

NAVIMFAC PACNORWEST **ORIGINAL IF RED**  
**ENGINEERING MEMORANDUM**

SER. NO.: 841/198M-11

**SUBJECT:** TRIPER/AERP, Low Pressure Air Compressor, Incorrect Rotor

SHIP: TRIPER/AERP	DATE: 08/17/11
REFIT: NA	ORIGINATOR: John Ellsworth
JCN: 00024OVHL0965, 4540431C 0026 and Various	CODE: 841.1
TSN: 047TC12258, SMIC 1414 and Various	PHONE: 5-1076
FGC: 551B010101	
REF: (a) 15-0181; MD-663C Compressor, Details, Cross Section. Piping & List of Material (b) PE/SK 5338; Rotor Machined	
ENCL: (1) LPAC Rotor Sketch	

**DISCUSSION:**

1. Sufficient evidence exists to indicate that the new rotors being received from the supply system under NSN 4310-00-008-9927 for use with MD-633C Nash Compressor (piece 10 of reference (a) and (b)) were not manufactured by the original equipment manufacturer (OEM), Nash (Cage code 42280) and were improperly fabricated.
2. Defective rotors shall be returned to the stock system using a QDR based on the following:
  - a. Unlike older rotors removed from in-service compressors, the new rotors received from the stock system are not marked with the Nash part number.
  - b. The nominal width of the volute opening in the new rotors (see reference (a) and enclosure (1)) is approximately 3/8" across. This dimension on an in-service rotor marked with the Nash part number is about 1/4". Follow up discussions with Nash POC Mr. John Edman has confirmed the 1/4" wide volute opening best reflects the configuration depicted by the OEM's proprietary drawings.
  - c. Reference (a) requires the discharge pressure of an overhauled low pressure air compressor (LPAC) to fall within the range of 110-125 psig. LPACs assembled using a questionable rotor typically cannot meet this criteria. Specifically, during the overhaul of LPAC TSN 047TC12258, the compressor was assembled using a new rotor. During the post overhaul operational testing the maximum obtainable discharge pressure was an unsatisfactory 108 psig. After only replacing the new rotor with an old shop available spare marked with the Nash part number, the discharge pressure was raised to an acceptable 114 psig.
  - d. Stock system records indicate the rotors currently available from the supply system were manufactured by ACME Products and Engineering of Brooklyn NY (Cage Code 1T943), a company that specializes in the manufacture of OEM Navy pump parts. Since the detail drawing for these rotors is considered proprietary, these rotors could not have been manufactured to the original OEM drawings/specifications.
3. Until stock system records indicate they are again providing rotors manufactured by Nash (Cage code 42280), replacement rotors shall be purchased directly from the OEM.

ROUTING

	SIGNATURE	DATE	
841.1	<i>[Signature]</i>	8/22/11	REVIEW
for 841	<i>[Signature]</i>	8/23/11	APPROVAL
840.1	COM	8/24/11	DIST & FILE

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4. The following additional historical information applies: During the 2004 timeframe the Navy reverse engineered the same rotor as shown in reference (b). However this drawing may not have been used by ACME Products and Engineering, as this drawing appears to have the geometry of the volutes shown correctly.

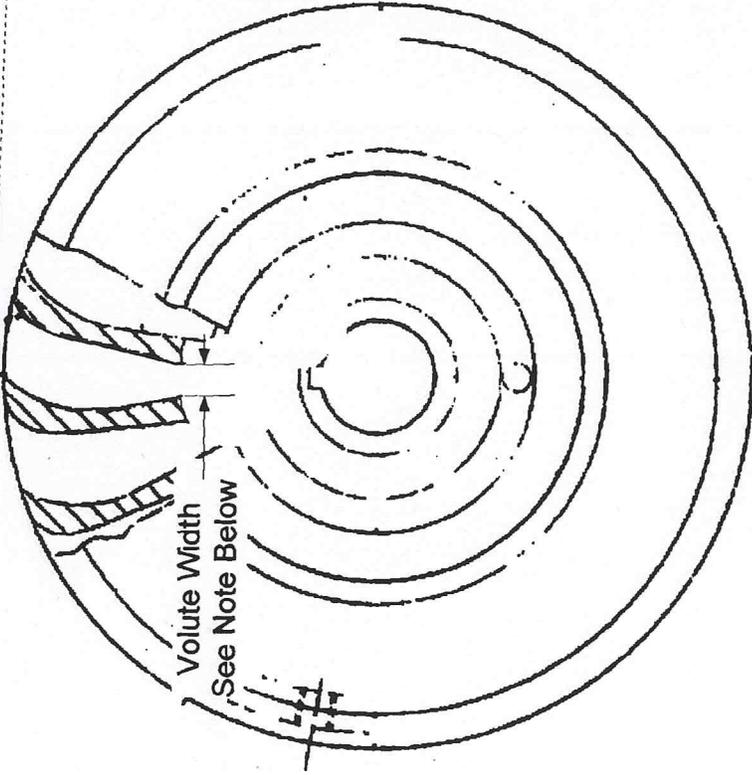
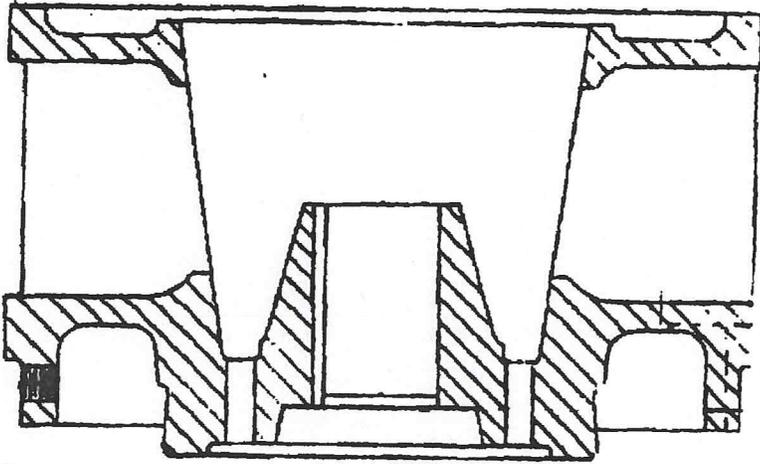
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**ACTION:**

EB842: Update applicable MJFs as required .

  
ORIGINATOR

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## LPAC Rotor Sketch

Note: The width of the volute opening for in-service rotors marked with the Nash part number is 1/4", while the rotors received from supply have a volute nominal width of 3/8".

SIZE	NAVIMFAC PACNORWEST ENGINEERING MEMORANDUM.	REV
A	841/198M-11 Enclosure (1)	-
SCALE: NONE		SHEET 1 OF 1