

Seal Dynamics

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Instructions for Continued Airworthiness

**APU Oil Filler Valve Kit used on
Honeywell Model GTCP36-280[D] APU
installed in Boeing MD-88 Series Aircraft**

Report Number: SD3062011IFCA

Revision: A, Dated 08/05/2016

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Log of Revisions

<u>Revision</u>	<u>Page</u>	<u>Description</u>	<u>Date</u>	<u>Approval</u>
A	4	Section 5.0, Kit Description, Revised to Include Part Number SD98000	8/05/2016	S. Sanford
	5	Section 6.0, Servicing, Revised to add Part Number SD98000 and to Discuss Servicing Requirements with Regard to the Three Added O-rings to that Assembly		
	5-7	Section 7.0, Maintenance Instructions, Revised to add Figures 1A and 3. Added Instructions for Disassembling SD98000 and Removal of O-rings.		
	8	Section 11.0, Troubleshooting, Revised to Include Potential Malfunctions of APU Oil Filler Valve Assy SD98000		
	9	Revised Appendix A to Include Figures 16 and 16A. Added Item 12A		

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1.0 Purpose

The purpose of this report is to address FAR Part 25, Appendix H, Instructions for Continued Airworthiness, as each requirement pertains to the installation of Seal Dynamics APU Oil Filler Valve Kit on Honeywell Model GTCP36-280[D] APU installed in Boeing MD-88 aircraft and showing compliance with FAR 25.1529.

2.0 General Description

Seal Dynamics part number SD92001-3 is an oil filler valve kit which replaces an existing oil filler neck and cap on Honeywell Model GTCP36-280[D] APU. An existing oil filler housing, part number 3863058-5 or 3863058-6, is attached to the APU gearbox and provides a fill port used for oil servicing and includes an oil level sight glass. The Seal Dynamics oil filler valve provides an internal spring loaded (closed) poppet valve which helps prevent oil and oil fumes from escaping.

3.0 Distribution

This document is an integral part of the STC and Seal Dynamics FAA-PMA data package for the installation of the APU oil filler valve kit on Honeywell Model GTCP36-280[D] APU installed in Boeing MD-88 aircraft. Seal Dynamics will furnish at least one complete copy of this document to the aircraft operator at the time of the FAA-PMA issuance. Seal Dynamics will authorize the aircraft operator to make this document available to any person required to comply with any of the terms contained in this document.

Seal Dynamics will be responsible to inform the aircraft operator of any revisions incorporated in this document and advise the operator how to obtain the latest revisions as they become available.

4.0 Introduction

The STC modification is for Boeing MD-88 aircraft which use Honeywell Model GTCP36-280[D] APU. Seal Dynamics oil filler valve kit part number SD92001-3 and its installation instructions are form, fit and function interchangeable with the existing oil filler housing filler neck & cap; albeit, an additional 1" of vertical space claim.

5.0 Kit Description

Seal Dynamics Oil Filler Valve Kit part number SD92001-3 consists of one (1) Valve Assembly part number SD92002 or SD98000, one (1) Filler Cap Assembly part number SD92006 and four (4) Pins part number SD92004. Seal Dynamics oil filler valve kit is designed to replace the existing APU gearbox oil filler housing filler neck and cap. The kit provides a way to improve the initial filler neck & cap installation. In addition to the standard filler cap & gasket, a spring loaded (closed) poppet valve assembly further prevents the loss of oil or oil fumes even if the filler cap is inadvertently not completely secured in the closed position or is unintentionally left off.

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6.0 Servicing

No specific time interval for servicing is required however the Filler Cap Assembly part number SD92006 or the Filler Cap Gasket part number SD92006-2 may be replaced at the discretion of maintenance personnel based on visual examination.

No specific time interval for servicing is required however with Valve Assembly part number SD98000 installed, O-Rings part number SD98007, SD98008 and SD98009 may be replaced at the discretion of maintenance personnel based on visual examination. O-Rings can be replaced without removing the Oil Filler Housing from the APU.

7.0 Maintenance Instructions

Replacement of the Filler Cap Assembly part number SD92006 is accomplished by removing the bolt which secures the filler cap chain lanyard to the sight glass and then removing the filler cap from the filler neck. Installation of a new Filler Cap Assembly is accomplished by reversing the above procedure, see Figure 1 or 1A. Tighten sight glass bolt to a torque value of 25 in-lb.

Replacement of the Filler Cap Gasket part number SD92006-2 may be accomplished with the assistance of a flat blade screw driver using caution not to damage the gasket, see Figure 2.

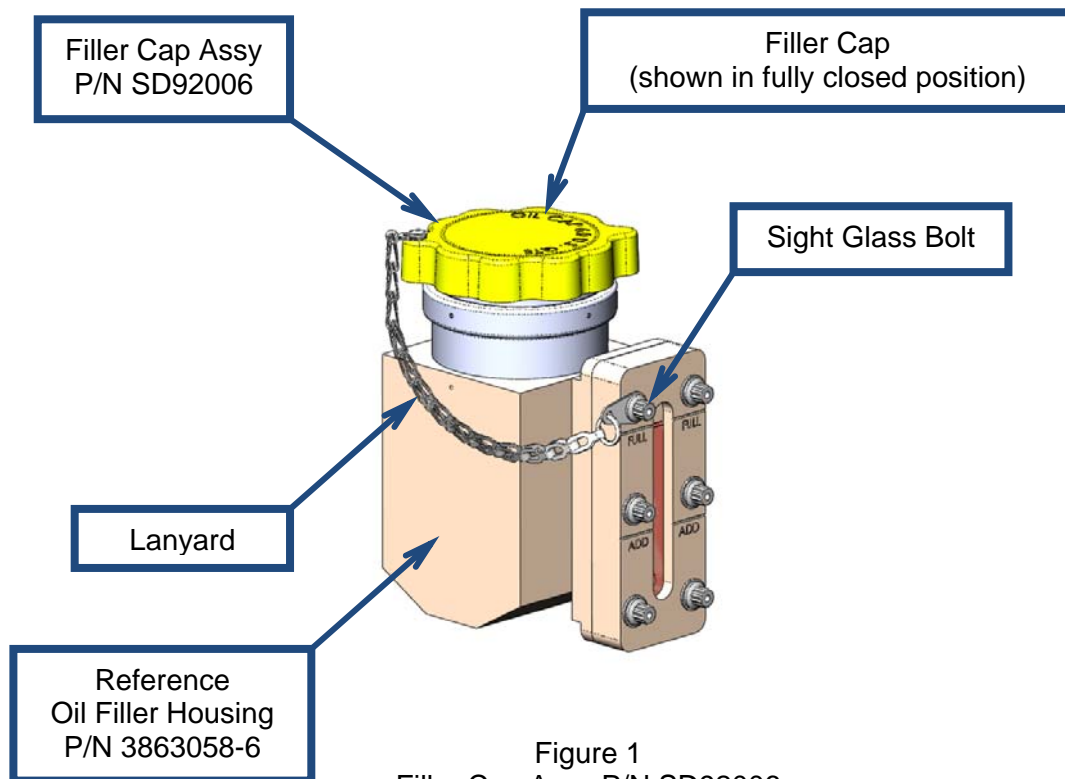


Figure 1
Filler Cap Assy P/N SD92006
Maintenance Instructions

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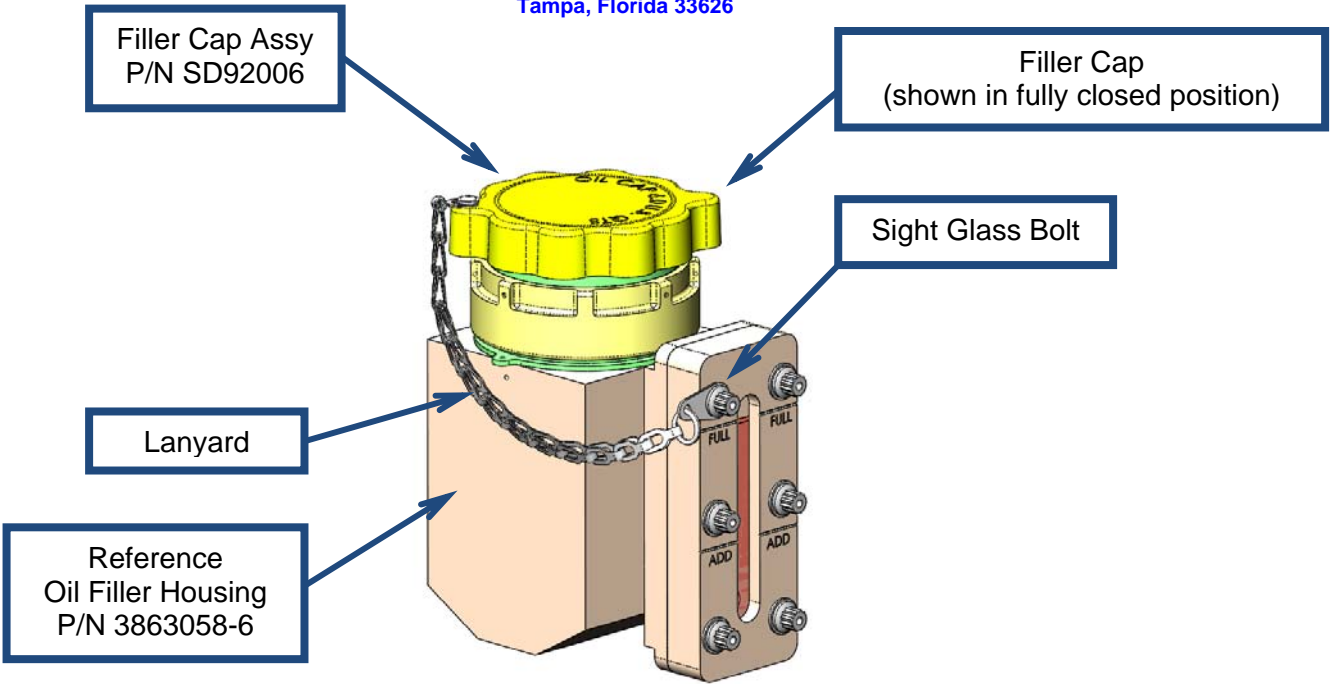


Figure 1A
Filler Cap Assy P/N SD92006
Maintenance Instructions

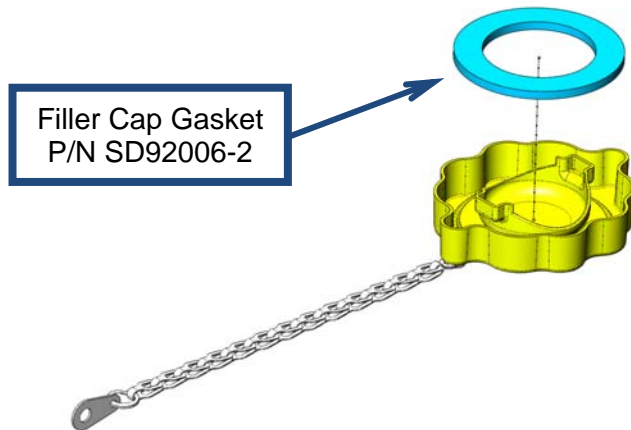


Figure 2
Filler Cap Gasket P/N SD92006-2
Maintenance Instructions

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The three O-Rings used in Valve Assy part number SD98000 can be replaced by unscrewing Cap Assy part number SD98001 and pulling out Valve Seat part number SD98002. Partially depressing Poppet part number SD98002 will assist in Valve Seat removal. Valve re-assembly should be accomplished per directions contained in Installation Instructions SD3062011INSTL as provided under Work Instructions Section 6.0. Figure 3 below illustrates the location for each O-Ring.

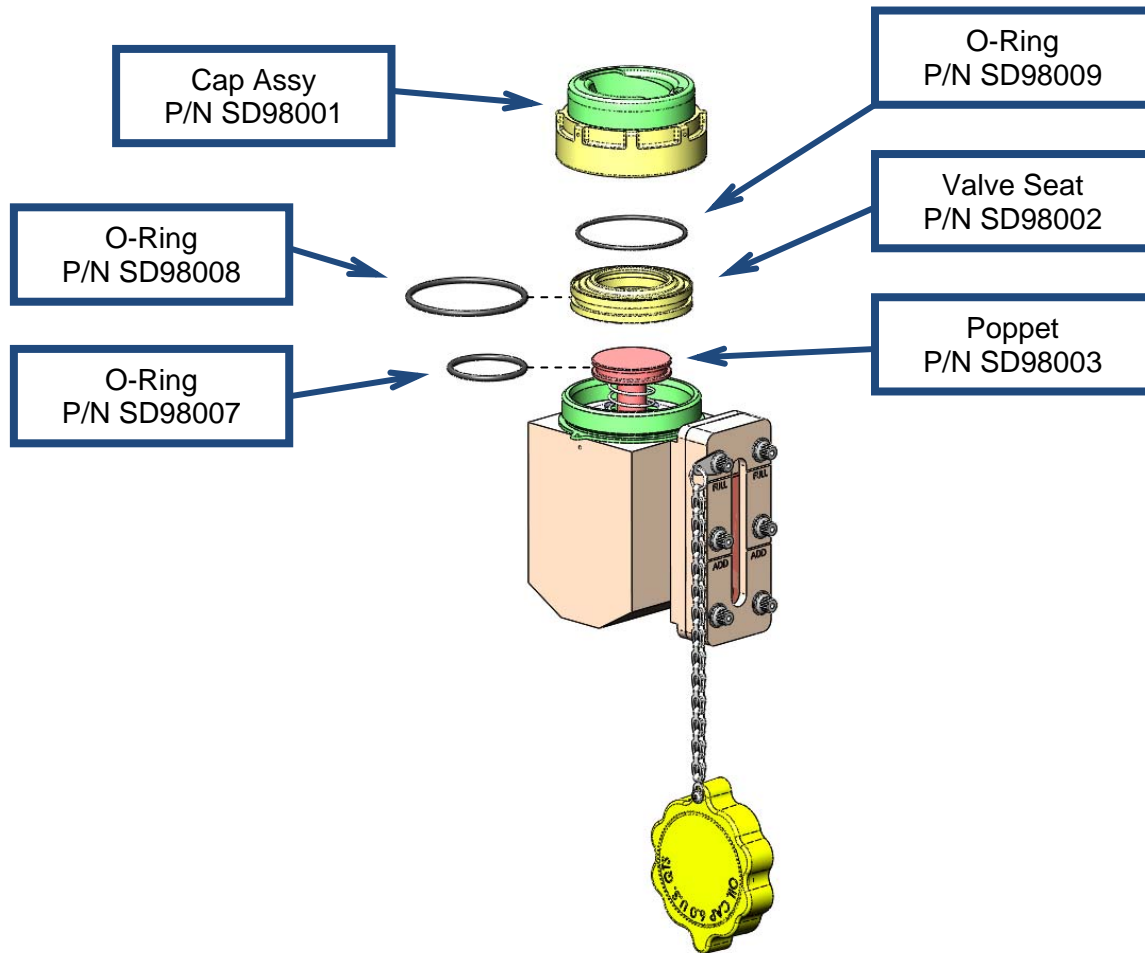


Figure 3
O-Ring Replacements
Valve Assy SD98000
Maintenance Instructions

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8.0 Installation Information

Refer to Seal Dynamics Report Number SD3062011INSTL for installation instructions for the APU Oil Filler Valve Kit.

9.0 Special Tools

No special tools are required.

10.0 Airworthiness Limitations Section

“The Airworthiness Limitations Section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations, unless an alternative program has been FAA approved.”

Installation of Seal Dynamics APU Oil Filler Valve Kit does not impose any airworthiness limitations on the aircraft. No changes are required to existing manuals.

“There are no new (or additional) Airworthiness Limitations associated with this equipment and/or installation.”

11.0 Troubleshooting

Potential malfunctions of APU Oil Filler Valve Assy SD92002 which may be detected during routine APU inspections or oil level servicing could include (1) a broken or worn spring (2) failure of the poppet valve to close properly (c) excessive oil leakage caused by a damaged or worn poppet valve rubber plug.

Potential malfunctions of APU Oil Filler Valve Assy SD98000 which may be detected during routine APU inspections or oil level servicing could include (1) a broken or worn spring (2) failure of the poppet valve to close properly (d) worn or leaking O-Rings.

The oil fill housing screen will trap potential loose valve parts preventing passage into the APU gearbox.

These malfunctions would not cause any serious safety hazards preventing normal APU operation or performance.

Remedial action requires that APU Oil Filler Valve SD92002 be replaced with APU Oil Filler Valve SD98000 which has improved low pressure performance and has O-Rings which can be easily replaced without removing the Oil Filler Housing from the APU.

12.0 Periodic Scheduled Servicing Tasks

None required.

13.0 Special Inspection Requirements

None Required.

14.0 Periodic Scheduled Preventative Maintenance

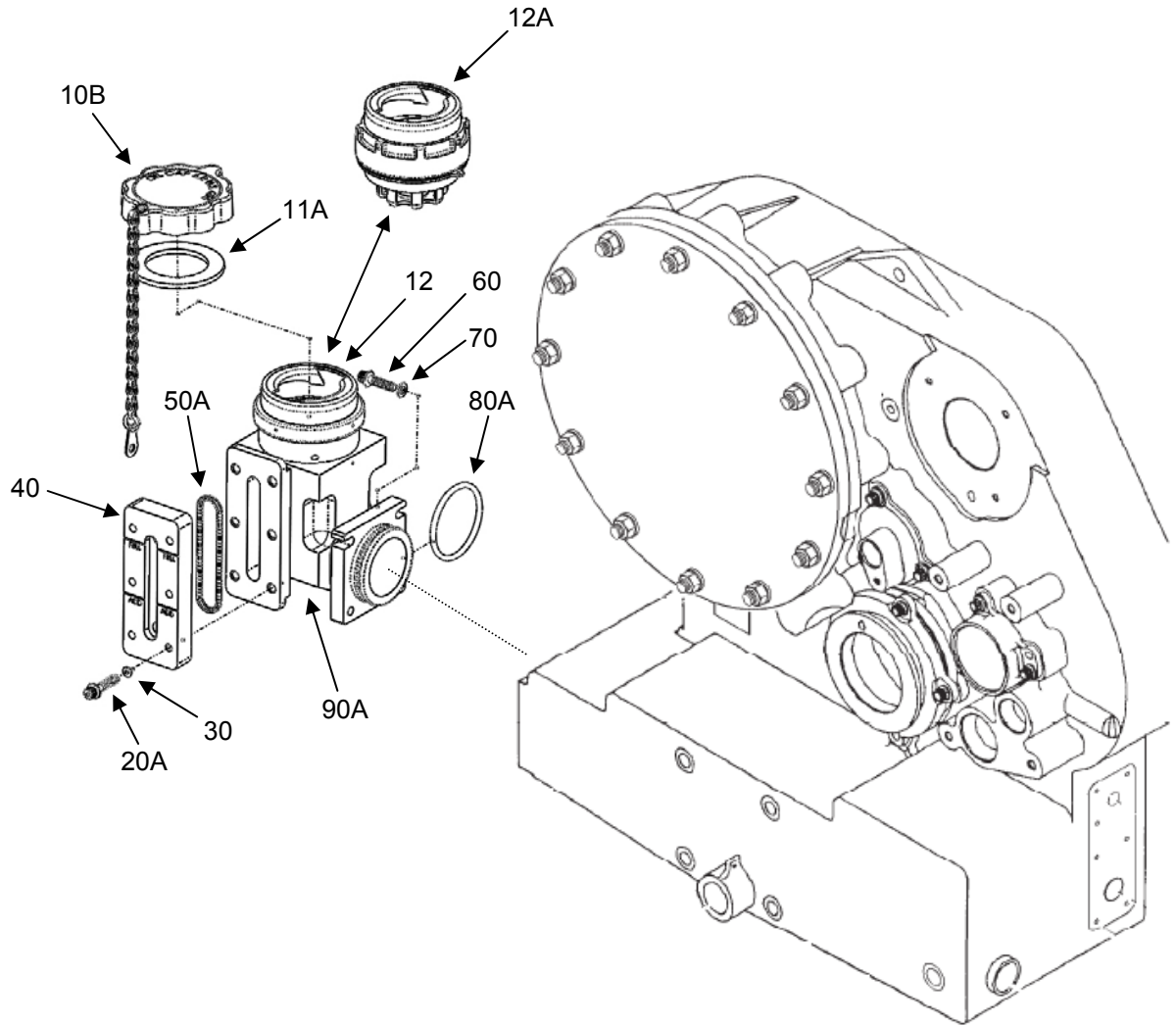
None required.

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Appendix A

Supplemental Illustrated Parts Catalog (IPC)



Gearbox Assembly (Post SB 49-7628)
(Partial Breakdown)
Figure 16 (Supplemental)

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ILLUSTRATED PARTS CATALOG
GTCP36-280[D]

FIG. ITEM	PART NUMBER	AIRLINE STOCK NO.	1234567 NOMENCLATURE	EFFECT (USE) CODE	UNITS PER ASSY
16 (SUP) - 1	3863019-1		GEARBOX ASSY (USE WITH PN 3800505-1) (PARTIAL BKDN) (SEE FIG. 1 FOR NHA) (REPL BY ITEM 1A)	A	RF
- 1A	3863019-2		GEARBOX ASSY (USE WITH PN 3800505-2) (PARTIAL BKDN) (POST SB 49-6658/49-6699) (SEE FIG. 1 FOR NHA) (REPLACES ITEM 1) (REPL BY ITEM 1, FIG. 16A)	B	RF
- 1B	3863019-3		GEARBOX ASSY (USE WITH PN 3800505-2) (PARTIAL BKDN) (POST SB 49-6940) (SEE FIG. 1 FOR NHA) (REPAIR PART) (NONPROCURABLE)	C	RF
- 10	FC2800		CAP (V10203)(194-518-9001) (REPL BY ITEM 10A)		1
- 10A	4300-3		CAP-OIL FILL (V10203)(194-518-9004) (POST SB 49-6721) (REPL BY ITEM 10B)		1
10B	SD92006		FILLER CAP ASSY (V5N582) (POST SB 49-7628) (REPLACES ITEM 10A)		1
- 11	4050		GASKET (V10203)(362-600-9002) (REPL BY ITEM 11A)		1
11A	SD92006-2		GASKET, FILLER CAP (V5N582) (POST SB 49-7628) (REPLACES ITEM 11)		1
12	SD92002		VALVE ASSY (V5N582) (POST SB 49-7628)		1
12A	SD98000		VALVE ASSY (V5N582) (POST SB 49-7628)		1

- ITEM NOT ILLUSTRATED

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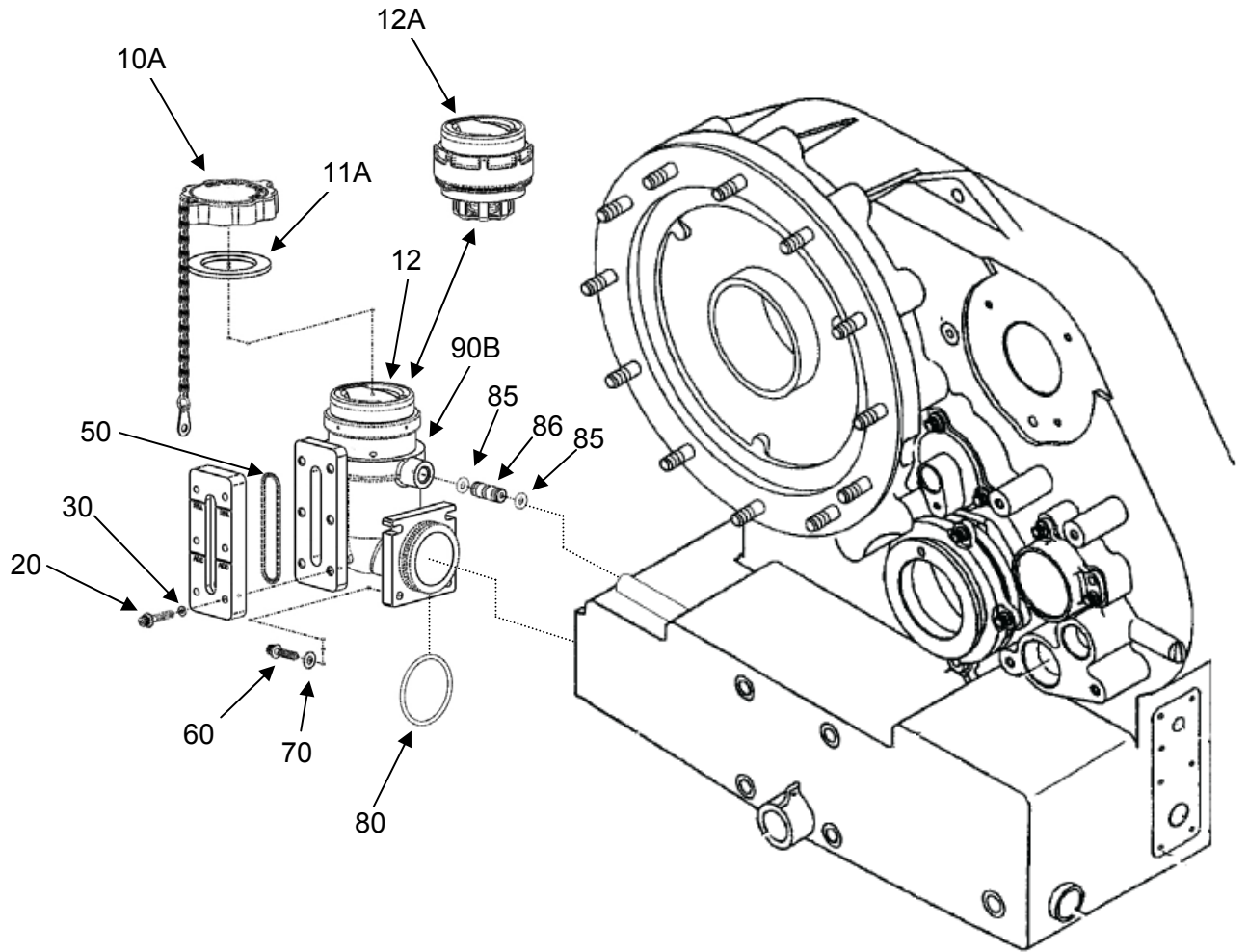
ILLUSTRATED PARTS CATALOG
GTCP36-280[D]

FIG. ITEM	PART NUMBER	AIRLINE STOCK NO.	1234567 NOMENCLATURE	EFFECT (USE) CODE	UNITS PER ASSY
16 (SUP) -13	SD92004		PIN (V5N582) (POST SB 49-7628)		3
- 20	MS9556-08		BOLT (REPL BY ITEM 20A)		6
20A	MS9556-12		BOLT (REPLACES ITEM 20)		6
30	AN960C10L		WASHER		5
40	3863057-1		SIGHT GLASS		1
- 50	S9413-164		PACKING-SCUPPER OIL FILL (REPL BY ITEM 50A)		1
50A	M83248-1-137		PACKING-SCUPPER OIL FILL (POST SPB GTE0860) (REPLACES ITEM 50)		1
60	MS9556-10		BOLT		4
70	NAS620C10L		WASHER		4
- 80	S9413-132		PACKING		1
80A	M83248-1-132		PACKING (POST SB GTE0741) (OPT TO ITEM 80)		1
- 90	3863058-1		HOUSING-SCUPPER OIL FILL (REL BY ITEM 90A)		1
90A	3863058-6		OIL FILL HOUSING ASSY (POST SB 49-7628) (REPLACES ITEM 90)		1

- ITEM NOT ILLUSTRATED

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Gearbox Assembly (Post SB 49-7628)
(Partial Breakdown)
Figure 16A (Supplemental)

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ILLUSTRATED PARTS CATALOG
GTCP36-280[D]

FIG. ITEM	PART NUMBER	AIRLINE STOCK NO.	1234567 NOMENCLATURE	EFFECT (USE) CODE	UINTS PER ASSY
16A (SUP) - 1	3863136-2		GEARBOX ASSY (USE WITH PN 3800505-2) (PARTIAL BKDN) (POST SB 49-6742) (SEE FIG. 1 FOR NHA) (REPLACES ITEM 1A, FIG. 16) (REPL BY ITEM 1A)	A	RF
- 1A	3863136-4		GEARBOX ASSY (USE WITH PN 3800505-2) (PARTIAL BKDN) (POST SB 49-6940) (REPLACES ITEM 1) (SEE FIG. 1 FOR NHA)	B	RF
- 10	4300-3		CAP-OIL FILL (V10203)(194-518-9004) (REPL BY ITEM 10A)		1
10A	SD92006		FILLER CAP ASSY (V5N582) (POST SB 49-7628) (REPLACES ITEM 10)		1
- 11	4050		GASKET (V10203)(362-600-9002) (REPL BY ITEM 11A)		1
11A	SD92006-2		GASKET, FILLER CAP (V5N582) (POST SB 49-7628) (REPLACES ITEM 11)		1
12	SD92002		VALVE ASSY (V5N582) (POST SB 49-7628)		1
12A	SD98000		VALVE ASSY (V5N582) (POST SB 49-7628)		1
- 13	SD92004		PIN (V5N582) (POST SB 49-7628)		3
20	MS9556-14		BOLT		6
30	NAS620C10L		WASHER		5
40	3863057-1		INDICATOR-SIGHT-OIL		1
50	M83248-1-137		PACKING-SCUPPER OIL FILL		1
60	MS9556-10		BOLT		4
70	NAS620C10L		WASHER		4
80	M83248-1-132		PACKING		1

- ITEM NOT ILLUSTRATED

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FIG. ITEM	PART NUMBER	AIRLINE STOCK NO.	1234567 NOMENCLATURE	EFFECT (USE) CODE	UNITS PER ASSY
16A (SUP)					
85	M83248-1-107		PACKING		2
86	3616091-1		TRANSFER TUBE		1
- 90	3863058-2		HOUSING-SCUPPER OIL FILL		1
- 90A	3863058-4		HOUSING-SCUPPER OIL FILL (POST SB 49-6939)		1
90B	3863058-5		OIL FILL HOUSING ASSY (POST SB 49-7628) (REPLACES ITEM 90A)		1

- ITEM NOT ILLUSTRATED