



Applications techniques

Description

The success of plant protection depends on several different factors. The most important of these are the plant protection product that you use, the dose and the application technique. This technique must especially ensure that the product penetrates to all the plants and is evenly dispersed. The Enbar LVM (Low Volume Mist) is space treatment equipment that offers optimum dispersion and penetration. Other advantages of the Enbar LVM include its robust design and excellent track record in greenhouse horticulture.

Operation

The main parts of the Enbar LVM are the compressor, the nozzle with filter, the ventilator fan and the control unit with timer. The compressor sends the air through the nozzle with a pressure of 6 bar. This creates a vacuum at the nozzle, which causes the mixture of water and plant protection product to be drawn up, via a filter. The high air pressure results in the production of minuscule droplets (average droplet size 14 microns) with good suspension properties.

The ventilator fans ensure effective dispersion in the greenhouse and good penetration to the plants. The stainless steel mixing paddle guarantees an optimum mixture in the reservoir, even when powders are used. You simply set the required misting time, and at the end of this the hoses, filter and nozzle are automatically flushed with clean water, after which the Enbar LVM switches itself off.

Advantages of working with the ENBAR LVM

- o optimum space treatment
- o easy to operate
- o labour-saving
- o no supervision required
- o lower consumption of plant protection products
- o no visible residue on the plants
- o low maintenance, thanks to automatic flushing system



Mobile Enbar LVM system

The mobile Enbar LVM is ideal when several spaces need to be treated, but not simultaneously. This model can easily be moved to the space that is to be treated, and requires only a 400 Volt 3-phase 50 Hz wall socket. Different voltages and 60 Hz can also be supplied. There are two models, with single or double LVM units (type U3). The low-speed compressor that supplies air to the nozzles is quiet and has a long lifespan. The timer in the control unit allows you to set the pre-ventilation time and misting time. The clean water flushing time is pre-programmed. Each LVM unit is fitted with a small reservoir containing water for flushing the liquid system.

Fixed Enbar LVM system

For larger areas or if you wish to treat several spaces simultaneously, the LVM units can be installed permanently in the greenhouse. In this case, the units will normally be suspended in such a way that the height is adjustable, so that after use they can be raised to a safe height. As an optional extra, we supply an adjustable frame in which the LVM units can be suspended. The units of a double LVM unit are fitted in a stainless steel frame, and this frame is then suspended. An adjustable set is supplied with all the necessary fittings, such as stainless steel cables, pulley, hand-winch, etc. Single LVM units are adjusted by means of four stainless steel cables and pulleys on the greenhouse post, using a hand-winch to raise and lower the LVM units. For a fixed Enbar LVM system, the units are connected centrally with a hose to a compressor for the compressed air and to the water supply for flushing.

The electrical control takes place from a central control unit with a PLC, for which there is a choice of two models. Enbar unit type U1 has control voltage of 24 V for the ventilation, misting and flushing. 230 V is only present as the supply voltage, and must be available close to the unit. In the case of type U1, each unit can be controlled separately. The second option is Enbar unit type U2, where all the units are switched on simultaneously with 230V. Here the air and water supply are also centrally controlled. In this case, switching on the water and air supply for ventilation, misting and flushing is thus controlled centrally for each space or group of units.

Different models of LVM units

For the fixed Enbar LVM system, unit U1 or U2 is used. The U1 LVM unit is fitted with a control unit underneath, containing the control relays for the air valves, ventilator fan and mixing paddles. This means that electricity, air pressure and water pressure are continuously present at the LVM unit. Each unit can be separately switched on and off via a central control unit. The LVM unit is fitted with a test button, making it easy to check for correct operation. The U2 LVM unit is a simpler model, without a control unit underneath. Electric valves are therefore fitted centrally in the air hose and water hose, and all the units are switched on and off simultaneously. The required 230 V / 50 Hz power supply for the LVM units is also centrally controlled by a relay. The U3 LVM unit is used for the mobile model. All the LVM units are fitted with a 5-litre reservoir with slow-speed mixing paddle for the misting liquid, or optionally a 10 litre reservoir can be supplied.



Mobile Enbar LVM flushing tank



Permanently installation



Control

The mobile Enbar U3 LVM is fitted with a control unit with PLC, which allows the pre-ventilation time to be easily set so that the air is sufficiently in motion before the misting begins and the staff also have time to leave the greenhouse. The misting time can also be set on the control unit, and this starts automatically at the end of the pre-ventilation time. The misting time that you set depends on the quantity of liquid to be misted. The misting is followed by flushing and post-ventilation, and the times for these are pre-programmed in the PLC.

With the fixed Enbar LVM U1 or U2 (see also “Different models of LVM units”), a control unit with PLC is centrally fitted. This control unit can be used to set the pre-ventilation and misting times. The misting is followed by flushing and post-ventilation, and the times for these are pre-programmed. For multiple spaces of different sizes, it is possible to set two different pre-ventilation and misting times. For more than two spaces, the control unit can be supplied with extra switches, so that the different spaces can be switched on and off.