

F. Power Train Pinion Helical Gear Spline Inspection

- (1) Inspect the power train pinion helical gear splines whenever the engine has been subjected to a [Sudden Engine Stoppage as defined in para 26](#). (Refer to [Power Train Pinion Helical Gear Spline Inspection](#).)

TABLE 8	
Owner _____	Date _____
A/C Make/Model _____	S/N _____ Reg No. _____ TSN _____
Engine S/N _____	TSN _____ TSO _____
<p>This inspection check sheet is to be used when performing scheduled inspections. This form can be locally reproduced and/or expanded to reflect the aircraft operating environment. Keep the completed sheets as a permanent part of the aircraft engine records. Detailed information regarding each inspection item is contained in the referenced Operation and Maintenance Manual paragraphs.</p> <p>CAUTION: BEFORE UNDERTAKING ANY INSPECTION OR MAINTENANCE ACTION, CONSULT THE REFERENCED PARAGRAPHS OF THE OPERATION AND MAINTENANCE MANUAL. FAILURE TO DO SO COULD RESULT IN EQUIPMENT DAMAGE OR DESTRUCTION, POSSIBLY RESULTING IN PERSONNEL DEATH OR INJURY.</p>	

Item	Inspection/Maintenance Action	Ref. Para	✓	Initial
	<u>100 Hour Inspection</u>			
1	Inspect the entire engine for loose or missing bolts, broken or loose connections, security of mounting accessories and broken or missing lock wire. Check accessible areas for obvious damage and evidence of fuel or oil leakage. Loose connections also include the requirement to inspect the slippage marks on all B-nut connections in the engine control system.	N/A		
2	Check mounting and support bolts to be sure they are tight, lockwired and in good condition. Check security of screws and rivets. Remove all foreign material which might be drawn into the compressor inlet.	N/A		
3	Check accessible fuel system components, lines, and connections for security, damage or leakage. Accomplish with the boost pump on, if available.	N/A		
4	Check fuel control and power turbine governor linkage for freedom of operation, full travel and proper rigging. Check security of linkage and for loose or worn linkage and linkage bolts.	51		
5	Inspect compressor inlet guide vanes and visible blades and vanes for foreign object damage.	N/A		

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TABLE 8 (cont)				
Item	Inspection/Maintenance Action	Ref. Para	✓	Initial
	<u>100 Hour Inspection (cont)</u>			
6	Clean compressor with chemical wash solution as required if operating in a smoggy area or with water alcohol.	15		
7	Visually inspect the water-alcohol nozzles for build-up of contaminants which could restrict flow or alter the spray pattern. Ultrasonic clean nozzles if equipment is available.			
8	Clean the 200 mesh screen (airframe part).			
9	Inspect the compressor scroll for cracks or breaks at the anti-ice valve and customer bleed ports. If cracks or breaks are detected, check engine for possible vibration causes.	24		
9A	Inspect P _c filter for proper clamping and security.	45		
9B	Until M250 CEB-A-246 is complied with, inspect P _c filter assembly as follows: Without disassembly or removal of the P _c filter assembly from the mounting bracket, inspect using a 10x magnification glass and a bright light to detect any signs of cracks, paying particular attention to both of the end fittings at their junction with the end walls. If cracks are detected, remove assembly and comply with M250 CEB-A-246.	N/A		
9C	Remove the scroll-to-P _c filter tube at both end connections and inspect for cracks using a 10X magnification. Pay particular attention to the flared ends of the tube for cracks and to the areas beneath the floating ferrules for excessive excessive fretting damage. Tubes found to contain cracks and/or fretting damage are to be replaced by new parts of the same part number as removed.	N/A		
	NOTE: Excessive fretting is present when the ferrule has chafed the tube sufficiently to wear a step that can be felt with the thumbnail or other inspection aid.			
9D	With the scroll-to-P _c tube assembly still removed and using a 10x power glass, inspect the elbow in the compressor scroll for distress/cracks/proper alignment. No cracks are permissible.	N/A		
10	Inspect for discharge air tube inserts that are cocked or backing out of the scroll. If cocked or loose inserts are detected, check engine for possible vibration causes.			
11	Check anti-ice valve for security, worn parts and and proper operation. Valve need not be removed or disassembled unless a problem is detected.	88		

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TABLE 8 (cont)

Item	Inspection/Maintenance Action	Ref. Para	✓	Initial
	<u>100 Hour Inspection (cont)</u>			
12	Inspect compressor mount inserts for looseness or oil leakage. Replace if loose and check engine for possible vibration causes.	116 117 24		
13	Inspect the turbine support assemblies and engine exhaust ducts for condition of welded joints, for cracks and buckling. Check exhaust duct clamps for proper installation, condition and torque.	121		
14	Wet spline starter-generator gearshafts (new production or those replaced in accordance with the Rolls-Royce Commercial Engine Bulletin M250-C18 CEB-179) do not need periodic inspection and lubrication. Clean and inspect any other starter-generator gearshaft. Clean the female splines of the starter-generator gearshaft and the male splines of the starter-generator with mineral spirits and a soft brush. Inspect splines in accordance with para 111 , Starter-generator Gearshaft Female Spline Inspection. Lubricate acceptable splines with grease (Aero-shell No.22, or equivalent). Before reinstallation of the starter-generator, make sure torsional damper members of the the starter-generator driveshaft are in hard contact with each other.	121		
	NOTE: Inspect the starter-generator brushes for wear in accordance with the Aircraft Manual at the same time the spline inspection is made.			
15	Remove, inspect and clean the oil filter. Note any accumulation of metal chips, debris or carbon particles. Conduct further inspection of the lube system and/or engine gear train/bearings if metal chips or debris are found. See item 16 below if carbon particles are found.	75		
16	If carbon particles are found in the oil filter, perform the following inspections:			
a.	Measure oil flow from the scavenge oil passage of the external sump. External sump need not be removed for this check.	83		
b.	Visually inspect external sump. Clean internal carbonaceous deposits from sump or replace if necessary.	N/A		
c.	Inspect scavenge oil strut in the power turbine support. Clean carbonaceous deposits from the strut.	81		
d.	Inspect No. 6 and 7 bearing pressure oil nozzle. Clean carbonaceous deposits from the nozzle.	82		
17	Inspect and clean magnetic chip detector plugs.	71		
18	Inspect quick disconnect magnetic chip detector plugs and flanged inserts for wear (if installed).	71		

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TABLE 8 (cont)

Item	Inspection/Maintenance Action	Ref. Para	✓	Initial
	<u>100 Hour Inspection (cont)</u>			
18.A	Inspect and clean the fuel nozzle. If no airframe mounted fuel filter is installed, inspect the fuel nozzle screen.	44		
19	Visually inspect the outer combustion case (sheet metal and weld seams) for cracks. Pay particular attention to the weld seams in the area of the igniter plugs, dummy plug, drain valves, fuel nozzle bosses, armpit braze patch and adjacent areas. Use a bright light and mirror as necessary. The OCC does not have to be removed. Perform a Leak Tec check for installed OCC's and an FPI for removed OCC's.	111		
20	Clean the burner drain valve.	110		
21	Inspect the ignition lead for burning, chafing, or cracking of conduit and loose connectors and broken lock wire.	85		
22	Review engine records for compliance with all mandatory bulletins, inspections and airworthiness directives.	N/A		
23	Review engine records for time limited parts components, accessories or modules.	N/A		
24	Enter component changes, inspection compliance, etc., in logbook as required.	N/A		
25	Drain the oil system and refill. Refer to M250 OIL CHANGE FLOWCHART, Figure 5A .	N/A		

TABLE 8 (cont)

Item	Inspection/Maintenance Action	Ref. Para	✓	Initial
	<u>100 Hour Inspection (cont)</u>			
	<p>Oil changed at:</p> <p>100 hours: _____</p> <p>200 hours: _____</p> <p>300 hours: _____</p> <p>600 hours: _____</p> <p>The maximum oil change interval with a dry spline starter generator is 100 hours or 6 months, whichever occurs first. This limit can be extended if the wet spline starter generator is installed in accordance with Rolls-Royce Commercial Engine Bulletin M250-C18 CEB-179, and the following conditions are met.</p> <p>A. If an external scavenge oil filter system is installed the oil change interval can be increased to 200 hours or 6 months, whichever occurs first.</p> <p>B. With an approved HTS (Third Generation Oil), but no external scavenge oil filter system, the oil change interval can be increased to 300 hours or 12 months, whichever occurs first.</p> <p>C. With an approved HTS (Third Generation Oil), and an external scavenge oil filter system installed, the oil change interval can be increased to 600 hours or 12 months, whichever occurs first.</p> <p>CAUTION: SOME OPERATORS EXPERIENCE AND/OR HARSH ENVIRONMENT CAN DICTATE OIL CHANGES AT MORE FREQUENT INTERVALS.</p> <p>NOTE: See M250 OIL CHANGE FLOWCHART, Figure 5A, for further details.</p> <p>NOTE: External scavenge oil filter systems must have a valid STC (Supplemental Type Certificate).</p>	<p>PARA 73, Section III, Engine Oil Change</p>		
	<u>200 Hour Inspection</u>			
	In addition to the 100 hour inspection items, perform the following:			
	WARNING: MANDATORY COMPLIANCE DATE FOR ROLLS-ROYCE M250-C18 CEB-A-161 WAS NOVEMBER 1, 1989.			
26	Perform fuel pump backlash inspection on Sundstrand dual element pump P/N 6854292, 6857548, 6877719, 6856250, 6876803.	M250 CSL-61		
27	Drain oil system and refill.	73 Section 1, 13		
	<u>300 Hour Inspection</u>			
	In addition to the 100 hour and appropriate 200 hour inspection items, perform the following:			

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TABLE 8 (cont)				
Item	Inspection/Maintenance Action	Ref. PARA	✓	Initial
	<u>300 Hour Inspection (cont)</u>			
	<p>CAUTION: INSPECTION FREQUENCY WILL BE BASED ON THE NATURE OF THE EROSIIVE AND/OR CORROSIVE ENVIRONMENT. THIS ENVIRONMENT CAN DICTATE A MORE FREQUENT INSPECTION INTERVAL. WHEN OPERATING IN A CORROSIVE AND/OR EROSIIVE ENVIRONMENT FOR NON-COATED COMPRESSOR WHEELS, THE INSPECTION WILL NOT EXCEED 300 HOURS OR 6 MONTHS. FOR COATED COMPRESSOR WHEELS, INSPECTION WILL NOT EXCEED 300 HOURS OR 12 MONTHS. IF THE PARENT METAL IS EXPOSED DUE TO CORROSION AND/OR EROSION, THE INSPECTION REQUIREMENT WILL REVERT BACK TO 300 HOURS OR 6 MONTHS.</p>			
28	Inspect the compressor case, blades, and vanes when operating in an erosive and/or corrosive environment. 10X power magnification is recommended for corrosion pit inspection.	31		
	<p>CAUTION: AIRCRAFT INSTALLED-ENGINE FUEL-PUMP FILTER DIFFERENTIAL PRESSURE WARNING SYSTEMS AND/OR OPERATING EXPERIENCE CAN DICTATE REPLACEMENT AT A LESSER TIME INTERVAL. IN NO INSTANCE WILL THE 300 HR REPLACEMENT INTERVAL BE EXCEEDED.</p>			
29	Replace the fuel filter element. Before discarding filter, inspect for signs of contaminants. If any are found, inspect the entire fuel system and clean if necessary.	43		
	<p>NOTE: This filter is a throw-away item; it is not cleanable.</p>			
	<p>CAUTION: WHEN THERE IS EVIDENCE THAT THE FUEL PUMP FILTER HAS BEEN BYPASSED, THE GAS PRODUCER FUEL CONTROL INLET STRAINER, THE FUEL NOZZLE STRAINER, THE GOVERNOR FILTER AND THE HIGH PRESSURE FUEL FILTER, IF APPLICABLE, MUST BE CLEANED. (REFER TO TABLE 9 SPECIAL INSPECTIONS, SECTION III, FOR DETAILS.) IF CONTAMINATION IS FOUND IN THE FUEL NOZZLE SCREEN, THIS WILL REQUIRE THAT THE FUEL CONTROL BE SENT TO AN AUTHORIZED OVERHAUL/REPAIR FACILITY FOR INTERNAL CLEANING. REFERENCE MUST ALSO BE MADE TO THE AIRFRAME MAINTENANCE MANUAL FOR FUEL SYSTEM MAINTENANCE FOLLOWING FUEL CONTAMINATION.</p>			
30	Do a fuel pump bypass valve operation check when a fuel filter is replaced. NOTE: Applicable to Sundstrand/Pesco and Argo-Tech/TRW manufactured pumps only.	61		
31	Purge air from the fuel system.	37		
32	Check the max. N ₁ speed setting of the gas producer fuel control.	46		

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TABLE 8 (cont)

Item	Inspection/Maintenance Action	Ref. PARA	✓	Initial
	<u>300 Hour Inspection (cont)</u>			
33	Remove and disassemble fuel nozzle. Clean and examine fuel nozzle filter assembly. Assemble and install fuel nozzle.	44		
34	Inspect and clean the No. 1 bearing oil pressure reducer.	99		
35	Visually inspect external sump. Clean internal carbonaceous deposits from sump or replace if necessary.	N/A		
36	Inspect scavenge oil strut in the power turbine support. Clean carbonaceous deposits from strut.	81		
37	Inspect No. 6 and 7 bearing pressure oil nozzle. Clean internal carbonaceous deposits from nozzle.	82		
38	Inspect the thermocouple assembly (TOT/MGT)	86		
39	Perform a detailed visual inspection of the outer combustion case. Using a bright light (flashlight or equivalent) and mirror as necessary, inspect all weld areas for cracks. <u>Note:</u> See special inspection Table 9, Item 27.	23		
	<u>Other Scheduled Inspections</u>			
	<u>500 Hour Inspection</u>			
	Inspect all uncoated and coated P/N 6846278 and 6871338 power turbine outer coupling nuts for corrosion.	M250-C18 CSL-88		
	<u>NOTE:</u> Compliance with Rolls-Royce Commercial Engine Bulletin M250-C18 CEB-193 and/or M250-C18 CEB-207 removes this inspection requirement.			
	<u>600 Hour Inspection</u>			
	Check the fuel pump driveshaft on the Sundstrand single element pumps for spline wear.	60A		
	<u>NOTE:</u> This inspection is not required for Argo-Tech (TRW) fuel pumps or Sunstrand fuel pumps, P/N 23003114 and subsequent			
	Do the scavenge oil filter impending bypass function check per Facet Service Bulletin No. 090589 (Ref. Rolls-Royce CSL 168) for aircraft equipped with this type of external scavenge filter system. Follow the Facet instructions and time intervals, or follow this recommended inspection interval each 600 hours.	N/A		

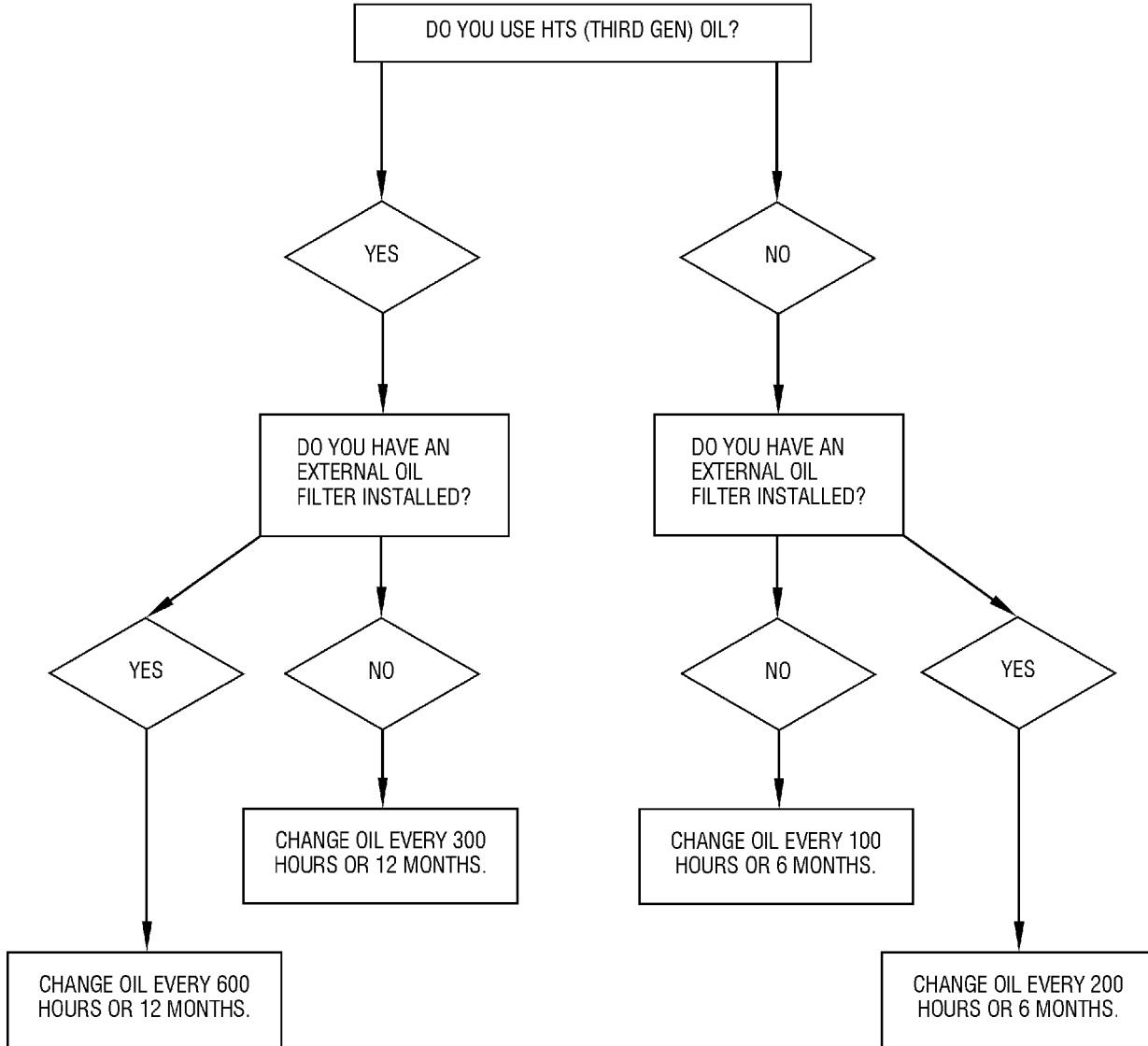
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TABLE 8 (cont)

Item	Inspection/Maintenance Action	Ref. PARA	✓	Initial
	<u>1000 Hour Inspection</u>			
	Clean and inspect the fuel control strainer assembly. Replace as necessary.	48		
	NOTE: The fuel control strainer assembly must be replaced on any fuel control unit that has not had M250-C18 CEB-185 accomplished.			
	<u>1500 Hour Inspection</u>			
	Inspect the compressor case, blades, and vanes. Inspection frequency will be as made necessary by operating environment. In erosive or corrosive environment, inspect case at least every 300 hours. In any environment do not exceed 1500 hours without case inspection. 10X power magnification is recommended for corrosion pit inspection.	31		
	Replace the fuel control strainer assembly. (All Bendix fuel controls that have complied with Rolls-Royce Commercial Engine Bulletin M250-C18 CEB-185 and Bendix fuel controls P/N 2524463-4 or 2524527-3 and subsequent.)	47		

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M250 OIL CHANGE FLOWCHART



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Oil Change Flowchart
FIG. 5A

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