TECHNICAL BULLETIN

Bell Helicopter TEXTRON

A Subsidiary of Textron Inc.

DATE	
REV	

No. 222-00-166

Date 10-23-02

MODEL AFFECTED: **222B**

SUBJECT: **HONEYWELL LTS 101 ENGINE, INTRODUCTION OF FLEXIBLE FUEL MANIFOLD ASSEMBLY**

HELICOPTERS AFFECTED: **All Model 222B helicopters**

COMPLIANCE: At customer's option in accordance with Honeywell Service Bulletin No. LTS101-73-10-0197

DESCRIPTION:

Honeywell has released Service Bulletin No. LTS101-73-10-0197 introducing a flexible fuel manifold as a product improvement for the LTS 101 engine. Installation of the flexible fuel manifold assembly eliminates the cycle life limit imposed on existing rigid tube fuel manifold assemblies.

This bulletin provides the procedures to incorporate the necessary airframe interface changes to complete the installation of a flexible fuel manifold on the number one and number two engines.

Part 1 of this bulletin provides information to allow the installation of a flexible fuel manifold on the number one (1) engine.

Part 2 of this bulletin provides information to allow the installation of a flexible fuel manifold on the number two (2) engine.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada approved.

MANPOWER:

In addition to the man-hours required to comply with Honeywell Service Bulletin No. LTS101-73-10-0197, approximately 2.0 man-hours are required to accomplish this bulletin on the number one engine and 1.0 hour on the number two engine for those engines equipped with BHT fuel flow kit. For helicopters not equipped with fuel flow kits, no modification is required on the number two engine. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

MATERIALS:

Required Material:
The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

Part Number	Nomenclature	Quantity
222-025-441-105	Tube assembly	1
222-060-086-109	Tube assembly	1
222-060-262-105 *	Tube assembly	2
MS21043-3 *	Nut	3
MS21919WCH4 *	Clamp	6
MS27039C1-08 *	Screw	2
MS27039C1-23*	Screw	1
NAS1057T3-112*	Spacer	1
NAS1149C0332R *	Washer	3

* Items identified with an asterisk are only required if aircraft is equipped with Bell Helicopter Textron fuel flow kit P/N 222-706-207-101.

Consumable Material:
The following material is required to accomplish this bulletin, however this material is considered consumable (bench stock) material and may not require ordering depending on the operators consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

Part Number	Nomenclature	Quantity	Reference
AS100028	Lockwire	A/R	C-405

SPECIAL TOOLS:

None required

WEIGHT AND BALANCE:

Not Affected

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

Allied Signal Bulletin LTS101-73-10-0197
T.B. 222-85-79, Rev. ”A”
BHT-222B-IPB, Chapter 95-99-00
BHT-222/222B-MM-1, Chapter 21-20-00
BHT-222/222B-MM-1, Chapter 71-00-00

PUBLICATIONS AFFECTED:

BHT-222B-IPB, Chapter 95-99-00
BHT-222/222B-MM-1, Chapter 21-20-00

PART 1 (ENGINE #1)

- NOTES -

Part 1 of this bulletin may be complied with independent of Part 2.

A flexible fuel manifold may be installed on the number one engine without any interface changes if the aircraft is not equipped with ECS kit P/N 222-706-018-103 or -107, heater kit P/N 222-706-017-103 or -107, BHT fuel flow kit P/N 222-706-207-101 or an STC fuel flow kit.

Replacement of two bleed air tubes, (part of the ECS system) on the number one engine side (only) is necessary to provide the required clearance with the flexible fuel manifold.

For aircraft equipped with ECS kit P/N 222-706-018-103, previous compliance with Technical Bulletin 222-85-79 Rev. “A” (engine bleed air system, modification of) is mandatory before complying with this bulletin.

For aircraft equipped with a heater kit P/N 222-706-017-103 or -107, contact Bell Product Support Engineering before proceeding with the installation of a flexible fuel manifold on the # 1 engine.

For aircraft equipped with fuel flow kits other than Bell fuel flow kit P/N 222-706-207-101, please contact STC holder if an interface problem exists with the flexible fuel manifold installation.

ACCOMPLISHMENT INSTRUCTIONS:

1. Gain access to engine # 1. Refer to BHT-222/222B-MM-1, chapter 71-00-00.

2. Remove tube assembly P/N 222-025-441-101 and install tube assembly P/N 222-025-441-105. Refer to Figure 1.

-NOTE-

Machined end fitting on engine mounted fitting assembly P/N 222-060-094-101 will couple with bulbed fitting on end of tube assembly P/N 222-060-086-109. The outside diameter difference between the two fittings does not affect the integrity of the installation and is acceptable.

3. Remove tube assembly P/N 222-060-086-103 or –105 or –107 and install tube assembly P/N 222-060-086-109. Re-use coupling P/N 24540-100 to connect tube to engine fitting assembly P/N 222-060-094-101. Refer to Figure 1.

4. Lockwire together the “B” nuts of tube assemblies P/N 222-025-441-105 and P/N 222-060-086-109 using AS100028 lockwire.

-NOTE-

The engine fuel flow divider is located at a different clock position on the flex fuel manifold installation. For aircraft with fuel flow kit P/N 222-706-207-101, the replacement of tube assembly P/N 222-060-262-101 will be required to interface with the new location of the engine fuel flow divider.

5. Remove tube assembly P/N 222-060-262-101 from fuel flow meter and install tube assembly P/N 222-060-262-105. Refer to Figure 2.

6. Install clamps, P/N MS21919WCH4 on tube assembly P/N 222-060-262-105 and on engine adjacent tube (2 places). Attach clamps using screw P/N MS27039C1-08, washers P/N NAS1149C0332R and nut P/N MS21043-3. (Refer to Figure 2 and Figure 3, View A-A).

7. Install clamp, P/N MS21919WCH4 on tube assembly P/N 222-060-262-105 and on adjacent tube. Attach clamps together using spacer P/N NAS1057T3-112, screw P/N MS27039C1-23, washer P/N NAS1149C0332R and nut P/N MS21043-3. (Refer to Figure 2).

8. Inspect the entire flexible fuel manifold to ensure adequate clearance exits with surrounding parts and structure to prevent chafing damage.

9. Prepare aircraft for ground run and maintenance checks. Check engine fuel system and bleed air distribution system for leaks.

10. Annotate aircraft records to reflect compliance with Part 1 of this bulletin.

PART 2 (ENGINE #2)

-NOTES -

Part 2 of this bulletin may be complied with independent of Part 1.

Flexible fuel manifold may be installed on the number two engine without any interface changes for aircraft without fuel flow kit P/N 222-706-207-101. No interface problem exits on the number two engine side between the flexible fuel manifold and the bleed air tubes of ECS kit P/N 222-706-018-103 / -107 or heater kit P/N 222-706-017-103 / -107.

The engine fuel flow divider is located at a different clock position on the flex fuel manifold installation. For aircraft with fuel flow kit P/N 222-706-207-101, the replacement of tube assembly P/N 222-060-262-101 will be required to interface with the new location of the engine fuel flow divider.

For aircraft equipped with fuel flow kits other than Bell fuel flow kit P/N 222-706-207-101, please contact STC holder if an interface face problem exists with the flexible fuel manifold installation.

ACCOMPLISHMENT INSTRUCTIONS:

1. Gain access to engine # 2. Refer to BHT-222/222B-MM-1, chapter 71-00-00.

2. Remove tube assembly P/N 222-060-262-101 from fuel flow meter and install tube assembly P/N 222-060-262-105. Refer to Figure 2.

3. Install clamps, P/N MS21919WCH4 on tube assembly P/N 222-060-262-105 and on engine adjacent tube (2 places). Attach clamps using screw P/N MS27039C1-08, washers P/N NAS1149C0332R and nut P/N MS21043-3. (Refer to Figure 2 and Figure 3, View A-A).

4. Install clamp, P/N MS21919WCH4 on tube assembly P/N 222-060-262-105 and on adjacent tube. Attach clamps together using spacer P/N NAS1057T3-112, screw P/N MS27039C1-23, washer P/N NAS1149C0332R and nut P/N MS21043-3. (Refer to Figure 2).

5. Inspect the entire flexible fuel manifold to ensure adequate clearance exits with surrounding parts and structure to prevent chafing damage.

6. Prepare aircraft for ground run and maintenance checks. Check engine fuel system and bleed air distribution system for leaks.

7. Annotate aircraft records to reflect compliance with Part 2 of this bulletin.

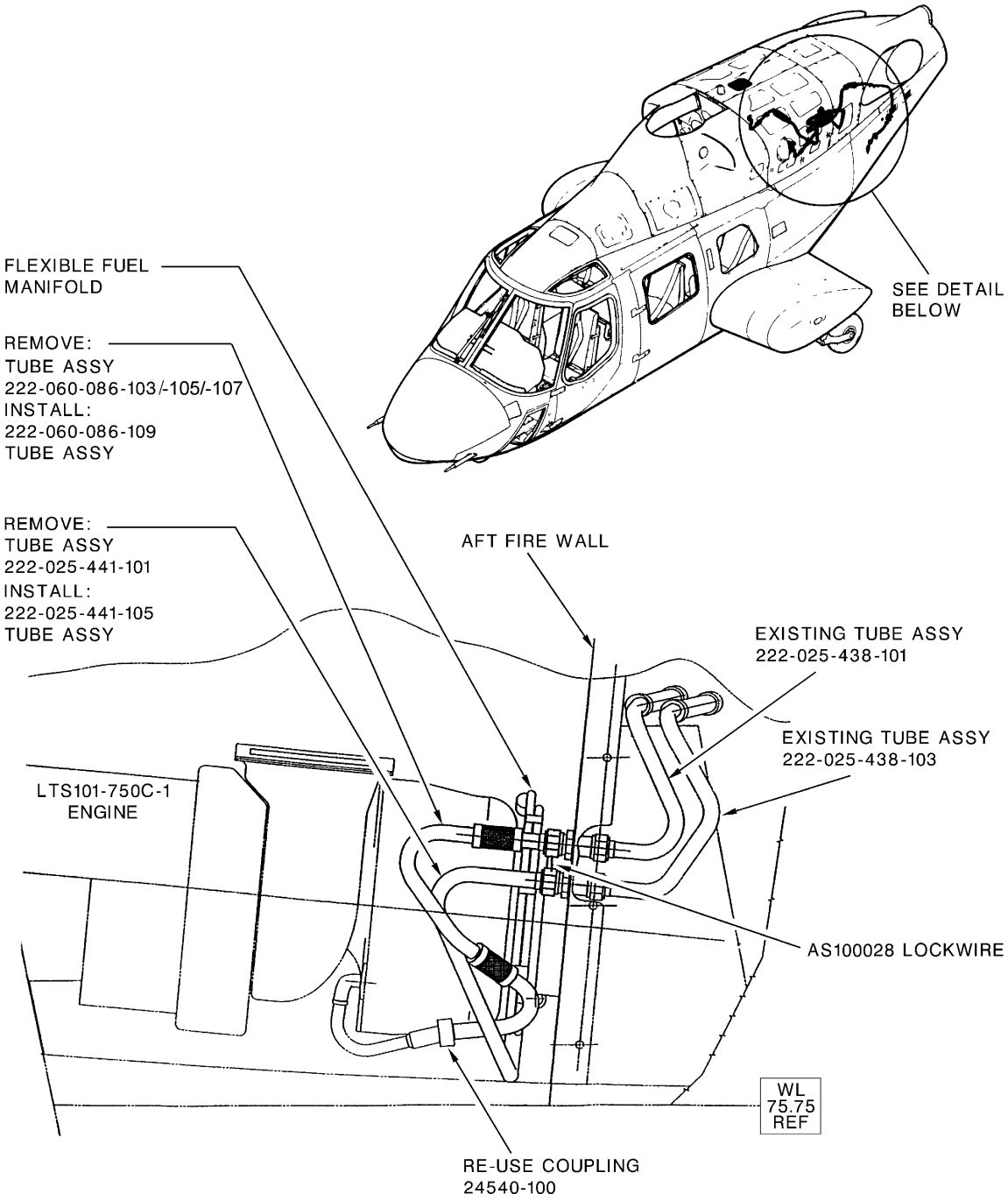
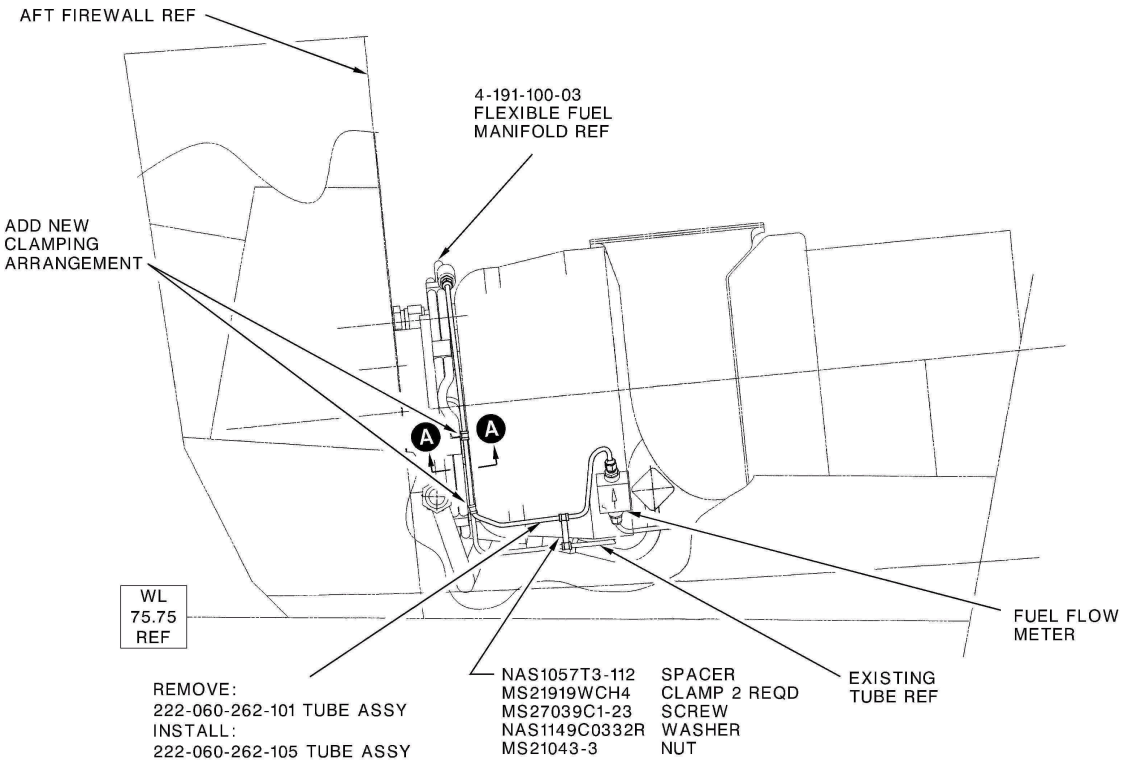


Figure 1 – Bleed Air Installation



LKG Inboard RH Side (Typical Both Engines)

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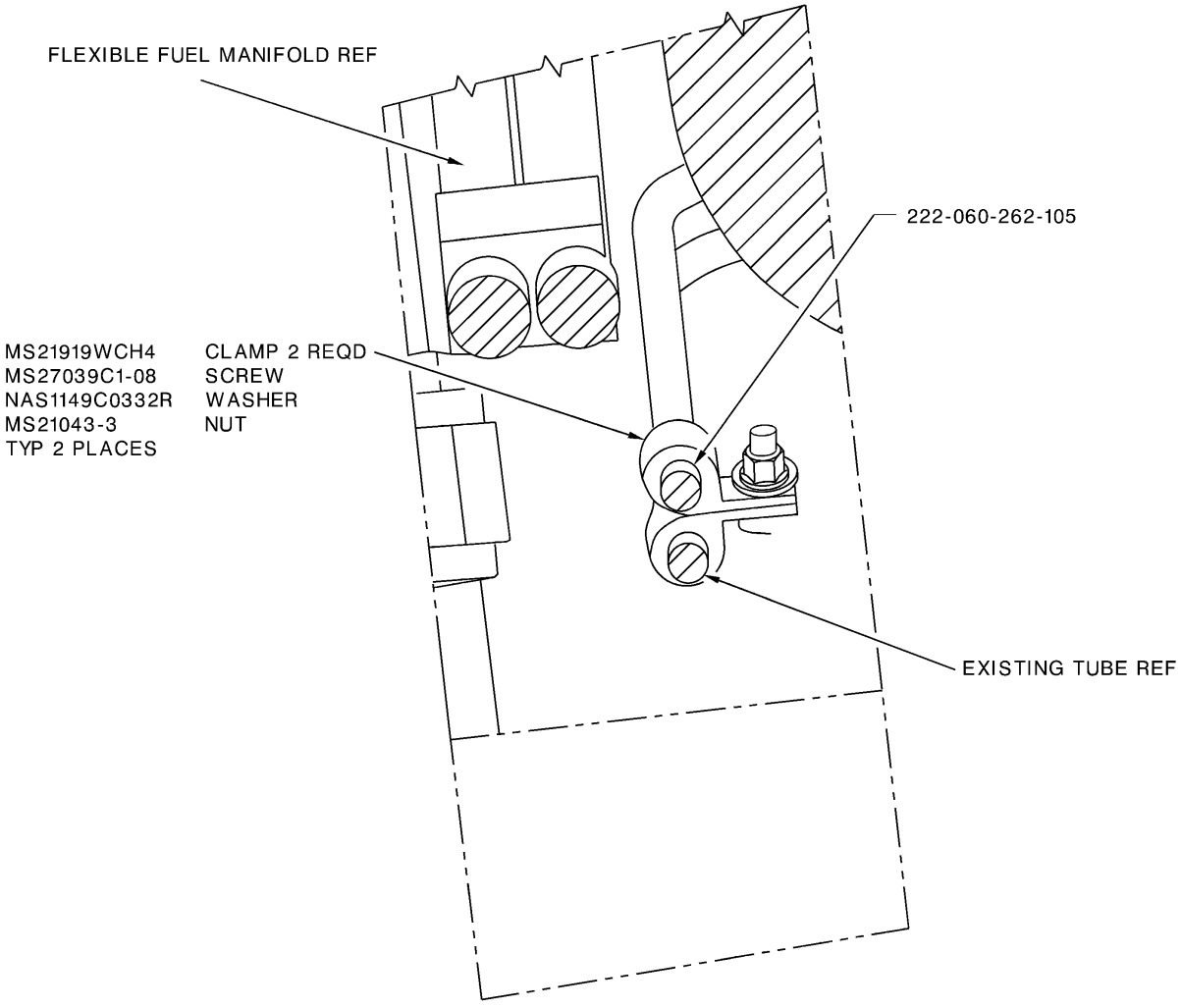
BHT Fuel Flow Kit P/N 222-706-207-101

Figure 2



SECTION A-A

NTB00107

Figure 3