

ISSUE	ALTERATION AND REASON	SIGN	DATE

ORIGINAL REFERENCE ENQUIRY

REMOVE THE ENGINE AND STORE IN THE METALIC CONTAINER AS PER PROCEDURE GIVEN IN IOM ARDC/D/DD-PFS/HTT-40/40.1/028/2020 DATED 11-05-2020

7. RIG SETUP MAINTENANCE SCHEDULE:

SL NO	PERIODICITY	MAINTENANCE CHECKS
01	BEFORE START OF TEST	1. TANK TO BE EMPTIED AND CLEANED PROPERLY 2. CONDITION OF THE TANK INSIDE (CHECK FOR ANY CORROSION, FUNGUS AND DAMAGES IF ANY BY USING BAROSCOPE INSTRUMENT) 3. CHECK PRESSURE RELIEF VALVE FUNCTIONALITY AND ENSURE THAT PRESSURE IS GETTING RELIVED AT 4.5 psig OR BELOW 5.0 psig. THIS IS TO BE CHECKED BEFORE CONNECTING THE TEST SETUP TO ENGINE FCU.
02	YEARLY	1. CALIBRATION OF PRESSURE GAUGES 2. CLEANING THE FILTER ELEMENT

8. ACCEPTANCE CRITERIA:

THE FOLLOWING SHALL BE THE ACCEPTANCE CRITERIA REQUIRED FOR THE MAINTENANCE OF PRESERVATION RIG AND COMPLIANCE OF ENGINE PRESERVATION PROCEDURE.

- THE SETUP SHALL BE CLEANED AND MAINTAINED PERIODICALLY AS PER THE MAINTENANCE SCHEDULE AS PER PARA 7.
- THE REPORT SHALL BE DOCUMENTED AS AND WHEN PERIODIC MAINTENANCE CHECKS WILL BE CARRIED OUT.
- CALIBRATED PRESSURE GAUGE SHALL BE USED IN THE TEST SETUP.
- FUNCTIONALITY OF RIG INSTRUMENTS SHALL BE CHECKED AND ENSURED BEFORE START OF PRESERVATION AS MENTIONED IN PARA 7.
- THE RIG SETUP SHALL BE KEPT IN CLEAN AND DUST FREE ENVIRONMENT WITH PROPER BLANKING AT INLETS AND OUTLETS WHENEVER RIG IS NOT IN USE.
- AFTER COMPLETION OF PRESERVATION PROCEDURE, THE RIG SETUP AND THE ENVIRONMENT AROUND IT SHALL BE CLEANED AND MAINTAINED NEATLY.
- SAFETY STANDARDS SHALL BE MAINTAINED AND ENSURED.

9. ABBREVIATION:

SL NO	NAME	ABBREVIATION
01	HTT-40	HINDUSTAN TURBO TRAINER-40
02	PSI	POUND PER SQUARE INCH
03	FCU	FUEL CONTROL UNIT

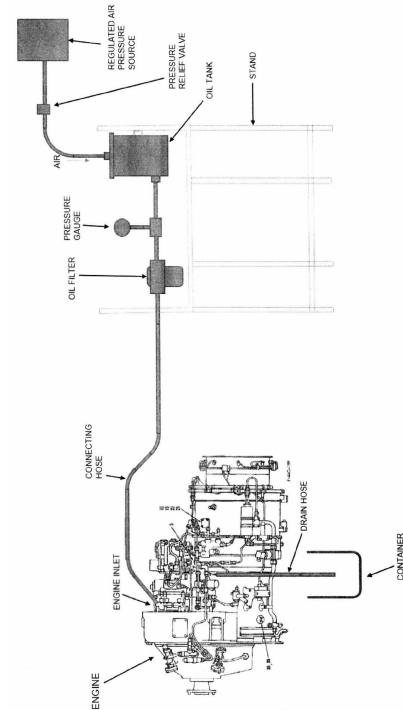


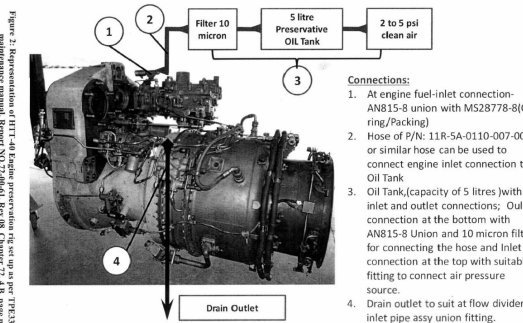
Figure 1: Representation of HTT-40 Engine preservation rig set up

5. VENDERS SCOPE:

- PIPES AND FITTINGS, SKID FRAME, SEAL ETC. REQUIRED ARE INTEGRAL PART OF RIG.
- INSTALLATION, TESTING AND DELIVERY TO HAL
- OEM CATALOGUES, LAYOUT/ GA DRAWINGS, OPERATION & MAINTENANCE MANUAL, TEST CERTIFICATES, TEST REPORTS IF ANY ARE TO BE SUPPLIED.

6. NOTES:

- ARRANGEMENT DRAWING HAS TO BE SUBMITTED FOR APPROVAL BEFORE FABRICATION.



For preserving the engine, with the above set up and Ignition CB pulled out, Crank the engine upto RPM<15%, until clean oil flows from overboard drain line

5. RIG SETUP DESCRIPTION:

A REGULATED AIR PRESSURE SOURCE SHALL BE USED TO SUPPLY CLEAN AND MOISTURE FREE COMPRESSED AIR RANGE 2-5 PSIG TO PRESERVATION OIL TANK OF 5-LITER CAPACITY. A PRESSURE RELIEF VALVE SHALL BE MOUNTED IN BETWEEN THE OIL TANK AND PRESSURE SOURCE TO RELIEVE THE EXCESS PRESSURE IF OBSERVED. PRESERVATION OIL SHALL BE PUMPED FROM THE OIL TANK TO THE ENGINE FUEL INLET CONNECTION AN815-8 UNION WITH MS28778-8(O-RING/PACKING.) A 10 MICRON- FILTER SHALL BE FREE FROM CONTAMINATION. A CONNECTING HOSE (P/N: 11R-5A-01-0110-007-000 OR SIMILAR HOSE) SHALL BE USED TO CONNECT THE OIL TANK TO THE ENGINE INLET CONNECTION. A DRAIN HOSE SHALL BE PROVIDED TO FUEL OUTLET LINE FROM FUEL CONTROL UNIT(FCU) AND THE SAME SHALL BE COLLECTED USING A CONTAINER PLACED BELOW IT.

THE WHOLE SETUP EXCEPT THE ENGINE INLET AND OUTLET LINES SHALL BE SUPPORTED AND MAINTAINED IN A STAND. SO UPON COMPLETION OF ENGINE PRESERVATION, THE INLET AND OUTLET LINES SHALL BE DISCONNECTED AND RIG SETUP SHALL BE SECURED PROPERLY. THE SCHEMATIC REPRESENTATION OF THE RIG SETUP SHALL BE AS SHOWN IN FIGURE 1.

6. PROCEDURE TO PRESERVE HONEYWELL TPE331-12B ENGINE WITH PRESERVATIVE OIL.

- DISCONNECT ENGINE FUEL LINE BETWEEN FUEL CONTROL UNIT (FCU) AND FUEL FLOW DIVIDER. CONNECT A DRAIN HOSE AND DROP IT TO A CONTAINER.
- DISCONNECT FUEL SUPPLY HOSE AT ENGINE FUEL INLET CONNECTION AND CONNECT A LOW PRESSURE (2 TO 5 PSIG) SOURCE OF FILTERED (10 MICRONS NOMINAL) PRESERVATIVE OIL.
- DE-ENERGIZE IGNITION SYSTEM BY PULLING OUT IGNITION CB, THEN MOTOR ENGINE WITH STARTER – GENERATOR. DO NOT EXCEED 15% RPM OR 30 SECONDS WHEN MOTORING ENGINE WHICHEVER HAPPENS FIRST.
- REPEAT MOTORING PROCEDURE FOR ANOTHER 2 TIMES TO ENSURE THAT PRESERVATIVE OIL IS COMPLETELY DRAINED FROM FCU.
- RESTORE THE ENGINE FUEL LINE CONNECTING FCU AND FUEL FLOW DIVIDER.
- PLUG THE ENGINE FUEL INLET PORT WITH THE STANDARD FITTING AN929-8.
- FOLLOW THE REMAINING PROCEDURE MENTIONED IN THE ENGINE MAINTENANCE MANUAL REPORT NO. 72-00-61, REV 08 -, CHAPTER 72.

SPECIFICATION FOR INHIBITION SYSTEM

1. INTRODUCTION:

THIS REPORT DESCRIBES THE DETAILS OF TECHNICAL SPECIFICATIONS OF PRESERVATION RIG SET UP FOR HTT-40 AIRCRAFT ENGINE (TPE331-12B).

2. REFERENCE DOCUMENTS:

TPE331-12B ENGINE MAINTENANCE MANUAL, REPORT NO. 72-00—61, REV 08.

3. TEST SPECIMEN:

HTT-40 ENGINE (TPE-331-12B) SHALL BE PRESERVED AND MAINTAINED AS PER THE PROCEDURE STATED IN THE ENGINE MAINTENANCE MANUAL REPORT NO. 72-00-61, REV 08, CHAPTER 72 USING THE TEST SETUP MENTIONED BELOW.

4. SETUP:

THE RIG USED FOR HTT-40 ENGINE (HONEYWELL TPE -331-12B) PRESERVATION SHALL CONSIST OF THE FOLLOWING.

- REGULATED, CLEANED AND MOISTURE FREE COMPRESSED AIR PRESSURE SOURCE.
- PRESSURE RELIEF VALVE TO RELIEVE PRESSURE AT 4.5 PSIG.
- OIL TANK 5 LITERS CAPACITY MADE-UP OF ALUMINUM SHEET TO WITHSTAND PRESSURE UP-TO 7.5 PSIG.
- PRESSURE GAUGE (0-30 PSI)
- OIL FILTER (10 MICRON) (COMPATIBLE TO PRESERVATION oil as per MIL-PRF-6081D GRADE 1010).
- CONNECTING HOSE (COMPATIBLE TO PRESERVATION OIL AS PER MIL-PRF-6081D GRADE 1010).
- DRAIN HOSE (COMPATIBLE TO PRESERVATION OIL AS PER MIL-PRF-6081D GRADE 1010)
- CONTAINER
- MOVABLE STAND.
- PRESERVATION OIL TURBONYCOIL-3516/MIL-PRF_6081D GRADE 1010/NATO CODE-O-133.

THE SCHEMATIC REPRESENTATION OF THE RIG SETUP IS AS SHOWN IN FIGURE 1.



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D O R: REFERENCE ARDC REPORT NO. HAL/ARDC/HTT-40/PPF/116 DATE: 30-03-2021

SHEET	DETAIL	QTY	DESCRIPTION	MATERIAL	SIZE
1	DETAIL	1	1. ALL DIMENSIONS ARE IN MM 2. UNSPECIFIED TOLERANCES TO BE DIM'S: ±0.25 (EN31/2) 3. BREAK SHARP EDGES WITH 1 X 45° CHAMFER OR 1MM RAD 4. MARK ON: TOOL No., ON ALL DETAILS & MFR'S LABEL.		
2	DETAIL	1	COMPT NO. - DESCRIPTION - INHIBITION SYSTEM		DATE - 23-10-2024
3	DETAIL	1	TOOL ENGINEERING ENGINE DIVISION	APPROVED (MANOJ)	CHECKED (SHIVAKUMAR)
4	DETAIL	1	PROJECT - HONEYWELL TPE331-12B	DRAWN - SANTHOSH	
5	DETAIL	1	SCALE: 1 : 1 3rd ANGLE PROJECTION		
6	DETAIL	1	DESCRIPTION - ENQUIRY DRAWING FOR ENGINE PRESERVATION RIG		DRG NO. - HTT 1005 00
7	DETAIL	1			
8	DETAIL	1			
9	DETAIL	1			
10	DETAIL	1			
11	DETAIL	1			
12	DETAIL	1			
13	DETAIL	1			
14	DETAIL	1			
15	DETAIL	1			
16	DETAIL	1			