



TRANE®

Service Bulletin

AFDB Primary Coolant Loop Service and Maintenance

CVHE, CVHF and CDHF

Order Number: AFDB-SVB02B-EN

DATE: August 16, 2004

Introduction

This service bulletin defines the required procedures and materials to be used when servicing the primary cooling loop of water-cooled AFDB drives installed on Trane CVHE, CVHF and CDHF chillers. This bulletin can also be applied to retrofit AFDC and the CH530 AFDD drives installed on other chillers.

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.

Inhibitor

The approved inhibitor for use in all Trane AFDB, AFDC, and AFDD Hp water-cooled drives is Trane CHM00481. The inhibitor is supplied pre diluted in quart plastic bottles and will be further diluted when mixed with the distilled water of the primary cooling loop. When charging an empty system on a factory installed drive, it is recommended that 3/4 quart (24 oz) of CHM00481 be installed in the primary cooling loop, regardless of the size of the drive.



If pre-mixing distilled water and the inhibitor to use as make-up for lost fluid, or if charging fluid to a field mounted drive with an unknown total fluid capacity, CHM00481 may be pre-mixed at a ratio of approximately 10 oz (295 ml) of CHM00481 per each gallon of clean distilled water. Inhibitor should always be installed along with clean distilled water. Do not use de-ionized water. Do not simply add inhibitor to an existing or dirty charge of water. Do not add distilled water to a drive unless you have pre-mixed it with the proper inhibitor as described above.

Primary Loop Fluid Amounts

The maximum total fluid capacity of the primary cooling loop of the factory installed 750 and 1000 Hp drive is approximately 3 gallons, the 350, 450 and 600 Hp factory installed drives will require up to 2.5 gallons. Use only clean distilled water and the proper inhibitor as the fluid in the primary cooling loop.

Flushing and Cleaning

The use of the proper solution and maintenance intervals will help ensure that the primary cooling loop never needs extensive cleaning or flushing. Back-flushing or flushing the drive heat sink and primary cooling loop is not allowed. If excessive pressure is applied to the drive heat sink it may fail and allow leakage of the cooling medium into the drive enclosure.

CAUTION

Primary Cooling Loop Overpressurization!

The maximum allowable pressure in the primary cooling loop must not exceed 50 psig. Use of pressures above 50 psig may cause structural damage to equipment. Do not exceed 50 psi of applied water pressure to the 750 or 1000 Hp drive heat exchanger or drive damage may occur. Be observant for the following warning label.

Drain and Fill Procedures

To drain the primary loop it is necessary to attach a hose to the drain valve found on the bottom of the drive. This is the lowest point of the system. Place the opposite end of the hose in an appropriate container or open floor drain and open the drain valve. Ensure that the fill plug and bleed port cap located on top of the primary loop expansion tank are both open. Allow several minutes for the loop to drain freely. **Do not** use compressed air or other pressure sources to force coolant from the drive. To fill an empty primary system you should first ensure that the drain valve on the drive is fully closed. On the top of the primary loop expansion tank remove the plug from the fill connection and ensure the cap on the bleed connection is removed. Add the correct charge of inhibitor to the expansion tank through the fill port. After the inhibitor is installed, add **distilled water** to the expansion tank until a correct fluid level is observed in the expansion tank sight glass. Use a funnel and simple gravity to add the solution components to the expansion tank. **Do not** use a hose with a pump or with city water pressure to add water to the drive as the high pressures that may result can damage the drive. Start and operate the primary loop cooling pump for a minimum of 2 minutes to evenly mix and distribute the inhibitor and distilled water through the drive. Recheck the fluid level in the expansion tank sight glass during pump operation and immediately add more distilled water if the sight glass indicates a low level. **Do not** over fill the expansion tank; insure that there is a minimum of 4-inches (101.1mm) air gap at the top of the tank at all times.

After filling and starting the system, the vent cap or bleed valve on the top of the expansion tank should be left open slightly, so that the expansion tank is exposed to atmospheric pressure. Do not open the cap or bleed valve fully or pre-mature inhibitor depletion due to the excessive contamination with oxygen may occur.



Maintenance Intervals

Once a week the AFD coolant system primary loop should be visually inspected for leakage and for proper solution levels in the expansion tank sight glass. It is recommended, after 12 months, that the primary cooling loop of the AFD drive be drained and refilled with new inhibitor and distilled water.

Storage

If a chiller and its drive is inactive for an extended period of time it is recommended that the drive-cooling pump be started at least once a week and allowed to run for one or two minutes. This will help maintain an even distribution of inhibitor in the system. It is recommended that the primary loop be completely drained of its fluid if it is not possible to run the drive cooling pump occasionally during extended storage. Place a tag on the drive that indicates the drive will require service before it can be placed back into operation. Drives that will be exposed to freezing temperatures during storage may have a temporary solution of 100% propylene glycol installed to prevent freeze damage. The solution should be installed and the circulating pump should run for several minutes to evenly distribute the solution. At the earliest opportunity and before operation of the drive is allowed the glycol solution must be removed and replaced with the proper inhibitor solution.

Parts Information

CHM00481 - Chemical, corrosion inhibitor, quart container, may be ordered through Trane Parts Center per the Pride System.

Production Changes

No production changes required per this bulletin.

Units Affected

CVHE, CVHF and CDHF units that are in service which have AFDB, AFDC and AFDD drives installed.

Questions

For general questions contact the CTV Technical Service department in La Crosse at 608-787-3943 or e-mail at TechService@trane.com.



Trane
A business of American Standard Companies
www.trane.com

For more information contact your local district office or e-mail us at comfort@trane.com

Literature Order Number	AFDB-SVB02B-EN
File Number	SL-RF-CTV-AFDB-SVB02B-EN-704
Supersedes	New
Stocking Location	Electronic Only

Trane has a policy of continuous product data and product improvement and reserves the right to change design and specifications without notice. Only qualified technicians should perform the installation and servicing of equipment referred to in this bulletin.