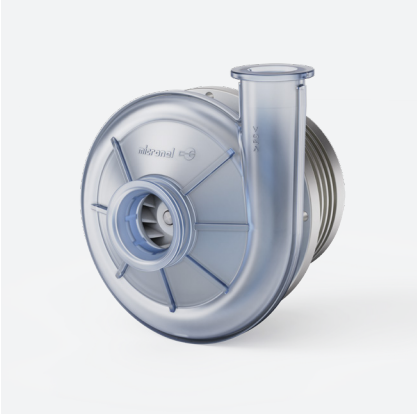
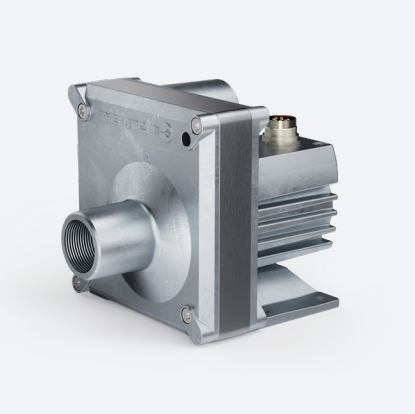
Operating Manual

Micronel Fans & Blowers





D240	D300	D340	D480	D460	D590	D600
D760	D800	F62	U50	U51	U64	U65
U71	U80	U81	U85	U97	U100	U150

Product Overview

Standard Product Ranges

Micronel Tube Fan D241
Micronel Tube Fan D243
Micronel Tube Fan D244

Micronel Tube Fan D301
Micronel Tube Fan D303
Micronel Tube Fan D304

Micronel Tube Fan D341
Micronel Tube Fan D343
Micronel Tube Fan D344

Micronel Tube Fan D461

Micronel Tube Fan D481
Micronel Tube Fan D483
Micronel Tube Fan D484
Micronel Tube Fan D485

Micronel Tube Fan D591

Micronel Tube Fan D601
Micronel Tube Fan D603
Micronel Tube Fan D604
Micronel Tube Fan D605
Micronel Tube Fan D606

Micronel Tube Fan D761

Micronel Tube Fan D801
Micronel Tube Fan D803
Micronel Tube Fan D804

Micronel Flat Fan F62

Standard Product Ranges

Micronel Radial Blower U50
Micronel Radial Blower U51

Micronel Radial Blower U64
Micronel Radial Blower U65

Micronel Radial Blower U71

Micronel Radial Blower U80
Micronel Radial Blower U81
Micronel Radial Blower U85

Micronel Radial Blower U97

Micronel Radial Blower U100

Micronel Radial Blower U150

Product Identification

Standard Products

For standard products the last character of the product no. is provided with a number.

Example **U85MX-024KX-4**

Customized Products

For customized products the last character of the product no. is provided with a letter instead of a number.

Example **U85MX-024KX-H**

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1. General Information

1.1 Information About This Manual

This Manual contains important information for safe and proper use of the product. The Manual is an integral part of the product's documentation and must be kept accessible to users at the site of operation at all times.
Before operating products, users must have read and understood this Manual. A prerequisite for safe working is the observance of all safety instructions in this Manual. The information given here does not exempt the user from undertaking his or her own assessments and tests. It should be noted that the products are subject to a natural process of wear and aging. All rights of disposal such as copying and distribution rights are reserved for Micronel. The original edition of this Operating Manual is issued in German.

Please check **www.micronel.com - Downloads** whether the Operating Manual is available in a product specific version, in a revised version or in your language.

1.2 Depiction of the Warning Information

WARNING	CAUTION	NOTE	ENVIRONMENTAL PROTECTION
Failure to do so may result in serious injury or death.	Failure to do so may result in minor or moderate injury.	Information to prevent property damage.	Information on environmental protection.

2. Basic Safety Instructions

Danger Due to Improper Handling of the Product
This Operating Manual describes the safe use of the products. Read the Operating Manual carefully prior to commissioning! Keep the Operating Manual with the product. It must be available at the site of operation at all times.

Risk of Injury
- Cover long hair with a hair net or cap
- Wear tight-fitting clothing
- Do not wear scarves, long necklaces or bracelets

- The product is built according to the latest technology and is safe to operate. However, hazards may arise from this machine if it is installed, operated or maintained by persons who have not been instructed about the hazards involved.
- The product may only be installed and commissioned by authorized personnel. The installation or maintenance personnel must have received special instruction as defined in this Operating Manual regarding any hazards that may occur.
- In principle, all work on the product must only be carried out when it is at a standstill and in a de-energized state. Only remove the protective devices when the product is at a standstill. Before starting up, check that the protective devices (protective grids if included in the scope of delivery) are in place.
- Unauthorized conversions and modifications to the product are not permitted.
- The suction or discharge opening of the product must be secured against the falling in and sucking in of foreign objects.

2.1 Proper use

The operator must ensure that the product is only used for its intended purpose and only operated in perfect working order, and that the safety devices in particular are regularly checked for proper functioning.
- The product is used to extract, convey and compress the following gases: Air, other gases that are not explosive, flammable, chemically reactive or corrosive.
- O_2 applications are prohibited unless otherwise specified.

2.2 Improper use

In particular, the following are contrary to the intended purpose and dangerous:
- Operation in an ignitable or dusty, combustible dust or gas atmosphere.
- Dust layer on the surface of the product and/or the motor.
- Unauthorized conversions or modifications to the product.
- Conveying of aggressive media, such as acids, alkalis, solvents, aggressive or abrasive gases.
- Conveying of liquids, solids or contaminated gases.

2.3 Operation Outside of Specified Ranges

- In case of non-compliance, the warranty obligation of the manufacturer expires.

3. Delivery, Transport and Storage

3.1 Delivery

Each device leaves our factory in perfect electrical and mechanical condition. The contents of the package are listed on the delivery bill, the completeness of which must be checked upon receipt. Inspect the products for obvious defects that could impair safe operation. Pay particular attention to damage to the fan wheel or cracks in the housing.

3.2 Transport

Risk of Injury
Do not operate the device if there is visible transport damage. Contact manufacturer.

Transport the product with care. The fan wheels in particular must be handled very carefully and must not be pressed on or in with the fingers. Avoid knocks and blows to the product.

3.3 Storage

Reduced service life due to long storage time.
If the storage period is more than one year, this may reduce the service life of the product.

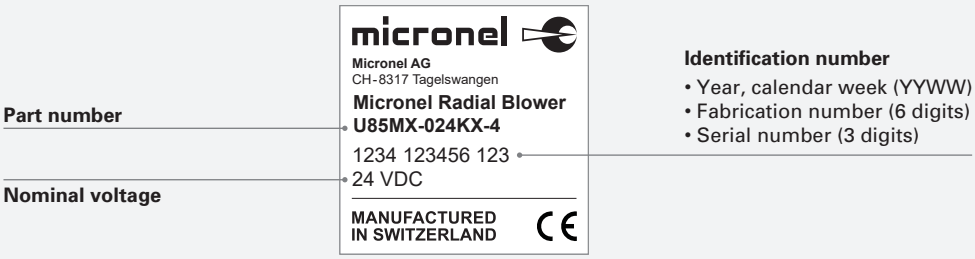
Measures after decommissioning or prior to storage	Store the products in the original packaging, at temperatures as constant as possible, while keeping them: • Dust-tight • Dry and protected from weather • Vibration-free
Measure prior to recommissioning after storage	Check the proper function of the product prior to installation.

4. Description

Micronel products are used to convey gaseous media. They are designed for cooling, ventilation and exhaust of devices and components, and for air transport.

4.1 Label

Using the example below, the label can be identified as follows:



4.2 Technical Data

The technical data can be found in the respective product specification.
Example **Specification_U85MX-024KX-4.pdf**

5. Assembly

Risk of Injury
The product must be opened in a fixed state.
Check the fixation regularly.

Risk of Injury
Secure the product and vulnerable connection parts against unintentional loosening (e.g. due to vibrations); if necessary, fit appropriate safety elements.

5.1 Safety Instructions

Adhere to the following sequence to eliminate the risk of injury from rotating parts:

- Assemble
- Connect electrically

Assembly may only be carried out by trained specialist personnel who observe the applicable regulations.
Only assemble and use the product if:

- The product is undamaged.
- The fan wheel runs freely when turned by hand.

5.2 Fastening

When planning for the device, make sure that there is sufficient space around the product to facilitate assembly work.

5.3 Assembly

If present, remove transport covers and fuses.

When assembling the product, make sure that a specially designed holding device ensures proper fastening (without distortion of the fan housing).

It is important that the product is carefully screwed to the appropriate holding device, and care must be taken that any piping or adjacent components to be connected are assembled in such a way that forces are not applied to the fan housing.

Before connecting any piping or other components, check that there are no foreign bodies in the fan housing.

5.4 Electrical Installation

Compliance With Electrical Installation Regulations
Install the connecting cable according to the use requirements and the respective local regulations.

The product must be connected by qualified personnel who are familiar with the applicable safety regulations. The performance data on the label (according to 4.1) must be observed.

6. Commissioning

6.1 Checks Prior to Commissioning

The following checks must be carried out prior to commissioning:

- Assembly and electrical installation are professionally completed
- Product is connected correctly according to specification
- Assembly residues and foreign bodies are removed from the fan compartment
- Carefully turn the fan wheel by hand and listen for unusual noises
  (Grinding noises can occur at the fan wheel circumference, at the seals or in the bearings)
- Check protective devices
- Inspect cable/connector for damage
- Check tightness of accessible screws

6.2 Initial Commissioning

Danger From Ejecting Parts
- Ensure that no foreign objects can get into the fan.
- Do not look directly into the outlet opening.
- Wear safety glasses.

Risk of Injury
Do not touch the fan wheel during operation.

- Commissioning to be carried out only by trained and instructed users.
- The first switching on of the product has to be done only for a short time in order to check the direction of rotation.
- Compare direction of rotation with arrow on housing/fan wheel or according to specification.
- If the direction of rotation is incorrect, check the electrical connection and connect it correctly accordingly.

Checks after commissioning
- Monitor power consumption of the product.
- Monitor vibrations and noise development.

7. Operation

Danger From Ejecting Parts
- Ensure that no foreign objects can get into the fan.
- Do not look directly into the outlet opening.
- Wear safety glasses.

Risk of Injury
Do not touch the fan wheel during operation.

Risk of Burns
Burns from touching hot surfaces.
Increased surface temperatures are to be expected.

Risk of Injury
Magnetic and electromagnetic fields originate from the product.
Keep product away from objects that are sensitive to magnetic fields.

Risk of Injury
During operation vibrations may occur from the product.
Do not touch the product during operation.

Risk of Injury
Noise emissions from the product may be harmful to hearing.
Wear hearing protection.

Risk of Injury
Do not point the inlet or outlet directly at people or animals.

Risk of Injury
Unless explicitly specified, our blowers are not completely gas-tight. There is a risk of burns and injury when operating with flammable, toxic or otherwise environmentally harmful gases.

- Sucking in of foreign particles can damage the product.
- Monitor the product during operation for its correct function.

7.1 Speed Control

During operation, the speed of the fan can be changed, so it is possible to adapt the operating point of the fan to a changing operating point of the system. Further details on speed control in the respective specifications.

7.2 Secure Start-up Behavior

When using fan and blower types with integrated driver electronics, the startup behavior may be impaired under certain operating conditions as a result of the sensorless driver technology. For safe start-up under all operating conditions, we recommend the use of fan and blower types with a Hall sensor drive system or the use of an external monitoring function.

8. Decommissioning

Risk of Injury
Before starting work on the product
- De-energize
- Secure against restarting
- Determine the absence of voltage

Risk of Injury
Product may only be opened by qualified personnel.
Only open the product when it is de-energized.

Measures after decommissioning or prior to storage	Ensure correct storage conditions (according to specification).
Measure prior to recommissioning after storage	Inspect product for damage due to storage. Make sure that the insulation of the stranded wires is not porous or damaged.

9. Maintenance

The fan is largely maintenance-free due to the use of ball bearings with permanent lubrication.

During normal operation, monitoring is limited to:
- Checking the ball bearings (noises).
- Checking contamination of the fan wheel in order to detect imbalance of the fan wheel on a timely basis and to prevent imbalance.

10. Cleaning

In case of dirt or dust deposits:
- Clean surfaces of the entire product, use a damp cloth for this purpose.
  In case of stubborn dirt, a cleaning agent compatible with the materials should be used.
- Cleaning with solvents or the like is prohibited.
- The fan wheel must be cleaned with due care, i.e. with minimal effort.

11. Inspection

Point in time	Checks	Means of checking
Annually, at standstill	General condition	Visual inspection
Annually, during operation	Noise/bearing condition	Acoustic inspection
	Vibrations	Visual inspection

12. Malfunctions

Malfunctions	Causes	Remedy
Fan wheel does not rotate	Mechanical blocking	Disconnect the power supply, remove blockage
	Connection failure	Check connections according to pin assignment
Fan power too low	Speed too low	Check voltage
	Suction or pressure paths are blocked	Remove obstructions
Power consumption too high	Incorrect supply voltage	Check supply voltage
Unusual sounds	Bearing damage	Replace product
	Fan wheel is touching or has imbalance	Clean product If imbalance persists, replace product
	Foreign objects in the product	Remove foreign objects
Oscillations / vibrations	Fastening screws loose	Retighten screws
	Turbulence in the system	Check air flow in the system

13. Disposal

Micronel products are small electrical appliances according to WEEE 2012/19/EU. They must be disposed of in accordance with the customary national regulations.

The products are delivered in cardboard or plastic packaging. Keep the packaging for repackaging the product or dispose of it according to local regulations.

All data are subject to change without advanced notice.
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