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VWR

Zero Air Generator

Models 26000-020, 26000-022

Bulletin TI-ZAG3500-L1466

Installation, Operation, and Maintenance Manual

Warranty

United States Only

Thank you for your recent purchase of VWR ChromGas instrumentation. Parker Hannifin Corporation warrants all new instrumentation of its manufacture to meet Parker Hannifin Corporation specifications and to be free from defects in workmanship and material under normal use for twelve (12) months from the date of installation. If installation is delayed by the customer, then the warranty period shall be thirteen (13) months from the date of shipment.

During the warranty period, Parker Hannifin Corporation, at its option, shall repair or replace defective parts at no charge to the customer.

Modification or alteration of the instrument without prior approval of Parker Hannifin Corporation, or damage from abuse, misuse, or accident will void this and all warranties.

User serviceable components and consumables are not covered by this warranty. Peripheral devices and software not manufactured by Parker Hannifin Corporation are subject to the warranty of the original manufacturer. Parts on liquid handling systems which are in contact with sample liquids, such as tubing, tip syringes and valves, are excluded from this warranty. Damage to detectors caused by contamination are excluded from this warranty.

Except as expressly provided above, Parker Hannifin Corporation does not make any warranty of any kind, either expressed or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose.

Parker Hannifin Corporation shall not be liable for any direct, indirect, consequential, or incidental damages including damages from loss of business profits, business interruption, loss of business information, and the like arising out of the use of or inability to use the product.

VWR Zero Air Generator

Introduction	1
Installation	2
Site Requirements	2
Plumbing Connections	4
Operation	5
Maintenance	6
Filters	6
Catalyst Bed	7
Precautions	8
Figures in this Manual	9
Figure 1. Front and Rear Views of Model 26000-022	
Figure 2. Front and Rear Views of Model 26000-020	
Explanation of Warning Symbols	10

Introduction

VWR Corporation produces a zero air generator designed to remove hydrocarbons from a supply of compressed air.

The VWR zero air generator is capable of purifying an input source of air to produce a zero-grade, hydrocarbon free output. The Model 26000-022 generator can produce 3500 cc/min (0.124 ft³/min) at 690 kPa (100 psig) and the Model 26000-020 can produce 1000 cc/min (0.035 ft³/min) at 690 kPa (100 psig). Each system is capable of producing an output gas that has a total hydrocarbon content (THC) of less than 0.1 parts per million as methane. With this level of purity, you can replace the high pressure gas cylinders rated as zero-grade or ultra-zero-grade air that you may currently be using.

The system consists of three different functional areas to produce the purity level required. The inlet filter is a 0.01 micron coalescing filter that removes particles, oil and water that may be present in the inlet compressed air source. Hydrocarbons are removed when the compressed air is passed through a converter containing a heated catalyst. After cooling, a 0.01 final filter is used to remove any residual particulate material.

Installation

Installation of the VWR zero air generator is simply a matter of making the appropriate plumbing connections and supplying power to the system (for indoor use only).

Site Requirements

Your zero air generator should be located near the equipment using the zero-grade air, with a power source located nearby.

Model Number	26000-020	26000-022
Flow	1000 cc/min (0.035 ft ³ /min)	3500 cc/min (0.124 ft ³ /min)
Ambient Temperature	40°-100°F (4.4°-38°C)	40°-100°F (4.4°-38°C)
Relative Humidity	Maximum 80% up to 31°C (50% at 40°C)	
Weight	14 lbs. (6.4 kg)	20 lbs. (9.1 kg)
Dimensions	11.5"Hx6.5"Wx10"D 29x17x25cm	12"Hx6.75"Wx15"D 31x17x38cm
Voltage / Hz	100-125 VAC/60 Hz	100-125 VAC/60 Hz
Amperage (Amps)	0.3	1.0
Fuse	Type S 0.5 Amp 125 V	Type S 1.5 Amp 125 V
Power	30 Watts	100 Watts
Installation Category	II	
Pollution Degree	2	
Protection Degree	IPX0	

Source Air Requirements

The source of compressed air should be regulated to be greater than the requirements of the intended consumption. Pressure should not, however, exceed 860 kPa (125 psig) and flow should not exceed 1000 cc/min (0.035 ft³/min) for Model 26000-020, and 3500 cc/min (0.124 ft³/min) for Model 26000-022. Maximum operating efficiency occurs if the quality of the compressed air source is maintained at less than 100 ppm total hydrocarbon content (THC).

This quality is achieved in most normal plant air systems equipped with an after cooler. Centrally located compressed air system filtration is normally sufficient for the zero air generator, but most compressed air piping systems contain some rust and condensed liquids. VWR International recommends a coalescing filter installed directly upstream from the inlet to the zero air generator to ensure the removal of condensed liquids and rust from the plant air system.

If there is a risk that bulk contaminants may reach the generator inlet, use a secondary depth type filter (such as Parker's optional DXE filter P/N 2002N-1B1-DX) in the source air line. This will extend the life of the primary inlet filter.

If your plant air system does not sufficiently dry the air, install P/N 72-100 (Parker's Inlet Compressed Air Conditioner) directly upstream from the inlet of the zero air generator.

The catalyst can become contaminated if compounds that contain lead, phosphorous, sulfur, silicates or halocarbons are present in the source air. If in doubt, use an activated charcoal trap (such as Parker Hannifin's optional Halogenated Hydrocarbon Scrubber P/N 76080 in the source air line to remove these chemical compounds).

Plumbing Connections

Connect $\frac{1}{4}$ " tubing from your source of compressed air to the $\frac{1}{4}$ " NPT fitting on the inlet filter. As you face the generator from the rear, the inlet filter is located on the left (see Figure 1).



Note: Make gas connections using PTFE tape on all threaded fittings. Do not use other compounds to seal the threads, as this can contaminate the purified air.

When making connections from the zero air generator to your piece of equipment, be sure to use clean stainless steel or refrigeration grade copper tubing. Do not use plastic tubing for the outlet line. Connect your $\frac{1}{8}$ " outlet tubing to the $\frac{1}{4}$ " NPT fitting on the outlet filter. As you face the generator from the rear, the outlet filter is located on the right for Model 26000-022 (see Figure 1 located at the back of this bulletin). For Model 26000-020, the filter is on the left side panel when facing the front of the generator (see Figure 2, located at the back of this bulletin).

To ensure flow rates within the capacity of the generator, a flow meter should be installed in the outlet line between the generator and the instrument using the purified air.

Operation

After the zero air generator is installed, operation is very simple. The operating procedure consists of turning on the generator, letting the catalyst heat up to operating temperature, and starting the compressed air flow.

The following instructions take you step by step through the startup procedure:

For Model 26000-020

1. Start the flow of compressed air through the system and allow it to stabilize.
2. Supply power to the generator and turn on the power switch. A power light should illuminate indicating that power is supplied to the generator.
3. Wait for the catalyst to heat up to its operating temperature (approximately 45 minutes).
4. Begin using your instrument.

For Model 26000-022

1. Supply power to the generator, and turn on the power switch. A power light should come on indicating that power is supplied to the generator. No air is needed at this time if you want a faster startup time.
2. Wait for the catalyst to heat up to its operating temperature. This should take approximately 30 minutes. If you supplied compressed air to the unit, it will take approximately 45 minutes to reach operating temperature.
3. For the fast start up, start the flow of compressed air through the system and allow it to stabilize.
4. Begin using your instrument.

Caution: Do not overflow the unit. Maintain a flow rate at or below the maximum flow rating, 3500 cc/min (0.124 ft³/min) for Model 26000-022, and 1000 cc/min (0.035 ft³/min) for Model 26000-020.

Maintenance

Routine maintenance procedures are described below to ensure an efficient flow of high quality, hydrocarbon free air.

Filters

At least twice a year, the inlet and outlet filters should be checked. If either filter is visibly dirty, it should be replaced. In any event, both filters should be replaced each year. To remove the filters for maintenance, use the procedures detailed in this section. Replacement filters may be ordered from Parker Hannifin using the following part numbers:

Standard Filters

	Parker Part Number
Primary Inlet Filter Assembly (0.01 micron)	A914D-BX
<i>Replaceable Filter Element (pkg of 5)</i>	5/050-05-BXE
Outlet Filter Assembly (0.01 micron)	A914A-95
<i>Replaceable Filter Element (pkg of 3)</i>	GS 3/050-05-95

Optional Filters

	Parker Part Number
Secondary Inlet Filter Assembly (0.1 micron)	2002N-1B-DX
<i>Replaceable Filter Element (pkg of 3)</i>	5/100-12-DXE
Halogenated Hydrocarbon Scrubber	76080
Compressed Air Conditioner	72-100

Inlet Filter

1. Turn off the air flow and the power to the generator.
2. As you face the generator from the rear, the inlet filter (P/N A914D-BX) is located on the left side of the back of the cabinet for Model 26000-022 (see Fig. 1), and on the right side panel for Model 26000-020 (see Fig. 2).
3. Lift the bowl slightly and rotate the bowl portion of the filter clockwise $\frac{1}{8}$ of a turn to remove it downward from the inlet filter assembly.
4. Unscrew the filter from the filter assembly and replace.
5. Thread the new filter onto the filter assembly and reassemble the bowl carefully onto the inlet filter. Turn the bowl counter clockwise on the filter assembly until it stops ($\frac{1}{8}$ turn).

Outlet Filter

1. Turn off the air flow and the power to the generator.
2. As you face the generator from the rear, the outlet filter (P/N A914A-95) is located on the right side of the back of the cabinet for Model 26000-022 (see Fig. 1). When facing the generator from the front, the filter is on the left side panel for the Model 26000-020 (see Fig. 2).
3. Lift the bowl slightly and rotate the bowl portion of the filter clockwise $\frac{1}{8}$ of a turn to remove it downward from the inlet filter assembly.
4. Unscrew the filter from the filter assembly and replace.
5. Thread the new filter onto the filter assembly and reassemble the bowl carefully onto the inlet filter. Turn the bowl counter clockwise on the filter assembly until it stops ($\frac{1}{8}$ turn).

Optional Secondary Inlet Filter

Replacement of the filter element in the optional, secondary inlet filter kit is accomplished in the same way as described above for the primary inlet filter.

Optional Halogenated Hydrocarbon Scrubber

The optional charcoal filter maintenance involves the complete replacement of the filter kit as necessary to protect the catalyst from contamination. If you have high concentrations of lead, phosphorous, sulfur, silicates or halocarbons in your air source, you should change this filter frequently.

Catalyst Bed

The catalyst bed should be replaced if contamination occurs due to the presence of lead, phosphorous, sulfur, silicates or halocarbons in the source air. If your instrumentation begins to show signs of unpurified air, this may indicate a contaminated catalyst bed. Replacement should be performed by qualified service personnel only. Contact Parker Hannifin Corporation technical service to order a replacement catalyst tower. (For 110V: Model 26000-020 P/N 75394 and Model 26000-022 P/N B01-0020. For 220V units: Model 26000-020 P/N 75394-220 and Model 26000-022 P/N B01-0020-220).

Precautions

High temperature components are found inside the cabinet, and should not require any user service. The temperature of the gas at the outlet port may reach as high as 45°C (113°F).

The tubing and fittings connecting the generator to other sources and instruments are under pressure. Be sure to relieve any pressure from the system before loosening or removing any fittings or tubing.



Figure 1. Front and Rear views of Model 26000-022

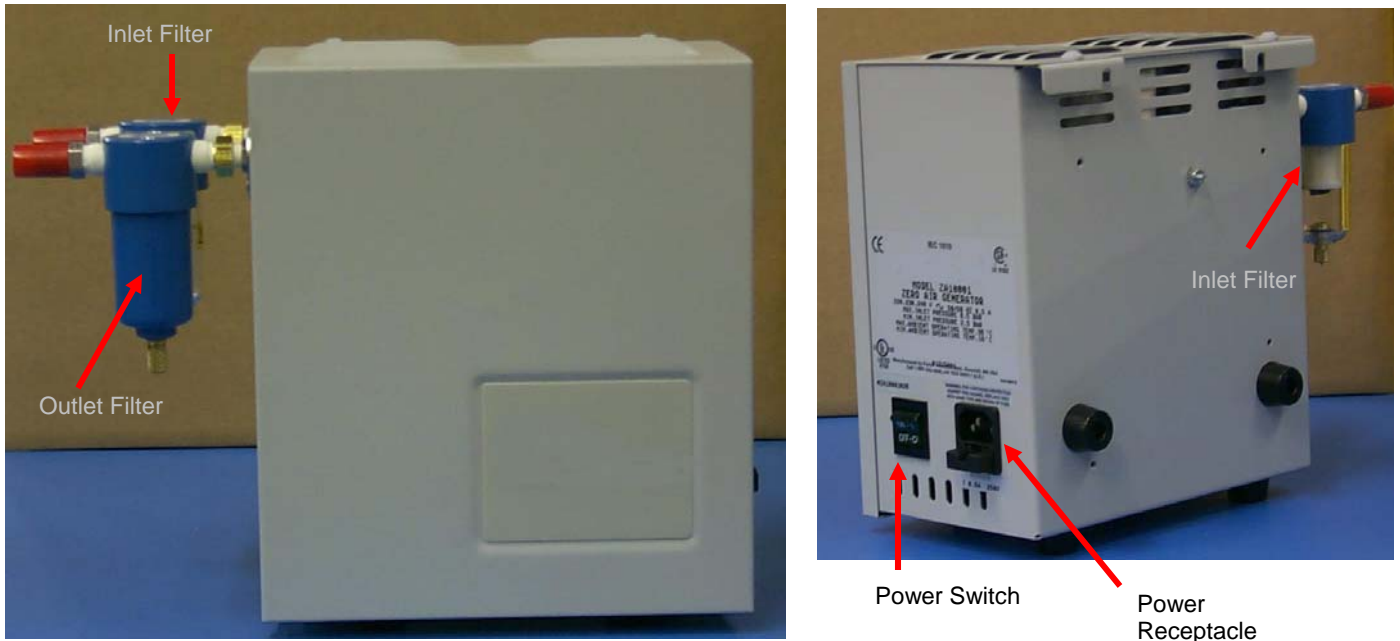


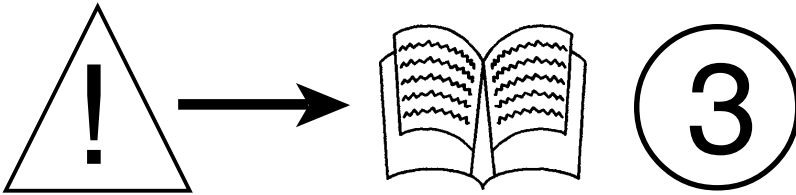
Figure 2. Front and Rear views of Model 26000-020

Symbol

Description



Caution, refer to accompanying documents for explanation.



Refer to Installation and Operation Manual, warning note #3 for explanation.



Caution, risk of electric shock.



Surface may be hot and could cause burns to the skin (found on inside of some units).



Under certain conditions, metal cabinet will be warm to touch (70°C).

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Printed in U.S.A. June 2006
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