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Date: April 01, 2020

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

INLET BARRIER FILTER SYSTEM

for the

Bell Helicopter Textron Canada Limited

Model 206B Series Helicopters

FAA STC No. SR09451RC

17891 Chesterfield Airport Rd.
Chesterfield, MO 63005

PROPRIETARY DATA STATEMENT

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EFFECTIVITY

Effectivity for this ICA is for all Bell model 206B series helicopters with the Donaldson Company, Inc. (DCI) Inlet Barrier Filter (IBF) System installed.

SIGNATURES

Revision		Name	Signature	Date
Initial Release	Prepared By:	Roger Wallis	Original Signed by:	11-29-05
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	Reviewed By:	Mark Boyce	Mark Boyce	04-01-20
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RECORD OF REVISIONS

Revision No.	Revision Description	Release Date
IR	Initial Release	10-25-07
A	Updated all references from AFS to DCI and Aerospace Filtration Systems, Inc. to Donaldson Company, Inc., including logo, copyright information and textual references. Updated reference to website and removed the requirement to register in order to access website (Section 1.9) Added reference to eCommerce website. Corrected syntax errors. Added '14 CFR' to Section 1.4 Revised Record of Revisions to have detailed list of changes. Updated Data Plate reference in Section 6.2 Added reference to Zok cleaner and updated amount of oil to be used. Added note to Figure A-3 clarifying that Filter Adapter Frame bolts to stiffener of Bell cowling. Corrected parts list for Figure A-4. Revised Figure A-5 to reflect changes associated in 109110-101 assembly. Original figure was changed to three figures to account for the large number of associated parts. Revised A-5 parts list to reflected changes in 109100 (Rev F) drawing. Changed Figure A-8 to show both Floor Angles and parts list to match. Updated A-9 parts list to reflect changes to 109130 (Rev B) drawing. Revised A-13 parts list to show decal.	04-01-20

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LIST OF EFFECTIVE PAGES

LIST OF REVISIONS Revision A April 1, 2020

LIST OF EFFECTIVE PAGES

Title	Pages	Revision
Cover		A
Proprietary Data Statement & Effectivity	i	IR
Signatures	ii, iii blank	A
Record of Revisions	iv, v blank	A
List of Effective Pages	vi, vii blank	A
Table of Contents	viii, ix blank	IR
ICA Chapter 1 – Introduction (ATA Chapter 1)	1-1 to 1-8	IR
ICA Chapter 2 – Airworthiness Limitations (ATA Chapter 4)	2-1 to 2-3	IR
ICA Chapter 3 – Inspection Requirements and Overhaul (ATA Chapter 5)	3-1 to 3-6	IR
ICA Chapter 4 – Access Panels (ATA Chapter 6)	4-1 to 4-3	IR
ICA Chapter 5 – Storage (ATA Chapter 10)	5-1 to 5-2	IR
ICA Chapter 6 – Placards, Data Plates, and Markings (ATA Chapter 11)	6-1 to 6-2	IR
ICA Chapter 7 – Servicing (ATA Chapter 12)	7-1 to 7-7	IR
ICA Chapter 8 – Troubleshooting and Maintenance (ATA Chapter 22)	8-1 to 8-40	IR
ICA Appendix A – Illustrated Parts Breakdown	A-1 to A-31	A

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INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

For the Donaldson Company Engine Inlet Barrier Filter System
Installed on the Bell Helicopter Textron Canada Model 206B series Helicopters

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ICA CHAPTER 1 – INTRODUCTION

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1-1. SCOPE OF THIS MANUAL

These Instructions for Continued Airworthiness (ICA) provide the information required to do the maintenance and repair of the Donaldson Company, Inc. (DCI) Inlet Barrier Filter (IBF) system installation on the Bell Helicopter Textron Canada Limited (BHTCL) Model 206B series helicopters. The ICA should be used in conjunction with all pertinent BHTCL Model 206B series manuals and all publications listed in the List of Applicable Publications (LOAP).

NOTE

Thoroughly review and become familiar with the Appendix A – Illustrated Parts Breakdown section of this ICA before performing maintenance on the IBF system.

1-2. USE OF THIS MANUAL

The instructions that are given in this manual and those that have been changed by revisions, bulletins and/or alerts issued by DCI, BHTCL or the Airworthiness Directives issued by the local Aviation Authority, shall be strictly followed.

1-3. DEFINITIONS / TERMINOLOGY

Access door	Allows access to the components mounted below the Bypass Floor Assembly.
Actuator	An electromechanical actuator used to open / close the bypass door.
Air induction screen	Screen installed in the engine inlet on baseline configuration aircraft in lieu of the EAPS or the IBF, to prevent engine foreign object damage.
Air induction cowling	This cowling houses the major kit components including the IBF filter assembly, adaptor frame, bypass floor assembly, associated wiring and, if elected the access door option as shown in Figure 1-1.
Brownout	A brownout condition is a zero visibility condition usually caused by hovering in a dusty environment.
Bypass	The bypass is an alternate air inlet used only when the main engine air inlet through the filter becomes clogged or blocked.
Bypass door	Door located in the Bypass Floor Assembly just aft of the filter that when opened by the actuator allows unfiltered air for the engine to be drawn from the aircraft transmission bay.
Bypass floor assembly	Floor is located just aft of the filter assembly and forward of the engine inlet/firewall that seals the bottom of the inlet plenum chamber.

	Mounted on the floor are the bypass door, actuator, filter maintenance aid, and differential pressure switch.
Cockpit switch	A toggle switch, labeled "IBF BYPASS", is used to OPEN or CLOSE the bypass door. This switch is normally CLOSED and is toggled to the OPEN position only when the cockpit indicator, an amber caution "IBF FILTER" light on the aircraft caution/warning panel, illuminates.
Cockpit indicator	Cockpit indicator is an amber caution "IBF FILTER" light on the aircraft caution/warning panel that illuminates any time the differential pressure reaches or exceeds a preset limit.
Differential pressure	Drop in pressure across the filter assembly, which is measured by the differential pressure switch and the filter maintenance aid.
Delta P switch	Differential pressure switch.
Filter	Barrier type filter media made of multi-layers of cotton gauze saturated with specially formulated oil that forms a tack barrier that increases the capture efficiency of the filter.
Filter assembly	Filter media supported by pleated stainless steel screen on both sides and the filter assembly frame components around the perimeter of the filter media.
Filter assembly frame	Structure that frames, retains, and seals the outside edges of the filter media.
Filter downstream side	Clean side of the filter media (i.e. the side of the filter facing aft)
Filter media	A wet media consisting of a multi-layered cotton gauze saturated with specially formulated oil.
Filter pleats	Stainless steel screen is used to form the pleats and hold the filter media in place.
Filter upstream side	Dirty side of the filter media (i.e. the side facing forward into the air stream on which the dirt collects).
Inches of water	Unit of measure used for the differential pressure measured across the filter, as measured with a water manometer or similar apparatus.
Oiling	Process used to apply a uniform amount of oil on filter media.
OML covers	Outer mold line covers used to block off the hole left on the outer skin of the Air Induction Cowling when the EAPS exhaust duct is removed.

On-condition	Indicates that servicing of the filter is based on a Filter Maintenance Aid (FMA) indication in the area marked in "RED", Power Assurance Check (PAC) results (where a failed PAC is the result of a dirty Filter Assembly), and / or any "IBF FILTER" light indication on the cockpit indicator.
Plenum chamber	Space between the filter assembly and the engine inlet / firewall (fore and aft, respectively), and between the Air Induction Cowling and bypass floor assembly (top and bottom, respectively).
Service cycle	Period starting when a filter is cleaned, oiled and placed into service and ending when the filter is removed for its next cleaning and oiling.

1-4. ACRONYMS

14CFR = Title 14 of the Code of Federal Regulations
AFS = Aerospace Filtration Systems, Inc.
ATA = Air Transport Association of America, Inc.
BHTCL = Bell Helicopter Textron Canada Limited
DCI = Donaldson Company, Inc
EAPS = Engine Air Particle Separator
FAR = Federal Aviation Regulation
FMA = Filter Maintenance Aid
FMS = Flight Manual Supplement
FOD = Foreign Object Damage
IBF = Inlet Barrier Filter
ICA = Instructions for Continued Airworthiness
IP = Installation Procedures
IPB = Illustrated Parts Breakdown
LOAP = List of Applicable Publications
MGT = Measured Gas Temperature
OAT = Outside Air Temperature
OML = Outer Mold Line
PAC = Power Assurance Check
RFM = Rotorcraft Flight Manual
SAE = Society of Automotive Engineers
TCDS = Type Certificate Data Sheet
TIS = Time in Service

1-5. WARNINGS, CAUTIONS, AND NOTES

Warning, cautions and notes are used throughout this manual to emphasize important and critical instructions.

WARNING

IF YOU DO NOT FOLLOW THE INSTRUCTIONS THAT ARE GIVEN IN A WARNING, PERSONAL INJURY CAN OCCUR.

CAUTION

IF YOU DO NOT FOLLOW THE INSTRUCTIONS THAT ARE GIVEN IN A CAUTION, YOU CAN CAUSE DAMAGE TO THE HELICOPTER OR TO THE COMPONENTS.

NOTE

A note includes supplemental data about the procedure, the practice, the condition, etc. for the maintenance task.

1-6. UNITS OF MEASURE

U.S. Standard units of measure have been used in preparation of this manual. Typical units used in this manual include - inches of water measuring differential pressure, inch-pounds of torque, etc.

1-7. REFERENCE PUBLICATIONS

Reserved for future use.

1-8. LIST OF APPLICABLE PUBLICATIONS

Bell Helicopter Textron
206B Series Technical Publications

FAA
FAA Advisory Circular, AC 43.13-1B, Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair

1-9. DISTRIBUTION OF CHANGES

Changes shall be distributed by posting them on the DCI website www.donaldsonaerospace-defense.com. The ICA may also be found on https://ShopDonaldson.com.

NOTE

This webpage should be checked prior to the performance of any maintenance actions on the IBF system to confirm possession of the latest FAA approved revision. If access to the internet is not possible, contact DCI at (636) 300-5200 for assistance.

1-10. INDICATION OF CHANGES

All changes will be complete revisions with all pages marked with the latest revision letter. All changes since the last revision shall be marked with a black vertical bar in the left side of the page.

1-11. SYSTEM DESCRIPTION AND OVERVIEW

a. The Bell 206B IBF systems are offered to operators in two available kits. DCI Kit No. 109000-101 that includes the Inlet Barrier Filter (IBF) system only and DCI Kit No. 10900-103 that includes the Inlet Barrier Filter (IBF) system and a quick access door modification.

b. The IBF provides a pair of forward-facing barrier type filter assemblies just aft of the aircraft's bifurcated engine air inlet system in the same location and in lieu of the Engine Air Particle Separator (EAPS) or Air Induction Screen. The IBF installation requires no structural modifications to the existing Air Induction Cowling except for the installation of additional structure and the optional access door. The access door has been added on the top side of the Air Induction Cowling to allow the operator quick access to the filter for servicing, which is especially helpful during extensive desert type operations. The IBF provides aircraft owner/operators a high performance engine air filtration option that significantly improve filtration efficiency over the EAPS. The IBF will increase the life of the engine through a dramatic reduction in erosion resulting from the substantial increase in filtration efficiency without degrading engine performance. The DCI IBF system provides dust separation efficiencies exceeding 99% for Society of Automotive Engineers (SAE) AC Coarse and AC Fine dust as defined in specification SAE J726, Air Cleaner Test Code.

c. The IBF system does not interfere with any of the commercial items installed in the Bell 206B series production aircraft. The IBF is a complete system in which safety, functionality and serviceability were major considerations in the design process. The major kit components include the filter assembly, cockpit switch/indicator, engine wash tube assembly, bypass floor assembly (which includes the bypass door assembly, actuator, differential pressure switch, filter maintenance aid and wiring harness), and an optional access panel. Figure 1-1, located at the end of this chapter, provides an exploded view of the major kit components with the exception of the cockpit switch, indicator light and wiring harness. For a detailed illustration of all kit components, see the Appendix A – Illustrated Parts Breakdown.

d. The major components making up the bypass system include the bypass door, actuator, wiring harness, cockpit switch, indicator light, and differential pressure switch.

e. The IBF system provides a means of monitoring the condition of the filter both in-flight and on the ground, and a bypass capability should flow through the filter become restricted. In-flight, when the differential pressure is too high, which means the filter is becoming too dirty for the engine to operate efficiently; the indicator light will illuminate alerting the pilot. At this point, the IBF is operating at approximately the same inlet differential pressure normally experienced with the EAPS installed. Upon illumination of the "IBF FILTER" caution light, the pilot must closely monitor the engine and if engine degradation is evident place the cockpit toggle switch, labeled IBF BYPASS, in the OPEN position to activate the actuator and open the bypass door. The electromechanically actuated bypass door permits unfiltered air to enter the engine inlet plenum chamber should the filter media become obstructed - and can be opened or closed as required. On the ground, a Filter Maintenance Aid, mounted under the bypass floor assembly, displays the maximum differential pressure across the filter reached during the last flight. It is accessible only on the ground, providing the pilot or mechanic the ability to visually gauge the current condition of the filter. This gives the mechanic the ability to forecast the timing of the next service cycle. The Filter Maintenance Aid can be reset by depressing the yellow button marked "PUSH TO RESET" located on the end of the Filter Maintenance Aid (See Pictures 3-1 & 3-2).

f. The design of the bypass system allows the ground crew to cycle the bypass door with power on the aircraft. The switch can be flipped up to actuate the bypass door open, and then flipped down to actuate it closed. Full functional verification of the bypass system including all electromechanical components and the filter maintenance aid is possible during routine maintenance (see Chapter 8).

g. Removal of the filter assemblies for servicing is easily achieved by removal of seven fasteners. Six of the fasteners are accessible through the engine air inlets, and then there is a single fastener that is common to the two filter assemblies that is accessible either through the access door on the top side of the Air Induction Cowling or by removal of the cowling. The two filter assemblies can then be removed.

h. The nozzle on the engine water wash tube assembly provides the equivalent engine wash capability as currently provided by similar nozzles mounted on the EAPS and Air Induction Screen installations.

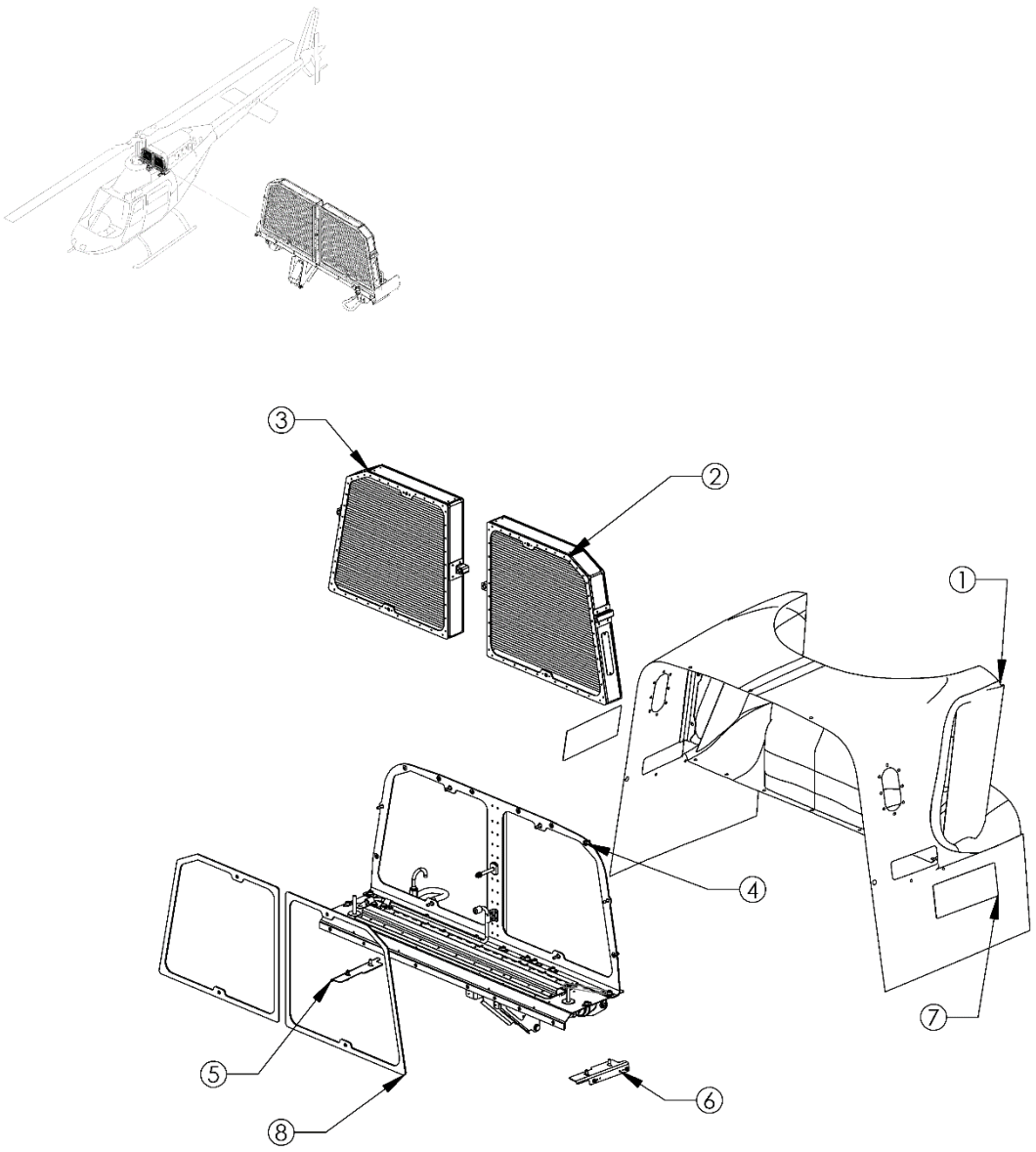

Figure 1-1. IBF System Installation

ITEM NO.	ITEM NAME
1	Air Induction Cowling
2	Filter Assembly RH
3	Filter Assembly LH
4	Frame and Floor Assembly
5	L/H Floor closeout
6	R/H Floor closeout
7	EAPS Exhaust Port Cover
8	Seal - Filter

ICA CHAPTER 2 – AIRWORTHINESS LIMITATIONS

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AIRWORTHINESS LIMITATIONS

FAA APPROVAL BLOCK

The Airworthiness Limitations Section is FAA approved and specifies maintenance required under Secs. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

Revision	Date of FAA Signature	FAA Signature
Initial Release	December 14, 2005	Gary A. Sharon
A	June 29,2020	ROY E BOFFO Digitally signed by ROY E BOFFO Date: 2020.06.29 21:50:45 -05'00'

2-1. GENERAL

The Airworthiness Limitations for the DCI Inlet Barrier Filtration system (IBF) as installed on Bell Helicopter Textron Canada Limited (BHTCL) model 206B series helicopters are FAA approved.

NOTE

The retirement life given or the failure to give a retirement life to a component does not constitute a warranty of any kind. The only warranty applicable to any component is the warranty included in the Purchase Agreement for the helicopter or the component.

2-2. FILTER RETIREMENT LIFE

After fifteen (15) cleaning and oiling cycles, the filter must be removed from service at the next servicing interval. The filter data tag is scribed after each cleaning and oiling cycle (see Paragraph 6-2). When all numerals (1-15) on the data tag have been scribed out, the filter shall be removed from service at the next service interval. No further cleaning cycles are authorized.

2-3. LIFE LIMITED COMPONENTS

There are no fatigue life limited components on the IBF System. The only life limited component is the filter assembly. See Paragraph 2-2.

ICA CHAPTER 3 –INSPECTION REQUIREMENTS AND OVERHAUL

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3-1. INSPECTION REQUIREMENTS

3-1.1. GENERAL REQUIREMENTS

a. Inspection of the IBF system consists of, in general terms, inspection of the filter assembly, inspection of the structural components, inspection of electrical and system components, and a special inspection at three specified points based on hours after initial installation. The components of the system are divided, generally as a scope of work, into Filter Assembly / Water Wash Tube / Seal, Structural Components, and Systems and Electrical components as is done throughout the manual.

b. Refer to the Appendix A - Illustrated Parts Breakdown for component illustrations that provide supplemental information relative to proper assembly configuration, orientation, and locations for all components to be inspected per Chapter 3 and Table 3-1. Refer to Appendix A, Figure A-1 & A-2 for the primary kit components. Refer to Appendix A, Figures A-2, A-3 and A-5 for filters, wash tube and filter seal components. Refer to Appendix A, Figures A-5, (items 2, 9, 27 & 34 plus associated tubes, hoses, clamps and brackets) and A-12 thru A-15 for items considered the primary systems and electrical components. Refer to Appendix A, Figures A-3 (less the filter assemblies and systems/electrical components) and A-11 for items considered structural components.

c. Table 3-1 gives a recommended inspection schedule for the components of the system. The Trouble-Shooting Guide, Table 8-1 found near the end of Chapter 8, also gives additional guidance when performing inspections and encountering trouble with the system. Chapter 8 also provides specific inspection guidance and removal/installation procedures for each component and is structured in the same three major groups as discussed above.

3-1.2. FILTER ASSEMBLY INSPECTION

a. The following inspections pertain to the barrier filter assembly and associated components, which include the filter assembly (i.e. filter frame and filter media), engine wash tube assembly, and all associated seals/fasteners.

b. ON-CONDITION UP TO TIS LIMIT: Any FMA indication in the “RED”, “FILTER” light indication of the IBF cockpit indicator or failed PAC requires a conditional inspection in accordance with Table 3-1.

c. VISUAL: All filter assembly components (plus engine wash tube assembly, seals and fasteners) are to be visually inspected at every annual in accordance with Table 3-1 checking for the following: filter media for tears, punctures, uneven or damaged pleats; seals for tears/damage; frame components for corrosion, cracks, distortions near holes, and check for missing or damaged fasteners.

3-1.3. STRUCTURAL COMPONENT INSPECTIONS

VISUAL: All structural IBF components are to be inspected in accordance with Table 3-1 every 100 hours and annual. These components include the following: Bell 206B series Air Induction Cowling (OEM Equipment), Access Door (Optional Equipment), Filter Adapter Frame Assembly, Bypass Floor Assembly, OML Covers, and Close out Angles.

3-1.4. SYSTEMS AND ELECTRICAL COMPONENT INSPECTIONS

a. VISUAL: The systems and electrical components are to be visually inspected in accordance with Table 3-1 every 100 hours and annual. These components include the following: Wiring, Wiring Harness, Connectors, Backshells, Circuit Breaker, Cockpit Switch, Cockpit Indicator, Differential Pressure Switch, Filter Maintenance Aid, and Actuator.

b. FUNCTION CHECK: Certain systems and electrical components are also to be function checked in accordance with Table 3-1 every annual. These components include the following: Circuit Breaker, Cockpit Switch, Cockpit Indicator, Differential Pressure Switch, Filter Maintenance Aid, and Actuator.

c. FMA CHECK: The FMA check is performed to ascertain the current condition of the filter or to gage the trend in accumulation of dirt. The FMA check is only a check of the indicator reading (See Picture 3-1). As such it is not considered an inspection of the FMA. The inspection Table 3-1 does not require a specific "inspection" interval of the FMA. The condition of the Filter Assembly and its accumulation of dirt will show up as an indication on the FMA. Thus, operational environment, more so than time in service, dictate how often the FMA should be checked in order to help determine the next Filter Assembly service requirement. It is an aid in scheduling the Filter Assembly servicing. At any time prior to an FMA indication in the "RED" (See Picture 3-1), a failed PAC, or a "IBF FILTER" indication on the cockpit indicator, when maintenance or flight personnel see a trend based on the FMA readings over time that would warrant servicing of the filter due to operational considerations, such as when the aircraft will be operated in a remote or off-site location without the ability to readily service the filter, the filter may be serviced, or replaced. See section 7-2 for a further description of the use of the FMA as it relates to the Filter Assembly service interval. See filter servicing Paragraph 7-3.

NOTE

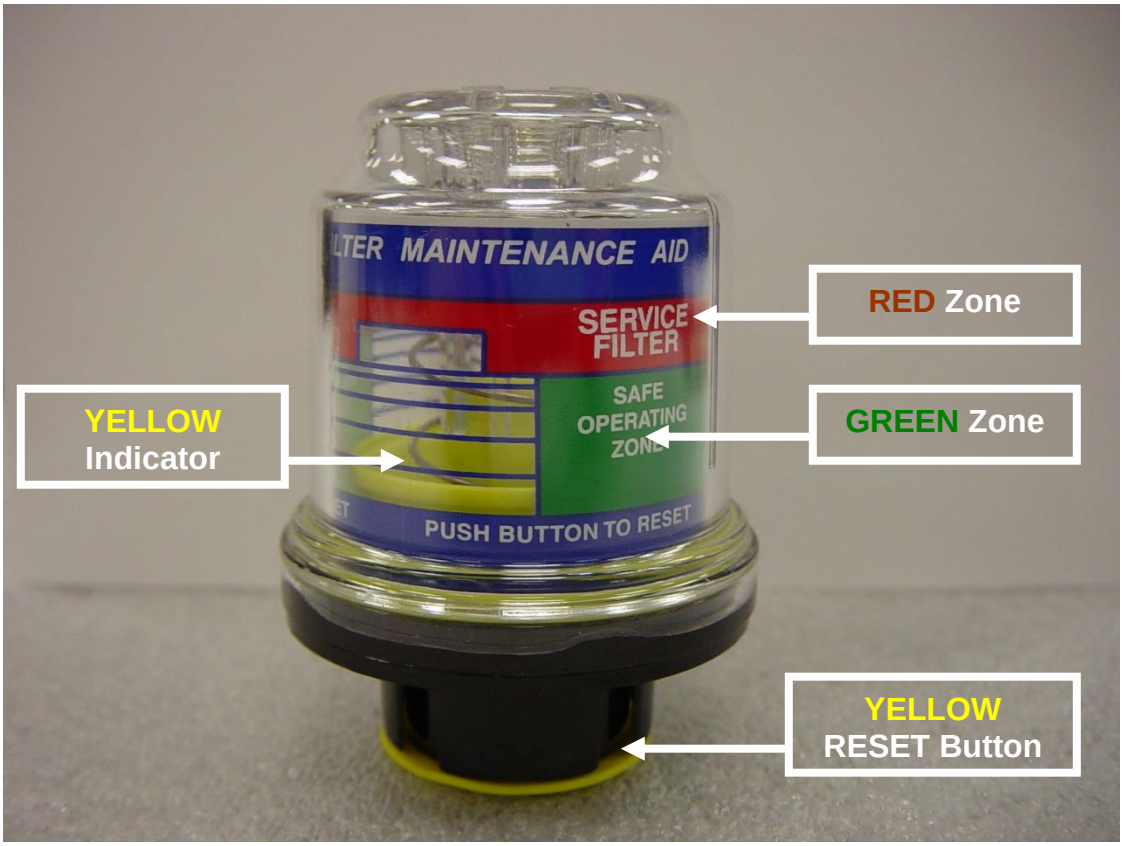
The Filter Maintenance Aid is designed to hold the highest differential pressure across the filter assembly reached during the last flight and should be reset after servicing of the filter assembly by depressing the yellow button marked "PUSH TO RESET" located on the end of the filter maintenance aid (See Picture 3-2). The Filter Maintenance Aid (FMA) will not provide accurate readings when the engine air inlet snow deflector kit is installed, and therefore should not be used. Upon removal of the snow deflector kit the FMA should be reset by depressing the yellow button marked "PUSH TO RESET" located on the end of the filter maintenance aid (See Picture 3-2).

3-1.5. IBF BYPASS COCKPIT SWITCH FUNCTION CHECK

FUNCTION CHECK: A function check of the IBF BYPASS Cockpit Switch is to be performed every 100 hours (See Table 3-1). Perform the function check as follows: (1) With aircraft power ON, place the IBF BYPASS switch in the OPEN position and visual check (through the engine air cowling RH access door) that the IBF bypass door is open. (2) Place the IBF BYPASS switch in the CLOSED position and visual check (through the engine air cowling RH access door) that the IBF bypass door is closed and ensure aircraft power is OFF. If conditions are not met refer to the Table 8-2 Troubleshooting Guide in the Instructions for Continued Airworthiness (ICA), AFS-BH206B-IBF-KIT-ICA.

3-2. OVERHAUL REQUIREMENTS

There are no overhaul intervals or requirements applicable to this product at this time.



Picture 3-1: FMA OPERATION - "YELLOW Indicator" position relative to SAFE OPERATING ZONE ("GREEN Zone") or SERVICE FILTER ("RED Zone") markings defines current filter condition and pushing "YELLOW RESET Button" resets indicator.

Picture 3-2: FMA RESET LOCATION - unit is mounted to bottom of IBF floor assembly and is accessed through RH access door on air induction cowling**.**

Table 3-1. Inspection Intervals

Components	Inspection Type	Inspection	Inspection Intervals			
			Scheduled		Time in Service	Notes
			100 Hrs.	Annual		
Filter Assembly as defined in para. 3-1.2.	Conditional	1. On-Condition up to TIS Limit			300 hrs. / 1 yr.	2, 3, 4, 5, 7
	Scheduled	2. Visual		X		1, 2, 4, 6, 7
Structural Components as defined in para. 3-1.3.	Scheduled	1. Visual	X	X		1, 2, 4, 6
Systems and Electrical Components as defined in para. 3-1.4.	Scheduled	1. Visual	X	X		1, 2, 4, 6
	Scheduled	2. Function Check		X		1, 2, 4, 5
IBF Bypass Cockpit Switch as defined in para. 3-1.5.	Scheduled	1. Function Check	X			8

NOTES:
1. Refer to Chapter 8 for specific inspection requirements and functional check procedures.
2. Refer to Chapter 4 (Figure 4-1) for access information.
3. IBF FILTER light or failed PAC. This inspection is required any time an IBF FILTER light indication or failed PAC is reported by the pilot.
4. Reference Appendix A – Illustrated Parts Breakdown.
5. Reference Trouble-Shooting Guide, Table 8-2 of this manual.
6. Perform a visual inspection checking for deformation, buckling, corrosion, cracks, dents, tears, or other signs of damage and repair in accordance with the procedures in Chapter 8.
7. The maximum filter service interval between cleanings under any conditions is 300 flight hours or 1 year TIS, whichever comes first. Up to the TIS limit, the inspection of the Filter Assembly is “On-Condition” based on an FMA indication in the “RED”, any “IBF FILTER” light indication on the Cockpit Indicator, and / or upon a failed PAC (where the failed PAC is the result of a dirty Filter Assembly).
8. If conditions are not met refer to the Table 8-2 Troubleshooting Guide in the Instructions for Continued Airworthiness (ICA), AFS-BH206B-IBF-KIT-ICA.

ICA CHAPTER 4 – ACCESS PANELS

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4-1. GENERAL DESCRIPTION

This chapter addresses how to access the IBF system installation for servicing or maintenance.

4-2. ACCESS FOR FILTER SERVICING

Access for removal/installation of the filter assembly for filter servicing requires removal of the air induction cowling assembly (Figure 4-1, Item A) if the standard IBF system kit (DCI IBF Kit No. 109000-101) is installed, or removal of the optional access door (Figure 4-1, Item B) if the IBF system kit with access door option (DCI IBF Kit No. 109000-103) is installed. See Chapter 8 for filter assembly removal/installation procedures and Chapter 7 for filter servicing procedures.

4-3. ACCESS FOR MAINTENANCE

4-3.1. ACCESS ABOVE BYPASS FLOOR ASSEMBLY

Access for maintenance of the system components located above the bypass floor assembly (i.e. filter assembly, engine water wash tube assembly, filter frame adapter, bypass door, etc.) requires removal of the air induction cowling assembly (Figure 4-1, Item A) if the standard IBF system kit (DCI IBF Kit No. 109000-101) is installed, or removal of the optional access door (Figure 4-1, Item B) if the IBF system kit with access door option (DCI IBF Kit No. 109000-103) is installed. See Chapter 8 for component removal/installation procedures, inspection, troubleshooting guide, adjustment/calibration/repair procedures.

4-3.2. ACCESS BELOW BYPASS FLOOR ASSEMBLY

Access for maintenance of components located below the bypass floor assembly (i.e. filter maintenance aid, pressure differential switch, actuator, wiring harness/connectors) requires opening the RH access door (Figure 4-1, Item C) or the LH access door (located in the same location on the opposite side of the aircraft).

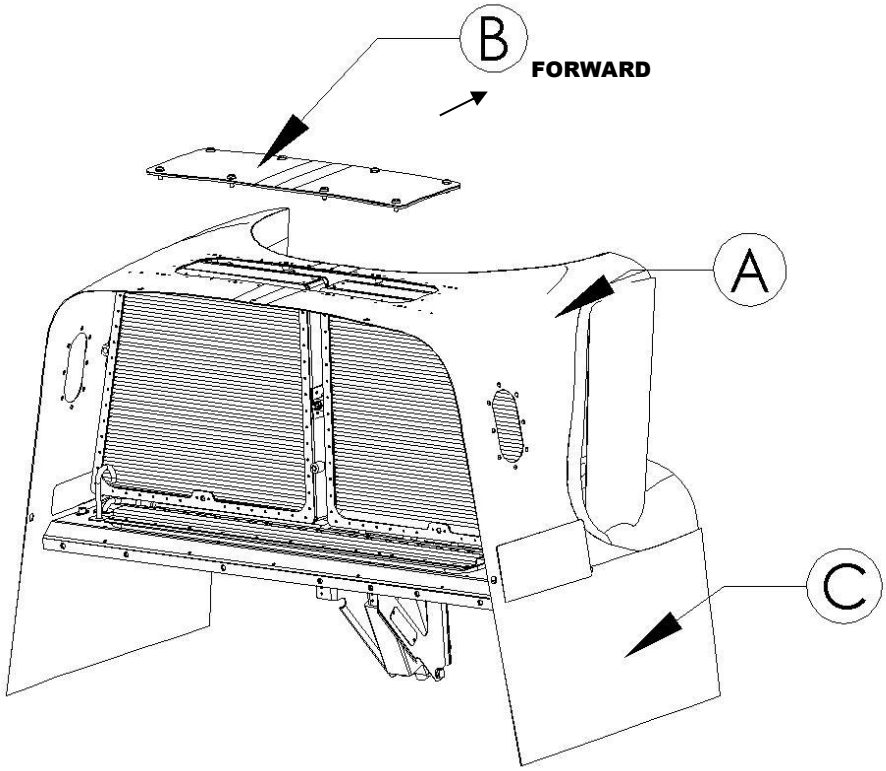

Figure 4-1. Locations of (A) Air Induction Cowling, (B) IBF Access Door and (C) RH Access Door

ICA CHAPTER 5 – STORAGE

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5-1. STORAGE

CAUTION

NEVER INSTALL A FILTER ASSEMBLY AND/OR OPERATE AN AIRCRAFT WITH A FILTER INSTALLED WHERE THE FILTER MEDIA HAS NOT BEEN PROPERLY OILED.

Long-term storage has no effect on filter assembly reliability if stored unoiled (dry) in a cool, dry location to discourage possible fungus growth. After storage, the only maintenance to be performed on the filter before installation on the aircraft is oiling of the filter media. Refer to filter servicing Paragraph 7-3.

ICA CHAPTER 6 – PLACARDS, DATA PLATES, AND MARKINGS

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6-1. MARKING – PART NUMBER / PMA / SERIALIZATION

The IBF system is marked on the floor assembly to contain the top level part number, the serial number of the system, and the FAA PMA markings, if applicable.

6-2. DATA PLATE – FILTER ASSEMBLY

After the filter assembly has been serviced an "X" is marked through one of the unmarked boxes on the serviceability tag (see Figure 6-1). When the last unmarked box is crossed through, the filter assembly will have to be replaced at the next servicing. See Chapter 7 for servicing procedures.

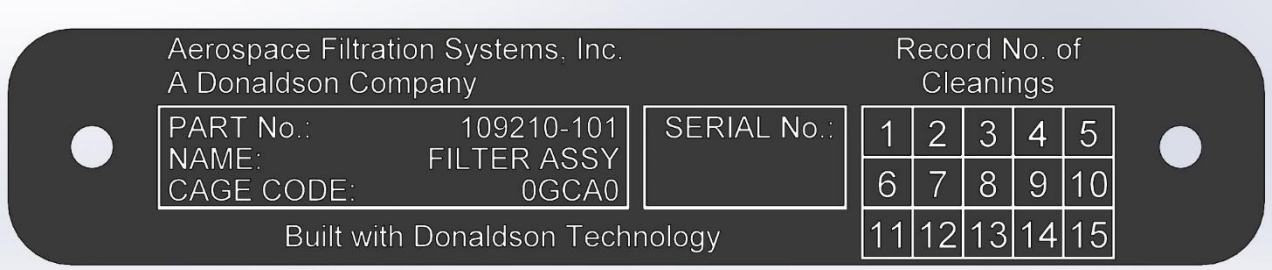

Figure 6-1. Example of Filter Assembly Data Plate

6-3. PLACARDS / MARKINGS - COCKPIT

a. The IBF uses a cockpit indicator in the aircraft caution/warning panel, which is amber and reads "IBF FILTER" when illuminated. See Picture 6-1(A) for markings

b. The cockpit switch is a simple toggle switch located on the instrument panel, which is labeled "IBF BYPASS – OPEN/CLOSED". See Picture 6-1(B) for markings.

c. The IBF circuit breaker in the overhead console is marked "IBF". See Picture 6-1(C) for markings.

(A) **(B)** **(C)**

Picture 6-1. IBF MARKINGS - (A) Cockpit Indicator, (B) Cockpit Switch & (C) Circuit Breaker

ICA CHAPTER 7 – SERVICING

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7-1. AUTHORIZED MATERIALS

Service DCI Filter with only the following:

a. Air Filter Oil

- Squeeze bottle (4.0 oz) - DCI P/N 100100-040
- 1 qt. bottle - DCI P/N 100100-320
- 1 gal. container - DCI P/N 100101-000
- 5 gal. container - DCI P/N 100105-000

b. Air Filter Cleaner

- 1 gallon container - DCI P/N 100201-000
- 5 gallon container - DCI P/N 100205-000
- Zok 27

NOTE

Refer to Chapter 8 for removal, inspection, repair and installation of filter assembly. Upon satisfactory inspection and any required maintenance of the filter assembly proceed with the rest of the servicing instructions for the filter assembly.

7-2. FILTER SERVICE INTERVALS

The filter service interval is based on the specific aircraft operating environment. The filter service intervals section is broken up in three parts: general requirements pertaining to all operations, specific recommendations for operations on prepared fields, and for operations in severe environments.

7-2.1. GENERAL REQUIREMENTS

NOTE

The maximum filter service interval between cleanings under any conditions is 300 flight hours or 1 year TIS, whichever comes first. Up to the TIS limit, the filter is considered an "on-condition" item.

NOTE

The FMA is an aid to help maintenance personnel and pilots to ascertain the condition of the filter at any point in time or to trend the accumulation of dirt on the Filter Assembly over a period of time.

a. Up to the 300 hour / 1 year TIS limit, the "on condition" requirement for servicing the Filter Assembly is based on an FMA indication, a "IBF Filter" light indication on the cockpit indicator, or upon a failed PAC (where the failed PAC is the result of a dirty Filter Assembly).

b. Any "IBF FILTER" indication, where the pressure sensor and indicating system are working properly, requires servicing of the filter assembly. See filter servicing Paragraph 7-3.

c. The gradual increase in differential pressure across the IBF filter assembly causes an increase in the measured gas temperature (MGT) required to produce a specified torque as measured during the PAC. A failed PAC due to an increase in differential pressure across the filter is cause for servicing of the filter assembly. See filter servicing Paragraph 7-3.

d. Any FMA indication in the area marked in "RED" requires servicing of the filter assembly. See filter servicing Paragraph 7-3.

e. At any time prior to a "IBF FILTER" indication on the cockpit indicator, an FMA indication in the "RED", or a failed PAC, when maintenance or flight personnel see a trend on the FMA that would warrant servicing of the filter due to operational considerations, such as when the aircraft will be operating in a remote or off-site location without the ability to readily service the filter, the filter may be serviced, or replaced. See filter servicing Paragraph 7-3.

f. The maximum number of service cycles for the filter assembly (i.e., cleaning / oiling) is limited to 15 for each filter assembly. The filter assembly includes a data plate that must be inscribed to track filter service cycles in accordance with Paragraph 6-2.

7-2.2. PREPARED FIELD OPERATIONS

a. During typical operations in and out of prepared airfields and landing sites, the IBF filter assembly will not require frequent servicing. DCI recommends that the filter maintenance aid (FMA) be checked about every 25 aircraft operating hours following the first installation and operation of an IBF system on an aircraft. This should be done to gauge the rate of engine performance degradation due to changes in engine inlet differential pressure as the filters accumulate dirt in operations considered "prepared fields" operations. Once an interval of time in flight hours is determined that provided discrete changes in the FMA, this interval can be repeated as long as there is no change in the environmental operating conditions.

b. This interval can be extended after sufficient flight data has been accumulated to establish a greater interval. Upon seeing increases in MGT and associated decreases in temperature margin / available power, the inspection interval should again be shortened to about every 25 hours or less to enable scheduling of filter servicing without interruption of normal operations.

c. Ensure all filter servicing requirements defined in Paragraph 7-2.1 are followed. Refer to Paragraph 7-3 for servicing of the filter assembly.

7-2.3. SEVERE ENVIRONMENT OPERATIONS

a. When operating in an environment of high sand and dust levels, frequent servicing of the filter assembly may be required based on the time exposure and severity of the environment. Any operations in an environment that can result in "brownout" conditions should therefore be minimized or avoided to the maximum extent possible within the constraints of the operation. During operations for extended periods of time in brownout conditions, monitoring of the FMA between shut down and start up will allow the maintainer or operator to trend the change in differential pressure. Once an interval of time in flight hours is determined that provided discrete changes in the FMA, this interval can be repeated as long as the initial readings remain typical of the current operations.

b. Ensure all filter servicing requirements defined in Paragraph 7-2.1 are followed. Refer to Paragraph 7-3 for servicing of the filter assembly.

7-3. FILTER ASSEMBLY SERVICING

The filter assembly servicing section defines the procedures for pre-cleaning, cleaning, drying, and oiling the filter media in the filter assembly.

7-3.1. FILTER PRE-CLEANING

a. Servicing of the filter assembly is determined by the inspection requirements found in Chapter 3.

b. Prior to any cleaning operation gently brush the dirty side of the filter with a soft bristle brush similar to a soft paintbrush. Remove as much debris as practical from the filter before proceeding to the cleaning procedure.

7-3.2. FILTER CLEANING

CAUTION

DO NOT CLEAN DCI FILTER ASSEMLBIES WITH GASOLINE, SOLVENTS, PARTS CLEANERS, STRONG DETERGENTS, OR CAUSTIC CLEANING SOLUTIONS.

CAUTION

DO NOT STEAM CLEAN OR USE HIGH-PRESSURE WASHERS TO CLEAN THE DCI FILTER ASSEMBLY.

CAUTION

ANY OF THESE PROCESSES <u>WILL</u> DAMAGE FILTER MEDIA AND/OR THE FILTER FRAMES.

a. Spray DCI Air Filter Cleaner liberally onto the entire filter media (both sides) until the filter media is thoroughly soaked. If procured in bulk, transfer a smaller quantity to a spray bottle. A spray bottle provides a more uniform distribution of the cleaning agent.

b. Let the cleaner soak into the contaminants and filter media for 10 minutes.

c. Rinse the filter with low-pressure water. Use water out of a faucet or hose (without nozzle). Rinse opposite the direction of airflow, i.e., from the clean side to the dirty side. Arrange the filter so the pleats are vertical and begin to rinse in a gradual side-to-side motion starting at the top and working downward. Adjust the pace to correspond with the cleanliness of the water runoff. As long as the runoff is filled with debris and oil, do not proceed downward.

d. Upon completion, adjust the filter to rinse from the dirty side to the clean side, pleats still vertical.

e. Repeat the rinsing procedure once again, until there is no visible debris on the surface and the runoff water is relatively clean.

f. When finished, flip the filter once again and repeat the rinse from clean side to dirty side.

g. Finally, rotate the filter from top to bottom, and perform the final rinse until the runoff water is free of all debris and oil.

7-3.3. FILTER DRYING

CAUTION

DO NOT USE COMPRESSED AIR TO DRY THE FILTER ASSEMBLY. IT MAY DAMAGE THE FILTER MEDIA.

CAUTION

DO NOT USE HEAT FROM ANY SOURCE TO DRY THE DCI FILTER ASSEMBLY. HEAT MAY SHRINK THE FILTER MEDIA AND MAY DAMAGE THE CORING MATERIAL WITHIN THE FILTER FRAMES.

a. After rinsing, shake off the excess water and let the Filter Assembly dry at room or outside air temperature (above freezing).

b. Ensure dirt or debris does not enter or contact the Filter Assembly while drying.

c. After the Filter Assembly dries, mark the service cycle on data plate in accordance with the Paragraph 6-2.

7-3.4. FILTER OILING

CAUTION

NEVER PUT AN DCI FILTER ASSEMBLY IN SERVICE WITHOUT OILING IT.

CAUTION

USE ONLY DCI FILTER OIL OR AN DCI APPROVED SUBSTITUTE.

NOTE

A squeeze bottle capable of accurately measuring out five (5) fluid ounces should be used when applying the oil to each filter assembly as directed below.

a. The filter will not function properly if other types of oil are used. DCI Air Filter Oil is a unique blend of mineral and organic oil base stocks and special polymers that form a very efficient "tack barrier." Red dye is added to show areas of oil application. Do not use transmission fluid, any kind of motor oil, or diesel fuel to oil the DCI filter. Do not use "WD-40," "LPS," or any other type of lightweight spray lubricants to oil the DCI filter. Any of those products will damage the filter or degrade its filtering ability. A squeeze bottle allows for the controlled application of a specific amount of oil to the filter (See Picture 7-1).

b. Apply approximately ¾ of the five (5) fluid ounces that is to be applied to each clean, dried Filter Assembly. Gently squeeze a small stream of oil along the entire length of each pleat peak, then flip the filter over and repeat this on the backside. Apply sparingly to ensure coverage of the entire filter.

c. Let each Filter Assembly sit for 20 minutes as the oil "wicks" into the surrounding filter media. Apply the remaining filter oil to any areas that are still white and to complete the application of the 5 fluid ounces from the squeeze bottle.

Picture 7-1: OILING FILTER MEDIA

7-4. STRUCTURAL COMPONENT SERVICING

There are no structural components requiring periodic servicing. See Chapter 6 for inspection requirements and Chapter 8 for maintenance requirements.

7-5. SYSTEMS AND ELECTRICAL SERVICING

There are no system and electrical components requiring periodic servicing. See Chapter 6 for inspection requirements and Chapter 8 for maintenance requirements.

NOTE

The Filter Maintenance Aid is designed to hold the highest differential pressure across the filter assembly reached during the last flight, and should be reset after servicing of the filter assembly by depressing the yellow button marked "PUSH TO RESET" located on the end of the filter maintenance aid (See Pictures 8-3 & 8-4).

7-6. ENGINE WATER WASH

NOTE

It is not necessary to remove the IBF filter prior to conducting an engine wash.

It is recommended the engine water wash frequency be in accordance with the current Rolls-Royce requirements for operation in a standard environment, desert environment or salt-water environment.

7-7. AIRCRAFT WASHING

During aircraft washing the IBF system, including the filter assembly, should be protected or removed to avoid damaging the filter media with high pressure spray nozzles or to prevent solvents from rinsing away the oil in the filter media.

ICA CHAPTER 8 – TROUBLESHOOTING AND MAINTENANCE

TABLE OF CONTENTS

8-1. MAINTENANCE GENERAL

CAUTION

THOROUGHLY REVIEW AND BECOME FAMILIAR WITH THE APPENDIX A - PARTS FIGURES BEFORE PERFORMING MAINTENANCE ON THE IBF SYSTEM.

NOTE

Except where otherwise indicated, all torque values shall be in accordance with Chapter 7 of FAA Advisory Circular AC 43.13-1B.

a. The components of the system are divided, generally as a scope of work, into Filter Assembly / Engine Wash Tube / Seal, Structural Components, and Systems and Electrical components throughout the manual. Refer to Appendix A, Figure A-1 & A-2 for the primary kit components. Refer to Appendix A, Figures A-2, A-3 and A-5 for filters, wash tube and filter seal components. Refer to Appendix A, Figures A-5 (items 2, 9, 27 & 34 plus associated tubes, hoses, clamps, brackets, etc.) and A-12 thru A-15 for items considered the primary systems and electrical components. Refer to Appendix A, Figures A-3 (less the filter assemblies and systems/electrical components) and A-11 for items considered structural components. The troubleshooting guide in Table 8-2 provides additional guidance for performing inspections when encountering trouble with the system.

b. The maintenance chapter is organized by removal, inspection, troubleshooting, adjustment, calibration and / or repair, and installation for the major components noted above, as applicable to the particular component. For some components a functional check is included. Not all components will require adjustment, or calibration, or have any approved functional check or repair procedures. Contact DCI for possible repairs when not listed in this manual. In some cases, defective components will require replacement.

c. In general, visually inspect all structural components for oversized or elongated holes, deformation, cracks, corrosion, missing fasteners or components, fretting, galling, etc. Any component exhibiting these conditions requires repair or replacement.

d. In general, visually inspect fasteners for damaged or missing threads, in both the bolt or screw and the nut or nut plate. If a self-locking fastener can be fully threaded by hand, replace the self-locking fastener.

e. In general, visually inspect all electrical connections for security, corrosion, arcing, breakdown of insulation, and overheating. Repair or replace components exhibiting defects. Inspect and repair components per Bell Helicopter technical manuals or AC 43.13-1, Chapter 11.

8-2. COMPONENTS - GENERAL DESCRIPTION

8-2.1. FILTER ASSY / FILTER SEAL (Refer to Appendix A, Figures A-1, A-5, A-10, and A-11)

a. Filter Assembly - The Filter Assembly is composed of the filter media (stainless steel mesh covering cotton gauze) bonded into the aluminum alloy filter frame assembly.

b. Filter Seal - The Seal is a silicon sponge that is held in place with adhesive.

8-2.2. STRUCTURAL COMPONENTS (Refer to Appendix A, Figures A-1, A-2, A-3 and A-11)

a. Bell 206B Series Air Induction Cowling (OEM Equipment) - The Bell 206B Series Air Induction Cowling is part of the original equipment manufacturer supplied for the Bell 206B series helicopters. For description see Bell 206B series technical manuals.

b. Access Door (Optional Equipment) - The cowling access door is formed and heat treated aluminum alloy with appropriate mounting holes providing access to the filter assemblies and additional access inside the Air Induction Cowling. Surface treatment and primer provide a protective coating.

c. Filter Adapter Frame Assembly - The Filter Adapter Frame Assembly is sheet stock aluminum alloy providing structural support for the mounting of the Filter Assembly and the Bypass Floor Assembly. Chemical conversion coating and epoxy primer provide an organic protective coating.

d. Bypass Floor Assembly / Bypass Door / Seal/ Water Wash Tube - The Bypass Floor Assembly consists of a aluminum sheet metal floor, a machined aluminum alloy actuator bracket, a military standard (MS) aluminum alloy hinge and steel pin, aluminum sheet metal assembly bypass door, stainless steel mesh screen, aluminum sheet metal mounting brackets and provisions for mounting the Differential Pressure Switch and Filter Maintenance Aid, and associated MS hardware and other standard aircraft hardware for mounting and installation provisions. The engine wash tube is composed of formed aluminum tube, aluminum spray nozzle and associated “AN” fittings and attachment hardware.

8-2.3. SYSTEMS AND ELECTRICAL COMPONENTS (Refer to Appendix A, Figures A-5 (items 2, 9, 27 & 34 plus associated tubes, hoses, clamps, brackets, etc.), A-12, A-13, A-14 and A-15)

a. Cockpit Switch - The Cockpit Switch is a toggle switch used to open or close the bypass door. The construction details of the component do not warrant field maintenance. Repair or servicing of this component requires the component to be sent back to DCI for disposition.

b. Cockpit Indicator - The Cockpit Indicator is located on the Caution/Warning Panel and illuminates the “IBF FILTER” light when the differential pressure across the filter reaches a pre-set limit indicating: (1) the filter is dirty, (2) the pilot should monitor engine conditions, and (3) the filter should be serviced prior to next flight. For repair or servicing of this component refer to the aircraft manuals.

c. Differential Pressure Switch - The Differential Pressure Switch provides a signal to the Cockpit Indicator for annunciation of the "IBF FILTER" light to signal the differential pressure across the Filter Assembly has reached a preset limit. The construction details of the component do not warrant field maintenance. Repair of this component requires the component to be sent back to DCI for disposition or replaced.

d. Filter Maintenance Aid - The Filter Maintenance Aid provides an indication to maintenance personnel as to the trend of the differential pressure across the Filter Assembly. The construction details of the component do not warrant field maintenance. Repair of this component requires it to be sent back to DCI for disposition or to be replaced. The FMA is an aid to help maintenance personnel and pilots to ascertain the current condition or trend accumulation of dirt on the Filter Assembly.

e. Actuator - The Actuator is an electro-mechanical device that provides mechanical actuation of the Bypass Door when the cockpit switch is toggled to OPEN or CLOSE the bypass door. The construction details of the component do not warrant field maintenance. Repair of this component requires the component to be sent back to DCI for disposition or replaced.

f. Wiring, Wiring Harness, Connectors, Backshells, Circuit Breaker – The wiring and wiring harness utilizes wire per Military Specification Mil-W-22759/41. The gauge and marking identification is specified on the wiring diagram. The connectors, backshells, and circuit breaker are military specification components, or where applicable, vendor designed components. The construction details of these components (other than wiring) do not warrant field maintenance.

8-3. FILTER ASSY / FILTER SEAL (Refer to Appendix A, Figures A-2, A-3, A-4 and A-11)

8-3.1. FILTER ASSY

8-3.1.1. REMOVAL – FILTER ASSY (For Aircraft NOT MODIFIED with Optional Access Door)

CAUTION

UPON REMOVAL OF THE AIR INDUCTION COWLING TO ACCESS THE FILTER ASSEMBLY, COVER THE ENGINE INLET TO ENSURE IT IS PROTECTED FROM FOREIGN OBJECT DAMAGE (FOD).

NOTE

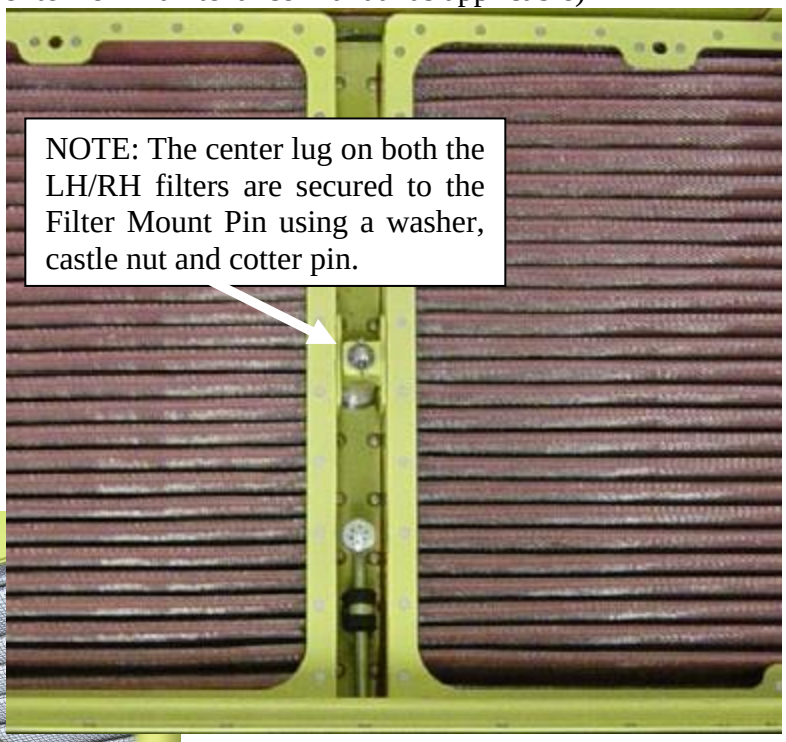
Unless the aircraft has been modified with the optional Access Door, removal of the IBF Filter Assembly requires removal of the Air Induction Cowling per the following procedure to allow access to the Filter Assembly.

a. Disconnect the connector at Bypass System Connector. (Refer to Appendix A, Figure A-6, Item 6)

b. Remove the hardware attaching the Bypass Floor Assembly to the Firewall.

c. Remove Air Induction Cowling. (Refer to Bell Maintenance Manual as applicable)

d. Reaching through the aft side of the Air Induction Cowl, remove the cotter pin, castle nut and washer (See Appendix A, Figure A-2, Items 5, 4 & 6) from the Filter Mount Pin (See Picture 8-1) on the aft side and between the Filter Assemblies that secures both Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1).



Picture 8-1: FILTER MOUNT PIN LOCATION

Picture 8-2: INSTALLATION/REMOVAL OF BOLTS SECURING FILTER ASSEMBLIES TO FILTER ADAPTER FRAME

e. Remove the three (3) fasteners securing the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1) that are accessed by reaching through the forward facing inlet on each side of the Air Induction Cowl. These fasteners include one (1) bolt on outboard edge (See Appendix A, Figure A-2, Item 7) and two (2) Huck bolts on top & bottom edge (See Appendix A, Figure A-4, Item 9) of each filter, which secure the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1). A 6-point offset ratcheting box wrench is recommended but not required (See Picture 8-2).

NOTE

The Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) must be carefully removed so as not to damage the Filter Seals (See Appendix A, Figure A-3, Item 2).

f. Use a plastic scraper to gently break any seal between the Filter Assembly and the Seal itself.

g. Carefully remove the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) from the Filter Mount Pin (See Appendix A, Figure A-4, Item 5) on the Filter Adapter Frame Assembly (See Appendix A, Figure A-4). First remove the R/H Filter Assembly then remove the L/H Filter Assembly.

h. Inspect the Filter Seal. Refer to "Filter Seal" procedures.

8-3.1.2 REMOVAL – FILTER ASSY (For Aircraft MODIFIED with Optional Access Door)

CAUTION

UPON REMOVAL OF THE ACCESS DOOR TO ACCESS THE FILTER ASSEMBLY, COVER THE ENGINE INLET TO ENSURE IT IS PROTECTED FROM FOREIGN OBJECT DAMAGE (FOD).

a. Remove the fasteners that retain the Access Door (See Appendix A, Figure A-11, Item 6). Remove the Access Door (See Appendix A, Figure A-11, Item 3).

b. Reaching through the Access Door opening, remove the cotter pin, castle nut and washer (See Appendix A, Figure A-2, Items 5, 4 & 6) from the Filter Mount Pin (See Picture 8-1) on the aft side and between the Filter Assemblies that secures both Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1).

c. Remove the three (3) fasteners securing the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1) that are accessed by reaching through the forward facing inlet on each side of the Air Induction Cowl. These fasteners include one (1) bolt on outboard edge (See Appendix A, Figure A-2, Item 7) and two (2) Huck bolts on top & bottom edge (See Appendix A, Figure A-4, Item 9) of each filter, which secure the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1). A 6-point offset ratcheting box wrench is recommended but not required (See Picture 8-2).

NOTE

The Filter Assembly must be carefully removed so as not to damage the Filter Seal.

d. Use a plastic scraper to gently break any seal between the Filter Assembly and the Seal itself.

e. Carefully remove the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) from the Filter Mount Pin (See Picture 8-1) on the Filter Adapter Frame Assembly (See Appendix A, Figure A-4).

First remove the R/H Filter Assembly through the Access Door slot then remove the L/H Filter Assembly.

f. Inspect the Filter Seal. Refer to "Filter Seal" procedures.

8-3.1.3. INSPECTION – FILTER ASSY

NOTE

After servicing of the Filter Assembly or at any time the Filter Assembly is inspected, the pleats may require straightening or crimping. If you cannot see the bottom of the pleat, the airflow will be restricted and/or the pleats will adhere to one another when dirt loaded. Any restriction to the flow through the pleats will result in increased differential pressure and reduction in dirt loading capacity. In order to ensure ideal flow characteristics through the filter media, the pleats must be straightened or crimped with a hand seamer.

a. Visually inspect the pleats on both sides of the filter. If you cannot see the bottom of the pleat, when sighting the length, or depth of the pleat, straightening of the pleat is required. Refer to "Adjustment" for pleat straightening procedures.

b. If this inspection is in response to an IBF FILTER light indication or failed PAC, perform troubleshooting per Table 8-2. If troubleshooting indicates a dirty filter, service filter per paragraph 7-3.

c. Inspect the Filter Assembly frame for cracks, gouges, distortion or deformation, corrosion, loose or missing fasteners, and missing or deteriorated protective coating. Refer to "Repair" for criteria / disposition.

d. Inspect the Filter Seal. Refer to "Filter Seal" procedures.

e. Inspect the engine wash tube for cracks, kinks, leaks, corrosion, deformation and security. Refer to "Repair" for criteria / disposition.

8-3.1.4. TROUBLESHOOTING – FILTER ASSY / ENGINE WASH TUBE

See Table 8-2 for troubleshooting guide.

8-3.1.5. ADJUSTMENT - FILTER

CAUTION

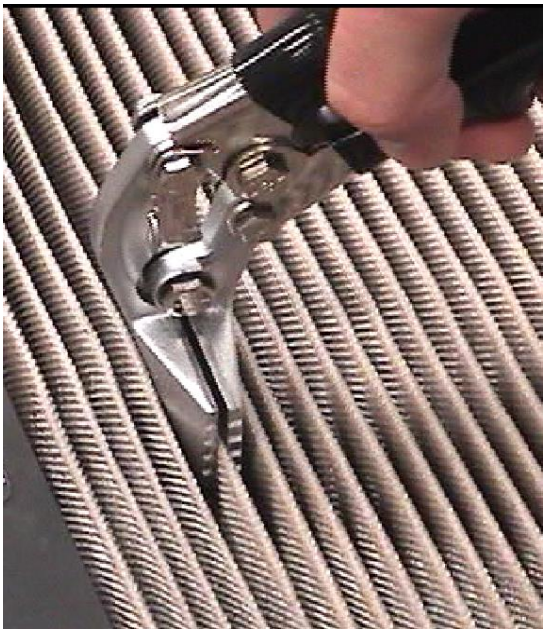
HAND SEAMER MUST BE LIMITED TO A MAXIMUM JAW DEPTH OF 1 1/4 INCH. A DEEPER JAW DEPTH CAN RESULT IN DEFORMATION OR DAMAGE TO THE ADJOINING PLEATS.

CAUTION

DO NOT OVER CRIMP AND CRUSH PLEAT; CARE MUST BE TAKEN TO SQUEEZE THE PLEATS WITHOUT DAMAGING THE PLEATED SCREEN. THE RADIUS AT THE TOP OF THE PLEAT SHOULD REMAIN INTACT, NOT CREASED.

a. If you cannot see the bottom of a pleat, use a hand seamer (See Special Tools / Special Equipment, Paragraph 8-9.a.) to crimp the pleat and to straighten the pleat. Sight down the length and depth of the pleat to confirm the pleat is straightened (See Picture 8-3).

b. Once one side is crimped, flip the filter over and crimp the other side as required following the guidance above. Use caution not to crush the pleats when straightening them. Use care to maintain the original radius, as much as possible, at the top of the pleat.



Picture 8-3. HAND SEAMER USED TO STRAIGHTEN OR CRIMP PLEATS

8-3.1.6. CALIBRATION

Not applicable.

8-3.1.7. REPAIR - FILTER MEDIA, GENERAL

WARNING

ADHESIVE VAPORS (SUCH AS MAY BE CONTAINED IN SEALING MATERIAL AMS 3276 OR MIL-S- 8802), MAY CAUSE IRRITATION OF EYES, NOSE, AND RESPIRATORY SYSTEM. EYE AND SKIN CONTACT WITH MATERIAL MAY CAUSE IRRITATION. IF INGESTED, MAY CAUSE GASTRIC DISTRESS. FLUSH EYES WITH WATER FOR 15 MINUTES. WASH SKIN WITH SOAP AND WATER. IF INHALED, MOVE TO FRESH AIR. IN ALL CASES GET IMMEDIATE MEDICAL ATTENTION. WORK IN A WELL-VENTILATED AREA. WEAR GLOVES AND SAFETY GLASSES.

NOTE

Repair filter media damage <u>after</u> cleaning but <u>prior to</u> oiling of filters.

8-3.1.8. REPAIR - FILTER MEDIA, SMALL RUPTURES, TEARS, OR HOLES

a. In the event of damage to the filter media, ruptures in the filter media may be repaired. Small ruptures defined as smaller than .500 inch diameter or length can be sealed shut without degradation of performance to the Filter Assembly. Up to 8 small ruptures in the filter media may be repaired on a single filter, but no repair may be within 1" of an adjacent repair.

b. Prior to performing any of these repairs, the filter material must be cleaned of contamination and oil. Refer to Chapter 7 for cleaning of the Filter Assembly. Perform the repair to a cleaned and dry Filter Assembly. Each time the Filter Assembly is cleaned, repaired, and/or oiled, a mark shall be scribed on the Filter Assembly data plate in accordance with Paragraph 6-2 indicating a cleaning cycle was performed.

c. Trim ruptures, tears, or holes in the filter media up to .500 inches in length or diameter to remove loose material (wire or cotton gauze).

d. Seal the affected area using two-part Sealant, AMS 3276 or MIL-S-8802. Allow the Sealant to bleed into the filter material and cure. Follow manufacturer's directions for proper mixing, application, and curing of the two-part Sealant.

e. Proceed with oiling the filter. Refer to Chapter 7.

8-3.1.9. REPAIR - FILTER MEDIA, LARGE RUPTURES, TEARS, OR HOLES

Larger ruptures exceeding .500 inch in size are not repairable in the field. Contact DCI for disposition and possible repair procedures, or to discard the Filter Assembly.

8-3.1.10. REPAIR – FILTER ASSY, OTHER DAMAGE

a. The repair procedures defined above are for damage resulting in ruptures, tears, or holes in the filter media. The following is for field repairable damage to the Filter Assembly frame. Field repairable damage to the Filter Assembly frame is limited to blending of scratches and gouges, and / or the re-application of protective coatings. See Table 8-1 for application of protective coatings.

b. Any damage to the filter frames such as cracking requires the Filter Assembly to be returned to DCI for evaluation and disposition, or replacement. Any damage to the filter frames such as warping or distortion (to the extent that the Filter Frame, when installed against the Filter Adapter Frame Assembly and torqued, do not permit the Filter Assembly to sit flush against the Adapter Frame) requires the Filter Assembly be returned to DCI for evaluation and disposition, or be replaced.

c. Any damage to the Engine Wash Tube Assembly that restricts the flow, allows leakage, or impacts security is cause for replacement.

8-3.1.11. INSTALLATION – FILTER ASSY (Aircraft NOT MODIFIED with Access Door)

CAUTION

REMOVE COVER FROM THE ENGINE INLET PRIOR TO INSTALLING THE AIR INDUCTION COWLING.

CAUTION

OVER TIGHTENING OF THE FASTENERS MAY RESULT IN THE FASTENER BEING DAMAGED.

a. Prior to installation of the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3), the Filter Seals on the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Item 2) shall be visually inspected for security and damage. The L/H Filter Assembly must be carefully positioned over the center Filter Mount Pin (See Picture 8-1 and Appendix A, Figure A-4, Item 5) against the Filter Adapter Frame Assembly then repeat for the R/H Filter Assembly. Ensure the Filter Assemblies seat properly (not cocked, i.e. fits flush) against the Filter Adapter Frame Assembly.

b. Install the three (3) fasteners securing the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1) by reaching through the forward facing inlet on each side of the Air Induction Cowl. These fasteners include one (1) bolt on outboard edge (See Appendix A, Figure A-2, Item 7) and two (2) Huck bolts on top & bottom edge (See Appendix A, Figure A-4, Item 9) of each filter, which secure the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1). A 6-point offset ratcheting box wrench is recommended but not required (See Figure 8-2).

c. Reaching through the aft side of the Air Induction Cowl, install washer, castle nut and cotter pin (See Appendix A, Figure A-2, Items 6, 4 & 5) on the Filter Mount Pin (See Picture 8-1) on the aft side and between the Filter Assemblies. This pin secures the inboard side of both Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1).

d. Tighten all fasteners to 20-25 inch-pounds.

e. Install Air Induction Cowling. (Refer to Bell Maintenance Manual as applicable)

f. Install Bypass Floor Fasteners to Firewall.

g. Connect electrical Bypass System connector at Bypass System Disconnect. (Refer to Appendix A, Figure A-12, Item 5)

8-3.1.12. INSTALLATION – FILTER (Aircraft MODIFIED with Access Door)

CAUTION

REMOVE COVER FROM THE ENGINE INLET PRIOR TO INSTALLING THE ACCESS DOOR.

CAUTION

OVER TIGHTENING OF THE FASTENERS MAY RESULT IN THE FASTENER BEING DAMAGED.

a. Prior to installation of the Filter Assemblies, the Seal shall be visually inspected for security and damage. The L/H Filter Assembly must be carefully inserted through the optional access door and positioned over the Filter Mount Pin (See Appendix A, Figure A-10, Item 6) against the mounting frame then repeat for the R/H Filter Assembly. Ensure the Filter Assemblies seat properly (not cocked, i.e. fits flush) against the Filter Adapter Frame Assembly.

b. Install the three (3) fasteners securing the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1) by reaching through the forward facing inlet on each side of the Air Induction Cowl. These fasteners include one (1) bolt on outboard edge (See Appendix A, Figure A-2, Item 7) and two (2) Huck bolts on top & bottom edge (See Appendix A, Figure A-4, Item 9) of each filter, which secure the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1). A 6-point offset ratcheting box wrench is recommended but not required (See Figure 8-2).

c. Reaching through the Access Door opening in the top of the Air Induction Cowl, install washer, castle nut and cotter pin (See Appendix A, Figure A-2, Items 6, 4 & 5) on the Filter Mount Pin (See Picture 8-1) on the aft side and between the Filter Assemblies. This pin secures the inboard side of both Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3) to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 1).

d. Tighten all fasteners to 20-25 inch-pounds.

e. Install Access Door.

8-3.2. FILTER SEAL

8-3.2.1. REMOVAL

a. Gain access to the Filter Adapter Frame Assembly by removing the Filter Assemblies. Refer to Paragraphs 4-3.1 and 8-3.1.

b. Carefully remove the Seal (See Appendix A, Figure A-3, Item 2) by peeling it away from the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Item 1). Use a plastic scraper or other suitable tool that is softer than aluminum to peel the Seal from the Filter Adapter Frame Assembly. Discard the removed Seal.

8-3.2.2. INSPECTION

Inspect the Filter Seal for any tears, nicks, gouges, missing pieces or a permanent set or flattening of the Seal. If the Seal exhibits any of these conditions, repair or replace the Seal.

8-3.2.2. REPAIR

WARNING

ADHESIVE VAPORS (IN SEALANT SUCH AS RTV 736) MAY CAUSE IRRITATION OF EYES, NOSE, AND RESPIRATORY SYSTEM. EYE AND SKIN CONTACT WITH MATERIAL MAY CAUSE IRRITATION. IF INGESTED, MAY CAUSE GASTRIC DISTRESS. FLUSH EYES WITH WATER FOR 15 MINUTES. WASH SKIN WITH SOAP AND WATER. IF INHALED, MOVE TO FRESH AIR. IN ALL CASES GET IMMEDIATE MEDICAL ATTENTION. WORK IN A WELL-VENTILATED AREA. WEAR GLOVES AND SAFETY GLASSES.

a. Small tears, nicks, or gouges in the Seal may be repaired using RTV 736 Sealant or equivalent. Use a wooden tongue depressor, cotton swab, or similar tool to dab a small amount of Sealant on the damage to repair tears, nicks, or gouges in the Seal. Smooth over Sealant to create a smooth flush repair similar to the original Seal cross section. Allow to dry before re-installing filter. If the repair does not allow the Filter Assembly to properly seal against the Adapter replace the Seal.

b. If the Seal exhibits extensive tears, deep nicks or gouges, or missing pieces that would prevent the filter from properly sealing, replace the Seal.

8-3.2.3. INSTALLATION

a. Gain access to the Filter Seal (See Appendix A, Figure A-10, Item 4). Refer to Paragraphs 4-3.1 and 8-3.1.

b. To install the Seal, clean surface of Filter Adapter Frame Assembly (See Appendix A, Figure A-1, Item 3), locate and bond Seal in place using Dow Corning RTV 736 or equivalent.

8-4. STRUCTURAL COMPONENTS

8-4.1. BELL 206B SERIES AIR INDUCTION COWLING (Refer to Appendix A, Figures A-1, A-2, A-12, A-15)

8-4.1.1. REMOVAL

a. Disconnect electrical Bypass System Connector (Refer to Appendix A, Figures A-12 & A-15).

b. Remove fasteners from Bypass Floor Assembly attaching to engine firewall.

c. Remove Air Induction Cowling (See Figure 4-1, Item A and Bell Maintenance Manual as applicable).

8-4.1.2. INSPECTION

a. The DCI IBF interfaces the Air Induction Cowling at the Filter Assembly, Filter Adapter Frame Assembly, Bypass Floor Assembly, the optional Access Door, and OML covers. See Appendix A, Figures A-1, A-2 and A-3. At these locations inspect for chafing or fretting, elongation of fastener holes, damage to nut plates and fasteners, corrosion, cracking, and deformation.

b. Inspection for the above conditions and any other conditions that may be applicable are defined in the Bell Helicopter 206B series technical manuals.

8-4.1.3. TROUBLESHOOTING

Not applicable.

8-4.1.4. ADJUSTMENT

Not applicable.

8-4.1.5. CALIBRATION

Not applicable

8-4.1.6. REPAIR

For repairs see Bell Helicopter 206B Series technical manuals.

8-4.1.7. INSTALLATION

a. Install Bell 206B Series Air Induction Cowling (See Figure 4-1, Item A and refer to Bell Maintenance Manual as applicable).

b. Install hardware in the Bypass Floor Assembly to the Firewall.

c. Connect Bypass System electrical disconnect (Refer to Appendix A, Figure A-12, Item 5).

8-4.2. BYPASS FLOOR ASSEMBLY/WATER WASH TUBE (Refer to Appendix A, Figures A-1, A-3, A-12 and A-15)

8-4.2.1. REMOVAL

a. Gain access to IBF Floor Wiring Harness through the Access Door on LH side of Air Induction Cowling (Refer to Figure 4-1, Item C) and disconnect the wiring harness from the Bypass System Disconnect (Refer to Appendix A, Figure A-12, Item 5)

b. Remove the hardware attaching the Bypass Floor Assembly to the Firewall from the Engine side of the Firewall.

c. Gain access to the Bypass Floor by removing the Bell 206B Series Air Induction Cowling (See Figure 4-1, Item A and refer to Bell Maintenance Manual as applicable).

d. Remove the Filter Assemblies (See Appendix A, Figure A-2, Items 2 & 3).

e. Remove the hardware attaching the Bypass Floor Assembly / Water Wash Tube to the Filter Adapter Frame Assembly (See Appendix A, Figure A-4, Item 6, 8, 13, 14 & 15).

f. Remove the hardware attaching the Floor Closeout Angles (See Appendix A, Figure A-3, Item 12) to the Bell 206B Series Air Induction Cowling.

g. Remove the hardware attaching the Bypass Floor Assembly to Air Induction Cowling (See Appendix A, Figure A-3, Items 9 & 10)

h. Remove the Bypass Floor Assembly (See Appendix A, Figure A-3 Item 4).

8-4.2.2. INSPECTION

a. Cracking. Visually inspect the Bypass Floor Assembly and related parts for cracking using 10x magnifications at the corners, radii, and transitions in part thickness. Any fretting of faying surfaces, such as those at a crack may emit a black or grey dust or soot like material indicative of a crack. Inspect suspect areas carefully using the 10x magnification. Refer to adjustment / calibration / repair for disposition of cracks in the Bypass Floor Assembly or parts.

b. Reserved.

c. Protective Coatings. Visually inspect the Bypass Floor Assembly and related parts for missing, damaged, or “scratched through” protective coatings. Re-apply protective coatings per Table 8-1 of this chapter.

d. Corrosion. Visually inspect the Bypass Floor Assembly and related parts for corrosion in accordance with AC 43.13-1, Chapter 6 and Table 8-1.

e. Missing, damaged or loose associated components. Visually inspect the Bypass Floor Assembly for missing damaged or loose components.

8-4.2.3. TROUBLESHOOTING

Not applicable.

8-4.2.4. CALIBRATION / ADJUSTMENT

Not applicable.

8-4.2.5. REPAIR

a. Cracks. No un-repaired cracks are allowed in the Bypass Floor Assembly. Contact DCI for disposition and possible repairs.

b. Warping or distortion. Contact DCI for disposition and possible repairs.

c. Protective Coatings. Re-apply protective coatings per Table 8-1 of this chapter.

d. Corrosion. Treat corrosion in accordance with AC 43.13-1, Chapter 6 and Table 8-1.

e. Missing, damaged or loose associated components. Replace missing or damaged components. Secure loose components.

8-4.2.6. INSTALLATION

a. Position the Bypass Floor Assembly (See Appendix A, Figure A-3, Item 4) to the Bell 206B Series Air Induction Cowling (See Figure 4-1, Item A).

b. Install the hardware attaching the Bypass Floor Assembly / Water Wash Tube to the Filter Adapter Frame Assembly (See Appendix A, Figure A-3, Items 6, 8, 13, 14 & 15).

c. Install the hardware attaching the Bypass Floor Assembly to Air Induction Cowling (See Appendix A, Figure A-3, Items 9 & 10)

d. Install the hardware attaching the Floor Closeout Angles (See Appendix A, Figure A-3, Item 12) to the Bell 206B Series Air Induction Cowling.

e. Install the Filter Assemblies (See Appendix A, Figure A-1, Items 2 & 3).

f. Install the Bell 206B Series Air Induction Cowling (See Figure 4-1, Item A and refer to Bell maintenance Manual as applicable).

g. Install the hardware attaching the Bypass Floor Assembly to the Firewall from the Engine side of the Firewall.

h. Connect the wiring harness to the Bypass System Disconnect (Refer to Appendix A, Figure A-12, Item 5)

8-4.3. BYPASS DOOR (Ref. Appendix A, Figures A-1, A-3 and A-4)

8-4.3.1. REMOVAL

a. Gain access to the Bypass Floor Assembly (See Paragraph 4-3).

b. Remove the Bypass Floor Assembly (Refer to Appendix A, Figure A-3, Item 2) from the Bell 206B Series Air Induction Cowling (Refer to Paragraph 8-4.2.1).

c. Remove the bolt attaching the Actuator to the Bypass Door Clevis Plate (See Figure 8-1).

d. Carefully open the flattened end of one end of the hinge (See Appendix A, Figure A-5, Item 6).

e. Remove the hinge pin.

f. Remove the Bypass Door Assembly (See Appendix A, Figure A-5, Item 2).

8-4.3.2. INSPECTION

a. Cracking. Visually inspect the Bypass Door and related parts for cracking using 10x magnification at the corners, radii, and transitions in part thickness. Any fretting of faying surfaces, such as those at a crack may emit a black or grey dust or soot like material indicative of a crack. Inspect suspect areas carefully using the 10x magnification. No cracks are allowed in the Bypass Door. If cracks are found, Bypass Door must be replaced.

b. Warping or distortion. Visually inspect the Bypass Door and related parts for warping or distortion. Any warping or distortion that keeps the Bypass Door from creating a seal to the Bypass Floor requires disposition instructions from DCI or replacement of the door.

c. Protective Coatings. Visually inspect the Bypass Door and related parts for missing, damaged, or "scratched through" protective coatings. Re-apply protective coatings per Table 8-1 of this chapter.

d. Corrosion. Visually inspect the Bypass Door and related parts for corrosion in accordance with AC 43.13-1, Chapter 6, and Table 8-1.

e. Missing, damaged or loose associated components. Visually inspect for missing, damaged, or loose components.

8-4.3.3. TROUBLESHOOTING

See Table 8-2.

8-4.3.4. ADJUSTMENT

Refer to Actuator / Bypass Door Adjustment (See paragraph 8-5.5.4).

8-4.3.5. CALIBRATION

Not applicable.

8-4.3.6. REPAIR

a. Cracks. No cracks are allowed in the Bypass Door. Cracks are not repairable. If cracks exist, Bypass Door must be replaced.

b. Warping or distortion. Visually inspect the Bypass Door for warping or distortion. With the Bypass Door in the closed position the Bypass Door Seal should be uniformly compressed. If there are gaps refer to Bypass Door Adjustment. After adjustments are performed if the gaps still exist, the door is warped or distorted beyond limit. Replace Bypass Door.

c. Protective Coatings. Visually inspect the Bypass Door for missing, damaged, or "scratched through" protective coatings. Re-apply protective coatings per Table 8-1 of this chapter.

d. Corrosion. Treat corrosion in accordance with AC 43.13-1, Chapter 6 and Table 8-1.

e. Missing, damaged or loose associated components. Replace missing or damaged components. Secure loose components.

8-4.3.7. INSTALLATION

a. Locate the hinge half on Bypass Door Assembly to the hinge half on Bypass Floor Assembly (See Appendix A, Figure A-5, Items 2 & 6).

b. Install the Bypass Door to the Bypass Floor Assembly by installing the hinge pin. Crimp both ends of hinge to prevent pin from backing out (See Appendix A, Figure A-6, Item 1).

c. Temporarily install the Bolt attaching the Actuator to the Bypass Door Clevis Plate (See Figure 8-1).

d. Perform adjustment / functional check per Actuator / Bypass Door Adjustment procedures (Refer to Paragraph 8-5.5.4).

CAUTION

TO PREVENT INTERNAL DAMAGE TO THE ACTUATOR, HOLD THE ROD END WHILE LOOSENING, TIGHTENING, OR APPLYING TORQUE TO THE JAMB NUT.

CAUTION

INSTALL THE ACTUATOR BOLT TO THE BYPASS DOOR CLEVIS PLATE IN THE CORRECT ORIENTATION. FAILURE TO CORRECTLY INSTALL THE BOLT WILL RESULT IN DAMAGE TO THE BYPASS FLOOR AND ACTUATOR.

e. Upon completion of Actuator / Bypass Door Adjustment procedures confirm the permanent installation of hardware securing the Actuator rod end to the Bypass Door Clevis Plate (See Figure 8-1).

8-4.4. BYPASS DOOR SEAL (Ref. Appendix A, Figures A-7)

8-4.4.1. REMOVAL

a. Remove Bypass Floor Assembly from the Air Induction Cowling (Refer to Paragraph 8-4.2.1).

b. Remove Bypass Door (Refer to Paragraph 8-4.3.1).

c. Remove the Bypass Door Seal retainer (See Appendix A, Figure A-7, Item 2) by carefully drilling out the rivets. Carefully peel away Seal retainer. The retainer is to be reused, do not discard.

d. Remove the damaged Seal (See Appendix A, Figure A-7, Item 3) by peeling it away from the door. Scrape all sealant and Seal pieces from Bypass Door.

8-4.4.2. INSPECTION

a. Inspect the Bypass Door Seal for proper compression upon closing of the Bypass Door. The Seal should be uniformly compressed to approximately 50% of its non-compressed cross-section (i.e. a compressed height of approximately 3/16 inches) with no visible gaps around the perimeter of the bypass door. Adjust Bypass Door to attain correct seal compression.

b. Inspect the Bypass Door Seal for any nicks, gouges, missing pieces or a permanent set or flattening of the Seal. If the Seal exhibits any of these conditions that would prevent the door from properly sealing, replace the Seal.

8-4.4.3. TROUBLESHOOTING

See Table 8-2 for troubleshooting guidance.

8-4.4.4. ADJUSTMENT / CALIBRATION / REPAIR

Perform adjustment to attain proper seal compression per instructions for Actuator / Bypass Door Adjustment (Refer to Paragraph 8-5.5.4).

8-4.4.5. INSTALLATION

a. Gain access to the Bypass Door with old Bypass Door Seal removed (Refer to Paragraph 8-4.3.1).

b. Prior to installing Seal Retainer, bond Bypass Door Seal in place on the Bypass Door using RTV-736 (See Appendix A, Figure A-7).

c. Install Seal Retainer and install rivets.

d. Install Bypass Door.

8-4.5. FILTER ADAPTER FRAME ASSEMBLY (Refer to Appendix A, Figures A-3)

8-4.5.1. REMOVAL

a. Break the sealant at the perimeter of the Filter Adapter Frame Assembly (Refer to Appendix A, Figure A-3, Item 1) and Air Induction Cowling stiffener.

b. Remove the hardware attaching the Filter Adapter Frame Assembly to the Air Induction Cowling stiffener (Refer to Appendix A, Figure A-3, Item 13).

c. Carefully break the sealant as the Filter Adapter Frame Assembly is removed from the Air Induction Cowling stiffener.

8-4.5.2. INSPECTION

a. Cracking. Visually inspect the Filter Adapter Frame Assembly for cracking using 10x magnification at the corners, radii, and transitions in part thickness. Any fretting of faying surfaces, such as those at a crack may emit a black or grey dust or soot like material indicative of a crack. Inspect suspect areas carefully using the 10x magnification. Refer to adjustment / calibration / repair for disposition of cracks in the Filter Adapter Frame Assembly.

b. Warping or distortion. Visually inspect the Filter Adapter Frame Assembly for distortion. Any warping or distortion causing the Filter Assembly not to seal requires disposition instructions from DCI, or replacement of the component.

c. Protective Coatings. Visually inspect the Filter Adapter Frame Assembly for missing, damaged, or “scratched through” protective coatings. Re-apply protective coatings per Table 8-1.

d. Corrosion. Visually inspect the Filter Adapter Frame Assembly and related parts for corrosion in accordance with AC 43.13-1, Chapter 6, and Table 8-1.

e. Missing, damaged or loose associated components. Visually inspect for missing, damaged, or loose components.

8-4.5.3. TROUBLESHOOTING

Not applicable.

8-4.5.4. ADJUSTMENT / CALIBRATION / REPAIR

a. Cracks. No crack repair is allowed in the Filter Adapter Frame Assembly without disposition from DCI.

b. Warping or distortion. Contact DCI for disposition and possible repair, or to replace component.

c. Protective Coatings. Visually inspect the Filter Adapter Frame Assembly for missing, damaged, or "scratched through" protective coatings. Re-apply protective coatings Table 8-3 of this chapter.

d. Corrosion. Treat corrosion in accordance with AC 43.13-1, Chapter 6, and Table 8-1.

e. Missing, damaged or loose associated components. Replace missing, or damaged components. Secure loose components.

8-4.5.5. INSTALLATION

a. Locate the Filter Adapter Frame Assembly to the Air Induction Cowling stiffener and to the Bypass Floor Assembly (Refer to Appendix A, Figure A-3, Item 4).

b. Apply AMS-3276 sealant (See Table 8-3) to seal the Filter Adapter Frame Assembly to the Bell 206B Series Air Induction Cowling stiffener.

c. Secure the Filter Adapter Frame Assembly to the Bell 206B Series Air Induction Cowling stiffener using eight (8) bolts (Refer to Appendix A, Figure A-3, Item 13).

8-4.6. ACCESS DOOR / SEAL (OPTIONAL EQUIPMENT) (Refer to Appendix A, Figures A-1 and A-11)

8-4.6.1. REMOVAL

a. Remove the fasteners that attach the Access Door/Seal to the Air Induction Cowling (Refer to Appendix A, Figures A-11, Items 5 & 6).

b. Remove the Access Door/Seal (Refer to Appendix A, Figures A-11, Items 3 & 4).

c. To remove the seal, carefully pry seal away from the Air Induction Cowling using a plastic tool. Use care not to scratch the Access Door. Touch up any scratches as necessary.

8-4.6.2. INSPECTION

a. Cracking. Visually inspect the Access Door for cracking. Any fretting of faying surfaces, such as those at a crack may emit a black or grey dust or soot like material indicative of a crack. Inspect suspect areas carefully using the 10x magnification. Inspect areas around fasteners carefully. No cracking is allowed.

b. Warping or distortion. Visually inspect the Access Door for distortion. Warping or distortion will be evident by bowing or springing of components when removed from their installed position. The Access Door should fit the opening in the Air Induction Cowling flush with no gaps. Refer to adjustment / calibration / repair for adjustment and repair of the Access Door.

c. Protective Coatings. Visually inspect the Access Door for missing, damaged, or "scratched through" protective coatings.

d. Corrosion. Visually inspect the Access Door for corrosion in accordance with AC 43.13-1, Chapter 6, and Table 8-1.

e. Inspect the Seal for adhesion to the Air Induction Cowling and tears. No more than .400 inch long tears can be repaired. Tears greater than .400 inches require replacement of the seal.

8-4.6.3. TROUBLESHOOTING / ADJUSTMENT / CALIBRATION

Not applicable.

8-4.6.4. REPAIR

a. Cracks. No cracks are allowed in the Access Door.

b. Warping or distortion. Carefully attempt to straighten or re-align distorted or warped Access Doors to fit the contour of the Air Induction Cowling. If the Access Door will not lay flush against the Air Induction Cowling after attempting to straighten, replace the Access Door.

c. Protective Coatings. Visually inspect the Access Door for missing, damaged, or "scratched through" protective coatings. Re-apply protective coatings per Table 8-1 of this chapter.

d. Corrosion. Treat corrosion in accordance with AC 43.13-1, Chapter 6, and Table 8-1.

e. Repair torn seal using RTV 736, Table 8-3. Apply a thin layer between the seal and the Air Induction Cowling.

8-4.6.5. INSTALLATION

a. Clean the Access Door where the Seal will be installed. Apply Dow Corning 1200 OS Primer or 1204 Primer area on the door where the seal will be bonded.

b. Locate and bond the Seal to the Access Door using Dow Corning RTV 3145 MIL-A-46146 adhesive/sealant (Refer to Appendix A, Figures A-11, Items 3 & 4).

c. Locate the Access Door to the Air Induction Cowling.

d. Install the fasteners that attach the Access Door/Seal to the Air Induction Cowling (Refer to Appendix A, Figures A-11, Items 5 & 6).

8-5. SYSTEMS AND ELECTRICAL COMPONENTS

8.5.1. COCKPIT SWITCH (Refer to Appendix A, Figures A-14 and A-15)

8-5.1.1. REMOVAL

a. Gain access to the back of the instrument panel (Refer to Appendix A, Figures A-14 and A-15).

b. Remove and tag wires at back of Cockpit Switch per callouts in Picture 8-4.

c. Remove nut on front side of Cockpit Switch.

d. Slide Cockpit Switch out of panel.

e. Secure wiring.

8-5.1.2. INSPECTION

a. Inspect Cockpit Switch for proper functioning. Refer to Paragraph 8-5.1.5, and to Table 8-2 for troubleshooting.

b. Inspect Cockpit Switch for security, damage, overheating, corrosion, or distortion. Replace defective component or contact DCI for disposition.

8-5.1.3. TROUBLESHOOTING

See Table 8-2 for troubleshooting guide.

8-5.1.4. ADJUSTMENT / CALIBRATION / REPAIR

Not applicable. Contact DCI for disposition of defective component or replace.

8-5.1.5. FUNCTION CHECK – BYPASS DOOR OPEN/CLOSED

CAUTION

THIS PROCEDURE INTRODUCES POSSIBILITY OF ENGINE FOD.

a. Gain access to the area above and below the Bypass Floor Assembly (Refer to paragraphs 4-3.1 & 4-3.2) and clear the area of the Bypass Door of any tools, hardware, or other obstructions.

b. With aircraft power ON and the IBF BYPASS Cockpit Switch (Appendix A, Figure A-14 & A-15) in the CLOSED position, move the Cockpit Switch to the OPEN position to energize the Actuator to open the bypass door (this fully extends the actuator rod). Verify the Bypass Door opens approximately 45 degrees.

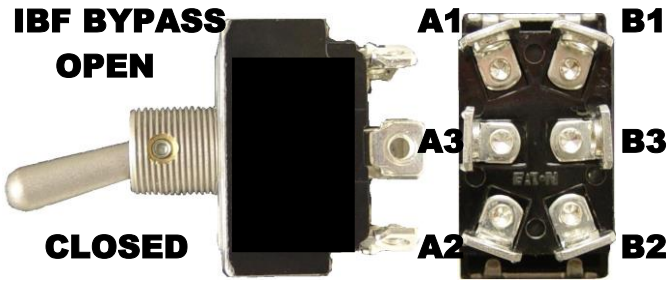
c. Move the Cockpit Switch to the CLOSED position and verify that the bypass door is closed.

d. Perform seal compression inspection and verify the seal is uniformly compressed to approximately 50% of its non-compressed cross-section (i.e. a compressed height of approximately 3/16 inches) with no visible gaps around the perimeter of the bypass door.

e. Ensure aircraft power is OFF.

f. If conditions are not met refer to Troubleshooting guide, Table 8-2, and Adjustment procedures, paragraph 8-5.5.4.

8-5.1.6. INSTALLATION



Picture 8-4: IDENTIFICATION OF ELECTRICAL SCHEMATIC TERMINAL CALL OUTS ON BACK OF IBF BYPASS SWITCH

a. Slide Cockpit Switch into panel opening with key slot oriented down (Refer to Appendix A, Figures A-14, Item 1 for switch location and A-15 for schematic).

b. Slide nut over switch and tighten to secure Cockpit Switch into panel.

c. Attach wires at rear of Cockpit Switch per callouts in Picture 8-4 (see Appendix A, Figure A-15).

d. Perform Cockpit Switch Function Check.

8.5.2. COCKPIT INDICATOR (Refer to Appendix A, Figures A-14 and A-15)

8-5.2.1. REMOVAL

a. Gain access to the back of the aircraft caution/warning indicator panel (Refer to Appendix A, Figures A-14 and A-15) and remove per Bell aircraft maintenance manual procedures.

b. Tag and secure wiring.

8-5.2.2. INSPECTION

a. Inspect Cockpit Indicator for proper functioning. Refer to Paragraph 8-5.2.5, and to Table 8-2 for troubleshooting.

b. Inspect Cockpit Indicator for security, damage, overheating, corrosion, or distortion. Replace defective component or contact DCI for disposition.

8-5.2.3. TROUBLESHOOTING

See Table 8-2 for troubleshooting guide.

8-5.2.4. ADJUSTMENT / CALIBRATION / REPAIR

Not applicable. Contact DCI for disposition of defective component or replace.

8-5.2.5. FUNCTION CHECK – "IBF FILTER" INDICATION

a. Perform Differential Pressure Switch function check.

b. Verify Cockpit Indicator amber "IBF FILTER" light on aircraft caution/warning panel illuminates.

8-5.2.6. INSTALLATION

a. Gain access to the back of the aircraft caution/warning indicator panel (Refer to Appendix A, Figures A-14 and A-15) and install Cockpit Indicator per Bell aircraft maintenance manual procedures.

b. Perform Cockpit Indicator Function Check.

8-5.3. DIFFERENTIAL PRESSURE SWITCH (Refer to Appendix A, Figures A-5, A-12 and A-14)

8-5.3.1. REMOVAL

a. Gain access to the area below the Bypass Floor Assembly (Refer to paragraph 4-3.2).

b. Remove hoses, fittings, and attaching hardware from the Differential Pressure Switch (See Appendix A, Figures A-5, Item 27).

c. Disconnect and secure connector (See Appendix A, Figures A-12, Item 6 and A-14).

e. Remove Differential Pressure Switch.

8-5.3.2. INSPECTION

Inspect for general serviceability, damage, corrosion, and missing components. Inspect the attaching hardware for security.

8-5.3.3. TROUBLESHOOTING

See Table 8-2 for troubleshooting guidance.

8-5.3.4. ADJUSTMENT / CALIBRATION / REPAIR

NOTE

If problems are suspected with the differential pressure switch, disconnect the supply line connecting the pressure switch to the static port and clean and flush the line and static port.

The construction details of the component do not warrant field maintenance beyond that noted above. Repair of this component requires the component to be sent back to DCI for disposition.

8-5.3.5. FUNCTION CHECK

CAUTION

THIS PROCEDURE INTRODUCES THE POSSIBILITY OF ENGINE FOD.

CAUTION

IMPROPER USE OF THE ALTIMETER TEST SET COULD RESULT IN DAMAGE TO THE SWITCH AND/OR SWITCH CALIBRATION.

CAUTION

PULLING AN ALTITUDE OF GREATER THAN 1880 FEET ABOVE FIELD ELEVATION WILL DAMAGE THE DIFFERENTIAL PRESSURE SWITCH.

a. Gain access to the top side of the Bypass Floor Assembly (Refer to paragraph 4-3.1).

b. Connect a Barfield (or equivalent) altimeter test set vacuum system to the plenum tube assembly (Appendix A, Figure A-9, Item 3), by slipping a piece of 3/16 inch ID vinyl tubing over the end of the tube assembly. Ensure that the fit between the tubing and tube assembly is tight, i.e., no leakage.

c. Ensuring that aircraft electrical power is ON, operate the test set to an indicated altitude above the field elevation and gradually increase altitude. The differential pressure switch should actuate and send a signal to the Cockpit Indicator illuminating the "IBF FILTER" light within the following range:

	Test Station Elevation (ft)					
Test Method	**0**	**1000**	**2000**	**3000**	**4000**	**5000**
Altimeter Test Set (ft above test station elevation)	410 ±40 ft	420 ±40 ft	440 ±40 ft	450 ±40 ft	460 ±40 ft	480 ±50 ft

	Test Station Elevation (ft)				
Test Method	**6000**	**7000**	**8000**	**9000**	**10000**
Altimeter Test Set (ft above test station elevation)	490 ±50 ft	510 ±50 ft	520 ±50 ft	540 ±50 ft	560 ±60 ft

d. If the Cockpit Indicator does not illuminate, pull IBF circuit breaker. Run the altimeter test set up to top of the range, check for continuity across the terminals of the Differential Pressure Switch. If continuity is present, the Differential Pressure Switch function is acceptable and the rest of the circuit is suspect. Upon completion of testing, ensure that aircraft electrical power is OFF. Refer to Table 8-2.

e. This will functionally check both the differential pressure switch and the "IBF FILTER" Cockpit Indicator.

8-5.3.6. INSTALLATION

a. Gain access to the area below the Bypass Floor Assembly (Refer to paragraph 4-3.2)

b. Properly orient the Differential Pressure Switch (Refer to Appendix A, Figures A-5, Item 27) in the Clamp (Refer to Appendix A, Figures A-5, Item 27) below the Floor.

c. Attach hoses, fittings, and attaching hardware (Refer to Appendix A, Figures A-5).

d. Connect and secure connector (See Appendix A, Figures A-12, Item 6).

e. Perform Function Check of Differential Pressure Switch (Refer to paragraph 8-5.3.5).

8-5.4. FILTER MAINTENANCE AID (Refer to Picture 8-5 & 8-6 and Appendix A, Figures A-5 and A-9)

8-5.4.1. REMOVAL

a. Gain access to the area below the Bypass Floor Assembly (Refer to paragraph 4-3.2)

b. Disconnect Tube Assembly from Filter Maintenance Aid (Appendix A, Figures A-5, Item 9).

c. Remove hardware and retainer from Filter Maintenance Aid (Appendix A, Figures A-9).

d. Remove Filter Maintenance Aid.

8-5.4.2. INSPECTION

a. Inspect the Filter Maintenance Aid and associated mounting for discoloration affecting readability, cracks, deformation, missing or damaged components, and serviceability.

b. Inspect the Filter Maintenance Aid Plenum Tube Assembly for debris and ensure that the tube is clear and unobstructed.

c. Inspect the associated components, such as the Mount Assembly and hardware for missing components, cracks, distortion or deformation, scratches or gouges, or missing protective coatings.

8-5.4.3. TROUBLESHOOTING

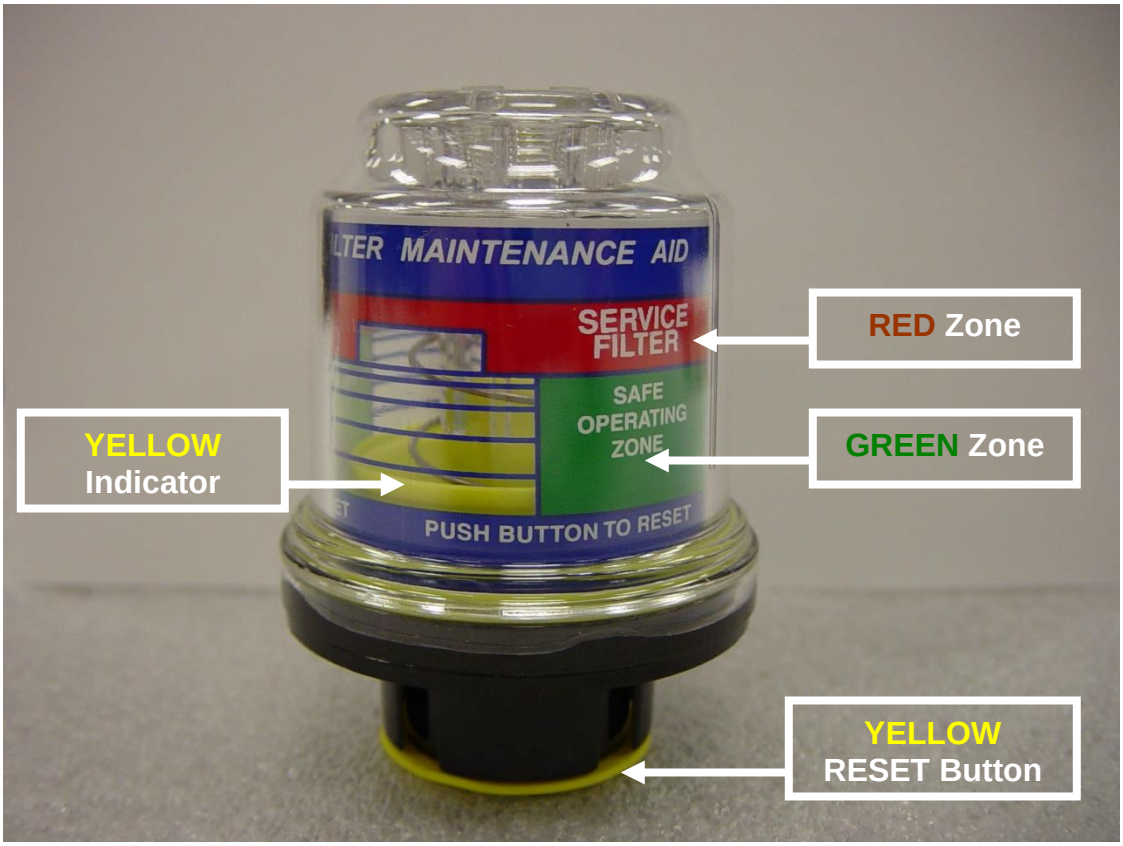
See Troubleshooting Guide, Table 8-2.

8-5.4.4. CALIBRATION / REPAIR

The construction details of the component do not warrant field maintenance. Repair of this component requires the component to be sent back to DCI for disposition, or to be replaced.

8-5.4.5. ADJUSTMENT

The Filter Maintenance Aid is designed to hold the highest differential pressure across the filter assembly reached during the last flight - and can be reset by depressing the yellow button marked “PUSH TO RESET” located on the end of the filter maintenance aid (See Picture 8-6).



Picture 8-5: FMA OPERATION - "YELLOW Indicator" position relative to SAFE OPERATING ZONE ("GREEN Zone") or SERVICE FILTER ("RED Zone") markings defines current filter condition and pushing "YELLOW RESET Button" resets indicator.

Picture 8-6: FMA / RESET LOCATION - unit is mounted to bottom of IBF floor assembly and is accessed through RH access door on air induction cowling**.**

8-5.4.6. REPAIR

a. The construction details of the component do not warrant field maintenance. Repair of this component requires the component to be sent back to DCI for disposition or replaced.

b. If the Filter Maintenance Aid fails the function check, disconnect the plenum tube assembly (Appendix A, Figure A-8, Item 9) from the Filter Maintenance Aid (Appendix A, Figure A-8, Item 3), and inspect for damage or blockage of the tube assembly. Inspect the opening on the Filter Maintenance Aid for obstructions. Remove obstructions as required. Reattach tube assembly and perform function check (Refer to paragraph 8-5.4.7). If it fails function check, replace FMA.

c. Replace damaged sheet metal components of the mount assembly and missing or damaged hardware.

d. Re-apply corrosion protection to mount hardware per Table 6.

8-5.4.7. FUNCTION CHECK

CAUTION

THIS PROCEDURE INTRODUCES THE POSSIBILITY OF ENGINE FOD.

CAUTION

IMPROPER USE OF THE ALTIMETER TEST SET COULD RESULT IN DAMAGE TO THE FILTER MAINTENANCE AID.

CAUTION

IMPROPER USE OF THE ALTIMETER TEST SET SUCH AS PULLING AN ALTITUDE OF GREATER THAN 1880 FEET ABOVE FIELD ELEVATION WILL DAMAGE THE FILTER MAINTENANCE AID.

a. Gain access to the area above the Bypass Floor Assembly (Refer to paragraph 4-3.1)

b. Connect the Barfield (or equivalent) altimeter test set vacuum system to the plenum tube assembly (Appendix A, Figure A-8, Item 9), by slipping a piece of 3/16 inch ID vinyl tubing over the end of the tube assembly. Ensure that the fit between the tubing and tube assembly is tight, i.e., no leakage.

c. Reset the Filter Maintenance Aid by depressing the yellow button marked “PUSH TO RESET” located on the end of the filter maintenance aid (See Picture 8-3).

d. The maintenance aid should indicate in the red zone within the following range:

	Test Station Elevation (ft)					
Test Method	**0**	**1000**	**2000**	**3000**	**4000**	**5000**
Altimeter Test Set (ft above test station elevation)	620 ±60 ft	640 ±60 ft	660 ±60 ft	680 ±60 ft	700 ±70 ft	720 ±70 ft

	Test Station Elevation (ft)				
Test Method	**6000**	**7000**	**8000**	**9000**	**10000**
Altimeter Test Set (ft above test station elevation)	740 ±70 ft	760 ±70 ft	790 ±80 ft	810 ±80 ft	840 ±80 ft

8-5.4.8. INSTALLATION

a. Gain access to the area below the Bypass Floor Assembly (Refer to paragraph 4-3.2)

b. Position the Filter Maintenance Aid into the mount assembly (Appendix A, Figures A-9).

c. Install hardware and connect Tube Assembly (Appendix A, Figures A-5).

8-5.5. ACTUATOR (Refer to Figure 8-1, and Appendix A, Figures A-5, A-12 and A-15)

8-5.5.1. REMOVAL

a. Gain access to the area below the Bypass Floor Assembly (Refer to paragraph 4-3.2)

b. Disconnect and secure connector at Actuator (Appendix A, Figures A-12, Item 4).

c. Remove hardware (Figure 8-1, Detail A, Items 1, 2, 4, 7, & 8) attaching the Actuator (Figure 8-1, Detail A, Item 5) to the Bypass Door Clevis Plate (Figure 8-1, Detail A, Item 3).

d. Remove hardware (Appendix A, Figure A-5, Items 24, 31, 35, 36 & 37) attaching the Actuator (Appendix A, Figure A-7, Item 34) to the Actuator Support (Appendix A, Figure A-5, Item 81).

e. Remove Actuator.

8-5.5.2. INSPECTION

a. Inspect Actuator for cracks, damage, security of installation, corrosion, and serviceability.

b. Inspect the connector for damage, security, corrosion and serviceability.

c. Inspect the Bypass Floor contact to the Bypass Door Seal. The Seal should be evenly compressed to approximately 50% of its non-compressed cross-section (i.e. compressed height of approximately 3/16 inches) with no visible gaps. Use care not to damage the seal when checking for gaps / compression of the Seal. Refer to Adjustment if Seal compression is discrepant.

8-5.5.3. TROUBLESHOOTING

a. Refer to Table 8-2 for troubleshooting guidance.

b. Perform Function Check. If Function Check indicates a discrepancy with the Actuator replace the actuator.

8-5.5.4. ADJUSTMENT

a. Clear the area of the Bypass Door of any tools, hardware, or other obstructions.

b. After ensuring that aircraft power is ON, move the IBF BYPASS Cockpit Switch (Appendix A, Figure A-14) from the CLOSED to the OPEN position to actuate the Actuator to open the bypass door (this fully extends the actuator rod). Verify the Bypass Door opens approximately 45 degrees. If Bypass Door does not open approximately 45 degrees, measure Actuator rod extension as shown in Figure 8-1, Detail B from centerline of Item 9 to centerline of Item 10. Measurement should be between 6.97 and 7.03 inches. If not, contact DCI for disposition or replace actuator.

c. Remove hardware from Actuator rod end at Bypass Door. Refer to Figure 8-1, Detail A.

CAUTION

TO PREVENT INTERNAL DAMAGE TO THE ACTUATOR, HOLD THE ROD END WHILE LOOSENING, TIGHTENING, OR APPLYING TORQUE TO THE JAMB NUT.

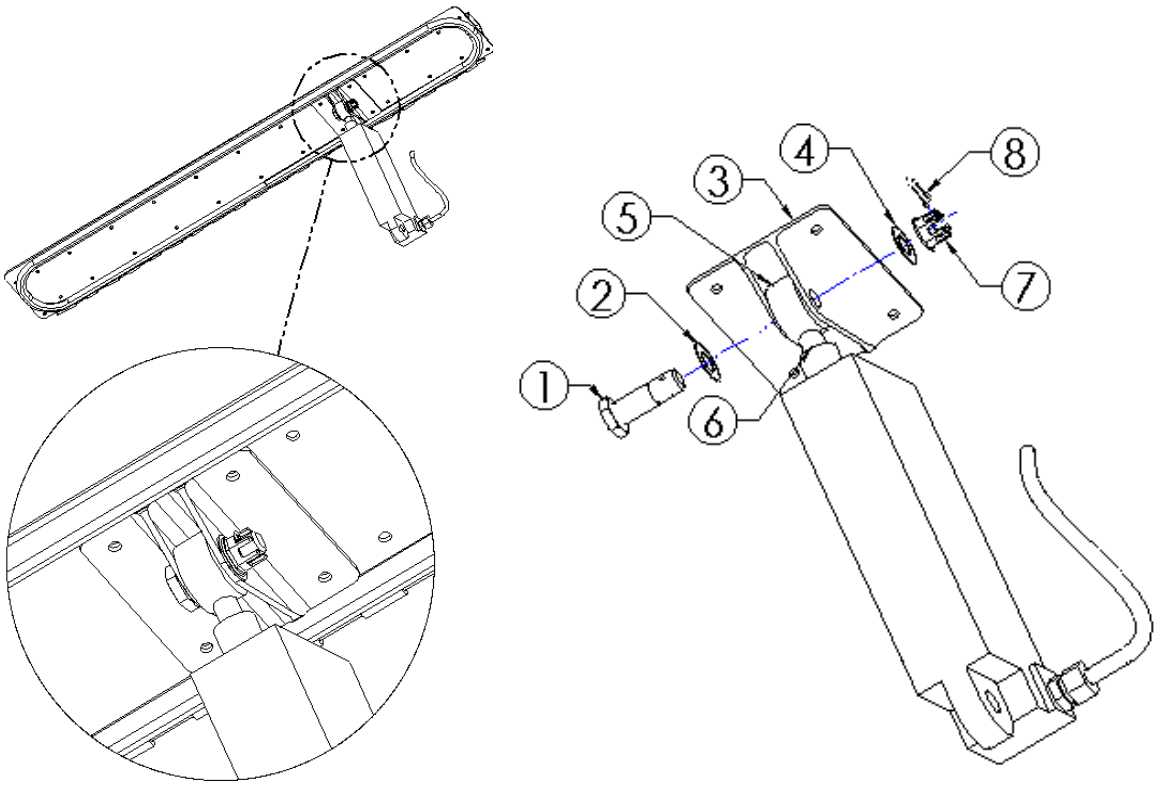
CAUTION

INSTALL THE ACTUATOR BOLT TO THE BYPASS DOOR CLEVIS PLATE IN THE CORRECT ORIENTATION. FAILURE TO CORRECTLY INSTALL THE BOLT WILL RESULT IN DAMAGE TO THE BYPASS FLOOR AND ACTUATOR.

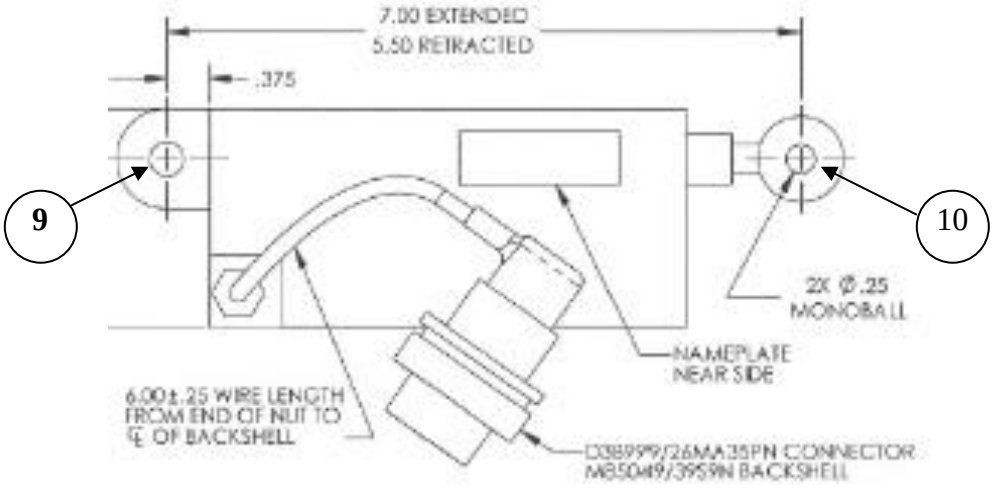
d. Referring to Figure 8-1, Detail A, loosen jamb nut (6) and adjust rod end (5) in or out, as required, one-half turn to attain greater or less Seal compression to the Bypass Door.

e. Temporarily re-install rod end bolt through the Bypass Door Clevis Plate. Move IBF BYPASS Cockpit Switch to the CLOSED position to retract the Bypass Door. The Seal should be uniformly compressed approximately 50% of its non-compressed cross-section (i.e. a compressed height of approximately 3/16 inches) with no visible gaps. Use care not to damage the seal when checking for gaps / compression of the Seal. Refer to Adjustments if Seal compression is discrepant.

f. Repeat steps b through e until the Seal is compressed correctly.



Detail A



Detail B

Figure 8-1. Actuator / Bypass Door Adjustment

g. Permanently install hardware (Figure 8-1, Items 1, 2, 4, 7 & 8) to attach the Actuator rod (5) end to the Bypass Door Clevis Plate (3). Torque jamb nut (6) **25 TO 30 INCH-POUNDS.** Torque nut (7) **30 TO 40 INCH-POUNDS.**

h. Perform function check per paragraph 8-5.5.7.

i. Move IBF BYPASS Cockpit Switch to the CLOSED position to close the Bypass Door and then ensure that aircraft power is OFF.

8-5.5.5. CALIBRATION

Not applicable.

8-5.5.6. REPAIR

a. Repair of the actuator is limited to removal of minor surface corrosion from the actuator shaft using very fine grade sandpaper (400-600 grit) or crocus cloth (Table 8-3).

b. Damage to the actuator, such as cracking of the attachment lug, distortion, warping, or failure to actuate requires disposition by DCI or replacement.

c. The Actuator rod end and attachment hardware can also be replaced if they are damaged, corroded, or unserviceable. Referring to Figure 8-1, Detail A, replace the Actuator rod end (5) by loosening the jamb nut and removing / replacing the rod end. Perform the Actuator / Bypass Door Adjustment procedure per paragraph 8-5.5.4.

8-5.5.7. FUNCTION CHECK

a. Gain access to the area above and below the Bypass Floor Assembly (Refer to paragraphs 4-3.1 & 4-3.2) and clear the area of the Bypass Door of any tools, hardware, or other obstructions.

b. With aircraft power ON, move the IBF BYPASS Cockpit Switch (Appendix A, Figure A-14) from the CLOSED to the OPEN position to actuate the Actuator to open the bypass door (this fully extends the actuator rod). Verify the Bypass Door opens approximately 45 degrees.

c. Move the IBF BYPASS Cockpit Switch (Appendix A, Figure A-14) to the CLOSED position and verify that the bypass door is closed.

d. Perform seal compression inspection and verify the seal is uniformly compressed to approximately 50% of its non-compressed cross-section (i.e. a compressed height of approximately 3/16 inches) with no visible gaps around the perimeter of the bypass door.

e. Ensure aircraft power is OFF.

f. If conditions are not met refer to Troubleshooting guide, Table 8-2, and Adjustment procedures, paragraph 8-5.5.4.

8-5.5.8. INSTALLATION

CAUTION

THIS PROCEDURE INTRODUCES THE POSSIBILITY OF ENGINE FOD.

CAUTION

TO PREVENT INTERNAL DAMAGE TO THE ACTUATOR, HOLD THE ROD END WHILE LOOSENING, TIGHTENING, OR APPLYING TORQUE TO THE JAMB NUT.

CAUTION

INSTALL THE ACTUATOR BOLT TO THE BYPASS DOOR CLEVIS PLATE IN THE CORRECT ORIENTATION. FAILURE TO CORRECTLY INSTALL THE BOLT WILL RESULT IN DAMAGE TO THE BYPASS FLOOR AND ACTUATOR.

a. Gain access to the area below the Bypass Floor Assembly (Refer to paragraph 4-3.2)

b. Clear the area of the Bypass Door of any tools, hardware, or other obstructions.

c. Install the connector to the Actuator (Appendix A, Figure A-12, Item 4). Ensure aircraft power is ON. Move the IBF BYPASS Cockpit Switch (Appendix A, Figures A-14) to the OPEN position to fully extend the Actuator rod to bypass door open position.

d. Orient actuator to the Bypass Door and Actuator Support (As shown in Appendix A, Figure A-5).

e. Install hardware (Appendix A, Figure A-5, Items 24, 31, 35, 36 & 37) attaching the Actuator (Appendix A, Figure A-5, Item 34) to the Actuator Support (Appendix A, Figure A-5, Item 8).

f. Temporarily install the bolt (Figure 8-1, Detail A, Items 1) attaching the Actuator (Figure 8-1, Detail A, Item 5) to the Bypass Door Clevis Plate (Figure 8-1, Detail A, Item 3).

g. Perform Actuator / Bypass Door Adjustment procedure (See paragraphs 8-5.5.4).

h. Confirm the permanent installation of hardware (Figure 8-1, Detail A, Item 1, 2, 4, 7, & 8) securing the Actuator rod end (Figure 8-1, Detail A, Item 5) to the Bypass Door Clevis Plate (Figure 8-1, Detail A, Item 3), and that aircraft power is OFF.

8-5.6. WIRING, WIRING HARNESS, CONNECTORS, BACKSHELLS, CIRCUIT BREAKER, RELAY (Refer to Appendix A, Figures A-12 through A-15)

8-5.6.1. REMOVAL

a. Prepare aircraft for work performed on the electrical system by disconnecting the battery.

b. Remove hardware, clamps, spiral wrap from component, as applicable. Tag interfacing components for later installation. Remove affected components.

8-5.6.2. INSPECTION

The IBF wiring, wiring harness and associated components is constructed of standard aircraft wire and connectors. Standard aircraft maintenance procedures should be used for inspections and repair of the harness and connectors. Routine aircraft maintenance should include visual inspection for evidence of chafing, damage, corrosion and ensuring the circuit breaker and all pins, connectors, and backshells are secure. Inspect wiring, wiring harness and associated components per AC 43.13-1, Chapter 11.

8-5.6.3. TROUBLESHOOTING

a. See Table 8-2 for troubleshooting guidance.

b. See Appendix A, Figures A-14 through A-15 for wiring diagram, wire marking and identification, routing, and installation information.

8-5.6.4. ADJUSTMENT / CALIBRATION

Not applicable.

8-5.6.5. REPAIR

Standard aircraft maintenance procedures should be used for repair of the wiring, wire harness and associated components. See Appendix A, Figures A-14 through A-16 for wiring diagram, wire marking and identification, routing, and installation information. Perform repairs to affected components per AC 43.13-1, Chapter 11.

8-5.6.6. INSTALLATION

a. Prepare aircraft for work performed on the electrical system by disconnecting the battery.

b. Install affected component using appropriate hardware. Connect wiring per wiring diagram. Install clamps, spiral wrap and heat shrink as applicable to affected components per AC 43.13-1, Chapter 11.

8-6. FASTENER LISTING

Refer to the Appendix A – Parts Figures for a listing of fasteners and their location.

8-7. PROTECTIVE TREATMENT

a. The fairing assembly and structural components of the IBF system is composed primarily of aluminum alloy materials, except for standard hardware components and fasteners, and vendor components. Aluminum components are coated with an epoxy primer. Scratched or damaged aluminum components should be touched up with a small paint brush dipped in epoxy primer. Prepare epoxy primer per manufacturer's instructions.

b. Aircraft finishes scratched or damaged should be recoated with the finish specified in the aircraft maintenance records and maintenance manual.

c. For the systems and electrical components, there are no protective treatments specified. Contact DCI for disposition of damaged components, or to replace the damaged component.

Table 8-1. Protective Treatment for Components

Component	Material	Limits of Damage	Protective Treatment
Filter Assembly	Alum. Alloy Sheet Stk.	Scratches, pitting, gouges must be less than 20% of part thickness. See note 1.	Re-apply Epoxy Primer Ref Table 8-3
Engine Wash Tube	Alum. Alloy Tubing	Scratches, pitting, gouges must be less than 20% of part thickness. See note 1.	Chemical conversion coating. Ref Table 8-3
Bypass Floor Assembly			
Bypass Floor	Alum. Alloy Sheet Stk.	Scratches, pitting, gouges must be less than 20% of part thickness. See note 1.	Re-apply Epoxy Primer Ref Table 8-3
Bypass Door	Alum. Alloy Sheet Stk.	Scratches, pitting, gouges must be less than 20% of part thickness. See note 1.	Re-apply Epoxy Primer Ref Table 8-3
Actuator Bracket	Alum. Alloy Sheet Stk.	Scratches, pitting, gouges must be less than 20% of part thickness. See note 1.	Re-apply Epoxy Primer Ref Table 8-3
Filter Maintenance Aid Bracket	Alum. Alloy Sheet Stk.	Inspect for Serviceability	Re-apply Epoxy Primer Ref Table 8-3
Filter Adapter Frame Assembly	Alum. Alloy Sheet Stk.	Scratches, pitting, gouges must be less than 20% of part thickness. See note 1.	Re-apply Epoxy Primer Ref Table 8-3
Access Door	Alum. Alloy Sheet Stk.	Inspect for proper sealing / serviceability.	Re-apply Epoxy Primer Ref Table 8-3; Then re-apply aircraft finish per aircraft records.

Notes:

1. Contact DCI for disposition instructions for components with more severe discrepancies or replace.

8-8. TROUBLESHOOTING GUIDE

The following table defines the probable cause, remedy, and ICA reference to the applicable procedure for correcting the trouble listed in the table. Multiple failures are not addressed in this table such as a failed actuator and failed wiring existing at the same time.

Table 8-2. Troubleshooting Guide

ITEM	TROUBLE	PROBABLE CAUSE	REMEDY	ICA REF
1	IBF FILTER light fails to illuminate	Faulty connector Faulty circuit Faulty cockpit indicator Faulty delta P switch	Check connectors to aircraft power, cockpit indicator and delta P switch. Check circuit continuity and repair circuit. Verify using caution light press-to-test; replace cockpit indicator light bulb. Replace differential pressure switch.	Para. 8-5.6. Para. 8-5.6. Para. 8-5.2. Para. 8-5.3.
2	IBF FILTER light is dim	Failed bulb in indicator	Verify using caution light press-to-test; replace cockpit indicator light bulb.	Para. 8-5.2.
3	IBF FILTER light stays illuminated	Bypass obstructed Faulty delta P switch	Clear bypass path. Replace differential pressure switch.	N/A Para. 8-5.3.
4	IBF Bypass door fails to close	Actuator misrigged Faulty connector Faulty circuit Faulty cockpit switch Faulty actuator	Check actuator rigging. Check connectors to aircraft power, cockpit switch and actuator. Check circuit continuity and repair circuit. Check switch continuity in CLOSED position; repair or replace cockpit switch. Replace actuator.	Para. 8-5.5. Para. 8-5.6. Para. 8-5.6. Para. 8-5.1. Para. 8-5.5.
5	IBF Bypass door fails to open	Actuator misrigged Faulty connector Faulty circuit Faulty cockpit switch Faulty actuator	Check actuator rigging. Check connectors to aircraft power, cockpit switch and actuator. Check circuit continuity and repair circuit. Check switch continuity in OPEN position; repair or replace cockpit switch. Replace actuator.	Para. 8-5.5. Para. 8-5.6. Para. 8-5.6. Para. 8-5.1 Para. 8-5.5.
6	IBF FILTER light illuminates	Obstructed inlet Dirty filter	Clear engine inlet. Check FMA & inspect filter; service filter.	N/A Para. 7-3.
7	Engine fails PAC	Obstructed inlet Dirty filter	Clear engine inlet. Verify PAC results, check FMA, & inspect filter; service filter. NOTE: If engine still fails PAC - check engine.	N/A Para. 7-3.
8	Engine wash spray pattern not uniform	Spray nozzle clogged	Inspect & clear tube/nozzle to remove dirt / debris.	Para. 8-4.2.
9	IBF FILTER fails to dim	Faulty aircraft dimmer circuit	Check aircraft dimmer circuit for caution/warning panel per Bell manual.	N/A
10	IBF FILTER fails to brighten	Faulty aircraft dimmer circuit	Check aircraft dimmer circuit for caution/warning panel per Bell manual.	N/A

8-9. SPECIAL TOOLS / SPECIAL EQUIPMENT

NOTE
Standard Aircraft Mechanic Tools are not listed.

a. Hand Seamer with 1 1/4 inch maximum jaw depth – Required for straightening of the filter assembly pleats. Hand seamers are available through many commercial aircraft supply stores and also through commercial heating and air conditioning supply stores. Recommend the following: Malco Tools "Hand Seamer with Forged Steel Jaw", Catalog # S2, S3 and S6. The S3 model is also available through Wicks Aircraft Supply, Part Number TP44-0, "Offset Hand Seamer".

b. Barfield or Equivalent Manufacturer Altimeter Test Set – Required for Function Check of the Differential Pressure Switch and Filter Maintenance Aid.

c. Six Point Offset Ratcheting Box Wrench to fit 5/16 inch hex head – Recommended but not required for installation and removal of the Filter Assemblies.

8-10. CONSUMABLE MATERIALS, SUPPLIES, AND PROTECTIVE TREATMENT SPECIFICATIONS

Table 8-3. Consumable Materials, Supplies and Protective Treatment Specifications

Item	Description	Spec / Part No.
	Consumables	
1	Sealant	AMS 3276
2	Sealant	Mil-S-8802
3	Sealant	RTV 736
4	Sandpaper 400-600 grit	Commercial avail.
5	Crocus Cloth	Commercial avail.
	Supplies	
6	Air Filter Oil	Squeeze bottle (4.0 oz.) – DCI P/N 100100-040
6.1	Air Filter Oil	1 Gallon container – DCI P/N 100101-000
6.2	Air Filter Oil	5 Gallon container -DCI P/N 100105-000
7	Air Filter Cleaner	1 Gallon container – DCI P/N 100201-000
7.1	Air Filter Cleaner	5 Gallon container – DCI P/N 100205-000
7.2	Air Filter Cleaner	25 liter or 6.6 gallon – Zok 27
	Protective Treatment Specs	
8	Epoxy Primer.	MIL-PRF-23337
9	Chemical Conversion Coating	MIL-C-5541 (One commercial trade name, "Alodine")
10	Aircraft Finish	See Aircraft Records for appropriate finish/top coat.

ICA APPENDIX A – ILLUSTRATED PARTS BREAKDOWN

TABLE OF CONTENTS

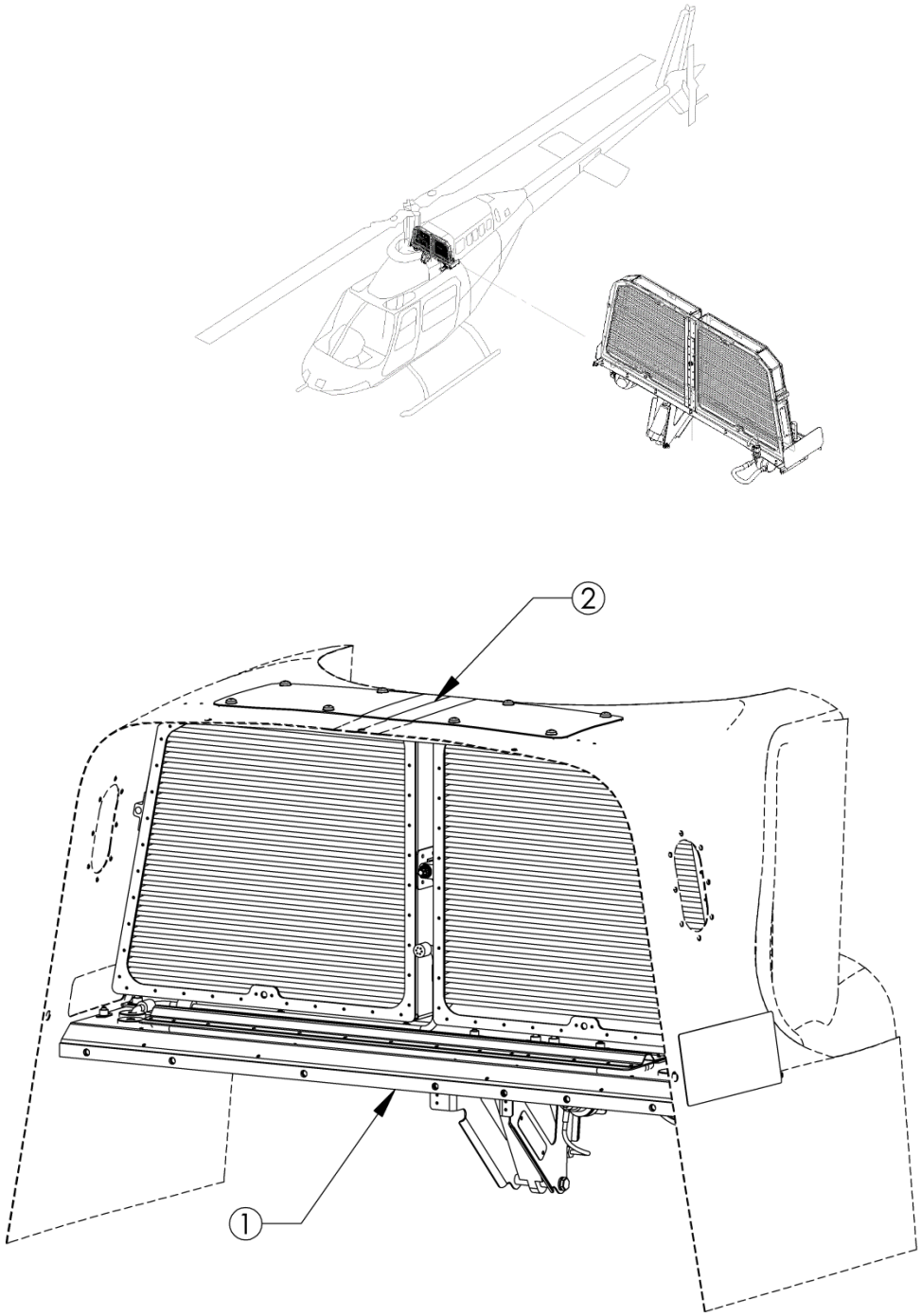


Figure A-1: IBF Kit Installation w/ Access Door

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-1: IBF Kit Installation w/ Access Door		
	109000-103	Installation – IBF (w/access door mod)		SP
1	109000-101	Installation – IBF (See Figure A-2 for breakdown)	1	SP
2	109301-101	Mod. – Access, Cowling, Inlet (See Figure A-11 for breakdown)	1	NP

AVAIL CODE DEFINITION

P	Procurable
NP	Non Procurable
SP	Normal stock/procurable

See introduction on availability codes for additional information.

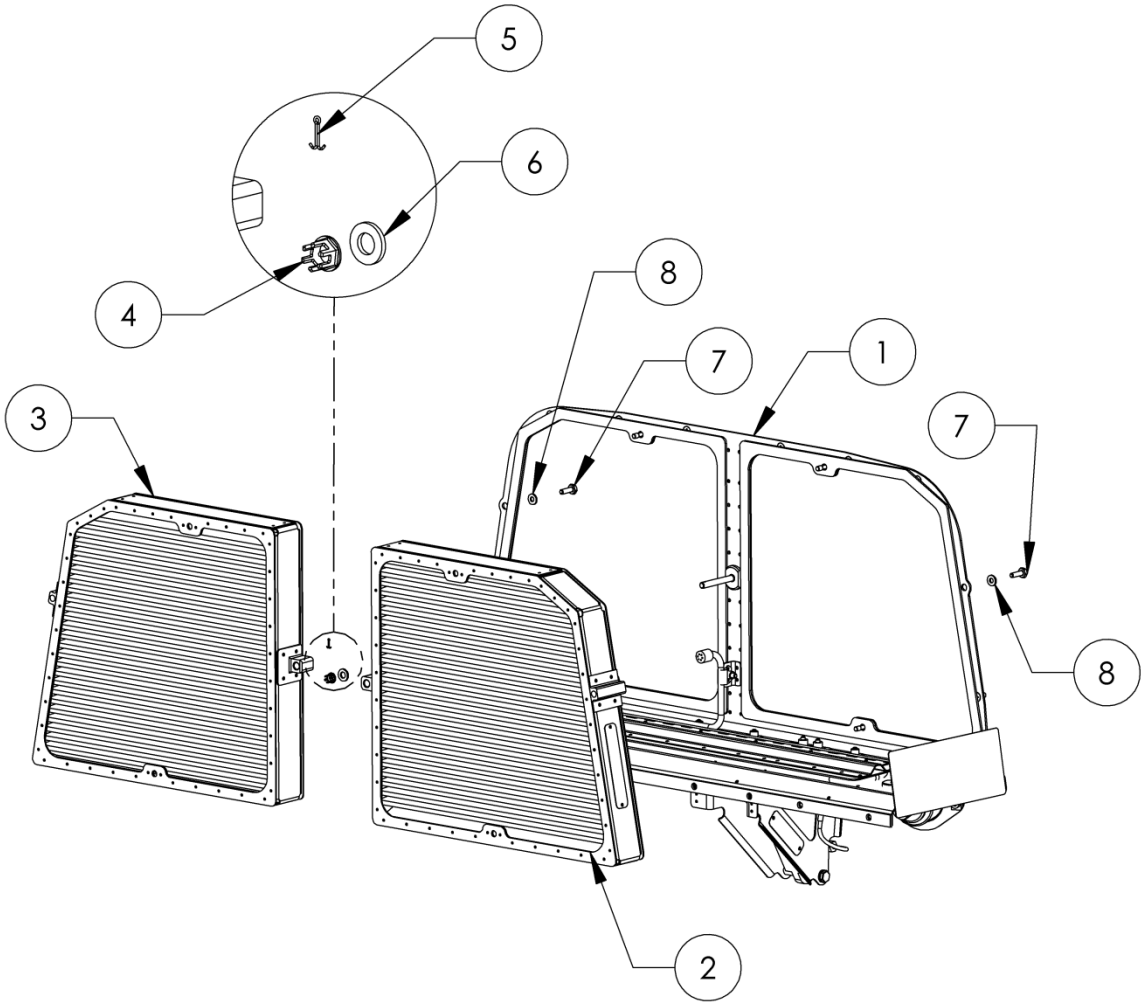


Figure A-2: Installation - IBF

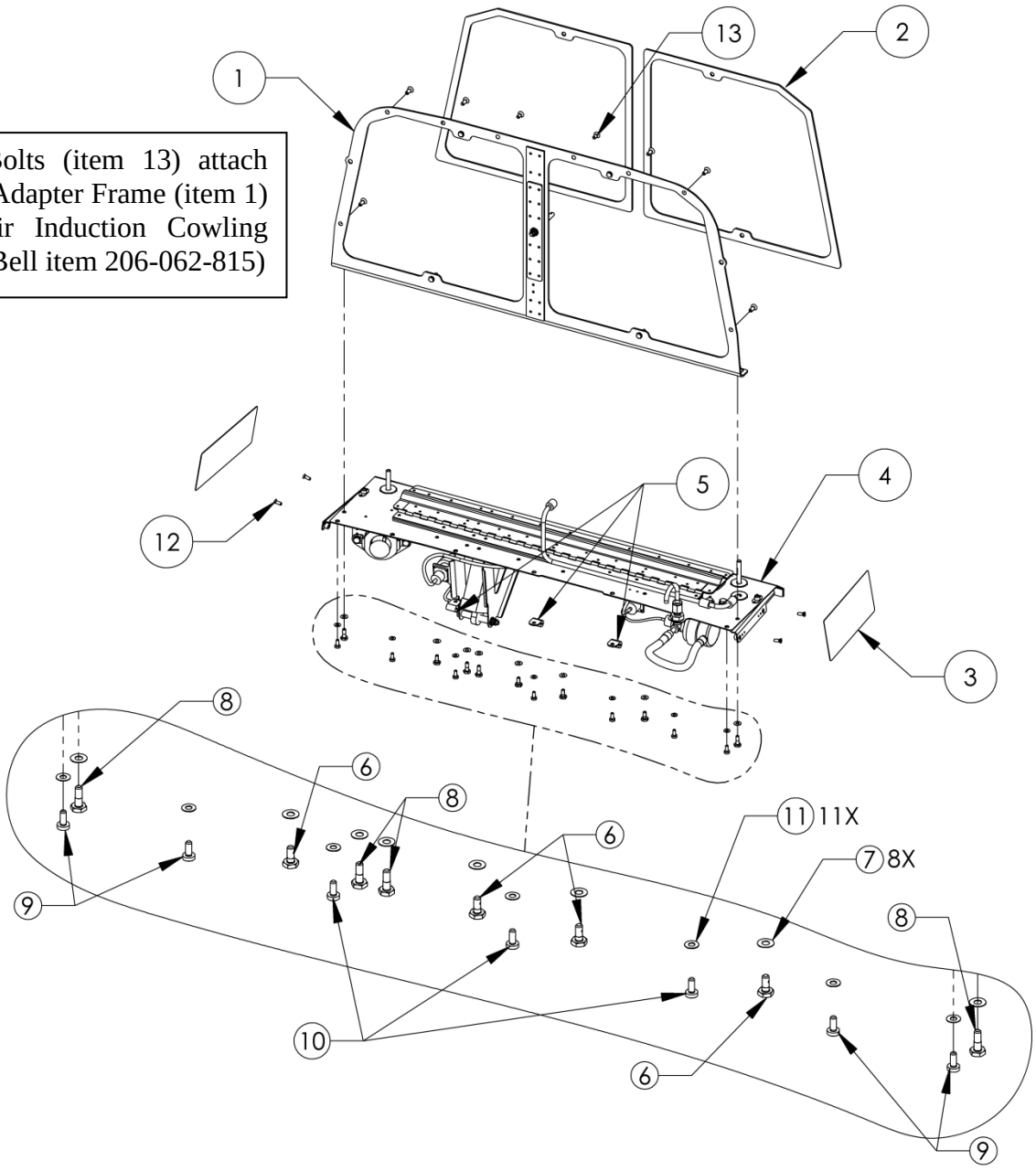
INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-2: IBF Installation		
	109000-101	Installation – IBF (See Figure A-1)	REF	
1	109100-101	Installation – Structure (See Figure A-3 for breakdown)	1	NP
2	109200-102	Filter – R/H	1	SP
3	109200-101	Filter – L/H	1	SP
4	MS14144L4	Nut	1	P
5	MS24665-151	Cotter Pin	1	P
6	AN960PD416	Washer	1	P
7	AN3-5A	Bolt	2	P
8	AN960C10L	Washer	2	P

AVAIL CODE DEFINITION

P	Procurable
NP	Non Procurable
SP	Normal stock/procurable

See introduction on availability codes for additional information.

NOTE: Bolts (item 13) attach the Filter Adapter Frame (item 1) to the Air Induction Cowling stiffener (Bell item 206-062-815)



NOTE: Bolts (items 9 & 10) attach the floor assembly (item 4) to engine air inlet cowl. Bolts (items 6 & 8) attach floor assembly (item 4) to frame assembly (item 1).

Figure A-3: Installation - Structure

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-3: Installation - Structure		
	109100-101	Installation – Structure (See Figure A-2)	REF	
1	109102-101	Assembly – Filter Adapter Frame (See Figure A-4 for breakdown)	1	SP
2	109103-201	Seal – Filter	2	SP
3	109105-201	Cover – Exhaust, IPS	2	SP
4	109110-101	Assembly – Floor, Bypass (See Figure A-5 for breakdown)	1	SP
5	MS21919WDG2	Clamp	3	P
6	NAS6203-2	Bolt	4	P
7	AN960PD10L	Washer	8	P
8	NAS6203-4	Bolt	4	P
9	MS27039-0806	Bolt	4	P
10	MS27039-0807	Bolt	3	P
11	AN960PD8L	Washer	7	P
12	MS24693S49	Bolt	4	P
13	NAS1203-2	Bolt	8	P
14	AN929-6J	Cap (Not Shown)	2	P
15	MS29470AD4	Rivet (Not Shown)	42	NP
16	109400-101	Installation – Electrical, System (Not Shown-See Figures A-12 through A-15 for breakdown)	1	NP
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		

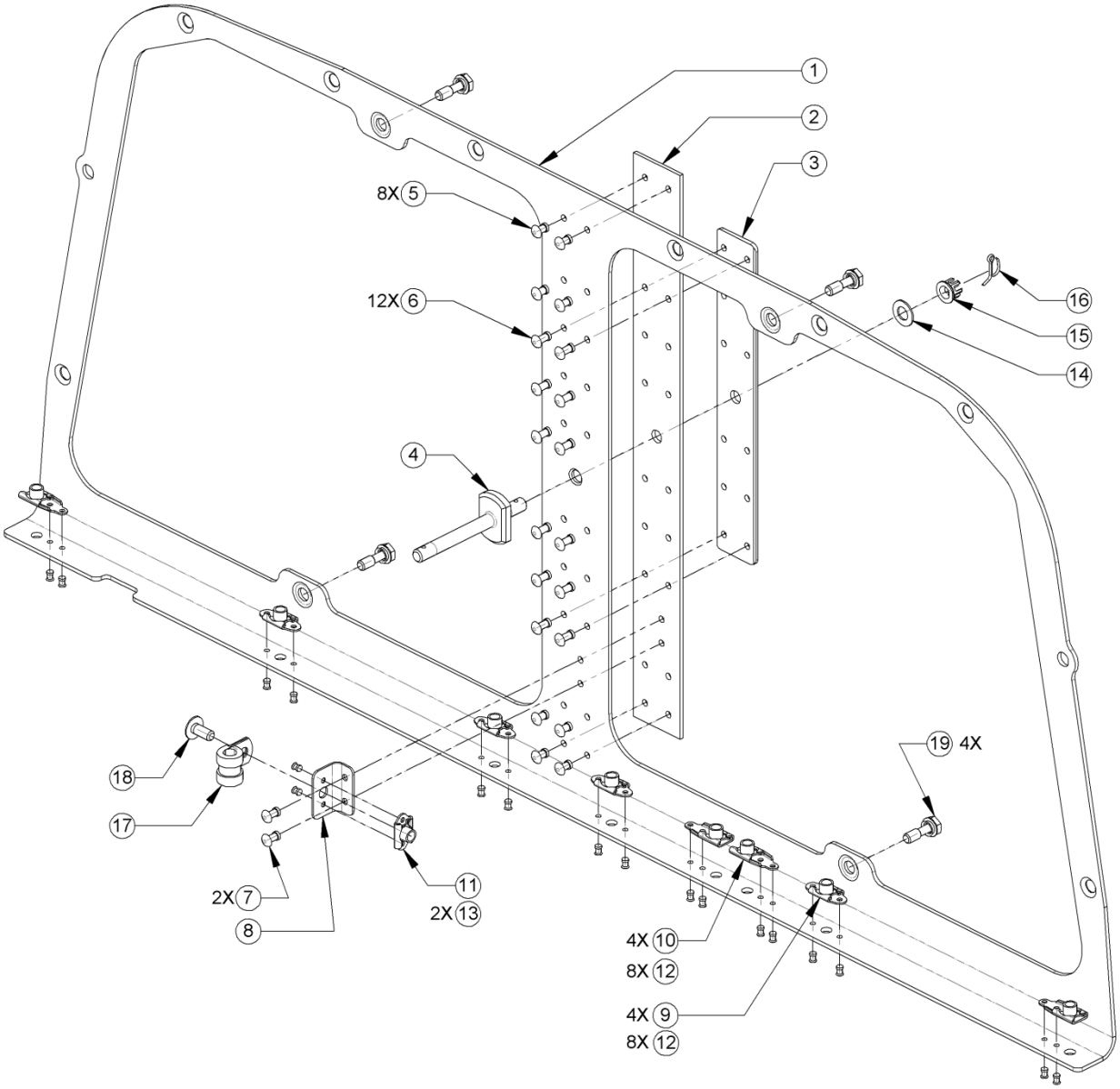


Figure A-4: Adapter Frame Assembly

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-4: Adapter Frame Assembly		
	109102-101	Filter Adapter Frame Assembly (See Figure A-3)	REF	
1	109102-201	Frame – Adapter, Filter	1	P
2	109104-203	Channel - Frame	1	P
3	109108-201	Doubler - Frame	1	P
4	109106-201	Pin – Mount, Filter	1	P
5	MS20470AD4	Rivet	8	SP
6	MS20470AD4	Rivet	12	SP
7	MS20470AD4	Rivet	2	SP
8	109109-201	Clip - Wash	1	P
9	MS21059L3	Platenut	4	SP
10	MS21061L3	Platenut	4	SP
11	MS21075L3N	Platenut	1	SP
12	NAS1097AD3-3-5	Rivet	16	SP
13	NAS1097AD3-3	Rivet	2	SP
14	NAS1149D0332J	Washer	1	SP
15	MS14144L4	Nut	1	SP
16	MS24665-151	Pin, Cotter	1	SP
17	MS21919WDG4	Clamp	1	SP
18	AN525-10R7	Screw	1	SP
19	WES7900-10-A-10	Bolt, Captive	4	P
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		

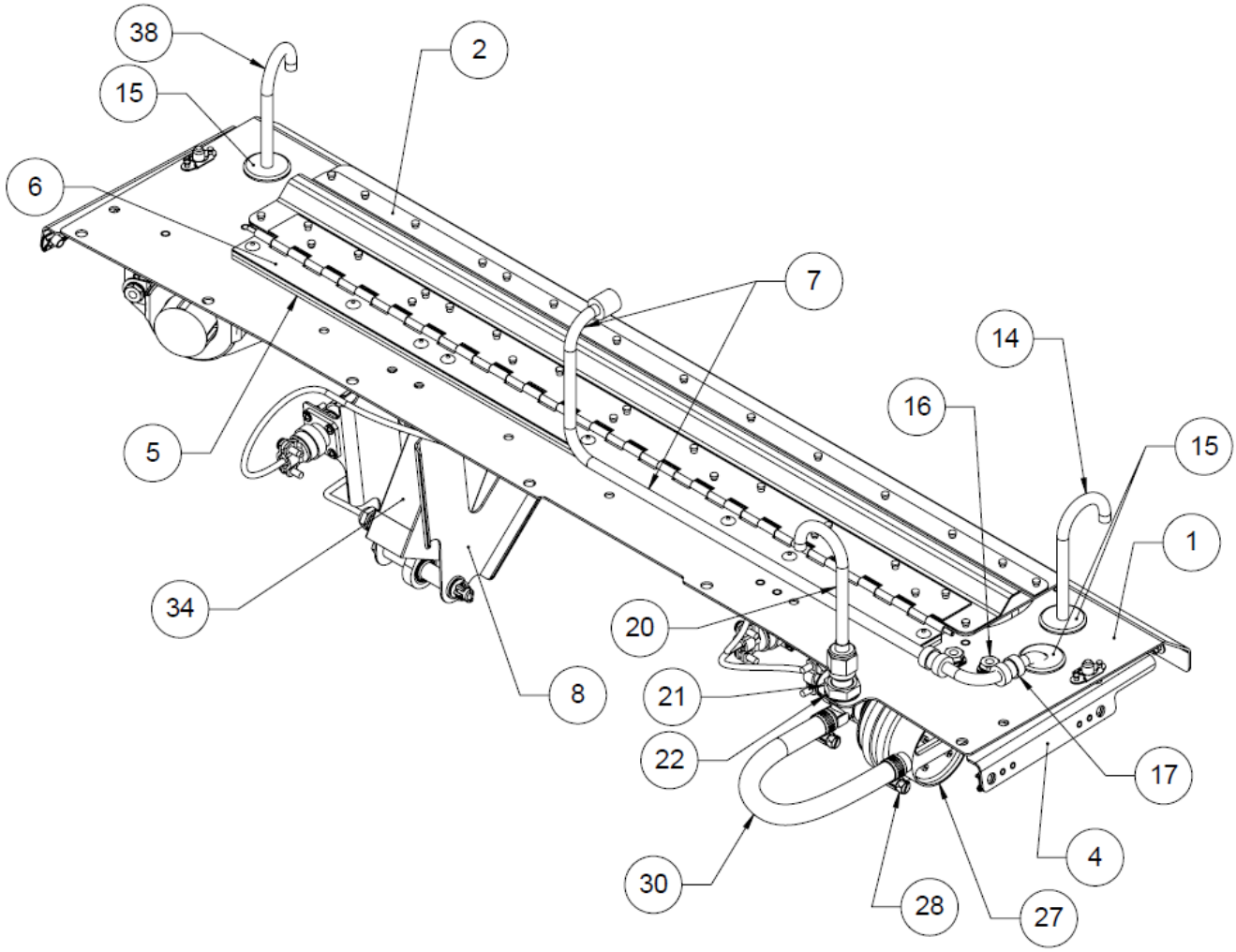


Figure A-5 (1): Bypass Floor Assembly

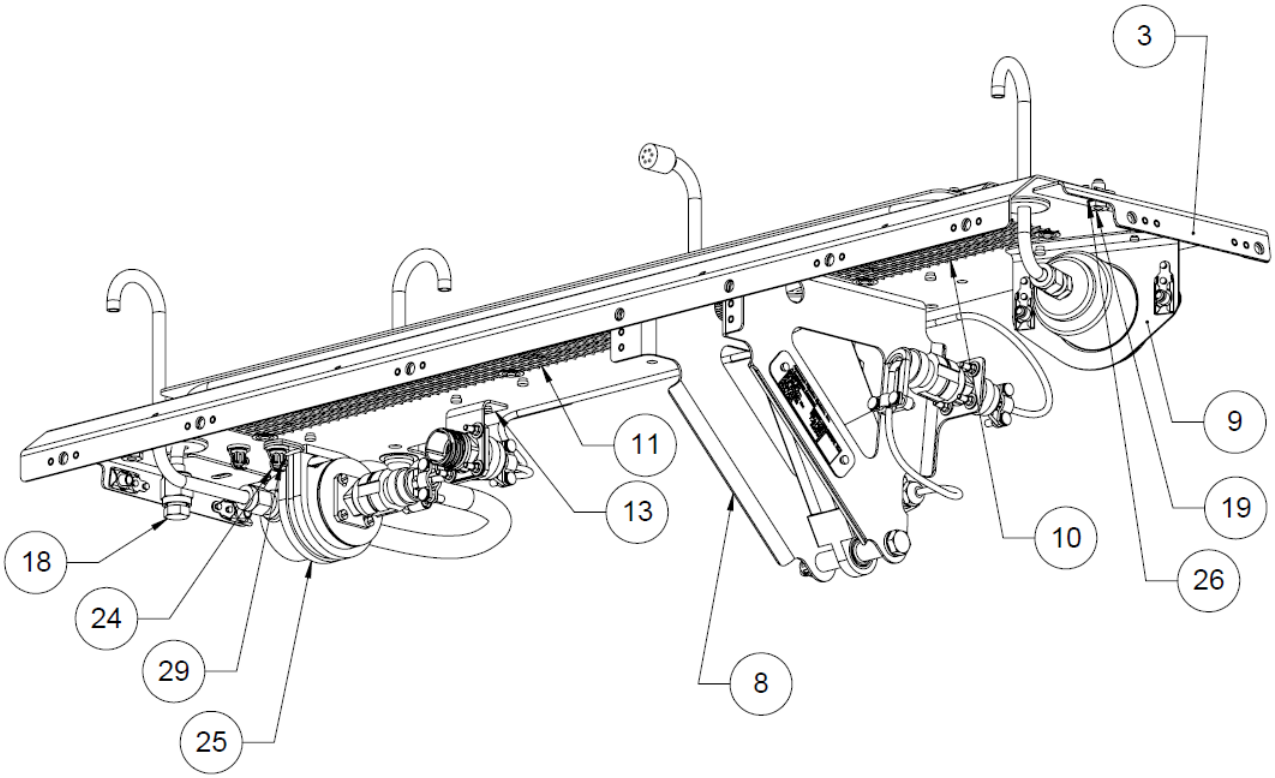


Figure A-5 (2): Bypass Floor Assembly

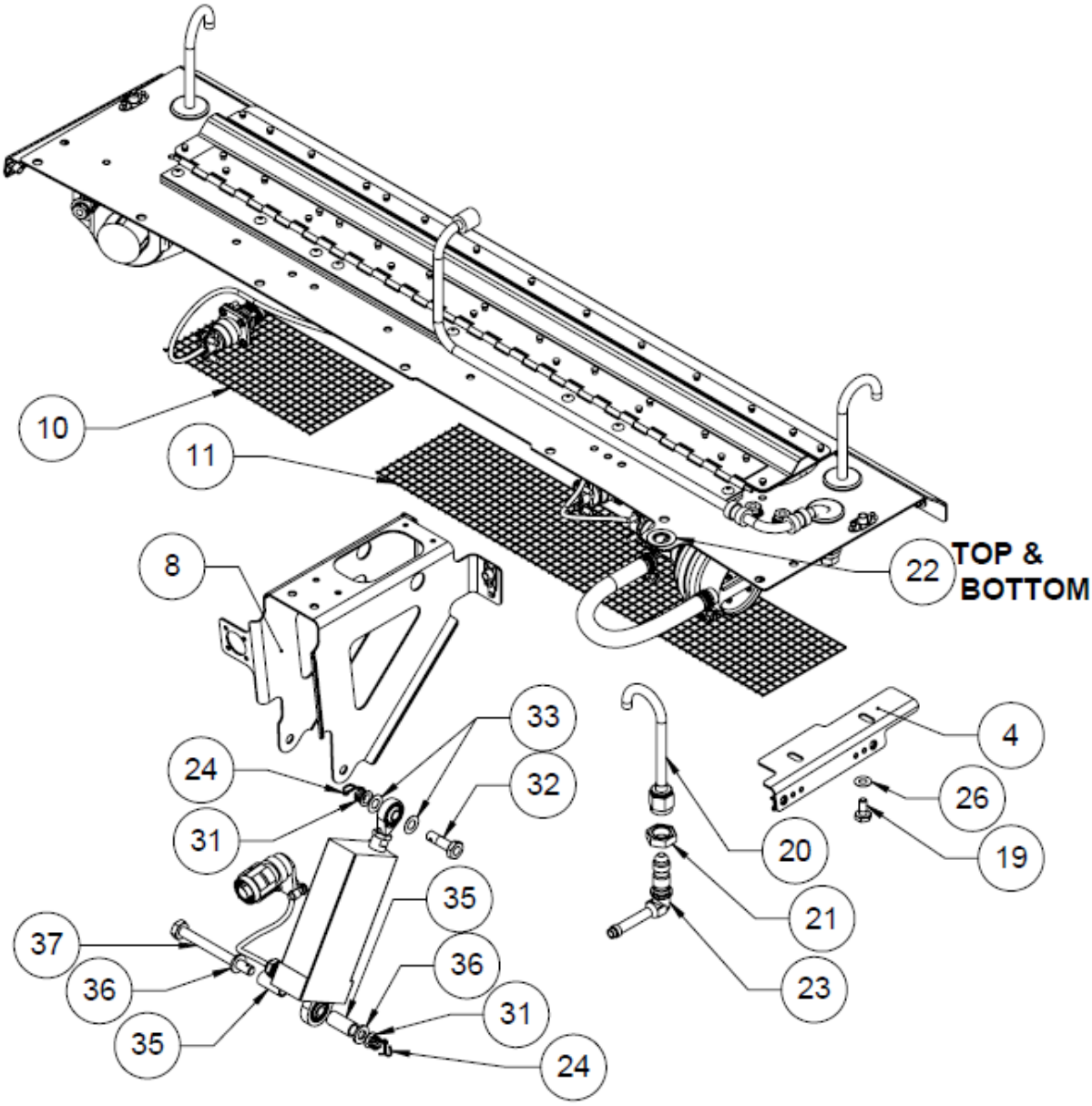


Figure A-5 (3): Bypass Floor Assembly

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-5: Bypass Floor Assembly		
	109110-101	Assembly – Floor, Bypass (See Figure A-3)	REF	
1	109111-101	Assembly – Floor (See Figure A-6 for breakdown)	1	P
2	109120-101	Assembly – Bypass Door (See Figure A-7 for breakdown)	1	SP
3	109113-102	Assembly – Angle LH (See Figure A-8 for breakdown)	1	SP
4	109113-101	Assembly – Angle RH (See Figure A-8 for breakdown)	1	SP
5	109115-201	Spacer – Hinge	2	SP
6	109114-201	Hinge Half – Piano, Floor	1	SP
7	109119-101	Assembly – Tube, Engine Wash	1	SP
8	109112-101	Assembly – Support, Actuator (See Figure A-10 for breakdown)	1	SP
9		Assembly – Maintenance Indicator (See Figure A-9 for Breakdown)	1	P
10	109118-201	Screen – Floor, LH	1	SP
11	109118-203	Screen – Floor, RH	1	SP
12	N/A	Removed	1	SP
13	106133-201	Electrical Bracket	1	SP
14	109117-201	Tube	1	SP
15	MS35489-7	Grommet	3	p
16	NAS6203-4D	Bolt	1	P
17	MS21919WDG4	Clamp	2	P
18	AN806-D4	Plug	1	P
19	NAS6203-2	Bolt	4	P
20	109117-105	Assembly – Tube, Ambient	1	SP

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
21	AN924-4	Nut – Jam	1	P
22	NAS1149D0716J	Washer	2	P
23	AN838-4D	Adapter	1	P
24	MS24665-151	Cotter Pin	2	P
25	MS21919WDG28	Clamp	1	P
26	NAS1149D0316J	Washer	4	P
27	100406-101	Switch – Pressure, Differential	1	SP
28	3604	Hose Clamp	2	P
29	MS14144L3	Nut	2	P
30	109132-201	Hose – Delta P, Ambient	1	SP
31	MS14144L4	Nut	2	P
32	NAS6204-8D	Bolt	1	P
33	NAS1149D0416J	Washer	2	P
34	106113-205	Actuator – Door, Bypass	1	SP
35	NAS43DD4-50	Spacer	2	P
36	NAS1149D0463J	Washer	2	P
37	AN4-24	Bolt	1	P
38	109117-203	Tube	1	SP
39	109133-201	Plate, Data (Not Shown – attaches to RH side of actuator bracket)	1	SP
40	MS20253-2-2100	Pin – Hinge (Not Shown)	1	SP
41	A3236-6	C/S Washer (Not Shown)	10	P
42	NAS1097AD4-4	Rivet (Not Shown)	11	NP

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
43	MS20470AD5	Rivet (Not Shown)	8	NP
44	MS20470AD4	Rivet (Not Shown)	2	NP
45	A-402-1	Nut (Connects DP Switch and 109117-201 Tube) – Not Shown	1	SP
46	A-403-1	Front Ferrule (associated with #45) (Not Shown)	1	SP
47	A-404-1	Back Ferrule (associated with #45) (Not Shown)	1	SP
48	NAS6203-3D	Bolt	1	SP
49	NAS6203-5D	Bolt	1	SP
50	NAS1149D0316J	Washer	2	SP
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		

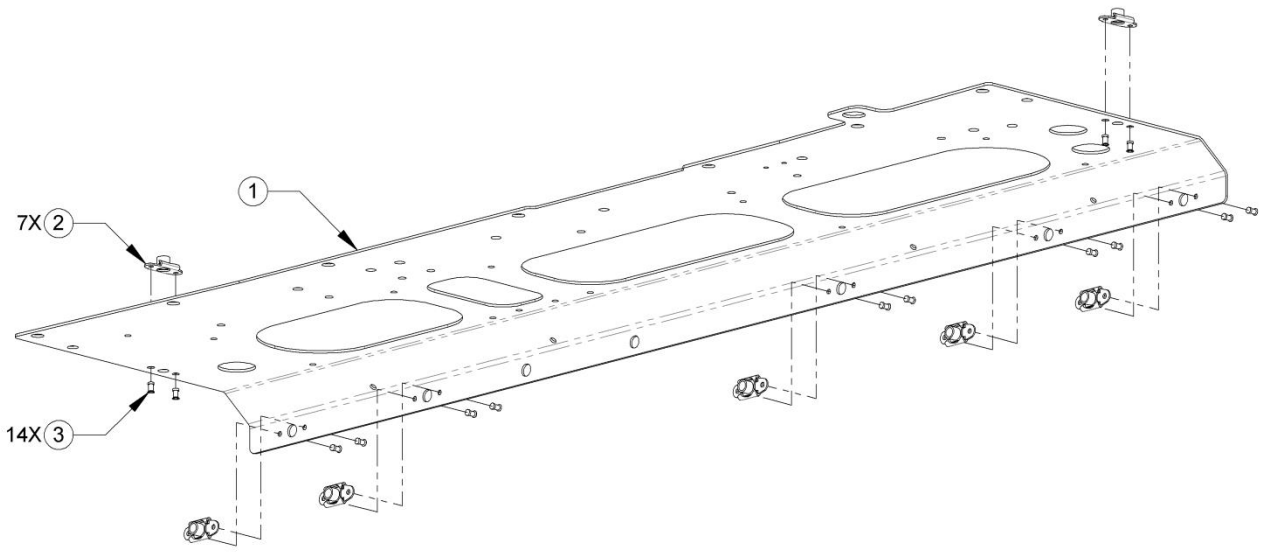


Figure A-6: Floor Assembly

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-6: Assembly – Floor		
	109111-101	Assembly – Floor, Bypass (See Figure A-5)	REF	
1	109111-201	Floor	1	P
2	MS21059-3	Platenut	7	P
3	MS20426AD3	Rivet	14	NP
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		

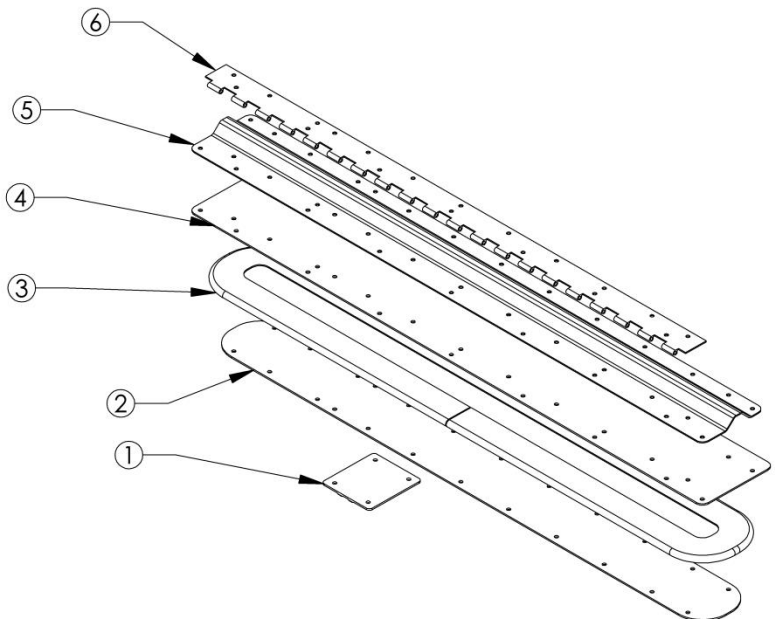


Figure A-7: Assembly – Bypass Door

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-7: Assembly – Bypass Door		
	109120-101	Assembly – Bypass Door (See Figure A-5)	REF	
1	109126-201	Lug – Door, Bypass	1	P
2	109123-201	Retainer – Seal, Bypass	1	P
3	109122-201	Seal – Bypass Door	1	P
4	109121-201	Door – Bypass	1	P
5	109125-203	Stiffener – Door, Bypass	1	P
6	109124-201	Hinge – Door	1	P
7	NAS1097AD4	Flush Rivet (Not Shown)	11	NP
8	MS20470AD4	Rivet (Not Shown)	24	NP
		AVAIL CODE DEFINITION		
		P Procurable NP Non Procurable SP Normal stock/procurable		
		See introduction on availability codes for additional information.		

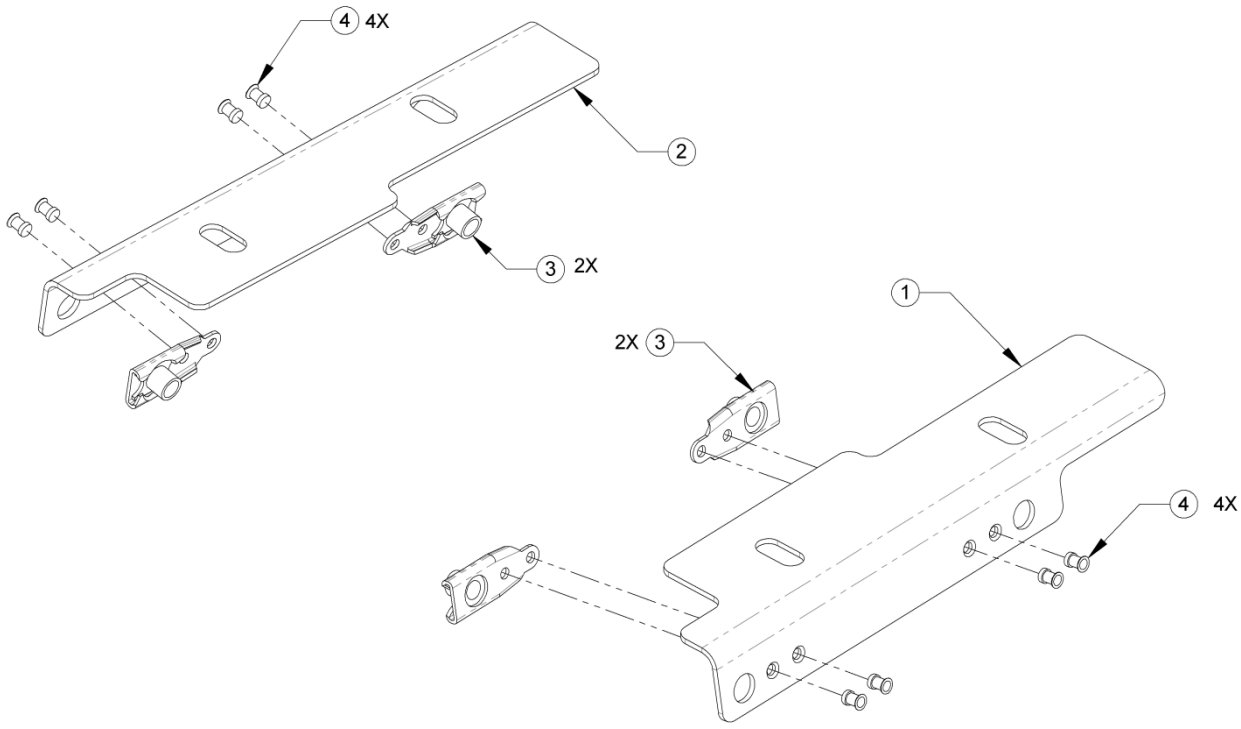


Figure A-8: Assembly – Angle, Floor

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-8: Angle Assembly, Floor		
	109113-101	Angle Assembly, Floor[Figure A-5(3)]	REF	
1	109113-201	Angle, Closeout - LH	1	P
3	MS21061L08	Platenut	2	SP
4	MS20426AD3	Rivet	4	NP
	109113-102	Angle Assembly, Floor [Figure A-5(3)]	REF	
2	109113-202	Angle, Closeout - RH	1	P
3	MS21061L08	Platenut	2	SP
4	MS20426AD3	Rivet	4	NP
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		

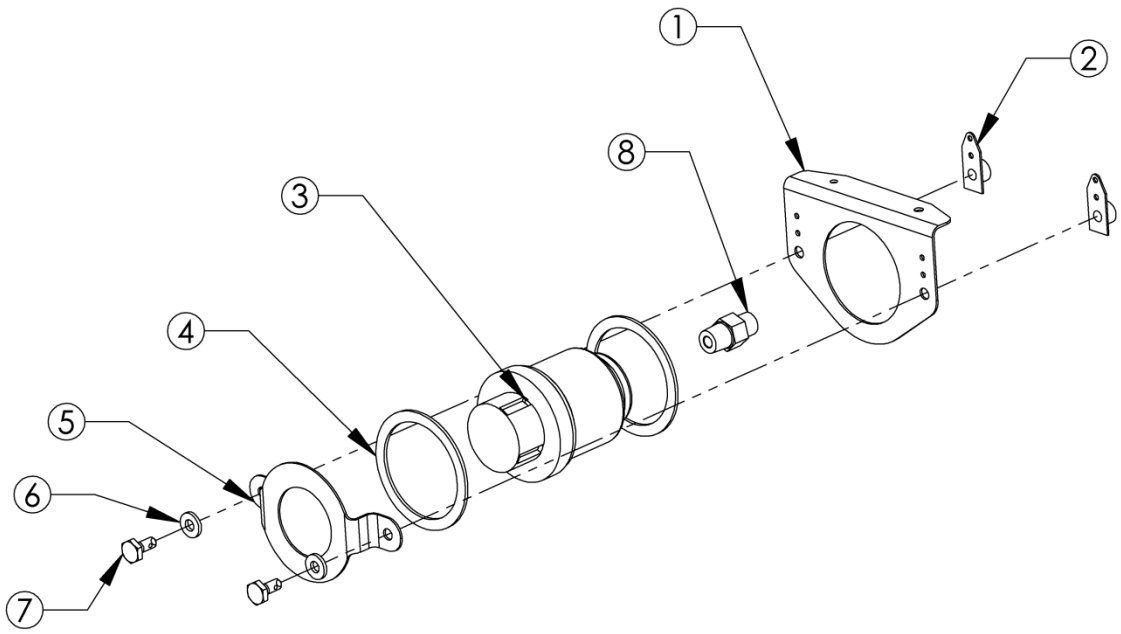


Figure A-9: Assembly – Maintenance Indicator

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-9: Assembly – Maintenance Indicator		
		Assembly – Maintenance Indicator (See Figure A-5)	REF	
1	109130-101	Mount Assy – Maintenance Indicator	1	SP
2	MS21061L3	Platenut – (Part of 109130 Assy)	2	P
3	104441-201	Indicator – Maintenance	1	SP
4	100444-201	Cushion	2	SP
5	100442-201	Retainer – Indicator Maintenance	1	SP
6	NAS1149D0332J	Washer	2	P
7	NAS6203-2	Bolt	2	P
8	A-400-1-2	Adapter	1	P
9	NAS1097AD3-3-5	Rivet – (Part of 109130 Assy) (Not Shown)	4	NP
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		

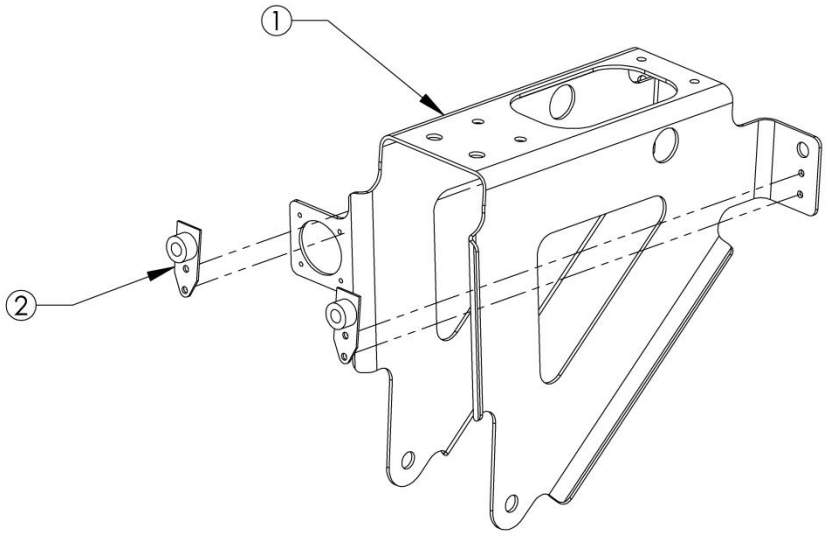


Figure A-10: Assembly – Support, Actuator

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-10: Assembly – Support, Actuator		
	109112-101	Assembly – Support, Actuator (See Figure A-5)	REF	
1	109112-201	Support – Actuator	1	P
2	MS21061-L3	Platenut	2	P
3	MS20426AD3	Rivet (Not Shown)	4	NP
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		

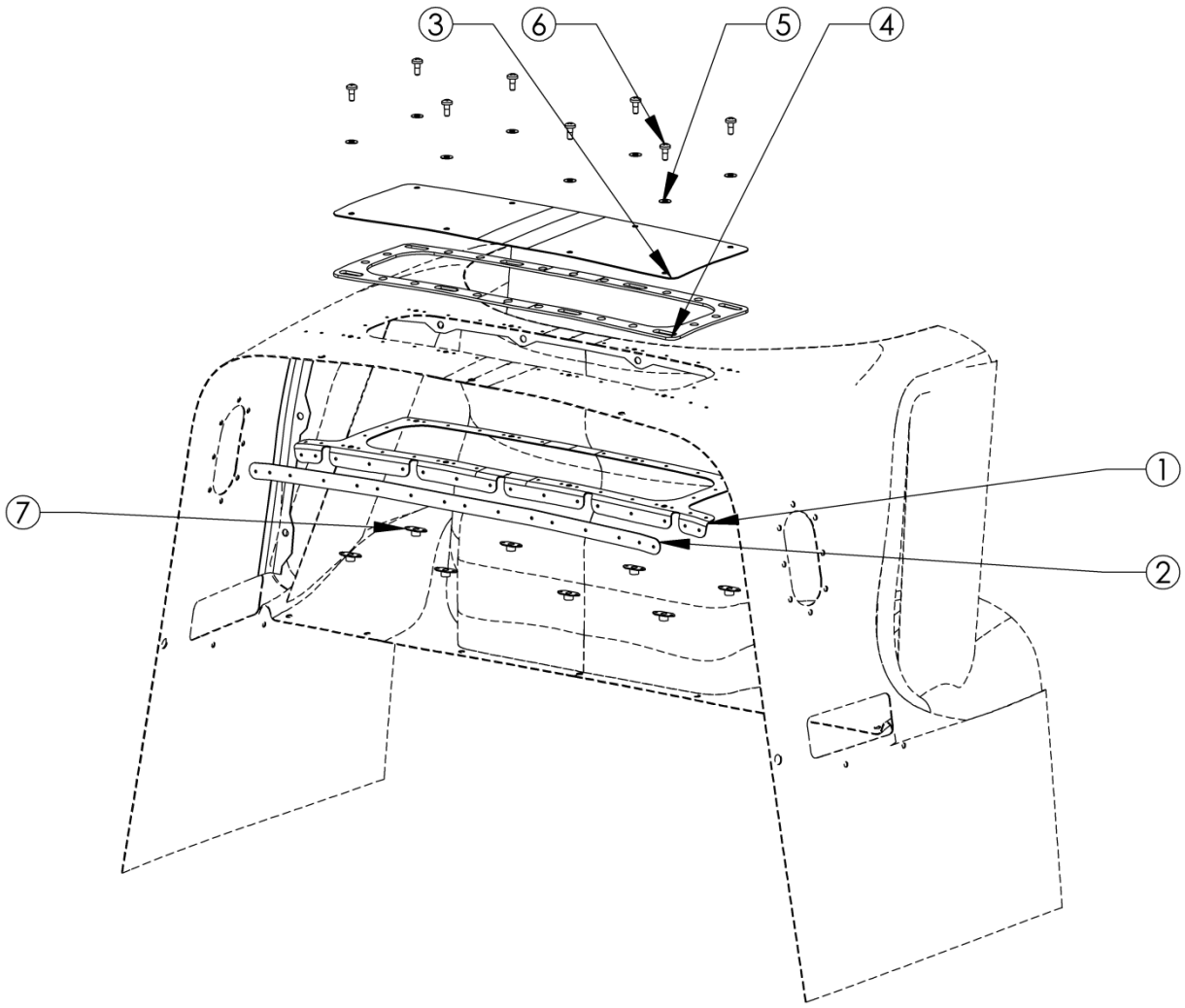


Figure A-11: Modification – Access, Cowl, Inlet

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-11: Modification – Access, Cowl, Inlet		
	109301-101	Modification – Access, Cowl, Inlet (See Figure A-1)	REF	
1	109311-201	Doubler	1	SP
2	109313-201	Plate Stiffener	1	SP
3	109310-201	Door	1	SP
4	109312-201	Gasket	1	SP
5	AN960PD10L	Washer	8	P
6	NAS623-3-3	Bolt	8	P
7	MS21059L3	Platenut	8	P
8	MS20426AD3	Rivet (Not Shown)	1	NP
9	MS20470AD3	Rivet (Not Shown)	53	NP
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		

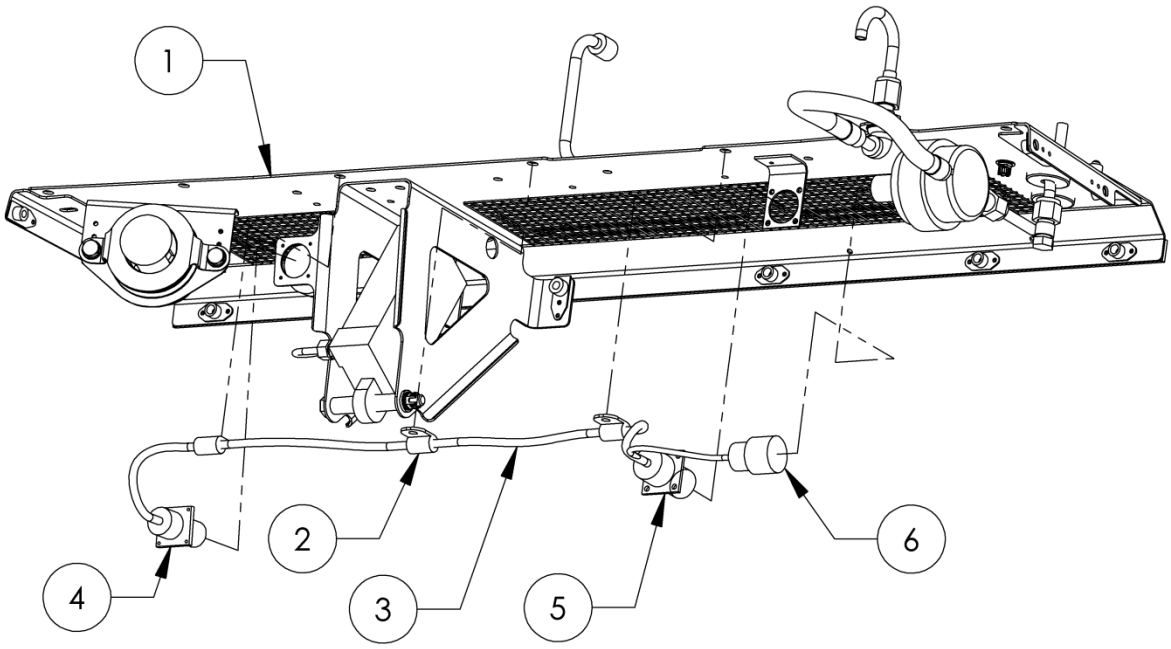


Figure A-12: Wire Harness, IBF Floor

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-12: Wire Harness, IBF Floor		
1	109110-101	Floor Assembly (See Figure A-3)	REF	
2	101292-201	Electrical Bracket (See Figure A-5)	REF	
	109400-101	Installation – Electrical System (See Figure A-3)	REF	
3	M22759/16-22-9	Wire 22 Gauge	AR	SP
4	D38999/26WA98SA M85049/39S9W	Plug (Delta P Connector-Floor) Backshell	1	SP
5	D38999/20WA35SN M85049/39S9W	Receptacle (Actuator Connector-Floor) Backshell	1	SP
6	D38999/20WB5PN M85049/38S11W	Receptacle (Bypass System Connector-Floor) Backshell	1	SP
7	MS35206-215	Bolt (Not Shown)	8	P
8	AN960PD-4	Washer (Not Shown)	8	P
9	MS21042-04	Nut (Not Shown)	8	P
N/A	109100-101	Installation Structure (See Figure A-2)	REF	
10	MS21919WDG2	Clamp (Not Shown - See Figure A-3)	REF	
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		

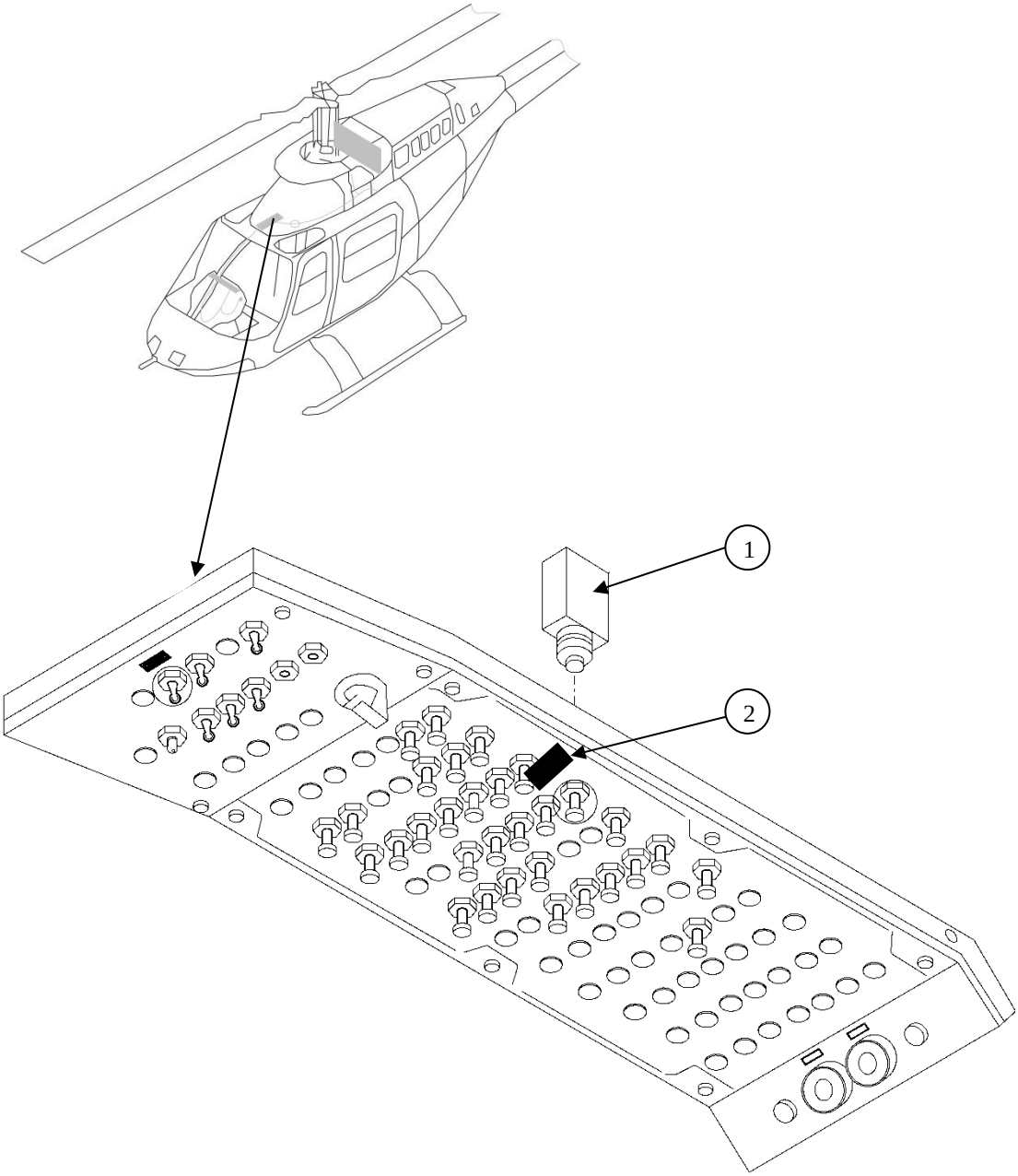
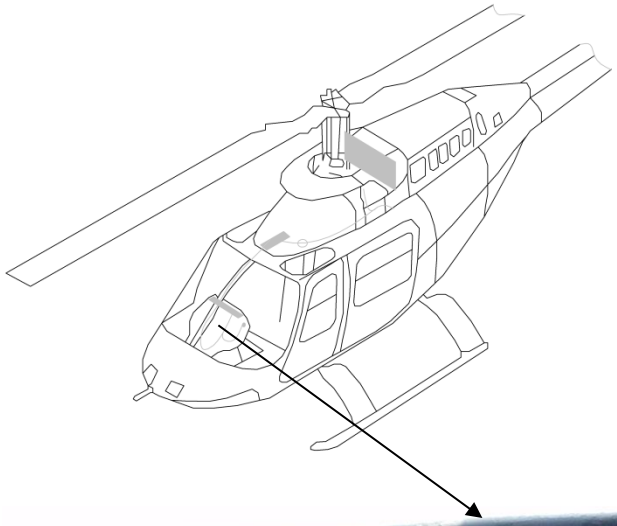


Figure A-13: Circuit Breaker

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-13: Circuit Breaker		
	109400-101	Installation – Electrical System (See Figure A-3)	REF	
1	MS26574-3	Circuit Breaker	1	SP
2	109400-201	Decal-IBF	1	SP
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		



NOTE
"IBF FILTER" indicator light may be installed in any SPARE location that was available in the Caution / Warning Panel. Typical location is shown below.

Figure A-14: Cockpit Indicator & Switch

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-14: Cockpit Indicator & Switch		
	109400-101	Installation – Electrical System (See Figure A-3)	REF	
1	MS35059-23	Cockpit Switch	1	SP
2	109400-203	Decal - Switch, IBF OPEN/CLOSED	1	SP
3	109400-205	Legend - Indicator Light, IBF FILTER	1	SP
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		

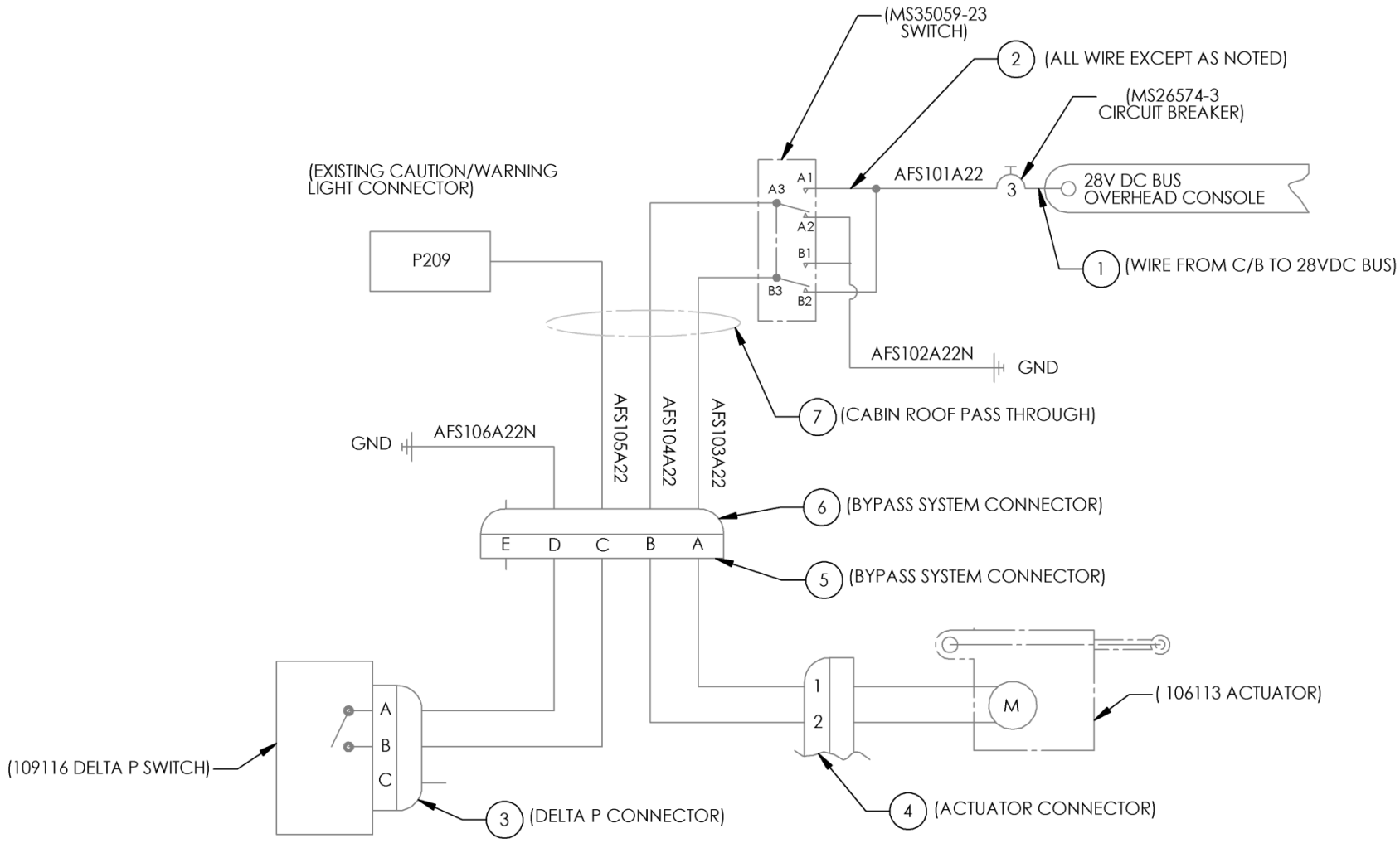


Figure A-15: Electrical Installation and Schematic

INDEX NUMBER	PART NUMBER	ITEM NAME	UNIT PER ASSY	AVAIL
		FIGURE A-15: Electrical Installation and Schematic		
	109400-101	Installation – Electrical System (See Figure A-3)	REF	
1	M22759/16-18-9	Wire 18 Gauge	AR	SP
2	M22759/16-22-9	Wire 22 Gauge	AR	SP
3	D38999/26WA98SA M85049/39S9W	Plug (Delta P Connector-Floor) Backshell (See Figure A-12)	REF	
4	D38999/20WA35SN M85049/39S9W	Receptacle (Actuator Connector-Floor) Backshell (See Figure A-12)	REF	
5	D38999/20WB5PN M85049/38S11W	Receptacle (Bypass System Connector-Floor) Backshell (See Figure A-12)	REF	
6	D38999/26WB5SN M85049/38S11W	Plug (Bypass System Connector-A/C) Backshell	1	SP
7	MS35489-4	Grommet	1	P
8	NP221-1/16 (AFS101A22)	Wire ID Heat Shrink (Not Shown)	2	SP
9	NP221-1/16 (AFS102A22N)	Wire ID Heat Shrink (Not Shown)	2	SP
10	NP221-1/16 (AFS103A22)	Wire ID Heat Shrink (Not Shown)	2	SP
11	NP221-1/16 (AFS104A22)	Wire ID Heat Shrink (Not Shown)	2	SP
12	NP221-1/16 (AFS105A22)	Wire ID Heat Shrink (Not Shown)	2	SP
13	NP221-1/16 (AFS106A22N)	Wire ID Heat Shrink (Not Shown)	2	SP
14	M39029/35-274	Pin (Not Shown)	1	SP
15	MS25036-102	Terminal End (Not Shown)	7	P
16	MS3367-4-9	Cable Tie (Not Shown)	AR	P
17	MS3367-1-9	Cable Tie (Not Shown)	AR	P
		AVAIL CODE DEFINITION P Procurable NP Non Procurable SP Normal stock/procurable See introduction on availability codes for additional information.		