



# AeroConversions

A Product Line of Sonex Aircraft LLC

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## Installing the AeroConversions Oil Separator

(Rev B 032613)

While the AeroConversion's oil separator can be adapted to nearly any engine/airframe installation, these instructions illustrate an installation on an AeroVee engine. **AeroConversions and Sonex Aircraft offer no specific advice for fitting an oil return line to any engine other than those covered in these instructions.**

### Oil Separator Features

#### Breather Input

1/2-14 NPT  
Includes Steel Ball  
for Inverted Flight

#### Mounting Bracket



**Oil Drain / Return Port**  
1/2-14 NPT

**Vapor Port Out**  
5/8" O.D. Tube

### Oil Separator Parts

The Oil Separator Assembly (ACV-S03-01) consists of:

- ACV-S03-01, Oil Separator
- ACV-S03-14, Steel Ball Bearing

### How It Works

Oil vapor that enters your engine's oil breather is routed to the separator where it is collected. A steel ball in the breather input port prevents excessive oil loss during inverted flight.

An oil drain / return port on the bottom of the separator allows collected oil from the separator to return to the engine via an oil return hose connected to a low point on your engine's oil sump, or be collected in the separator and drained.

The vapor port vents vapor out the bottom of the aircraft without excessive oil residue.

### Other Items You May Need

Review these instructions to determine additional parts you may need for your particular installation. If you are installing this on an AeroVee we specifically recommend:

- \_\_\_ AeroConversion's ACV-P02-20 Oil Sump Plate, Qty. 1
- \_\_\_ High-Performance -06 Braided Hose, 6 feet (or as req'd.)  
Used for oil return line, Jegs part number 361-406006
- \_\_\_ -06AN Hose End Fittings, Qty 3  
JEG's part number 555-100001
- \_\_\_ -06AN Hose End Fittings, 90° Swivel end, Qty 1  
JEG's part number 799-613163
- \_\_\_ DTL-60000C Series Fuel Line, 5/8" I.D., length as req'd.  
Used for Vapor Port Out line and Breather Input line.  
Wicks part number MILDTL6000-5/8
- \_\_\_ AN842-10D Hose Elbow, Qty. 1
- \_\_\_ AN912-5D Reducer, Qty. 1
- \_\_\_ MS20822-6D Elbow, Qty. 1
- \_\_\_ Hose clamps as needed.
- \_\_\_ Teflon paste (**Do NOT use teflon tape**)

### Mounting the Separator

The oil separator must be mounted in a position that permits the oil drain port to be above the engine's oil level in normal flight attitudes. When selecting a location for the oil separator keep in mind the need for access to the oil drain port if an oil return line to the engine will not be installed.

## Connecting the Ports

### Breather Input Line

The oil breather line from the engine is attached to this 1/2-14 NPT threaded port.

*Note: Install the steel ball in the port prior to installing a fitting in the breather port. The ball prevents oil loss during negative G maneuvers.*

**AeroVee Installation Recommendation:** Install an AN842-10D hose elbow in the breather input and use a 5/8" I.D. oil-proof hose between the oil separator and the 5/8" O.D. tube attached to the AeroVee's oil breather plate. Secure the hose with hose clamps.

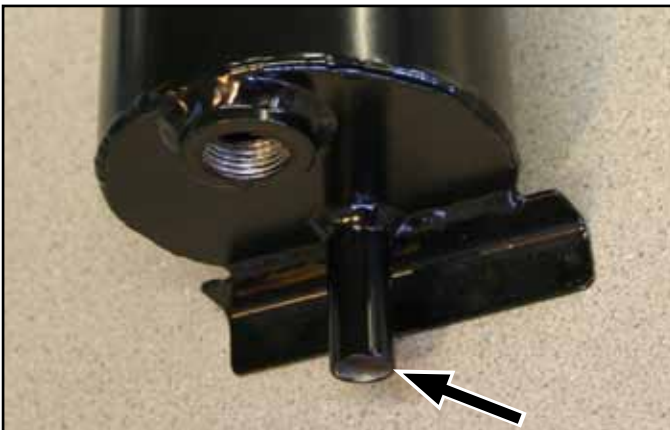


*This separator is shown with an AN912 reducer and AN842 hose elbow.*

### Vapor Line Out

This is the outlet for vapor and it should be vented out the bottom of the airplane. This port will also vent oil if the oil separator is allowed to fill before being drained, or if the drain is not plumbed back into the engine.

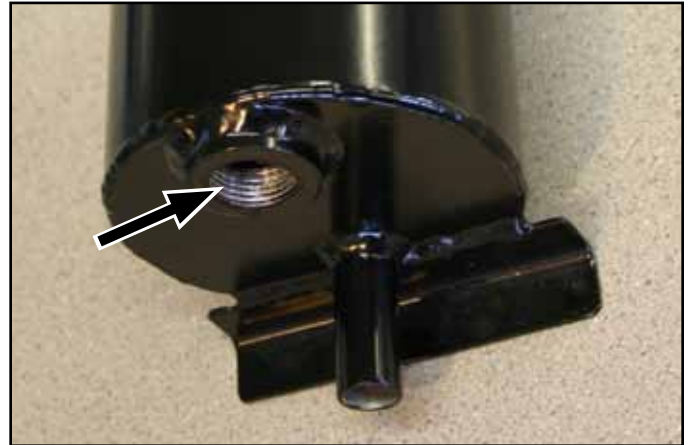
This port is a 5/8" O.D. tube which will accept an oil-proof 5/8" I.D. hose held in place by a hose clamp.



*The 5/8" O.D. vapor line is identified by the arrow.*

### Oil Drain / Return Port

The drain can be plumbed back to the bottom of the engine to return oil to the case, or it can be plugged so captured oil can be periodically drained.

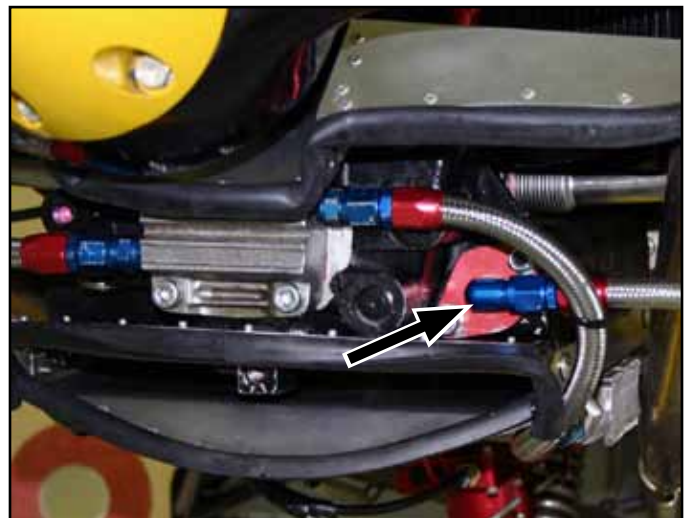


*The 1/2-14 NPT oil drain / return port.*

This port will accept any variety of fittings. **Do not use barbed fittings and hose clamps for the oil return line. Use only threaded AN hose fittings for critical connections.**

**AeroVee Installation Recommendation:** Install an AN912-5D reducer in the oil drain port and then install an MS20822-6D elbow in the reducer.

If the AeroVee engine is equipped with an oil temperature plate (see photo, below), tap the plate (1/4NPT) to accept an MS20822-6D elbow and attach a -06 braided hose equipped with -6AN hose end fittings between the elbow in the plate and the separator.



*In this photo the oil temperature plate fitted to most AeroVee engines has been drilled and tapped to 1/4 NPT and an oil return line installed.*

To fit an oil return line to an AeroVee equipped with the optional ACV-P02-20 Oil Sump Plate, which has a 1/4 NPT tapped port for fitting an oil return line, install an AN816-6D nipple in the Oil Sump Plate and attach a -06 braided hose equipped with one -06AN (straight) hose end and one -06AN Hose End Fittings, (90° Swivel end) fitting between the nipple in the sump plate and the oil separator.



*This photo shows a typical oil return line installation in a oil sump sump plate. An AN816-6D nipple is installed in the sump plate and a -06 hose with -06AN 90° Swivel hose end is attached to the nipple.*