

Title: 19HR THRUST BEARING

Models Affected: 19HR

Number: C8804
Date: 2/17/88
Supersedes: NEW
Date:

Purpose: This bulletin is to advise the field of the availability of an improved 19HR thrust bearing.

Background: It has been found that frequent surging of the 19HR can lead to premature thrust bearing failure. Analysis of failed bearings returned from the field and the results of laboratory simulation tests with instrumented bearings have shown that damage occurs in the bearing housings from the excessive movement of the leveling pads and thrust shoes on the unloaded side of the bearing. In a surging machine this loading and unloading of the thrust and counterthrust can occur several times per minute. The leveling pads on the unloaded side oscillate radially, severely impacting the housing. This pounding of the leveling pad opens up excessive side clearance and deforms the adjusting pad button holes. The clearance becomes progressively greater until the leveling pads disengage and jam the thrust shoe assembly. This causes unequal shoe loading and failure occurs.

Redesign Information: To reduce the high velocity impact of the leveling pads, the thrust and counterthrust bearing housings are being machined to reduce the leveling pad side clearance. In addition, the axial thrust clearance has been reduced to half that of the previous designs. The thrust shoes have been slightly modified to enhance the oil wedge effect. The leading edge of each shoe has been milled with a 5 degree taper x 1/8" wide. The new thrust bearing assemblies are directly interchangeable with those presently in use, but the part numbers have been changed to identify them as the latest version. The old and new thrust assemblies, as well as the components that have undergone change, are listed in Table 1. Refer to your 19HR parts catalog for the remaining parts.

Recommendations: To improve long-term reliability, the latest design thrust bearing should be installed if the compressor is disassembled for any reason.

Attachment (Table 1)

MAIL KEYS: 2.33D, 2.40B, 2.45, 2.53

Prepared By:


J. FRED BACHMANN

Approved By:


JAMES N. CUNY

TABLE 1

<u>Description</u>	<u>19HR21</u>		<u>19HR31</u>	
	<u>New Part No.</u>	<u>Old Part No.</u>	<u>New Part No.</u>	<u>Old Part No.</u>
Thrust Bearing Assembly	19HR232-254	19HR232-214	19HR332-254	19HR332-214
Thrust Bearing Housing	19HR232-1253	19HR232-1023	19HR332-1253	19HR332-1023
Counterthrust Bearing Housing	19HR232-1243	19HR232-1063	19HR332-1243	19HR332-1063
Thrust Shoe	19HR232-1303	19HR222-1133	19HR332-1303	19HR332-1133
Thrust Shoe Assembly	19HR232-203	19HR232-103	19HR332-203	19HR332-103
Counterthrust Shoe	19HR232-1273	19HR232-1173	19HR332-1273	19HR332-1173
Counterthrust Shoe Assembly	19HR232-193	19HR232-143	19HR332-193	19HR332-143
	<u>New</u>	<u>Old</u>	<u>New</u>	<u>Old</u>
Axial Thrust Clearance	.003 - .006	.006 - .012	.004 - .007	.008 - .014

FJB/pab
2/17/88