



# Service Instruction

ENGINE COMPONENTS, INC.

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Title: CYLINDER ASSEMBLY VALVE TRAIN

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Technical Portions are FAA DER Approved.

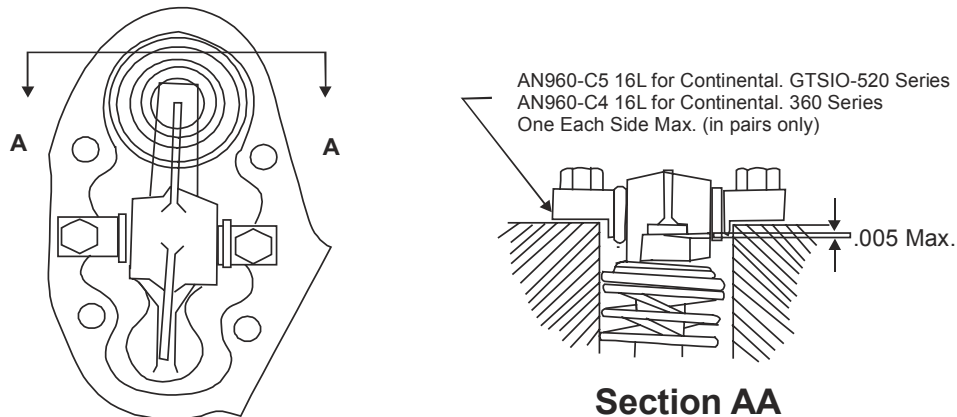
**BACKGROUND:** This Service Instruction addresses valve train overhaul practices that affect valve and valve guide operation and service life.

**ROCKER ARM DESIGN:** Most aircraft engine rocker arms are forged low alloy steel, with moderate core hardness properties. The surface that bears on the valve or rotator is generally hard surfaced to a minimum depth of .035.

**SERVICE PRACTICES:** Rocker arm assemblies are quite often reworked during cylinder overhaul by refinishing the wear surface that bears on the valve or rotator. The procedures and equipment are derived from old automotive practices and the procedures do seem to work. However, there are several problems that can cause premature wear. These include:

1. Grinding through the hard surface of the rocker arm.
2. Grinding an improper radius
3. Grinding an angle between the rocker arm and valve (or rotator)

Engine Components, Inc. has developed FAA approved repair procedures that assure airworthiness. However, item No. 3 does not become apparent until assembly with the cylinder, and can create excessive valve and guide wear. Fortunately, it is relatively easy to check. The illustrations show our recommended maximum misalignment between valves and rocker arms, regardless of engine type.



**ROCKER ADJUSTMENT:** Several approved repair techniques have an effect on valve train fits. One difficulty that occasionally is found is that valve clearance is reduced as a result of crankcases, cylinder, rocker arm, camshaft and cam follower repair. For many engines, adjustment is very difficult. For the Continental IO-TSIO-360 and GTSIO-520 series, however, a very slight adjustment can be accomplished by placing AN960-C416L or AN960-C516L washers on each side between the rocker shaft flat and cylinder. More than one washer should not be used on each side, and clearance for the gasket and rocker cover must be assured. It is essential to check rocker arm and valve alignment as shown above.

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