

Service Letter

Technical Aspects are FAA Approved

Number: L96-04 E
Replaces L96-04 D

Date: 04/18/2005

Subject: Overhaul and repair procedures for the SA47000S-A1 (Short-reach spark plugs) and SA47000L-A1 (Long reach spark plugs) Cylinder Stud Assemblies.

Application:

| Cylinder Assemblies | Engine Applications |
|-----------------------------|---|
| SA47000S-A1 Stud Assemblies | O-470-G, K, L, M, R & S IO-470-C |
| SA47000L-A1 Stud Assemblies | O-470-U; IO-470-D, E, F, L, M, N, S, U & V |

Compliance: Any time the above cylinders are removed for overhaul or repair.

This Service Letter covers specific differences between a Superior Air Parts, Inc. SA47000 series Millennium Cylinder®, and the original equipment manufacturer’s cylinder, as it pertains to repair and overhaul. If a specific procedure is not addressed in this Service Letter, the applicable procedure in the original equipment manufacturer’s current overhaul manual applies. The cylinders are identified by part number and serial number on the cylinder flange, as shown in Figure 1.

Cylinder Bore

The Millennium® cylinder barrels are manufactured from AMS 6382 steel. The barrels are through hardened with a choked bore, which should be maintained during any boring or honing operation. See Figure 2 for new standard cylinder dimensions and finish specifications.

Any time a cylinder is removed, the diameter and out-of-round condition should be checked and the cylinder inspected for scoring, galling, low spots, and ring step. Inspection results should be compared to the dimensions in Figure 2 and in the original equipment manufactures current overhaul manual. Piston Rings for nitrided cylinders should be used in through hardened cylinder barrels unless the cylinder has been chrome or nickel plated. Though hardened steel cylinders that are worn may be oversized .015 or chrome or nickel plated back to standard dimensions. Refer to the appropriate repair service instructions for rings to be used with the type of plating being placed in service.

Cylinder Rebarreling

A Millennium Cylinder® may have the cylinder bore returned to new steel limits by having the cylinder barrel replaced by a Superior Air Parts licensed FAA Repair Station. The old worn barrel is removed and a new Superior Air Parts FAA-PMA Millennium Cylinder® barrel (the same high quality barrel used in new Millennium® cylinder assemblies) is installed. This procedure returns the cylinder bore to the new steel limits shown in Figure 2, as well as, assuring that other critical dimensions, such as, compression height and cylinder barrel flange hole alignment, are returned to new limits. Superior Air Parts Customer Service may be contacted for approved sources of this repair.

Cylinder Heads

Superior Air Parts, Inc. Millennium Cylinder® heads for the SA47000 series cylinders are investment cast using ASTM B26 aluminum alloy in compliance with Superior Air Parts, Inc. material specifications.

Cylinder Parts

The following list of parts are used in new production of the SA47000S-A1 and SA47000L-A1 stud assemblies and SA47000S-A2 and SA47000L-A2 valve assemblies.

SA47000S-A1 and SA47000L-A1

| | | |
|----------------|----|--------------------------------------|
| SA636242 | ** | Exhaust Valve Guide (Ni-Resist) |
| SA643766-1 | ** | Intake Valve Guide - Aluminum Bronze |
| SA401893 | | Exhaust Stud |
| SA35967 | | Exhaust Seat |
| SA630591 | | Intake Seat |
| MS21209C4-15 | | Helicoil, Rocker Shaft |
| SL-STD-2-107 | | Helicoil, Spark Plug (Long Reach) |
| MS9018-05/2-52 | | Helicoil, Spark Plug (Short Reach) |
| MS122121 | | Insert, Helical Coil |

Additional Related Cylinder Assy Parts

| | | |
|------------|--|-----------------------|
| SA643873 | | Exhaust Valve |
| SA539988 | | Intake Valve |
| SA654442 | | Valve Spring - Inner |
| SA654441 | | Valve Spring - Outer |
| SA625393 | | Lower Spring Seat |
| SA629117-1 | | Roto-Coil |
| SA24802 | | Valve Key - Retaining |
| 646985 | | Intake Seal Assembly |
| SA35971 | | Intake Valve Retainer |

**For field service, P/N SA643766 and P/N SA643767 pre-reamed guides may be used.

