

Engine Removal / Installation

Yamaha FX140 / HO

Step 1

Battery Removal



1.1 (Above) Remove the two retaining straps, disconnect the battery and remove it from the hull. Disconnect the negative (black) cable first, then the positive (red).

Step 2

Removal From Hull

2.1 Remove the center screws and outer retaining clips from the airbox cover and remove.



2.2 Wiggle & remove the flame arrestors by loosening the 4 flame arrestor bolts. Remove the two allen bolts on each throttle body. Remove the three retaining screws from the airbox base and raise it.



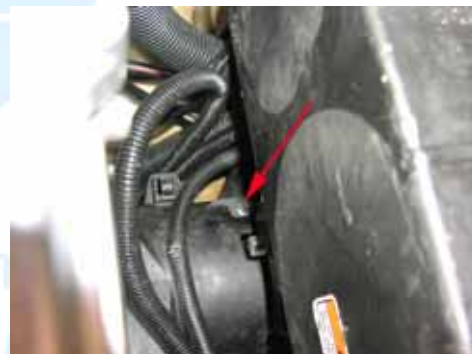
2.3 Disconnect the hose and wire connector under the base to remove it.



2.4 Loosen the outer then inner hose clamps on the pipe and separate. Remove the cooling fitting.



2.5 Remove the PTO shroud.



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2.6 Remove the relay cover on the electrical box and disconnect the starter lead.



2.7 Disconnect the wiring harness connections. Remove motor mount bolts.



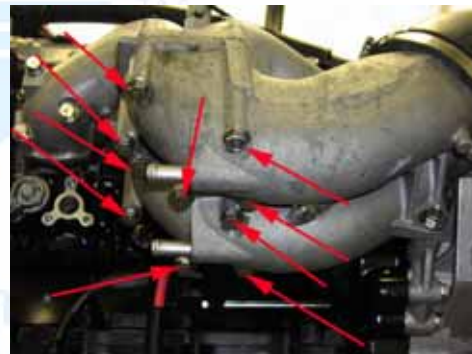
2.8 Using an engine hoist, raise the engine to access the remaining hoses and connections.



3.2 Remove the rail connections and cooling lines from the block.



3.3 Remove the exhaust collector.



Step 3

Accessory Removal

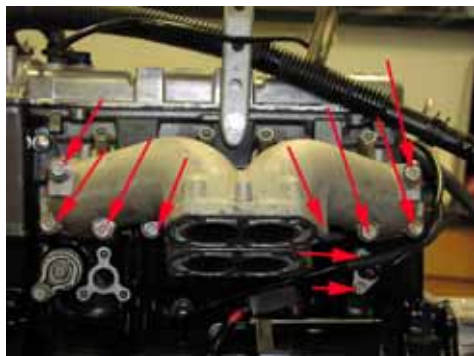
3.1 Remove the coil pack and ignition wires from the block.



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3.4 Remove the exhaust manifold and knock sensor.



3.5 Remove the oil line and head sensor.



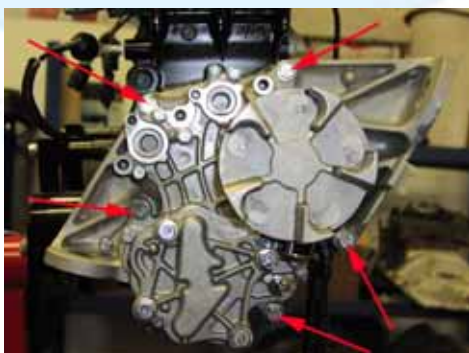
3.6 Remove the two retaining bolts on top and 4 on the bottom for the oil tank and remove it from the block.



3.7 Remove the head bracket.



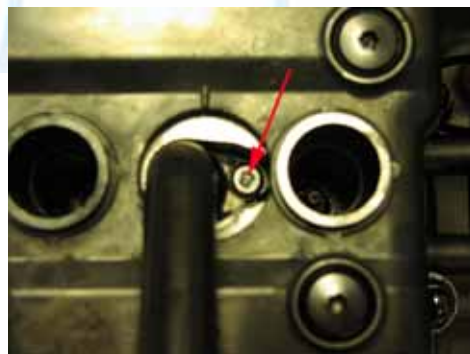
3.8 Remove the gear reduction assembly.



3.9 Loosen the clamps and remove the intake adaptors.



3.10 Pry the rubber plug back and remove the retaining bolt and tube on the head.



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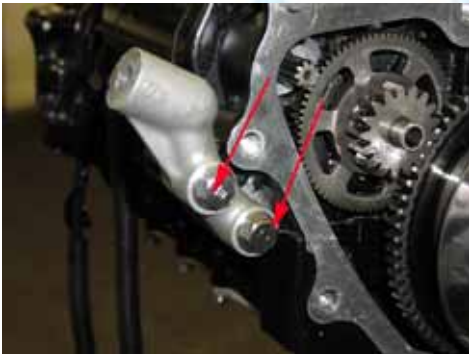
3.11 Remove the case sensor.



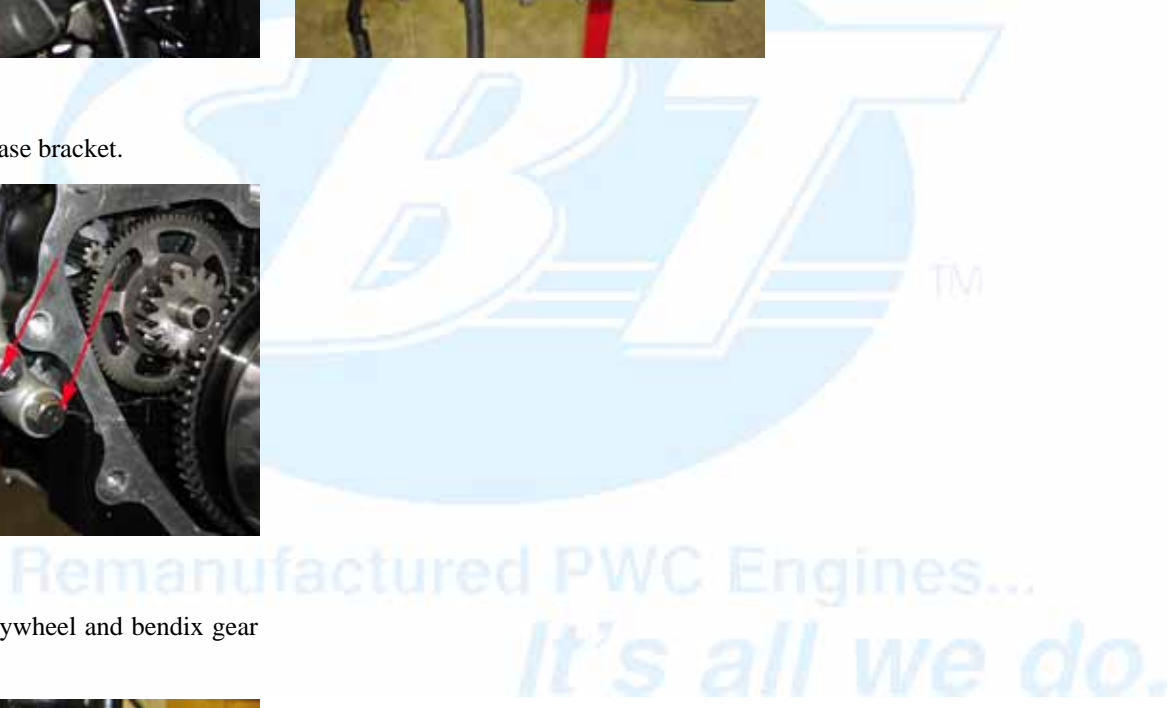
3.14 Remove the starter.



3.12 Remove the case bracket.



3.13 Remove the flywheel and bendix gear assembly.



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Engine Installation Notes

Paper Gaskets

It is SBT's recommendation that all paper gaskets be treated with Loctite® High-Tack Gasket Sealer prior to installation. Read and follow all instructions on the product canister to insure good gasket sealing on your new engine.

Special Gaskets

It is SBT's recommendation that all exhaust gaskets be sealed with Loctite® Copper Gasket Adhesive prior to installation. Read and follow all instructions on the product canister to insure good gasket sealing on your new engine.

Bolts

It is SBT's recommendation that all bolts be treated with Loctite® Medium Strength Threadlocker Blue (242) during assembly.

Electrical Connections

It is SBT's recommendation that all electrical connections be sanded, cleaned and secured during the assembly process. It is a common problem to not have solid connections due to corrosion, paint, poor wire condition, etc.

Disclaimer

While every precaution has been taken in the preparation of these guides, SBT assumes no responsibility for errors or omissions. Neither is any Liability assumed for damages resulting from use of the information contained herein. Publication of the procedures in these guides does not imply approval of the manufacturers of the products covered. Persons engaging in the procedures herein do so at their own risk.

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Follow the removal steps in reverse order to install your new SBT short block assembly:

- 3.14 Torque the starter to 13 ft./lbs.
- 3.13 Torque the flywheel bolt to 54 ft./lbs.
- 3.12 Torque the case bracket to 13 ft./lbs.
- 3.11 Torque the case sensor to 11 ft./lbs.
- 3.10 Torque the head tube to 4.5 ft./lbs.
- 3.9 Tighten the intake adaptor clamps to snug.
- 3.8 Torque the gear reduction unit bolts to 20 ft./lbs.
- 3.7 Torque the head bracket bolt to 23 ft./lbs.
- 3.6 Torque the top oil tank bolts to 20 ft./lbs. Torque the bottom 4 bolts to 28 ft./lbs.
- 3.5 Tighten the head sensor to snug.
- 3.4 Torque the exhaust manifold to 28 ft./lbs. Torque the knock sensor to 11 ft./lbs.
- 3.3 Torque exhaust collector to 28 ft./lbs.
- 3.2 Reattach rail connectors and cooling lines.
- 3.1 Torque coil pack to 11 ft./lbs.
- 2.8 Hoist the engine back into the hull far enough to reconnect the bottom fittings and lines.
- 2.7 Drop the engine fully in the hull and reattach the electrical harnesses. Torque motor mounts to 12 ft./lbs.
- 2.6 Reattach starter lead and cover.
- 2.5 Install PTO shroud to snug.
- 2.4 Install exhaust clamps to snug.
- 2.3 Reattach airbox hose and connector. Torque to 4.7 ft./lbs.
- 2.2 Torque airbox base to 12 ft./lbs. Torque Flame arrestor bolts to snug.
- 2.1 Torque airbox cover screws to snug and snap outer connectors shut.
- 1.1 Reinstall battery.

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Tools Needed:

Sockets

- 17mm socket
- 14mm socket
- 13mm socket
- 12mm socket
- 10mm socket
- 8mm socket

Sealers / Lubricants

- Loctite® Copper Gasket Adhesive
- Loctite® Medium Threadlocker (Blue) 242

Parts

- External Gasket Kit
- Zip-Ties

Misc.

- Ratchet
- Long socket extension
- Short socket extension
- Screwdrivers
- Yamaha Rotor (flywheel) Puller – Part # YM01082 / 40890-01080 from any Yamaha Dealer

Wrenches

- 12mm wrench
- 10mm wrench
- Torque wrench