

nano



V1 oil vapour removal systems
user guide

about us

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.

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1.1 general information

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range: series 2 & 3 oil vapour removal systems
models: NVR 0185, 0370, 0750, 1100 & 1500
doc no: 17-100-0 128
issue: 001

1.2 manufacturers details and support

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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.



1.3 document introduction

This manual provides factory prescribed installation and maintenance procedures for a series 2 & 3 oil vapour removal systems. 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 NVR. This document should be permanently available at the NVR installation site and be kept in an easily accessible place alongside the NVR.

1.4 warranty guidelines

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

1.5 packaging

All products are securely packaged in a specifically designed wooden packing box. The NVR will be held in a horizontal position by wooden struts; using straps to secure the product to the box base. The box top cover can be removed by removing the 4 fixing screws and lifting off in one piece.

1.6 damage to packaging

Check immediately to establish whether damage has occurred to the external packaging and if the damage extends to the product inside. If there is damage to a product, contact the relevant supplier immediately.



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.

1.7 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.

1.8 intended use of the product

The NVR is exclusively intended for the treatment of compressed air, which is free from bulk water and solid matter constituents. The product should be located within a building and protected from extreme conditions and weather. The dryer 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.



This product is only designed to operate at a maximum pressure of 16 barg (232 psig). It is not suitable for pressures in excess of 16 barg (232 psig).



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1.9 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.

1.10 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 depressurized 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.

1.11 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).

1.12 product contents

when ordering a series 2 desiccant air dryer you will receive the following;

- 1 x support base and box cover
- 1 x series 2 oil vapour removal system
- 1 x user guide
- 1x declaration of conformity

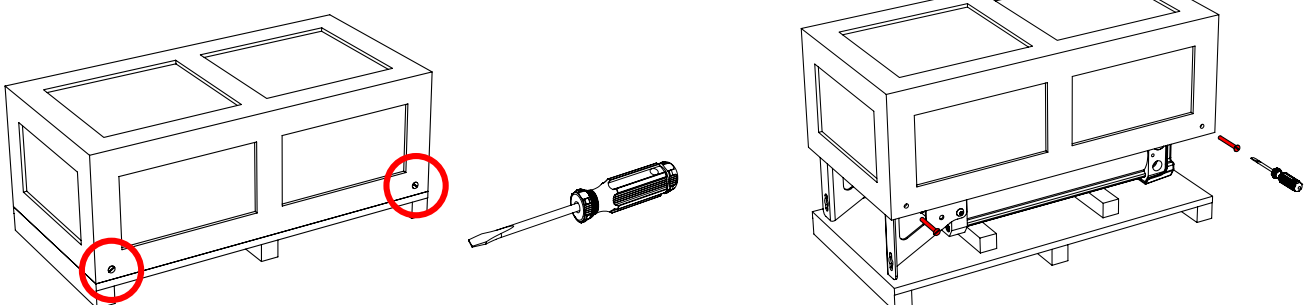


Figure 1: Contents Layout

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oil vapour removal system



2.1 technical specification

specifications	standard	optional
maximum operating pressure	16 barg (232 psig)	-
recommended operating temp range	1.5 to 35°C (35 to 95°F)	-
design operating temperature range	1.5 to 50°C (35 to 122°F)	-

2.2 flow rates

model	inlet flow rate		connection	
	Nm ³ /hr	scfm	inlet	outlet
NVR-0185	315	185	1"	1"
NVR-0370	630	370	BSPP or NPT	BSPP or NPT
NVR-0750	1275	750	2"	2"
NVR-1100	1870	1100	BSPP or NPT	BSPP or NPT
NVR-1500	2550	1500	2 ½" BSPP or NPT	2 ½" BSPP or NPT

2.3 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	pressure dew-point	°C	>3	<3
	°F	<95	104	113	122		°F	>37	<37
correction factor		1.00	0.98	0.96	0.95	correction factor		0.25	1.00

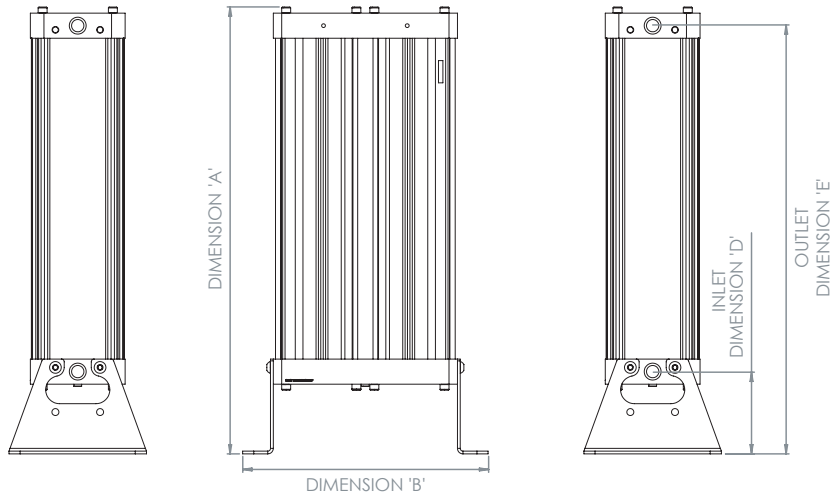


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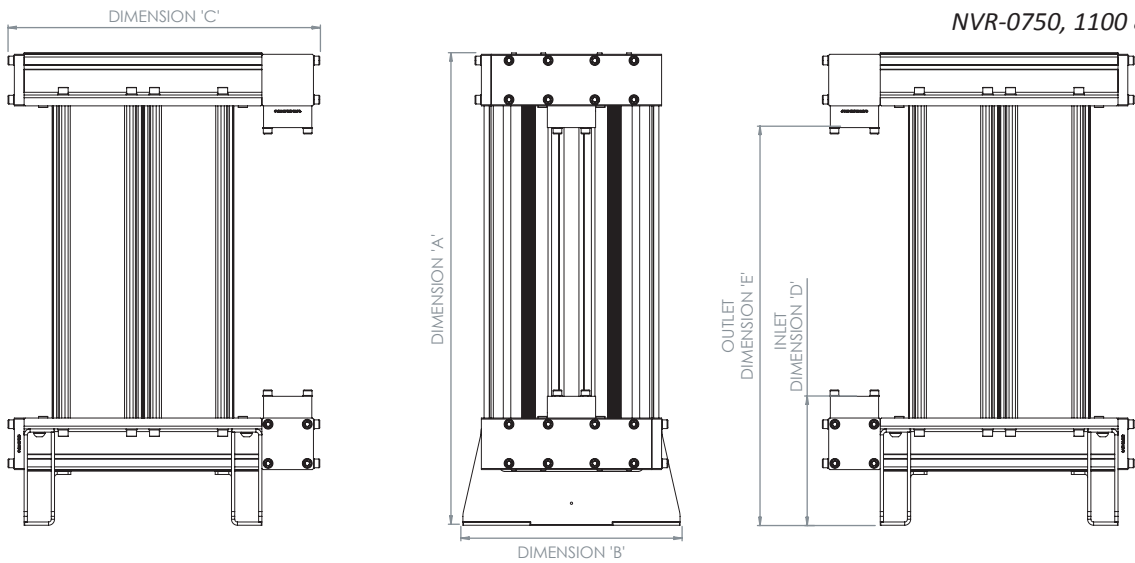
oil vapour removal system

2.4 product dimensions

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NVR-0185 & 0370



NVR-0750, 1100 & 1500

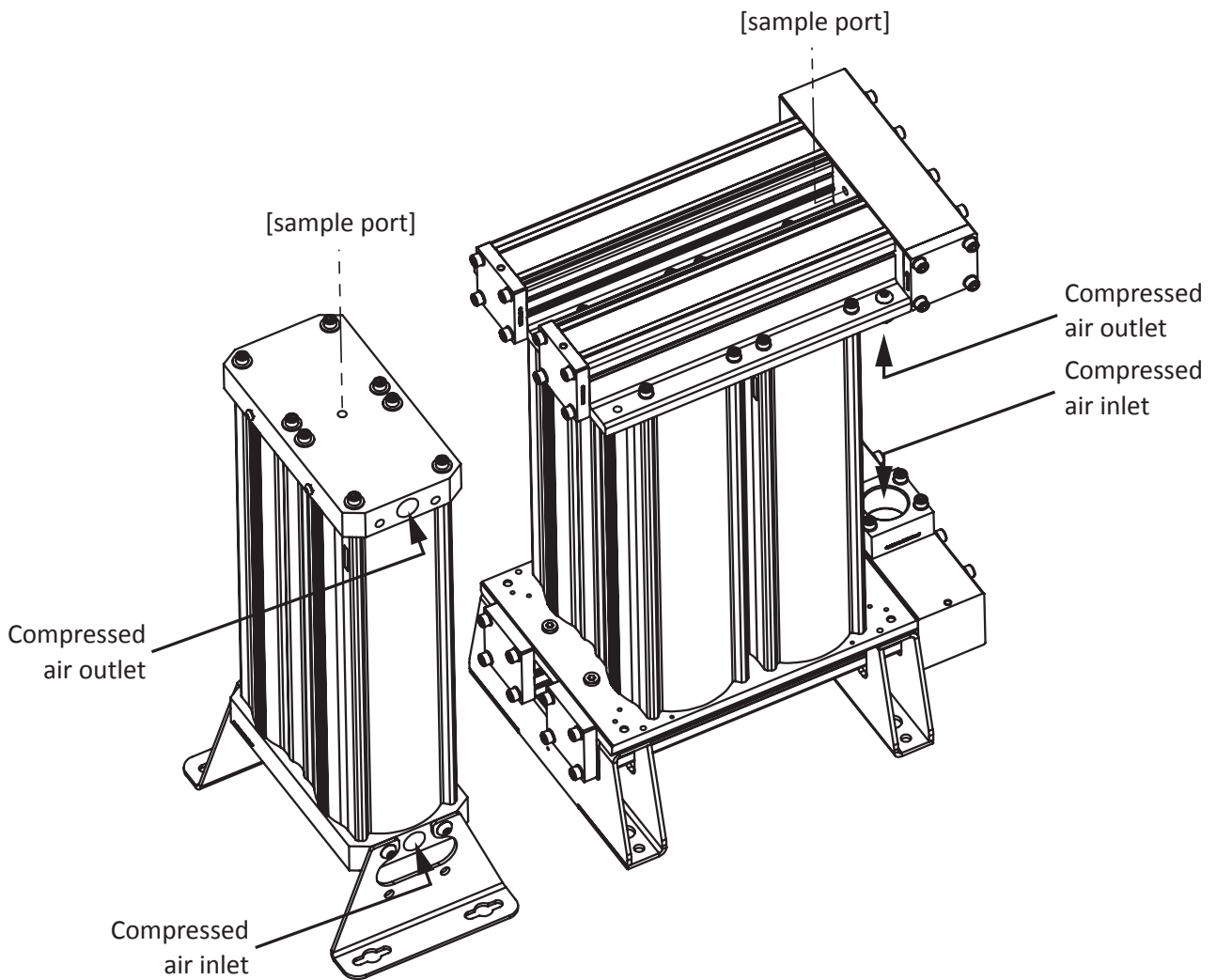
model	dimension										weight	
	A		B		C		D		E		kg	lbs
	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches		
NVR-0185	621	24.5	440	17.3	245	9.6	147.5	5.8	587.5	23.1	38.5	85
NVR-0370	800	31.5							767.5	30.2	49.5	109
NVR-0750					574	22.6					103	227
NVR-1100	870	34.25	400	15.75	742	29.2	237.5	9.35	732.5	28.83	142	313
NV-1500					910	35.8					180	397

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2.5 product overview



2



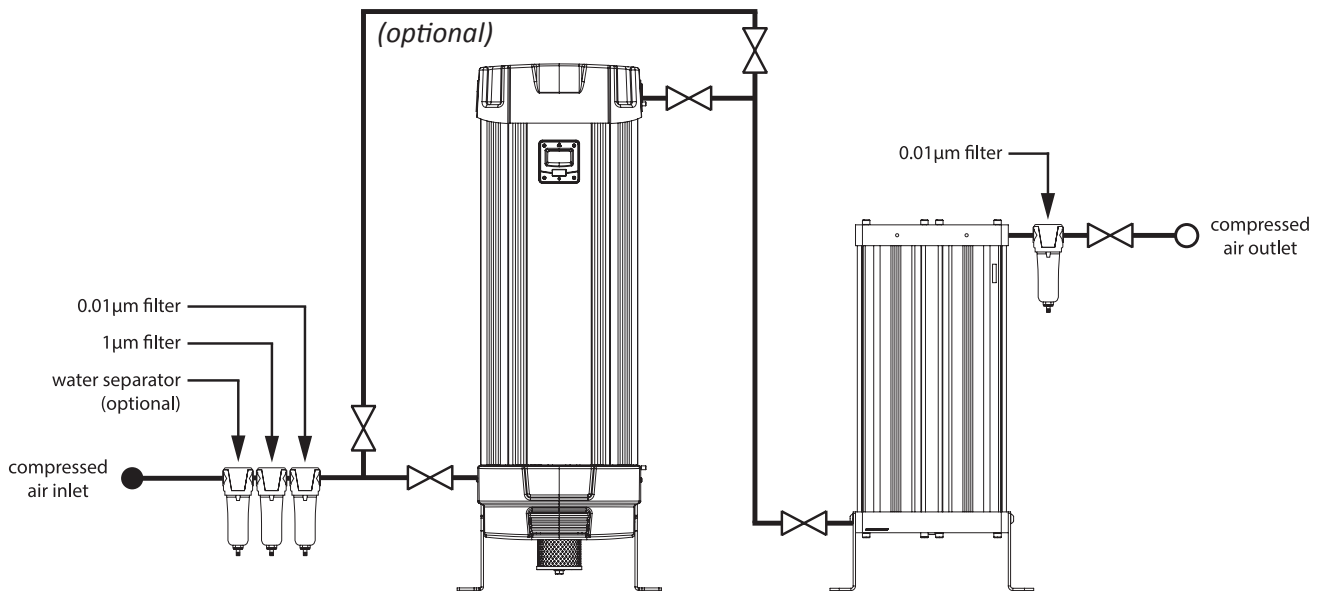
IMPORTANT: Do not remove the blank from the sample port when product is pressurized. Ensure the system is isolated from the compressed air and fully depressurized before remove this blank.



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2.6 typical system layout



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

2.7 site location

When selecting an installation site for the oil vapour removal system, ensure the following conditions are met:

- Installation site should be located indoors on a flat surface 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.

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2.8 system operation

- Ensure all pipe work is connected
- Ensure the inlet operating pressure parameters do not exceed 16barg (232 psig).
- Ensure the inlet air temperature is between 1.5°C and 50C (34.7°F and 122°F).
- Slowly open the inlet valve and allow the system to pressurize.
- Check for leaks and rectify if any are found.
- Allow the system to pressurize before slowly opening the outlet valve.

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3.1 maintenance



Maintenance operations should only be carried out by authorized, suitably trained personnel.

- Maintenance operation should only be conducted when the system has been shut down and fully depressurized.
- All connections must be isolated and removed with care, paying particular attention to the areas that become pressurized.
- Do not modify or adjust the control settings.
- Only certified and approved replacement parts should be used.
- Always check all connections for leakage and secure seating.
- Ensure all loose parts are removed or secured to the dryer before operation.

3.2 cleaning

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

3.3 daily checks

- Check the system for any external damage.
(assess and eliminate any defects found)
- Remove any loose dust or dirt from the system clean all surfaces that appear to have attracted unwanted contaminants.
- Always check all connections for leakage and secure seating.
- Ensure all loose parts are removed or secured to the system before operation.

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3.4 servicing guidelines

- Maintenance operation should only be conducted when the system has been shut down and fully depressurized.
- Isolate the system from the compressed air ensuring the system is in a safe condition for maintenance to be carried out on.
- All connections must be removed with care, paying particular attention to the areas that become pressurized.
- All gasket seals removed during maintenance operations must be replaced with new gaskets.
- Only certified and approved replacement parts should be used.
- Always 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.
- Always check all connection and sealing faces for any leakage, if any found resolve and check again.
- Ensure the system is left operating in a safe working condition after completion of maintenance.

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3.5 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	✓	✓	✓	✓	✓	✓	✓	✓



When contacting your service provider be sure to provide the part number and serial number of your product, this can be found on the rating plate located top right hand side of the column.

- **Service A** - Every 1 year (12 months)
Replace cartridges
Replace top manifold gasket seals

3.6 service kits and spares

model	service A
NVR-0185	NCK-0185
NVR-0370	NCK-0370
NVR-0750	NCK-0750
NVR-1100	NCK-1100
NVR-1500	NCK-1500

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3.7 service record

part number		serial number			
installed by		installation date			
service interval	hours run (if applicable)	date	serviced by		comments / observations
			print	sign	
year 1					
year 2					
year 3					
year 4					
year 5					
year 6					
year 7					
year 8					
year 9					
year 10					
year 11					
year 12					

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additional nano products



F-series industrial filters

D-series desiccant dryers



B-series breathing air purifiers

GEN₂-series nitrogen generators



ECO GEN₂-series nitrogen generators

V-series oil vapour removal systems



R-series refrigeration dryers



nano



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