

## INSTALLATION INSTRUCTIONS

VT No. 40-4602

### TOOLS NEEDED

- Strap wrench or oilfilter removal tool
- 5/32" Allen wrench
- 1" deep-well socket
- 7/16" Allen wrench (if removing a stock H-0 adapter)
- 7/8" socket (if removing a stock H-0 adapter)

### IMPORTANT INFORMATION

This V-Twin oil filter adapter must be installed following these instructions. Read the easy-to-follow instructions fully prior to starting the installation of the oil filter adapter. Correct installation is the only way to ensure proper operation of the oil filter adapter.

### BASIC SYSTEM INSTALLATION GUIDELINES

- Route oil hose to avoid any hot surfaces or moving parts. Ensure all bends are smooth, with no sharp turns that may restrict oil supply to the engine.
- Oil filter adapter is designed to mount as detailed in these instructions. Any modifications may lead to decreased performance or item failure.
- When cutting oil hoses, always use a sharp knife, single-edge razor blade, or hose cutter. Make a straight, clean cut at 90° to the oil hose. This will ensure a proper fit where the oil hose attaches to its connection. Over tightening hose clamps may cause oil leaks.

### **CAUTION: ALLOW MOTORCYCLE TO COOL BEFORE ATTEMPTING INSTALLATION OR RISK SERIOUS INJURY.**

The V-Twin Offset oil filter adapter is used to access the oil supply for the installation of a oil cooler.

Oil flow direction from adapter :oil feeds the oil cooler from the fitting on the left side and returns to the fitting on the right side, as viewed from front with oil filter adapter fittings at bottom.

Installing the offset oil filter adapter

1. Remove spin-on oil filter, and clean the filter mounting surface thoroughly.
2. Disassemble the offset oil filter adapter by removing the five Allen head bolts from the front face of the adapter using a 5/32" Allen wrench. Then remove the front half of the adapter (the portion with hose fittings attached).
3. With the longer/offset end of the adapter at the top, place the back half of the adapter (the portion with the flat rubber o-ring) over the threaded oil filter stem and tighten the included 1" lock-nut to finger-tight. The adapter's flat sealing rubber o-ring should face inward, toward the stock oil filter housing, and be free of debris. (Do not apply oil to this o-ring.)

### **APPLICATION NOTE: Sportster models**

- Some Sportster models may require rotating the mounting of the offset oil filter adapter 180 degrees, placing the hoses above the filter.
4. Place the front half of adapter over the already-installed back half .
  5. Remove the front half of the adapter and hold the back half of the adapter in its current orientation. Using a 1" deep-well socket securely tighten the 1" lock-nut so the back half of the adapter will not rotate and the sealing

o-ring is tight against the stock filter mount. This may require a prying force applied against the adapter to allow tightening while retaining the chosen orientation.

**NOTE:** On rubber-mounted engine models, allow adequate clearance to ensure that the adapter will not strike any object when the motor shakes.

6. Install gasket (included in kit) onto the back half of the adapter.

**CAUTION:** The gasket should be applied dry. No additional gasket sealing compound is required. Ensure that the adapter halves are free of oil residue.

7. Place the front half of the adapter against the a gasket and install allen bolts loosely. If a thread lock compound is optioned, please choose a medium strength and use it on the allen bolts at this step.

8. Evenly draw the two halves of the adapter together by gradually tightening the allen bolts in an alternating criss-cross pattern (e.g., like tightening wheel lug nuts on a car).

9. When the adapter halves have been evenly tight bends that may restrict oil flow and that drawn together, firmly tighten the Allen bolts in the same alternating criss-cross pattern as the previous step.

**SERVICE NOTE:** Inspect adapter and screws for tightness at each oil filter change. This completes the installation of the offset oil filter adapter. The following instructions are for installing oil lines between a oil filter adapter and a oil cooler (sold separately).

### **Route oil lines to oil cooler**

10. Cut oil hose into two lengths and install the oil hoses onto the hose fittings on the oil cooler. Secure hoses over the fittings with hose clamps so the hose cannot pull over the barb on the fitting. The flow orientation of oil cooler is non-directional, so either hose fitting will allow proper flow as an inlet or an outlet.

11. Measure, cut, route, and attach the oil hoses to the oil filter adapter. Secure the hose over the fittings using the hose clamps onto the oil filter adapter inlet and outlet as detailed in the previous step.

**NOTE:** It may be necessary to rotate hose clamps to ensure hose clamps do not interfere with oil filter installation.

**CAUTION:** Take care to make gentle bends in oil hose routing from oil cooler to adapter. Sharp bends may collapse under heat load and cause restriction to oil flow.

12. Install oil filter onto the threaded stem of the oil filter adapter. Tighten per factory/service manual recommendations.

### **Final Inspection**

13. Inspect the oil hoses to ensure there are no tight bends that may restrict oil flow and that they are not contacting any moving parts. If necessary secure the new hoses to the frame with plastic zip-ties.

14. Refill the engine with the correct amount and type of oil. Check the oil level per factory/service manual recommendations.

**NOTE:** Over-tightened hose clamps may cut into oil lines and cause oil leaks

15. Start the engine and let it idle. Check all oil hose connections for any leakage. Tighten any hose clamps that may be leaking.

16. After installation completion and engine warm-up, shut the engine down and recheck the level. Correct the oil level if necessary, but do not over-fill.