

NOZ₂

Multi-Directional Heating
& Cooling Solutions



Biddle



MADE FOR LARGE SPACES

The NOZ₂ range is specifically designed for large buildings with high ceilings such as factories, retail outlets, sports centres and exhibition halls. Their innovative multi-directional design induces movement in the air around the unit ensuring warm or cool air is distributed evenly throughout the room. As a result, they are not only more effective than conventional products they are also more efficient, delivering energy savings of up to 15% compared to traditional products.

DESIGNED TO WORK HARDER

The main difference between our products and other air handling units is the number of air outlets. Whereas most of the products on the market have one nozzle, our products have six, hence the name 'NOZ.' As each nozzle can be pointed in a different direction, NOZ₂ units have a greater area of influence than conventional air handling units, so fewer units are needed to heat or cool large spaces. The nozzles can be individually positioned to direct warm air away from workstations to avoid drafts, or where appropriate, to channel cool air into workspaces to maximise comfort.

BENEFITS

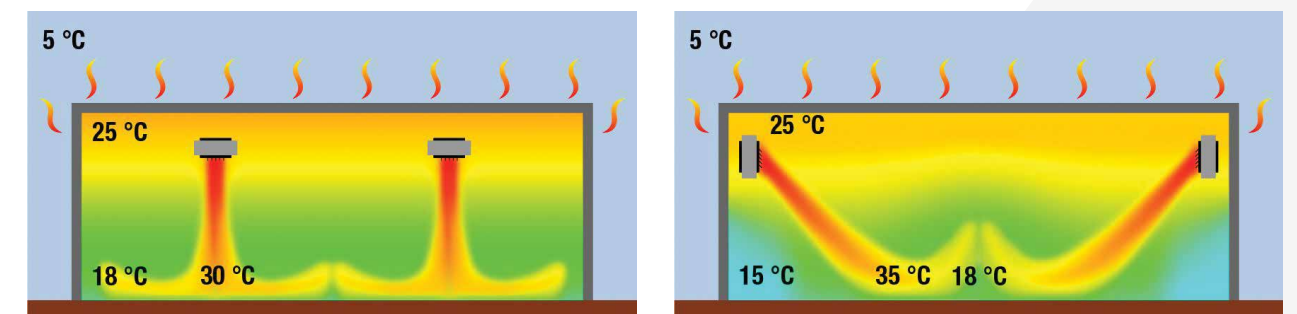
- ❶ Energy consumption reduced by 15% with NOZ₂ heaters
- ❷ High air displacement due to the 'induction effect'
- ❸ Adjustable discharge pattern
- ❹ Optimal air distribution: fewer devices required to heat or cool large areas
- ❺ Reduced installation costs due to fewer units required
- ❻ Efficient re-use of energy
- ❼ Minimal heat loss
- ❽ Optional automatic control (not available for NOZ₂ Gas)
- ❾ High-performance stepless EC-fans
- ❿ Easy to operate & maintain
- ⓫ Models available for water heating, water cooling, gas heating, ambient and ventilation applications
- ⓬ Heating and cooling functionality from one unit

OPTIMUM AIR DISTRIBUTION BY INDUCTION

Biddle's innovative NOZ₂ technology minimises temperature differences in the room and heat loss to the outside environment. Warm or cool air is forced downwards at speed, from ceiling height to floor level through six multi-directional nozzles. The high velocity of the air leaving the unit induces movement in the surrounding air ensuring warm or cool air is distributed throughout the room. This is known as the inductive effect. Optimising air distribution using the inductive effect provides a greater area of influence, so fewer units are required to heat or cool large spaces. With an induction air flow rate of 10 times the primary air displacement, the NOZ₂ temperature gradient is only 0.25 °C per metre. This makes it far more efficient than conventional air movement products, delivering significant energy savings.

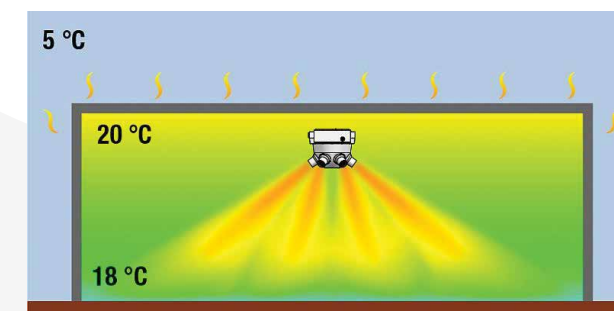
CONVENTIONAL AIR HANDLING UNITS

Large temperature differences and high heat loss.



BIDDLE NOZ₂

Optimal air distribution and minimal heat loss.



A greater area of influence means fewer units are required to heat or cool large spaces.

A SOLUTION FOR ALL APPLICATIONS

NOZ₂ WATER HEATED & AMBIENT

Warm air naturally rises, NOZ₂ heaters capture it at ceiling height and optimise its distribution at floor level using the inductive effect. When used with Biddle's intelligent automatic controls, the fan speed and heat output are automatically adjusted to ensure a consistent, comfortable climate is maintained at floor level without any user intervention.

Energy efficiency

The NOZ₂ is supplied with energy efficient EC fans as standard, which enable stepless control and deliver significant cost savings over traditional AC fans.

Applications

For mounting heights between 2.8 - 14m
Recirculation and/or ventilation
Suspended ceiling model

Models

NOZ₂ 25 (230V)
NOZ₂ 50 (400V)

Heat source

Water
Ambient

Controls

Automatic control with b-touch control panel and CHIPS technology
Basic control with b-control (0 - 10V)
BMS: Modbus communication

NOZ₂ GAS

NOZ₂ Gas heaters circulate warm air in the same way as NOZ₂ water heated and ambient units, using the induction effect to optimise distribution throughout the room. Gas air heater units have an integrated closed system gas burner. This gas burner draws in air from outside and exhausts combustion gases externally. Heat output is automatically regulated by an intelligent MultiTherm C Thermostat.

Applications

For mounting heights between 2.8 - 8.5m
Recirculation and/or ventilation
Suspended ceiling model

Models

NOZ₂ 25 (230V)

Heat source

Gas

Controls

MultiTherm C with integrated timer

NOZ₂ COOLING

The latest addition to the NOZ₂ range, NOZ₂ Cooling provides both heating and cooling from a single unit. NOZ₂ Cooling works in combination with a cold and warm water source. Warm air is drawn into the NOZ₂, cooled, then released and distributed evenly throughout the room using the induction effect. Condensation from the cooling process is collected by a built-in demister, and can be drained away using a gravity drain or a mechanical pump, therefore there is no restriction on where the cooling unit can be sited.

Applications

For mounting heights between 2.8 - 14m
Recirculation and/or ventilation
Suspended ceiling model

Models

NOZ₂ 25 (230V)
NOZ₂ 50 (400V)

Cooling source

Water

Controls

Automatic control with b-touch control panel and CHIPS technology
Basic control with b-control (0 - 10V)
BMS: Modbus communication



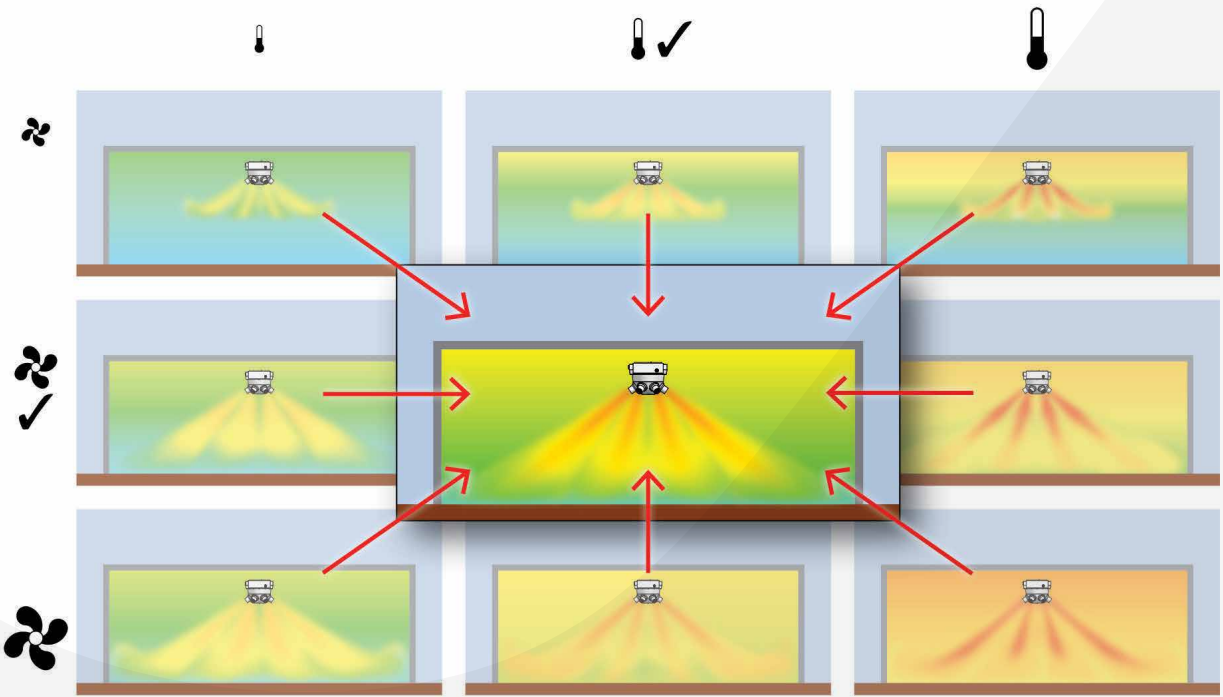
KEEPING YOU IN CONTROL

NOZ₂ AUTOMATIC CONTROL

The NOZ₂ Automatic Control automatically adjusts the heat output and fan speed to ensure a consistent, comfortable temperature is maintained without the user having to make any changes or adjustments.

INTELLIGENT CHIPS TECHNOLOGY

Biddle's industry-leading CHIPS technology constantly searches for the best possible mix of air volume and heat. With conventional air heaters only the fan speed is automatically controlled so air volume and heat are interlinked. With CHIPS technology air movement and heat output are controlled independently to deliver optimum performance.



Automatically adjusting heat output and fan speed means there is always sufficient heat to warm the inducted air and there is always sufficient air speed to ensure it reaches the floor.

OPTIMAL AND DIRECTED AIR DISTRIBUTION

To achieve optimum air distribution throughout the room, and ensure warm air always reaches the floor level, the nozzles need to be set at the correct angle. This is determined by the floor area to be heated or cooled and the height of the room. The angle of each nozzle is set manually when the units are installed. The height and angle are programmed into the b-touch control panel (1). The air speed is continuously adjusted based on the temperature difference between the discharged air (3) and the measured room temperature (2) at floor level (1.5m).

COMFORTABLE INDOOR CLIMATE

Temperature is regulated based on the room climate set on the b-touch control panel (1). The NOZ₂ Automatic Control ensures the desired temperature at floor level is maintained using data from the room temperature sensor (2). Heat from the highest level of the room is used first, before any additional heat is added. The air volume is automatically adjusted accordingly.



- 1 b-touch control panel
- 2 room temperature sensor
- 3 discharge temperature sensor

NOZ₂ B-TOUCH



The user-friendly b-touch control panel can be used to switch the unit on and off, adjust the room temperature and change situation specific settings. NOZ₂ units feature built-in intelligence, which means they can also function without the b-touch control. When this is the case, the control panel is only required for servicing purposes.

KEY FEATURES:

- Manual and auto mode
- Programmable timer
- Touchscreen control
- Status display
- Multi-language navigation menu (11 languages)
- Configuration wizard for site settings
- Screen security with personal PIN code
- Personalised branding

ANALYSIS TOOL

The b-touch's built-in USB port allows users to import and export settings, carry out software updates and export unit specific data for performance monitoring.

MODBUS

The automatically regulated NOZ₂ can communicate using the Modbus protocol for remote control with a BMS system. The Modbus and the b-touch can also be used in parallel, allowing local control and remote control to take place at the same time.

CONTROL OF MULTIPLE UNITS

A single b-touch can be used to control up to 50 x NOZ₂ units for space heating or cooling applications. When ventilation is provided, up to 10 units can be controlled by a single b-touch.

NOZ₂ B-CONTROL

STEPLESS CONTROL

The b-control is a continuously variable, manual 0 – 10V potentiometer. The fan speed can be adjusted to compensate for any change in temperature with a simple turn of the dial.

AUTOMATIC ON AND OFF

Our optional room thermostat automatically turns on the NOZ₂ unit when additional heating or cooling is required, and switches it off once the set room temperature has been achieved.

ENERGY EFFICIENCY

The NOZ₂ is supplied with energy efficient EC fans as standard, which enable stepless control and deliver significant cost savings over traditional AC fans.

CONTROL OF MULTIPLE UNITS

A single b-control can be used to control up to 5 NOZ₂ units.

NOZ₂ MULTITHERM C

STEPLESS CONTROL

The NOZ₂ MultiTherm C thermostat delivers intelligent temperature regulation and automatic climate control with no need for any user intervention. The temperature difference between ceiling height and floor level is constantly monitored by two sensors; one on the unit and one in the MultiTherm C thermostat.

The gas burner within the NOZ₂ unit starts automatically when the fan is turning and heat is required. Once the required temperature is reached, it automatically switches the burner off. This minimises the amount of time the gas burner is required, as there is never any significant drop in room temperature, reducing energy consumption and operating costs.

CONTROL OF MULTIPLE UNITS

A single MultiTherm C control panel can be used to regulate a maximum of 8 units.

**NO₂ HEATERS ARE
HIGHLY EFFICIENT
AND CAN REDUCE
ENERGY CONSUMPTION
BY UP TO 15%**



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