



HARDWARE



BRACKETS

PACKER #: _____

**EXHAUST SYSTEM # IN00076
SHARP CURVE RADICAL RADIUS (2-2)
WITH CROSSOVER CHAMBER**

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.

PACKAGING IN00076-HW (*) =ASSEMBLED

PART NUMBER	DESCRIPTION	QTY	PART NUMBER	DESCRIPTION	QTY
I120-F1	FRONT HEAD PIPE*	1	A225ECA-F10	SYSTEM END CAPS	2
I120-F3	FRONT HEAT SHIELD*	1	HWB0007	5/16"-18 X 5/8" SERRATED FLANGE SCREW ZINC	3
I121-F1	REAR HEAD PIPE*	1	HWB0001	1/4"-20 X 3/8" BUTTON HEAD CAP SCREW ZINC	2
I121-F3	REAR HEAT SHIELD*	1	HWN0003	5/16"-18 K-LOCK NUT	1
MGS175-F5	MUFFLER ASSEMBLY*	1	HWW0003	1/4" SPLIT WASHER ZINC PLATED	2
MBK-SC100-F4	MOUNTING BRACKET	1	HWM0002	ZIP TIE PLASTIC CABLE 7"	1
HWC0011	BARREL CLAMP # 60 STAINLESS STEEL	2	MBK-M115-F7	BACK PLATE BRACKET	1
HWC0002	HOSE CLAMP # 24 STAINLESS STEEL	4	IN00076-INS	INSTRUCTION MANUAL	1
HWC0003	HOSE CLAMP # 28 STAINLESS STEEL	3	IN00076-HW	HARDWARE BOX	1

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

REMOVING THE STOCK EXHAUST SYSTEM

1. If equipped remove saddle bags, refer to owner's manual.
2. Using a 13mm socket or wrench, remove two screw holding muffler together. They are located behind the mufflers. (See fig. 1.1 & 1.2)
3. Loosen muffler clamps (x2) using a 15mm socket or wrench loosen both clamps holding mufflers to header assembly. (See fig. 1.3)
4. Remove rear (top) muffler some lube may ease the removal. (See fig. 1.4)
5. Using a 12mm socket remove screw holding lower (front) muffler (See fig. 1.5)
6. Remove muffler and set it aside.
7. Remove seat, locate and disconnect rear Oxygen sensor harness, now, using a 14mm wrench remove sensor from head pipe. **NOTE:** make sure to rotate cable as you loosen sensor from sensor bung to prevent twisting the cables otherwise the cable may rupture. Do not pull the sensor out leave it hanging. (See fig. 1.6 & 1.7)
8. Using a 10mm socket or wrench, remove two screws holding radiator cover located at the bottom, one on each side of motorcycle. (See fig. 1.8 & 1.9) pay attention at the screw assembly, you will need it to reinstall it back in place the same way.
9. Remove plastic cover and set it aside. (See fig. 1.10)
10. Using an 8mm hex key wrench, remove both (right/left) forward controls and let them hang. (See fig. 1.11, 1.12, & 1.13)
11. Using a 10 socket, remove two screws holding radiator bracket located on each side. Pull radiator bracket down. (See fig. 1.4 & 1.15)
12. Softly pull radiator forward towards the front fender to have access to remove front Oxygen sensor. Do not overdue it.
13. Cut off the plastic zip tie holding sensor cable and disconnect sensor from harness. (See fig. 1.16, 1.17 & 1.18)
14. Remove rear flange nuts holding rear header using a 13mm socket or wrench. (See fig. 1.19)
15. Locate and loosen clamp holding rear and front header assembly using a 15mm socket or wrench. (See fig. 1.20)
16. Disengage rear assembly and set it aside. Using some type of lube will ease the removal. (See fig. 1.21 & 1.22)
17. Using a 13mm socket remove flange nuts holding front header assembly, remove and set it aside. (See fig. 1.23)
18. Now remove the stock mounting bracket using an 8mm hex key wrench and remove two lower screws, now, using a 24mm socket remove axle nut. Save screws and nut for your new bracket. (See fig. 1.24 & 1.25)



PART # IN00076

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.

1. Remove exhaust system from protective packaging. 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. Refer to (Fig. 2.1) for hardware and part list to make sure you have all necessary components prior to installation.
3. Using a 14mm wrench install oxygen sensor on front head pipe **I120-F1**. Apply a small amount of anti-seize compound to the threads of the O2 sensors and install it into the new head pipe. *NOTE: Be careful not to get anti-seize on sensor tip, it may affect sensor functionality.* (FREEDOM PERFORMANCE recommends replacement of exhaust port gaskets if damaged or worn out. (Fig. 2.2)
4. Using stock flange nuts and a 13mm socket install front header, bring nuts all the way but do not tighten at this time yet. (Fig. 2.3)
5. Install rear Oxygen sensor on **I121-F1** header. Turn the pipe not the sensor to prevent damage to the sensor cables there is plenty of play to maneuver with the rear pipe, now with a 14mm wrench tighten sensor. (Fig. 2.4)
6. Install rear header into rear engine port using stock flange nuts and a 13mm socket, bring all the way but do not tighten yet. (Fig. 2.5)
7. Attach mounting bracket **MBK-SC100-F4** using an 8mm hex key wrench and a stock screw previously removed from stock as well as the stock nut and flat washer using a 24mm wrench. (Fig. 2.6)
8. Slide 1 Barrel clamp (# 60) in front of the slotted end of each muffler *NOTE: the screw head on the both mufflers must face up and towards the engine, this is to make it easy when tightening the clamp after shields are in place.* (See figure 2.7)
9. With a marker, mark a line 1-3/8" (1.375") 35mm away from the edge on each pipe. This is to know if the pipes go into the muffler too deep or not deep enough. (Fig. 2.8)
10. Install twin muffler, **MGS175-F5**, align muffler inlets with both front and rear headers and slide muffler over pipes. Align brackets welded on the mufflers and using hardware in the kit provided engage system to mounting bracket using three 5/16-18 flange serrated bolts, one back plate **MBK-M115-F7** and one K-Lock nut 5/16"-18. DO NOT TIGHTEN AT THIS TIME YET. (See figure 2.9) *NOTE: make sure back end of both brackets are flush with mounting bracket to ensure that head pipes have gone inside muffler inlet just enough to prevent exhaust leaks. head pipes go inside muffler inlet about 1-3/8"*
11. Align both pipes, tighten to mounting bracket using a 1/2" open wrench (4 screws) now tighten exhaust port flange nuts using a 1/2" socket. Do not tighten barrel clamps yet.
12. Align both pipes and muffler assembly, make sure pipes go in up to the line marked or close to it. Tighten muffler to mounting bracket using a 1/2" socket or wrench. (Fig. 2.10)
13. Tighten both front/rear header to engine ports using a 13mm socket. (Fig. 2.11, 2.12, 2.13, & 2.14) make sure clamps over the muffler nose are flush to the edge of the sleeve. If it is too far back it will not tighten the muffler.
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 small piece and tape it over the heat shield where the clips are located (these are the clips welded inside the heat shield) now mark the center of the clip with a pen or marker also mark an arrow pointing the direction of hose clamp insertion as seen of the picture. (See figure 2.15)
15. Slide the front shield **I120-F3** over the front muffler and pipe. (See figure 2.16) and carefully align it. Now insert the worm clamps in the direction of the arrow. (See figure 2.17) Use clamps as follow: (#24) over the header (#28) over the muffler.
16. Repeat step with the rear heat shield **I121-F3** Note: we recommend for you to cover front 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.
17. Align heat shields and tighten clamps using a 5/16 nut driver.
18. Tighten both barrel band clamps using a 5mm hex key wrench.
19. Install end caps, use 1/4"-20 button head screws and split washers to tighten end caps with a 5/32" hex key wrench. Note that end caps have multiple threaded holes you can position end caps in any direction you want. If end caps are already installed, make sure they are properly tightened.
20. Route and engage Oxygen sensor harness, install a plastic zip-tie to hold front sensor cable to where it was originally and cut-off excess tail. Make sure cables do not make contact to any part of the exhaust to prevent heat damages.
21. Install radiator retainer bracket as it was before using 2 screws from stock and a 10mm socket or wrench. (Fig. 2.18 & 2.19)
22. Install both right/left forward controls using stock screws and an 8mm hex key wrench. (Fig. 2.20 & 2.21)
23. Install radiator plastic cover refer to owner's manual for proper torque. (Fig. 2.22, 2.23 & 2.24)
17. Check for adequate clearance between all exhaust system components and motorcycle accessories prone to heat damage.
18. 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.**

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Fig. 1.1 remove muffler screw

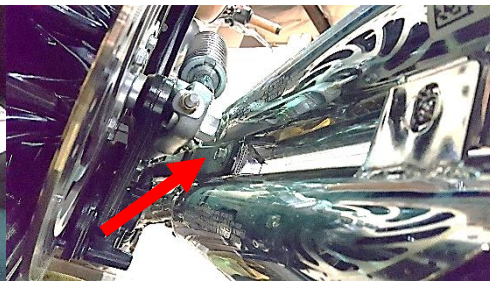


Fig. 1.2 remove bracket screw

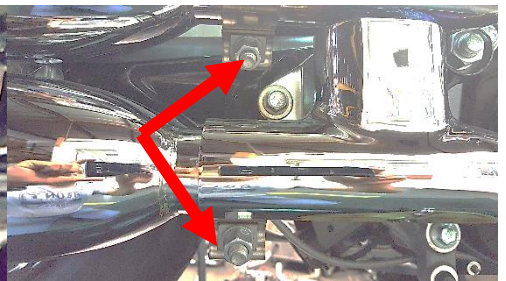


Fig. 1.3 loosen both muffler clamps



Fig. 1.4 remove top muffler



Fig. 1.5 remove screw



Fig. 1.6 disengage sensor harness



Fig. 1.7 let sensor hang



Fig. 2.8 remove screw right side



Fig. 1.9 remove screw left side

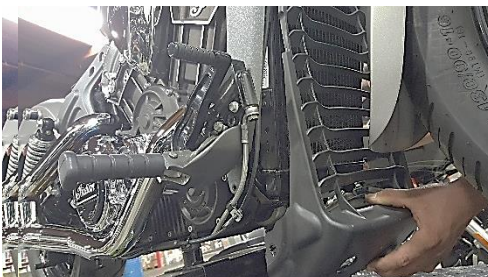


Fig. 1.10 remove plastic cover



Fig. 1.11 remove right side control



Fig. 1.12 remove left side control

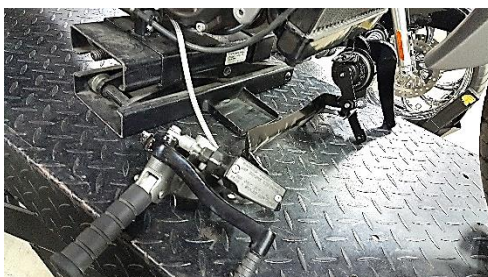


Fig. 1.13 let controls hang



Fig. 1.14 remove screw right side

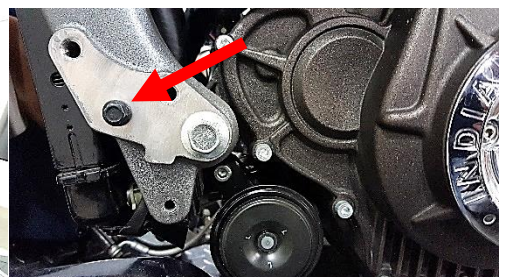


Fig. 1.15 remove screw left side

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Fig. 1.16 cut off plastic zip tie



Fig. 1.17 don't cut plastic bracket



Fig. 1.18 disengage from harness

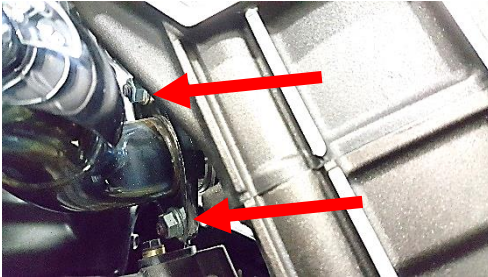


Fig. 1.19 remove flange nuts



Fig. 1.20 loosen clamp

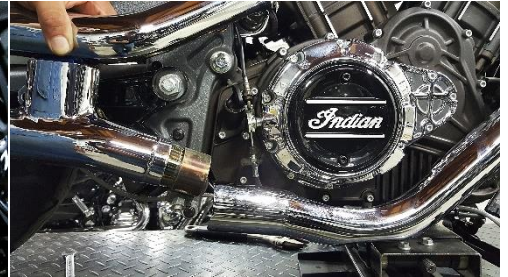


Fig. 1.21 disengage pipe assembly



Fig. 1.22 remove rear pipe assembly



Fig.2.23 remove flange screw nuts



Fig.1.24 remove mounting bracket

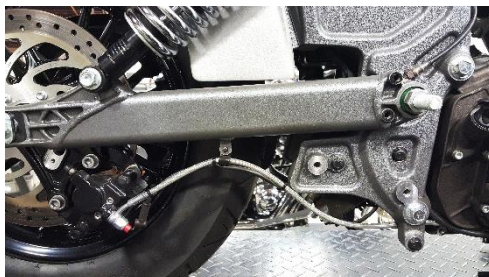


Fig.1.25 bracket removed



Fig. 2.1 hardware on kit



Fig. 2.2 install O2 sensor front pipe



Fig. 2.3 install front pipe

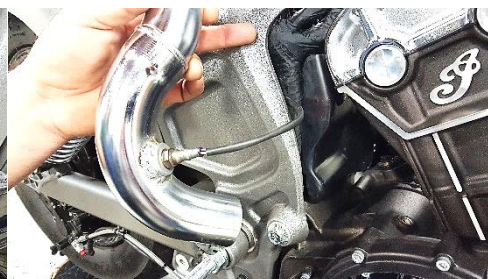


Fig. 2.4 install rear O2 sensor



Fig. 2.5 install rear pipe

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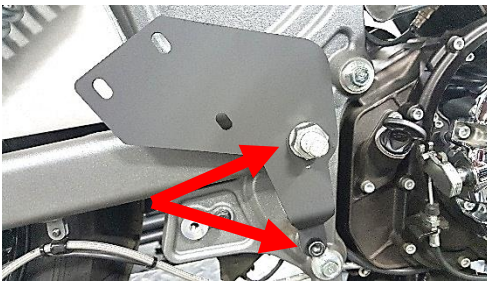


Fig. 2.6 attach mounting bracket



Fig. 2.7 insert clamps over inlets

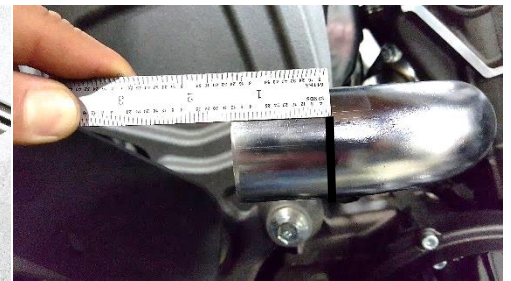


Fig. 2.8 mark a line as shown



Fig. 2.9 install muffler assembly



Fig. 2.10 align system



Fig. 2.11 tighten upper flange nut



Fig. 2.12 tighten lower flange nut



Fig. 2.13 tighten upper flange nut



Fig. 2.14 tighten lower flange nut



Fig. 2.15 mark arrows as shown



Fig. 2.16 install shields over

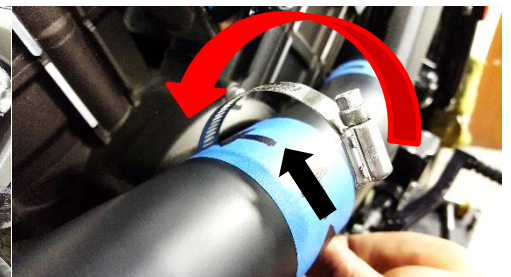


Fig. 2.17 install hose clamps

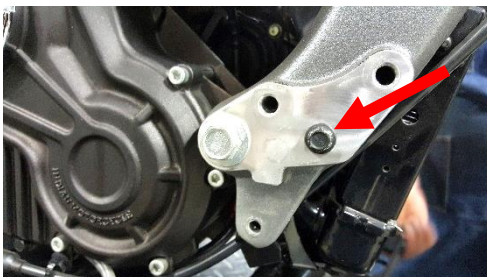


Fig. 2.18 install radiator bracket

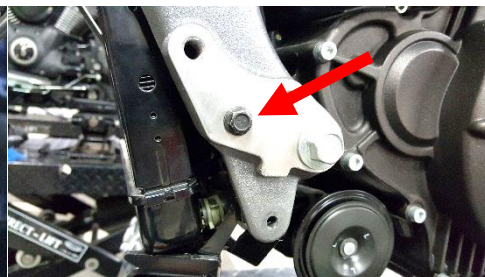


Fig. 2.19 install radiator bracket



Fig. 2.20 install right control

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Fig. 2.21 install left control



Fig. 2.22 ensure correct assembly

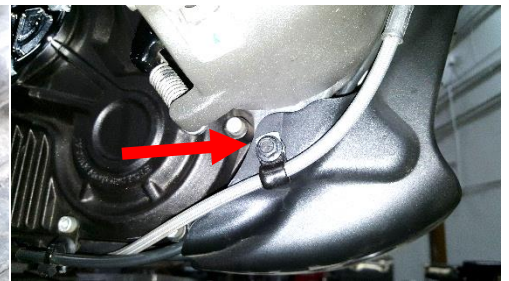


Fig. 2.23 install screw right side



Fig. 2.24 install screw left side



Fig. 2.25 cover installed

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