

Martindale

FRESH AIR SUPPLY EQUIPMENT

Unpowered Fresh Air Hose System *or* Powered Fresh Air Hose System (Powered by Mini-Turbine)

Selection of Systems

The Full Face Mask Fresh Air System can be used either as unpowered (Negative pressure), where the air is drawn through the system by the lungs of the user, or as a Powered system where air is supplied by connecting a Martindale Mini turbine to the end of the air supply hose.

The choice of which system to use is left to the user. Normally if the system is likely to be used for any significant period of time (i.e. over an hour) then the powered option is preferable in terms of comfort to the user.

The unpowered system should be used if there is no power available for the turbine or if the atmosphere where the turbine is to be sited does not permit the use of electrical equipment (for example a potentially explosive atmosphere).

Both systems conform to the higher specification of EN 138, namely Fresh air BA EN 138 class2.

The unpowered system (M26/200) consists of :

M26FFM/2	Full Face Mask + Twin Air Hose
M26/003 or M26/003P	Belt with hose connector
M269MH	9 Metre Hose Assembly.
M26SA	Strainer and Anchor pin assembly.
M26/004	Storage Case

The unpowered system (M26/250) consists of :

M26FFM/3	Full Face Mask + Twin Air Hose and Overflow Valve
M26/003 or M26/003P	Belt with hose connector
M269MH	9 Metre Hose Assembly.
M26SA	Strainer and Anchor pin assembly.
M26/004	Storage Case

The powered system (M26/300) consists of :

M26FFM/3	Full Face Mask + Twin Air Hose and Overflow Valve.
M26/003 or M26/003P	Belt with hose connector
M26/10	Reinforced 10 metre hose
M26LWT110	Mini Turbine (110/120Volts)
M26/004	Storage Case

The powered system (M26/300/EURO) consists of :

M26FFM/3	Full Face Mask + Twin Air Hose and Overflow Valve.
M26/003 or M26/003P	Belt with hose connector
M26/10	Reinforced 10 metre hose
M26LWT240/EURO	Mini Turbine (220 Volts - Euro)
M26/004	Storage Case

Parts and spares

M26LWT240	Mini Turbine (240Volts, 3 UK Plug)	(for use with a powered system only)
M26LWT240/EURO	Mini Turbine (220Volts, Euro Schuko Plug)	(for use with a powered system only)
M26LWT110	Mini Turbine (110/120Volts, Yellow Plug)	(for use with a powered system only)
M269MH	Reinforced 9 metre hose	
M26/10	Reinforced 10 metre hose	
M26/20	Reinforced 20 metre hose	
M26/30	Reinforced 30 metre hose	(for use with a powered system only)
M26/40	Reinforced 40 metre hose	(for use with a powered system only)
M26/003	Belt with metal hose connector	
M26/004	Storage Case	
M26/003P	Belt with new plastic hose connector	
M26FB	Spare belt (1.5m)	
M08S	Full Face Mask	
M26A	Adaptor for joining two Reinforced hoses together.	
M26FFM/2	Full Face Mask + Twin Air Hose	(for use with an un-powered system only)
M26FFM/3	Full Face Mask + Twin Air Hose and Overflow Valve	
M26TAM	Twin Air Hose and Overflow Valve	
M26TAF	Twin Air Hose	(for use with an un-powered system only)
M26SA	Strainer and Anchor pin assembly	(for use with an un-powered system only)
M26MTF	Replacement Pre-Filter disk for Mini Turbine.	(for use with a powered system only)
M26O10	Spare O-ring pack for Y piece and Brass connector. (5 of each)	
M08SSVPN	Spare Valve pack for Silicon Full Face Mask	
M08SVN	Spare Visor for Silicon Full Face Mask	
M08SVCVN	Spare visor covers for Silicon Full Face Mask	

Warnings

Facial hair or spectacles with side arms that pass underneath the face seal will affect the sealing of the face mask. This is likely to cause leakage and seriously impair the performance of the system. Contact Centurion Martindale for information on suitable spectacles that can be used on the system.

Both the Unpowered and Turbine powered systems provide the wearer with air from a source remote from the immediately contaminated area. The quality of the supplied air is dependent upon the quality of the air at this source. The user must ensure the purity of the air supply at all times.

At very high work rates the pressure in the mask may become negative at peak inhalation.

The unpowered system (M26/200 and M26/250) can be used in a potentially flammable atmosphere.

The powered system (M26/300, M26/300/EURO) may also be used in a potentially flammable atmosphere provided the mini turbine unit itself is not sited within or close to this flammable atmosphere.

The Mini-Turbine is **NOT** intrinsically safe.

Fitting Instructions

REINFORCED HOSE

Joining Hoses

It is possible to join two reinforced hoses together if required using an M26A adaptor providing the limitations below are followed.

- Only the approved Martindale M26A adaptor must be used. It should be checked for damage before use.
- You should join a maximum of two hoses together. (i.e. Only one M26A may be used per user's system).
- The maximum total length of joined hose assembly is 20 metres for unpowered and 40 metres for powered systems.
- Check that the O-rings are in place on the nipples on the hose before attaching the adaptor. The adaptor must be tightly screwed into the ends of the hose to be joined so that nuts on the end of the hose are tight and it should not be possible for the hoses to rotate.

Unpowered Apparatus (M26/200 and M26/250)

Firstly fit the strainer to one end of the reinforced hose by screwing it in tightly by hand. Then stake, hook or tie the strainer in a location/position where the air is of breathable quality (and will remain so through the intended period of use of the apparatus). See diagram 1. Breathing quality air is defined in EN 132.

Ensure that the hose is free from bends or kinks which could impede air flow and that it is located/identified to secure/protect it from being crushed by motorised vehicles.

Powered Apparatus (M26/300, M26/300/EURO)

Position the turbine in a dry area where the air is of breathable quality (and will remain so through the intended period of use of the apparatus). Breathing quality air is defined in EN 132. Connect the power supply to the turbine and remove the blanking cap from one of the turbine outlets. Ensure that the power supplied to the turbine is within the range printed on the turbine. Turn on the power and switch the turbine on. Check that the turbine is operating and that air is being blown from the outlet on the turbine. Connect one end of the reinforced hose to the outlet by screwing on tightly by hand, it should not be possible for the hose to rotate once the nut is tightened. (For twin users repeat previous steps using second outlet for the second user). Note: if there is only one user the holed blanking cap **MUST** be fitted to the other outlet.

If the unit fails to start the Mains Voltage may be low - turn the turbine off, turn the air control to maximum and turn the unit on again, allow unit to warm up for 5 minutes. Adjust airflow to required level. If the unit still fails to start refer to "Electrical Safety section on Page 3"

Ensure that the turbine/hose is free from bends or kinks which could impede air flow and that it is located/identified to secure/protect it from being crushed by motorised vehicles.

All Apparatus

Remove any protective caps from the belt bracket.

Connect the free end of the reinforced hose to the fine thread connector of the belt bracket by screwing the nut onto the belt bracket connector tightly by **HAND**, it should not be possible for the hose to rotate once the nut is tightened.

Connect the Y piece of the twin air hose into the top of the belt bracket, screwing down the retaining nut tightly by **HAND**, it should not be possible for the Y piece to rotate once the nut is tightened.

Fit the belt and bracket around the waist, adjusting the belt to fit the user, and snap the belt buckle together. The belt should be tightened so that the belt bracket and comfort pad sit flat against the lower back. The belt bracket should lie behind the user with the main air supply hose pointing down and outwards.

Adjust the vertical position at which the hoses are held together such that when placed over the head the hose assembly does not slip down over the shoulders. Ensure hoses are not twisted when placed over the head. Fit the full face mask according to the specific instructions supplied with the mask. Connect the twin air hose to the full face mask by screwing the threaded nut into the full face mask tightly.

Inspection & Fit Testing of System

BEFORE USE, THE FOLLOWING CHECKS SHOULD BE CARRIED OUT:

Leak Tightness Testing of Unpowered Apparatus (With the facemask, double hose, belt bracket donned and reinforced hose fitted)

Block the strainer end of the air supply hose and inhale. This should create a negative pressure inside the mask, thus sucking the mask onto the face. If this effect is not obtained, re-fit mask and check security of hose connectors, then re-test.

Leak Tightness Testing of Powered Apparatus (With the facemask, double hose with o/f valve, belt bracket donned and reinforced hose fitted)

Disconnect the turbine end of the main air supply hose, block and inhale. This should create a negative pressure inside the mask, thus sucking the mask onto the face. If this effect is not obtained, re-fit mask and check security of hose connectors, then re-test. If supplying twin users this test should be carried out by both users.

General Maintenance and Cleaning

Double air tube with or without overflow valve

Visually inspect

The valve in the overflow valve assembly of the twin air hose for damage, or distortion.

The underside sealing surface & the O-ring it sits on should be completely free of dust and dirt. (If necessary clean both surfaces with a soft cloth soaked in clean water and allow to dry).

The hoses for any signs of obvious damage, holes tears etc,

The presence and condition of the rubber 'O'-ring fitted to the plastic 'Y' piece connection of the twin air hose. Replace if necessary

Reinforced hose

Check for the presence and condition of both O-rings of the reinforced hose. Replace if necessary.

The security of the hose clamps. The reinforced hose for holes, cuts, tears, abrasions, kinks or flattening.

Full facemask

For maintenance and cleaning of the full face mask refer to the specific supplied instructions.

Mini Turbine Unit

The turbine unit is fitted with a coarse prefilter which is located behind the end plate without the mains cable connection, it can be accessed by removing the 3 screws. The prefilter consists of a foam disc, it should be checked at minimum of 3 monthly intervals and if dirty or damaged be replaced. The unit should be cleaned prior to storage and stored in a dry warm atmosphere, preferably within a protective enclosure.

Electrical safety

Visually inspect

The cable along its length for damage ie torn insulation, exposed conductors etc.

Security and condition of the plug fitted to the cable.

Do not use the unit if any of the above conditions are found

Periodic electrical safety checks must be carried out by a competent person.

Should the turbine unit fail to operate check the supply, the fuse in the plug (230volt version only) and the fuse in the unit (Replacement fuse. 1.5 amp 250V Anti-surge type RS 415-581) **WARNING** failure to use the correct type of replacement fuse may cause permanent damage to the unit.!

If the unit still fails to operate return to Centurion Safety Products Ltd for repair.

All items should be transported in the packaging originally provided.

Cleaning & storage

The system should be cleaned by hand washing with a mild soap (non-detergent) then rinsing with clean water and allowing to dry naturally. (Do not immerse the turbine unit in water or allow water to enter the unit). Ensure that the complete system is fully dry before using.

The belt bracket and turbine unit should always be stored with protective caps in place.

Recommended storage temperature is 20 °C, limits of storage conditions are -10 °C to +50 °C, R.H. < 60%.

DO NOT STORE IN DIRECT SUNLIGHT. Items should be stored in the packing provided. When stored as detailed by these instructions the system (excluding the full facemask) has a shelf life of 5 years. (See instructions supplied with the Full Face Mask for details regarding it's shelf life.)

All items should be transported in the packaging originally provided.

Applications and Uses.

This system is designed to operate between -6°C and +50 °C

The turbine unit will provide a minimum of 120 ltrs/min of air to each port (which is the minimum requirement for this system). This air can be provided to 2 users at a **MAXIMUM** distance of 40 metres each. The airflow can be increased by rotating the control on the turbine in a clockwise direction. This should be adjusted to the preference of the user. An increase in setting may be required if any of the following are relevant :

Twin users, Long lengths of hose, Very high work rates.

When operating the system as unpowered, the **MAXIMUM** length of hose that should be used is **20 metres**.

The system with class 2 hoses offers a Nominal protection factor of 2000 as defined in EN 138. It thus should not be used where the level of contaminate in the atmosphere is greater than 2000 x Occupational Exposure Limit. It should be noted that EN 529 gives an assigned protection factor of 40 for the UK which may be used as an alternative protection factor limit. Refer to EN529 for further guidance.

The Full facemask should be fitted, used and maintained in accordance with the instructions supplied with it.

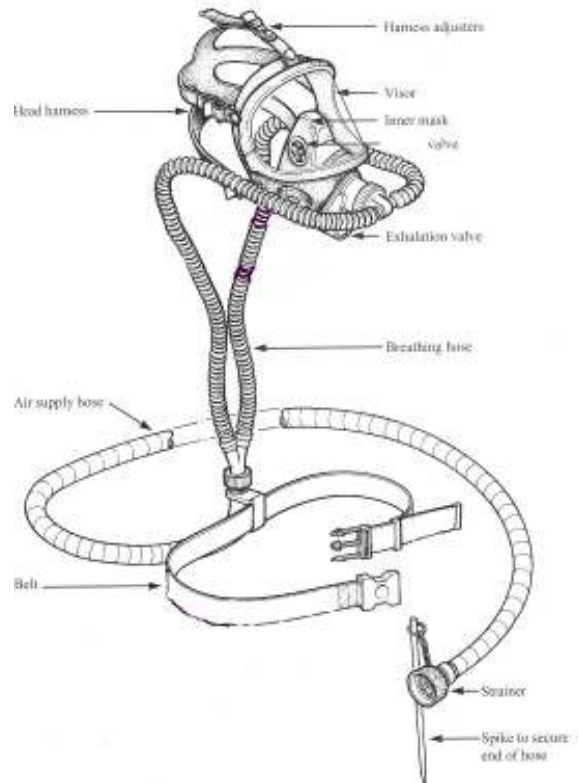


Diagram1 Unassisted system



WEEE (Refers to Mini Turbine ONLY)

THE MINI TURBINE SHOULD NOT BE DISPOSED OF IN GENERAL MUNICIPAL WASTE

1. The crossed-out wheeled bin symbol, with the solid bar, shown on this product, its packaging or instructions indicates that the product has been manufactured after 13/8/05 and is subject to European Community directive 2002/96/EC, issued 27/1/03, on correct handling of Waste Electronic and Electrical Equipment (WEEE).
2. WEEE cannot be disposed of as municipal waste and must be collected and disposed of separately. Appropriate public or private waste collection systems defined by national and local regulations should be used.
3. The product may contain substances which could harm the environment or human health if disposed of incorrectly.

Standards

Both the unpowered and turbine powered fresh air systems are designed to EN-138 class 2. The current Mini-Turbine unit offers mechanical/electrical protection to IP 54 as marked on the unit.

EC Type-examination by :

BSI Product Services, Maylands Avenue, Hemel Hempstead, Herts, HP2 4SQ (Notified Body No 0086)

All Martindale Fresh Air Units are guaranteed free from any faults in materials or workmanship. Should any such faults develop within 12 months of purchase then Centurion Safety Products Ltd will, at their discretion, repair or replace the unit without charge.

Centurion Safety Products Ltd. Howlett Way, Thetford, Norfolk, IP24 1HZ, UK
Tel. +44 1842 754266 Fax. +44 1842 765590