

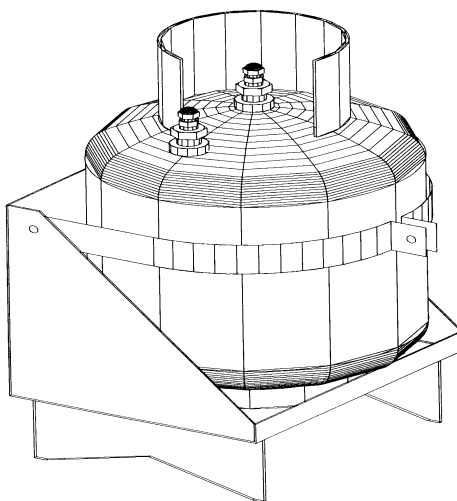


**TRANE®**

# Installation Operation Maintenance

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## **Purifier Plus™ Purge Emission Collection Canister**





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# General Information

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## Model Number Description

P	R	P	A	0	0	0	N	1	B	0
1	2	3	4	5	6	7	8	9	10	11

### Digits 1, 2, 3 - Product Description

PRP = Purge Plus

### Digit 4 - Development Sequence

A = First Development

### Digit 5, 6 - Future Use

### Digit 7 - Tank Origin

0 = Trane

1 = Out source

### Digit 8 - Tank Type

N = New

R = Regenerated

### Digit 9 - Refrigerant

1 = R11

2 = R123

3 = R113

4 = Generic (R11, R123, or R113)

### Digits 10, 11 - Design Sequence

B0 = Second Design Sequence



# General Information

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## Warnings and Cautions

Warnings and Cautions appear at appropriate locations 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 be used to alert against unsafe practices and where property-damage-only accidents could occur.

## Literature Change History

### **PRG-IOM-3 (March 1993)**

Original issue of manual. Describes installation, operation and maintenance of the Purifier Plus™ Purge emission collection canister.

### **PRG-IOM-3A (March 1994)**

Manual revised to include:

- Return Instructions

### **PRG-IOM-3B (February 1997)**

Manual revised to include:

- UPS Hazardous Form information

### **PRG-IOM-3C (June 1997)**

Manual revised to include:

- Updated canister drawing

### **PRG-IOM-3D (October 1998)**

Manual revised to include:

- Deletion of Hazardous shipping form information
- Added Pressurized Tank Warning

### **PRG-IOM-3E (October 2001)**

Manual revised to include:

- Update return information.
- Added data sheet to be completed and sent with “saturated” canister to be regenerated.
- Deleted pressurized tank warning.



# General Information

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## **▲ WARNING**

**Use tank ONLY on specified refrigerants having low pressure. Failure to do so may result in personal injury or death.**

## About this Manual

The Purifier Plus™ purge emission collection canister is designed to be installed in the exhaust line of a Trane Purifier Purge. The canister contains activated carbon which “filters” the refrigerant from the purge exhaust and holds it for recovery at a later date. Proper application of a Trane Purifier Purge and a Purifier Plus collection canister can result in “near zero” refrigerant emissions due to the purging of non-condensable from low pressure chillers.

The Purifier Plus canisters can be used effectively for chillers operating on CFC-11, CFC-113 and HCFC-123. When the carbon is saturated, the canister must be removed and returned for regeneration. During regeneration the refrigerant is extracted from the carbon and recycled. The canisters are cleaned and tested to insure proper performance and made available for reuse.

**Note:** The Purifier Plus can only be used with Trane Model PRGA, PRGB and PRGC Purifier Purges. Use with other purges may result in a potential safety hazard and/or damage to the purge due to partial restriction of the purge exhaust.

## Receiving

Upon receipt of the unit, inspect the shipping carton for signs of visible damage. Report any damage to the carrier.

Store unit in a dry, secure place prior to its installation and use.

Carefully remove the collection canister from the shipping containers. Inspect it for signs of visible shipping damage. If any damage is found, report it to the freight company immediately. Confirm all loose items shipped with the collection canister have been received. Do not install or operate a damaged unit.

The Purifier Plus is sold in two configurations:

### **Purifier Plus Kit (required for initial installation)**

- (1) Purifier Plus Canister
- (1) Holding bracket
- (2) Mounting brackets and hardware
- (1) PRG-IOM-3E

### **Purifier Plus Replacement Canister (For Exchanged Cylinders)**

- (1) Regenerated Purifier Plus Canister
- (1) Return shipping package and shipping instructions
- (1) PRG-IOM-3E/Data Sheet

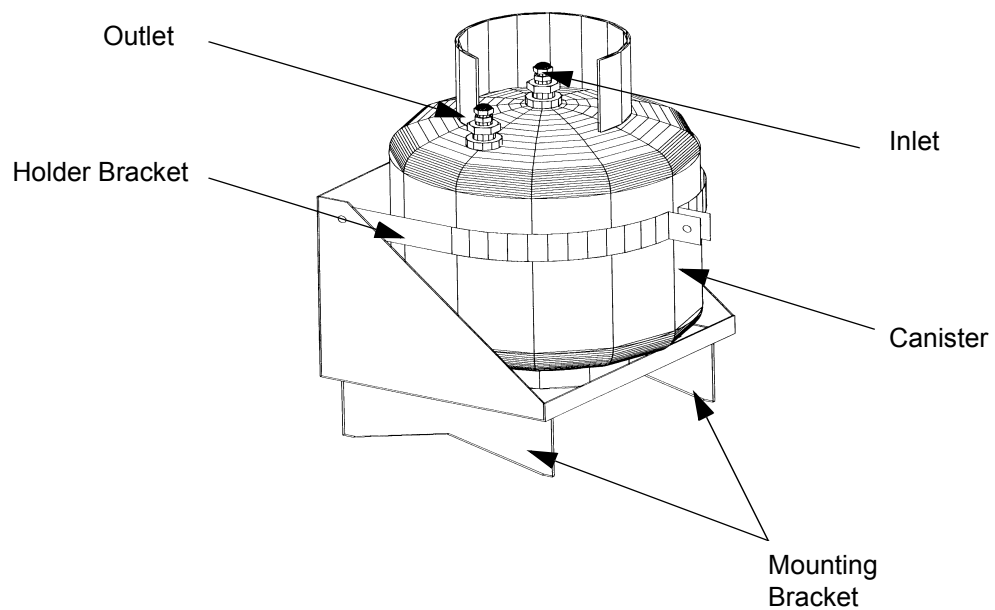
## General Information

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### Field supplied items

- (3) 3/8" Flare nuts
- 3/8" OD refrigeration-grade copper tubing (Length determined by location of canister)
- (4) 1/4" Bolts (Use when canister is bolted directly to chiller such as Option #3 in Figure 2).

**Figure 1 — Purifier Plus™ Canister and Bracket**



# Installation

## ▲ WARNING

Do not pressurize from an external source. Pressurizing tank from an external source could cause tank to rupture, resulting in death or serious injury.

## ▲ Caution:

Before installation, verify the refrigerant type marked on the Purifier Plus canister is the same as the refrigerant in the chiller. DO NOT CONTAMINATE THE CANISTER WITH THE WRONG REFRIGERANT.

## ▲ Caution:

The refrigerant must be evacuated from the chiller before welding of any kind is done to the condenser shell.

## Initial Installation

The mounting location of the Purifier Plus™ canister is determined by:

1. The style of chiller
2. Chiller options such as free-cooling, hot gas bypass, etc.
3. Service access to the chiller and canister

It is recommended that it be securely mounted to the chiller, off the floor in a dry, clean location. See Figure 2 for possible mounting locations on a CVHE-style chiller.

1. Mount the canister in the holding bracket. The bracket has holes in both the bottom and back plates for mounting directly to chiller leg (Figure 2, Option 3). V-Brackets are included in the kit for mounting to the curved surface of the condenser (Figure 2, Option 1 or 2). See Figure 6 for dimensions.
2. Install 3/8" OD copper tube from the purge exhaust to the canister inlet. (The inlet is in the center of the tank.) Install 3/8" OD copper tube from the canister outlet to the chiller vent line. (See Figure 3).
3. Insure there are no restrictions in the exhaust line. If any valves are included in the line, they must be fully open during use.
4. Install or modify the Change Purifier Plus Canister label (Figure 4) on the Purifier Purge near the minute timer. Add the applicable value from Table 1 to the current value on the purge minute timer. Record this number on line A. Add three years to the installation date and record on line B.
5. Record the requested information on the canister nameplate. (See Figure 5), including refrigerant type in appropriate check box.

Figure 2 — Recommended Purifier Plus Mounting Locations

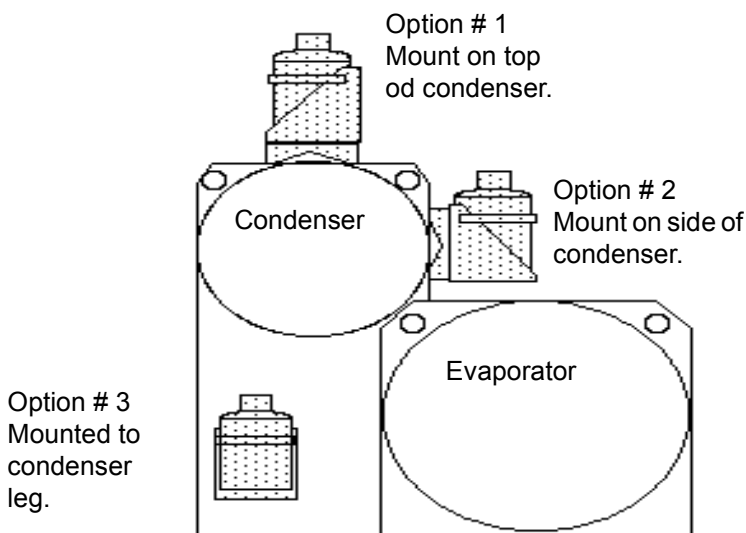
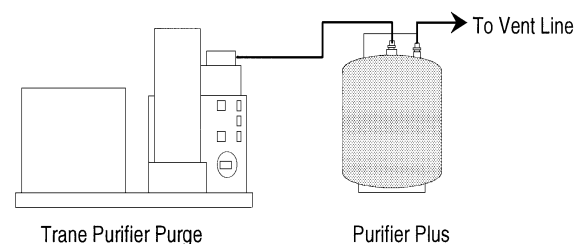


Figure 3 — Purifier Plus Connection





# Installation

**Table 1: Purifier Purge™ Pump Out Minutes**

Model	Chiller Refrigerant		
	R113	R11	R123
PRGA	5000	1500	2000
PRGB	5000	3000	4000
PRGC	5000	3000	4000

**Figure 4 — Change Canister Label**

Change Purifier Plus™ Canister		
AT	A	Minutes
OR	B	Date

A = Purge pump out timer value at installation plus appropriate value from Table 1.

B = Installation date plus 3 years.

**Figure 5 — Typical Unit Nameplate**

Order No.	Example
Model No.	PRPA000N2A0
Serial No.	L93C02684
For use with Refrigerant HCFC-123 Only	
	Purifier Purge
	Meter      Date
Installed	_____
Removed	_____
Sales Order No.	_____
Purge Model	_____
Chiller Manufacturer	_____
Chiller Model	_____
_____	
URC X39000746-01	





# Tank Replacement

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## **▲ Warning!**

**The contents of this canister must be reclaimed at a Trane authorized facility. Disposal of the canister or the contents in any other way may be a violation of Federal CFC/HCFC Venting Regulations.**

The saturation level of the activated carbon in the canister is directly related to the accumulated pump out time on the Purifier Purge. When the pump out time on the Purifier Purge timer reaches the value listed in line "A" or the date on line "B" of the Change Purifier Plus™ Canister label (Figure 4) the carbon is saturated and the canister needs to be replaced.

The most accurate way to determine if a canister needs replacement is to weigh the cylinder. The tare weight of the carbon tank and carbon is contained on a sticker on the bottom of the carbon tank (sometimes located elsewhere on the tank). The weight is listed as pounds-ounces. For example 42-10 means 42 lbs. 10 ounces.

The amount of refrigerant that can be held within a given quantity of activated carbon depends on many variables including the carbon type, refrigerant type, as well as the temperature and pressure of the carbon. At typical equipment room temperatures the Purifier Plus canister will hold approximately 12 lbs of refrigerant.

If the current tank weight is any more than 6 lbs. over the tare weight listed on the label, it is time to exchange the tank. In the above example, any weight over 48 lbs 10 ounces (42 lbs. 10 ounces + 6 pounds = 48 lbs. 10 ounces) should be exchanged. There is no problem in exchanging a tank at a weight between 0 and 6 lbs. over the tare weight, however.

### **Removing the Old Canister**

The refrigerant vapor in the purge exhaust line can be pumped into the canister before removing the copper lines by:

1. Disconnect and plug the ¼" line entering the pump out compressor.
2. Remove the bypass cap from the pump out compressor inlet tee and turn on the pump out system using the purge service switch for ten to fifteen seconds. This will pull room air into the pump out compressor and force purge exhaust into the Purifier Plus canister.
3. Disconnect the copper lines from the full canister and cap the inlet and outlet ports of the canister.
4. Install replacement tank and update all label information per steps 4 and 5 of the "Installation" section of this manual.
5. Reconnect the tubing and replace the cap removed in Steps 1 and 2 of this section.



## Return Instructions

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The “Replacement” Purifier Plus™ kit includes the materials needed to replace a saturated Purifier Plus canister. It also includes the shipping box, shipping instructions and shipping labels needed to return a saturated canister to the Trane regeneration site. The replacement Purifier Plus shipping box can be reused to ship, free of charge, the saturated Purifier Plus canister back to Trane for regeneration. Upon receipt of the Purifier Plus canister at the Trane regeneration site, the tank will be regenerated and the refrigerant in the tank will be recovered. You should receive a report detailing how much refrigerant was recovered from the tank. This refrigerant credit may be useful in reports requiring documenting the amount of refrigerant “lost” from a chiller. Since this refrigerant was recovered and not released to the atmosphere, it could be deducted from the chiller’s refrigerant loss total.

A no-charge United Parcel Service (UPS) Authorized Return Service (A.R.S) is available for the return of Purifier Plus canisters.

Follow these instructions for easy Purifier Plus returns:

1. **Inspect It!** Upon receipt of the replacement canister, confirm the items listed under replacement canister were received.
2. **Document It!** Record all information on the data sheet (enclosed in this IOM) and/or on tank labels and return the completed sheet with the saturated tank. Data can be found on tank nameplate/stickers, purge or UCP2 human interface, and chiller nameplate. *It is very important that all information be filled in on all labels and the data sheet returned with the tank!*
3. **Package It!** Remove the new canister and place the saturated Purifier Plus and Data Sheet into the shipping carton. Note: Tightly connect the caps on the saturated canister’s fittings before sealing carton.
4. **Seal It!** Seal the carton with heavy-duty shipping tape. Please do not use masking or cellophane tape, these are not strong enough for a proper seal.
5. **Label It!** Enter your address and ZIP code in the space provided on the UPS A.R.S. Label. Apply the label on top of the existing mailing label, located on the top of the carton. Do not place label over tape or seams. Retain the detachable receipt for your records. (Complete shipping instructions are included on the back of the label).
6. **Send It!** Bring the package to any location where a UPS driver makes a regular pickup or delivery or to any UPS Customer Counter. Your A.R.S. package will be accepted free of charge. You do not need to call for pickup or record the package in a pickup record book.

# Maintenance

**⚠ Caution:**

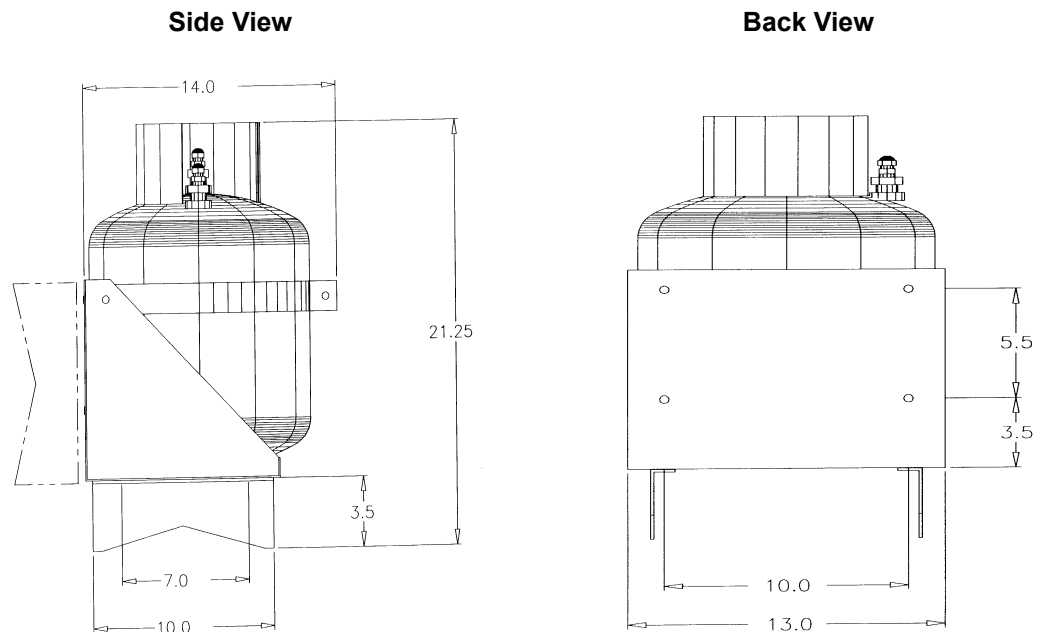
**DO NOT PAINT THE TANK.** The performance of the carbon is tracked by weight. Any added weight will invalidate the tank data.

Normal maintenance is required for the canister. Keep the canister clean and dry in a corrosive free environment.

## Specifications

- **Weight (Including brackets):**  
50 lbs
- **Overall Size (Including bracket):**  
21" H X 13" W X 14" L
- **Connection sizes:**  
Inlet: 3/8" Male flare  
Outlet: 3/8" Male flare
- **Temperature Range:**  
Operating: 40° to 120°F  
Shipping and Storage: -40° to 150° F

**Figure 6 — Purifier Plus™ Dimensions**



**Note:** All dimensions are shown in inches.



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## Purge Cylinder Regeneration Program Data Sheet

The following information is required to be sent along with a tank for regeneration. In order to ensure the proper “leak credit” for refrigerant is received, all information must be included. This information should be written on the nameplate and stickers on the tank, purge, and chiller.

Technician Name and #	
Sales Office	
Tank Sequence Number (from sticker on bottom of tank)	
Empty Weight of Cylinder (from sticker on bottom of tank)	
Refrigerant type	
Chiller Model Number (1 <sup>st</sup> 12 digits)	
Chiller Serial Number	
Chiller Sales Order Number	
Tank Order Number (or N/A), (From Nameplate)	
Tank Model Number, (From Nameplate)	
Tank Serial Number, (From Nameplate)	
Purge minutes & date when tank was installed	
Purge minutes & date when tank was removed	
Purge Model Number	
Purge Serial Number (or N/A)	

Send Tank & Data Sheet (using supplied pre-paid label) to:  
Trane Purge Cylinder Regeneration Program  
350 Sunpac Court  
Henderson, NV 89015

See PRG-IOM-3E for details on tank removal, packaging, shipping, and installation.



**TRANE®**

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An American Standard Company



Units whose model numbers  
have a "1" in digit 20 are  
certified by  
Underwriters Laboratory.



Units whose model numbers  
have a "2" in digit 20 are  
certified by Canadian  
Standards Association (CSA).

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Stocking Location	La Crosse

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