TRANE®

General Service Bulletin

Thrust Bearing Design Change

ORDER NO: CVHE-SB-56A DATE: December 2002

Literature History: CVHE-SB-56, 2/2/00, Original bulletin
CVHE-SB56A, 10/28/02 - added information in Background section
CVHE-SB-56A, 12/18/02 - removed warnings

Introduction

This is a informational service bulletin on a thrust bearing design change implemented in late 1999 and updated in 2002.

NOTICE: Warnings and Cautions appear at appropriate sections throughout this literature. Read these carefully.

⚠ **WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

CAUTION Indicates a situation that may result in equipment or property-damage only accidents.

Background:

This new design utilizes a center oil feed (see Figure 1) instead of the axial oil feed used previously (see Figure 2). These new bearings (BRG1209 and BRG1210) have shallow grooves machined in the face of the outer races on the back side of each bearing (see Figure 3, Detail A). When mounted on the compressor shaft in a back to back arrangement, these grooves allow oil to be fed to the center of the duplex bearing set. No other change to the bearing is incorporated. These center feed thrust bearings can be used on any CVHE, CVHF, CVHG, CDHF, CDHG compressor with a "K4" marked shaft, whether or not it is equipped with the center feed bearing bracket. In other words, these bearings are backward compatible with any K4 shaft CVHE, CVHF, CVHG, CDHF, CDHG that formerly called for a BRG0609 or BRG0610.

⚠ WARNING

Rotating Components!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

CAUTION

Equipment Damage

Failure to install new center feed thrust bearings when a compressor is equipped with the center feed bearing bracket will result in bearing failure due to lack of lubrication.

If the new center feed bearing bracket is installed (starting with the design sequence - **See Units Affected Section**) on the machine, the new center feed thrust bearings (BRG1209 and BRG1210) **must be used** or catastrophic thrust bearing failure will occur due to lack of lubrication. For non-K4 shaft compressors, it is imperative to use the BRG0913 or BRG0914 to allow proper interference fit, as outlined in service bulletin CVHE-SB-33B.

Alignment markings may or may not be present on the bearings. If present the high spot marking convention uses a section of "V" on each outer race that forms a complete "V" when the two bearings are properly aligned and a scribed line on he inner bore of each bearing which should be aligned with each other to form a straight line. If not present, simply mount the bearings in a back-to-back arrangement without concern for alignment.

Note: Beginning in mid-2002 thrust bearings received from Trane, an American Standard Company, may not have alignment or high spot markings. If the high spot markings are not present, simply mount the bearings in a back-to-back arrangement. Follow this procedure outlined in Service Bulletin CVHE-SB-33B.

Figure 1. Center Feed Thrust Bearing Installed

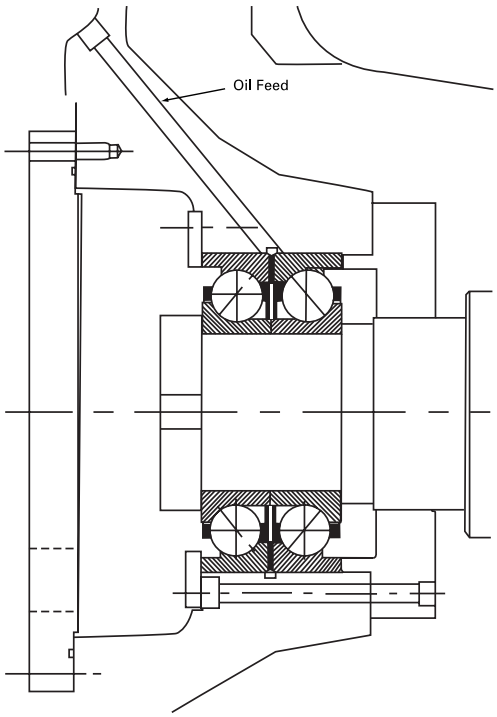


Figure 2. Axial Feed Thrust Bearing Installed

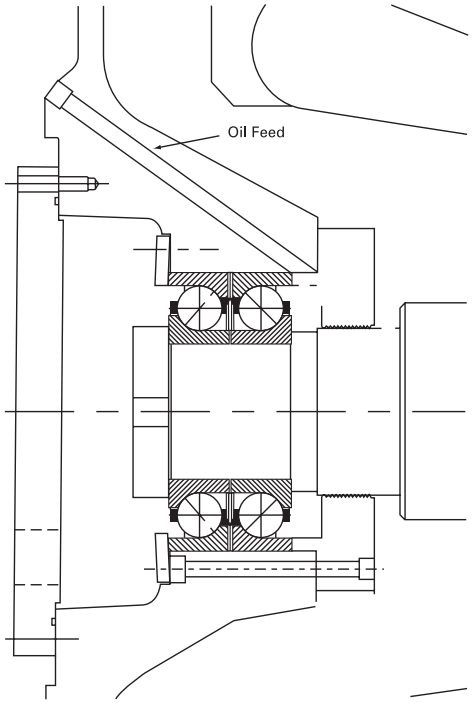
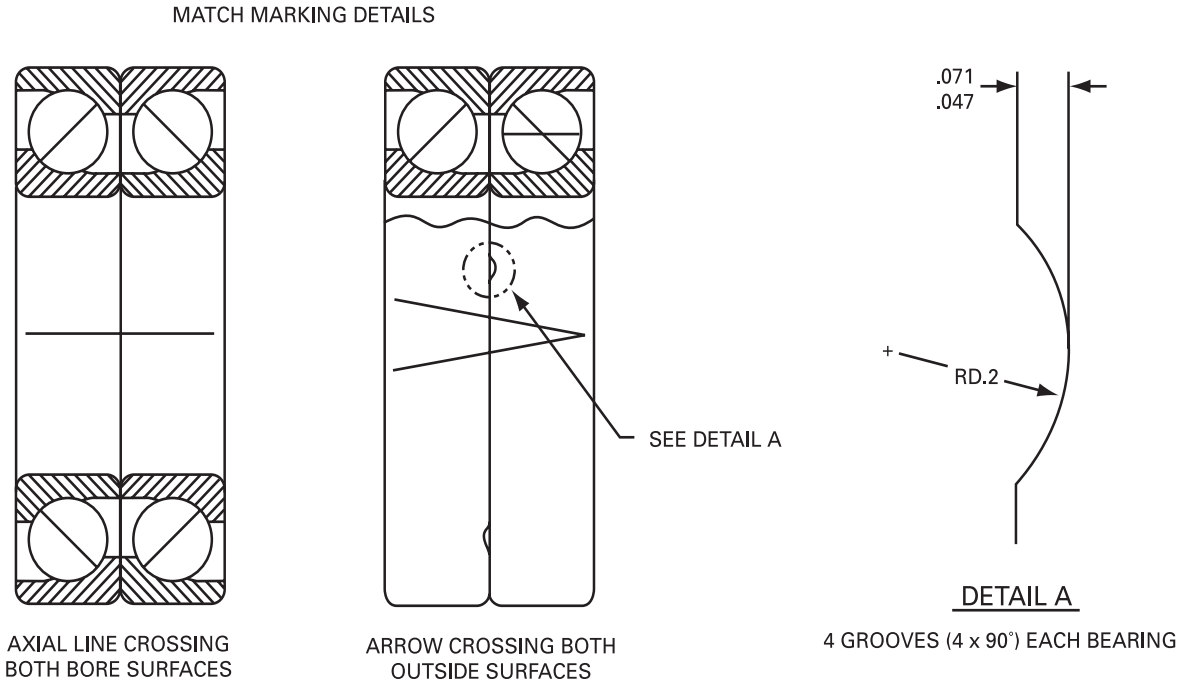


Figure 3. BRG01209, BRG01210 and BRG01258 Details



Units Affected:

CVHE, CVHF, CVHG chillers and CDHF, CDHG chillers beginning with the following design sequence designators:

Model	Design Sequence (10 and 11 Digit of Model Number)
CVHE	3B
CVHF	1J
CVHG	1B
CDHF (Duplex)	J0
CDHG (Duplex)	H0

Bearing Replacement:

When changing the duplex ball bearings for the CVHE, CVHF, CVHG, CDHF, CDHG machines, proper seating of the bearings using a hydraulic assembly nut and torquing of the locknut using a socket tool is imperative to properly pre-load these bearings. This procedure, along with the tools required is covered in detail in service bulletin CVHE-SB-33B and should be followed very closely.

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