



# MAJOR REPAIR

Number  
0007121

Revision  
A

Page 1 of 8

Release Date: 11/06/00

Title: **Stator Assembly, Fourth Stage Compressor - Replacement of Vanes, Shroud, Ring, and Flange.**

Affected Part Number(s):	892892-1 thru -8, 892892-1 (16724) thru 892892-5 (16724), 966617-1 thru -8m, and 966617-1 (16724) thru 966617-5 (16724)
Application:	GTCP660 Series APU
Drawing(s):	BMP892892

## I CUSTOMER - MAJOR REPAIR INCORPORATION RECORD

**AIR CARRIERS:** The FAA (Federal Administration Association), requires all repair stations that perform maintenance for Air Carriers operating under FAR, Part 121 to perform such maintenance following that Air Carriers' Operation Specification. This FAA approved, Major Repair is beyond the scope of the current Original Equipment Manufacture's (OEM) Repair Manual. Therefore, all Part 121 Air Carriers who opt to use components repaired using the methods set forth within this repair must incorporate this repair in their applicable Operation Specification(s). Regulation may or may not be compliant or reciprocal with Air Carriers operating under foreign regulations.

**REPAIR STATIONS/OTHER:** BMP (Britt Metal Processing, Inc.) prefers your Company follow the same guidelines set forth for the Air Carriers.

**Instructions:** Please review this major repair and incorporate into your technical files. Return a signed copy of this acceptance record to our Document Control Department. If applicable, furnish a copy of your revised Operation Specification(s) that reflect incorporation of this repair.

Customers who sign below have authorized BMP to incorporate this FAA approved major repair procedure as a stand alone written document. Parts that require the repair embodied in this repair will be placed on hold pending proof of your acceptance. Thereafter, BMP will accomplish this major repair procedure without further notification.

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Company Representative Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

Reference: CFR 14, FAR Part 121, Sub-Part L, and FAR 145.2

**BMP-95**



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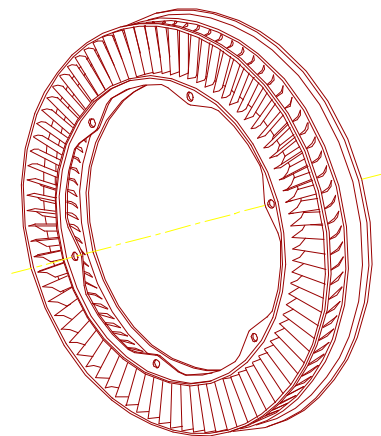
## REVISION INFORMATION

Revision	Description	Approved By:	Date
Original		S. Balakrishna	09/27/00
A	Revised to reference an alternate method to fabricate the ring P/N BMP892892-15, allow fabrication of a -20 ring that is fabricated by machining the -15 ring and -17 flange as one detail item and allow welding/metal spray restoration of the -17 flange. Revision A is a complete reissue.	S. Balakrishna	11/06/00

## DESCRIPTION

GTCP660 Series APU Fourth Stage Stator Assemblies that exhibit parent metal thinning in the shroud section, excessive cracking in the vanes or other damages beyond the OEM repair scope will be repaired as follows:

The -13 shroud, -15 ring and vanes on the damaged part will be replaced with BMP fabricated components. Either the -17 flange and/or vane(s) will be retained. If the vane is salvaged, then the BMP fabricated equivalent of the -17 flange will be installed. If the -17 flange is retained, wear/damage to the -17 flange will be weld/metal spray repaired.



**FIGURE 1**  
Stator Assembly, 4<sup>th</sup> Stage Compressor

Title: **Stator Assembly, Fourth Stage Compressor - Replacement of Vanes, Shroud, Ring, and Flange.**

## I PROCEDURE

**NOTE: The -17 flange or vane(s) must be retained during this repair.**

1. Machine to remove and retain either the -17 flange and/or vane(s).
2. Fabricate vanes P/N BMP892699-1, shroud P/N BMP892892-13, ring P/N BMP892892-15, and flange P/N BMP892892-17 (if an original vane is retained).

3. TIG weld build up worn/damaged areas of the -17 flange using 17-4PH weld wire (AMS 5825) per BMP Process 6.1B. Weld restoration is limited to a total weld bead length of 0.250 inch.

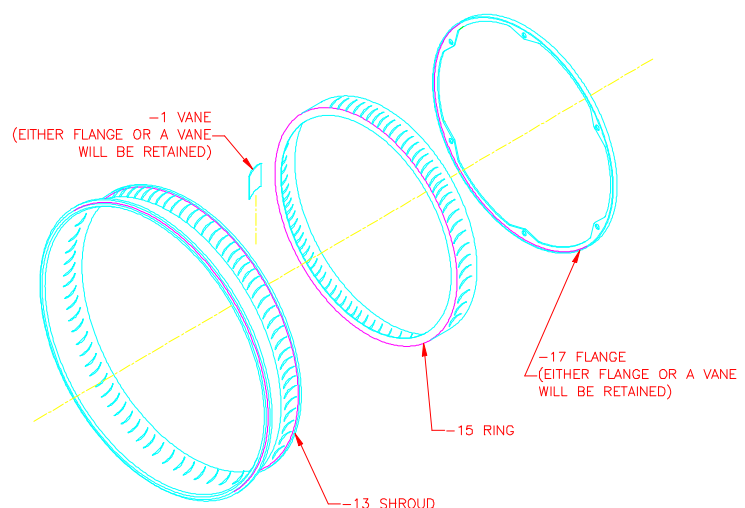
or

Metal spray restore -17 flange using Tafa 75B per BMP Process 4.2B or Metco 12C per BMP Process 4.3A or equivalent in accordance with Standard Practices Manual and manufacturer's specification. Metal spray coating must be 0.005 to 0.010 inch after final machining.

4. Penetrant inspect -17 flange per BMP process 1.1A for cracks. No cracks are allowed.

**NOTE: To be accomplished only if the -17 flange is weld restored.**

5. Assemble vanes, shroud, and ring by tack welding vanes to the shroud and ring using 17-4PH weld wire (AMS 5825) per BMP Process No. 6.1B.
6. Spray flange (retained or new) per BMP drawing BMP892892 and BMP process 4.1D using "Microbraz" 4777 braze alloy or equivalent. Allow for 0.002-0.004 inch joint and a 0.040 inch maximum fillet after furnace braze.



**FIGURE 2**



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## I PROCEDURE (Continued)

7. Tack weld the flange to the ring using 17-4PH weld wire (AMS 5825) per BMP Process 6.1B.
8. Furnace braze the tack welded ring and vanes to the stator assembly using AMS 4777 braze alloy per BMP Process 7.1B.
9. Age all stator assemblies at  $1025 \pm 10/F$  for  $4 \pm 1/4$  hours (Rc 35 -42). Except P/N 892892-6 stator assembly, which will be aged at  $1150 \pm 10/F$  for  $4 \pm 1/4$  hours (Rc 28 - 36).
10. Apply plasma spray (abradable) coating per OEM Overhaul Manual 49-21-03, OEM Service Bulletin 49-5926 and manufacturer's specifications as applicable.
11. Finish machine and complete repairs per BMP drawing BMP892892, OEM Overhaul Manual 49-21-03 and OEM Service Bulletin 49-5111 as applicable.

## I SUBSTANTIATION

**ATTENTION: Substantiation Data is considered Proprietary and is not customarily included when major repairs are sent to our Customers. Please contact our Quality Control Department if you require any additional information.**

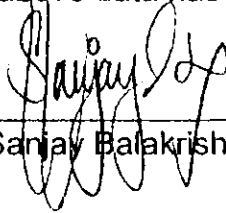
DEPARTMENT OF TRANSPORTATION  
 FEDERAL AVIATION ADMINISTRATION  
 STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS

DATE  
 November 8, 2000

AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION

MAKE Allied Signal	MODEL NO. GTCP660 Series	TYPE (Airplane, Radio, Helicopter, etc.) APU	NAME OF APPLICANT Britt Metal Processing, Inc.
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LIST OF DATA

IDENTIFICATION	TITLE
0007121 Rev A (11/06/00)	Stator Assembly, 4 <sup>th</sup> Stage Compressor - GTCP660 Series APU
BMP892892 Rev A (11/06/00)	Stator Assembly, 4 <sup>th</sup> Stage Compressor - GTCP660 Series APU
----- End of Data -----	
The above data has been reviewed by DER Candidate  _____ Sanjay Balakrishna	
_____ 11/6/2000 Date	
Notes: (1) This form constitutes FAA approval of all the engineering design data listed above. It does not provide installation approval. (2) This approval indicates the data listed above demonstrates compliance only with the regulations specified in "APPLICABLE REQUIREMENTS" (Compliance to additional regulations not listed here may be required).	

PURPOSE OF DATA

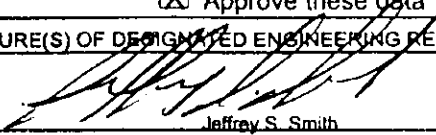
Define Britt Metal Processing, Inc. major repair for the GTCP660 Series APU.

APPLICABLE REQUIREMENTS (List specific sections)

F.A.R. 33.15, 33.19(a)  
 Ref: TSO-C77a

CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attached sheets numbered \_\_\_\_\_ have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal

I (WA) Therefore  Recommend approval of these data  
 Approve these data

SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)	DESIGNATION NUMBER(S)	CLASSIFICATION(S)
 Jeffrey S. Smith	DERT-510376-CE	Engines/APUs