

# TO 1300I-2-12JG-49-1

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## TECHNICAL MANUAL

### JOB GUIDE

### ORGANIZATIONAL MAINTENANCE

## SERVICING AUXILIARY POWER UNIT

(12-49-00 THROUGH 12-49-03)

### USAF SERIES

### 300i

### AIRCRAFT

MCDONNELL DOUGLAS CORPORATION

MILITARY TRANSPORT AIRCRAFT

F33657-81-C-2108

FA8526-12-D-0001

THIS MANUAL SUPERSEDES TO 1300I-2-12JG-49-1 DATED 1 JULY 2019.

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**1 AUGUST 2020**

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**T-2**

**1 AUGUST 2020**

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# INTRODUCTION

## **SCOPE.**

This manual contains procedures required to replenish, change, drain and flush the auxiliary power unit oil.

## **MODEL(S) COVERED.**

All

## **ABBREVIATIONS.**

The following is a list of non-standard abbreviations used throughout this manual.

GS	General System
MSDS	Material Safety Data Sheet

## **CHANGE REQUEST.**

Recommendations for routine changes to this Technical Order (TO) will be on AFTO Form 22, Technical Manual (TM) Change Recommendation and Reply, in accordance with TO 00-5-1. Completed forms will be forwarded through the Command Control Point (CCP) to Boeing Airlift and Tanker, 300i Technical Publications group mailbox at 300i-techpubspcrs@boeing.com. Information copies will be sent to AFLCMC/WLMC TOMA, Robins AFB, GA.

Urgent AFTO Form 22s will be routed through the CCP to AFLCMC/WLMC TOMA, Robins AFB, GA. Emergency AFTO Form 22s will be transmitted by immediate message, e-mail, or fax to AFLCMC/WLMC TOMA. Information copies will be sent to HQ AMC/A4M, Scott AFB, IL and AFLCMC/WLMC TOMA, Robins AFB, GA.

## **300i TO INFORMATION.**

General 300i TO/eTO and TO Manager information can be found in the Enhanced Technical Information Management System (ETIMS). 300i TO supplement and finalized AFTO Form 22 information can be found on the 300i TO System Application Site at: <https://asw.robins.af.mil/afto22/AFTO22>

## ➤ LIST OF TIME COMPLIANCE TECHNICAL ORDERS (TCTO).

This list of TCTO's contains all current TCTO's that affect the technical content of text or illustrations found in this manual.

TCTO NUMBER	TITLE	TCTO DATE	APPLICABILITY



## SECTION 1

### GENERAL INFORMATION (12-49-00)

#### **1-1. GENERAL INFORMATION.**

1-2. This section provides general information that is essential for ensuring complete and safe maintenance procedures contained throughout this manual.

1-3. All packings shall be coated with lubricating oil prior to installation unless otherwise specified.

1-4. All part numbers listed in the supplies page throughout this manual are considered primary numbers. Secondary, alternate, and/or suitable substitutes part numbers may be found in the system's Illustrated Parts Breakdown (IPB) manual (Refer to TO 1300I-4-49).

1-5. All part numbers listed in the support equipment page throughout this manual are considered primary numbers. All approved test equipment, special tools, locally manufactured equipment, secondary, alternate, and/or suitable substitutes part numbers may be found in the system's General System (GS) manual (Refer to TO 1300I-2-49GS-00-1, Chapter 4).

1-6. All adhesive sealants, sealants, and compounds used in this manual are listed with a primary part number and/or primary specification number. Any suitable substitutes and/or interchangeable adhesive sealants, sealants, and compounds may be used unless otherwise specified. Suitable substitutes and/or interchangeable adhesive sealants, sealants, and compounds are listed in the system peculiar corrosion control manual (Refer to TO 1300I-23, Chapter 1, Section III).

1-7. Suitable substitutes for lubricating oils are listed in aircraft cross servicing guide manual (Refer to TO 1300I-2-1, Chapter 3).



SECTION 2

AUXILIARY POWER UNIT OIL SYSTEM  
REPLENISHMENT  
(12-49-01)

GENERAL MAINTENANCE INPUT CONDITIONS:

Applicability:	Task
All	All

Additional information:

This procedure consists of the following task:

01-1. Replenishment.

Additional data:	Task
NA	--

Personnel recommended:	Task
One	All

Safety conditions:	Task
--------------------	------

**WARNING**

The use of personal protective equipment is mandatory to perform this procedure. The applicable Material Safety Data Sheet (MSDS) will identify special protection information. Failure to comply may cause injury to personnel.	All
--	-----

Support equipment:

<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
NA	--	--	--	--

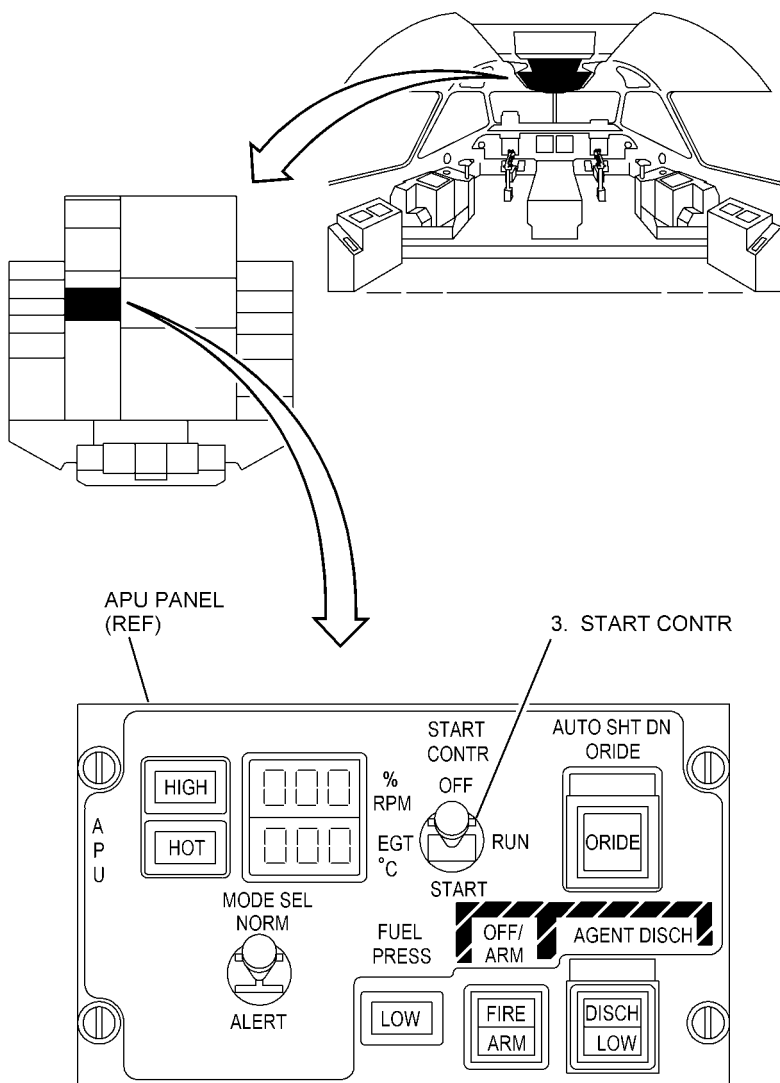
Supplies:

<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
Oil, Lubricating	--	MIL-PRF-23699	AR	All
Rag, Wiping	--	A-A-2522	AR	All
Tag, Warning	--	--	1	All



## **01-1. REPLENISHMENT.**

1. Review "Section 1 (General Information)" of this TO for system general warnings, cautions, and notes.
2. Review task "General Maintenance Input Conditions" page for task specific safety conditions.
3. Ensure **START CONTR** switch on **APU** panel is **OFF** and attach warning tag.

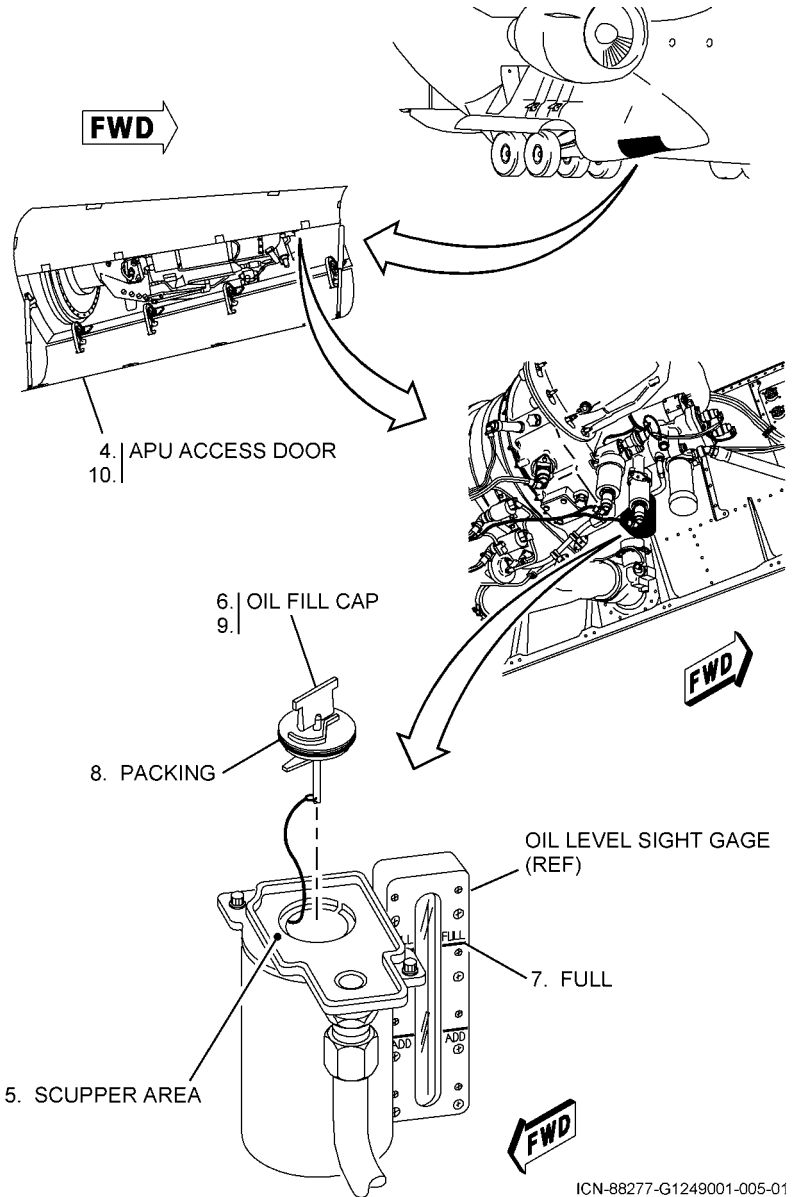


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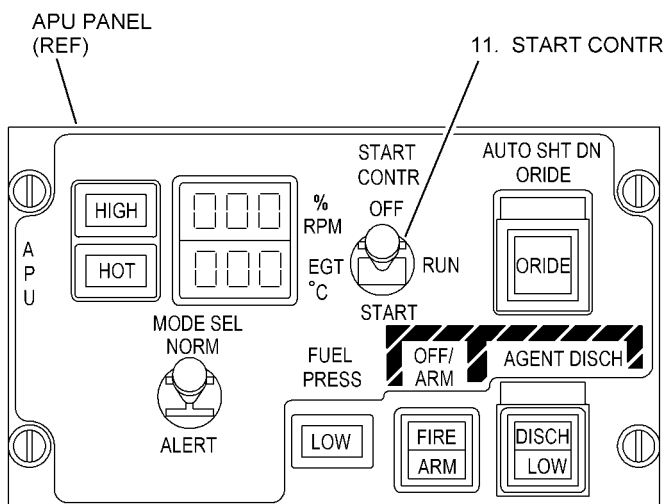
## TO 1300I-2-12JG-49-1

4. Unlatch and open Auxiliary Power Unit (APU) access door (181BRD).
5. Clean scupper area.
6. Unlock and remove oil fill cap.
7. Add oil until oil level reaches **FULL** line on oil level sight gage.
8. Ensure packing is free from cuts and deterioration.
9. Install and lock oil fill cap.
10. Close and latch APU access door (181BRD).





11. Remove warning tag from **START CONTR** switch on **APU** panel.



ICN-88277-G1249023-002-01



**AUXILIARY POWER UNIT OIL SYSTEM  
CHANGE  
(12-49-02)**

**GENERAL MAINTENANCE INPUT CONDITIONS:**

<b>Applicability:</b>	<b>Task</b>
All	All

**Additional information:**

This procedure consists of the following task:

02-1. Oil change.

<b>Additional data:</b>	<b>Task</b>
TO 1300I-2-49GS-00-1	All
TO 1300I-2-49JG-00-1	All

<b>Personnel recommended:</b>	<b>Task</b>
One	All

<b>Safety conditions:</b>	<b>Task</b>
---------------------------	-------------

**WARNING**

The use of personal protective equipment is mandatory to perform this procedure. The applicable Material Safety Data Sheet (MSDS) will identify special protection information. Failure to comply may cause injury to personnel.

All

Support equipment:

<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
Pail, Utility	B12R	--	1	All
Wrench, Torque	--	(0-50 in-lb)	1	All

Supplies:

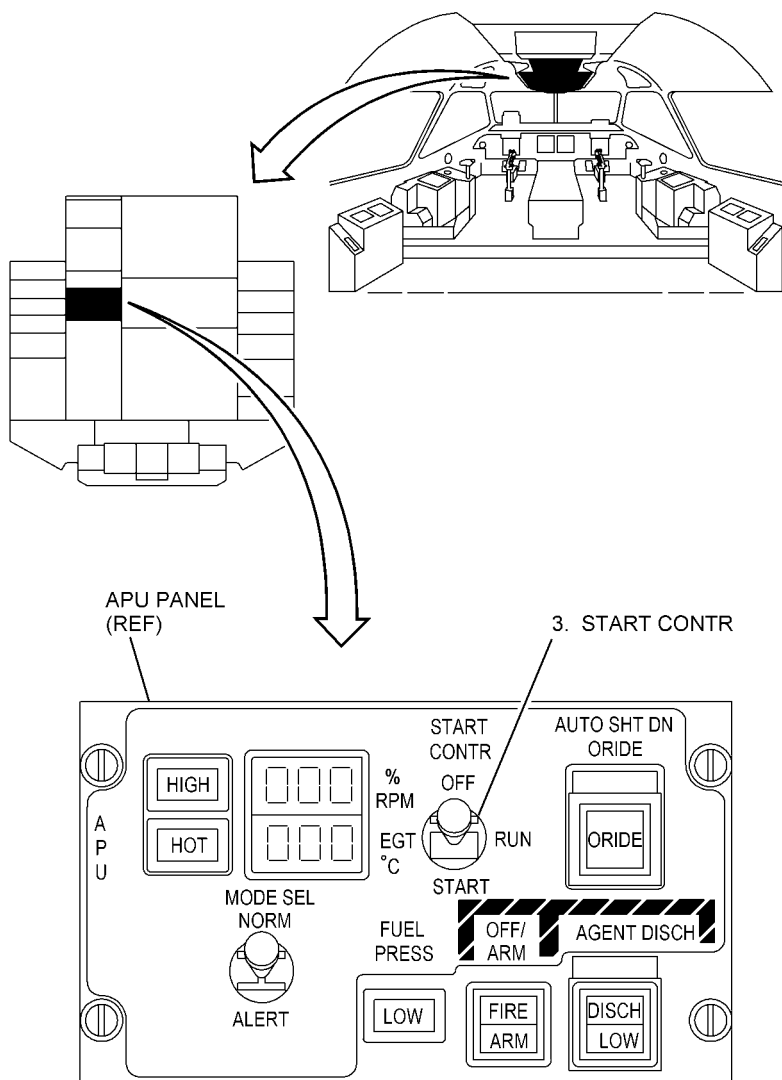
<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
Oil, Lubricating	--	MIL-PRF-23699	AR	All
Packing, Preformed	M83248/1-011	--	1	All
Packing, Preformed	S9413-557	--	1	All
Rag, Wiping	A-A-2522	--	AR	All
Tag, Warning	--	--	1	All

<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
Wire, Safety	900010-32C	--	AR	All

## **02-1. OIL CHANGE.**

1. Review "Section 1 (General Information)" of this TO for system general warnings, cautions, and notes.
2. Review task "General Maintenance Input Conditions" page for task specific safety conditions.
3. Ensure **START CONTR** switch on **APU** panel is **OFF** and attach warning tag.

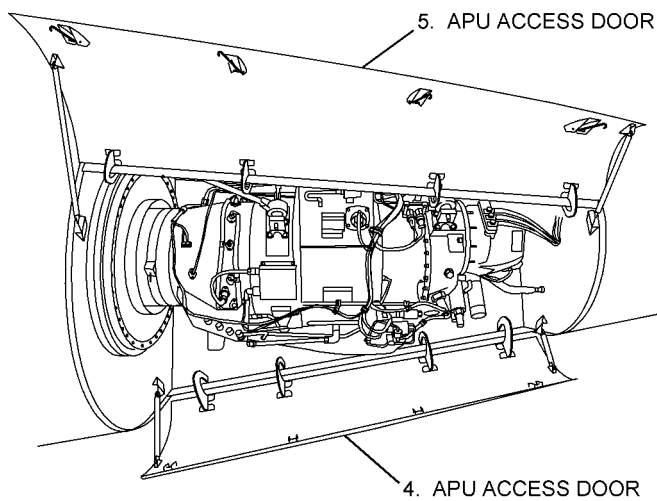
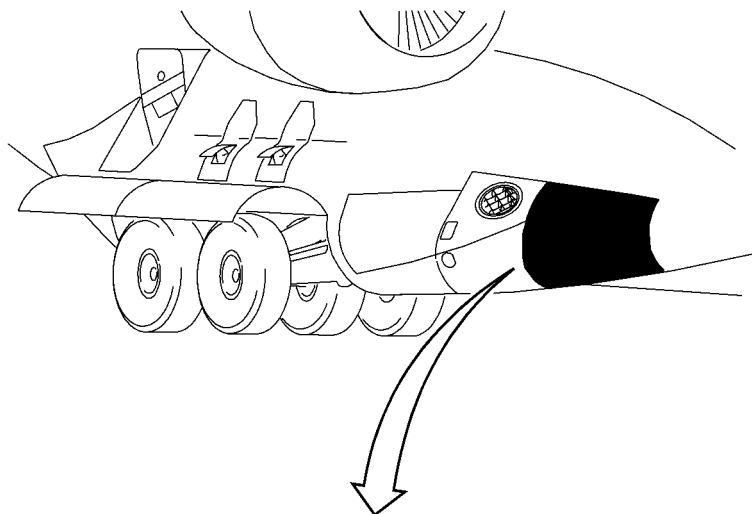




ICN-88277-G1249004-005-01

## **TO 1300I-2-12JG-49-1**

4. Unlatch and open Auxiliary Power Unit (APU) access door (181BRD).
5. Unlatch and open APU access door (181ARD).



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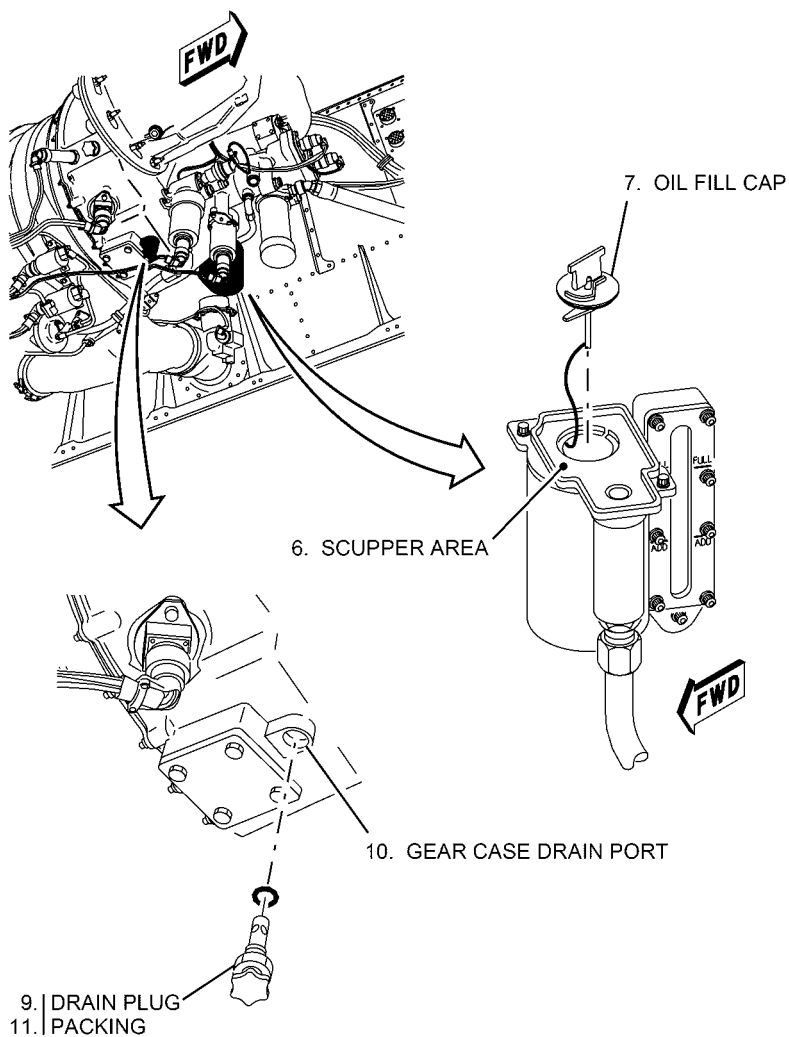
## TO 1300I-2-12JG-49-1

6. Clean scupper area.
7. Unlock and remove oil fill cap.
- 8. Inspect chip collector (TO 1300I-2-49GS-00-1, Chapter 2).

### NOTE

Gear case contains approximately 6 quarts of oil.

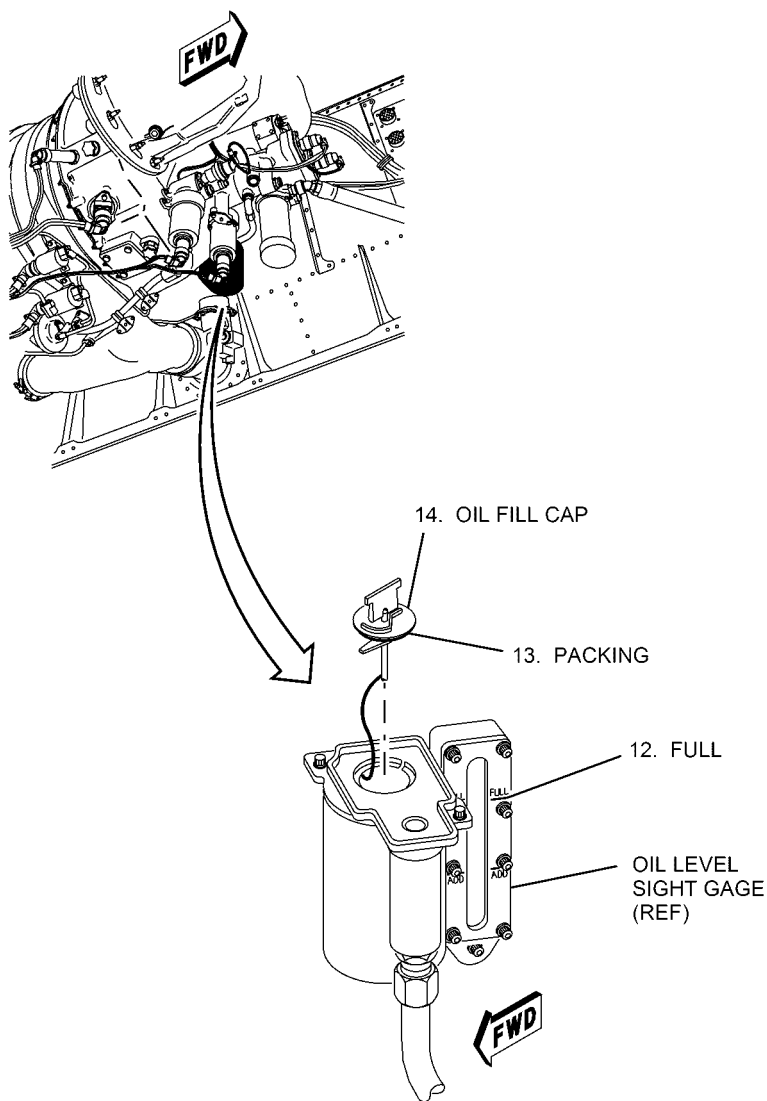
9. Remove safety wire and drain plug; discard packing.
10. Allow oil to drain from gear case drain port.
11. Install packing (PN S9413-557) and drain plug in gear case drain port; torque **25-35 in-lb** and secure with safety wire.



ICN-88277-G1249007-007-01

## **TO 1300I-2-12JG-49-1**

12. Add oil until oil level reaches **FULL** line on oil level sight gage.
13. Ensure packing is free from cuts and deterioration.
14. Install and lock oil fill cap.

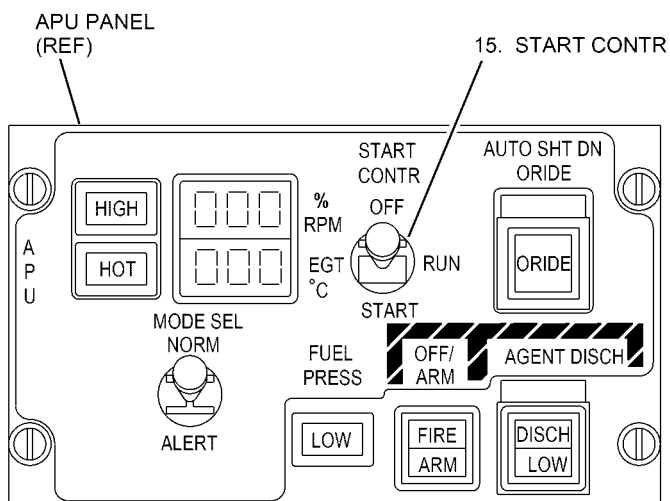


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## **TO 1300I-2-12JG-49-1**

15. Remove warning tag from **START CONTR** switch on **APU** panel.
16. Perform APU ground operation for a minimum of 15 minutes (49-00-01, tasks 01-1 or 01-2 and 01-3).
17. Perform auxiliary power unit oil system replenishment (12-49-01, task 01-1).

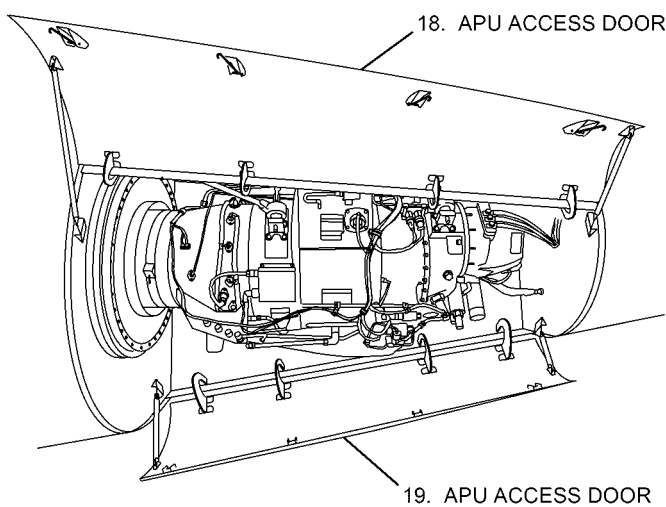




ICN-88277-G1249010-006-01

## **TO 1300I-2-12JG-49-1**

18. Close and latch APU access door (181ARD).
19. Close and latch APU access door (181BRD).



ICN-88277-G1249009-005-01



**AUXILIARY POWER UNIT OIL SYSTEM  
DRAIN AND FLUSH  
(12-49-03)**

**GENERAL MAINTENANCE INPUT CONDITIONS:**

<b>Applicability:</b>	<b>Task</b>
All	All

**Additional information:**

This procedure consists of the following task:

03-1. Drain and flush.

<b>Additional data:</b>	<b>Task</b>
TO 1300I-2-49GS-00-1	All
TO 1300I-2-49JG-00-1	All

<b>Personnel recommended:</b>	<b>Task</b>
One	All

<b>Safety conditions:</b>	<b>Task</b>
---------------------------	-------------

**WARNING**

The use of personal protective equipment is mandatory to perform this procedure. The applicable Material Safety Data Sheet (MSDS) will identify special protection information. Failure to comply may cause injury to personnel.

All

Support equipment:

<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
Pail, Utility	B12R	--	1	All
Wrench, Torque	--	(0-50 in-lb)	1	All

Supplies:

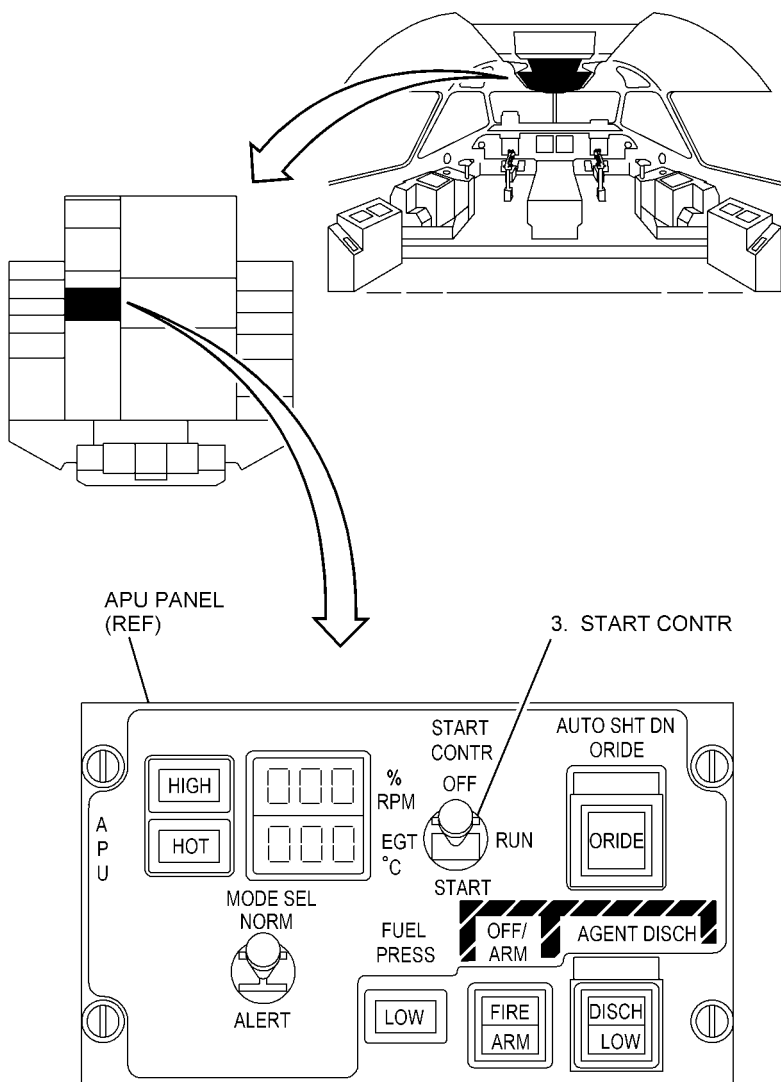
<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
Element, Filter	3001436-1	--	2	All
Oil, Lubricating	--	MIL-PRF-23699	AR	All
Packing, Preformed	M83248/1-011	--	3	All
Packing, Preformed	S9413-227	--	2	All
Packing, Preformed	S9413-557	--	2	All

<u>Nomenclature</u>	<u>PN</u>	<u>Specification</u>	<u>Qty</u>	<u>Task</u>
Rag, Wiping	A-A-2522	--	AR	All
Tag, Warning	--	--	1	All
Wire, Safety	900010-32C	--	AR	All

## **03-1. DRAIN AND FLUSH.**

1. Review "Section 1 (General Information)" of this TO for system general warnings, cautions, and notes.
2. Review task "General Maintenance Input Conditions" page for task specific safety conditions.
3. Ensure **START CONTR** switch on **APU** panel is **OFF** and attach warning tag.

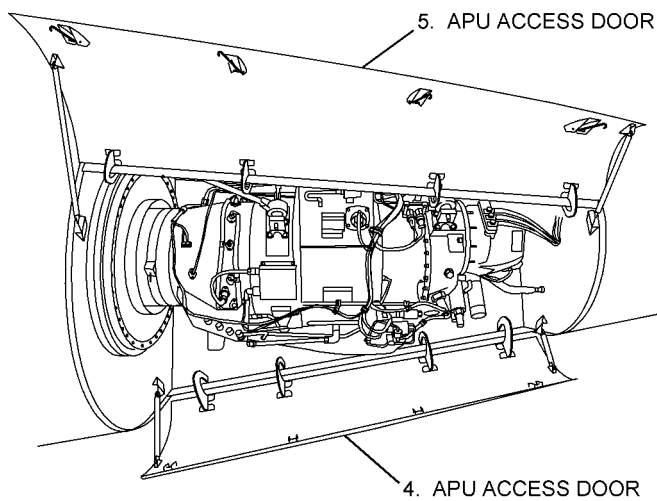
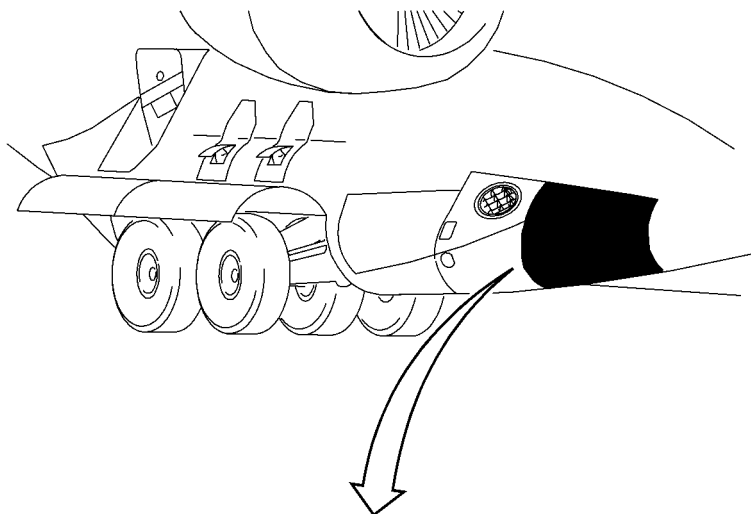




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## **TO 1300I-2-12JG-49-1**

4. Unlatch and open Auxiliary Power Unit (APU) access door (181BRD).
5. Unlatch and open APU access door (181ARD).



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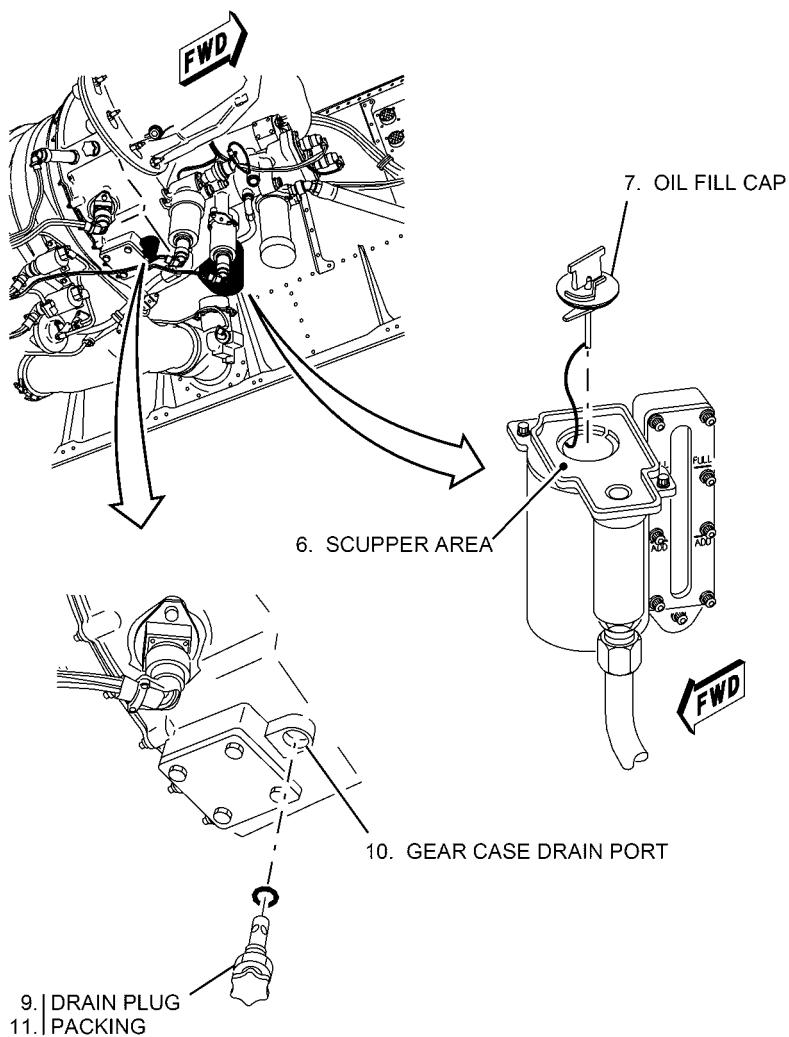
## TO 1300I-2-12JG-49-1

6. Clean scupper area.
7. Unlock and remove oil fill cap.
- 8. Inspect chip collector (TO 1300I-2-49GS-00-1, Chapter 2).

### NOTE

Gear case contains approximately 6 quarts of oil.

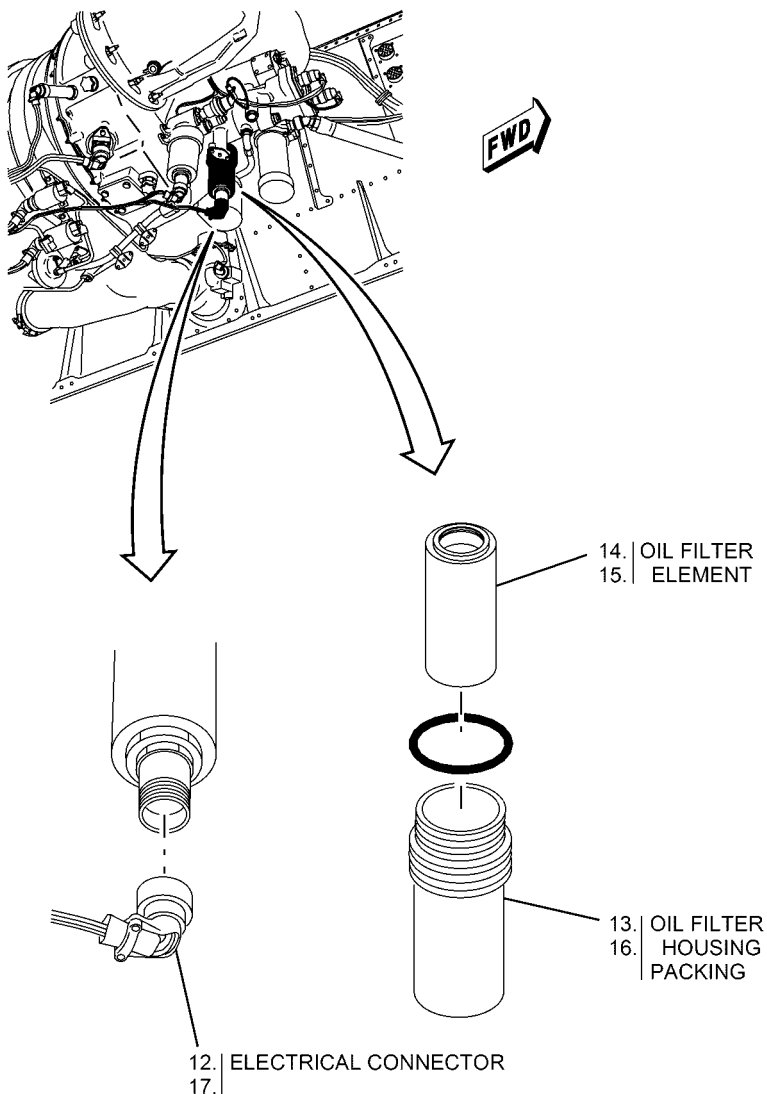
9. Remove safety wire and drain plug; discard packing.
10. Allow oil to drain from gear case drain port.
11. Install packing (PN S9413-557) and drain plug in gear case drain port; torque **25-35 in-lb** and secure with safety wire.



ICN-88277-G1249012-007-01

## TO 1300I-2-12JG-49-1

12. Disconnect electrical connector.
13. Remove safety wire and oil filter housing; discard packing.
14. Remove and discard oil filter element.
15. Install filter element into filter housing.
16. Install packing (PN S9413-227) and oil filter housing; torque **25-35 in-lb** and secure with safety wire.
17. Connect electrical connector (4993PP027).

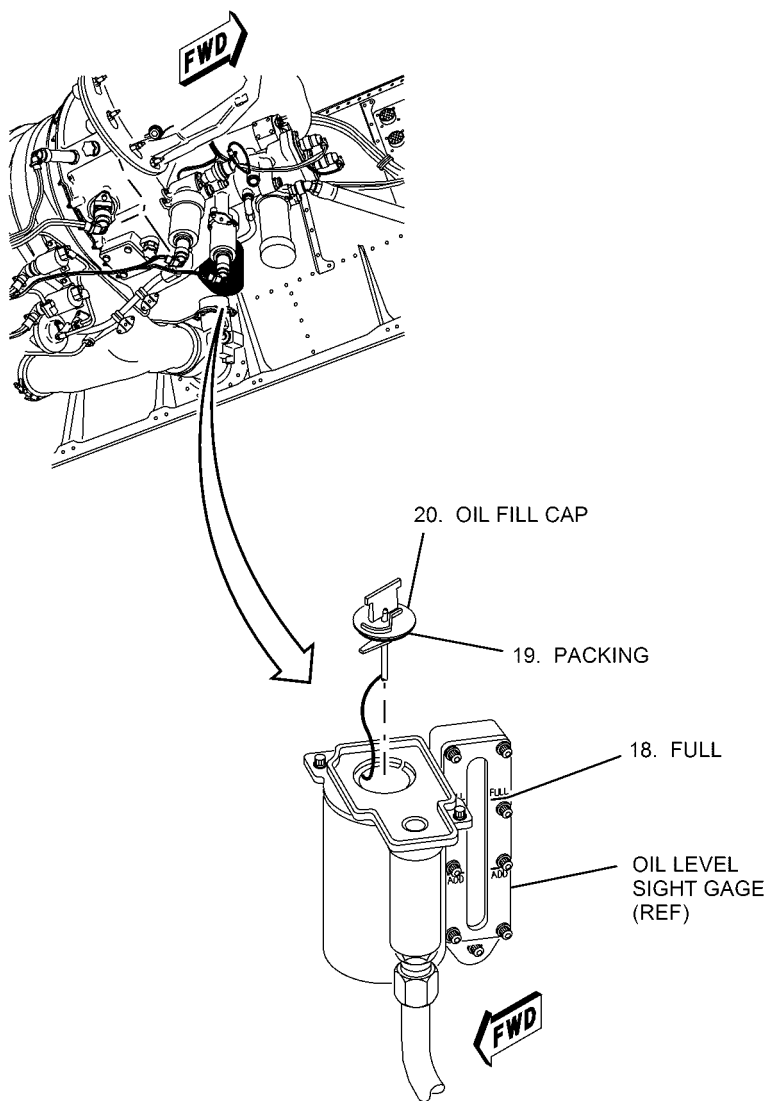


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## **TO 1300I-2-12JG-49-1**

18. Add oil until oil level reaches **FULL** line on oil level sight gage.
19. Ensure packing is free from cuts and deterioration.
20. Install and lock oil fill cap.

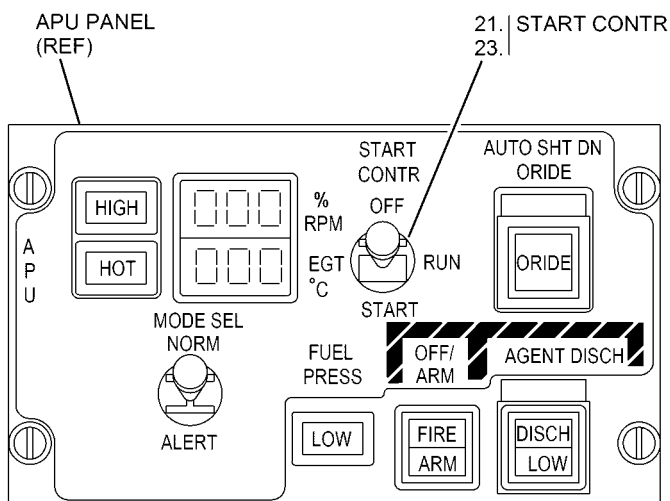




ICN-88277-G1249014-004-01

## **TO 1300I-2-12JG-49-1**

21. Remove warning tag from **START CONTR** switch on **APU** panel.
22. Perform APU ground operation for minimum 15 minutes  
(49-00-01, tasks 01-1 or 01-2 and 01-3).
23. Attach warning tag to **START CONTR** switch on **APU** panel.



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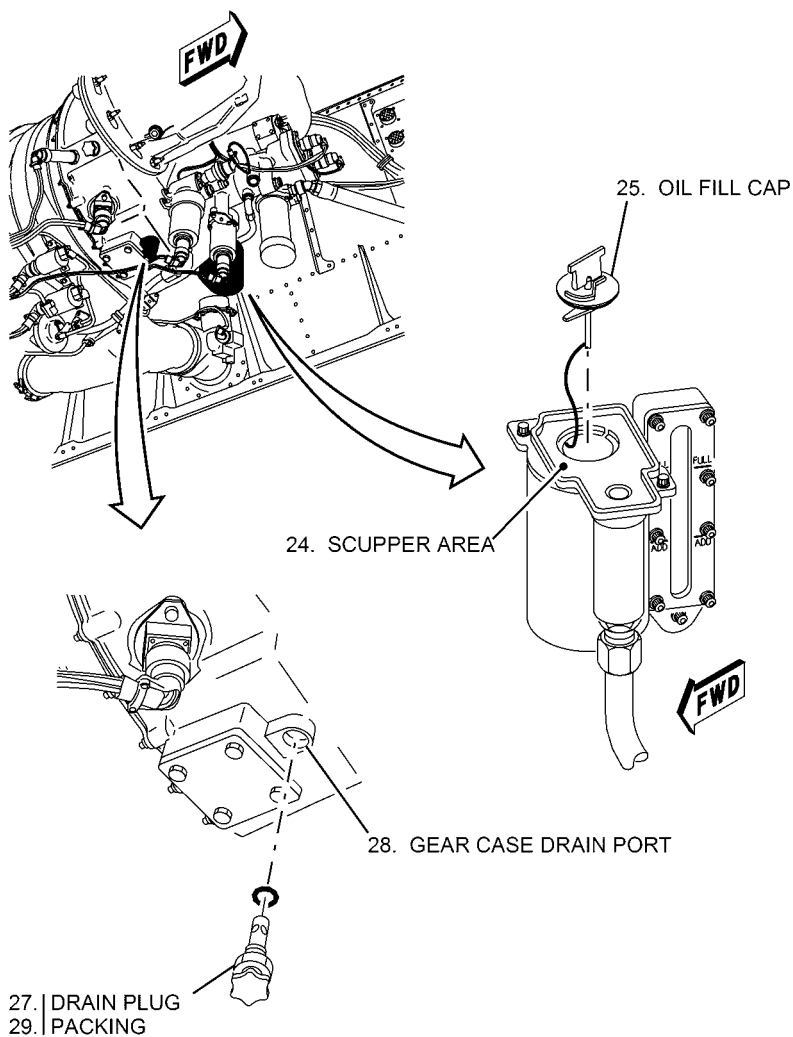
## TO 1300I-2-12JG-49-1

24. Clean scupper area.
25. Unlock and remove oil fill cap.
- 26. Inspect chip collector (TO 1300I-2-49GS-00-1, Chapter 2).

### NOTE

Gear case contains approximately 6 quarts of oil.

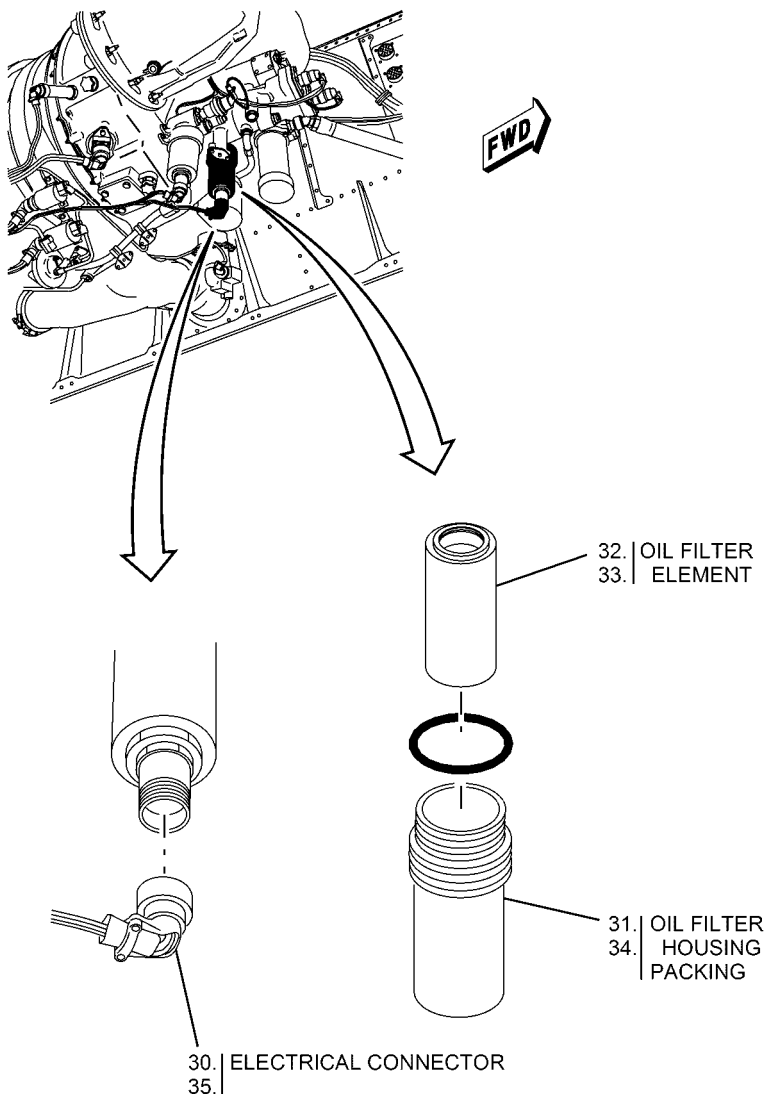
27. Remove safety wire and drain plug; discard packing.
28. Allow oil to drain from gear case drain port.
29. Install packing (PN S9413-557) and drain plug in gear case drain port; torque **25-35 in-lb** and secure with safety wire.



ICN-88277-G1249016-007-01

## TO 1300I-2-12JG-49-1

30. Disconnect electrical connector.
31. Remove safety wire and oil filter housing; discard packing.
32. Remove and discard oil filter element.
33. Install oil filter element into oil filter housing.
34. Install packing (PN S9413-227) and oil filter housing; torque **25-35 in-lb** and secure with safety wire.
35. Connect electrical connector (4993PP027).

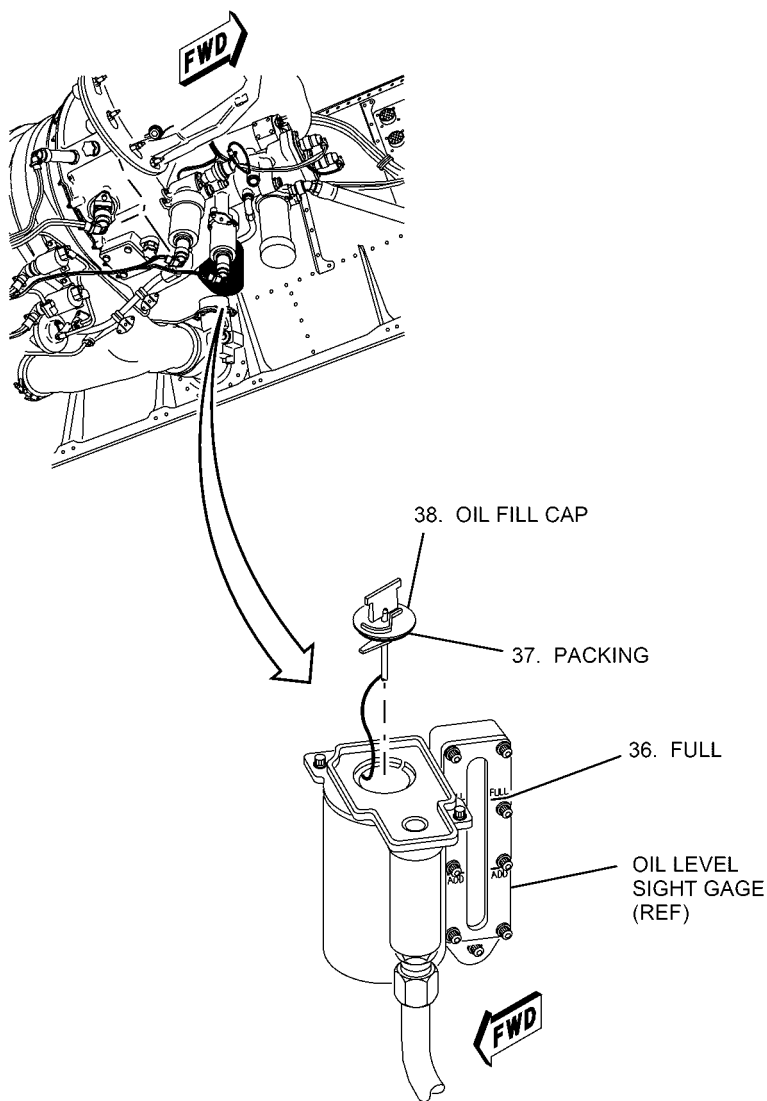


ICN-88277-G1249017-004-01

## **TO 1300I-2-12JG-49-1**

36. Add oil until oil level reaches **FULL** line on oil level sight gage.
37. Ensure packing is free from cuts and deterioration.
38. Install and lock oil fill cap.

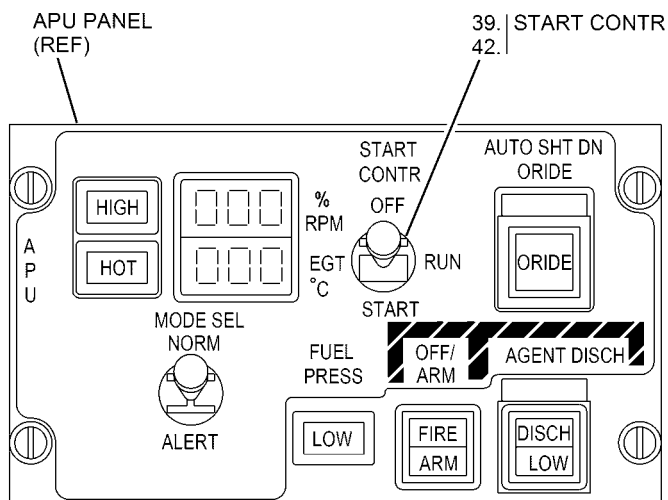




ICN-88277-G1249018-004-01

## **TO 1300I-2-12JG-49-1**

39. Remove warning tag from **START CONTR** switch on **APU** panel.
40. Perform APU ground operation for a minimum of 15 minutes (49-00-01, tasks 01-1 or 01-2 and 01-3).
41. Perform auxiliary power unit oil system replenishment (12-49-01, task 01-1).
42. Attach warning tag to **START CONTR** switch on **APU** panel.



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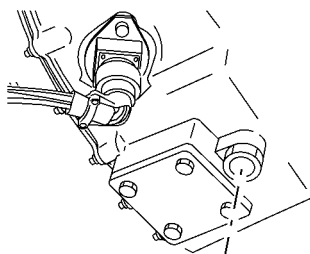
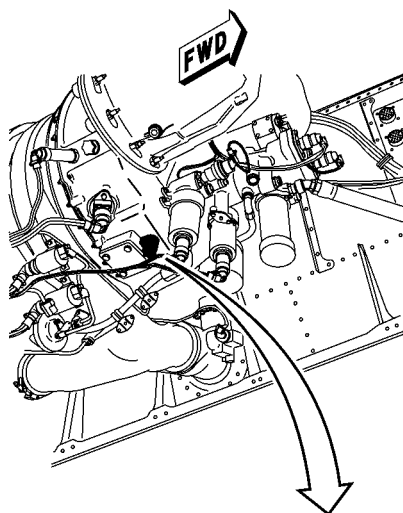
## **TO 1300I-2-12JG-49-1**

43. Remove chip collector.

■ 44. Inspect chip collector (TO 1300I-2-49GS-00-1, Chapter 2).

45. Remove and discard packing.

46. Install packing (PN M83248/1-011) and collector.



45. PACKING  
46.

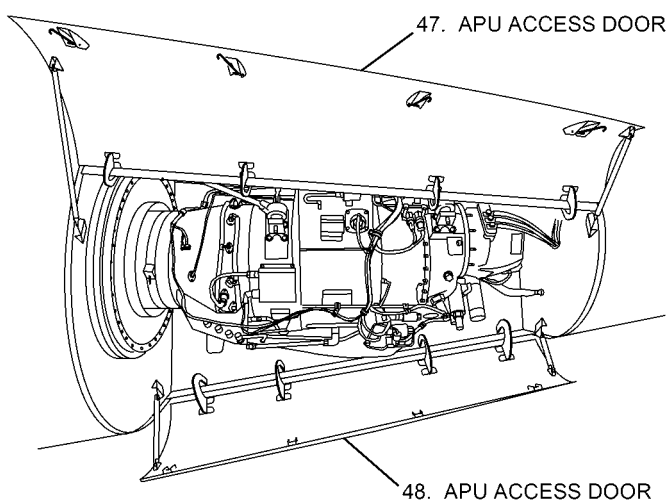
43. CHIP COLLECTOR



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## **TO 1300I-2-12JG-49-1**

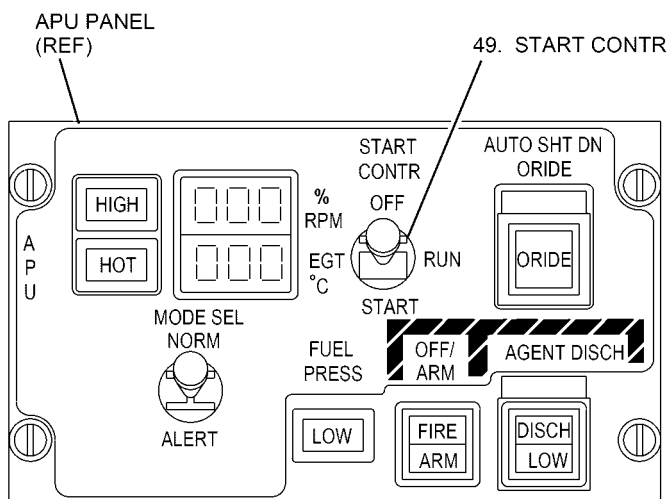
47. Close and latch APU access door (181ARD).
48. Close and latch APU access door (181BRD).



ICN-88277-G1249002-004-01

49. Remove warning tag from **START CONTR** switch on **APU** panel.





ICN-88277-G1249021-006-01

