

The logo for nps, consisting of the lowercase letters 'nps' in a bold, blue, sans-serif font, enclosed within a thin grey circular border.

# User Guide

## V1 oil vapour removal system

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[www.n-psi.co.uk](http://www.n-psi.co.uk)

## Experience.

Our team is comprised of and supported by individuals spanning all disciplines from research & development, engineering & manufacturing, marketing & sales and service & support. Our backgrounds are in air and gas purification and our experience in this field spans a wide range of industries. We combine this knowledge and experience to ensure our products and services are designed and provided to meet the objectives and expectations of you - our Customer.



## Customer.

We recognise that our Customers are not only our valuable distribution partners who sell and support our products or the machine builders who depend on them as protection for their equipment. They are the contractors who install them, the manufacturers who use them in their processes and the service people who maintain them. At nano we have developed our products, packaging and support materials to ensure they exceed all of our Customers' expectations.



## Service.

At nano we recognise that world-class customer service is the most important component to any successful business. Your business needs to exceed your customers' expectations to stand out from your competitors and our service must positively impact your business so you can be successful in doing so. Our commitment is simple... we will stand behind our products and ensure that our customer service is unrivaled in the industry.



Experience. Customer. Service.

# table of contents

<b>section</b>	<b>description</b>	<b>page</b>	
1	1.	general information	4
	1.1	document introduction	
	1.2	warranty guidelines	
	1.3	general safety	
	1.4	intended use of the product	
2	2.	technical specification	5
	2.1	flow rates	
	2.2	product dimensions	6
	2.3	product overview	7
	2.4	typical system layout	8
	2.5	site location	9
	2.6	wall mounting	
	2.7	operation	10
	2.8	remote start/stop control	11
	2.9	remote stop control	12
3	3.	monitoring dryer performance (when ES option is fitted)	13-15
	3.1	shutdown procedure	16
	3.2	maintenance	17
	3.3	cleaning	
	3.4	daily checks	
	3.4	service schedule and breakdown	18
4	4.	process and instrumentation diagram	19
	4.1	wiring diagram	20
	4.2	troubleshooting	21
	notes	22-23	



# V1

## V1 oil vapour removal system

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## V1 oil vapour removal system

### 1. general information

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#### 1.1 document introduction

This manual provides factory prescribed installation and maintenance procedures for the V1 oil vapour removal system. The procedures illustrated in this document are only to be performed by authorized personnel. For further information regarding the procedures outlined in this document contact the manufacturer before proceeding. Be sure to read this document carefully before attempting to install or operate the V1 oil vapour removal system. This document should be permanently available at the V1 oil vapour removal system installation site.

#### 1.2 warranty guidelines

All products are supplied with a 2 year manufacturer's warranty from the date of purchase when installed and maintained in accordance with the manufacturers guidelines. Only genuine service parts should be used and no modifications made.

#### 1.3 general safety

No modifications must be made to the product. Any modifications may reduce the operational safety of the product and invalidate the manufacturer's warranty. This could potentially result in damage to the product and serious personal injury.

For your own safety, when carrying out work on this product, all relevant national safety regulations must be complied with relating to pressurized and electrical systems.

Only authorized, competent and trained personnel are permitted to work on this product. This user guide is intended solely for such personnel and is to be used only as a reference; it should not be used to replace conventional training.

#### 1.4 intended use of the product

The V1 oil vapour removal system is exclusively intended for the treatment of compressed air, which is free from bulk water, oil and solid matter constituents.

The product should be located within a building and protected from extreme conditions and weather. The V1 oil vapour removal system must be operated only in accordance with the data on the rating plate. Any operations that do not comply with those stated on the product rating label will render the warranty void



#### annotations



**CAUTIONS:** indicate any situation or operation that may result in potential damage to the product, injury to the user, or render the product unsafe.



**NOTES:** highlight important sections of information where particular care and attention should be paid.



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and/or birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



# V1

## V1 oil vapour removal system

### 2.5 personnel

Only authorized, competent and trained personnel are permitted to work on this product. This user guide is intended solely for such personnel and is to be used only as a reference; it should not be used to replace conventional training.

### 2.6 safe handling

Please ensure the relevant safe engineering practices and handling procedures are employed when handling, installing and operating this product. Ensure that the equipment is de-pressurized and electrically isolated prior to carrying out any of the scheduled maintenance instructions specified within this user guide.



**In no circumstances must a damaged product be used in operation. Using damaged products can lead to irreparable functional faults or cause serious physical harm.**

### 2.7 technical description

The oil vapour removal system is a static machine that utilises proven activated carbon technology to efficiently remove hydrocarbons and odour from the compressed air supply to provide ISO 8573 class 1 air.

- Dry air enters the NVR through the inlet and is directed into the columns.
- Each column contains a densely filled activated carbon cartridge.
- Air then passes through the cartridge where any remaining oil or hydrocarbons is adsorbed.
- The clean dry air passes out through the final particulate filter (<1micron/ISO8573.1 Class 2).

# V1



## V1 oil vapour removal system

### 3. technical specification

specifications	standard	option
maximum operating pressure	16 barg (232 psig)	-
recommended operating temperature range	1.5 to 35°C (35 to 95°F)	-
design operating temperature range	1.5 to 50°C (35 to 122°F)	-
estimated cartridge life	6000 hrs (or 12 months)	-

### 3.1 flow rates

model	inlet flow rate		connection	
	Nm3/hr	scfm	inlet (BSPP or NPT)	outlet (BSPP or NPT)
NVR-0040	68	40	1/2"	1/2"
NVR-0185	315	185	1"	1"
NVR-0370	630	370		
NVR-0750	1275	750	2 1/2"	2 1/2"
NVR-1100	1870	1100		
NVR-1500	2550	1500		

### 3.2 correction factors

inlet air pressure	barg	1	2	3	4	5	6	7-16
	psig	14	29	43	58	72	87	101-232
correction factor		0.25	0.37	0.50	0.62	0.75	0.87	1.00

inlet air temperature	°C	<35	40	45	50
	°F	<95	104	113	122
correction factor		1.00	0.98	0.96	0.95

pressure dew point	°C	<3	<3
	°F	<37	<37
correction factor		0.25	1.00

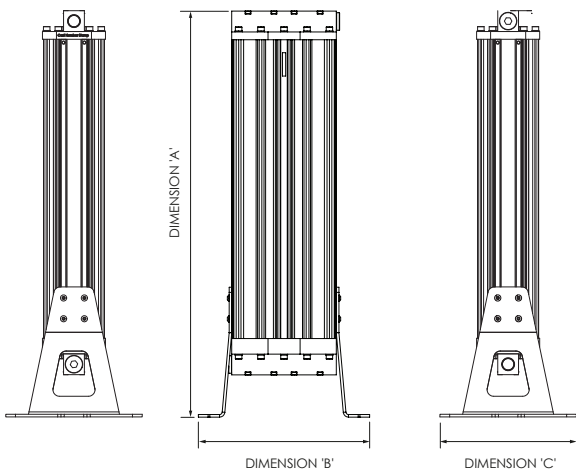


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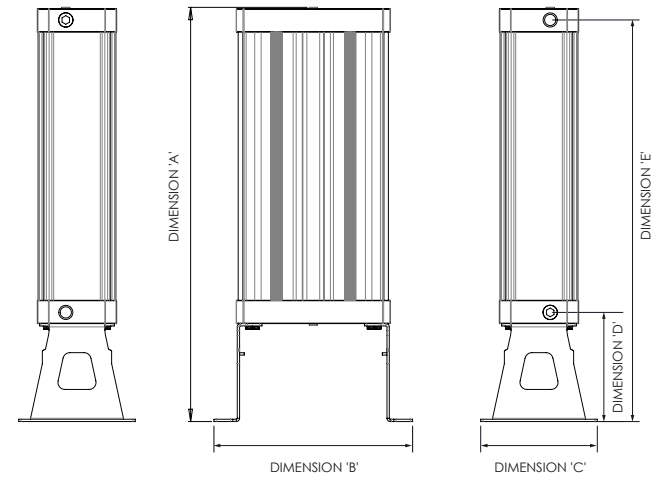
## V1 oil vapour removal system

### 3.3 product dimensions

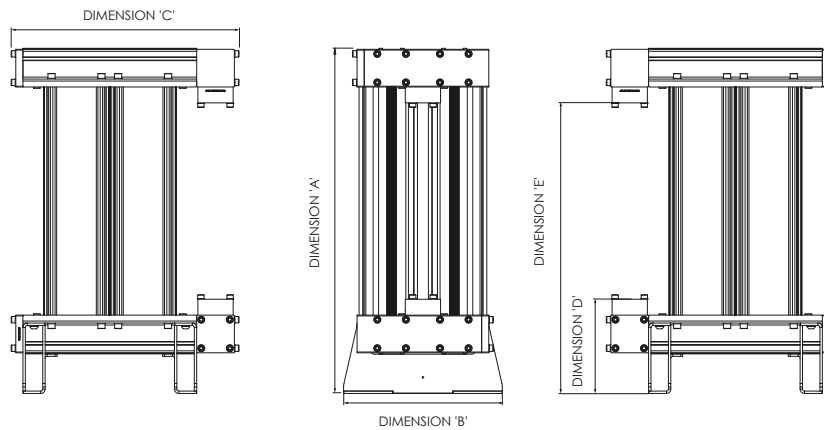
NVR-0040



NVR-0185; NVR-0370



NVR-0750; NVR-1100; NVR-1500



model	dimension										approx. weight	
	A		B		C		D		E		kg	lbs
	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches		
NVR-0040	865	34	263	10.3	210	9.8	81	3.19	609	24	12.8	28
NVR-0185	705	27.7	426	16.7	250	9.8	147.5	5.8	587.5	2.1	40	88
NVR-0370	885	34.8							767.5	30.2	50	110
NVR-0750					574	22.6					103	227
NVR-1100	870	34.25	400	15.75	742	29.2	237.5	9.35	732.5	28.83	142	313
NVR-1500					910	35.8					180	397

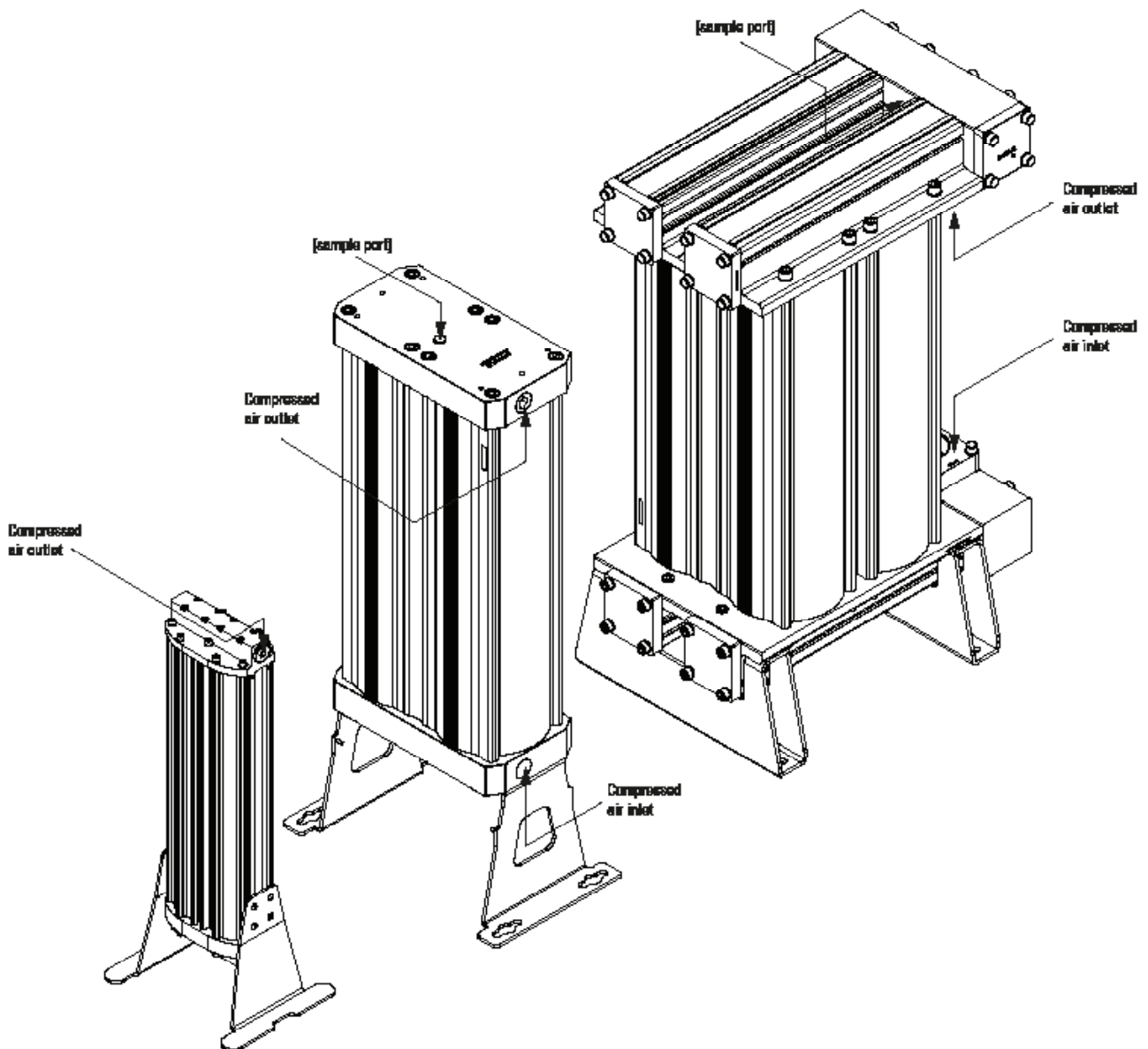


# V1



## V1 oil vapour removal system

### 3.4 product overview



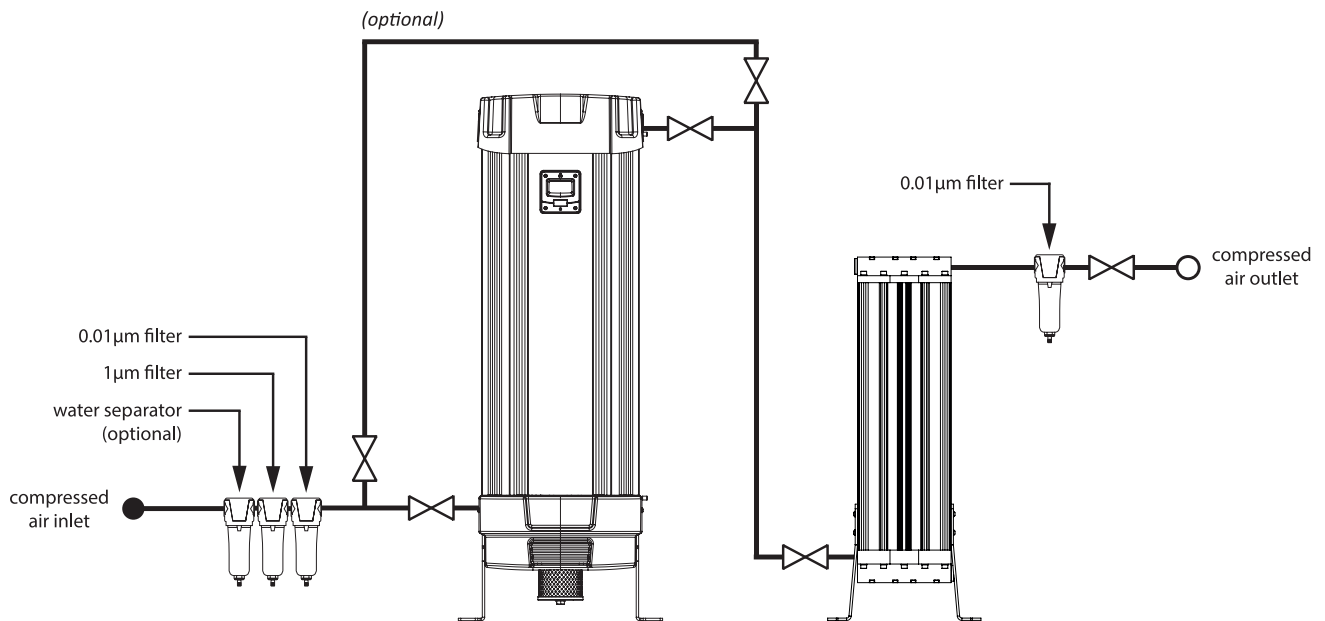
**IMPORTANT:** Do not remove the blanking plugs from the sample ports when product is pressurized. Ensure the system is isolated from the compressed air and fully depressurized before remove this blank.



# V1

## V1 oil vapour removal system

### 3.5 site location



**IMPORTANT:** It is essential that the system into which this is installed is fitted with a pressure limited / relief device. This device should be installed between the compressor and the dryer.

**When selecting an installation site for the unit, ensure the following conditions are met:**

- Installation site should be located indoors on a flat protected from the weather and other harmful conditions.
- The ambient temperature must not drop below 1.5°C (34.7°F) or exceed 50°C (122°F)
- The installation site should be level and able to support the weight of the product.
- Ensure sufficient space around the product, to allow access for operation and maintenance.



## V1 oil vapour removal system

### 4. maintenance



**Maintenance operations should only be conducted once the system has been shut down and is fully depressurized. All operations should be carried out by authorized and suitably trained personnel**

- All connections must be removed with care, paying particular attention to the areas that become pressurized.
- All seals removed during maintenance operations must be replaced with new seals.
- Only certified and approved replacement parts should be used.
- Check all connections and sealing faces for cleanliness and secure seating prior to assembly.
- Ensure all components are re-fitted to the product before operation.
- Check all connection and sealing faces for any leakage, if any found resolve and check again.
- Ensure the unit is left operating in a safe working condition after completion of maintenance

#### 4.1 cleaning

Clean the equipment with a damp cloth only and avoid excessive moisture around any electrical connections. If required a mild detergent can be used. Do not use abrasives/solvents as these may cause damage.

#### 4.2 daily checks

- Check the unit for any signs of external damage.
- Remove any loose dust or dirt from the unit, clean all surfaces that appear to have attracted unwanted contaminants.
- Ensure the unit is operating within the specification.
- Always check all connections for any leaks.
- Ensure all loose parts are removed or secured to the unit before operation.



# V1

## V1 oil vapour removal system

### 4.3 service schedule and breakdown

service	year 1 (12 months)	year 2 (24 months)	year 3 (36 months)	year 4 (48 months)	year 5 (60 months)	year 6 (72 months)	year 7 (84 months)	year 8 (96 months)
A	✓	✓	✓	✓	✓	✓	✓	✓

Service A - Every 1 year (12 months)  
 Replace activated carbon  
 Replace top manifold gasket seals

### 4.4 service kits and spares

model	service A
NVR 0040	NVR SK 040
NVR 0185	NVR SK 185
NVR 0370	NVR SK 370
NVR-0750	NVR SK 370 (x2)
NVR-1100	NVR SK 370 (x3)
NVR-1500	NVR SK 370 (x4)

V1



## lab gas CO2 removal dryer

notes

A series of horizontal dotted lines for taking notes.



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