



EXHAUST SYSTEM TRUE-DUALS TUCK-&-UNDER

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 (951) 898-4733 or visit us at: www.freedomperform.com

PACKAGING LIST: MY00153-HW (*=ASSEMBLED)

PART NUMBER	DESCRIPTION	QTY	PART NUMBER	DESCRIPTION	QTY
YS110-F1	FRONT HEAD PIPE ASSEMBLY	1	HWB0009	3/8"-16 X 1.000" CARRIAGE BOLT ZINK PLATED	1
YS110-F3	FRONT HEAT SHIELD	1	HWB0008	3/8"-16 X 3/4" CARRIAGE BOLT ZINK PLATED	4
YS112-F1	CROSSOVER HEAD PIPE	1	HWB0043	M10 X 1.25 X 50 HEX SCREW ZINC PLATED	2
YS112-F3	CROSSOVER HEAT SHIELD	1	HWB0001	1/4"-20 X 3/8" BUTTON HEAD SCREW ZINC PLATED*	6
YS111-F3	REAR HEAT SHIELD	1	HWN0004	3/8"-16 FLANGE TRI-LOCK NUT ZINC PLATED	5
MY245-F6	RIGHT SIDE MUFFLER*	1	HWW0011	M10 FLAT WASHER ZINC PLATED	2
MY246-F6	LEFT SIDE MUFFLER*	1	HWW0003	1/4" SPLIT WASHER ZINC PLATED*	6
MBK-Y140-F4	LEFT SIDE MOUNTING BRACKET	1	A103SP	19MM X 4.42 X 10 LONG ALUMINUM SPACER	2
MBK-141-F4	RIGHT SIDE MOUNTING BRACKET	1	A115-O2-F14	18MM OXYGEN SENSOR BUNG PLUG	1
A143-LCB-F8	RACING BAFFLE*	2	A105-O2-F14	10MM OXYGEN SENSOR BUNG PLUG	1
A140ECA-F10	RACING END CAP*	2	A115PC-F14	P-CLAMP 1.750" ID	1
HWC0010	BARREL CLAMP # 62 STAINLESS STEEL	1	MY00153-HW	HARDWARE BOX	1
HWC0006	T-BOLT CLAMP # 62	2	MY00153-INS	INSTRUCTION MANUAL	1
HWC0002	HOSE CLAMP # 24 STAINLESS STEEL	8			

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.



STOCK EXHAUST SYSTEM REMOVAL ROADLINER/STRATOLINER

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. Using a 5mm Allen wrench remove flapper valve cover shield. **(see figure 1.1 & 1.2)**
3. Exup valve will be visible once heat shield is removed, remove cables from pulley by loosening its tension adjustment nuts then remove the cable pins from pulley, using a 10mm wrench loosen nuts retaining valve in place as shown in **(figure 1.3 & 1.4)**
4. Remove bracket holding the O2 sensor with a 5mm Allen wrench. **(figure 1.5 & 1.6)**
5. Unplug Oxygen sensor from harness.
6. Remove brake light bracket using a 5mm allen wrench and disengage spring. **(see figure 1.7 & 1.8)**
7. Remove right side floorboard using a 12mm socket or wrench and let it rest against the frame but be careful not to damage any assembly components **(see fig 1.9 & 1.10)**
8. If necessary, loosen heat shields on header section to gain access to remove the entire header.
9. Remove nuts holding the header system to the cylinder heads (two on each header) use an 8mm allen wrench for the rear header and a 12mm socket for the front header section **(see figure 1.11 & 1.12)**
10. Remove the two 10mm flange bolts retaining the mounting bracket with a 12mm socket or wrench and save for re-use, remove the header section carefully some assistance may be required. **(see figure 1.13)**
11. Remove Exup valve cables the same way as they were removed from the pulley, leave solenoid valve in place. **(See figure 1.14 & 1.15)**

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.

FREEDOM PERFORMANCE EXHAUST SYSTEM INSTALLATION ROADLINER/STRATOLINER

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. If equipped remove left side passenger peg using a 12mm socket or wrench. **(see figure 2.1)**
3. Attach mounting bracket **MBK-Y140-F4** using a 17mm socket or wrench to the left side of motorcycle frame, use two 10mm hex screws and washers (supplied) apply a small amount of locking glue on threads of your choice. NOTE: the third hole on the bracket serves as spacer but you may choose to drill and tap to the frame this option will make the bracket more stable. **(see figure 2.2)**
4. Repeat step # 3 with right side bracket marked as **MBK-Y141-F4** using stock flange screws. **(see figure 2.3)**
5. Before continuing with the installation it is required to do this step first: the plastic cover for the belt is too close for the crossover pipe and need to have a cutout section as seen in the picture **(see figure 2.4)** you may wish to remove the cover if you like. Use some type of cutters and if the cut is rough you can file it to make it look really smooth. the left side bracket has a rounded cut to allow the left pipe more space use this as a guide to make the cutout, cut both sides of the belt cover about 2" in length by about .3/4" high.
6. If equipped install O2 sensor using a 22mm wrench for 18mm sensor or a 14mm for 10mm sensor. If not equipped with sensor plug sensor bungs. Apply a small amount of anti-seize compound to the threads of the O2 sensor prior to installation if a sensor is not to be used, use plugs (supplied) in the hardware kit. NOTE: Be careful not to get anti-seize compound on sensor tip, it may affect sensor functionality Note this system is equipped with both 10mm and 18mm sensor bungs for fitment on Raider models. **(See fig. 2.5)**
7. With 12mm socket or wrench for the front engine port and an 8mm allen wrench for rear engine port install header assembly marked as **(YS110-F1)** use stock nuts, the pipe may be pre-assembled with heat shield, if this is the case remove shield from header using a flat screw driver or a 5/16" nut driver, use the stock flange nuts and drive nuts all the way finger tight. make sure rear stock shield is re-installed as it was on the stock system **Do not tighten with wrench yet. (See fig. 2.6 and 2.7)**
8. Reconnect O2 harness and re-install bracket holding it using a 5mm Allen wrench. If sensor cable does not reach disengage from clip to allow more length.
9. Install P-Clamp, slip clamp over front pipe with the flat side facing towards the bottom. **(See fig. 2.8)**
10. Install crossover pipe, this pipe is marked as **(YS112-F1)** on the shorter side, insert a T-Bolt Clamp (supplied) with the screw pointing down as shown in **(figure 2.9)** The P-clamp will engage the right side bracket like a sandwich, insert a 3/8"-16 x 1" long carriage bolt thru P-clamp and bracket and secure it with a flange nut (supplied) to hold the front header to the bracket do not tighten at this time.
11. Insert T-bolt clamps # 62 over mufflers as shown. **(See fig. 2.10)**
12. Install left side muffler marked as **(MY246-F6)** in the front section of the muffler install a **T-Bolt clamp # 62** with the bolt pointing down, now insert two **3/8"-16 x 3/4"** carriage bolts (supplied) on the slotted bracket welded to the muffler body, now, slide muffler inlet over crossover pipe as shown(some assistance may be required), drive nuts all the way but do not tighten yet make sure the back of the bracket welded to the muffler is flush with the mounting bracket **(see figure 2.11 & 2.12)** Make sure the gap between the left pipe and the mounting bracket is that of about 1/8" as seen in **(figure 2.13)**
13. Repeat last step but this time with the right side muffler marked as **(MY245-F6)**, insert two 3/8"-16 x 3/4" carriage bolts (supplied) on the slotted bracket welded to the muffler body and slide muffler nose over rear pipe (some assistance may be required), drive nuts all the way but do not tighten yet make sure the back of the bracket welded to the muffler is flush with the mounting bracket **(see figure 2.14 and 2.15)**
14. Mark center of heat shield clips welded inside heat shields as shown. This is to easy the installation of the heats shields and to guide you inserting hose clamps properly. NOTE: the direction of the arrow denotes the direction of hose clamp insertion to allow an easier way to tighten clamps. **(figure 2.16)**
15. Install heat shields. Place heat shields over their corresponding headers and secure it with hose clamps. Insert hose clamps as shown guided by the. **(figure 2.17)**
16. Align heat shields using a 5/16" nut driver or flat screw driver.
17. Align right and left side muffler so that they have the same height adjust as necessary by loosening and tightening flange nuts holding the muffler, once aligned tighten all the way with a 9/16" socket or wrench.
18. Tighten T-bolt clamps using a 7/16" deep socket or wrench the one underneath holding crossover pipe, and both muffler clamps.

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. Tighten P-Clamp nut using a 9/16" socket or wrench.
20. Tighten head port nuts using a 12mm socket or wrench for the front header and an 8mm Allen wrench for the rear header and the stock nuts.
21. Re-install floorboard using a 12mm socket or wrench and install the bracket holding the spring with a 5mm allen wrench now install the spring as it was prior to the installation. Check for clearance between the shield and the floorboard if necessary install washers to serve as spacer between the frame and the floorboard.
22. Align heat shields and tighten clamps using a 5/16 nut driver. (8 total)
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

There are accessories available for this exhaust system such as quiet baffles or different muffler designs 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. Use caution when leaning or turning. This system is intended for show/display only.

WARNING!

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

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Fig. 1.1 remove shield 5mm allen



Fig. 1.2 slide backwards

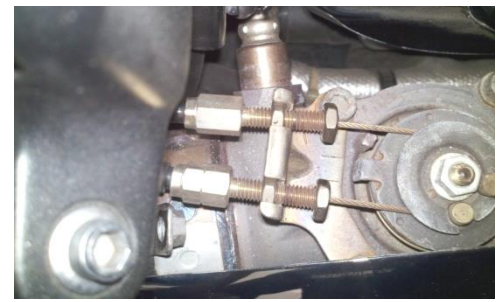


Fig. 1.3 loosen nuts 10mm wrench



Fig. 1.4 remove barrel cables



Fig. 1.5 remove sensor bracket 5mm allen



Fig. 1.6 disconnect O2 harness



Fig. 1.7 remove bracket (brake light)



Fig. 1.8 disengage spring



Fig. 1.9 remove floorboard 12mm



Fig. 1.10 space to work



Fig. 1.11 remove flange nuts 12 mm



Fig. 1.12 remove allen nuts 8mm allen



Fig. 1.13 remove bracket bolts 12mm wrench



Fig. 1.14 follow valve cables



Fig. 2.15 remove from solenoid as shown

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Fig. 2.1 remove left passenger peg 12mm



Fig. 2.2 install left bracket



Fig. 2.3 install right side bracket

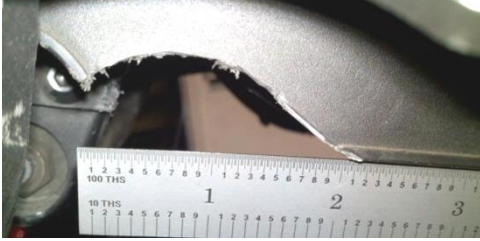


Fig. 2.4 cut plastic belt cover



Fig. 2.5 install O2 sensor or plugs.



Fig. 2.6 install front headers assembly.



Fig. 2.7 install stock shield.



Fig. 2.8 install P-Clamp as shown.

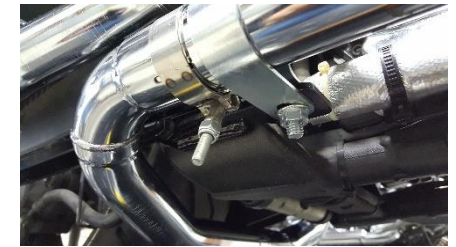


Fig. 2.9 insert T-Bolts pointing down



Fig. 2.10 insert T-Bolts pointing down



Fig. 2.11 install left side muffler.



Fig. 2.12 secure with carriage bolts



Fig. 2.13 1/8" gap pipe and bracket.



Fig. 2.14 install front muffler.



Fig. 2.15 brackets must be flush.



Fig. 2.16 mark shields as shown



Fig. 2.17 insert hose clamps using a 5/16" nut driver.



Fig. 2.18 bend wire backwards to prevent heat damage.

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