TITAN

NEW AIRCRAFT ENGINE PRODUCTS MANUFACTURED BY ECi

NEW FAA-PMA Replacements Cylinder Assemblies for various TCM

C-/O-200,300/GO-300 Series Engines

FAA-PMA PARTS 100% CERTIFIED Cylinder Assemblies WITH EXCLUSIVE ENHANCED FEATURES

EXCLUSIVE

Exclusive features not found on OEM or other PMA cylinders.

Teflon® Rockershaft Thrust Button
The ends of the floating rocker shaft are fitted with Teflon buttons. This safety feature ensures that the shaft does not contact the rocker cover. Cover wear and danger of rupture of the cover side wall are eliminated.

Rocker Boss Bushings
Installed and reamed for optimum valve train geometry.

Exhaust Valve Rotators
Under a Supplemental Type Certificate, valve rotators (rotocoil) are installed to reduce build-up of carbon and varnish that can lead to premature valve guide wear and valve leakage. Processing of FAA Form 337 is required and included with each cylinder.

Casting Surface Texture
Efficient cylinder head cooling - minimizes valve sticking and cylinder head cracking.

Springs
Three special springs are installed to properly balance the action of the valve train and to compensate for the thickness of the valve rotators. Slightly reduced spring pressures reduce wear of the entire valve train.

Tru-Bore™Valve Guide
Precision finished valve guides - reduces unscheduled maintenance costs.

Calibrated Intake Port
Use of a calibrated flow bench during manufacturing is standard procedure for all TITAN cylinders - assures engine performance.

Chrome Plated Exhaust Valve Stem
Chromium plating is metallurgically compatible with High Chrome Cast Iron Guides, resulting in longer valve and guide life.

Cast-in CHT Thermo-couple Probe Boss
To improve the reliability of CHT measurements, a thermocouple boss has been added. This boss will accommodate a screw-in CHT probe or the more durable military bayonet style. Accurate CHT readings will alert the pilot against over-heating cylinders thereby preserving the fatigue strength of the aluminum head.

High-Chrome Cast Iron Exhaust Valve Guides
Improved wear resistance helps maintain good cylinder compression ratios and peak horse power output during the life of the engine.

Fin Width and Spacing
Optimum cylinder head cooling prolongs cylinder life.

Permanent Mold Casting
A manufacturing process that produces dimensional accuracy and the best metallurgical properties of any cylinder head in use today.

Nickel+Carbide™Bore Coating
Warranted against premature wear and corrosion for sixty (60) months - no other cylinder bore carries a warranty of this magnitude.

Plateau Bore Finish
A 2-step honing procedure creating a finish of plateaus and subsurface valleys essential to ring break-in and lubrication of the ECi moly-filled top compression ring and bore interface system.

Moly-filled Top Compression Ring
Scuff resistant and self-lubricating - easy break-in, longer ring life, less bore wear. Metallurgically matched to the Nickel+Carbide cylinder bore for optimum compatibility.

ECi warrants each Nickel+Carbide™ Cylinder Bore to remain free of corrosion and wear up to 5 years following date of first operation. No other cylinder manufacturer offers a warranty against corrosion.

Consult ECi's written warranty policy for details. Visit www.eci.aero.

TITAN Cylinder Assemblies include all reciprocating parts except piston pin and rocker arms. Gasket set included. Piston and rings fitted and installed.

For more information on our TITAN Cylinder Assembly line, please contact ECi today and request booklet #M105 entitled What You Should Know About TITAN Cylinder Assemblies by ECi.

SALES HOTLINE

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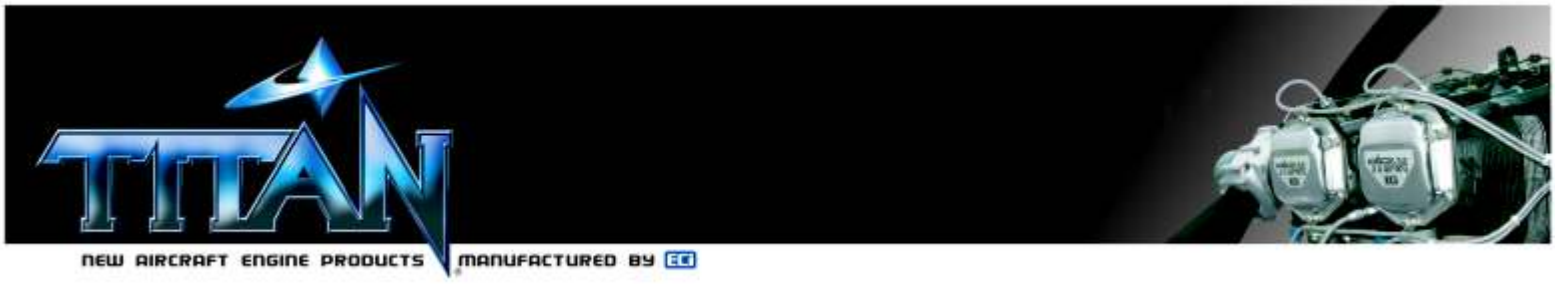
ECi is recognized for Quality Management System Compliance to ISO 9001:2000

www.ECi.aero



PRODUCT ENHANCEMENT

Exclusive ECi TITAN C-/O-200, 300/GO-300 Series Cylinder Assemblies

History

Engine Components, Inc (ECi®) upgraded the valve train components of its O-200 style cylinders to be compatible with 100LL fuel. Smaller TCM engines, such as the C-85 and O-200, were originally certified for use with 80/87 octane fuel and TCM approved the use of 100LL as an alternate fuel in 1977 (see TCM SB M77-3). Included in that bulletin are warnings against spark plug lead fouling and valve sticking caused by lead salts accumulating in the oil and then being deposited in the exhaust guides. Textron Lycoming issued Service Instruction 1246A regarding100LL fuel and warned that “the lead deposits that are associated with the high lead content fuels cause valve erosion and accelerated valve guide wear”. At the time both OEM manufacturers were using solid stem exhaust valves and aluminum bronze exhaust guides. TCM continues to produce their small cylinders with solid stem valves and aluminum bronze guides and Lycoming changed to cast iron guides and sodium filled valves in 1995.

High-Chrome Cast Iron Exhaust Valve Guides

ECi addressed the issue of 100LL fuel and higher lead content by using valve and valve guide materials that are compatible with 100LL fuel. The O-200 style cylinder now has a high-chrome content cast iron exhaust guide and a chrome-plated valve stem. These materials have been successfully used in the larger cylinders for many years.

Exhaust Valve Rotators

The larger cylinders also have the advantage of a rotator cap (roto-coil) on the exhaust valve. This allows any lubrication in the valve/stem area to be distributed evenly and it also helps prevent the formation of carbon deposits. ECi adds a roto-coil to the O-200 style cylinder so the small bore cylinder reaps the benefit of this feature and reduces the incidence of valve sticking that has plagued this engine. The FAA requires an Supplemental Type Certificate (STC) for this installation since it is a product enhancement that was not incorporated in the original type design. ECi provides the STC and prepares the form 337 at no additional charge.

The use of contemporary materials has separated the ECi O-200 style cylinder from all others. No other cylinder manufacturer offers the complete package of cast iron guides, chrome-plated valve stem AND a rotator on the exhaust valve. This cylinder has additional enhancements such as Teflon buttons in the rocker shaft and the Nickel+Carbide bore coating to reduce wear and maintenance costs.

Engine Components, Inc.

ECi® is an internationally recognized general aviation manufacturer of FAA-PMA approved replacement parts for Lycoming and Continental engines since 1943. ECi and EC Services (FAA Certified Repair Station #AG2R689K) are ISO 9001:2000 compliant – maintaining an effective Quality Management System based on the ISO 9001:2000 international standard. ECi provides the GA industry with an extensive line of FAA-PMA approved products and services, including: TITAN® cylinder assemblies, camshafts, connecting rods, crankshafts, crankcases, gears, pistons, ring sets, valves, guides, seats, springs, sumps, and much more. ECi is a premier worldwide supplier of certified engine parts.

New TITAN® Cylinder Assemblies

New Head - New Barrel - New Product

Manufactured to Higher Standards for Extreme Durability™

The TITAN cylinder incorporates unprecedented design, metallurgical and manufacturing improvements over traditional cylinder design. As the name implies, the all new TITAN brand of FAA-PMA cylinders from ECi stands head and shoulders above all competing cylinders currently available in the market.

Armed with state-of-the-art digital design technology, ECi engineers re-examined every feature of previous cylinder designs. Manufacturing methods were carefully studied to improve product consistency and reduce unnecessary costs.

After design review and retooling, the TITAN Cylinder Assemblies were subjected to hundreds of hours of testing in ECi's calibrated test cell and comfortably passed all testing which was designed to exceed FAA and OEM requirements.

The new TITAN brand cylinder assemblies are much more than a random assortment of new parts. The list of features and benefits is impressive. Just take a look at the illustrated cylinder assembly.

For more information on ECi products and services, please visit our web site at www.eci.aero or contact Customer Service for your free TITAN booklet (#M105) entitled What You Should Know About TITAN Cylinder Assemblies by ECi.

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