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REF: Engine Mechanicals - Sub-05F

Installing a Buell XB Rocker Box / Breather System on an Evo Sportster



Some have reported better engine breathing and less oil leaking out the breather valve by using these Buell rocker boxes.

(along with their corresponding breather valves (17607-00Y)).

Considerations:

- 1991-2003 Sportsters will get rid of the middle spacer and umbrella valve, eliminating one more gasket that could leak.
- On 2004-up Sportsters, after removing the fuel tank, you might want to consider removing the top and front tie bars and the front motor mount.
(to rotate the engine down away from the frame to give you more space to work in)
Don't forget to put a jack under the engine so it doesn't drop on you when you undo the front motor mount.
Slowly lower the engine using the jack until the motor mount gets close to the front tie bar frame member. ²⁾
- On 2004-up, you may have to shave off some areas around the motor mounts to gain clearance for the covers.
Depending on your fuel tank, you may want to point the breathers towards the rear of the bike.
- The breather valve is not a PCV valve but rather a regular 91-03 umbrella valve, [Click Here](#) for more details on the valve.
- The breathers reside higher up on the boxes and should run a little cooler than the OEM Sportster umbrella system (may last longer).
- You know longer have to deal with the hoses coming off the heads as an upgrade to your breather venting system.

- You have to run vent hoses either to the air cleaner or somewhere else. Do not put a filter on the end of the hose.
- Most importantly, this upgrade WILL NOT STOP the occasional drips and condensation out the vent hose as that is an inherent symptom of the machine.

Parts Needed:		
17605-00YB	1	Front Rocker Cover
17642-02A	1	Rear Rocker Cover
17606-00YA	2	Viton Grommet (black)
17607-00Y	2	Breather Valves (called pcv valves in the parts catalog)
882	8	1/4" x 20 x 7/8" Hex Socket Head Screw w/ washer (you can also use your old ones)
63858-49	8	Fiber Washers (you can also use the aftermarket copper washers)
868A	2	1/2" x 13 x 3/4" Hex Socket Button Head Screw (to plug the head vent holes)

Basically, remove the four bolts holding each cover on and replace them with the Buell covers bolting them down as you would the Sportster cover.

1986-2003 models will not use the middle rocker box section.

Use the 1/2" screws to plug the OEM breather holes in the heads (use Loctite thread sealer).

In the pics below, Buell rocker boxes were installed on a 1200R with XB heads using the Buell style rocker box mounted breather valves. The OEM XL breathers were removed.

The rocker box mounted breather valves replace the OEM XL breather / umbrella valves. Vent lines off the breathers were tied together, into a catch can and to the rear of the bike.

Both breather valves are connected to a 'Y' connector that runs along the frame under the tank.³⁾ The tube comes down into a catch can that can be emptied when it gets too much oil in it. On a long hard ride the catch can will clean its self out.



The tube from the catch can runs up under the fender and exits at the rear on the left side of the bike. When the bike is on the jiffy stand the hose is way over the side.

If some oil drips from the end, it's not near the tire and there is no oily mist spraying over all the bike

while riding.

Oil from catch can on left side under fender. ⁴⁾



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1)

photo by rubine of the XLFORUM

<https://www.xlforum.net/forum/buell-motorcycle-forum/buell-motorcycle-top-end/25478-how-do-buell-heads-vent/page4?t=42202&highlight=buell&page=4>

2)

<http://thex1files.com/External/XBRockerCovers.htm>

3)

photos by mick42 of the XLFORUM

<https://www.xlforum.net/forum/buell-motorcycle-forum/buell-motorcycle-top-end/25478-how-do-buell-heads-vent/page4?t=42202&highlight=buell&page=4>

4)

photo by mick42 of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/frame-mount-evo-sportster-talk-1986-2003-models/197402-pcv-valve-in-sporty-rocker-covers#post4318378>

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Last update: **2023/12/21 21:27**

