

CHEVRON

FROM ~~MONITAIR~~

User Installation & Operation Guide

The Monitair Chevron airflow indicator has been designed to provide continuous monitoring, at regular intervals, of individual extraction points in a Local Exhaust Ventilation (LEV) system.

At a glance, personnel working in hazardous industries can be reassured that their extract system is working correctly and that their safety has not been compromised by malfunction or blockage. The Monitair Chevron is simple to fit, simple to set up and simple to use.

It allows operators to comply with the requirements of HSG258 and the COSHH (Control of Substances Hazardous to Health) regulations.

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**Designed and
manufactured in the UK.**





Installation & Setup

Principle of Operation

The Chevron is programmed to monitor the static pressure in the extract duct (if you are using the Chevron with a Spray Booth please see our guide on 'Setting up for a Spray Booth' available on our website). The sample tube from the unit is fitted to the duct, close to the point of extract, using an extended grommet or tapped hosetail. Firstly, the local exhaust system (LEV) is set up to ensure a safe working environment, using dampers, fan speed controllers and bypasses. This process is continued until every extract point in the system is working safely and within the guidelines for the material being extracted. The calibration mode is then selected on the Chevron airflow indicator, using a simple magnetic actuator. This 'normalises' the Chevron to the conditions now observed, and continuous periodic monitoring commences. The Chevron measures negative pressures in the range of **-50 to -6000 Pascals**. The duct pressure is sampled every 5 seconds, and the display updated accordingly.



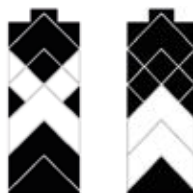
Reading the Display

Whilst the static pressure in the duct stays adequate for safe air removal, the Chevron shows this, continuously moving, display.

If the negative static pressure within the duct drops by more than 20%, the Chevron recognises this as an unsafe condition. This triggers a series of flashes of the LED below the display, after which the display changes to the graphic shown, flashing on and off approximately twice per second. Thereafter, the red LED below the display flashes approximately every 5 seconds.



The Chevron is powered by 2 'AA' size batteries, and is designed to run for a minimum of 14 months between battery changes. When the batteries need changing, the display will change to one of the forms shown below. The batteries can be easily changed after the removal of the rear cover using a cross-head screwdriver.



Installation & Setup



1. The Chevron should be fitted in a position clearly visible to the machine or process operator, so that he or she can easily see that the LEV is providing adequate protection. The unit can be mounted using the hand strapping and buckle supplied, selftapping screws or simple cable ties.

2. Once a suitable position has been found, a monitoring point should be determined. This should be close to the point of entry of air into the duct, on a parallel-sided part of the duct, between the entry point and any damper or blast gate. It is not advisable to position the sample point in flexible ducting, as the ducting may become damaged, which will compromise the efficiency of the LEV. Once a suitable point has been found in a solid part of the extract path, the duct should be drilled 7mm at this point. The supplied extended grommet will be fitted to the end of the Chevron's tube.

Alternatively, where appropriate, the duct can be drilled and tapped M5 (or a nut used), and a hosetail fitting used to connect the Chevron's tube to the duct.

3. Cut the attached tubing to the correct length to connect to the duct (hose-tail or grommet), push the extended grommet onto the tube, (if using) and push into the drilled monitoring hole. Avoid unnecessary loops of tube and excessive tension (which can pull the tubing from the Chevron or the monitoring point). Secure the tube if necessary with cable ties or similar securing method.

4. Once the Chevron has been installed, it needs to be set up to monitor for optimum extract performance. This can only be done once the LEV system has been correctly set up and balanced to achieve adequate flow into every branch of the system. This balancing, damping and fan-speed variation (where possible) must maintain, at least, the minimum recommended airflow velocity for the heaviest particles to be removed for the entire route of that particle's journey, as well as adequate velocities for all other particles for their separate journeys.



Calibration

Once the above has been achieved and documented, The Chevron can be set up as follows: Hold a magnet approximately 10mm to the right of the LED, until the LED illuminates continuously. When this happens, move the magnet away from the Chevron and wait until the LED starts to flash. Once more, hold the magnet in the above position until the LED illuminates continuously. Now take the magnet away again. Our website has a useful videos showing how this is done. Remember- when the LED lights continuously, take the magnet away, when it flashes, put the magnet in place.

This concludes the Chevron set up. The negative pressure in the duct at this time is stored in memory, and used as the 100% point, against which all further sampling is compared.

See our website for a video demonstration.