

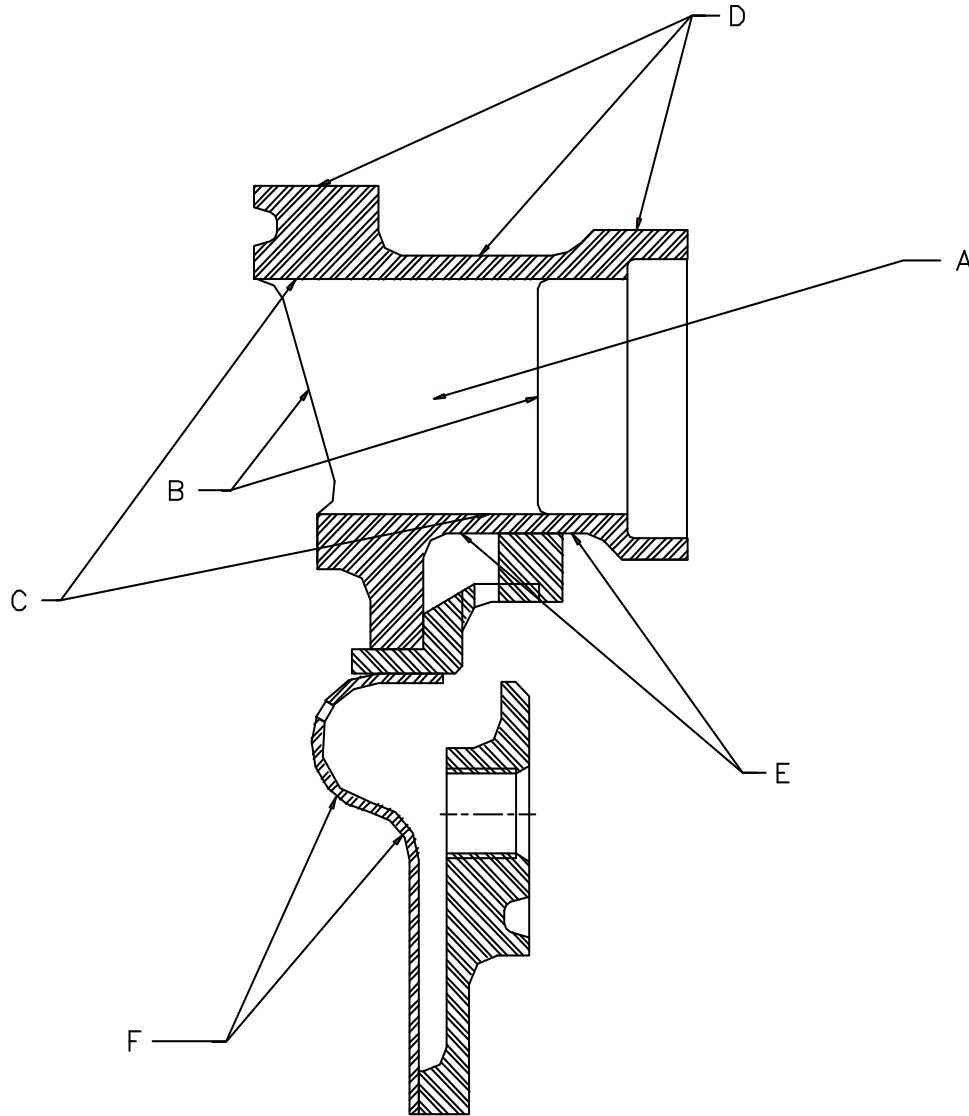
T-001 Inspection Limits and Repair

1ST STAGE TURBINE NOZZLE

Engine Application(s):	250-C20, C20B, C20F, C20J, C20S, C20W.																					
Subject:	Inspection and Rework Procedure for the Un-coated A23038218 & E23038218 1 st Stage Turbine Nozzle Assembly.																					
Compliance:	<p>Any time the uncoated nozzle assembly is removed for overhaul. Refer to the appropriate Figures for Inspection and Rework Procedures.</p> <p>Fluorescent Penetrant Inspection per AMS 2647 or equivalent.</p> <p>After first airfoil restoration, re-identify by adding R1 after Part No. (e.g. E23038218R1,) and R2 after second airfoil restoration. Extex does not recommend more than two airfoil repairs to this part.</p> <p>Repaired Nozzle Assemblies shall meet dimensional requirements of Figure 2.</p> <p>Table 1: Acceptance, rework limits and procedures Figure 1: Inspection Figure 2: Dimensional Inspection</p>																					
Notes:	Replaces Service Letter T95-010 issued by Superior Turbine on July 26, 1995. Refer to OEM's published data for installation, engine operation and disassembly.																					
Revisions:	<table><tr><td>N/C</td><td>Dated: 01/30/97</td><td>Initial Release.</td></tr><tr><td>A</td><td>Dated:</td><td>Updated format; added "FAA/DER procedure for airfoil repair".</td></tr><tr><td>B</td><td>Dated: 11/26/97</td><td>Added Cadorath and Dallas Airmotive as sources.</td></tr><tr><td>C</td><td>Dated: 06/28/99</td><td>Removed sources.</td></tr><tr><td>D</td><td>Dated: 01/22/01</td><td>Updated format.</td></tr><tr><td>E</td><td>Dated: 09/10/09</td><td>Updated EXTEX to TIMKEN.</td></tr><tr><td>F</td><td>Dated: 2/02/16</td><td>Updated Timken to EXTEX Engineered Products.</td></tr></table>	N/C	Dated: 01/30/97	Initial Release.	A	Dated:	Updated format; added "FAA/DER procedure for airfoil repair".	B	Dated: 11/26/97	Added Cadorath and Dallas Airmotive as sources.	C	Dated: 06/28/99	Removed sources.	D	Dated: 01/22/01	Updated format.	E	Dated: 09/10/09	Updated EXTEX to TIMKEN.	F	Dated: 2/02/16	Updated Timken to EXTEX Engineered Products.
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T-001 Inspection Limits and Repair

A23038218 & E23038218
1st Stage Nozzle Inspection



Code Letter	Location	Description of Condition
A	Vane Airfoil	Cracks
B	Vane Leading Edge Vane Trailing Edge	Nicked, Dented Nicked, Dented, Warped, Burned
C	Vane Fillet	Cracks
D	Outer Band	Cracks
E	Inner Band	Cracks
F	Diaphragm	Cracks

FIGURE 1

T-001 Inspection Limits and Repair

**A23038218 & E23038218 1st Stage Nozzle (Un-coated)
Inspection and Rework Limits**

Location / Condition	Service and/or Repair Limits	Corrective Action
A - Airfoil Crack Indications	Leading Edge: 0.25 inch maximum is acceptable.* Trailing Edge: 0.25 inch maximum is acceptable.* *Acceptance is contingent upon the following: 1) No L.E. & T.E. cracks lie in the same plane. 2) Multiple cracks are separated by at least 0.25 inch. 3) Adjacent cracks do not converge.	Install new or serviceable Nozzle Assembly per approved procedure if Service Limit cannot be met. Airfoils may be repaired using FAA/DER approved procedure
B - Damaged Airfoils	L.E. & T.E. maximum material loss to a depth of 0.156 inch (4mm). Depth measured after blending.	Blend damaged surface(s) reference notes 3, 4, & 6. Replace Nozzle Assembly when service limit cannot be met Airfoils may be repaired using FAA/DER approved procedure.
B-Airfoil Negative Imperfections	Negative imperfections in the first 0.25" of the airfoil L.E. & T.E. are subject to the crack criteria. Negative imperfections between L.E. & T.E. are acceptable up to an area of: 1/16" dia. X 1/2 section thickness.	Airfoils may be repaired using FAA/DER approved procedure.
B-Airfoil Positive Imperfections	Positive imperfections in the first 0.25" of the airfoil L.E. & T.E. are to be no greater than 0.005", otherwise to 3/16" dia. X 0.010" height if smooth and adherent, and part line evidence to 0.015" height.	Airfoils may be repaired using FAA/DER approved procedure.
C - Vane Fillet Cracks	At Inner Band: 0.25 inch maximum from Leading or Trailing edge. At Outer Band: 0.25 inch maximum from Leading or Trailing edge. NOTE: Length specified is for cracks along the airfoil measured parallel to the adjacent band. Two or more cracks are acceptable provided they do not propagate towards another or could cause metal breakout.	Replace Nozzle Assembly when service limit cannot be met Airfoils may be repaired using FAA/DER approved procedure.

TABLE 1 (sheet 1 of 2)

T-001 Inspection Limits and Repair

**A23038218 & E23038218 1st Stage Nozzle (Un-coated)
Inspection and Rework Limits**

D - Outer Band Cracks	One crack extending 0.500 inch axially into the band or 0.625 inch (16mm) circumferentially between vanes and completely through wall.	Install new or serviceable Nozzle if Service Limit cannot be met. Repair using approved braze procedure. Repair using approved weld procedure when braze capability is exceeded. EFA to be between 3.30 and 3.31 after repair. Outer Bands may be repaired using FAA/DER approved procedure.
E - Inner Band Crack	One axial crack 0.190 inch maximum into band but not through diaphragm braze fillet.	Replace Nozzle Assembly when service limit cannot be met.
F - Diaphragm Crack	Cracks are not acceptable.	Install new or serviceable Nozzle Assembly.

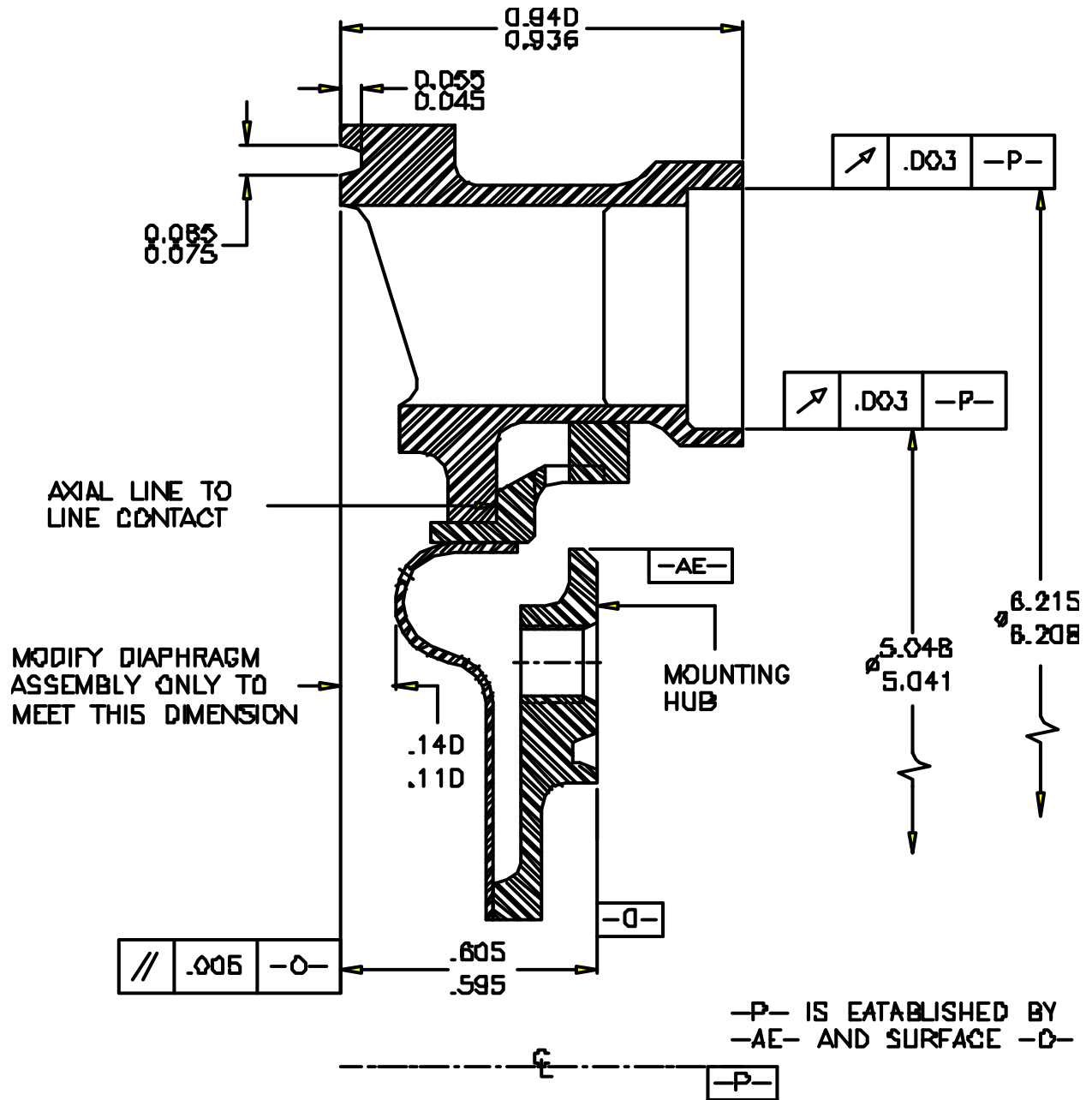
NOTES:

- 1 Extex considers airfoil restoration of this part a Major Repair, (as defined in FAR 1,) and should be performed under FAA authorization.
- 2 Airfoil repairs to be performed by an FAA Approved repair facility with Major Repair experience.
- 3 Blending to remove L.E. and/or T.E. damage may affect airflow.
- 4 Recommended airflow to be 3.30 to 3.31 EFA (as determined with a Fleming Flow Rig.)
- 5 FPI indications less than 0.005 inch are acceptable.
- 6 Blend and polish acceptable vane edge damage in a radial direction using a fine file or 320 grit abrasive paper. Optimum blend should produce scallops with a 3:1 width to depth ratio. Maintain a smooth blend with the basic airfoil. Trailing edge radius after blend to be greater than 0.005 inch.

TABLE 1 (sheet 2 of 2)

T-001 Inspection Limits and Repair

A23038218 & E23038218
1st Stage Nozzle Inspection



FOR DIMENSIONAL RESTORATION OF PACKING GROOVE METALLIZE USING METCO 450.
DIMENSIONS ARE IN INCHES.

FIGURE 2