



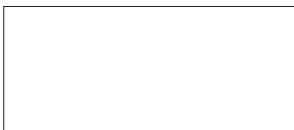
UHP Range of Zero Air Generators

dh, domnick hunter, OIL-X and Pseudri are registered trademarks of domnick hunter limited.

domnick hunter limited has a continuous policy of product development and although the Company reserves the right to change specifications, it attempts to keep customers informed of any alterations. This publication is for general information only and customers are requested to contact our Industrial Division Sales Department for detailed information and advice on a products suitability for specific applications. All products are sold subject to the Company's standard conditions of sale.

www.domnickhunter.com

a member of the domnick hunter group plc




**domnick hunter
scientific**

domnick hunter limited
Dukesway, Team Valley Trading Estate,
Gateshead, Tyne and Wear,
England NE11 0PZ
Tel: +44 (0)191 402 9000
Telefax: +44 (0)191 482 6296

Copyright domnick hunter limited 2004
Stock No: 176270554 Rev 001

User Guide

DECLARATION OF CONFORMITY

Name of manufacturer or supplier: **domnick hunter ltd.**

Full postal address including country of origin:
**Dukesway, TVTE, Gateshead, Tyne & Wear, NE11 0PZ
United Kingdom**

Place of issue: **Gateshead**

Description of product: **Zero Air Generator**

Name, type or model, batch or serial number:
UHP-10ZA, UHP-35ZA, UHP-50ZA, UHP-75ZA, UHP-150ZA, UHP-200ZA

Directives used

73/23/EEC 98/37/EC 89/336/EEC 97/23/EC 98/68/EEC 92/31/EEC

Standards used, including number, title, issue date and related documents

**Generally In accordance with ASMEVIII Div.1:2004 and Pressure Equipment Directive
essential safety requirements**

**EN61000-6-1:2001, EN61000-6-3:2001, EN61000-3-2:2000, EN61000-3-3:1995
EN61010-1:2001**

Conformity Assessment Route:
PED Article 3.3 SEP

Name of authorised representative
Barry Wade

Position of authorised representative
Business Systems Improvement Manager

Declaration

I declare that as the authorised representative, the above information in relation to the supply / manufacture of this product, is in conformity with the standards and other documents following the provisions of the above Directives.

Signature of authorised representative



Contents

	Page No
1. Safety Warnings	1
2. Description	2
3. Technical Specification	3
4. Installation	4
5. Service	6
6. Troubleshooting	8
7. Warranty	9
Declaration of Conformity	10

1. Safety Warnings

Do not operate this generator until the instructions in this manual have been read and understood by all personnel concerned.

Retain this user guide for future reference.

Caution: The operator of this unit is advised that if the equipment is used in a manner not specified in this manual, the protection provided by the equipment may be impaired.

When handling, installing or operating this unit, personnel must employ safe engineering practices and observe all related regulations, health & safety procedures and legal requirements for safety.

Most accidents that occur during the operation and maintenance of machinery are the result of failure to observe basic safety rules and procedures. Accidents can be avoided by recognising that any machinery is potentially hazardous.

domnick hunter can not anticipate every possible circumstance which may represent a potential hazard. The warnings in this manual cover the most known potential hazards, but by definition can not be all-inclusive.



Read manual



Risk of electrical shock



Pressurised components on system



General Warning

If the generator user employs an operating procedure, item of equipment or a method of working which is not specifically recommended by **domnick hunter** the user must ensure that the generator will not be damaged or made a potential hazard to persons or property.

This product should be installed in accordance with the recommendations outlined in this manual. Commissioning and service should be undertaken by a **domnick hunter** trained, qualified and approved engineer to maintain warranty.

Extended warranty and tailored service contracts are available for this product. Please contact your local **domnick hunter** sales office for a tailored service agreement to meet your specific requirements.

Details of your nearest **domnick hunter** sales office can be found at www.domnickhunter.com

7. WARRANTY

This warranty applies to ZERO AIR GENERATORS and associated parts (the Equipment) manufactured and supplied by **domnick hunter ltd (domnick hunter)**.

Use of the ZERO AIR GENERATORS without the recommended inlet air quality or genuine parts will expressly invalidate the warranty.

Should the Equipment be defective as to materials or workmanship, **domnick hunter** warrants that it will remedy such defect. Where the Equipment is a ZERO AIR GENERATOR, the warranty period will be 12 months from date of commissioning or 18 months from date of manufacture, whichever is the earlier. In the case of Equipment other than a ZERO AIR GENERATOR, the warranty period shall commence from the date of despatch. Should any defect occur during the warranty period and be notified in writing to **domnick hunter** or its authorised distributor within the said period, **domnick hunter** will, as its sole option, remedy such defect by repair or provision of a replacement part, provided that the Equipment has been used strictly in accordance with the instructions provided with each item of Equipment and has been stored, installed, commissioned, operated and maintained in accordance with such instruction and with good practice. **domnick hunter** shall not be under any liability whatsoever under the warranty, if, before giving notification in writing to **domnick hunter** as aforesaid, the Customer or any third party meddles, interferes, tampers with or carries out work whatsoever (apart from normal maintenance as specified in the said instructions) in relation to the Equipment or any part thereof.

Any accessories, parts and equipment supplied by **domnick hunter** but not manufactured by **domnick hunter** shall carry whatever warranty the manufacturer has given **domnick hunter** providing it is possible for **domnick hunter** to pass on such warranty to the customer.

To claim under the warranty, the goods must have been installed and continually maintained in the manner specified in the User Guide. Our product support engineers are qualified and equipped to assist you in this respect. They are also available to make repairs that may become necessary in which event they will require an official order before carrying out the work. If such work is to be the subject of a warranty claim, the order should be endorsed for consideration under warranty.

Where Equipment is sold outside the UK mainland direct to the end user the warranty will cover parts only. Any substitution of parts not manufactured or approved by **domnick hunter** will expressly invalidate the warranty.

6. Troubleshooting

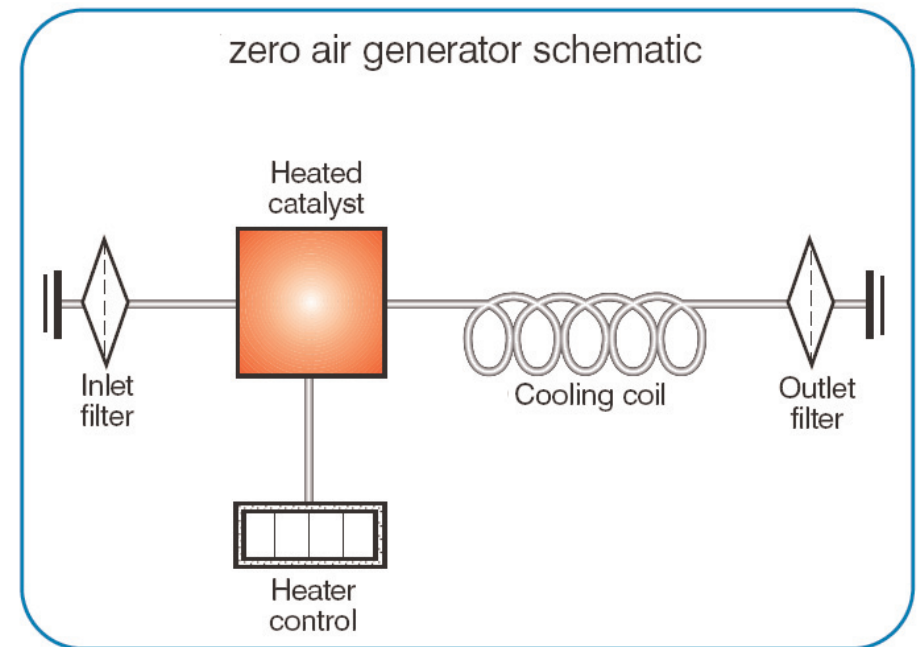
Fault Found	Probable Cause	Remedy	Comments
No power/green LED will not illuminate	Incorrect input voltage	Check mains voltage and rating number plate for voltage spec	
	Fuse blown	Check fuse, replace if necessary	
	On/Off switch failure	Consult domnick hunter service department	
	Faulty Lamp	Consult domnick hunter service department	
In normal operation, the temperature reading falls well below 420°C	Faulty heater	Consult domnick hunter service department	The unit has a safety thermostat which will switch off electrical power to the unit if the surface temperature of the outer case exceeds 60°C
Amber LED will not illuminate	Faulty Lamp	Consult domnick hunter service department	Note – this LED will intermittently illuminate during normal operation
Hydrocarbon level >0.1ppm	Faulty temperature controller	Consult domnick hunter service department	
	Faulty catalyst/heater	Consult domnick hunter service department	
	No power	Check power	
	Flow rate too high	Set flow rate correctly	
	Inlet air supply hydrocarbon level too high	Install pre-dryer and filtration	Consult domnick hunter service department
	Inlet air supply not to ISO 8573.1:2001 class 3.2.1	Install pre-dryer and filtration	Consult domnick hunter service department. If condensate is drained from the pre-filter then inlet air supply is not to required quality
Excessive downstream temperature	Cooling fan not operating	replace cooling fan	Consult domnick hunter service department

2. Description

domnick hunter zero air generators are designed to produce a supply of hydrocarbon free air from a pre-treated (ISO 8573.1:2001 class 3.2.1) low pressure compressed air system so eliminating the need for high pressure gas storage and disruption due to bottle changes and subsequent recalibrations.

The inlet compressed air first passes through a 1.0 micron filter to remove any particulate. After pre-filtration the air is passed over a heated palladium catalyst which converts methane and oxygen in the air to carbon dioxide and water.

This catalytic action produces an ultra pure air stream with a residual hydrocarbon concentration (as methane) of less than 0.1ppm. The gas exits the catalyst unit, and is then cooled, via a cooling coil. Finally, the air passes through a 0.01 micron filter to remove any particulate and water, which may be generated during the hydrocarbon removal phase.



3. Technical Specification

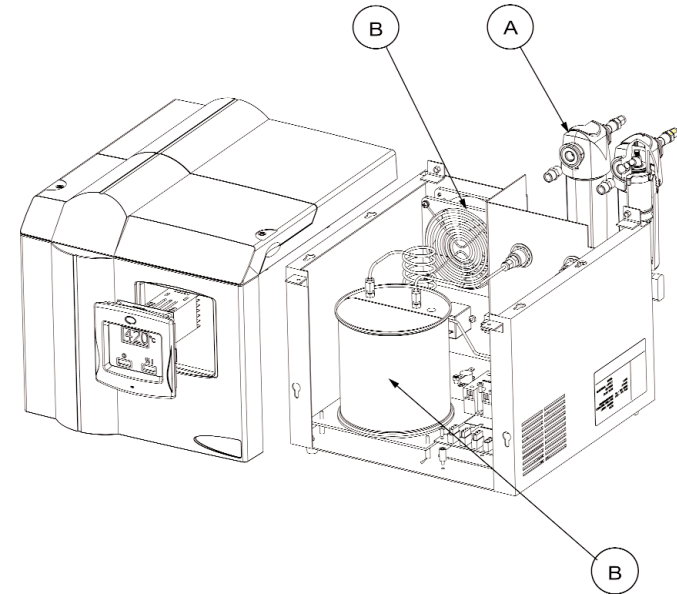
3.1 Technical Data

	UHP-10ZA	UHP-35ZA	UHP-50ZA	UHP-75ZA	UHP-150ZA	UHP-200ZA
Compressed Air Inlet	1/8" Swagelok		1/4" Swagelok			
Compressed Air Outlet	1/8" Swagelok		1/4" Swagelok			
Ambient and Operating Temperature	+5 to + 40°C 41 to 104 °F					
Inlet Pressure	3 - 10barg 45 - 145psig 0.45 - 1.45Mpa					
Inlet Air Quality	ISO 8573.1:2001 class 3.2.1					
IP rating	IP20, NEMA 1, indoor use only.					
Input Voltage	115V, 50/60Hz, +/-10% 230V, 50/60Hz, +/-10%					
Flow rate (l/min) (ft ³ /h)	1 2.12	3.5 7.42	5.0 10.59	7.5 15.9	15 31.8	20 42.3
Power (W)	250	250	450	450	1000	1000
Relative Humidity	<80% up to 31°C Then reduced by 3.33%/°C up to 40°C					
Maximum (m) Altitude (ft)	2000 (6560)					
Installation Overvoltage Category	II					
Pollution Degree	2					

3.2 Dimensions

Unit		UHP-10ZA	UHP-35ZA	UHP-50ZA	UHP-75ZA	UHP-150ZA	UHP-200ZA
Height	mm	325	325	455	455	455	455
	(inches)	12.8	12.8	17.9	17.9	17.9	17.9
Width	mm	342	342	342	342	342	342
	(inches)	13.5	13.5	13.5	13.5	13.5	13.5
Depth	mm	400	400	400	400	400	400
	(inches)	15.8	15.8	15.8	15.8	15.8	15.8
Weight	kg	10.8	10.8	16.1	16.1	16.1	16.1
	(lbs)	23.8	23.8	35.5	35.5	35.5	35.5

5.1 Service Intervals



Service	Model No.	Service Kit Number
A	Inlet Filter - All	504421110
	Outlet Filter - All	504431110
B	UHP-10ZA 115V/60Hz	606272280
	UHP-10ZA 230V/50Hz	606272282
	UHP-35ZA 115V/60Hz	606272284
	UHP-35ZA 230V/50Hz	606272286
	UHP-50ZA 115V/60Hz	606272288
	UHP-50ZA 230V/50Hz	606272290
	UHP-75ZA 115V/60Hz	606272292
	UHP-75ZA 230V/50Hz	606272294
	UHP-150ZA 115V/60Hz	606272296
	UHP-150ZA 230V/50Hz	606272298
C	UHP-200ZA 115V/60Hz	606272300
	UHP-200ZA 230V/50Hz	606272302
C	UHP 10-200ZA 115V/60Hz	606260740
	UHP 10-200ZA 230V/50Hz	606260742

N.B. Ensure that zero air generator is fully depressurised, electrically isolated and allowed to cool down before carrying out any service activities.

5. Service
5.1 Service Intervals

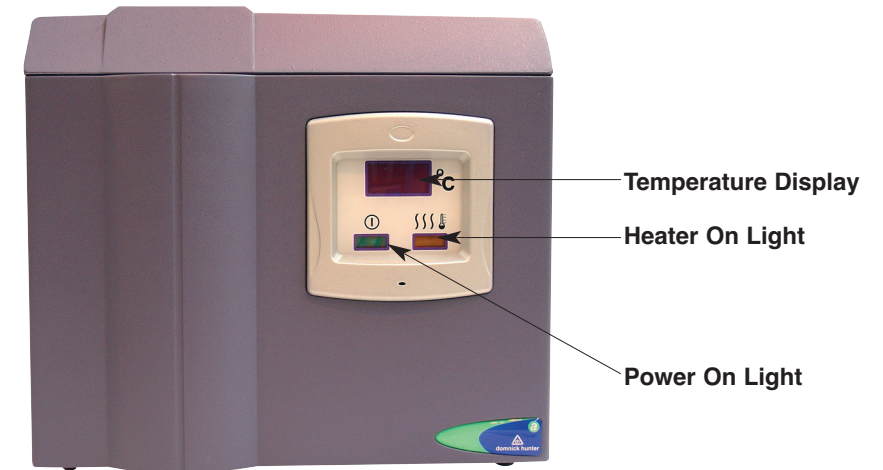
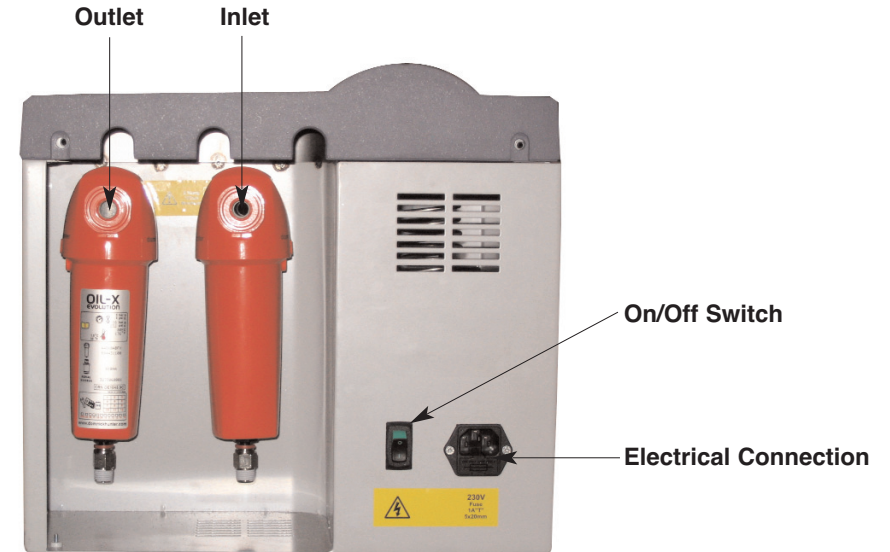
Description Of Maintenance Required		Typical Recommended Maintenance Interval						
Component	Operation	Daily	Weekly	3-month	6-month	12-month	24-month	60-month
Controller	Check POWER ON indicator located on control panel is illuminated	C						
Controller	Check HEATER ON indicator located on control panel illuminates intermittently.	C						
Cooling Fan	Check fan rotation	C						
Filtration	Open manual drain valve to drain any collected condensate.	C						
Pipework	Check pipework for leaks.		C					
Generator	Check condition of electrical supply cables and conduits			C				
Filtration	Replace inlet and outlet filters. Recommended Service A					R		
Generator	Replace catalyst assembly Recommended Service B							R
Cooling Fan	Replace cooling fan Recommended Service C						R	

C - Check R - Replace

Service	Typical Recommended Maintenance Intervals (Run Hours)									
	8000	16000	24000	32000	40000	48000	56000	64000	72000	80000
A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
B					✓					✓
C		✓		✓		✓		✓		✓

domnick hunter ltd and its distributors offer a comprehensive range of preventative maintenance programmes, for further details contact your local **domnick hunter** distributor or **domnick hunter** ltd direct (tel. 44 (0)191 402 9000) for further details

3.3 Configuration



4. Installation
4.1 Unpacking

Care should be taken during unpacking to ensure that the Zero Air Generator is not damaged

4.2 Installation Guidelines

1. Ensure that the zero air generator is correctly sized for the application.
2. Identify a suitable location for the zero air generator, ensuring the following:-
 - a) Environmental restrictions (refer to section 3.1 Technical Specification) are taken into consideration.
 - b) The zero air generator should be located as close to the application as possible.
 - c) There is at least 150mm (6") clearance, on both sides and rear of the zero air generator, for ventilation.
 - d) Isolation valves should be fitted to the system, these must be accessible when the zero air generator is installed.

- N.B.** It is recommended that a suitably rated pressure gauge is installed upstream of any isolation valve.
- e) The mounting surface is capable of supporting the weight of the zero air generator (refer to section 3.2 Dimensions).
- 3 Ensure the inlet air supply is pre-treated to ISO 8573.1:2001 class 3.2.1.



Caution

If the compressed air used to supply the zero air generator contains significant amounts of particulate, moisture and oil, as would be expected if the compressed air is supplied straight from a compressor, a small dryer should be installed upstream of the zero air generator to treat the inlet air to the required standard of cleanliness (ISO8573.1:2001 class 3.2.1).

ISO 8573.1 : 2001 Class 3.2.1 equates to:

- 10,000 Solid Particle 0.5 - 1 micron/m³
- 500 Solid Particles 1 - 5 micron/m³
- Water Vapour Pressure Dewpoint -40°C
- Oil aerosol and vapour 0.01 mg/m³

In such instances a MIDAS type dryer is recommended. Please refer to the domnick hunter scientific product brochure for further information on the MIDAS.

Further information on ISO 8573.1 can be found in the domnick hunter publication "A Guide to ISO 8573.1:2001 Air Quality Classes" (Stock Number: 17 400 4765).

Contact your local domnick hunter sales office or download a copy from our website www.domnickhunter.com.

- 4 Check the rating plate for correct supply voltage and frequency.
- 5 It should be noted that the catalyst could become contaminated if compounds that contain lead, phosphorous, sulphur, silicates or halocarbons are present in the inlet air supply. If in doubt use an activated carbon filter at the inlet of the generator. (contact domnick hunter for a suitable activated carbon filter).

N.B. Numerous dielectric tests are not recommended.

4.3 Operation

Once the Zero Air generator is installed, the operating procedure is very simple:

- Connect the power supply to the mains connector. Switch the generator on via the mains ON/OFF switch. The green and amber lights should illuminate. The green LED indicates power to the unit, with the amber LED indicating power to the heater.
- Allow the catalyst to reach the operating temperature (approximately 60 minutes). Once the correct operating temperature of 420°C is reached, the amber LED will intermittently switch on and off showing the unit is now ready for operation.
- Start the flow of compressed air through the system and allow it to stabilise. In normal operation the amber LED should illuminate intermittently.