F-15 Constant Speed Drive (CSD)

CSDs were designed in the 1970s and 1980s. F-15 variants use different version of CSDs.

Collins (UTAS/Hamilton Sundstrand) continues to improve reliability of the CSD by applying current technology and offers upgrade kits to increase MTBF.

Aero Precision is the worldwide stocking distributor for Collins (UTAS/Hamilton Sundstrand)'s F-15 CSD and has significant inventory at the LRU and subcomponent levels. Aero Precision has also signed a Manufacturing License Agreement with Collins (UTAS/Hamilton Sundstrand) to be exclusive source for the F-15 Constant Speed Drive (CSD) unique and common parts and/or components for military applications including U.S. Government Foreign Military Sales (FMS) solicitations.

F-15 CSD Upgrades

**MMB-1477 APPLICATION:** Collins (UTAS/Hamilton Sundstrand) issued Military Modification Bulletin (MMB-1477) for Modification of Constant Speed Drive (CSD), Model 50IDG02A, part number 711595 series, used on F-15 aircraft. This modification is applicable to CSDs all serial numbers prior to serial number 2948. Upgrade parts are contained in Parts Kit 174-71 and in (Idler) Gear Set Parts Kit 174-44. These kits should be implemented in first OH cycle as a whole kit. If all PNs are not replaced during this installation there is a risk to the integrity of the upgrade.

**REASON FOR MMB BULLETIN:** is to incorporate improvements using commercial technology consisting of TiN coated wobblers, improved slippers, crowned pistons, and an extended service filter in CSD. These improvements are standard CSD design and will improve the mean time between failures (MTBF) for this CSD assembly. In addition, a new pressure fill adaptor assembly is incorporated to prevent the unit from being overfilled with oil. If not already done, a more robust idler shaft assembly is incorporated.

**REFERENCE:** This MMB effects Collins (UTAS/Hamilton Sundstrand) Engineering Changes 50077E, 08B208, and 09E101; CSD Overhaul Instructions, Technical Order (T.O.) 9H6-3-36-3; CSD Illustrated Parts Breakdown T.O. 9H6-3-36-4; HCollins (UTAS/Hamilton Sundstrand) Engineering Drawings 711596, 712087, 712088, 739546, 739547, and 744382; Collins (UTAS/Hamilton Sundstrand) Parts Kits 174-44 and 174-71.

**IDENTIFICATION:** After completion of the MMB-1477 mark the symbol MMB1477 on the modification plate 656762 by using the metal stamp method.
**MMB-1513 APPLICATION:** This bulletin is applicable to Collins (UTAS/Hamilton Sundstrand) Constant Speed Drive (CSD), Model 75IDG10, part number **739827 series**, all serial numbers, used on F-15E aircraft.

**REASON FOR MMB-1513 BULLETIN:** is to incorporate improvements using commercial technology consisting of TiN coated wobblers, new cylinder block assy, improved slippers and crowned pistons. These improvements are standard CSD design and will improve the mean time between failures (MTBF) for this assembly. In addition, process improvements have been incorporated in a new splined input shaft to help improve the life of the carbon seal. This MMB modifies sub components in Center Housing Assembly, Differential Assembly, Left/Right Hand Pump and Motor Assembly. These parts are contained in Parts Kit 174-98.

**REFERENCE:** This MMB effects Collins (UTAS/Hamilton Sundstrand) CSD Overhaul Instructions (OHi) T.O. 9H6-5-14-3; Illustrated Parts Breakdown (IPB) T.O. 9H6-5-14-4; Collins (UTAS/Hamilton Sundstrand) Engineering Changes EC15B037 and EC17B843; Collins (UTAS/Hamilton Sundstrand) 75IDG10 Parts Kit 174-98. These kits should be implemented in first OH cycle as a whole kit. If all PNs are not replaced during this installation there is a risk to the integrity of the upgrade.

**IDENTIFICATION:** After completion of the MMB-1513 mark the symbol MMB1513 on the modification plate 656762 by using the metal stamp method.

**MMB-1538 APPLICATION:** This modification is applicable to Collins (UTAS/Hamilton Sundstrand) Constant Speed Drive CSDs, part number 739827 series, Model 75IDG10, used on F-15E aircraft which contain the (shimmed) control piston and pushrod PN 733753.

**REASON FOR MMB-1538 BULLETIN:** To incorporate a wavy washer loaded control piston in place of the existing shimmed control piston. This will reduce the chance of improper shimming. This MMB modifies sub components in Center Housing Assembly, Right Hand Pump and Motor Assembly, Control Piston and Pushrod Assembly. The required parts are contained in Control Piston Kit 174-120.

**REFERENCE:** This MMB effects Collins (UTAS/Hamilton Sundstrand) CSD Overhaul Instructions (OHi) T.O. 9H6-5-14-3, Illustrated Parts Breakdown (IPB) T.O. 9H6-5-14-4, Standard Practices Manual (SPM) T.O. 9H6-1-113, Collins (UTAS/Hamilton Sundstrand) Engineering Change (EC) 56506E, and Collins (UTAS/Hamilton Sundstrand) Control Piston Kit 174-120. These kits should be implemented in first OH cycle as a whole kit. If all PNs are not replaced during this installation there is a risk to the integrity of the upgrade.

**IDENTIFICATION:** Incorporation of this bulletin advances the part number of the right hand pump and motor assembly from 742730 to 742730A. Mark the symbol MMB1538 on the modification plate.

<table>
<thead>
<tr>
<th>APPLICABLE PLATFORM</th>
<th>PRODUCT</th>
<th>MODEL</th>
<th>MMB</th>
<th>KIT PN</th>
<th>APPLICATION PN</th>
<th>APPLICATION MSN</th>
<th>T.O.</th>
<th>PURPOSE OF KIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-15E</td>
<td>CSD</td>
<td>75IDG10</td>
<td>1538</td>
<td>174-120</td>
<td>739827 (A,B)</td>
<td>1650-01-240-0068, 1650-01-313-4227</td>
<td>T.O. 9H6-5-14-3</td>
<td>Incorporate a wavy washer loaded control piston in place of the existing shimmed control piston. This will reduce the chance of improper shimming.</td>
</tr>
</tbody>
</table>