

SERVICE BULLETIN

TO: HOLDERS OF SERVICE BULLETIN NO. 60-703-28-35

REVISION NO. 3, DATED 2004/02/03

HIGHLIGHTS

This service bulletin has been revised to add current pricing data for the P/N 60-703xx(x) series of motor-impeller subassemblies. Please replace the existing service bulletin in its entirety.

Page No.	Description of Change	Effectivity
7	Updated pricing information for kits.	



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SERVICE BULLETIN

B747

Bulletin No. 60-703-28-35
Revision 3, 2004/02/03
H/A 8-160
ATA 28-31

FUEL – MODIFICATION OF FUEL OVERRIDE JETTISON PUMP MOTOR-IMPELLER SUBASSEMBLIES P/N 60-70303, 60-70306, 60-70307, 60-70308, 60-70309, 60-703103, 60-703104, 60-703113, (BPN 60B92603-3, -7, -9, -10, -11, -13, -14, -15) TO P/N 60-70303-3, 60-70306-3, 60-70307-3, 60-70308-3, 60-70309-3, 60-703103-3, 60-703104, 60-703113-3 (BPN 60B92603-303, -307, -309, -310, -311, -313, -314, -315).

1. PLANNING INFORMATION

A. EFFECTIVITY

Hydro-Aire Fuel Override/Jettison Pump Motor-Impeller Subassemblies with part numbers 60-70303 (BPN 60B92603-3), 60-70306 (BPN 60B92603-7), 60-70307 (BPN 60B92603-9), 60-70308 (BPN 60B92603-10), 60-70309 (BPN 60B92603-11), 60-703103 (BPN 60B92603-13), 60-703104 (BPN 60B92603-14), 60-703113 (BPN 60B92603-15).

B. CONCURRENT REQUIREMENTS

See paragraph 1.E., K., and L.

C. REASON

Cavitation wear of the inlet adapter has been occurring due to the vibration of the inlet check valve flapper in the fuel stream. Excessive wear on the inlet adapter may affect pump performance and will eventually lead to the failure of the inlet check valve assembly.

D. DESCRIPTION

This service bulletin gives instructions for the modification of Hydro-Aire Fuel Override/Jettison Pump Motor-Impeller Subassembly configurations shown in paragraph 1.A. The resulting -3 configurations will include a new Stellite-coated inlet adapter.

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E. COMPLIANCE

It is recommended that this service bulletin be incorporated at the next suitable, planned maintenance period. It is also recommended that the operator review the requirements/applicability of SB 60-703-28-32 (ref. K.(1)) and, if applicable, incorporate that service bulletin before or in conjunction with this bulletin.

F. APPROVAL

This service bulletin has been approved by Boeing and the Federal Aviation Administration (FAA). The repairs and modifications herein comply with the applicable Federal Aviation Regulations (FARs), part 25, and are on file at Hydro-Aire as FAA approved for installation on 747 aircraft.

G. MANPOWER REQUIREMENTS

Approximately 1.5 hours per Motor-Impeller Subassembly, including testing.

H. WEIGHT AND BALANCE

Not affected.

I. ELECTRICAL LOAD DATA

Not affected.

J. REFERENCES

NOTE It is recommended that Ref. (1) be considered for accomplishment with this Bulletin (see Interchangeability (L) below).

- (1) Service bulletin 60-703-28-32, Rev. 1, dated Feb 15/99, for Fuel Override/Jettison Pump Replacement of Thrust Washer P/N 60-06561 on the P/N 60-703 Series Motor-Impeller Subassembly.
- (2) ATA 28-31-01 Overhaul Manual for Fuel Jettison/Override Pump Part No. 60-703 Series, Rev. 4, dated Jul 15/92.
- (3) Service bulletin 60-703-28-33, dated (anticipated release date July 2000), for Fuel Override Jettison Pump Housing Subassembly P/N 60-703200, 60-70304, 60-70305, 60-72314, and 60-703135 to P/N 60-703200-1, 60-70304-1, 60-70305-1, 60-72314-1 and 60-703135-1.
- (4) Boeing service bulletin 747-28A2212, dated (anticipated revision release date July 2000), Ref. Center Wing Tank Override/Jettison Pump Housing updates to the "-1" configuration.
- (5) Boeing service bulletin 747-282222, dated (anticipated revision release date July 2000), Ref. HST and Main Tank Override/Jettison Pump / Pump Housing installations.

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K. OTHER PUBLICATIONS AFFECTED

- (1) ATA 28-31-01 Overhaul Manual for Fuel Jettison/Override Pump Part No. 60-703 Series, Rev. 4, dated Jul 15/92.

L. INTERCHANGEABILITY/INTERMIXABILITY OF PARTS

See related Boeing document 344U0052 for pump application matrix.

2. MATERIAL INFORMATION

A. MATERIAL - PRICE AND AVAILABILITY

See section 5 for additional information.

B. INDUSTRY SUPPORT INFORMATION

Not applicable.

C. MATERIAL NECESSARY FOR EACH PUMP MODIFICATION

The table below shows the contents of kit no. 60-703113-3901 for this modification.

Description	Qty	New Part No.	Old Part No.	Instructions
Modification kit no. 60-703113-3901:				
Inlet adapter	1	60-703278	60-70316	Replace
Screw	3	MS35275-213	MS35275-213	Replace
Washer	3	NAS620C4	NAS620C4	Replace
Screw	1	60-847504	60-847504	Replace
Washer	1	NAS620C10L	NAS620C10L	Replace
Shim	4	S24A5-0500-0390	S24A5-0500-0390	Replace
Shim	4	S24A0-0500-0390	S24A0-0500-0390	Replace
Nameplate	1	60-70389	60-70362 60-70375 60-70381 60-70389	Replace
Drive screw	2	MS21318-1	MS21318-1	Replace
Packing	1	M25988/1-235	M25988/1-235 or 60-703550	Replace
	1	M25988/1-236	M25988/1-236 or 60-703551	Replace
	1	M25988/1-238	M25988/1-238 or 60-703552	Replace
	2	MS29513-007	MS29513-007	Replace
	1	MS29512-04	MS29512-04	Replace

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D. TOOLING – PRICE AND AVAILABILITY

With the exception of the 1/8-in. steel stamp set, use tools and equipment specified in the Overhaul Manual ATA 28-31-01.

3. ACCOMPLISHMENT INSTRUCTIONS

NOTE: Note the pattern of lockwiring the inlet screws for duplication at reassembly.

- (A) Cut lockwire and remove three screws, P/N MS35275-213 as applicable, and three washers, P/N NAS620C4, that attach the inlet adapter, P/N 60-70316 to the inner housing; if required, remove two drive screws, P/N MS21318-1, that attach the nameplate, P/N 60-70362, 60-70375, 60-70381, or 60-70389 to the inner housing.
- (B) Discard the inlet adapter, P/N 60-70316, and screws, P/N MS35275-213, MS21318-1, and washers, P/N NAS620C4. Retain the identification plate for serial number transfer.
- (C) Attach a new Stellite-coated inlet adapter, P/N 60-703278, with three new washers, P/N NA620C4, and screws, P/N MS35275-213, to the inner housing using finger-tight torque on the screws. **DO NOT TORQUE SCREWS AT THIS TIME.**
- (D) Place the motor-impeller subassembly in holding fixture, T-31355, with the inlet impeller and inlet adapter, P/N 60-703278, in a downward position.
- (E) Move the inlet impeller in and out and note the axial movement. Total axial movement must be 0.001–0.008 inch (0.003–0.020 cm).

NOTE: If the in-service axial play exceeds 0.008 inch (0.020 cm), the motor-impeller subassembly must be overhauled.

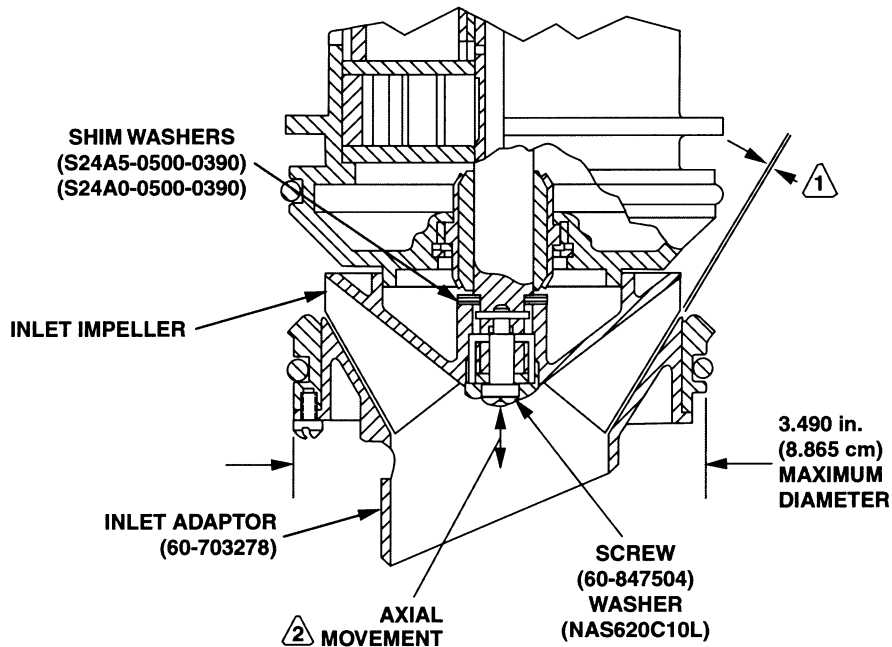
NOTE: When measuring the clearance between the inlet impeller and inlet adapter, pull the rotor assembly toward the inlet adapter.

- (F) Measure the clearance between the inlet impeller and inlet adapter by inserting a feeler gauge with a width of 0.200 inch (05.08 cm) or less and a thickness of 0.007–0.010 inch (0.018–0.025 cm) between the two parts.

NOTE: Clearance between the inlet impeller and inlet adapter must be 0.007 to 0.010 inch (0.018–0.025 cm). Add or remove shim washers, S24A5-0500-0390 or S24A0-0500-0390, to get the required clearance. The ratio of clearance to washers is 1:2. That is, a 0.001-inch difference in clearance requires a 0.002-inch change in shim washers.

- (1) Remove the three screws and washers, P/N MS35275-213 and NAS620C4, respectively, that attach the inlet adapter to the inner housing; remove the inlet adapter.
- (2) Remove screw, P/N 60-847504, and washer, P/N NAS620C10L, the inlet impeller, and the drive pin to access area for shim washer addition or removal.
- (3) Add or remove shim washers to get the correct inlet impeller-to-inlet adapter clearance.
- (4) Reinstall the drive pin, inlet impeller, washer, and screw.

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① 0.007 – 0.010 in (0.018 – 0.025 cm) CLEARANCE.

② 0.001 – 0.008 in (0.003 – 0.020 cm) AXIAL MOVEMENT BEFORE AND AFTER TEST.

SB60723285_001

**Inlet Impeller-to-Inlet Adaptor Clearance
Figure 1**

NOTE: Make sure drive pin protrudes equally on each side of the shaft.

- (5) Reinstall the inlet adapter with three washers and screws removed in step (1).
- (G) Remeasure the inlet-impeller-to-inlet adapter clearance to be sure that it is within range, repeating the steps of paragraph (F) until clearance is correct.
- (H) After getting the correct clearance, remove three screws, P/N MS35275-213, and washers, P/N NAS620C4, that attach the inlet adapter, P/N 60-703278, to the inner housing.
- (I) Remove one washer, P/N NAS620C10L, and one screw, P/N 60-847504, that attach the inlet impeller to the rotor-bearing holder assembly.

CAUTION: REPLACE P/N 60-847504 SCREW WITH A NEW SCREW WHEN ADJUSTMENT IS COMPLETED.

- (J) Apply Loctite T7471 primer to at least the first three threads of the new self-locking screw, P/N 60-847504; let screw air dry for 3 to 4 minutes, then apply Loctite 087 sealant to the screw.

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- (K) Reinstall washer, P/N NAS620C10L, and the treated screw, P/N 60-847504, and torque the screw 18–20 lbf•in (2.034–2.260 N•m).
- (L) Reinstall three washers and screws, P/N NAS620C4 and MS35275-213, respectively, to attach the inlet adapter to the inner housing and torque screws 3–5 lbf•in (0.339–0.565 N•m).
- (M) Test the motor-impeller subassembly as described in CMM ATA 28-31-01, TESTING AND FAULT ISOLATION.
- (N) Move the inlet impeller in and out and record the after-test axial movement. Total axial movement must be 0.001–0.008 inch (0.003–0.020 cm).
- (O) After successful test, refer to MS33540 and safetywire screws in the original pattern.

NOTE: Be sure that safety wire does not extend beyond the 3.490-inch (8.865-cm) maximum diameter, as shown in Figure 1.

4. REIDENTIFICATION

Reidentify pumps P/N 60-70303, 60-70306, 60-70307, 60-70308, 60-70309, 60-703103, 60-703104, and 60-703113 to the –3 configurations by steel stamping the applicable information below onto the new nameplate, P/N 60-70389, and installing it with two drive screws, MS21318-1.

- (A) Transfer the part number and serial number, including any letter suffix, from the old nameplate: P/N 60-70362, 60-70375, 60-70381, or 60-70389.
- (B) Add “-3” to the Hydro-Aire part number.
- (C) Add the applicable dash number to the Boeing part number (see page 1 of this service bulletin).

5. MODIFICATION OPTIONS

A. OPTION 1

The operator may modify each Motor-Impeller Subassembly, P/N 60-70303, 60-70306, 60-70307, 60-70308, 60-70309, 60-703103, 60-703104, 60-703113 (BPN 60B92603-3, -7, -9, -10, -11, -13, -14, -15) following the instructions outlined in this service bulletin. Kits for pumps are available at prices as outlined in Section 5.D.

B. OPTION 2

The operator may return a Motor-Impeller Subassembly, P/N 60-70303, 60-70306, 60-70307, 60-70308, 60-70309, 60-703103, 60-703104, 60-703113 (BPN 60B92603-3, -7, -9, -10, -11, -13, -14, -15) to Hydro-Aire for this service bulletin modification at a charge as outlined in Section 5.D. If the pump requires additional repairs, they will be quoted separately.

C. OPTION 3

The operator may have this service bulletin accomplished in conjunction with a pump overhaul at Hydro-Aire at a charge of US\$7101.00.

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D. WARRANTY

NOTE: Although the normal warranty period for these pumps has expired, Hydro-Aire is offering the following warranty consideration valid through December 2006.

- (1) Hydro-Aire will perform the modification described in this service bulletin at a charge of US \$34.20, plus the US \$232.80 price of the kit, already discounted; and will reimburse the operator US \$45.60 for the cost of removal/reinstallation labor (limited to 1.0 hr @ 45.60 per hr) of the motor/impeller on the airplane. **This amounts to a net charge of US \$221.40.**
- (2) Operators who perform the modification themselves may purchase kits from Hydro-Aire at US \$232.80, already discounted. They will be reimbursed for the cost of labor 0.75 hour for the repair labor and 1.0 hour for the removal/reinstallation of the pump on the airplane, for a total of 1.75 hr @ US\$45.60 per hr = US \$79.80. **This amounts to a net charge of US \$153.00.**

Warranty claims must include the following information:

- Operator identification
- Airplane Identification Number (Tail Number)
- Pump part number
- Pump serial number

To order modification or kits:

Contact: Hydro-Aire Airline Sales
phone: 818-526-2500
FAX: 818-842-6117
e-mail: spares@hydroaire.com

Contact: Hydro-Aire Repair & Overhaul
phone: 818-526-2400
FAX: 818-526-2284
e-mail: repairs@hydroaire.com