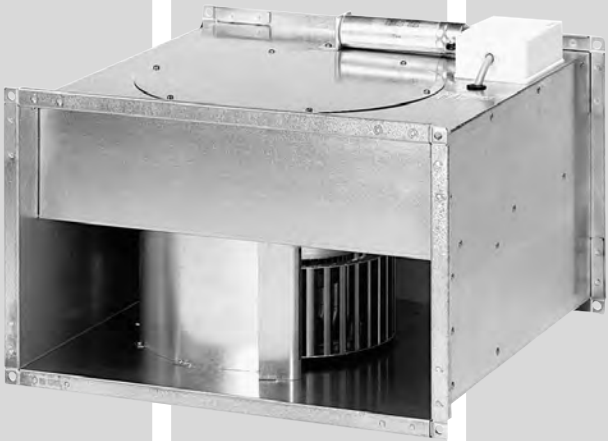
Kanal-Radialventilatoren
Duct-mounted radial fans
Ventilateurs centrifuges pour gaines rectangulaires

MAICO VENTILATOREN

www.maico.de

EPK ...
DPK ...

Montage- & Betriebsanleitung
Mounting & operating instructions
Instructions de montage & mode d'emploi



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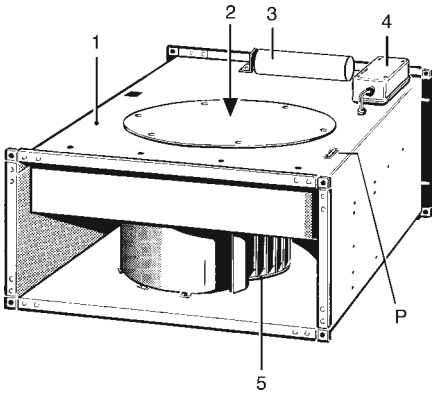
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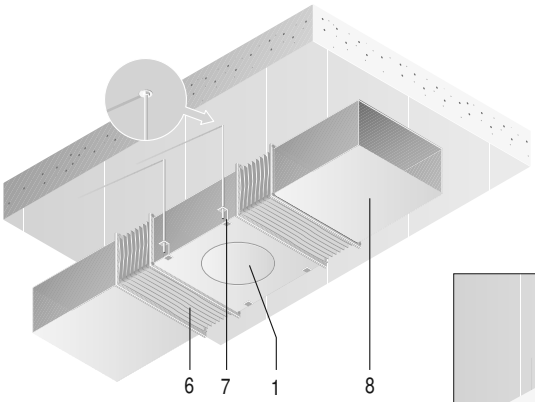
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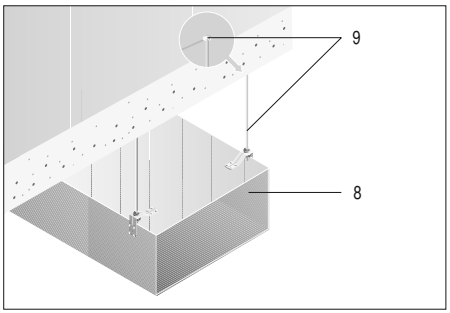
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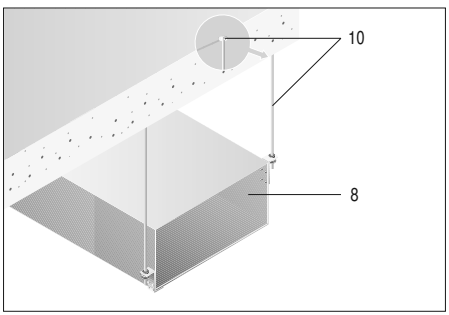
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Duct-mounted radial fans EPK .. / DPK ..

Top figure – Overview

1 EPK.. / DPK.. duct fan
2 Motor
3 Capacitor
4 Terminal box
5 Impeller
P Airstream and rotational direction arrow

Centre /Lower figures – Installation examples
(all components have to be supplied by customer)

6 ELP .. flexible coupling
7 Mounting component
8 Ventilation channel
9 Mounting components for assembly to ceiling
10 Mounting components for lateral mounting

Intended use

Depending on installation, EPK .. and DPK .. fans are used for air extractionn or ventilation of commercial premises, working areas, show rooms, fitness rooms, restaurants, canteens, workshops etc.

They are also used in air extraction systems for machine and workplace extraction or manufacturing areas.

- EPK .. : Single-phase AC motor model
- DPK .. : Three-pase AC motor model

It is permitted to transport air or air-based mixtures. It is not permitted to transport gasses, mist or vapours or mixtures thereof, or liquids and solids. Operation is also not permitted in areas subject to explosion hazards or in the area of inflammable materials.

The fan may only be used when correctly installed in rectangular ventilation channels, if safety is guaranteed through safety equipment in accordance with DIN EN 294 or other structural safety measures.

The fan is designed in accordance with VDE safety requirements within the framework of the equipment and product safety act as well as the pertinent regulations laid down in the EC directives.

Modifications and changes to the device are not permitted. MAICO accepts no liability for any damage caused by non-authorised use.

Basic safety instructions

Read the instuctions carefully and completely before you install the fan or commission it. Keep the instructions somewhere safe.

- Installation should only be carried out by specialists with knowledge and experience of ventilation technology.
- Only qualified electricians are permitted to make the electrical connections and / or repairs.
- During assembly and electrical installation, please take note of the valid regulations, in particular DIN VDE 0100 and the corresponding parts.
- The fan motor is thermally protected by a temperature sensor in the winding.
- Before removing the safety devices, the fan must be completely removed from the power supply – switch off mains fuse !
- If the fans are being used with air-ventilated fireplaces, you must ensure that there is sufficient flow of supply air. The maximum permitted pressure differences is 4 Pa.

Warning symbols used in this manual

WARNING Danger of injury! There is a middle risk danger. If ignored, this may lead to death or severe personal injury.

CAUTION Danger of injury / Material damage! There is low risk of danger. If ignored, this may lead to minor or more serious personal injury or material damage.

INFO symbol:
Useful information and tips.

Functioning

The fan is switched on and off centrally using a switch or a button (see also the wiring diagrams on pages 15 and 16). Depending on how the fan is installed, air is either extracted from or fed into the rooms.

i The fan is not designed for switching the direction of the air flow.

Transport and storage advice

- Transport should only be handled by authorised specialists.
- Maico will not consider any replacements or guarantee claims in the event of incorrect transport methods.
- The Technical data in respect of weight and dimensions must be taken into account during transport. Please refer to the rating plate or the currently valid Maico catalogue.
- You should never stand underneath a raised load.
- Only lift fans using supporting parts. No load should be placed on sensitive components, such as terminal boxes.
- Lift the fan evenly and without any sudden movements.
- Storage:
  The fan should only be stored horizontally in a suitable, dry room, with an ambient temperature from –10 °C to +40 °C. Maico assumes no liability for corrosion damage caused by incorrect storage, for example, if the unit is stored in a humid area. Long periods of storage should be avoided. Check the correct functioning of the motor bearings before installation.

Operation conditions

- **Installation location, installation position**
  The fan is used in rectangular duct systems with duct dimensions from 500 x 250 mm to 700 x 400 mm, depending on the model. It can be mounted in a vertical or horizontal installation position in dry rooms. The complete unit may only be installed in walls, ceilings, brackets etc. with sufficient load-bearing capacity.
- **Temperatures**
  Please refer to the valid Maico catalogue for the maximum permitted airstream temperature.
- **Protective grille**
  The fan and channel system should be secured against the danger of foreign bodies falling in or being sucked in, in line with the safety requirements of equipment and product safety act. In the case of free inlet or outlet, you should install a protective grille, in line with DIN EN 294 (DIN 31001).
- **Rated voltage and frequency**
  The fan should only be operated using the rated voltage and frequency indicated on the rating plate.
- **Rotating speed**
  Please refer to the current Maico catalogue for speed control accessories.
- **Fixed electrical cabling**
  The fan may only be connected to a permanent electrical installation. This must be fitted with a mains isolation device that has contact openings of at least 3 mm at each pole.
- **Thermal protection**
  The fan motor is thermally protected by a temperature sensor (thermal contact or PTC thermistor) in the winding.

  It must be connected to an external control unit with automatic switch-off, such as a motor protection switch for example or to a self-latching contactor circuit. The control unit should not be able to switch itself back on after being triggered.

  In the case of overheating, the control unit completely disconnects the fan from the power. In this case, leave the fan switched off until the motor and the temperature limiter have cooled down.

  Control units:

  1. For motors with thermal contact (TK):
  EPK .. : Maico motor protection swith MVE 10
  DPK .. : Maico motor protection switch MV 25

  2. For motors with PTC thermistor (K):
  EPK .. und DPK .. :
  Motor protection switch must be supplied by the customer.
- Please check out the **Pressure / volumetric flow tables** on http://www.maico.de. The pressure differential may not fall below the statistical minimum value as otherwise the motor warms up above the permitted level.

Installation

Mounting instructions

- The duct fan is to be suspended on the wall or the ceiling using, for example, threaded rods, fixing brackets, etc. These must be supplied by the customer and must have load-bearing capacities corresponding to the wall/ceiling/bracket and the fan weight.
- Airstream and rotational directions are indicated by arrows marked on the fan housing.
- Use ELP .. flexible couplings to prevent transfer of vibrations onto the channel system.
- When installing the fan, make sure that no loads are placed on sensitive components, such as the impeller or terminal box.

WARNING **against using incorrect fixing materials. Components can come loose or move.**

Danger of injury !

➢ Always use suitable fixing materials !

WARNING **against incorrectly executed installation work.**

Danger of injury !

➢ Commissioning and installation work should only be carried out by authorised specialists.

Procedure

1. **Prepare the duct system.** Only use ducting that is suitable for the fan. Please refer to the currently valid Maico catalogue for dimensions. If necessary, separate the installed duct elements at the installation site.
2. **Mount the fan** on the wall, ceiling or bracket with suspension elements supplied by the customer. Take note of the position of the terminal boxes as these must be freely accesible after the fan is installed.
3. **Screw ELP .. flexible couplings** onto the inlet and outled side flanges of the fan. Please refer to the installation example figures on page 2.
4. **Screw duct elements together** with the ELP .. flexible couplings.

Electrical connection

- **The electrical connection work should only be carried out by a professional electrician, according to the wiring diagram (see pages 15 and 16).**
- Before working with terminal boxes, always switch off the main fuse at the fuse box and post warning signs advising not to re-apply power. This is particularly valid where the on/off switch is some way away from the fan.
- The connecting cable between the power source and the terminal box must be a permanently laid cable. The cables must be fed into the terminal box so that the cable grommet fits tightly round the non-metallic sheathed cable. If the power cable is not installed correctly, the degree of protection indicated on the rating plate cannot be guaranteed and no claims can be made under the terms of the warranty .
- **The fan motor is thermally protected. It must be connected to an external control unit with automatic switch-off,** such as a Maico MVE 10 motor protection switch for example or to a self-latching contactor circuit. **The control unit should not be able to switch itself back on after being triggered.**

Procedure

1. Wire up the fan according to the wiring diagram.
2. Connections should be made from both „TK“ motor connector blocks to the control unit.

Thermal contact technical data (not for PTC termistor)

Nominal voltage at 50 Hz/60Hz	250 VAC
Nominal current (ohmic) cosφ=1,0	max. 2,5 A
Nominal current (inductive) cosφ=0,6	max. 1,6 A

Commissioning, Function test

WARNING **against commissioning without a subsequent system check.**

Danger of injury !

Before starting up:

➢ Check that all screwed connections are tight.

➢ Check the air channel for dirt. If necessary, clean the air channel.

➢ Check compliance with the Technical data.

Procedure

1. Switch fan on.

2. Ensure that ther is a free flow of air.

3. Make sure the impeller is running quietly and the air flow direction is correct.

4. Switch fan off.

Faults, rectification

- **Main fuse:** Always check whether the mains fuse is switched on in the case of a fault.
- **The thermal overload protection has been triggered, the fan switches off.**
  Leave the device switched off long enough for the motor and temperature limiter to cool down. Depending on the size and the temperatures involved, the cool-down time could be up to 30 minutes. Only switch it back on again then. If the fault is still present or if it occurs again, remove the power completely and call on the services of a trained electrician to identify and eliminate the cause of the problem.

Maintenance

The device is maintenance-free.

Spare parts

Advice about ordeirng spare parts:
Always quote the print number of these instructions (0185.0935.0002), and the name of the corresponding spare part.

The following spare parts are available. Please refer also to the figures on page 2:
Motor, impeller and capacitor.

Disposal

The fan contains some recyclable materials and some substances that should not be disposed of in the rubbish. After its lifetime has elapsed, dispose of the device according to the valid regulations.

Technical Data

See the rating plate or the currently valid catalogue.

Ventilateurs centrifuges pour gaines rectangulaires EPK .. / DPK ..

Figure du haut – Vue d'ensemble

1 Ventilateur à gaine rectangulaire EPK .. / DPK ..
2 Moteur
3 Condensateur
4 Bornier
5 Rotor
P Flèche indiquant les sens de refoulement et de rotation

Figures du centre/bas – Exemples de montage
(tous les composants sont à fournir par le client)

6 Manchette de raccordement flexible ELP ..
7 Elément de fixation
8 Gaine de ventilation
9 Éléments de fixation dans le cas d'une fixation en hauteur
10 Éléments de fixation dans le cas d'une fixation latérale

Utilisation conforme

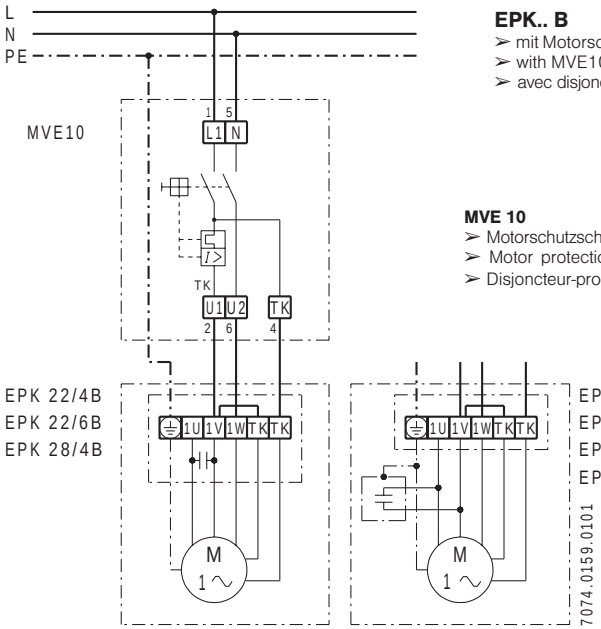
Les ventilateurs EPK .. et DPK .. servent en fonction de leur position de d'installation à l'extraction d'air ou à la ventilation de locaux commerciaux, professionnels, salles d'exposition, salles de sports, brasseries, cantines, ateliers, etc.

On les utilise également dans des installations d'aspiration de machines et de postes de travail ou dans des sites de production.

- EPK .. : Modèle à moteur monophasé
- DPK .. : Modèle à moteur triphasé

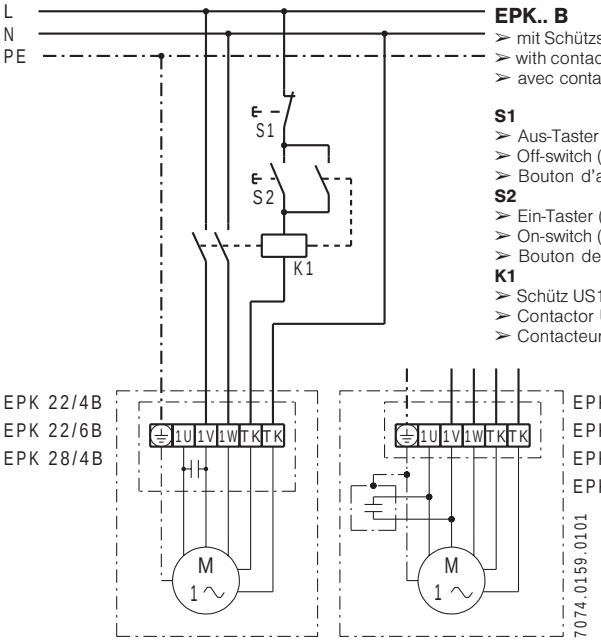
Le transport d'air ou de mélanges similaires est aurtorisé. Le transport de gaz, brouillards, vapeurs, leurs mélanges ainsi que de liquides et matières solides n'est pas autorisé. Le fonctionnement est également interdit dans des atmoshères explosives ou à proximité de matériaux inflammables.

Le ventilateur doit impérativement fonctionner en cas de montage conforme à l'utilisation prévue dans des gaines de ventilation rectangulaires, à condition que la sécurité soit garantie par des dispositifs de protection condormément à DIN EN 294 ou par autres me sures de protection constructives.



EPK.. B
- ➢ mit Motorschutzschalter MVE10
- ➢ with MVE10 motor protection switch
- ➢ avec disjoncteur-protecteur de moteur MVE10

MVE 10
- ➢ Motorschutzschalter (bauseits)
- ➢ Motor protection switch (provided by customer)
- ➢ Disjoncteur-protecteur de moteur (sur le site)



EPK.. B
- ➢ mit Schützschaltung (selbsthaltend)
- ➢ with contactor-circuit (self-latching)
- ➢ avec contacteur-disjoncteur (à auto-entretien)

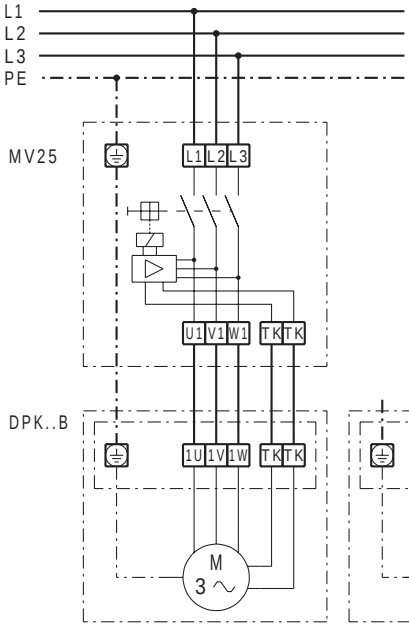
S1
- ➢ Aus-Taster (bauseits)
- ➢ Off-switch (provided by customer)
- ➢ Bouton d'arrêt (sur le site)

S2
- ➢ Ein-Taster (bauseits)
- ➢ On-switch (provided by customer)
- ➢ Bouton de marche (sur le site)

K1
- ➢ Schütz US16 (bauseits)
- ➢ Contactor US16 (provided by customer)
- ➢ Contacteur-disjoncteur US16 (sur le site)

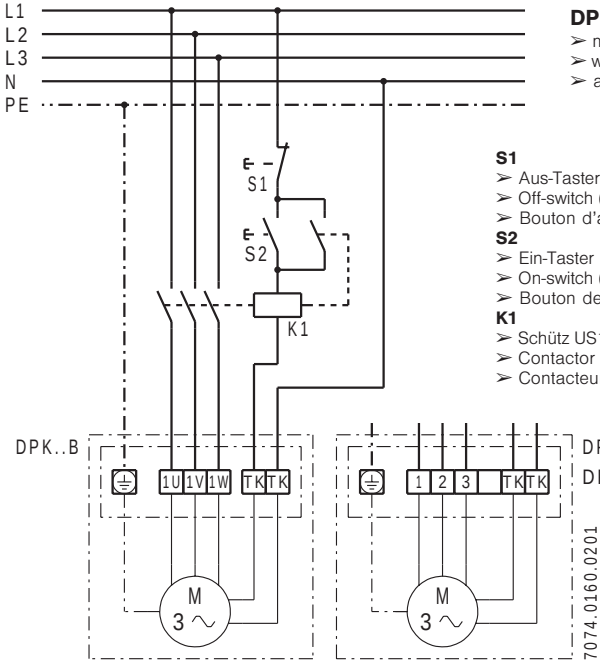
Bei Schützschaltung **Brücke V1-TK** an der Anschlussleiste des EPK.. entfernen.
Remove jumper **V1-TK on the EPK..terminal strip** when a contactor circuit is used.
Avec un contacteur-disjoncteur, enlever **le pont V1-TK** du bornier de l'EPK.

Schaltbilder • Wiring diagrams • Schémas de branchement



DPK ..
- ➢ mit Motorschutzschalter MV25
- ➢ with MV25motor protection switch
- ➢ avec disjoncteur-protecteur de moteur MV25

MV25
- ➢ Motorschutzschalter (bauseits)
- ➢ Motor protection switch (provided by customer)
- ➢ Disjoncteur-protecteur de moteur (sur le site)



DPK..
- ➢ mit Schützschaltung (selbsthaltend)
- ➢ with contactor-circuit (self-latching)
- ➢ avec contacteur-disjoncteur (à auto-entretien)

S1
- ➢ Aus-Taster (bauseits)
- ➢ Off-switch (provided by customer)
- ➢ Bouton d'arrêt (sur le site)

S2
- ➢ Ein-Taster (bauseits)
- ➢ On-switch (provided by customer)
- ➢ Bouton de marche (sur le site)

K1
- ➢ Schütz US16 (bauseits)
- ➢ Contactor US16 (provided by customer)
- ➢ Contacteur-disjoncteur US16 (sur le site)