1.0 **SUBJECT:** Mandatory parts replacement at overhaul and after repair or maintenance of engines fabricated in accordance with ASTM F2339 standard.

2.0 **PARTS TO BE REPLACED AT OVERHAUL OR UPON REMOVAL:** Replace the following parts any time they are removed from a TITAN® engine regardless of their condition.

- All lockplates and locktabs
- All circular retaining rings
- All lockwashers and locknuts
- All main and connecting rod bearings
- All connecting rod bolts and nuts
- Crankshaft gear bolt
- Lockwire and cotter pins

3.0 **PARTS TO BE REPLACED AT OVERHAUL:** During overhaul of any TITAN® engine, it is mandatory that the following parts be replaced regardless of their condition.

- All engine hoses and hose assemblies
- All lip seals, rubber molded seals, o-rings, and gaskets (paper, fiber, or annular “crush” washer)
- Pistons
- Piston Pins
- Piston rings
- Valve keepers and rotocaps
- Exhaust valves
- Temperature control valves (Vernatherm Valves)
- Fuel pump plunger (for DIO- and O- engines utilizing a diaphragm “AC” fuel pump)

4.0 **ACCESSORIES:** Requirements for replacement of accessories such as ignition system components, fuel system components, alternators, starters, prop governors, etc. are defined in the applicable manufacturer’s manual.