

Project No: **BDHRN002**Job Card No **0042**

Notif.No.: 10049028

Activity: **1001**

Rev No: 20000622

Model.: F900EX

Sheet 1 of 1

A/C Regn: **D-AHRN**

Serial No.: 096

Type: F900EX

Starting Phase: Routine

Starting Work Centre: FALCON A/C TEAM

**Job Description: Drain & Refill Turbocooler Oil (504hn)**

ETOPS A/C: No

RVSM A/C: No

Warranty: -

ATA: 21

Check Type: 2A CHECK

Work Center	
FALCON A/C	

**Zone: 100****Access Required for this task:**

194AR,194ER

## Corrective Action

0001	<b>Task carried out in accordance with the attached Customer Card that quotes the Operator code detailed below.</b>					  Order: 80069249 Operation: 0010 Phase: Routine - scheduling activity Work Center:FALCON A/C TEAM
	Accomplished		Inspected			
	Pers. No.	Date	Pers. No.	Date		
	Stamp		Stamp			

Completed & Confirmed on SAP IAW MOE 2.13.

**Defect Card Raised**

## Components Removed/Installed

	Part Number	Part Name	S/N	Location	Comm. Off/On
OFF					
ON					
OFF					
ON					
OFF					
ON					
OFF					
ON					

Occurance Report Raised? YES ☐

Operations Above &amp; Notifications Completed IAW MOE 2.13.

OEM Code: 21-52-05-610-801-02

Operator Code: 21-52-05-610-801-02

Form No: JA-SAP-MTX-002

Printed by: ADAMOVIC G



Printed: 03.09.2012

13:34:17

Print No: 1

Operator: **HERON AVIATION**

Work Card No.: **21.350**

Serial No.: **096**

Model: **FALCON 900EX**

**PKG # 2 2A INSPECTION**

Reg No.: **D-AHRN**

Workorder No.: \_\_\_\_\_

Due At	Date	A/C HRS	AFL	APH			
Accomplished	<b>25-NOV-2012</b>	<b>4410:47</b>					

TECHNICIAN SIGNATURE: \_\_\_\_\_ KIND OF CERTIFICATE & NO.: \_\_\_\_\_

INSPECTED BY: \_\_\_\_\_ KIND OF CERTIFICATE & NO.: \_\_\_\_\_

21-52-05-900-801-01

TURBOCOOLER

AMM 21-52-05-900-801

REASON REMOVED: (CHECK ONE)	<input type="checkbox"/> TIME EXPIRED	<input type="checkbox"/> FAILURE	<input type="checkbox"/> WORN	<input type="checkbox"/> LOANER	<input type="checkbox"/> SCHEDULING CONV
	<input type="checkbox"/> MOD/UPGRADE	<input type="checkbox"/> SERVICE	<input type="checkbox"/> ENGINE CHANGE	<input type="checkbox"/> TIRE CHANGE	<input type="checkbox"/> SWAP/TRBLE SHOOT <input type="checkbox"/> DAMAGED <input type="checkbox"/> UNKNOWN
If removed P/N & S/N information is incorrect please provide details below.					
REMOVED P/N	3269B0202		S/N	280	
INSTALLED P/N			S/N		
INSTALLED TSN	MOS	INSTALLED TSO	MOS	TIME SINCE REPAIR	MOS
	HRS		HRS		
	LDGS		LDGS		
				WARRANTY TIME REMAINING	MOS
					HRS
					LDGS
				TECH:	INSP:

REMARKS : \_\_\_\_\_

Note: INITIAL THE SERVICE TASKS BELOW WHICH WERE ACCOMPLISHED DURING CHANGE. IF TASKS WERE NOT ACCOMPLISHED, RECORD TIME ACCRUED SINCE TASK WAS LAST ACCOMPLISHED OR CHECK CONTINUE TIME (CT).

TECH	INSP	LABOR-HRS HRS.MINS	TIME ACCRUED	CONTINUE TIME
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21-52-05-350-801-01 RESTORATION TURBOCOOLER (OVERHAUL)

REMARKS : \_\_\_\_\_

GENERIC NO REF,AMM  
21-52-05-350-801

21-52-05-610-801-01 TOP UP TURBOCOOLER OIL

REMARKS : \_\_\_\_\_

AMM 21-52-05-610-801

**>21-52-05-610-801- 02 DRAINING AND REFILLING TURBOCOOLER OIL**

REMARKS : \_\_\_\_\_

AMM 21-52-05-610-801

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

### TASK 21-52-05-900-801 REMOVAL / INSTALLATION OF THE TURBOCOOLER

#### 1. OVERVIEW OF THE JOB

Operation code: 21-52-05-900-801-01 turbocooler (**504HN**)

This procedure describes the removal/installation of turbocooler (**504HN**).

At least two operators are required for the removal and installation of the fillet fairing (**194AR**).

At the end of this procedure, a leak check must be performed with the APU running.

**NOTE:** Three operators are required for this leak check (Refer to **TASK 21-00-00-790-801**).

#### 2. LOGISTICS

##### A. References

Reference	Designation
• <b>20-41-00-900-809</b>	REMOVAL / INSTALLATION OF FLEXINOX CLAMPS
• <b>21-00-00-790-801</b>	LEAK CHECK OF THE AIR CONDITIONING SYSTEM
• <b>21-52-05-610-801</b>	TURBOCOOLER OIL SERVICING
• <b>21-52-19-200-801</b>	INSPECTION / CHECK OF THE LP WATER SEPARATOR COMPONENTS
• <b>53-60-01-900-801</b>	REMOVAL / INSTALLATION OF THE FUSELAGE FAIRINGS

##### B. Tools and Ground Support Equipment

Reference	Designation	Quantity
• <b>F7XC202000008</b>	TOOL BOX	

##### C. Spare Parts

Reference	Designation	Quantity
• <b>W932-48B</b>	SEAL	4
• <b>W932-40B</b>	SEAL	2
• <b>W932-24B</b>	SEAL	2

##### D. Additional Spare Parts

Reference	Designation	Quantity
• <b>33350CA048</b>	LOCKWASHER	2
• <b>1501100400</b>	FLEXIBLE SLEEVE	

##### E. Energy

- ELECTRICAL
- PNEUMATIC

##### F. Access

Reference	Designation
• <b>190BB</b>	REAR LOWER FAIRING
• <b>194AR</b>	LOWER UNDER-PYLON FAIRING

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

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### **3. PRELIMINARY STEPS**

Refer to **fig. 1**

- A. Remove fillet fairing (**194AR**) (Refer to **TASK 53-60-01-900-801**) and door (**190BB**).
- B. Drain turbocooler (**504HN**) (Refer to **TASK 21-52-05-610-801**).

### **4. REMOVAL**

Refer to **fig. 1**

- A. Remove the four WIGGINS couplings and discard the eight seals (Refer to **TASK 20-41-00-900-803**):
  - the compressor inlet coupling (1) and outlet coupling (2),
  - the turbine inlet coupling (3) and the heating coupling (4).
- B. Remove the two FLEXINOX clamps (7) (Refer to **TASK 20-41-00-900-809**).
- C. Remove the two tie-bolts (8), without disassembling their half-brackets (9).
- D. Remove the flexible sleeve (10).
- E. Remove the attaching hardware securing turbocooler (**504HN**) to the aircraft:
  - the four self-locking nuts (12),
  - the four screws (14) and washers (13).

**CAUTION: TO PREVENT OIL LEAKS, THE TURBOCOOLER MUST BE CARRIED AND STORED IN THE HORIZONTAL POSITION.**

- F. Disengage turbocooler (**504HN**) from its support and remove it.
- G. Store turbocooler (**504HN**) in its normal operating position, with the filler plug upwards.

### **5. PREPARATION BEFORE INSTALLATION**

Refer to **fig. 1**

- A. Check that the flexible sleeve (10) is in good condition.
- B. Replace the flexible sleeve (10) (**1501100400**), if defective.

**CAUTION: AN INCORRECT INSTALLATION OF THE WATER SEPARATOR MAY CAUSE A CABIN DEPRESSURIZATION OR A MALFUNCTION OF THE TURBINE ANTI-ICING VALVE.**

- C. Make sure that the LP water separator is correctly installed (Refer to **TASK 21-52-19-200-801**, paragraph "Preparation Before Installation").

### **6. INSTALLATION**

Refer to **fig. 1**

**CAUTION: TO PREVENT OIL LEAKS, THE TURBOCOOLER MUST BE CARRIED IN THE HORIZONTAL POSITION.**

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

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**CAUTION:** AN INCORRECT INSTALLATION OF THE FLEXIBLE SLEEVE MAY CAUSE A CABIN DEPRESSURIZATION OR A MALFUNCTION OF THE TURBINE ANTI-ICING VALVE.

- A. Slip the flexible sleeve (10) over the turbocooler turbine outlet end-fitting (15).
- B. Position turbocooler (**504HN**) on the aircraft, and install the attaching hardware:
  - the four screws (14) and washers (13),
  - the four self-locking nuts (12).

- C. Move the flexible sleeve (10) back towards the LP water separator (**506HN**).

NOTE: The sleeve-end beads (22) of the flexible sleeve (10) must abut on the end-fitting beads (23).

- D. Install the two tie-bolts (8).
- E. Install the two FLEXINOX clamps (7) on the half-brackets (9) (Refer to **TASK 20-41-00-900-809**).
- F. Install the eight new seals as follows:
  - (1) Four new seals (**W932-48B**) on couplings (2) and (1),
  - (2) Two new seals (**W932-40B**) on coupling (3).
  - (3) Two new seals (**W932-24B**) on coupling (4).
- G. Install the four WIGGINS couplings of the turbocooler (Refer to **TASK 20-41-00-900-803**):
  - the heating coupling (4) and the turbine inlet coupling (3),
  - the compressor outlet coupling (2) and inlet coupling (1).

### **7. ADJUSTMENT OF TIE-BOLTS (8) (IF NECESSARY):**

Refer to **fig. 2**

NOTE: The two tie-bolts (8) must be adjusted with the same accuracy. Length adjustment may be necessary if the LP water separator, the supports of LP water separator or the drain line (1) have been replaced.

- A. Unsafety the adjustment nuts (1) and (3) of the tie-bolt (8).
- B. Remove nut (1) with its lockwasher (2).
- C. Remove the half-bracket (4) with the lockwasher (2) of the second nut (3).
- D. Discard the two lockwashers (2).
- E. Slightly unscrew nut (3).
- F. Install the half-bracket (5) on the tie-bolt (8), with its two nuts (3) and (1) and two new lockwashers (2) (**33350CA048**).
- G. Install the two half-brackets (5) and (4) on the flexible sleeve (10).
- H. Install the two FLEXINOX clamps (7) (Refer to **TASK 20-41-00-900-809**).

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

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- I. Screw the nut (3) until it comes into contact with the half-bracket (5).
- J. Screw the nut (1) until it comes into contact with the half-bracket (5).
- K. Tighten the two nuts (1) and (3) together.
- L. Safety the two nuts (1) and (3) with the lockwashers (2).

**CAUTION:** AN INCORRECT INSTALLATION OF THE FLEXIBLE SLEEVE MAY CAUSE A CABIN DEPRESSURIZATION OR A MALFUNCTION OF THE TURBINE ANTI-ICING VALVE.

- M. Make sure that the flexible sleeve (10) is in correct position.

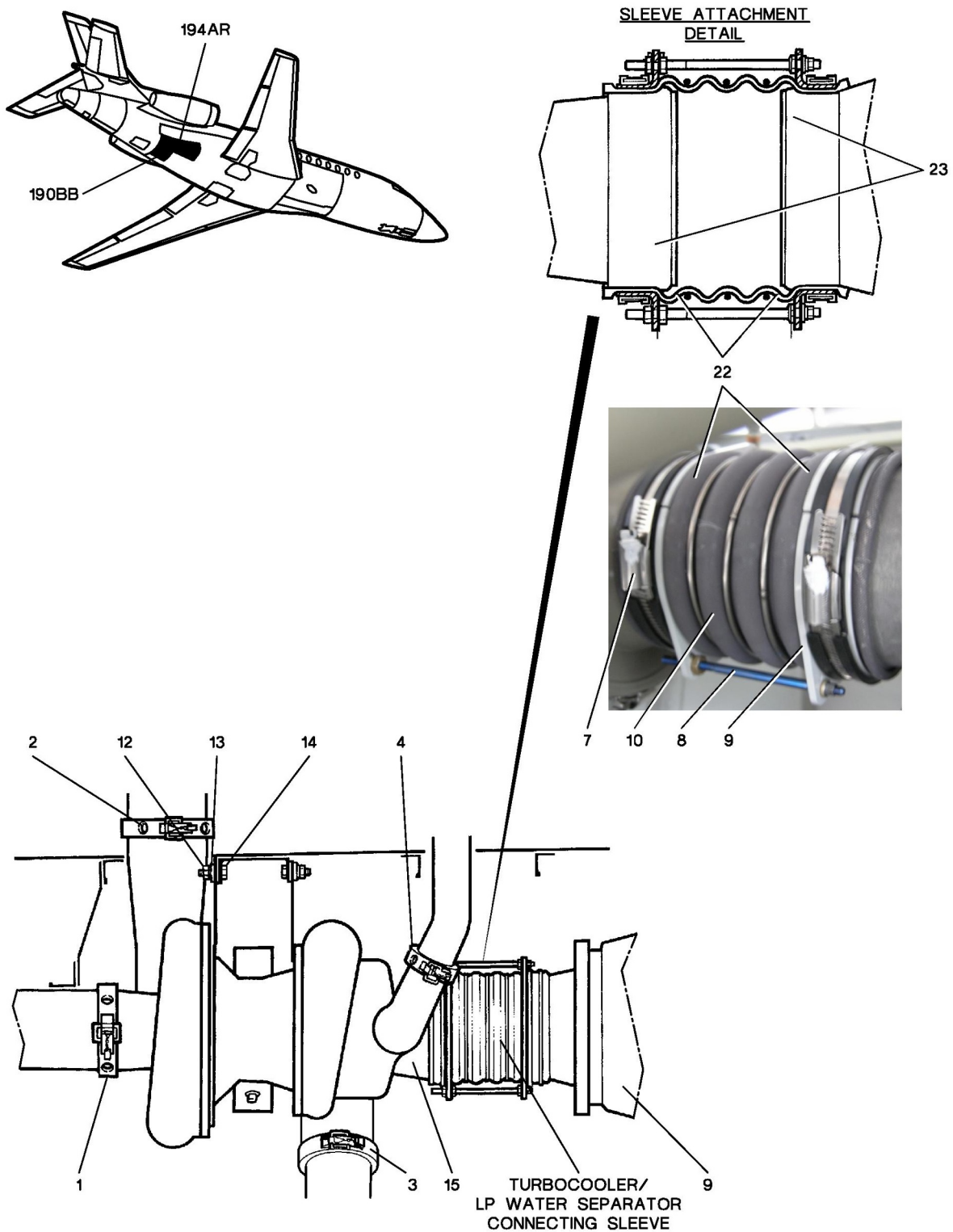
**NOTE:** The sleeve-end beads (22) of the flexible sleeve (10) must abut on the end-fitting beads (23).

### **8. FINAL STEPS**

Refer to **fig. 1**

- A. Fill turbocooler (**504HN**) (Refer to **TASK 21-52-05-610-801**).
- B. Check for leaks at the turbocooler (**Refer to TASK 21-00-00-790-801**).
- C. Install fillet fairing (**194AR**) (Refer to **TASK 53-60-01-900-801**) and door (**190BB**).

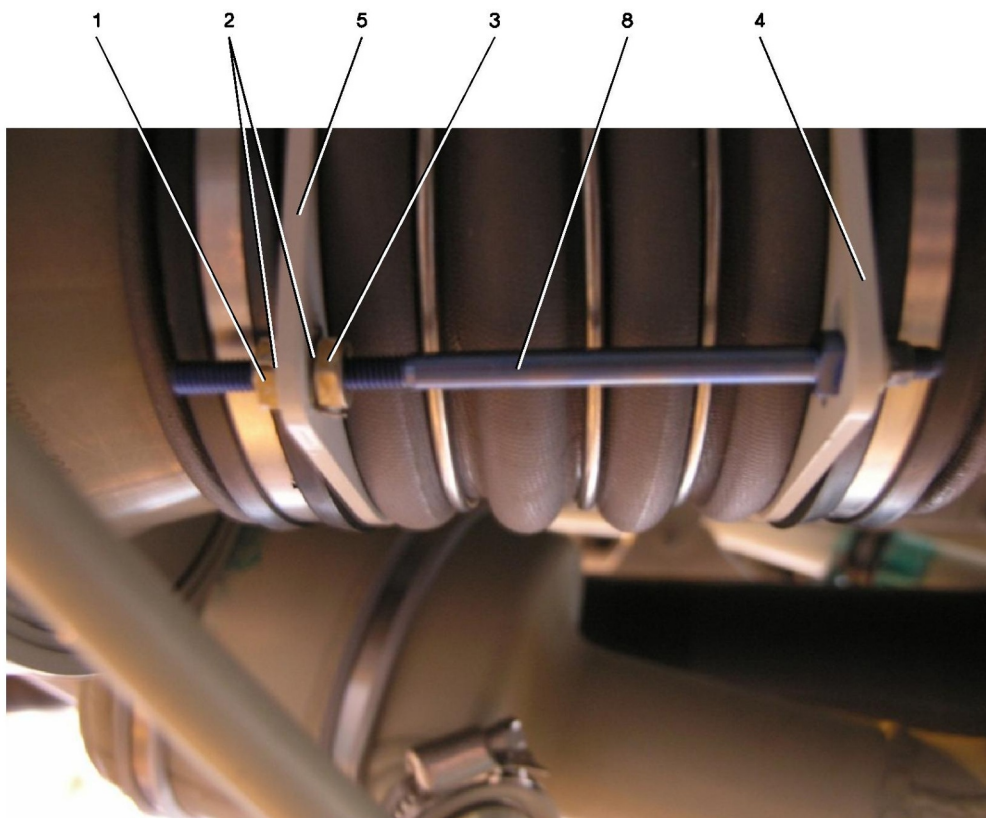
## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL



**Figure 1: REMOVAL/INSTALLATION OF TURBOCOOLER**

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

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**Figure 2: ADJUSTMENT OF TIE-BOLTS (8)**



## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

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### TASK 21-52-05-350-801 **RESTORATION OF THE TURBOCOOLER (OVERHAUL)**

#### 1. OVERVIEW OF THE JOB

Operation code: 21-52-05-350-801-01 turbocooler (**504HN**)

This task **consists** in an overhaul of the turbocooler (**504HN**)

It must be performed by an authorized Repair Agent.

For Removal/Installation of the turbocooler (**504HN**), refer to the AMM (Refer to **TASK 21-52-05-900-801**).

#### 2. LOGISTICS

##### A. References

###### Reference

- **21-52-05-900-801**

###### Designation

REMOVAL / INSTALLATION OF THE TURBOCOOLER

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

### TASK 21-52-05-610-801 TURBOCOOLER OIL SERVICING

#### 1. OVERVIEW OF THE JOB

Operation codes:

- 21-52-05-610-801-01 turbocooler (504HN) oil top-up
- 21-52-05-610-801-02 turbocooler (504HN) oil draining and refilling

This procedure is to be used to:

- check the turbocooler oil level and top it up if necessary (refer to paragraph "Oil Servicing"), or
- perform a full replacement of the turbocooler oil (refer to paragraphs "Oil Draining", then "Oil Refilling").

#### 2. LOGISTICS

##### A. References

Reference	Designation
• <a href="#">21-52-05-900-801</a>	REMOVAL / INSTALLATION OF THE TURBOCOOLER
• <a href="#">53-60-01-900-801</a>	REMOVAL / INSTALLATION OF THE FUSELAGE FAIRINGS

##### B. Tools and Ground Support Equipment

Reference	Designation	Quantity
• <a href="#">F7XC202000008</a>	TOOL BOX	

##### C. Ingredients and Consumable Products

Designation	Additional designation
• <a href="#">LOCKWIRE</a>	MS20995C32
• <a href="#">TURBOCOOLER OIL</a>	
• <a href="#">HIGH TEMPERATURE LUBRICANT MIL-PRF-907</a>	

##### D. Spare Parts

Reference	Designation	Quantity
• <a href="#">LAMJETDN12P</a>	SEAL	

##### E. Additional Spare Parts

Reference	Designation	Quantity
• <a href="#">R00570X190A60C7</a>	PACKING,PREFORMED	

##### F. Access

Reference	Designation
• <a href="#">194AR</a>	LOWER UNDER-PYLON FAIRING
• <a href="#">194ER</a>	TURBO-COOLER OIL SERVICING ACCESS DOOR

##### G. Miscellaneous

- GRADUATED CONTAINER, MINIMUM CAPACITY 250 CC (8.45 OZ) (LOCAL PROCUREMENT)
- FUNNEL (LOCAL PROCUREMENT)

## **FALCON 900EX AIRCRAFT MAINTENANCE MANUAL**

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- LINT-FREE CLOTH (LOCAL PROCUREMENT)

### **3. OIL TOP-UP**

Refer to **fig. 1**

- A. Open the door (**194ER**).
- B. Wipe off the oil seepage, (if any), on the turbocooler with a cloth.

**NOTE:** Oil seepage from the weeper hole (1) may occur during normal operation of the turbocooler. In this case, the turbocooler must not be replaced.

- C. Disengage the retaining clip (4) from the oil dipstick (3) and pull it out.
- D. Check the oil level, using the oil dipstick (3).

**CAUTION:** DO NOT OVERFILL THE TURBOCOOLER (I.E., DO NOT FILL IT BEYOND THE MAXIMUM LEVEL) TO PREVENT LEAKS. CHECK THE OIL LEVEL SEVERAL TIMES DURING FILLING.

- E. Fill the turbocooler with **turbocooler oil** using a funnel, if necessary:
  - (1) Make sure that the funnel is clean and free of foreign matter.
  - (2) Slowly fill the turbocooler up to the maximum level mark, checking the oil level several times during filling to prevent overfilling.
- F. Remove the funnel.
- G. Install the oil dipstick (3) and the retaining clip (4).
- H. Close the door (**194ER**).

### **4. OIL DRAINING**

Refer to **fig. 1**

- A. Remove the panel (**194AR**) (Refer to **TASK 53-60-01-900-801**).
- B. Disengage the retaining clip (4) from the oil dipstick (3) and pull it out.
- C. Place a graduated container under the turbocooler drain plug (2).
- D. Unsafety and remove the drain plug (2). Discard the seal.
- E. Let the oil drain into the graduated container until draining is completed.
- F. Apply a light coat of **high temperature lubricant MIL-PRF-907** to the thread of the drain plug (2).
- G. Install the drain plug (2), fitted with a new seal (**LAMJETDN12P**).
- H. Tighten the drain plug (2) to a torque of 1.5 m.daN (11 lb.ft).

## FALCON 900EX AIRCRAFT MAINTENANCE MANUAL

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- I. Safety the drain plug (2) with **lockwire**.
- J. Install the oil dipstick (3) and the retaining clip (4).

**CAUTION:** THE TURBOCOOLER OIL CONSUMPTION SHOULD NOT EXCEED 1.04 CC/FH (0.035 OZ/FH). IF THE OIL CONSUMPTION EXCEEDS THIS VALUE, THE TURBOCOOLER MUST BE REPLACED.

- K. Evaluate the oil consumption per flight hour since the last oil top-up:
  - (1) Check the number of flight hours (NFH) since the last oil top-up.
  - (2) Read the quantity of oil (Q2) in the graduated container.
  - (3) Calculate the oil consumption (QC) since the last oil top-up:  $QC = Q1 - Q2$ .  
**NOTE:** The quantity of oil at maximum level (Q1) is 218.6 CC (7.39 OZ).
  - (4) Calculate the oil consumption per flight hour (QCNFH):  $QCNFH = QC : NFH$ .  
**NOTE:** Example of calculation:
    - the number of flight hours since the last oil top-up is 115 FH.
    - the quantity of oil in the graduated container (Q2) is 104 CC (3.5 OZ).
    - the oil consumption (QC) since the last oil top-up is  $218.6 - 104 = 114.6$  CC (3.87 OZ).
    - the oil consumption per flight hour (QCNFH) since the last top-up is  $114.6 : 115 = 0.99$  CC/FH (0.033 OZ/FH).
    - conclusion: the oil consumption per flight hour (QCNFH) is acceptable ( $QCNFH < 1.04$  CC/FH (0.035 OZ/FH)).
  - (5) If the oil consumption per flight hour (QCNFH) is above 1.04 CC/FH (0.035 OZ/FH), the turbocooler must be replaced (Refer to **TASK 21-52-05-900-801**).
- L. Dispose of the old oil.

### 5. **OIL REFILLING**

Refer to **fig. 1**

- A. Pour 218.6 CC (7.39 OZ) of new **turbocooler oil** into a graduated container.

**CAUTION:** THE TURBOCOOLER MUST BE INSTALLED BEFORE IT IS REFILLED.

- B. Disengage the retaining clip (4) from the oil dipstick (3) and pull it out.
- C. Fill the turbocooler with **turbocooler oil** using a funnel as follows:
  - (1) Make sure that the funnel is clean and free of foreign matter.
  - (2) Slowly pour the contents of the graduated container into the turbocooler.
  - (3) Wait one minute and check that the oil level is not above the maximum level mark.
  - (4) Remove the funnel.
- D. Check the condition of the dipstick O-ring (5); if damaged, replace it with a new O-ring (**R00570X190A60C7**).

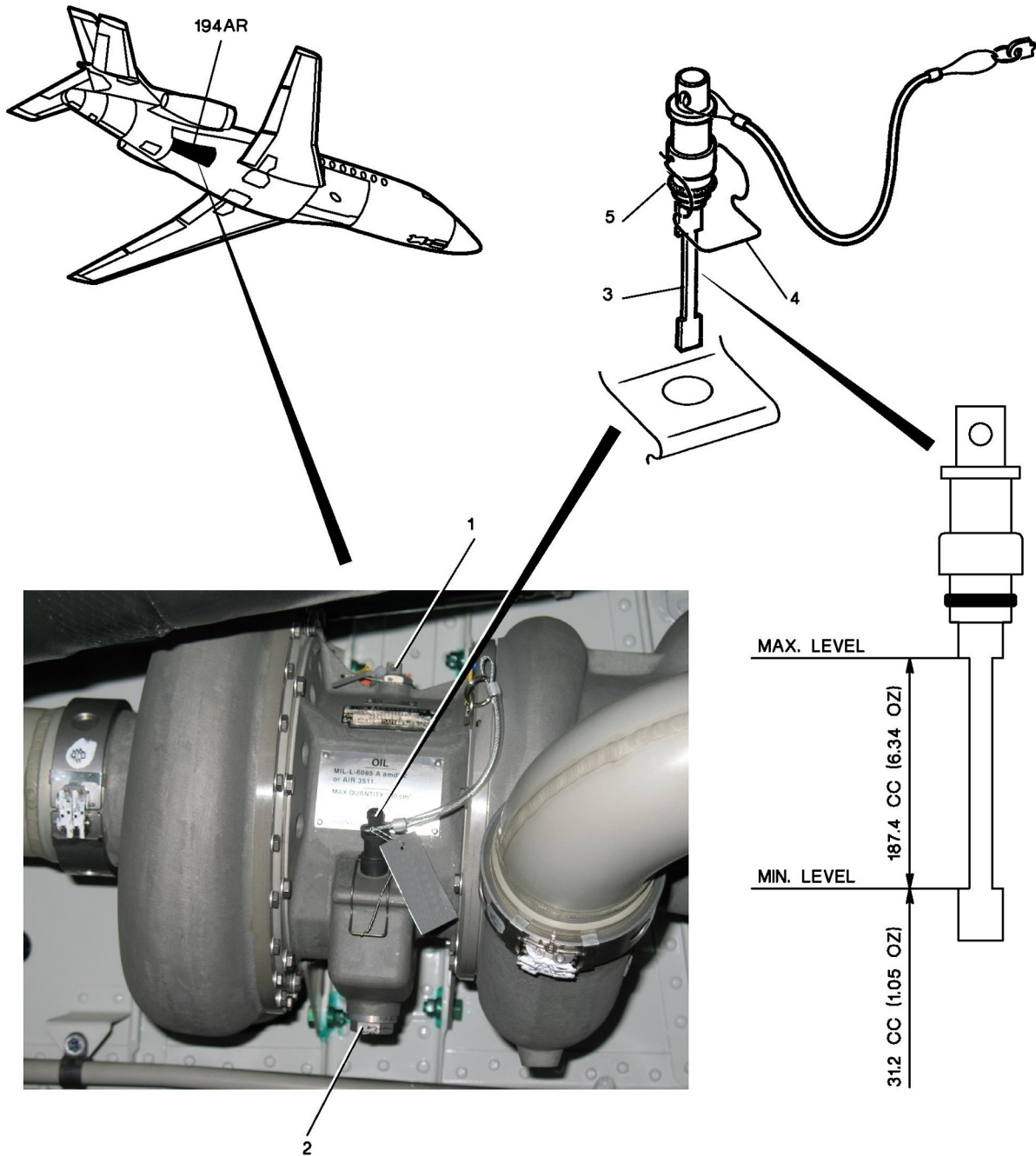
## **FALCON 900EX**

### **AIRCRAFT MAINTENANCE MANUAL**

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- E. Install the oil dipstick (3) and the retaining clip (4).
- F. Install the panel (**194AR**) (Refer to **TASK 53-60-01-900-801**).

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**Figure 1: Turbocooler Oil Servicing**