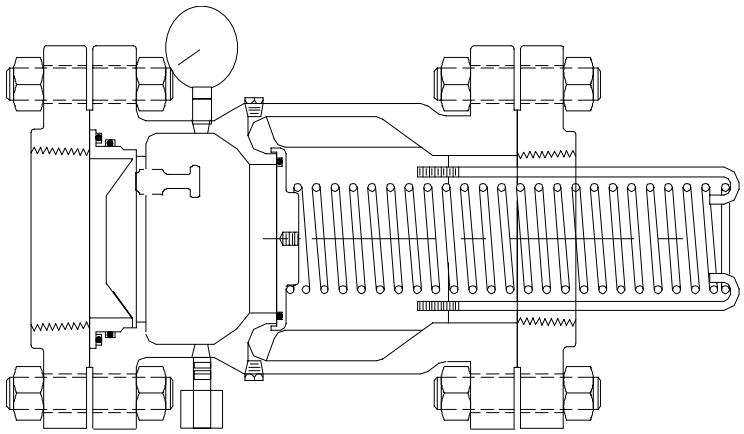
TRANE

Installation
Operation
Maintenance

RuptureGuard™ Pressure Relief System
Design Sequence A0



Models: RRVB

RRVB-SVX01A-EN

Warnings and Cautions

NOTICE:
Warnings and Cautions appear at appropriate sections throughout this manual. 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.

Environmental Concerns!

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants—including industry replacements for CFCs such as and HCFCs and HFCs.

Responsible Refrigerant Practices!

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified. The Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

Table of Contents

General Information

Literature History

RRVB-SVX01A-EN (October 2003)

Manual revised to include minor text changes.

RRVB-IOM-1D (March 1996)

RRVB-IOM-1C (November 1995)

RRVB-IOM-1B (July 1995)

RRVB-IOM-1A (February 1995)

RRVB-IOM-1 (November 1994)

Unit Model Number

For service and replacement purposes, the Trane Model RRVB RuptureGuard™ is assigned a multiple-character alphanumeric model number that precisely identifies each unit. The model number key is shown here.

Use of the model number will enable the owner/operator, installing contractor, and service technician to define the characteristics of any RRVB unit. Be sure to refer to the model number when ordering replacement parts or requesting service.

Sample Model Number

Model Number	R	R	V	B	4	1	0	0	0	A	0
Digit Number	1	2	3	4	5	6	7	8	9	10	11

Digits 1, 2, 3 - Product Description
RRV = Refrigerant Rupture Valve

Digit 4 - Development Sequence
B = Second

Digit 5 - Valve Size
3 = 3”
4 = 4”

Digit 6 - Pressure Setting
1 = 15 psig at 115°F

Digits 7, 8, 9 - Not Used

Digits 10, 11 - Design Sequence
A, 0 = First Design Sequence

General Information

Nameplates

The Model RRVB unit nameplate is located on the outside of the rupture relief valve body. The nameplate includes the service model number and unit serial number. Refer to this information whenever making inquiries or ordering replacement parts. A typical nameplate is shown below in Figure 1. An abbreviated version of the nameplate is also provided on the outside of the shipping package (Figure 2).

Figure 1. Typical nameplate

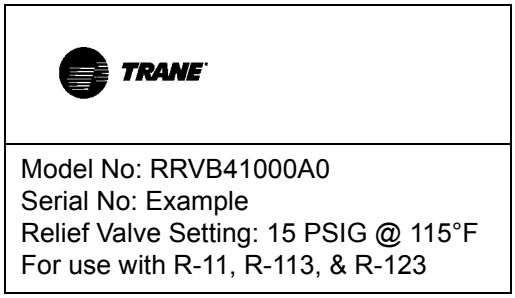
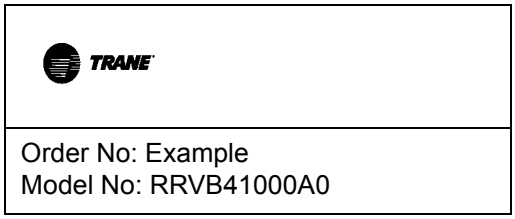


Figure 2. Typical shipping package nameplate



What is the Trane RuptureGuard™?

The Trane RuptureGuard refrigerant containment system replaces the carbon rupture disk on new or existing low pressure chillers utilizing CFC-11, CFC-113, or HCFC-123. The RuptureGuard consists of a solid-metal, (non-fragmenting) reverse-buckling rupture disk, and automatically re-seating relief valve and selectable inlet and outlet adapter flanges. The relief valve and the rupture disk are rated at the chiller's maximum working pressure level. If the chiller's refrigerant pressure exceeds the rupture disk burst rating, the disk bursts, releasing pressure to the relief valve. The relief valve vents the pressure down to a safe level and then re-seats, thus minimizing the amount of refrigerant vented to the atmosphere. Figure 3 illustrates the operation of a reverse buckling rupture disk. Refer to the Operation section of this manual for more information on unit operation.

General Information

Figure 3a. Reverse buckling 3” rupture disk

Disk in normal operating position. Chiller pressure is below 15 psig.

When chiller pressure exceeds the disk’s rated burst pressure, the disk begins to tear open along the score line of the outlet ring.

The disk snaps open through the score line of the outlet ring and the pressure is vented. The outlet ring is designed with a hinge area to retain the disc petal.

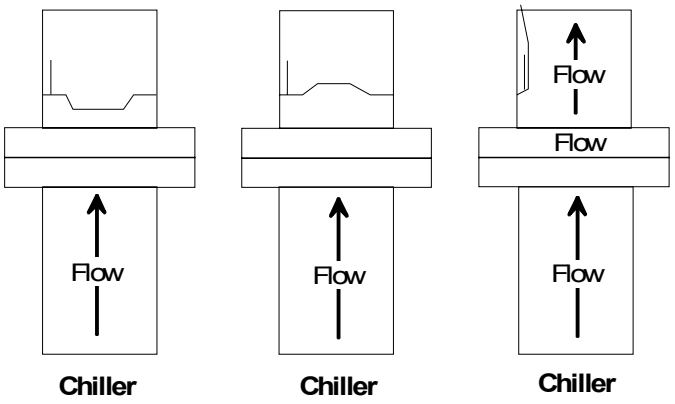


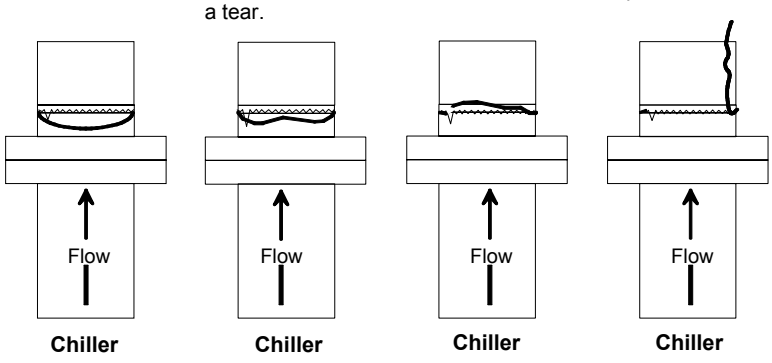
Figure 3b. Reverse buckling 4” rupture disk

Disk in normal operating position. Pressure is below 15 psig.

When chiller pressure exceeds the disk's rated burst pressure, the dome collapses, the disk begins to reverse and the extended tooth pierces the disk and initiates a tear.

The disk continues to reverse, the dome inverts and the disk becomes perforated along the outer tooth edge.

When the dome completes the reversal process, the disk snaps open along the tooth perforation and the pressure is vented.



General Information

Receiving

Upon receipt of the unit, inspect the shipping carton for signs of visible damage. Report any damage or shortage to the carrier and note it on the delivery receipt.

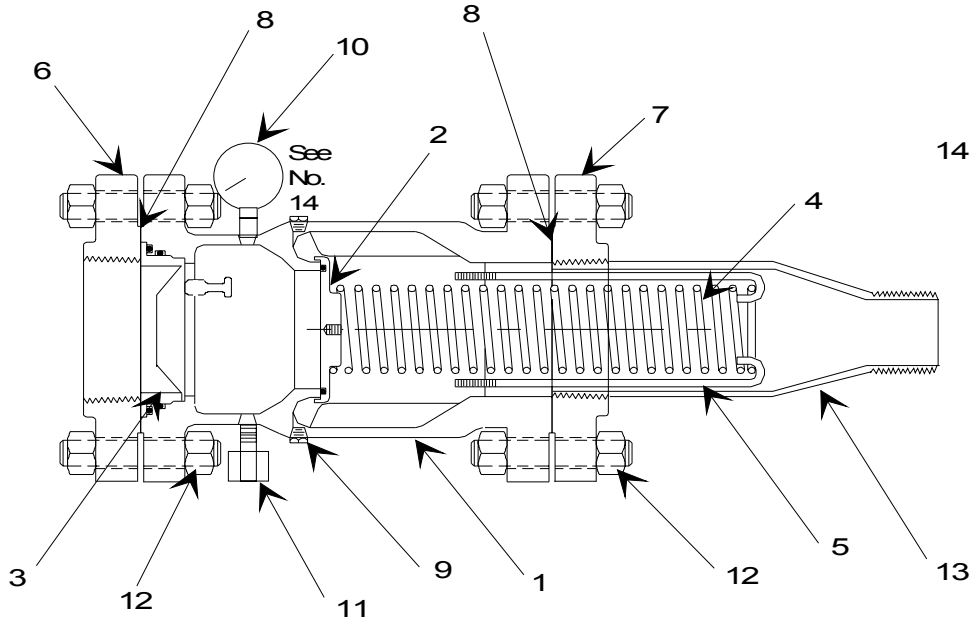
Unit must be stored in its original shipping carton in a dry, secure place prior to its installation and use.

Unpacking

Be very cautious to avoid damaging the rupture disk when unpacking the RuptureGuard™. The rupture disk comes installed inside the valve for protection during shipment and for ease of valve installation. Inspect for signs of visible shipping damage. Confirm all parts have been received by referring to the list and diagram in Figure 4. Also, confirm all the parts received will assemble to form the correct RuptureGuard configuration as ordered (see Figure 5).

Important! The surface of the rupture disk is extremely fragile and the domed portion of the disk should never be touched! Any dent, dimple, or imperfection is an indication that the disk is damaged and should be replaced.

Figure 4. RuptureGuard components



Optional accessory - Remove 1/4” plug upstream of the Valve Relief Plug and install pressure switch if ordered. Use refrigerant grade pipe thread sealant.

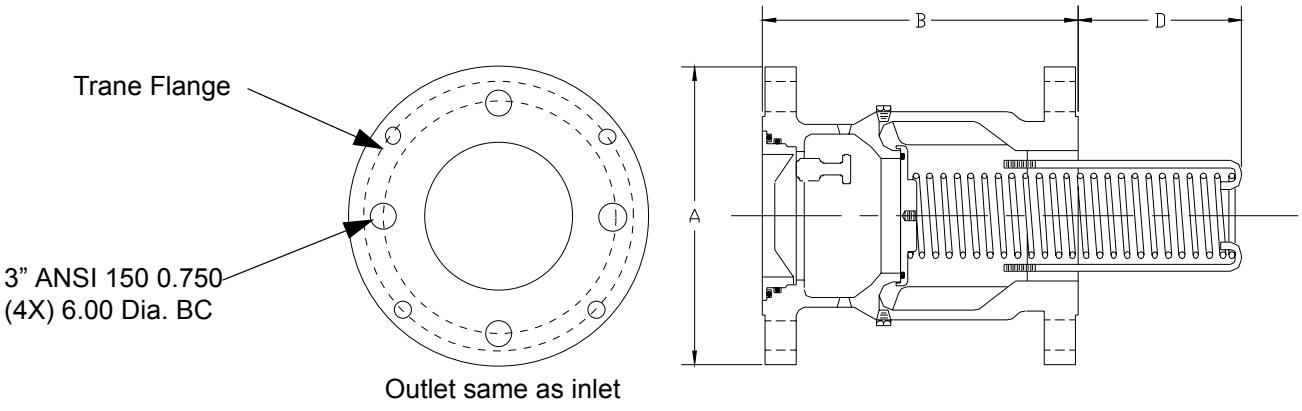
General Information

Table 1. RuptureGuard™ components

No.	Qty	Item	No.	Qty	Item
1	1	Valve body	8	2	Gaskets
2	1	Valve relief plug	9	3	Darin plug
3	1	Rupture Disk cassette	10	1	Pressure gauge
4	1	Valve relief spring	11	1	Excess flow valve
5	4	Spring hooks	12	8 (16)	Stud w/2 nuts, 5/8” x 4” long (optional)
6	1	Threaded inlet adapter (optional)	13	1	Reducing pipe nipple (optional)
7	1	Threaded outlet adapter (optional)	14	1	Pressure switch (optional)

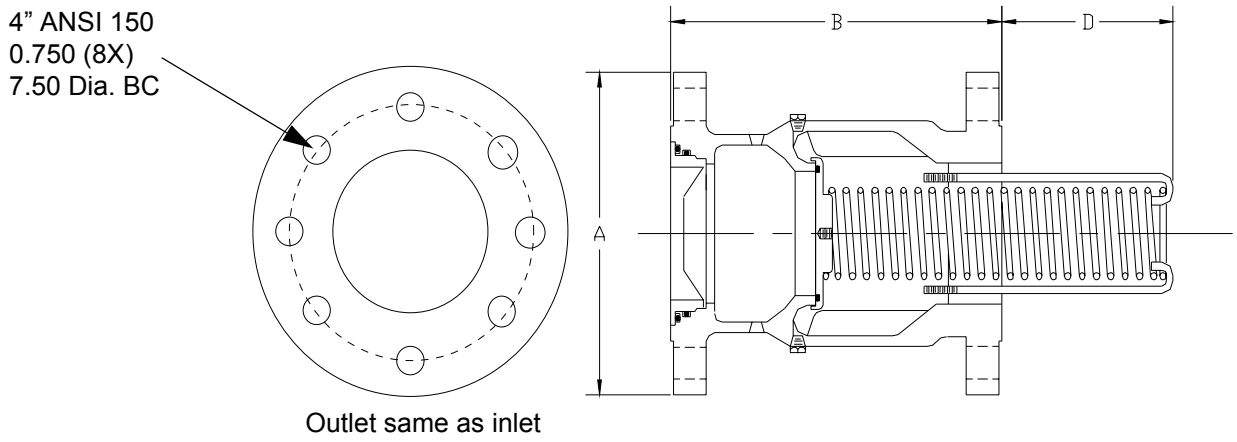
Figure 5. RuptureGuard configurations

3” Valve: 3 x 3 configuration (Adapter flanges not supplied)

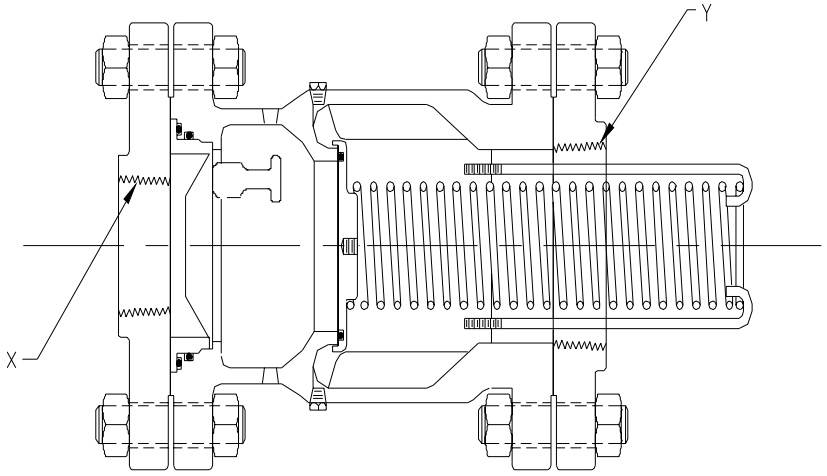


General Information

4” Valve: 4 x 4 configuration (Adapter flanges not supplied)

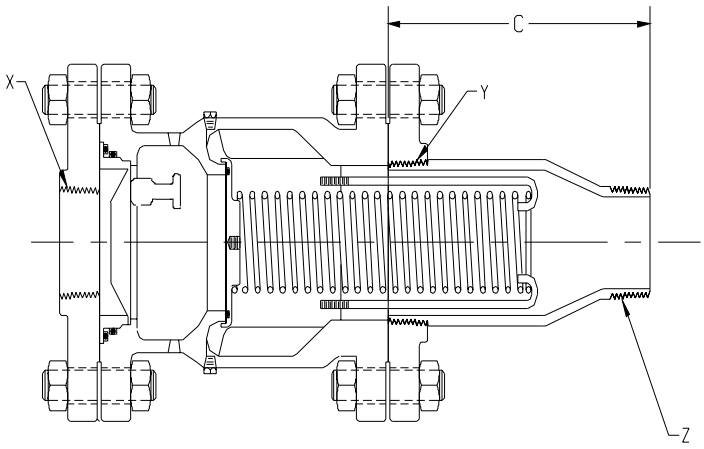


3” Valve: 2 x 3 configuration
4” Valve: 3 x 4 configuration

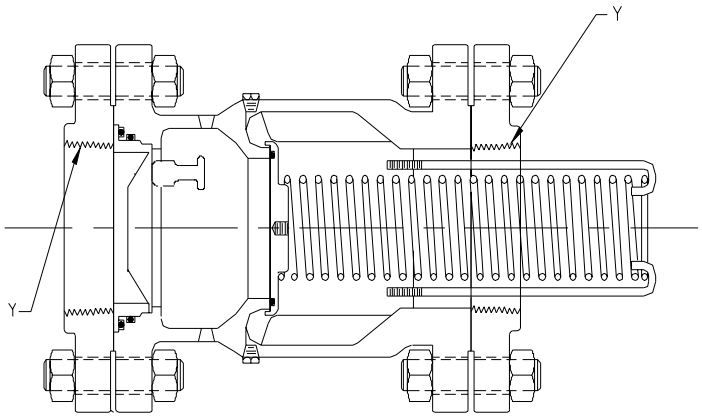


General Information

3” Valve: 2 x 2 configuration
4” Valve: 3 x 3 configuration



3” Valve: 3 x 3 configuration
4” Valve: 4 x 4 configuration



	A	B	C	D	X	Y	Z
3” Valve	7.5	8.5	8.0	4.0	2” NPT	3” NPT	2” NPT
4” Valve	9.0	10.0	9.0	5.0	3” NPT	4” NPT	3” NPT

(All dimensions are nominal)

Installation

The installation of the Trane RuptureGuard™ refrigerant containment valve should be performed by qualified personnel familiar with the operation of centrifugal water chillers. All instructions should be read and understood before the installation is performed. It is recommended that a suitable refrigerant grade pipe thread sealant, such as Teflon™, be used on all threaded joints.

Preparing the Chiller

Chiller rupture disk vent lines are typically configured with threaded connections. Flanges are connected to the threaded pipe or welded to the chiller vent line and are used to hold the existing carbon disk.

In the case of a threaded connection, remove the existing rupture disk holder. The RuptureGuard inlet adapter flange, as selected, will connect directly to this threaded connection (see Figure 6).

In the case of a welded flange connection, as on Trane model CVHE, CVHF and CVHB chillers, the chiller can be prepared for one of two installation options.

Option one: Remove the existing rupture disk, insert a gasket in the flange joint and reconnect the companion flange.

Note: The original flange bolts are typically longer so new bolts of the proper threaded length, size and strength should be installed. These are to be provided locally.

The RuptureGuard inlet adapter flange, as selected, will connect directly to this threaded companion flange (see Figure 6).

Option two (only applicable to the 3" RuptureGuard): Remove the existing rupture disk. The RuptureGuard is now ready to bolt directly to the chiller. The companion flange can be directly attached to the outlet of the RuptureGuard (see Figure 6).

Note: The original flange bolts are typically longer so new bolts of the proper threaded length, size and strength should be installed. These are to be provided locally.

Installation of the RuptureGuard requires opening the refrigerant side of the chiller to the atmosphere. To prevent the release of refrigerant, the installation should be performed after the chiller refrigerant charge has been evacuated or after raising the chiller pressure to 0 psig using heat or some other means which will not cause excessive purging.

Installation

CAUTION
Environmental Concerns!

Federal Refrigerant Recycling Regulations require that during non-major servicing, the chiller is either completely evacuated or pressurized to 0 psig prior to opening the refrigerant side to atmosphere. Failure to do so, or using means other than heat to increase the pressure, violates Section 608 of the Clean Air Act.

Orientation of the RuptureGuard™

The RuptureGuard may be installed in either a horizontal or vertical position.

To prevent water, refrigerant and/or other debris such as rust from hindering the operation of the valve, a drip leg should be installed immediately after or downstream of the RuptureGuard (see Figure 6).

CAUTION
Equipment Damage!

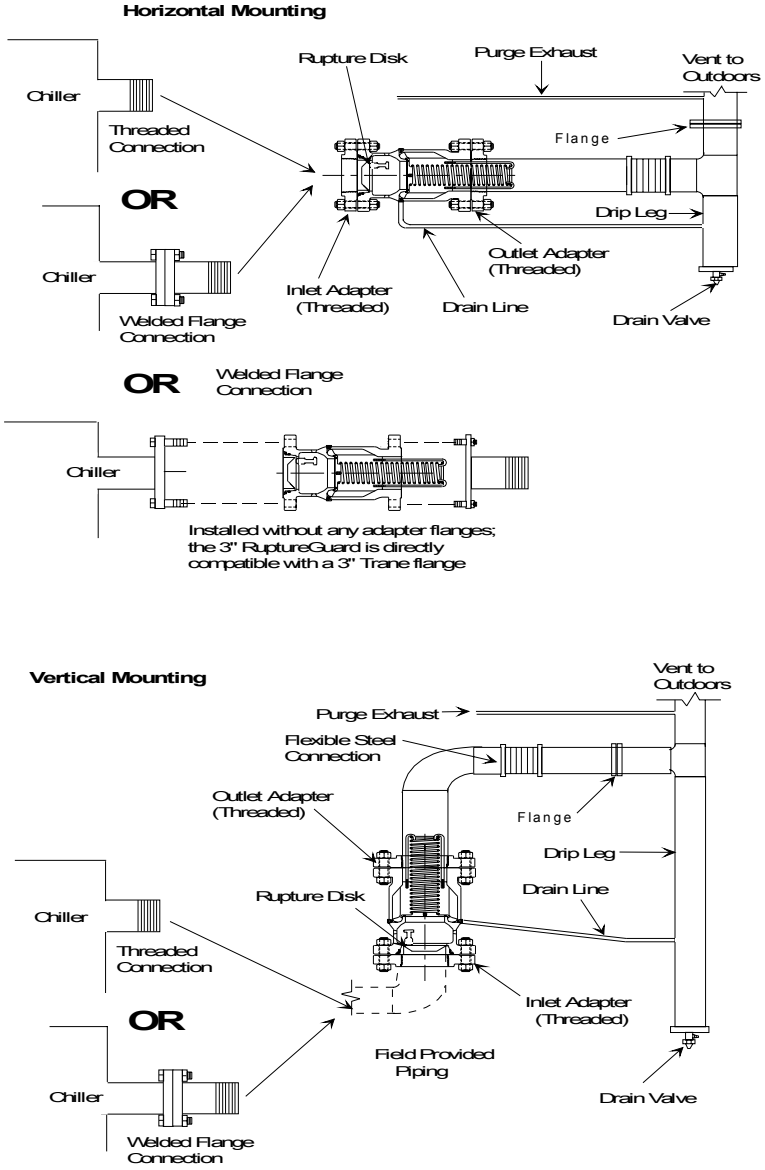
All vent lines must be equipped with a drip leg of sufficient volume to hold the expected accumulation of water and/or refrigerant. The drip leg must be drained periodically to assure that it does not overflow and allow fluid to flow into the horizontal portion of the vent line.

If the RuptureGuard is installed horizontally, the drain plug downstream of the valve relief plug and nearest to the bottom of the valve body should be piped to the drip leg in the vent line. This will allow the removal of any condensate formed within the valve body. If installed vertically, any one of the three drain plugs can be piped to the drip leg (see Figure 6).

Provisions, such as installing a set of flanges (see Figure 6) or other disconnect means, must be made in the discharge vent piping. This will allow the piping downstream of the valve to be easily removed for an annual inspection, to replace the rupture disk, or for any other servicing need.

Installation

Figure 6. RuptureGuard™ mounting options



Installation

Preassembly

CAUTION
Rupture Disk Damage!

The reverse buckling disk cassette comes installed in the relief valve body. This is a fragile, precision device. Extreme care must be taken when unpacking, handling and installing the RuptureGuard™ assembly. If any damage is visible, the disk MUST be replaced. Any damage to the domed portion of the disk will cause premature rupture of the disk.

1. Unpack the carton containing the RuptureGuard valve/disk assembly and optional inlet and outlet adapter flanges. Compare the parts received to the list and diagrams in Figures 4 and 5.
2. Place the flanged rupture/relief valve assembly in a horizontal position on a flat work surface capable of supporting the weight of the completed valve assembly (approx. 35 and 50 lbs. for the 3" and 4" valves respectively).

Note: While assembling the valve, keep in mind the desired finished orientation of the nameplate, pressure gauge, excess flow valve and pressure switch (optional).

Note: The preferred procedure for valve assembly and installation is to first connect the inlet adapter flange (if selected) to the valve body as this provides added protection to the rupture disk.

3. Place a flange gasket on the inlet side of the relief valve assembly.
4. Position the inlet adapter flange (if selected) on top of the gasket, align the bolt holes with the holes in the valve body, insert the stud bolts with nuts and tighten.

Note: If the flanged cross (field provided) mounting option is chosen as the preferred outlet configuration, see Figure 6a, preassembly of the valve outlet is not necessary at this time. The assembly of the flanged cross to the valve can be completed after the RuptureGuard has been connected to the chiller, and when the vent line connections are being made.

5. Place the valve assembly in a vertical position and place a flange gasket on the outlet side of the assembly.
6. Position the outlet adapter flange (if selected) on top of the gasket, align the bolt holes with the holes in the valve body, insert the stud bolts with nuts and tighten.
7. Screw the reducing pipe nipple (if selected) into the outlet adapter flange.

This completes the preassembly portion of the RuptureGuard installation.

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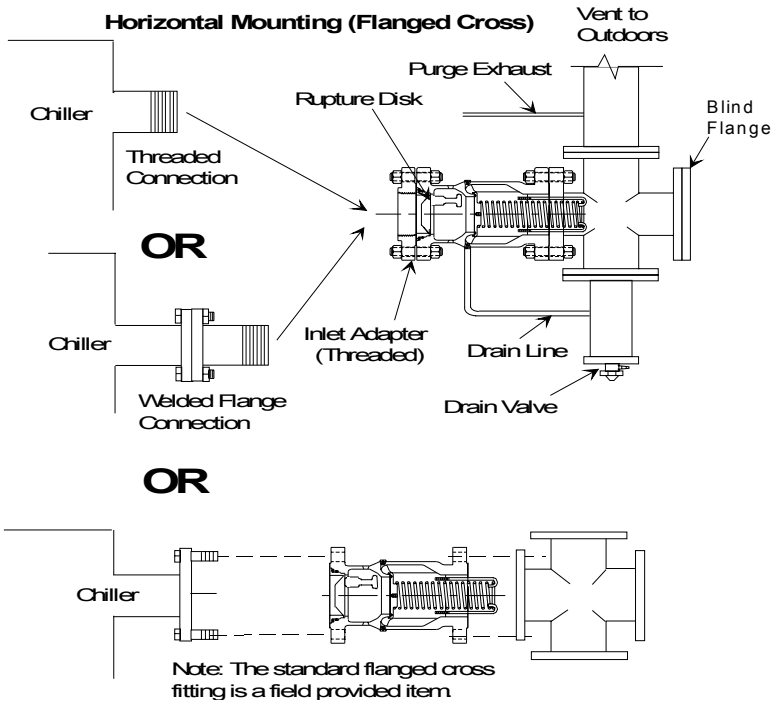
Figure 6a. RuptureGuard™ mounting options (Note: the standard flanged cross fitting is field provided)



Connection to the Chiller

1. Move the RuptureGuard assembly to the vicinity of the chiller vent line.

⚠ WARNING
Improper Unit Lift!

Test lift unit approximately 24 inches to verify proper center of gravity lift point. To avoid dropping of unit, reposition lifting point if unit is not level. Failure to properly lift unit could result in death or serious injury or possible equipment or property-only damage.Attach the preassembled RuptureGuard to the chiller vent line connection. Be sure to provide adequate support for the valve.

2. Attach the preassembled RuptureGuard to the chiller vent line connection. Be sure to provide adequate support for the valve.
3. Connect the discharge of the valve assembly to the vent line connected to the outdoors.

Important: The rated flow capacity of the RuptureGuard disk/valve assembly is based on having straight pipe extending past the spring mechanism downstream of the valve. When installing the 3" RuptureGuard with 2" x 2" adapters and the 4" RuptureGuard with 3" x 3" adapters, this requirement is automatically met. However when installing other configurations, be sure

Installation

there are no crosses*, elbows, tees or any other obstructions within first 9 inches of valve discharge. See the chiller installation manual and ASHRAE Standard 15-1992 for additional requirements on piping rupture disk and relief valve vent lines.

*A derate on the rated flow capacity for this configuration is published in RuptureGuard engineering bulletin, E/CTV-EB-10.

4. If the RuptureGuard™ is installed horizontally, remove the drain plug downstream of the valve relief plug and nearest to the bottom of the valve body and pipe to the drip leg in the vent line. If installed vertically, any of the three drain plugs can be piped to the drip leg (see Figure 6).
5. Screw the 1/4-inch NPT pressure gauge and 1/4-inch NPT excess flow valve into the threaded ports located in the disk-valve interspace of the valve body.

Important: The excess flow valve must be installed to maintain the downstream side of the rupture disk at atmospheric pressure to assure proper operating conditions for the disk.

6. If ordered, screw the 1/4-inch NPT pressure switch in the remaining threaded port.

Important: Use a refrigerant grade pipe sealant on all threaded pipe joints.

Pressure Switch

A factory calibrated pressure switch is an optional accessory and can be installed with each RuptureGuard for the purpose of signaling a disk rupture. When a disk ruptures, the pressure inside the valve holder section increases to the chiller pressure. The increased pressure changes the position of the switch's SPDT contacts. See the Technical Specification section of the manual for detailed switch ratings.

The use of the binary output signal from the switch is specific to each application. Some typical ways the switch output can be used are:

- provide the switching action to activate a local or remote audible or visual alarm.
- provide an alarm contact closure to a building management system, such as a Tracer™.
- wired in series with other safety controls to shut down pumps, boilers or other ancillary system components that may cause the high pressure condition.

Installation

Testing the Rupture Disk

Note: Any dent, dimple or imperfection is an indication the disk is damaged and should be replaced.

Note: The following test procedure is required only for the 4" Rupture Disk.

The RuptureGuard™ utilizes a solid metal, reverse-buckling rupture disk that is rated at 15 psig (+/- 2 psig). Testing has determined that a damaged disk will reverse at less than 9 psig. Reversals at less than 9 psig however may not have sufficient energy to fully open the rupture disk. If the disk reverses and does not fully open, the pressure required to fully open the disk may be above the disk rating, creating an unsafe condition. For this reason, a pressure test must be performed immediately following installation. The test should be conducted as follows:

1. Remove the excess flow valve and connect a vacuum pump and gauge capable of reading to 30" of mercury to the 1/4-inch NPT port as shown in Figure 7.

Note: The accuracy of this pressure (vacuum) reading is very important. If there is any question as to the accuracy of the reading, connect another gauge to confirm the measurement.

2. Determine the chiller evaporator refrigerant pressure from the suction pressure gauge on the control panel.
3. Refer to Table 2 with the chiller pressure reading and determine the vacuum necessary downstream of the disk to result in a 10 psid pressure differential across the disk.
4. Pull a vacuum in the disk-valve interspace to the level determined in Step 3 above. Establish this vacuum level using the pressure gauge installed on the RuptureGuard.

Close the valve to the vacuum pump in order to isolate the section between the rupture disk and the valve seat. Maintain this isolation for a minimum of five minutes.

CAUTION
Equipment Damage!

Exceeding the recommended test pressure can result in rupture disk damage and/or loss of refrigerant.

5. Monitor the RuptureGuard pressure gauge. If during this isolation time, the disk-valve interspace pressure moves within 1 psig of the chiller evaporator pressure, the disk has partially ruptured on the serrated tooth ring or has fully reversed.

The disk must be replaced BEFORE the RuptureGuard can be put into service on the chiller. A pressure differential of at least 8 psid maintained during this isolation time indicates the rupture disk is in good operating condition. If the pressure reading is in between these two conditions, repeat the test. If, after repeating the test, a deviant pressure reading is again obtained, there may be a valve plug O-ring seating problem. Refer to Step 5 in the Maintenance section of this manual.

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Figure 7. RuptureGuard™ 4” disk test setup (Note: on 3” disk, test in not required)

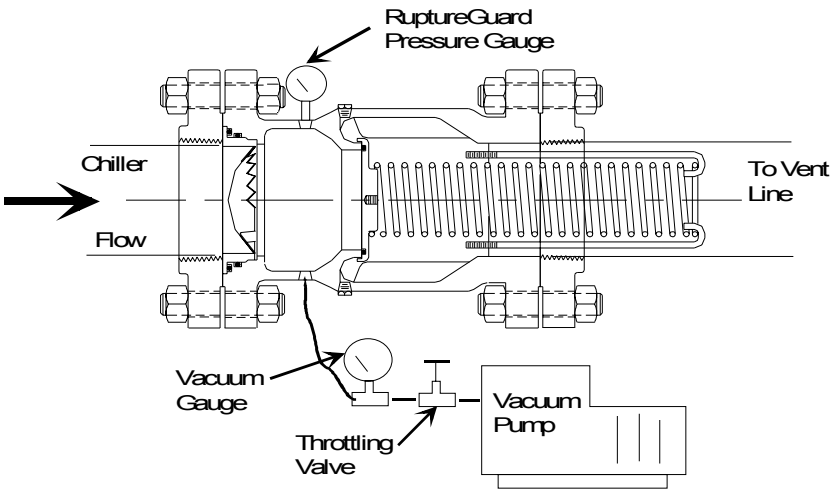

Table 2. Rupture disk test procedures

	Chiller Pressure	Vacuum Required in Valve Holder to Result in 10 psid
Vacuum	10” Hg	29” Hg
	9” Hg	29” Hg
	8” Hg	28” Hg
	7” Hg	27” Hg
	6” Hg	26” Hg
	5” Hg	25” Hg
	4” Hg	24” Hg
	3” Hg	23” Hg
	2” Hg	22” Hg
	1” Hg	21” Hg

Installation

	Chiller Pressure	Vacuum Required in Valve Holder to Result in 10 psid
Pressure	0” Hg	20” Hg
	1” Hg	18” Hg
	2” Hg	16” Hg
	3” Hg	14” Hg
	4” Hg	12” Hg
	5” Hg	10” Hg
	6” Hg	8” Hg
	7” Hg	6” Hg
	8” Hg	4” Hg
	9” Hg	2” Hg
	10” Hg	0” Hg

Operation

The rupture disk monitors the pressure inside the chiller. If the pressure exceeds the disk's burst setting, the disk ruptures allowing the chiller pressure to enter the valve holder compartment upstream of the relief valve. If the pressure is above the pressure setting of the relief valve, the valve will open allowing only the amount of refrigerant to escape to keep the pressure within safe operating limits.

The excess flow valve maintains the downstream side of the rupture disk at atmospheric pressure to assure proper operating conditions for the disk. When the disk bursts, the rapid pressure increase causes the excess flow valve to seal and the valve holder area becomes pressurized.

A disk rupture will be indicated by a pressure reading on the gauge and the pressure switch contacts will close. The pressure switch is an accessory. (See Figure 4)

It is recommended that the RuptureGuard™ be visually inspected and the relief valve pressure tested annually. See Relief Valve Pressure test procedure in the Maintenance section of this manual. The test can be performed with the valve in place and the refrigerant in the chiller.

The vent line drip leg must be periodically checked for accumulation of water or refrigerant. Drain any accumulation that may be present into an evacuated, properly labeled vessel and dispose of in accordance with local, state and federal codes.

Parts used in the following procedures and kits are identified in the current RuptureGuard parts list.

Maintenance

Relief Valve Pressure Test Procedure

1. Remove the excess flow valve from the 1/4” NPT port. At this time the excess flow valve can also be tested. Shake the valve back and forth. The ball inside the assembly should rattle. If no rattling occurs, the ball is sticking which indicates it should be replaced to insure proper operation.
2. Connect a REGULATED pressure source capable of at least 16 psig to the 1/4-inch NPT. This can either be a pump or a compressed gas cylinder however it MUST have a regulator to assure the pressure does not exceed 16 psig at any time. See Figure 7.
3. The valve is rated to open at 15 psig (+/- 1 psig). SLOWLY increase the pressure in the valve holder until the valve opens OR you reach 17 psig. If the valve has not opened by 17 psig, slowly release the pressure and re-pressurize.
4. If the valve does not open by 17 psig after repeating the test, remove the downstream piping and visually inspect the spring for any debris or obstructions. Perform a spring pull test to verify there are no obstructions in the spring mechanism. See Pull Test Kit Instructions in Maintenance Procedures.

CAUTION
Equipment Damage!

Do not attempt to re-calibrate the valve in the field. The calibration of the valve must be factory set. Failure to follow this suggestion may result in equipment-only damage.

5. The valve should be completely re-seated by 13 psig. A leakage rate of greater than one psig drop per minute indicates a re-seating problem and must be repaired. The valve relief plug will need to be removed in order to examine the valve plug o-ring. The o-ring seat should also be examined at this time. It is recommended a valve disassembly tool be used to complete this task. See Disassembly Tool Kit Instructions in Maintenance Procedures.
6. In addition to confirming the proper relief pressure of the valve and its ability to re-seat, the pressure switch operation can also be checked. The switch should trip at 11 psig and reset at 8 psig (+/- 1 psig). Replace the switch if it operates outside of this range.

No periodic lubrication is required on the RuptureGuard™.

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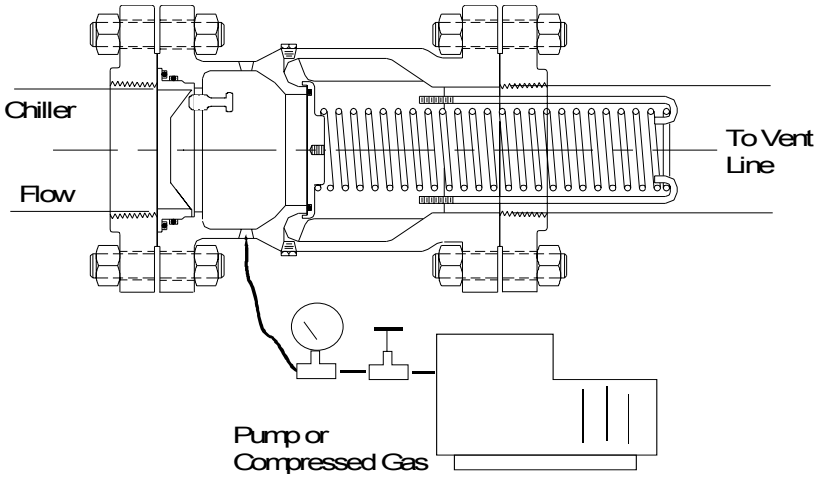
Figure 8. Relief valve test setup



Rupture Disk Replacement Procedure

The easiest way to remove the disk from the valve assembly is to carefully pierce the dome with a screwdriver. Gently pull the disk out of the body of the valve by using the hinge area on the other side of the disk's dome. Avoid scratching the interior of the valve body.

Pull Test Kit

This maintenance procedure explains the installation and operation of the pull test kit.

This kit is available as a service part. The pull test kit is recommended for use if the valve relief plug does not open during the relief valve pressure test procedure.

1. If the valve relief plug doesn't open after repeating the pressure test, remove the piping immediately downstream of the RuptureGuard™ and visually inspect the spring for any debris or obstructions. If any debris is present, remove it and continue to proceed to perform the pull test.
2. If not already installed, a 3" x 7.5" or 4" x 9" threaded flange, depending on valve size, will need to be installed on the outlet of the RuptureGuard. The studs and nuts need to be securely fastened. Screw the lifting eye-bolt into the valve relief plug. Screw the lifting spool piece into the threaded flange. Insert the lifting bar through the eyebolt. The pull test kit is now fully assembled, as shown in Figure 9, and ready for use.
3. Pull the lifting bar until it is perpendicular to the valve body, as shown in Figure 8. This pull distance translates to a valve plug travel (spring compression) of 5/8". This distance of 5/8" represents full spring travel that produces the rated flow capacity.

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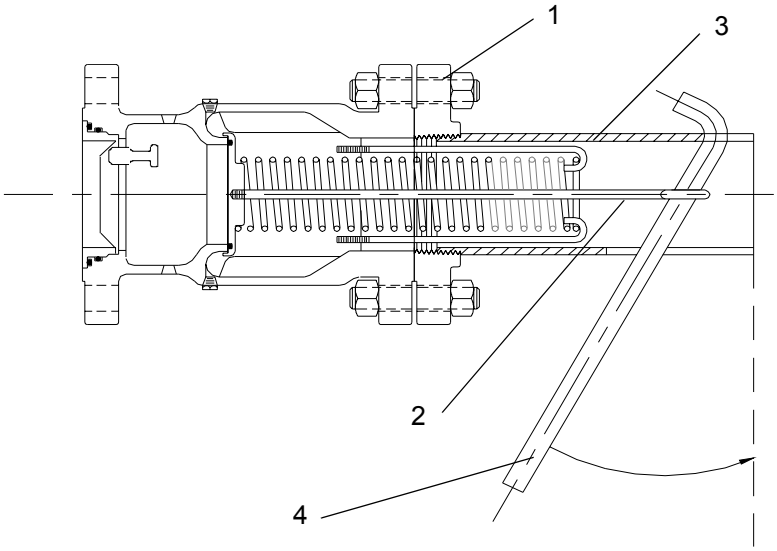
4. If the valve relief plug still cannot be opened by using this pull test kit, then the valve relief plug and spring system should be disassembled for further examination.

Figure 9. Pull test kit



Number	Description
1	3” x 7.5” or 4” x 9” threaded flange (not included in the kit)
2	Lifting eyebolt
3	Lifting spool piece
4	Lifting bar

Disassembly Tool Kit

This maintenance procedure explains the installation and operation of the disassembly tool kit.

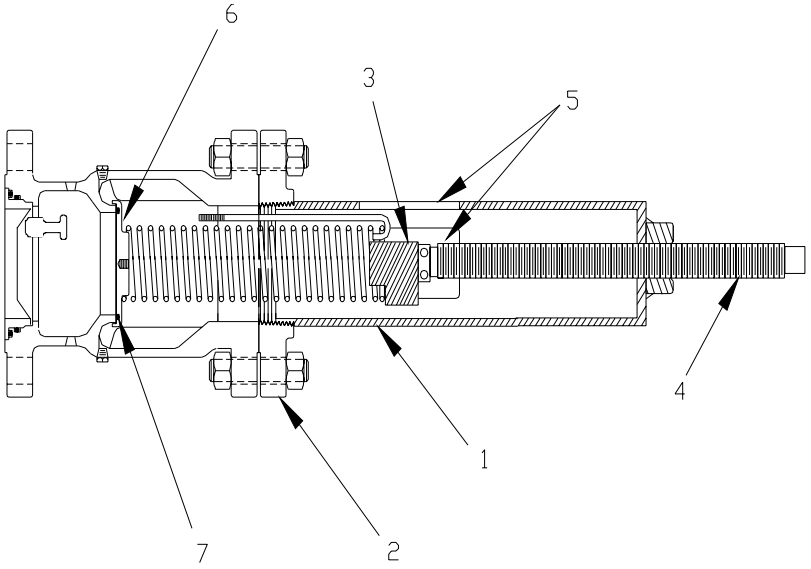
This kit is available as a service part. The disassembly tool kit is recommended for use whenever the internal parts (valve relief plug and/or spring and hooks) of the RuptureGuard™ need to be removed for service work.

1. To install this disassembly tool, remove the piping immediately downstream of the RuptureGuard. If not already installed, a 3” x 7.5” or 4” x 9” threaded flange, depending on the valve size, will need to be installed on the outlet of the RuptureGuard. The studs and nuts need to be securely fastened. Screw the disassembly tool into the threaded flange.

Maintenance

2. To remove the valve internal parts, turn the jackscrew until the spring rest makes contact with the spring. Look in the access ports of the threaded pipe and make sure the spring rest is correctly positioned on the spring as shown in Figure 10. Continue to turn the jackscrew until the spring is compressed below the spring hooks. Through the access ports turn the spring hooks 90°. Now slowly turn the jackscrew in the reverse direction to relieve the spring compression. Unscrew the disassembly tool and remove the spring. The valve plug can now be removed.
3. Examine the valve plug o-ring for any damage. Also, examine the o-ring seat at this time.
4. The valve can be reassembled in the reverse order of the disassembly process as described above.

Figure 10. Disassembly tool kit



Number	Description
1	3” or 4” threaded pipe
2	3” x 7.5” or 4” x 9” threaded flange (not included in this kit)
3	Jackscrew spring rest
4	Jackscrew
5	Access ports
6	Valve relief plug
7	Valve relief plug o-ring

Technical Specifications

Specifications

Relief Valve

- Rating at 15 PSIG (æ 5%)
- Bubble tight reseat at 13 psig
- Stainless steel valve body
- Stainless steel valve spring, spring hooks and valve plug
- O-rings compatible with CFC-11, CFC-113, HCFC-123
- Valve body flange connections
  3" valve
  3" Trane flange
  3" 150# ANSI flange, (Ø 0.75 (4x) @6.00” B.C.)

  4" valve
  4" 150# ANSI flange, (Ø 0.75 (8x) @7.50” B.C.)

Rupture Disk

- Burst rating of 15 (æ 2) psig at 115° F
- Nickel disk construction with stainless steel cassette body

Weight

- 3" Valve Only - 28 lbs
- 4" Valve Only - 40 lbs

Pressure Switch (Optional)

- Trip at 11 psig, Reset at 8 psig, SPDT Contacts rated at 5 A at 220 V

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