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## REF: Engine Mechanicals - Sub-01S

### Windage Tray / Flywheel Scraper

These are in two separate pieces. <sup>1)</sup>

The scraper peels the oil off the flywheels and sends it down under the windage tray.

The windage tray isolates the oil under the flywheels so that windage from the flywheels doesn't kick it back up again.

The back end of the windage tray, where it meets the case and the scraper, has some half-moon style cutouts to allow scraped oil to go past.

The front of the windage tray attaches to the factory windage barrier.

It's basically an extension of the factory windage control.

The scraper needs to be .010" to .020" from the flywheels to work properly.

The main thing is getting it all to fit, such that it works properly and the cases can be bolted back together without interference.

Takes a little trial and error, bending, filing, checking, repeat.

There's some drilling and fitting and filing work to install it, but it's not difficult.

You could make one yourself if you want, but the kit saves time and trouble.

When installing this mod, make sure you put some sealer of some kind on the fasteners that pass through into the transmission area.

Otherwise oil will seep through and fill your primary.

Commercial XL engine flywheel scraper <sup>2)</sup>



Homemade XL engine flywheel scraper <sup>3) 4)</sup>



Here's how it's done on S&S cases.

Notice how it has a scraper built right into the cases, that peels oil off.

It then goes through a reed valve to the chamber below, where the scavenge inlet resides.

The advantage to this method is that the reed valve prevents any vacuum (from the pistons going up) from being seen at the scavenge inlet.

Putting vacuum on the scavenge inlet plays hell with scavenging.

We never see wet-sumping issues with this setup the way we do on stock (XL) case motors. <sup>5)</sup>

S&S engine w/ built in flywheel scraper <sup>6)</sup>



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<sup>1)</sup> <sup>5)</sup>

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-bottom-end/49717-flywheel-scraper?t=203160>

2)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-engine-conversions/87710-aussiegazzas-rebuild/page12?t=692835&page=12>

6)

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