

**Deckenfächer
Ceiling fans
Ventilateurs de plafond**

 **MAICO**
VENTILATOREN

EC 30 E EC 90 B
EC 40 D EC 140 B

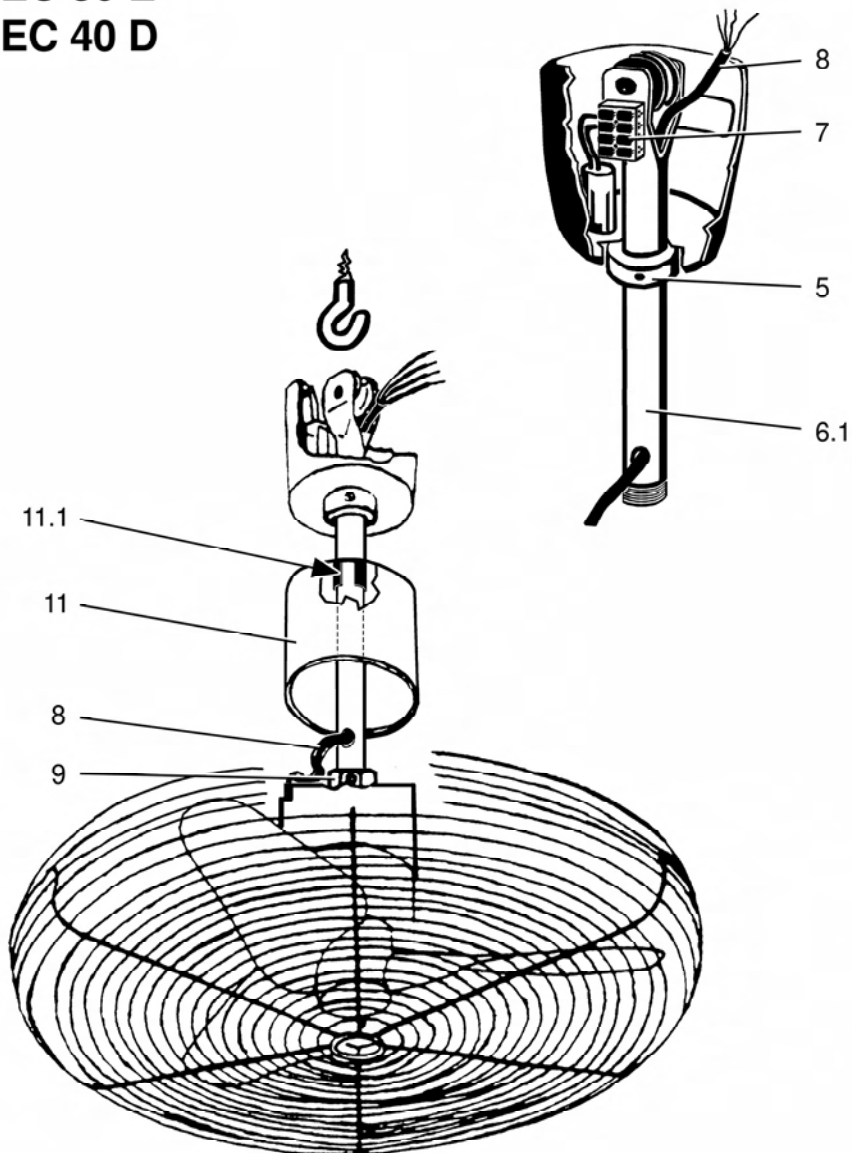
**Montage- und Betriebsanleitung
Mounting and Operating instructions
Instructions de montage et Mode d'emploi**

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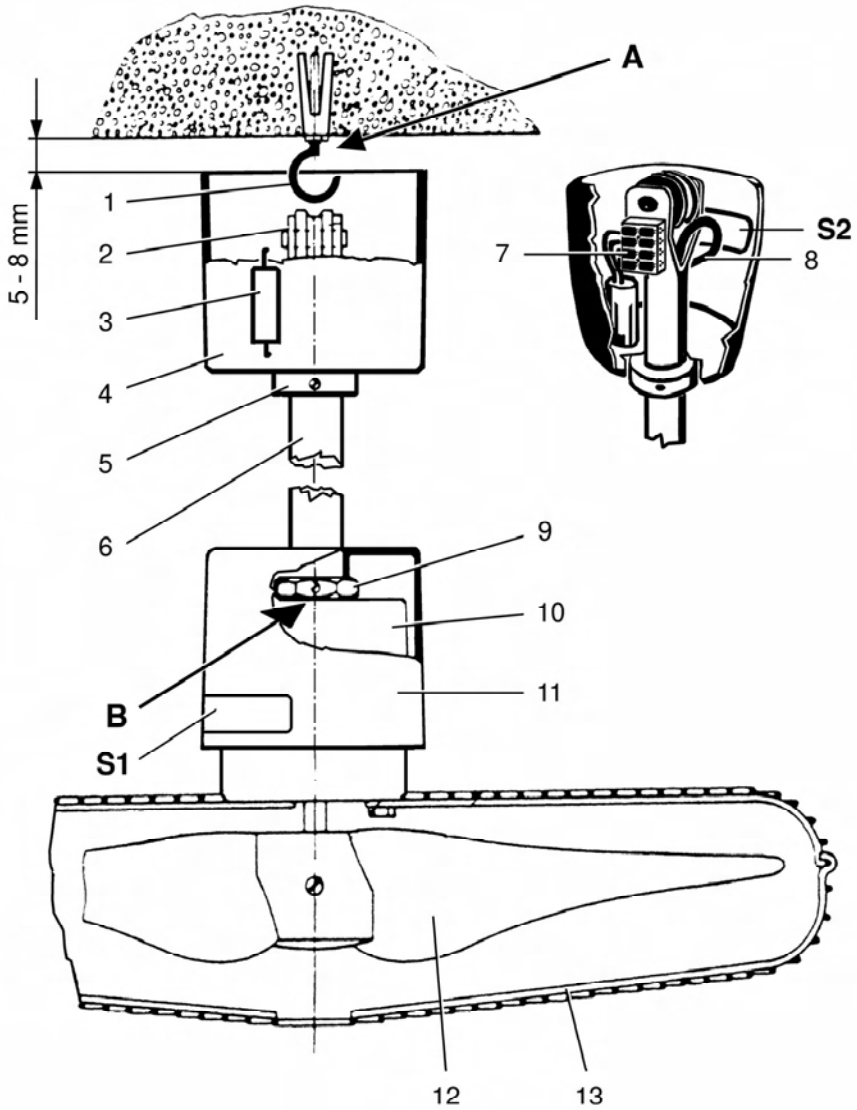


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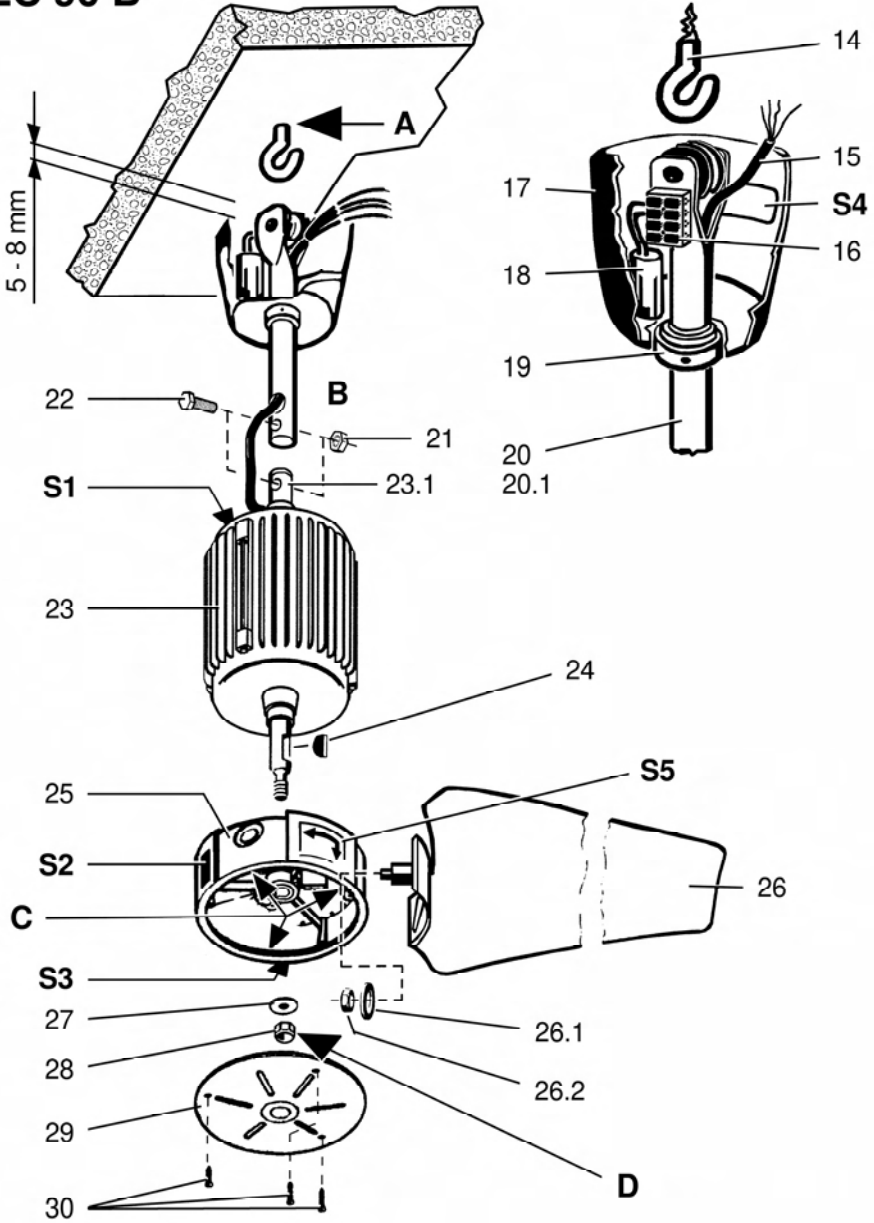
EC 30 E
EC 40 D



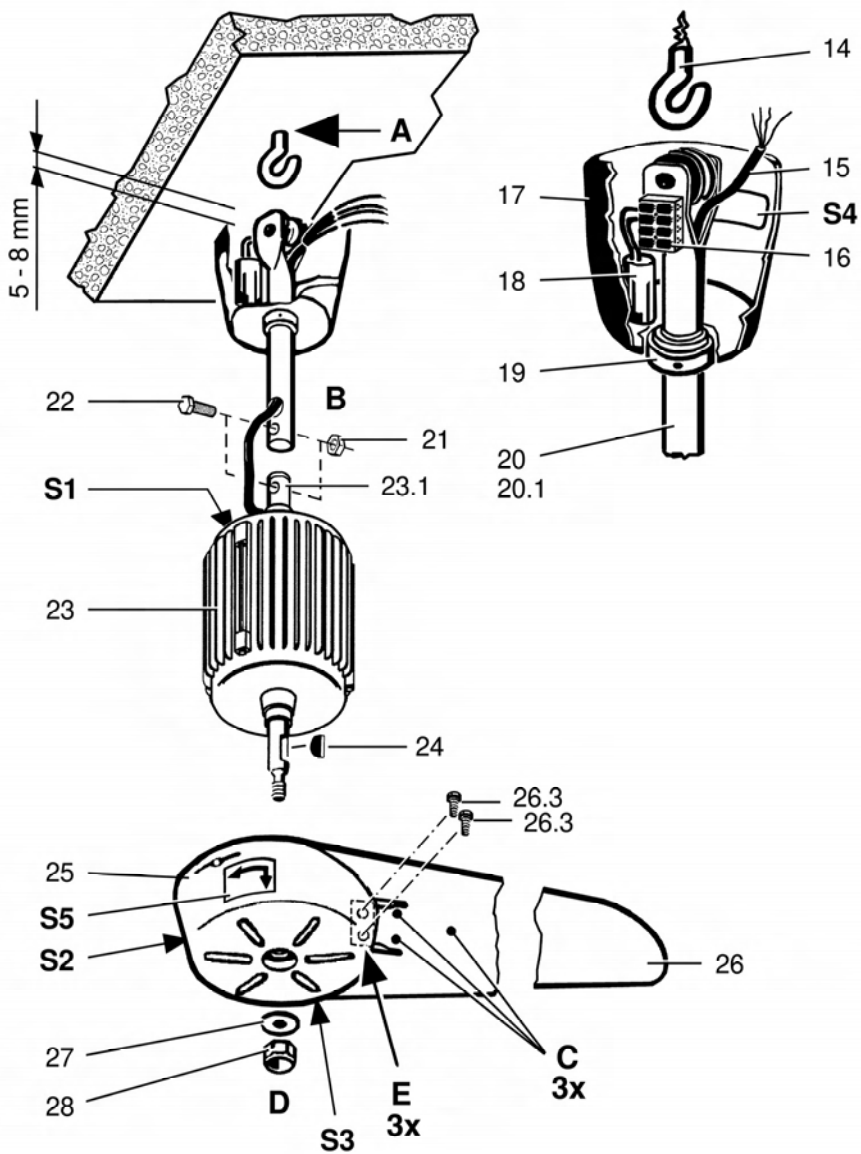
EC 30 E
EC 40 D



EC 90 B



EC 140 B



Ceiling fans EC ...

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1. Scope of delivery

1.1 EC 30 E and EC 40 D

Fully fitted ceiling fan, mounting and operating instructions.

1.2 EC 90 B and EC 140 B

Removed ceiling fan, consisting of: canopy, fastening rod, motor, impeller hub, 3 impeller blades, cover plate (EC 90 B only), motor capacitor, bag of accessories and mounting and operating instructions.

Bag of accessories for EC 90 B

- 1 M6x30 mm hex bolt [22]
- 1 M6 hex lock nut [21]
- 1 shim, inner diameter 10.5 mm [27]
- 1 M10 hex lock nut [28]
- 1 setting ring with threaded pin [19]
- 3 M8 hex lock nuts [26.2]
- 3 shims, inner diameter 8.4 mm [26.1]
- 3 ST2.9x22 tapping screws [30]
- 1 5x6.5 spring washer [24]

Bag of accessories for EC 140 B

- 1 M6x30 mm hex bolt [22]
- 1 M6 hex lock nut [21]
- 1 shim, inner diameter 10.5 mm [27]
- 1 M10 hex lock nut [28]
- 1 setting ring with threaded pin [19]
- 6 M5x12 mm countersunk screws, coated [26.3]
- 1 5x9 spring washer [24]

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2. Warning symbols used

2.1 Warning symbols



DANGER

Danger to life.

Non-observance can lead to death or serious bodily injuries.



CAUTION

Danger of injury. Damage to property. Non-observance can lead to minor or more serious bodily injuries.

NOTICE

Damage to property.

Non-observance can lead to damage to property.

2.2 Other symbols



INFO symbol: Text passages marked with this symbol contain important information and tips.



List symbol:

List containing important information on the relevant subject.



Action symbol:

List of work to be carried out. Follow the instructions in the order given.

3. Product information

3.1 EC 30 E, EC 40 D unit overview

- 1 Ceiling hook (not included in scope of delivery)
- 2 Rubber roller
- 3 Capacitor (EC 40 D only)
- 4 Canopy
- 5 Setting ring with locking threaded pin
- 6 Fastening rod
- 6.1 Fastening rod, long model (optional)
- 7 Connecting terminal
- 8 Connection cables for motor, with insulation sleeve
- 9 Lock nut with locking threaded pin

- 10 Motor
- 11 Motor cover
- 11.1 Recess
- 12 Impeller
- 13 Protective cage
- S1 Rating plate
- S2 Wiring diagram

3.2 EC 90 B, EC 140 B unit overview

- 14 Ceiling hook (not included in scope of delivery)
- 15 Connection cables for motor, with insulation sleeve
- 16 Connecting terminal
- 17 Canopy
- 18 Capacitor
- 19 Setting ring with locking threaded pin
- 20 Fastening rod with rubber roller
- 20.1 Fastening rod, long model (optional)
- 21 Lock nut
- 22 M6 x 30 mm hex bolt
- 23 Motor
- 23.1 Retaining bolt
- 24 Feather key
- 25 Impeller hub with recesses
- 26 Impeller blade (3 items)
- 26.1 Shim (EC 90 B only)
- 26.2 Lock nut (EC 90 B only)
- 26.3 Bolt (EC 140 B only)
- 27 Shim
- 28 Lock nut
- 29 Cover plate
- 30 Bolt
- S1 Rating plate
- S2 Minimum distance note
- S3 Lock nuts note
- S4 Wiring diagram
- S5 Rotation and air direction information sign

3.3 Product description

Ceiling fan for air circulation in commercial and working areas.

EC 30 E and EC 40 D run clockwise.
EC 90 B and EC 140 B run anti-clockwise (see direction of rotation arrow sign [S5]).

The motor is designed for continuous operation. In the event of thermal overload, an integrated motor overload switches the unit off.

They are switched on and off using a separate switch (this should be supplied by the customer). The unit is speed controllable, see recommended Maico accessories.

4. Technical data

- Protective cage diameter

EC 30 E	345 mm
EC 40 D	450 mm
- Impeller diameter

EC 90 B	900 mm
EC 140 B	1400 mm
- Mounting height

EC 30 E	410 mm
EC 40 D	420 mm
EC 90 B	450 mm
EC 140 B	420 mm
- Weight

EC 30 E	2.5 kg
EC 40 D	3.2 kg
EC 90 B	5.1 kg
EC 140 B	8.5 kg
- Air circulation (max.)

EC 30 E	2,800 m ³ /h
EC 40 D	4,500 m ³ /h
EC 90 B	11,000 m ³ /h
EC 140 B	18,000 m ³ /h
- Permissible ambient temperature

EC 30 E, EC 40 D	max. + 40 °C
EC 90 B, EC 140 B	max. + 60 °C

For other data, see rating plate.

5. Essential safety instructions

5.1 General safety instructions

- Read the operating instructions through carefully before starting up.
- Keep the instructions.
- The unit should not be used as a toy.
- **Installation is only permitted when carried out by trained specialists.**
- **Electrical connection, repairs and conversion to a longer fastening rod (accessories) should only be carried out by a trained electrician.**
- Only connect unit to a permanently wired electrical installation.
 - Permissible cable cross-section 1.5...2.5 mm².
 - Mains isolation device required with contact openings of at least 3 mm at each pole.
- The fan unit may only be operated using the voltage and frequency shown on the rating plate.
- Only operate the fan unit when it is completely installed.
- Never operate EC 30 E and EC 40 D without protective cage.
- Modifications and alterations to the unit are not permitted and release Maico from any guarantee obligations and liability. Exception: the unit may be modified to a longer fastening rod (Maico accessories) according to section 8.

5.2 Intended use

- Ceiling fan for constant air circulation in rooms with high ceilings, commercial and industrial halls, offices, production and operating facilities. Air circulation produces an even distribution of temperature in the room.
- The air flows from the ceiling to the floor.
- For surface installation on a ceiling with sufficient load bearing capacity.

- Operations only permitted when fitted at a sufficient space from the wall, other ceiling fans or equipment in the vicinity.
- EC 90 B, EC 140 B: Operation only permitted with a minimum gap of 2.3 m between floor and bottom edge of impeller blades.

5.3 Non-permitted operation

The fan unit should not be used:

- close to flammable materials, liquids or gasses.
- for the conveying of chemicals, aggressive gases or vapours.
- in explosive atmospheres.

5.4 Safe and correct practices during operation

- **Danger of injury.** Do not place anything in the rotating impeller blades.
- **Danger from rotating impeller blades.** Do not get too close to the unit, to avoid hair, clothing or jewellery being drawn into the unit.
- The unit is not intended to be used by people whose physical, sensory or mental capabilities are not sufficient for them to understand and put into practice the safety information provided in these instructions. This limitation also applies to children. The unit may however be safely used by such persons if they are supervised by someone responsible for their safety or if they are instructed in a suitable way.

6. Installation preparations

- Observe permissible minimum installation height. For EC 90 B and EC 140 B min. 2.3 m (bottom edge of impeller blades to floor, according to EN 60335-2-80).
- The following fastenings must be provided on site:
 - 1 ceiling hook with 7 mm diameter, strength class 4.8
 - 1 suitable retaining dowel
- Make a hole for the retaining dowel in the ceiling.
- Insert retaining dowel.
- Screw in ceiling hook.

7. Installation

7.1 EC 30 E and EC 40 D installation

These ceiling fans come from the factory ready for installation. For conversion to a longer fastening rod (accessories), see section 8.



DANGER

Incorrect installation results in a danger of injury from falling unit parts.

- When installing and also after dismantling, always use new lock nuts according to ISO 7042.



CAUTION

Malfunction if the ceiling fan cannot swing freely.

- Leave 5 to 8 mm gap between upper edge of canopy [4] and ceiling.
- Lift up ceiling fan and hang rubber roller [2] of fastening rod in ceiling hook [1].
- Undertake electrical connection according to section 7.3.
- Slide canopy [4] towards ceiling and lock with setting ring [5].

7.2 EC 90 B and EC 140 B installation



Incorrect installation results in a danger of injury from falling unit parts.

- Install impeller blades as shown (fold-out side) and screw down correctly.
- Observe tightening torques.
- Only use impeller blades of the same weight on the impeller blade retaining flange.
- When installing and also after dismantling, always use new lock nuts according to ISO 7042.



Malfunction if the ceiling fan cannot swing freely.

- Leave 5 to 8 mm gap between upper edge of canopy [17] and ceiling.

Assemble ceiling fan first, then attach to ceiling hook and wire up. For conversion to a longer fastening rod (accessories), see section 8.

- Slide canopy [17] over fastening rod [20].
- Then slide setting ring [19] over fastening rod.
- Attach fastening rod [20] to retaining bolt [23.1] and screw down with hex bolt [22] and hex nut [21]. Tighten lock nut to a tightening torque of 10 Nm.
- Thread motor connection cables with insulation hose [15] over cable duct of fastening rod towards rubber roller.

- Fit impeller blades [26].



Unit will be damaged if impeller blades are of different weights as this will cause imbalance.

- Only use impeller blades of the same weight, see inscription on impeller blade foot.

Guide 3 impeller blades [26] into recesses in impeller hub [25]. The side of the impeller blade which curves inwards (concave) must face the floor.

EC 90 B only: The impeller blade retaining flange must end flush with the top and bottom edge of the impeller hub.

- EC 90 B only: Secure 3 impeller blades with shims [26.1] and lock nuts [26.2]. Tighten lock nuts to a tightening torque of 10 Nm.
- EC 140 B only: The 3 impeller blades are each secured with 2 bolts [26.3]. Tighten screws to a tightening torque of 2.5 Nm.
- Insert feather key [24] in slot of motor shaft.
- Slide impeller hub [25] with impeller blades already fitted [26] on to motor shaft. Ensure that the feather key remains in position and that the air direction arrow on the impeller hub is pointing to the floor.
- Fit shim [27] and lock nut [28]. Tighten lock nut to a tightening torque of 30 Nm.
- EC 90 B only: Secure cover plate [29] with 3 bolts [30].
- Wire motor connection cables and capacitor to connecting terminal as shown in wiring diagram (see back of instructions or inside of canopy).
- Accommodate excess cable in the canopy.

- Lift up ceiling fan.
- Hang rubber roller of fastening rod [20] in ceiling hook [14].
- Undertake electrical connection according to section 7.3.
- Slide canopy [17] towards ceiling and lock with setting ring [19].

7.3 Electrical connection



DANGER

Danger to life from electric shock

- Switch the mains fuse off.



The cable length of the motor connection cables has also been designed for units with the long fastening rod.

- Undertake electrical connection according to wiring diagram (see rear of instructions or inside of canopy).

7.4 Start-up

- Switch the mains fuse on.
- Switch ceiling fan on and off. Check direction of rotation at same time.
EC 30 E and EC 40 D: The impeller must turn clockwise (viewed from below).
EC 90 B and EC 140 B: The impeller must turn anti-clockwise (viewed from below).

NOTICE **Note rotation and air direction arrows.**

- If the rotation and air direction is wrong, check the electrical connection and correct if necessary.

8. Long fastening rod



DANGER

Danger to life from electric shock

- Switch the mains fuse off.



DANGER

Incorrect installation results in a danger of injury from falling unit parts.

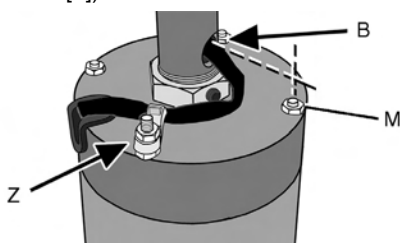
- When installing and also after dismantling, always use new lock nuts according to ISO 7042.

If using a long fastening rod (option with 0.5 m or 1 m), the unit must be modified.

- Modification may only be undertaken by a trained electrician.
- If ceiling fan has already been fitted, take it off the ceiling.
- Never undertake modification with fan fitted on the ceiling and unit live.
- The length of the connection cables is designed ex-factory for the long fastening rod too.

8.1 EC 30 E, EC 40 D fastening rod

- Disconnect motor connection cables [8] from connecting terminal [7].
- Slide up motor cover [11].
- Carefully pull connection cable [8] at bottom out of fastening rod [6].
- Loosen retaining threaded pin of lock nut [9].
- Unscrew fastening rod [6] out of motor housing.
- Slide canopy [4] and setting ring [5] on to new, long fastening rod [6.1].
- Fully screw lock nut [9] in hole of fastening rod.
- Carefully screw in fastening rod [6.1] until stop in motor housing is reached. Ensure that the lock nut does not sit on the motor housing.
- Unscrew fastening rod until hole for cable duct [B] and nut [M] are directly opposite one another (nut [M] to right of tension relief [Z]).



NOTICE Unscrew fastening rod by no more than 1 revolution.

- In this position, tighten lock nut [9] to a tightening torque of 20 Nm and secure with threaded pin.

Tip: Place screwdriver between rubber roller and fastening rod to counter them so that the fastening rod is not twisted.

- Slide enclosed insulation sleeve over motor connection cables. This must protrude around 20 mm beyond the existing insulation sleeve [8].
- Carefully thread insulation sleeve and connection cables into fastening rod, working from the bottom and moving upwards. If necessary, use threading tool.
- Slide down motor cover [11].

NOTICE If the motor cover is positioned wrongly, it cannot be slid all the way down.

- Turn motor cover [11] such that recess [11.1] in motor cover fits over motor cable [8].
- Wire motor connection cables and capacitor to connecting terminal according to wiring diagram. For wiring diagram, see back of instructions or inside of canopy.
- Lift up ceiling fan.
- Hang rubber roller of fastening rod [6] in ceiling hook [1].
- Undertake electrical connection according to section 7.3.



Malfunction if the ceiling fan cannot swing freely.

- Leave 5 to 8 mm gap between upper edge of canopy and ceiling.
- Slide canopy [4] towards ceiling and lock with setting ring [5].
- Start up ceiling fan according to section 7.4.

8.2 EC 90 B, EC 140 B fastening rod

- Disconnect motor connection cables [15] from connecting terminal [16].
- Carefully pull motor connection cables [15] at bottom out of fastening rod [20].
- Remove nut [21] and bolt [22] and pull fastening rod off retaining bolt [23.1].
- Take off canopy [17] and setting ring [19] and slide onto new, long fastening rod [20.1].
- Attach new fastening rod [20.1] to retaining bolt [23.1] and screw down securely with bolt [22] and nut [21], tightening torque 10 Nm.
- Slide enclosed insulation sleeve over motor connection cables. This must protrude around 20 mm beyond the existing insulation sleeve [15].
- Carefully thread insulation sleeve and connection cables into fastening rod, working from the bottom and moving upwards. If necessary, use threading tool.
- Wire motor connection cables and capacitor to connecting terminal [16] according to wiring diagram. For wiring diagrams, see back of instructions or inside of canopy.
- Lift up ceiling fan.
- Hang rubber roller of fastening rod [20.1] in ceiling hook [14].
- Undertake electrical connection according to section 7.3.



CAUTION

Malfunction if the ceiling fan cannot swing freely.

- Leave 5 to 8 mm gap between upper edge of canopy and ceiling.
- Slide canopy [17] towards ceiling and lock with setting ring [19].
- Start up ceiling fan according to section 7.4.

9. Dismantling



DANGER

Danger to life from electric shock

- Switch the mains fuse off.
- Dismantling should only be carried out by a trained electrician.

10. Maintenance



DANGER

Danger to life. Unit is powered up.

- Switch the mains fuse off.



DANGER

Danger of injury if lock nuts are loose. Parts of the ceiling fan may fall down and cause injury and damage to property.

- **Every six months** check that bolts and lock nuts are secure.
- If the connection is loose, fit new lock nuts. Tighten these to the specified tightening torque.
- Coat loose bolts, e.g. item [27.3], with retaining bolt paint and tighten to specified torque.

10.1 Six-monthly check

EC 30 E, EC 40 D

- Check that bolts and nuts at fixing points A and B are secure, see diagram.

EC 90 B, EC 140 B

- EC 90 B only: Take off cover plate [13].
- Check that bolts and nuts are secure, see diagram:
 - EC 90 B: Fixing points A...D
 - EC 140 B: Fixing points A...E
- EC 90 B only: Fit cover plate [13].

11. Cleaning



Danger to life. Unit is powered up.

➤ Switch the mains fuse off.

- If the impeller blades are dirty or not running smoothly (imbalance), clean the unit with a damp cloth.

12. Fault rectification

- Call on the services of a trained electrician any time there is a fault.
- Repairs should only be carried out by a trained electrician.



Danger to life. Unit is powered up.

➤ Switch the mains fuse off.



Once the overload protection has cooled the rotating impeller blades still represent a danger. The ceiling fan will automatically start back up once the fan motor has cooled down.

➤ Do not reach into the area around the impeller blades.

Fault	Countermeasure
– Unit doesn't run	Check that the mains fuse is switched on.
– Thermal overload protection of the motor switches unit off and back on again after cooling down.	If the thermal overload protection has tripped, the ceiling fan must start back up again automatically after 1 hour at the most.

Tab. 1: Fault rectification

13. Disposal



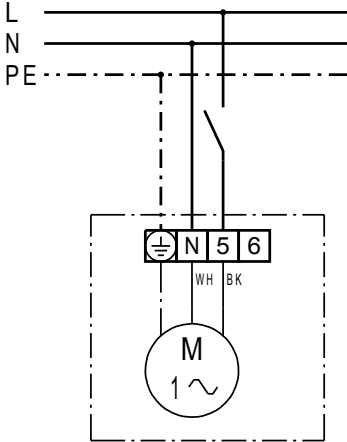
Do not dispose of in domestic waste.

The unit contains in part material that can be recycled and in part substances that should not end up as domestic waste.

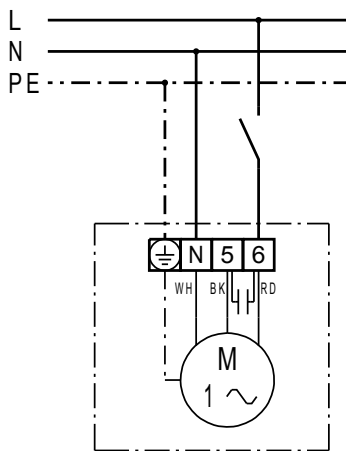
- Dispose of the unit once it has reached the end of its working life according to the regulations valid where you are.

14. Schaltbilder / Wiring diagrams Schémas de branchement

EC 30 E



EC 40 D



EC 90 B, EC 140 B

