS (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 read and follow the installation instructions and certainly do not hesitate to call us for any technical questions at (310) 324-0415 or visit us at: [www.freedomperform.com](http://www.freedomperform.com)

### PACKAGING LIST: MS00006-HW

MSZ100-F1 FRONT HEADER	1	MSZ100-F3 FRONT SHIELD	1	MSZ100-F5 FRONT MUFFLER	1
MSZ101-F1 REAR HEADER	1	MSZ101-F3 REAR SHIELD	1	MSZ101-F5 REAR MUFFLER	1
MBK-SZ100-F4 BRACKET	1	T-BOLT CLAMP # 62	2	WORM CLAMP # 20	1
MBK-SZ101-F4 BRACKET	1	1/2"X0.257"X1.000" LONG SPACERS	2	MBK-M115-F7 BACK PLATE	2
WORM CLAMP # 24	3	WORM CLAMP # 28	4	MS00006-INS	1
6MMX1.0MMX60MM HEX BOLT	2	5/16"-18 X 5/8" ZINC PLATED SERRATED FLANGE BOLT	4	1/4" SPLIT WASHERS	4
5/16"-18 X 5/8" FLANGE SERRATED BOLT ZINC PLATED	1	5/16"-18 FLANGE SERRATED NUT	1	6MM X 1.0 FLANGE SERRATED NUTS	2
A180ECS-F9 CAM	1				

**WARNING:** When installing you new exhaust system always refer to owner's manual for torque specifications and follow safety precautions, make sure motorcycle is properly secure to prevent it from falling and that is not hot to prevent burning.

**FREEDOM PERFORMANCE RECOMMENDS THIS SYSTEM TO BE INSTALLED BY A PROFESSIONAL.**



### STOCK EXHAUST SYSTEM REMOVAL

1. When removing or installing accessories there is always a chance to scratch motorcycle components, use painters tape on areas prone to scratches during the installation such frame, chrome or painted parts.
2. It is recommended to use some type of penetrating lubricant to all nuts and bolts to be removed for an easier removal.
3. Remove seat as well as right side cover (the cover right below the seat) **(see figure 1.1)**
4. Remove the right side cover with the insignia (M109R) **(see figure 1.1)**
5. Remove stock long shields using an 4mm allen wrench. **(see figure 1.2)**
6. Remove right side chrome steel cover using a 4mm allen wrench and set it aside this cover is right on top of the middle section of the exhaust system. **(see figure 1.3)**
7. Using a 12mm socket loosen clamp holding the canister to the head pipe.
8. Locate and remove with a 12mm socket the two bolts behind the top canister, pull canister backwards to disengage form header section and place it aside.
9. Locate and disconnect solenoid cable harness. **(see figure 1.4)**
10. Remove right side plastic cover (next to the passenger peg) use a 4mm allen wrench remove one bolt and pull out. **(see figure 1.5)** set cover and bolt aside. **NOTE:** notice that when this cover is removed a nut and bolt will be visible from the stock mounting bracket which will be removed in the next step.
11. Remove the nut and bolt holding the stock bracket, use a 12mm socket or wrench, these are located on the top right behind the plastic cover that was removed on step 10. save nut and bolt for re-use. **(see figure 1.6)**
12. Locate and remove the flange bolt holding the mounting bracket from the bottom using a 12mm socket. **(see figure 1.7)**

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.

13. Using a 6mm allen wrench remove the 4 bolts holding the headers to the engine port (2 on each header) (*see figure 1.8, 1.9*)
14. Remove entire exhaust system and set it aside. some assistance may be required as this is a heavy part.
15. Loosen the two nuts holding the solenoid cables to the exhaust valve as shown on (*figure 1.10*)
16. Remove dust cover (rubber covering solenoid) pull the tabs and release the two cables from the cam (barrel end) (*see figure 1.11*) **NOTE:** Be careful not to turn the cam when removing the cables as it may damage internal parts.
17. Remove solenoid from stock exhaust system it is attached with two bolts. see (*figure 1.12*)
18. Remove solenoid cam, using an allen wrench and a crescent wrench remove the cam as follow: hold the cam with the crescent wrench as shown in (figure 1.13), now use the allen wrench to loosen and remove the cam. save bolt for re-use with the new cam. **NOTE: DO NOT ATTEMPT TO LOOSEN CAM WITH OUT HOLDING IT, DOING IT SO MAY DAMAGE INTERNAL PARTS ON THE SOLENOID, IT MUST NOT ROTATE.**

## 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 CAM to solenoid. The new cam is included on the hardware insert the slotted section on the solenoid shaft and use the bolt from stock (previously removed) again be very careful when tightening the bolt the internal pars must not move. (*see figure 2.1*)
3. Attach solenoid to MBK-SZ100-F4 mounting bracket, refer to (*figure 2.2 and 2.3*) use the hardware supplied insert the two 6mm bolts with split washers from the front of the bracket, once the bolts are inserted place the spacers on the other side, now place the solenoid as seen on the pictures, now install the split washers and serrated flange nuts and tighten.
4. Attach mounting bracket MBK-SZ100-F4 (the one the solenoid was installed to) using a 12 mm socket or wrench to motorcycle frame using stock nut and bolt apply a small amount of locking glue on threads of your choice. (*see figure 2.4*)
5. Attach small mounting bracket MBK-SZ101. This bracket is attached from the bracket previously installed to the frame, use a 5/6"-18 x 5/8" serrated flange bolt and flange serrated lock nut (supplied) to attach to the other bracket. to attach small bracket to frame use stock 8mm flange bolt, now tighten both bolts (*see figure 2.5*)
6. Connect solenoid cables harness as shown in (*figure 2.6*) the same way it was on the stock system.
7. Install front header assembly pipe first into exhaust port by first and carefully aligning the bracket welded on the inner muffler to the mounting bracket using two 5/16-18 flange serrated bolts. and a MBK-M115-F7 back plate bracket. Note: It may be necessary to rotate the inner muffler to align it to the holes on the mounting bracket, insert the back plate bracket inside the bracket welded to the muffler making sure the nuts face towards the muffler. Install stock allen bolts into engine port all the way but, **DO NOT TIGHTEN AT THIS TIME YET.** (*see figure 2.7 & 2.8*)
8. **NOTE: the muffler in this system is engaged to the header, loosen the band clamp to allow adjustment forward, backwards and rotation until the nuts welded on the back plate bracket align with the slots in the mounting bracket and make sure the front of the welded bracket to the muffler is flush to the front of the mounting bracket.**
9. Repeat step 7 with the rear header assembly. **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 pipe.
10. Align both pipes, make sure the space between front and rear curved sections have an even gap and tighten to the mounting bracket bolts first using a 1/2" wrench then tighten barrel band clamps. (These are the clamps that hold the inner muffler to the headers) now tighten the exhaust port flanges.
11. Align heat shields and tighten clamps using a 5/16" nut driver.
12. install chromed steel cover as shown on (*figure 2.9*) use a 4mm allen wrench and stock button head bolts.
13. Install plastic cover using a 4 mm allen wrench and stock button head bolts.
14. Install side panels and seat just the way it was before the installation.
15. Check for adequate clearance between all exhaust system components and motorcycle accessories prone to heat damage.
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-mapping is strongly recommended by FREEDOM PERFORMANCE**

**There are accessories available for this exhaust system such as quiet baffles, contact us for more details.**

*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 1.1 remove seat and side covers



Figure 1.2 remove shield use 4mm allen



Figure 1.3 remove steel cover use 4mm



Figure 1.4 disconnect solenoid harness



Figure 1.5 remove plastic cover (4mm)



Figure 1.6 remove nut and bolt 12mm



Figure 1.7 remove flange bolt 12mm



Figure 1.8 remove engine port bolts



Figure 1.9 remove engine port bolts



Figure 1.10 loosen nuts



Fig 1.11 remove barrel end cables



Fig 1.12 remove solenoid



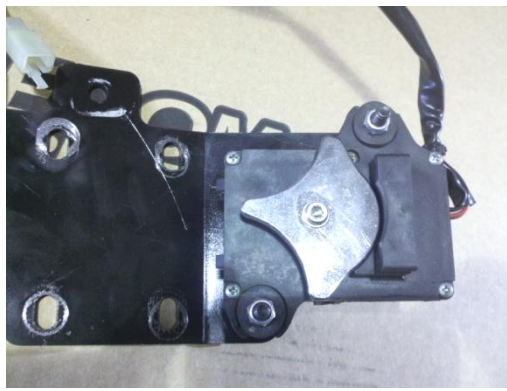
Fig 1.13 remove cam

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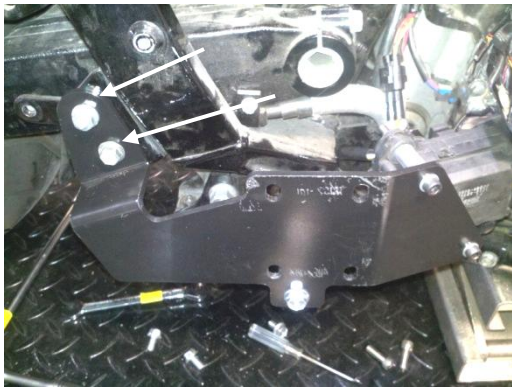
**Figure 2.1 install cam as shown**



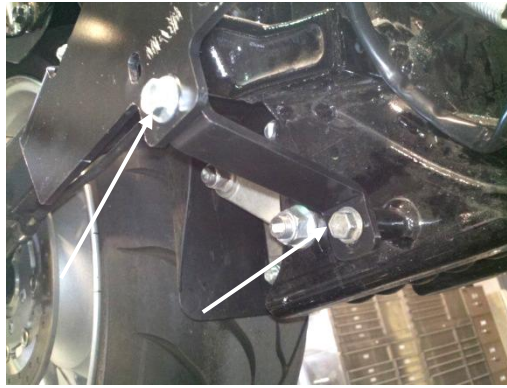
**Figure 2.2 install solenoid to bracket**



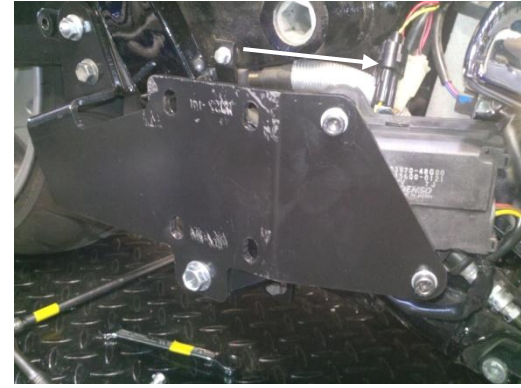
**Figure 2.3 use 2 spacers 4 split washers 2 hex bolts and 2 nuts**



**Figure 2.4 attach bracket to frame**



**Figure 2.5 attach small bracket as shown**



**Figure 2.6 connect solenoid harness**



**Figure 2.7 install front pipe assembly**



**Figure 2.8 install rear pipe assembly**



**Figure 2.9 install chrome steel cover**



**Figure 2.10 install plastic cover**

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