



TPE331 ALERT SERVICE BULLETIN

**NF-TPE331-A72-10961 - ENGINE - Inspect Third Stage Turbine Stator Assembly
Part No. 868379-1/-3.**

1.0 PLANNING INFORMATION

A. Effectivity

This service document is applicable to third stage turbine stator assembly part no. 868379-1/-3 installed in the following turboprop/turboshaft engines:

<u>Part No.</u>	<u>Model No.</u>	<u>Aircraft Application</u>
893130-1/-2	TPE331-1-100F	Pilatus Porter
893400-1/-2	TPE331-1-101B	Turbo 18/Turboliner
894120-1/-2	TPE331-1-101E	Jetliner 600 (Dove)
896760-1/-2/-3/-4	TPE331-1-101F	Peacemaker
3101850-1	TPE331-1-101Z	S2R Turbo Thrush/Turbo Ag Cat
893250-1/-2	TPE331-1-151A	Mitsubishi MU-2DP/-2F/-2G
869595-1/-2	TPE331-1-151G	Merlin IIB
3101260-1/-2	TPE331-1-151K	Century Turbo Commander
893250-11	TPE331-1-101Z	Schweizer G164B
869480-1/-2	TPE331-2-201A	Skyvan
894820-1/-2	TPE331-2-201C	CASA 212
894980-1/-2	TPE331-2UA-203D	Goose
894040-1/-2	TPE331-3U-303G	Merlin III/IIIA/IV/IVA/Metro
895880-1/-2	TPE331-3UW-303G	Metro II/Metro IIA
3101800-1	TPE331-3U-303V	Century Jetstream III
3102550-1/-2/-3/-4	TPE331-3U-304G	Merlin III/IIIA/IV/IVA/Metro/Metro II/ Metro IIA
894870-1 thru -4	TSE331-3U-303N	Helitec Corp. S55T
896950-1/-2/-3	TPE331-5-251C	CASA 211-100
895720-1/-2/-3	TPE331-5-251K	Jetprop Commander 690/690A/690B
3103860-1	TPE331-5-252C	CASA 212-100
3102200-1	TPE331-5-252D	Dornier 228
3102520-1	TPE331-5-252K	Jetprop Commander 690A/690B
3101840-1	TPE331-5-252M	Mitsubishi MU-2N-2P
3102520-2/-3	TPE331-5-254K	Jetprop Commander 690C/690D
895720-4	TPE331-5-255K	Jetprop Commander 690/690A/690B
3103330-1	TPE331-5-252D	Dornier 228
896160-1/-3/-5	TPE331-6-251M	Mitsubishi MU-2J/-2K/-2L/-2M
3101630-1	TPE331-6-252B	Beech B100
3101360-2	TPE331-6-253B	Beech B100
3103300-1	TPE331-6-252L	Merlin IIB
3101300-2	TPE331-6-252M	Mitsubishi MU-2J/-2K/-2L/-2M
3103340-1	TPE331-6-252T	Skyvan
3102450-1	TPE331-6A-251M	Mitsubishi MU-2J/-2K/-2L/-2M
3101300-3	TPE331-6A-252M	Mitsubishi MU-2J/-2K/-2L/-2M



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B. Reason

(1) Problem: Attachment of the outer sheet metal band to the stator may have inadequate weld penetration. Failure of the weld results in aft movement of the stator and subsequent contact with the third stage turbine rotor. If uncorrected, this could result in failure of the third stage turbine rotor.

Some radiographic films of unacceptable outer band welds may have been misread by AlliedSignal. Unacceptable outer band weld penetration may exist in stators which previously passed radiographic inspection by AlliedSignal in accordance with Service Bulletin TPE331-A72-0559. One stator which passed radiographic inspection by AlliedSignal subsequently cracked due to inadequate outer band weld penetration.

(2) Background: National Flight Services, Inc. has subjected all third stage stators listed in Table 1 to radiographic inspection to ensure weld penetration integrity in accordance with Airworthiness Directive 93-05-09. Stators other than those listed in Table 1, including those stators accepted by AlliedSignal in accordance with AlliedSignal Service Bulletin TPE331-A72-0559, require radiographic inspection in accordance with this bulletin to ensure satisfactory weld penetration or replacement in accordance with AlliedSignal Service Bulletin TPE331-72-0861R2, dated April 23, 1997.

(3) Action: One time radiographic inspection in accordance with this bulletin of third stage stators not listed in Table 1, will determine if part has adequate weld penetration.

- or -

Replacement of stators not listed in Table 1 of this bulletin in accordance with AlliedSignal Service Bulletin TPE331-A72-0861, R2, dated April 23, 1997.

C. Description

This document provides instructions for radiographic inspection of third stage turbine stator assembly part no. 868379-1/-3.

D. Compliance

Recommended. National Flight Services, Inc. recommends that this service bulletin be accomplished in accordance with the following schedule. Due to the critical process involved, this inspection shall only be accomplished by National Flight Services of Arizona, Inc., Glendale, Arizona, CRS# NZIR850L.



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D. Compliance (Continued)

Third Stage Stator Cycles in Service
Since Radiographic Inspection in Compliance
with AlliedSignal Service Bulletin TPE331-
A72-0559

More than 2200 or Time or Cycle History
Unknown

Less than 2200

Removal Schedule

Within 600 cycles in service following receipt
of this bulletin, at next major periodic inspection,
at next access*, or prior to March 31, 2002,
whichever occurs first.

Remove prior to accumulating 2800 cycles since
compliance with A72-0559, at next major
periodic inspection or at next access*, or prior to
March 31, 2002, whichever occurs first.

Note: * Next access to the third stage stator assembly is defined as disassembly of the turbine
beyond removal of the third stage turbine rotor.

E. Approval

This alert service bulletin is approved by the FAA, Los Angeles Aircraft Certification
Office, ANM140L.

F. Manpower Requirements

No additional man-hours required at access to affected area.

G. Material - Price and Availability

Information may be obtained from:

National Flight Services of Arizona, Inc.

5170 W. Bethany Home Road
Glendale, Arizona 85301
Ph. (602)931-1143, Fax (602)931-7264

- or -

National Flight Services, Inc.

Customer Support
10971 E. Airport Services Road
Toledo Express Airport
Swanton, Ohio 43558
Ph. (419)865-2311, Fax (419)867-4224

H. Tooling - Price and Availability

No special tooling required.

I. Weight and Balance

Not applicable.



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J. Publication References

The sources of information used in the preparation of this document include the following AlliedSignal TPE/TSE331 manuals.

<u>Model No.</u>	Engine Overhaul <u>Manual</u>	Engine Maintenance <u>Manual</u>	Illustrated Parts <u>Catalog</u>
TPE331-1-100F	NA	*72-00-92	72-00-91
TPE331-1-101B	NA	*72-00-92	72-00-91
TPE331-1-101E	NA	*72-00-92	72-00-91
TPE331-1-101F	NA	*72-00-92	72-00-91
TPE331-1-101Z	NA	*72-00-92	72-00-91
TPE331-1-151A	NA	*72-00-92	72-00-91
TPE331-1-151G	NA	*72-00-92	72-00-91
TPE331-1-151K	NA	*72-00-92	72-00-91
TPE331-2-201A	NA	*72-00-92	72-00-91
TPE331-2-201C	NA	*72-00-92	72-00-91
TPE331-2UA-203D	NA	*72-00-92	72-00-91
TPE331-3U-303G	NA	*72-00-98	72-00-97
TPE331-3UW-303G	NA	*72-00-98	72-00-97
TPE331-3U-303V	NA	*72-00-98	72-00-97
TPE331-3U-304G	NA	*72-00-98	72-00-97
TSE331-3U-303N	NA	*72-00-98	72-00-97
TPE331-5-251C	NA	*72-01-27	72-01-25
TPE331-5-251K	NA	*72-01-27	72-01-25
TPE331-5-252D	NA	*72-01-22	72-01-20
TPE331-5-252K	NA	*72-01-27	72-01-25
TPE331-5-252M	NA	*72-01-27	72-01-25
TPE331-5-254K	NA	*72-01-27	72-01-25
TPE331-5-255K	NA	*72-01-27	72-01-25
TPE331-6-251M	NA	*72-00-95	72-00-94
TPE331-6-252B	NA	*72-00-95	72-00-94
TPE331-6-253B	NA	*72-00-95	72-00-94
TPE331-6-252L	NA	*72-00-95	72-01-94
TPE331-6-252M	NA	*72-01-95	72-01-94
TPE331-6-252T	NA	*72-00-95	72-00-94
TPE331-6A-251M	NA	*72-00-95	72-00-94
TPE331-6A-252M	NA	*72-00-95	72-00-94

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K. Service Bulletin References

The following TPE331 Service Bulletins should be reviewed for compliance prior to or in conjunction with this alert service bulletin.

<u>Service Bulletin No.</u>	<u>Service Bulletin Title</u>
TPE331-A72-0384	Reidentify or replace third stage stator and establish rework interval

The following TPE331 Service Bulletins should be reviewed for compliance in lieu of this alert service bulletin.

<u>Service Bulletin No.</u>	<u>Service Bulletin Title</u>
TPE331-A72-0861	Replace third stage stator assembly part no. 868379-1/-3/-5

L. Publications Affected

Same as those listed under paragraph J Publications References.

2. ACCOMPLISHMENT INSTRUCTIONS

NOTE: Publications listed in Section 1 provide applicable disassembly, cleaning, inspection, reassembly, and testing instructions and shall be referred to during the accomplishment of the following instructions.

A. Accomplish Inspection of Third Stage Stator

- (1) Compare third stage stator serial number on life-limited part log in engine log book with list of acceptable stators in Table 1.
 - (a) If third stage stator serial number is listed in Table 1 no further action is required except step (8) of this bulletin.
 - (b) If third stage stator life limited part log is missing with history unknown or serial number is not listed in Table 1 accomplish steps (2) through (8) of this bulletin.

NOTE: Table 1 contains a list of serial numbers of third stage stators which have had Radiographic inspection of the outer band weld and are considered acceptable.



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Table 1 - Serial Numbers of Acceptable Third Stage Stators (PN 868379-3)

0-01345-1163	1-01345-7259	3-01345-2997
0-01345-1299	1-01345-8605	3-01345-3112
0-01345-1439	1-01345-8630	3-01345-3113
0-01345-17115	1-01345-8640	3-01345-3369
0-01345-1977	1-08378-459	3-01345-3399
0-01345-2048	2-01345-115	3-01345-3401
0-01345-2666	2-01345-1467	3-01345-3643
0-01345-2674	2-01345-1510	3-01345-3782
0-01345-2841	2-01345-16384	3-01345-4035
0-01345-2940	2-01345-2142	3-01345-4303
0-01345-3012	2-01345-507	3-01345-4304
0-01345-3444	2-01345-7374	3-01345-4573
0-01345-4577	2-01345-915	3-01345-4951
0-01345-596	2-01345-9883	3-01345-4982
0-01345-6810	2-08378-1018	3-01345-5090
0-01345-9963	2-08378-1028	3-01345-5257
0-12488-14100	2-08378-1518	3-01345-5518
0-13488-2367	2-08378-1752	3-01345-5778
0-13488-2662	2-08378-1760	3-01345-5901
0-13488-2675	2-08378-1845	3-01345-6144
0-13488-4042	2-08378-2237	3-01345-685
0-13488-4102	2-08378-922	3-01345-7502
0-13488-4112	2-08378-9931	3-01345-7809
0-13488-4191	3-01345-14966	3-01345-7930
1-01345-1239	3-01345-2188	3-01345-7948
1-01345-14419	3-01345-2189	3-01345-8830
1-01345-3402	3-01345-2537	3-01345-8841
1-01345-556	3-01345-2710	3-01345-8857



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Table 1 (Cont'd) - Serial Numbers of Acceptable Third Stage Stators (PN 868379-3)

3-01345-8969	5-01345-1344	6-01345-10723
3-013488-2665	5-01345-1708	6-01345-10942
3-08378-1377	5-01345-1708	6-01345-2090
3-08378-1429	5-01345-1868	6-01345-2094
3-08378-1436	5-01345-2647	6-01345-2097
3-13488-2887	5-01345-2661	6-01345-2117
3PR-1252	5-01345-2710	6-01345-2153
3R-3666	5-01345-2728	6-01345-2380
4-01345-1344	5-01345-2729	6-01345-2389
4-01345-149	5-01345-2744	6-01345-2394
4-01345-3400	5-01345-3150	6-01345-2491
4-01345-3412	5-01345-3152	6-01345-2668
4-01345-3587	5-01345-3153	6-01345-3102
4-01345-4644	5-01345-3228	6-01345-3112
4-01345-5355	5-01345-3251	6-01345-8981
4-01345-5406	5-01345-3884	6-01345-9829
4-01345-5495	5-01345-3896	6-13488-8162
4-01345-5744	5-01345-3918	7-01345-11250
4-01345-5760	5-01345-412	7-01345-12399
4-01345-5760	5-01345-4151	7-01345-12649
4-01345-5861	5-01345-4258	7-01345-12723
4-01345-6039	5-01345-4457	7-01345-13132
4-01345-6192	5-01345-4502	7-01345-13143
4-01345-6344	5-01345-4768	7-01345-13521
4-01345-6398	5-01345-4786	7-01345-14071
4-01345-6457	5-01345-5426	7-01345-15678
4-01345-7287	5-01345-82369	7-01345-16020
4-08378-3728	6-01345-0198	7-01345-225



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Table 1 (Cont'd) - Serial Numbers of Acceptable Third Stage Stators (PN 868379-3)

7-01345-2389	7Q-2503	8-13488-1359
7-01345-2417	7Q-2714	8-13488-14667
7-01345-6555	8-01345-13526	8-13488-16925
7-01345-6561	8-01345-13974	8-13488-16927
7-01345-697	8-01345-13989	8-13488-16989
7-01345-74081	8-01345-13994	8-13488-18433
7-01345-7632	8-01345-14002	8-13488-2098
7-01345-76393	8-01345-14585	8-13488-2098
7-01345-8803	8-01345-16001	8-13488-2102
7-01345-8809	8-01345-16006	8-13488-2570
7-01345-9530	8-01345-16049	8-13488-6306
7-01345-9547	8-01345-16090	8-13488-6377
7-01345-955	8-01345-19393	8-13488-7177
7-01345-9550	8-01345-19421	8-13488-8131
7-01345-9919	8-01345-20253	8-13488-8193
7-08378-1141	8-01345-20264	8-13488-9915
7-08378-1162	8-01345-2072	8-13488-9923
7-08378-1176	8-01345-20726	84PR584
7-08378-1237	8-01345-21809	9-01345-1417
7-08378-283	8-01345-2214	9-01345-1421
7-08378-310	8-01345-3086	9-01345-14495
7-08378-795	8-01345-4126	9-01345-14497
7-08378-923	8-01345-7081	9-01345-145
7-08378-997	8-01345-9892	9-01345-14509
7-13488-3351	8-01345-99412	9-01345-14512
7-13488-5079	8-13488-10176	9-01345-15651
7-13488-6439	8-13488-10599	9-01345-15652
7Q-2422	8-13488-11106	9-01345-15655



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Table 1 (Cont'd) - Serial Numbers of Acceptable Third Stage Stators (PN 868379-3)

9-01345-16197	9-13488-12855	9-13488-9642
9-01345-16206	9-13488-13461	9-13488-970
9-01345-16584	9-13488-13690	941166
9-01345-17127	9-13488-13697	94NF104136
9-01345-17545	9-13488-1469	94NF104697
9-01345-17550	9-13488-14698	94NF105126
9-01345-2155	9-13488-16999	95NF106876
9-01345-2856	9-13488-2259	9PR-172
9-01345-4608	9-13488-5807	9Y-129
9-01345-517	9-13488-5826	9Y-1369
9-01345-5435	9-13488-5936	9Y-154
9-01345-5452	9-13488-6019	9Y-1912
9-01345-7545	9-13488-6023	9Y-3254
9-13488-10744	9-13488-6237	9Y-3391
9-13488-10753	9-13488-6280	9Y-378
9-13488-11247	9-13488-6703	AB3-01345-2507
		AB9-13488-9668

NOTE: Stators listed in Table 1 are acceptable with respect to outer band weld radiographic inspection performed by National Flight Services only.

Stators that have had modifications or repairs on the outer band following radiographic inspection by National Flight Services shall be excluded from Table 1 unless approved by the FAA Los Angeles Aircraft Certification Office.

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- (2) Gain access to and remove unserviceable third stage stator in accordance with applicable Engine Maintenance Manual.
 - (3) Perform radiographic inspection of third stage stator in accordance with National Flight Services of Arizona Process Specification NF-X-1379.



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Due to the critical process involved, radiographic inspection must be accomplished at National Flight Services of Arizona, Inc., CRS# NZIR850L. If stator is removed at facility other than National Flight Services forward to:

National Flight Services of Arizona, Inc.

5170 W. Bethany Home Road
Glendale, Arizona 85301
Ph. (602)931-1143, Fax (602)931-7264

- or -

National Flight Services, Inc.

10971 E. Airport Services Road
Toledo Express Airport
Swanton, Ohio 43558
Ph. (419)865-2311, Fax (419)867-4224

- (4) If stator radiographic inspection is acceptable in accordance with NF-X-1379, reinstall serviceable third stage stator assembly, Part No. 868379-3 in accordance with applicable Engine Maintenance Manual
- (5) If radiographic inspection is not acceptable install serviceable third stage stator in accordance with applicable Engine Maintenance Manual.

NOTE: National Flight Services, Inc. Repair Process Specification 72-T50-5912 has been approved by the FAA as a procedure to replace the third stage stator outer band with radiographic inspection of reweld for rework of rejected stators.

- (6) Reassemble engine in accordance with applicable Engine Maintenance Manual.

Refer to applicable manuals listed in Section 1 for disassembly, cleaning, inspection, reassembly and test instructions.

- (7) Check and ensure proper operation in accordance with Aircraft Flight Manual and/or appropriate aircraft documents.
- (8) Complete life-limited part log and/or engine log book entry.
 - (a) Make entry on stator life-limited part log noting date, stator time and cycles in service and compliance with this alert bulletin (and alert bulletin revision number if applicable).
 - (b) Make entry in engine log book noting date, engine operating time, part number and serial number of installed stator and compliance with this alert bulletin (and alert bulletin revision number if applicable).



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3. MATERIAL INFORMATION

The following parts are required to accomplish the instructions outlined in this service bulletin.

NOTE: Applicable illustrated parts catalogs and spare parts bulletins dated later than the original issue date of this alert bulletin may introduce different parts for installation. Refer to these documents before ordering parts.

Expendable parts discarded in gaining access to the affected area of the equipment are not included.

New Part No.	Qty	Unit List Price	Description	Old Part No.	Disposition
868379-3 (Serial Numbers listed in Table 1 or stators accepted per this alert service bulletin)	1		Stator	868379-1/-3 (Serial Numbers NOT listed in Table 1)	R, T

Disposition

Code R: Replacement part is available on exchange basis. Contact National Flight Services, Inc. for details.

Code T: Forward part to National Flight Services of Arizona, Inc., 5170 W. Bethany Home Road, Glendale, Arizona 85301, for rework.

National Flight Services, Inc. Repair Process Specification 72-T50-5912 has been approved by the FAA as a procedure to replace the third stage stator outer band with radiographic inspection of reweld for rework of rejected stators.