

Parts Required

___ 3 quarts approved SAE engine oil. Approved oils are listed below.

Approved Oils - Break-in Period (First 25 hours)

The flat-tappet (non-roller rocker) design of the AeroVee requires an oil with zinc and phosphate levels of approximately .12% to .14% (1200 - 1400 ppm)

Additionally, break-in oil must be non-detergent, non-synthetic, and contain no friction modifiers.

Do not use diesel engine oils (Rotella) and do not use oil additives.

Approved break-in oils are:

Valvoline VR-1, 20w50, non-synthetic
Brad Penn Penn-Grade 1 Racing 20w50

Approved Oils - Post Break-in

The flat-tappet (non-roller rocker) design of the AeroVee requires an oil with zinc and phosphate levels of approximately .12% to .14% (1200 - 1400 ppm)

Do not use diesel engine oils (Rotella) and do not use oil additives.

Synthetic oils may be used but do not extend the recommended oil change interval. The primary benefit to using a synthetic oil is improved heat transfer.

Approved post break-in oils are:

Valvoline VR-1, 20w50, non-synthetic
Valvoline VR-1, 20w50, synthetic
Brad Penn Penn-Grade 1 Racing 20w50
Mobil 1, 15W-50

Priming the Engine and Setting Oil Level

The AeroVee has a 2.75 quart capacity without oil cooler and lines. The following method may be used to achieve the proper oil level for your engine whether fitted with oil cooler or not:

- ___ 1. Add 2 quarts of oil to the crankcase and allow it to settle into the sump.
- ___ 2. With the aircraft in its normal ground attitude (on its tailwheel for tailwheel aircraft), remove the dipstick and file a mark on the dipstick at the oil line. This is the "Low" mark for the oil level.
- ___ 3. Add an additional .75 quart of oil to the crankcase and allow it to settle into the sump.
- ___ 4. With the aircraft in its normal ground attitude (on its tailwheel for tailwheel aircraft), remove the dipstick and file a mark on the dipstick at the oil line. This is the "Full" mark for the oil level.
- ___ 5. Remove one spark plug from each cylinder.
- ___ 6. With the fuel *off* and ignition switches *off*, operate the starter until oil pressure registers on the oil pressure gauge.
Note: If no oil pressure registers, the oil pump may need to be re-primed with white lithium grease. Also, check the electrical connection of the oil pressure sender.
- ___ 7. Re-install the spark plugs.
- ___ 8. Add oil as needed to bring the oil level back to "Full".

In operation you may find that your engine prefers a slightly lower oil level. This will be evidenced by excessive oil draining from the breather tube and, in some cases, the front seal. It is acceptable to operate your engine with less than 2.75 quarts, 2.5 quarts being fairly common.

If your oil level is allowed to drop too low you will experience increased oil temperatures and decreased oil pressure, or rapidly fluctuating oil pressure. **Do not operate your engine in this condition.**

Oil Changes During Break-in Period

During the first 25 hours of operation the oil level should be monitored closely and oil changes performed at 1 hour, 5 hours, 15 hours, and 25 hours. Thereafter, oil should be changed every 25 hours or 3 months.

Note: Engines which are not operated frequently collect damaging moisture. This moisture can only be removed by operating the engine until oil temperatures are above 190-degrees for an extended period of time, or by changing the oil. Short runs of the engine, which do not allow the engine to come to full operating temperature, are more damaging than not running the engine at all.