



# INSTRUCTION MANUAL



## Fan PM-225

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**1.0 General safety precautions**

IMPORTANT - Please study all the instructions before mounting and commissioning.

Please keep these instructions in a safe place and instruct all users in the function and operation of the product.

Do not dismantle any factory-mounted parts, since it impedes the commissioning of the equipment.

**1.1 Danger**

**Explosive media** – The Fan is not suitable for the extraction of aluminium dust, flour, textile dust nor for sawdust or other media, which are connected with danger of explosion, without specific approval from Geovent A/S.

Removing the protection net on the fan whilst in operation involves a risk of mutilation.

Always switch off the current when mounting something on the Fan or when servicing it.

**1.2 Field of application**

The GEOVENT transportable Fan PM-225 is typically used for comfort ventilation as well as for smaller process extraction jobs, where a high pressure is not required. The Fan is applied for process extraction within the industry for the extraction of welding smoke, vapours, and other jobs where a fixed installation is not possible

**GEOVENT PM-225 may NOT be started without the hose mounted, since this may result in motor overload.**

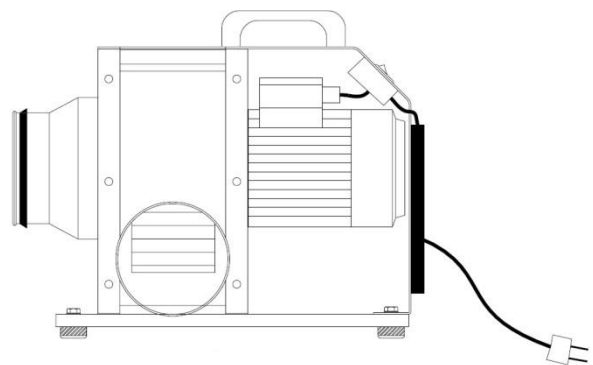
**1.3 Technical data**

Temperature extracted air	Max 80°C
Temperature surroundings	Max 40°C

**Fans 2.800 min<sup>-1</sup>, noise emission to the surroundings**

Type	Lp, dB(A)	Lp, 1m
PM-225	81	75

The sound level depends on various factors under various circumstances. For instance, where in the room the Fan has been installed, the size of the room, the temperature in the room, the sound of the room and also the connection (hose><pipe) of the Fan influences the sound level of the Fan.



The actual ampere consumption and the kW of the motor are shown on the metal sign on the Fan.

**1.4 Construction**



**Fan housing:** 100% hot-galvanized steel for optimal corrosion resistance. Carrying feet have been mounted on all Fans with fitted vibration dampers as well as inlet nozzle with safety net.

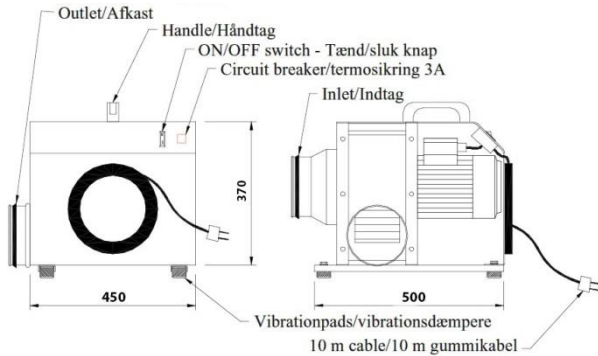
**Fan wheel:** Forward curved sirocco-fan wheel (F-wheel) in hot-galvanized steel sheet.

**Motor:** B5 flange motor, directly driven in protection class IP 55.

**Shield** Powder Coated

Hose/hood 2x5m ø200mm flexible and lightweight hose with coupling brackets for easy mounting and dismantling. Power coated extraction hood with 1 strong power magnet.

Cable 10m rubber cable, 16A CEE plug.



**2.0 Installation**

The Fan is supplied in complete/assembled condition, ready for connection to piping and to the mains.

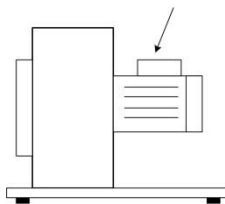
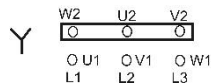
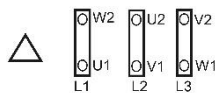
If at all possible, please avoid bends just before the intake and after the outlet, since otherwise this would reduce the yield of the Fan.

Connection of the Fan to the mains:

1. The Fan should be connected to 3x400V 50Hz, as standard.
2. Circuit diagram 3-phase motor (non-adjustable). Should only be changed by qualified electrician, in case the direction of the impeller is wrong.

△ 3x400..440V 50/60Hz

Y 3x690V 50Hz



**3.0 User instruction – application**

When extracting large quantities of air, containing dust, the fan wheel may get out of balance due to dirt on the wheel.

In many cases, the Fan is started by pushing the green button on the motor protection switch (if automatics are not used).

The Fan does not work according to the purposes, if ...

- unauthorised parts have been mounted on the Fan (e.g. unauthorised wheel).
- the wheel runs in the wrong direction. It will still work, but the capacity will be reduced to a third of the normal capacity.
- no motor protection switch is used.

**4.0 Maintenance**

Periodic maintenance

- In principle, the motor is maintenance-free because of the factory-mounted, completely closed special ball bearings, which do not require any maintenance. Exchange of worn bearings should only be handled by an electrician.
- The wheel and the fan housing should be cleaned every year or according to requirement. The wheel and the housing may be cleaned by means of a washing-up brush and dishwasher. Remember to disconnect the power before the washing and to wipe the parts afterwards with a dry cloth. This operation results in a longer life of the Fan.

**4.1 Trouble-shooting**

Remember always to use a motor protection switch!

Always use adjustment damper!

In case of problems with the Fan, the following items may be reviewed in order to check whether:

**The volume of air or the pressure is below the stated level:**

- Wrong direction of operation of the wheel. May be due to wrong electrical installation. Please double-check the direction of rotation. Change two phases, if necessary.
- Leaky channel system.
- Poor inlet/outlet possibilities near the Fan may reduce the yield (e.g. 90° bend before the inlet).
- Damaged wheel.
- The rotation speed has been set lower.

- If the temperature deviates substantially from the lab measurements, where the temperature was 20°C with an atmospheric pressure of 101.4 kPa.
- The dampers have not been correctly adjusted.
- The central lid on the sound box is turned the wrong way and thus blocks the air.
- The suction net has been blocked by cotton waste, a cloth or the like.

#### Vibrations and noise

- The base is not even/stable.
- Elements coming from the outside are stuck in the Fan.
- Damaged wheel or motor.
- The wheel is loose.
- The wheel may have become unstable, for instance as a result of dirt on the impellers.
- The wheel is rotating in the wrong direction.
- The Fan supplies more air than for which the equipment has been dimensioned. Use adjustment damper.
- Loose bolts or screws.

#### The motor is overtaxed

- The cabling of the motor is not correct.
- The shaft has been bent.
- The Fan has over-capacity in relation to the resistance in the system. Use adjustment damper.
- The speed of the motor is too high.
- Defective motor – please contact your dealer!

### 5.0 Liability

#### Warranty

Geovent A/S grants a warranty for products, which are defective, when it can be proved that the defects are due to poor manufacture or materials on the part of Geovent. The warranty comprises remedial action (reparation or exchange) until one year after date of shipment. No claims can be made against Geovent A/S in relation to loss of earnings or consequential loss as a result of defects on products from Geovent.

Wear parts like fan wheels are not included in the warranty.

#### User liability

In order for Geovent to be capable of granting the declared warranty, the user/fitter must follow this Instruction Manual in all respects.

Under no circumstances may the products be changed in any way, without prior written agreement with Geovent A/S.

### 6.0 Declaration of conformity

The manufacturer: GEOVENT A/S  
HOVEDGADEN 86  
DK-8831 LØGSTRUP

hereby declares that:

The product: Mobile Fan  
Model: PM-225

has been manufactured in compliance with the directions of the Directive Council 2006/42/EEC, regarding machine safety, changes of directive 95/16/EEC and following standards:

EN ISO 14121-1:2007 Risk assessment – part 1

EN ISO 12100-1:2005 Basic concepts and general principles for design

EN ISO 12100-1:2009 Construction and design Part 1: Basic terminology and methodology

EN ISO 12100-2:2005 Basic concepts and general principles for design

EN ISO 12100-2:2009 Construction and design Part 2: Technical principles

Authorized to assemble the technical file:  
Ole Madsen

Date: 08.03.2016

GEOVENT A/S • HOVEDGADEN 86 • DK-8831 LØGSTRUP

Position: Managing Director  
Name: Thomas Molsen

Signature: 



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