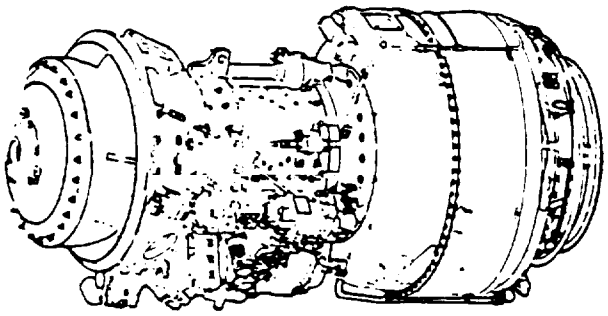
* TM 55-2840-229-23-2
T.O. 2J-T53-16

TECHNICAL MANUAL

AVIATION UNIT AND AVIATION INTERMEDIATE MAINTENANCE MANUAL

ENGINE ASSEMBLY



MODEL T53-L-13B
NSN 2840-00-134-4803
PART NUMBER 1-000-060-22

MODEL T53-L-13BA
NSN 2640-01-093-7451
PART NUMBER 1-100-060-10A

MODEL T53-L-703
NSN 2840-00-621-1860
PART NUMBER 1-000-060-23

*** This manual together with TM 55-2840-229-23-1, 9 March 1981, supersedes TM 55-2840-229-24,23 April 1971.**

	ENGINE -GENERAL
	COMPRESSOR SECTION
	COMBUSTION SECTION
	TURBINE SECTION
	ACCESSORY GEARBOX
	FUEL SYSTEM
	ELECTRICAL SYSTEM
	OIL SYSTEM
	DRIVE SYSTEM
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APPENDIX B	MAINTENANCE ALLOCATION CHART
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HEADQUARTERS, DEPARTMENT OF THE ARMY AND THE AIR FORCE
9 MARCH 1981

TECHNICAL MANUAL
NO. 55-2840-229-23-2
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HEADQUARTERS
DEPARTMENTS OF THE ARMY AND THE AIR FORCE
WASHINGTON D.C., 9 MARCH 1981

AVIATION UNIT AND INTERMEDIATE MAINTENANCE MANUAL FOR ENGINE ASSEMBLY

MODEL T53-L-11C
NSN 2840-M-102-3967
PART NUMBER 1-000-080-12

MODEL T53L-11D
NSN 2840-00-102-3968
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MODEL T53-L-13BA
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MODEL T53-L-13B
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PART NUMBER 1-000-060-22

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PART NUMBER 1-000-060-23

NOTE:

This manual is printed in two volumes as follows:
TM 55-2840-229-23-1, consisting of Warning Page, Table of Contents, Chapters 1 through 3.
TM 55-2840-229-23-2, consisting of Chapters 4 through 9, Appendixes A through H, Glossary, and Alphabetical Index.
The Table of Contents, Warning Page, Alphabetical Index applicable to the -1 and -2.

CHAPTER 4

TURBINE SECTION

OVERVIEW

This chapter contains procedures for the maintenance and preservation of the power turbine. Paragraphs following outline disassembly, inspection, repair, and additional requirements needed to maintain the oil system and related parts. Procedures requiring maintenance on the Aviation Intermediate Maintenance (AVIM) level are specified and must be performed as such. Paragraphs in which the maintenance level Is not specified shall be considered Aviation Unit Maintenance (AVUM) and maybe performed at this level or a higher level of maintenance.

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4-1. GENERAL MAINTENANCE INFORMATION.

Visually inspect all subassemblies and accessories removed from the engine's combustion section. Check for loose or missing arts. Note any damage or excessive wear. Repair damaged parts where possible. Replace damage parts that cannot be repaired. Disassembly procedures provided enable required cleaning, inspection, repair or replacement of combustion section and its accessories.

During reassembly of the engines subassemblies and accessories discard all of the following parts and replace with new parts:

Seals	Tabwashers
Gaskets	Lockpins
Packing	Lockwashers
Cotter Pins	Lockwire

4-2. Combustor Turbine Assembly(T53-L-11 Series Engines) - Removal

INITIAL SETUP

Applicable Configuration
T53-L-11 Series Engines

Special Tools
Wrench (LTCT505)
Wrench (LTCT506)
Wrench (LTCT393)
Lifting device (LTCT53)
Lifting device (LTCT87)
Lifting device (LTCT91)
Lifting device (LTCT2089)
Lifting device (LTCT14668-01)

Consumable Materials
Marking Pencil No. 2107 (item 54, Appendix D)

References
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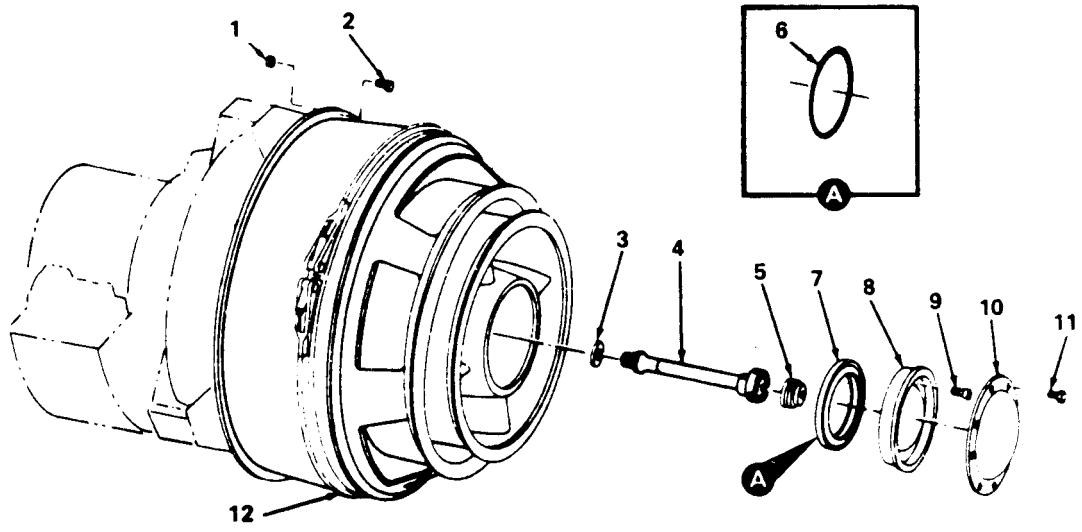
LOCATION/ITEM	REMARKS	ACTION
ENGINE	**WARNING** **FLIGHT SAFETY PARTS** Use of nonaproved marking materials such as common lead pencils on engine components In or near the hot end will cause cracking of those components when subjected to high temperatures. This can lead to engine failure.	

4-2. Combustor Turbine Assembly (T53-L-11 Series Engines) - Removal - Continued

LOCATION/ITEM	REMARKS	ACTION
ENGINE/ - Continued	**WARNING** When handling combustion chamber internal parts that have been exposed to fuels containing tetraethl lead, Insure that the by product (poisonous lead oxide) is not Inhaled or taken Into the body through cuts or other external openings. If accidental exposure occurs, drench affected area with large amounts of clean water and obtain immediate medical attention. NOTE Combustor Turbine assembly may be removed while engine is installed in aircraft. **CAUTION** When disconnecting fuel lines, action for Item 2, disconnect main fuel line at forward end of fuel bypass filter and disconnect filter from diffuser flange. Use extreme care to prevent scoring at sealing surface of connector. Do not disconnect hose from aft end of filter. Secure filter to bracket with short lengths of lockwire. Identify and mark all bolts at which brackets and filter are secured.	

4-2. Combustor Turbine Assembly (T53-L-11 Series Engines) - Removal - Continued

LOCATION/ITEM	REMARKS	ACTION
ENGINE/ - Continued		
1. Ignition Lead and Coil Assembly		Disconnect.
2. Fuel and Oil Lines		Disconnect as necessary and cap all openings.
3. Bolts (11) and Exhaust Diffuser Cover (10)		Remove.

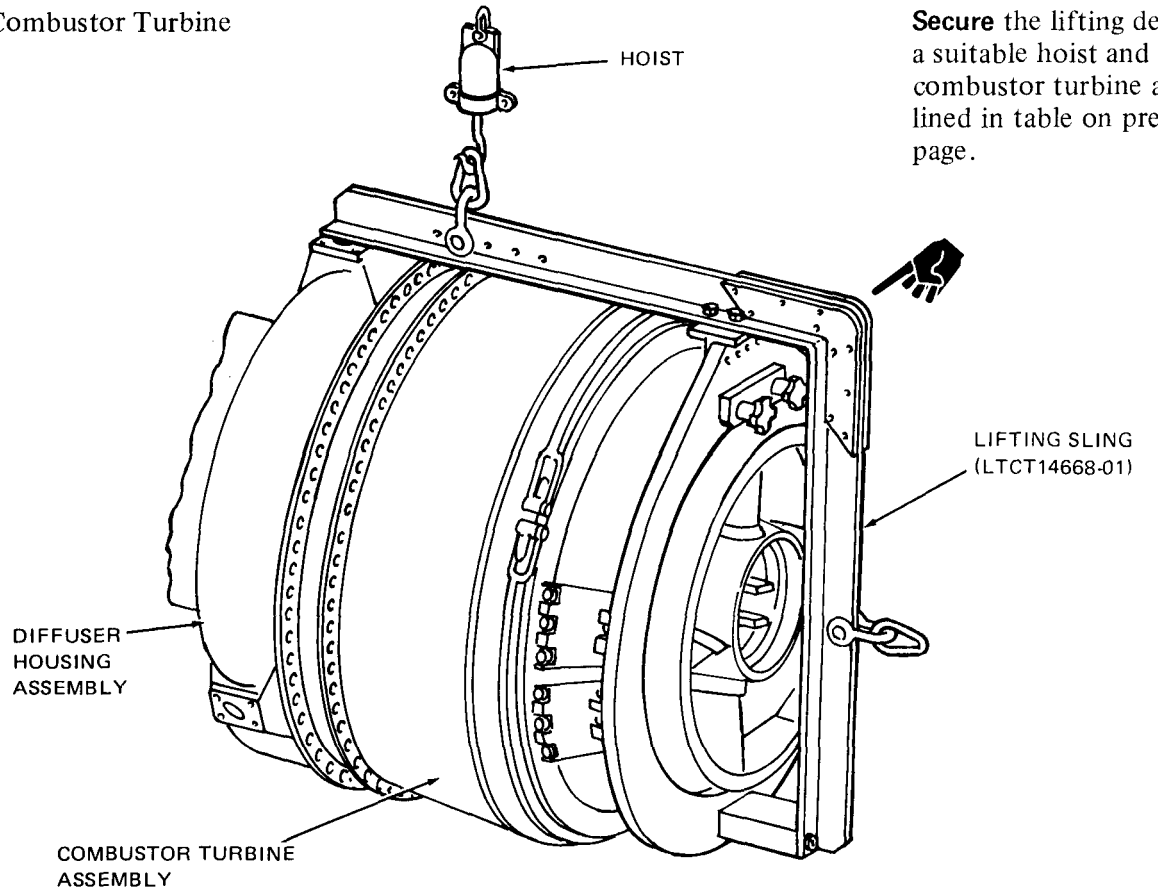


4-2. Combustor Turbine Assembly (T53-L-11 series Engines) - Removal - Continued

LOCATION/ITEM	REMARKS	ACTION
ENGINE/ - Continued		
4. Bearing Cover (8)		**Remove** bolts (9) which secure rear bearing cover (8) to combustor turbine assembly.
5. Rear Bearing Cover (8) and Seal (7) or Packing (6)	**Discard** packing (6). Seal (7) is reusable.	**Install** three puller screws in cover at approximately 1 -o'clock, 4-o'clock, and 9-o'clock positions. **Tighten** puller screws evenly. **Remove rear** bearing cover (8) and seal (7) or packing (6).
6. Power Shaft Internal Wrenching Nut (5)		**Straighten** deformed rim at four places.
7. Locking Plate Assembly (LTCT248)		**Position** against exhaust diffuser housing with tangs of plate engaging power turbine bearing retainer nut. **Secure** plate with three bolts.
8. Power Shaft Internal Wrenching Nut	Use wrench (LTCT505).	**Remove** and **retain** for reuse.
9. Power Shaft Bolt (4) and Shims (3)	Use wrench (LTCT506). When removing shims, record shim thickness and attach shims, nut, and bolt to air diffuser. Select the lifting device appropriate to the position of the engine (horizontal or vertical) from the table below.	**Remove.**

Combustor Turbine Assembly Lifting Devices and Applications

Lifting Device	Engine Attitude	Location of Device
LTCT53	Vertical	Exhaust Diffuser Support Cone Aft Flange
LTCT87	Horizontal	Around Combustor Housing
LTCT91 LTCT2089 LTCT1 4668-01	Horizontal or Vertical	Exhaust Diffuser Support Cone Aft Flange

4-2. Combustor Turbine Assembly (T53-L-11 Series Engines) - Removal - Continued

LOCATION/ITEM	REMARKS	ACTION
ENGINE/ - Continued		
10. Combustor Turbine		**Secure** the lifting device to a suitable hoist and to the combustor turbine as outlined in table on preceding page.
	Mark relationship of combustor turbine to air diffuser, using approved marker.	
11. Bolts (2) and Nuts (1)	See figure in item 3. Bolts and nuts secure combustor turbine assembly (12) to diffuser housing.	**Remove** using wrench (LTCT393).
12. Combustor Turbine Assembly	Use marking pencil (yellow) Colorbrite No. 2107 (item 54, Appendix D).	**Remove** sufficiently to mark relationship of power shaft to power turbine shaft.