

Start-Up, Operation, and Maintenance Instructions Supplement

Open-Drive and Hermetic Centrifugal Liquid Chillers Safety Guide

Centrifugal liquid chillers are designed to provide safe and reliable service when operated within design specifications. When operating this equipment, use good judgement and safety precautions to avoid damage to equipment and property or injury to personnel.

This Safety Guide is a supplement to the machine Installation Instructions and to the Start-Up, Operation and Maintenance Instructions of the following Open-Drive and Hermetic Centrifugal Liquid Chillers:

17CB, 17DA, 17EA, 17FA and 17M,P,S
19CB, 19DG, 19DH, 19EA, 19EB and 19FA

Be sure you understand and follow the procedures and safety precautions contained in the machine instructions as well as those listed in this supplement.

▲ DANGER

DO NOT USE OXYGEN to purge lines or to pressurize a machine for any purpose. Oxygen gas reacts violently with oil, grease, and other common substances.

NEVER EXCEED specified test pressures. **VERIFY** the allowable test pressure by checking the instruction literature and the design pressures on the equipment nameplate.

DO NOT VALVE OFF any safety device.

BE SURE that all pressure relief devices are properly installed and functioning before operating any machine.

▲ WARNING

DO NOT USE eyebolts or eyebolt holes to rig machine sections or the entire assembly.

NEVER OPERATE an open-drive machine, pumpout unit or other equipment without coupling (or belt) guards in place. This warning applies even to short runs such as a motor rotation check. Serious injury can result from contact with moving parts.

DO NOT work on high voltage equipment unless you are a qualified electrician.

DO NOT WORK ON electrical components, including control panels, switches, starters, or oil heater until you are sure **ALL POWER IS OFF** and no residual voltage can leak from capacitors or solid-state components.

LOCK OPEN AND TAG electrical circuits during servicing. **IF WORK IS INTERRUPTED**, confirm that all circuits are deenergized before resuming work.

DO NOT syphon refrigerant by mouth.

AVOID SPILLING liquid refrigerant on skin or getting it into the eyes. **USE SAFETY GOGGLES.** Wash any spills

from the skin with soap and water. If any enters the eyes, **IMMEDIATELY FLUSH EYES** with water and consult a physician.

NEVER APPLY an open flame or live steam to a refrigerant cylinder. Dangerous overpressure can result. When necessary to heat refrigerant, use only warm (110 F/43 C) water.

DO NOT REUSE disposable (nonreturnable) cylinders nor attempt to refill them. It is **DANGEROUS AND ILLEGAL.** Before disposing of the cylinder, recover all remaining refrigerant from the cylinder in accordance with EPA (Environmental Protection Agency) guidelines. Loosen the valve collar and unscrew and discard the valve stem. **DO NOT INCINERATE.**

CHECK THE REFRIGERANT TYPE before charging machine. High pressure refrigerant in a low pressure machine can cause vessels to rupture if the relief devices cannot handle the refrigerant volume.

DO NOT ATTEMPT TO REMOVE fittings, covers, etc. while machine is under pressure or while machine is running. Be sure pressure is at zero psig before breaking any refrigerant connection.

CAREFULLY INSPECT all relief valves, rupture discs and other relief devices **AT LEAST ONCE A YEAR.** If machine operates in a corrosive atmosphere, inspect the devices at more frequent intervals.

DO NOT ATTEMPT TO REPAIR OR RECONDITION any relief valve when corrosion or build-up of foreign material (rust, dirt, scale, etc.) is found within the valve body or mechanism. Replace the valve.

DO NOT VENT refrigerant relief valves within a building; vent to outside. The accumulation of refrigerant in an enclosed space can displace oxygen and cause asphyxiation.

DO NOT install relief valves in series or backwards.

USE CARE when working near or in line with a compressed spring. Sudden release of the spring can cause it and objects in its path to act as projectiles.

▲ CAUTION

DO NOT STEP on refrigerant lines. Broken lines can whip about and cause personal injury.

DO NOT climb over a machine. Use platform, catwalk or staging. Follow safe practices when using ladders.

USE MECHANICAL EQUIPMENT (crane, hoist, etc.) to lift or move inspection covers or other heavy components. Even if components are light, use such equipment when there is a risk of slipping or losing your balance.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

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PC 211

Catalog No. 531-731

Printed in U.S.A.

Form 17-1SSC

Pg 1

11-77

Replaces: New

Supplements all 17 and 19 Series Installation, Start-Up, Operation and Maintenance Instructions

DO NOT WELD OR FLAME CUT any refrigerant line or vessel until all refrigerant has been removed from the vessel.

BE AWARE that certain automatic start arrangements CAN ENGAGE THE STARTER. Open the disconnect *ahead of* the starter in addition to shutting off the machine or pump.

USE only repair or replacement parts that meet the code requirements of the original equipment.

DO NOT VENT OR DRAIN water boxes containing industrial brines, liquid, gases or semisolids without permission of your Process Control Group.

DO NOT LOOSEN water box cover bolts until the water box has been completely drained.

DOUBLE-CHECK that coupling nut wrenches, dial indicators or other items have been removed before rotating any shafts.

DO NOT LOOSEN a packing gland nut before checking that the nut has a positive thread engagement.

PERIODICALLY INSPECT all valves, fittings and piping for corrosion, rust, leaks, or damage.

PROVIDE A DRAIN connection in the vent line near each pressure relief device to prevent a build-up of condensate or rain water.