

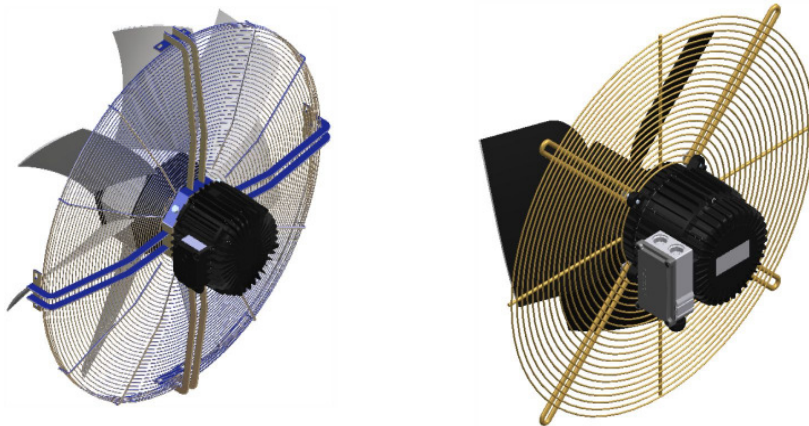
Assembly Instructions

(English Translation)

(in accordance with EC Machinery Directive 2006/42/EC,
 Annex VI for Incomplete Machines)

for

Axial Fans



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motors and fans
SÜD-ELECTRIC 
 Member of the Ziehl-Abegg Group

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1. Important basic information

1.1 Information pertaining to these assembly instructions

To ensure correct use, please read these assembly instructions carefully before installation and commissioning!
Please note that these assembly instructions apply to a designated device and on no account to a complete machine!
These assembly instructions are not valid for explosion proof fans.

These assembly instructions serve to ensure the safe operation of the designated machine. They are also relevant to any work carried out thereon. These instructions contain safety information which must be adhered to as well as information which ensures the failure-free operation of the machine.
 The assembly instructions are intended for qualified persons who are working on planning, installing, commissioning or service and maintenance, and thus are to be read and understood by everyone carrying out work on the machine.

1.2 Legal information

1.2.1 Limitation / Exclusion of liability

The contents of these assembly instructions were checked against the design details of the devices but may vary nevertheless; Süd-Electric cannot guarantee that the documentation matches identically.
 In the interests of further development, we reserve the right to make modifications to the construction and technical data. No claims can be made therefore based on the information, drawings or descriptions. No liability is accepted for errors.
 Süd-Electric AG is not liable for damage caused by incorrect, inappropriate or improper use or as a result of unauthorised repair or modifications.

1.2.2 Copyright

These assembly instructions contain information protected by copyright law. It is therefore illegal to photocopy, copy, translate or store on data storage media all or part of these instructions without the prior consent of Süd-Electric AG. All violations are liable for damages. All rights reserved, including those arising from patents or registered design.

1.2.3 Warranty

Please refer to "Technical Explanations" Chap. 28 "Warranty".

1.3 Documentation

1.3.1 Explanation of safety symbols



ATTENTION! or WARNING!

General danger spot. Death, risk of severe personal injury or considerable material damage can arise if appropriate safety measures are not taken!



DANGER FROM ELECTRIC CURRENT!

Warning of dangerous voltage or dangerous current



IMPORTANT INSTRUCTION



INFORMATION

Important additional information and application tips

1.3.2 Drawings

Especially important information is printed in bold type in boxes with a grey background.

1.4 Manufacturer and service

Manufacturer information

Our products are manufactured in accordance with current international standards. If you have questions regarding the application of our products or you are planning special applications, please contact:

Süd-Electric AG
Westring 1-7
D-85614 Kirchseeon

Tel.: +49(0)8091/5657-0
Fax: +49(0)8091/5657-58

info@suedelectric.de
www.suedelectric.de

Service information

If technical questions arise during commissioning or in the case of machine failure, please contact our Support Department (Technical Sales).

As part of the Ziehl-Abegg Group, we have service engineers in our subsidiaries around the world. ☞ **www.ziehl-abegg.com**

In the case of returns sent back for testing or repair, we need certain information in order to carry out efficient trouble shooting and to facilitate fast repair. Please refer to our annexed data sheet. After consultation, this will be sent to you by our Support Department.



Please refer also to our documentation "Technical Explanations" at
 ☞ www.suedelectric.de/download.htm

2. Safety

This section provides you with an overview of all important safety aspects which ensure optimum protection for your staff and safe and trouble-free operation.

Non-compliance with the information and safety instructions contained in these assembly instructions can lead to serious danger.

2.1 Use as intended



- **The fans are intended for the transfer of air or air-like mixtures only.**
- **Any other use or use above and beyond the transfer of air or air-like mixtures is deemed unintended use unless contrary written agreements have been made. The manufacturer is not liable for any damage resulting from such unintended use. All risks are borne solely by the “user” company.**
- **Use in explosive atmospheres for the transfer of gas, mist vapours, steam or mixtures is not permissible. Nor can fans be used for the transfer of solid materials or solid components in the transfer medium.**
- Normal usage includes the reading of this document as well as adherence to all instructions herein – especially safety instructions.
- Please observe all documentation pertaining to connected components.



WARNING!

Danger from misuse! Any machine use above and beyond or variant to its intended use can lead to hazardous situations.

2.1.1 Application

The fans / motors are not ready-to-use products, but designed as components for refrigeration, air-conditioning, ventilation and air extraction technology. The fans / motors may only be operated when they have been appropriately installed in accordance with the pertinent regulations and safety is ensured through safety equipment in accordance with DIN EN ISO 13857 (DIN EN ISO 12100) or other safety measures.

In the case of selected motors, a special motor design enables speed control through voltage reduction.

In the case of operation with **frequency inverters**, please observe instructions in the section Operating Conditions.

2.1.2 Ambient safety conditions

Fans must be operated within the ranges stipulated on the rating plate only. The max. permissible operating data on the rating plate apply for an air density of $\rho = 1.2 \text{ kg/m}^3$.

2.2 Improper use

2.2.1 Possible application errors

- The transfer of gaseous, aggressive and explosive media
- Use in explosive atmosphere
- Operation with icy fan wheels
- The transfer of abrasive or sticky media
- The transfer of fluid media
- Use of fan including mounting parts (e.g. safety grille) as storage rack or as climbing aid
- Unauthorised modification to the construction of the fan
- Operation of fan as a safety component or for to take on a safety function according to DIN EN ISO 13849-1
- Blocking or slowing of fan by inserting object
- Removing fan wheel from motor
- All other applications not stipulated in the standard compliant usage section

All liability for personal injury and material damage resulting from non-compliant use rests with the operator of the device alone and not with the manufacturer.

2.2.2 Modifications / Changes to device



WARNING!

For safety reasons no unauthorised modifications may be made to the device. Any planned modifications require written consent from the manufacturer.

Use only Süd-Electric original spare parts / original wear parts / original accessories. These parts have been especially designed for the device. In the case of non-original parts, Süd-Electric cannot guarantee that the parts have been designed and manufactured to comply with wear and tear or safety standards. Süd-Electric does not authorize the use of parts delivered by other manufacturers.

2.3 Product safety

At the time of delivery the device corresponds to state-of-the-art technology and is generally considered safe to operate. The device and accessories may only be installed and operated if in perfect working condition; assembly instructions or operating instructions must be adhered to. Operation outside the technical specifications for the device can lead to failure and consequential damage!

In the event of a disruption or failure of the device, functions must be monitored separately by an alarm system to prevent personal injury and/or material damage. Substitute operation must be taken into consideration! During the planning and assembly of the plant, all local regulations and laws must be adhered to.

2.4 Operator's responsibilities

2.4.1 General

- The owner or operator must ensure that the electrical machinery and operating equipment are operated and maintained in accordance with electro-technical regulations.
- The operator undertakes to operate the device only when it is in perfect working condition.
- The device may only be used as intended in accordance with the relevant operating instructions (→ Ch. 2.1 "Use as intended").
- Safety devices must be checked regularly to ensure their perfect working order.
- The assembly instructions or operating instructions must be kept with the device in a legible condition at all times. The documents must be complete at all times.
- Personnel must undergo regular work safety and environmental protection training and must know the assembly instructions or operating instructions, especially the safety instructions contained therein.
- All safety and warning instructions on the device must not be removed and the operator must ensure that they remain legible.

2.4.2 Staff safety, requirements / Duty of care

Persons entrusted with the planning, installation, commissioning and service and maintenance of the device must be suitably qualified and have appropriate experience to carry out their work.

In addition, they must have knowledge of safety standards, EC directives, accident prevention regulations and corresponding national legislation as well as regional and company regulations. New personnel or personnel who are still undergoing training may only work on or with the device under the supervision of experience staff. This also applies for staff undergoing general training. The legal minimum age must be observed.

This device is not designed to be used by persons (including children) with limited physical, sensory or mental ability or those who lack experience and / or knowledge.

2.4.3 Personal safety equipment



EAR PROTECTION

For work near running fans (especially high speed motors) it is recommended that ear protection is worn for health reasons!



SAFETY SHOES

Safety shoes protect against heavy falling parts (especially during assembly) and against slipping on slippery surfaces.



HAND PROTECTION

It is strongly recommended that cut resistant safety gloves are worn during assembly.

2.4.4 Work carried out by external persons

Service and maintenance work are often carried out by external persons who are not always aware of special circumstances and resulting dangers. These persons must be informed in detail about dangers pertaining to their work. Their work procedures must be checked to allow timely intervention if necessary.

2.5 General dangers



DANGER FROM ELECTRIC CURRENT!

- **WARNING!** Even after the voltage has been switched off, the following applies: as long as the motor is still running e.g. through airflow or overtravel, dangerous voltages of more than 50 V can occur at the motor connections through the generator-based operation!



MOVING MACHINE PARTS!

- Risk of injury from moving parts!
- During fan / motor operation, keep away from moving parts (impeller). Do not tamper with moving parts.



WARNING, AUTOMATIC RESTART!

- For functional reasons the fan / motor can switch on and off automatically!
- After a power cut or switching off at the mains, automatic fan restart can occur when voltage returns!
- Keep away until the fan comes to standstill!



WARNING, HOT SURFACES!

- Temperatures of more than 90°C can occur at motor surfaces!

2.6 Safety instructions for phases in the product lifecycle

2.6.1 Installation

For special safety and precaution measures during transport, installation, assembly and commissioning phases, please refer to the relevant chapters in these instructions!

2.6.2 Operation



DANGER FROM ELECTRICAL CURRENT!

Identified defects in electrical machines/operating equipment must be eliminated immediately. If in the mean time there is acute danger, the device / machine must not be operated as long as it is defective.

Electrical fuses must be replaced and must not be repaired or bypassed. It is imperative that specifications for the maximum pre-fusing are observed (see Technical Data). Use only the fuses stipulated in the electrical circuit diagram.



WARNING, Danger from suction!

Do not wear loose or hanging clothing, long hair, jewellery etc.

2.6.3 Maintenance and service, disassembly and waste disposal

For special safety measures for maintenance and service, as well as disassembly and waste disposal, please refer to the corresponding chapters.

2.7 What to do in an emergency

In an emergency, switch off fan and secure against restart!


Observe the safety instructions and warnings supplied by the plant manufacturer (complete machine → cf. Ch. 2.1.1)

3. Technical data

Please see rating plate or data sheet for technical data. Depending on the model, the rating plate is situated on the motor bearing shield or terminal box. Rating plates contain the following data:

- Type and article number of the motor / fan
- Characteristics of motor / fan
- Insulation class
- IP class
- Permissible temperature range (ambient air)

SÜD-ELECTRIC AG Kirchseeon Ident-Nr.: 400930-V

Typ Nr.: 

V ±10%	Hz	A	W _{Aufn}	U/min	cos φ
D/Y 230/400	50	3,8/2,2	1200	1350	0,79
Th.CL. F	3~ Mot	IP 66	S1	C=	μF -40/+45 °C

QMP

Example of Rating Plate

Data sheets can be obtained from the manufacturer (see Ch. 1.4 “Manufacturer and Service”) or can be downloaded from the website www.suedelectric.de (Section “Product Catalogue” or “Download”).

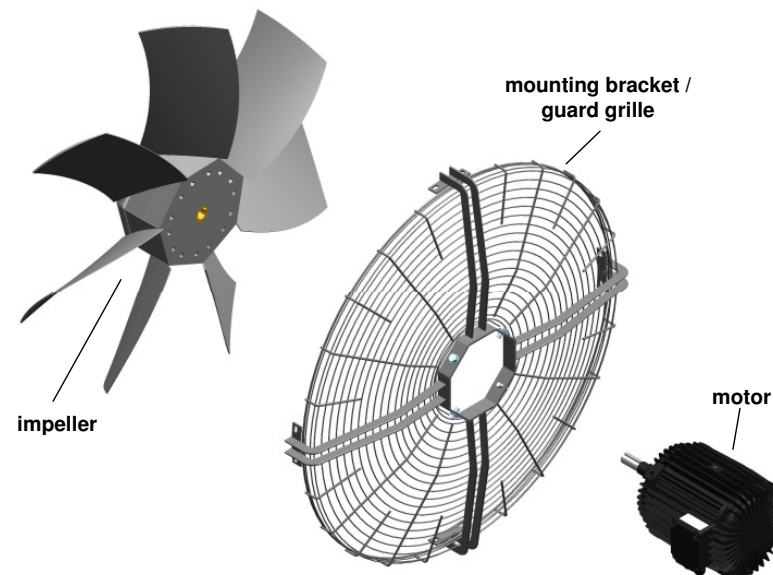
General operating conditions

Fans are to be operated only within the (temperature) ranges stipulated on the rating plate. The max. permissible operating data on the rating plate apply for an air density of $\rho = 1.2 \text{ kg/m}^3$.

Voltage variation tolerance	Nominal voltage according to rating plate +/- 10%
Frequency variation tolerance	50Hz or 60Hz +/- 1Hz
Insulation class	F or H (see rating plate)
max. permissible altitude	1000 m absolute without drop in performance
Permissible temperature range for storage and transport	-30...+80 °C
dB(A) values	See product catalogue / data sheet
Weight	See product catalogue / data sheet

4. Construction and function

4.1 Main components



4.2 Functional description

Fans are intended for the transfer of air or air-like mixtures. The air is moved by a **rotating impeller**. The impeller is screwed on to the motor shaft and is driven by the **motor**. Motor and impeller are mounted to a wall, a device (e.g. a heat exchanger) or a nozzle e.g. wall ring or pipe) by means of a **mounting bracket**, which can also act as a **contact protection**. The **nozzle** can be part of the fan unit or is integrated in a machine or device in which the fan is installed. Its purpose is to optimise the air current flow.

The fan's electrical connection takes place at the **terminal box**. If the fan is delivered without a safety grille, the manufacturer or operator of the whole machine is responsible for making sure that this poses no danger.

5. Transport and storage

5.1 Safety



WARNING!

- Please observe information in the chapter “Safety”!
- When handling, please wear safety footwear and gloves!
- Never position yourself under the suspended fan. In the event of a defect in the hoisting device, danger to life!

5.2 Packaging and transport

- Süd-Electric axial fans are packaged ex works for the relevant mode of transport agreed upon
- The fan(s) must be transported either in their original packaging or in the case of larger fans on the especially prepared transport equipment (bored holes in the supporting arms, wall ring plates) with suitable means of transport
- Do not transport fan by connecting cable
- Check that there is no damage to the packaging or the fan
- Observe at all times the weight stipulations and the permissible maximum load capacity of the means of transport
- Avoid vibration and shocks during transport
- Avoid exposure to extreme heat or cold (see “Technical Data” chapter for temperature range for storage and transport)
- Secure pallets during transport
- Do not pile up pallets
- Handle with appropriate hoisting devices only

5.3 Storage

- Store fan / motor in its original packaging in a dry place and protected from weather conditions, protect it from dirt and weather until final assembly
- Avoid exposure to extreme heat and cold (see “Technical Data” chapter for temperature ranges for storage and transport)
- Do not pile up pallets
- Check proper functionality of motor bearing prior to installing
- Avoid excessive storage periods. We recommend a maximum of one year (in the case of longer periods, please contact manufacturer before commissioning)

6. Assembly and installation, initial operating

6.1 Safety



WARNING!

Please observe information in the chapter “Safety”!
Assembly, installation and commissioning by qualified personnel only!
Incorrect installation and commissioning may lead to fatal injury!



DANGER TO LIFE FROM ELECTRICAL CURRENT!

- Work on electrical parts may only be carried out by qualified electrical specialists or those instructed in electrics and under the supervision of a qualified specialist in accordance with technical regulations.
- The five safety rules for electricity must be observed!
- Never carry out work on live parts.
- When working on live parts or cables, a second person must always be present to switch off power in the case of an emergency.
- The fan may only be connected to an electrical circuit that can be disconnected using an all-pole isolating switch.
- The operator of the device is responsible for the EMC compatibility of the whole machine in accordance with local standards.
- Electrical equipment must be checked regularly: loose connections must be repaired, damaged lines or cables must be exchanged immediately.

6.2 Assembly and installation



When assembling, observe also the information in the brochure “Technical Explanations” (especially the information about installation possibilities and clearance distances). The brochure can be found at www.suedelectric.de in the “Download” section.

6.2.1 General information

- It is incumbent upon the system or aggregate plant manufacturer to ensure that installation and safety instructions relevant to the machine are in keeping with the valid norms and standards (DIN EN 292/294).
- Remove the fan from its packaging using an appropriate hoisting device. Suspension points are the mounting brackets of the fan and the safety grille (depending on fan model).
- When lifting with the hoisting device the chain / rope must not come into contact with the impeller. Otherwise damage may occur.

- Check fan for possible damage before assembly, e.g. damage during transit, cracks or dents or damage to the electrical connecting cable.
- For weights greater than 25 kg for men / 10 kg for women, the removal of the fan from its packaging must be carried out by two persons (in accordance with time and motion). It is possible that values vary from country to country.
- There should be no drilling chips, screws or other foreign bodies in the device!
- Before installing fan, please check whether the safety clearance in accordance with DIN EN ISO 13857 or in household devices in accordance with DIN EN 60335 is adhered to. If a fan is within a danger zone, the manufacturer of the aggregate plant or the operator must ensure that risks are eliminated by using a protective construction (safety grille) in accordance with DIN EN ISO 13857.
- Any constructions made by the customer must correspond with the level of strain placed upon them. Apply stipulated torque for securing fixing materials.
- For usage in ambient temperatures under -10 °C all unusual, sudden or mechanical stress or strain on the material must be avoided (for min. permissible ambient temperature, see "Technical Data" chapter).

6.2.2 Mechanical installation

The following applies for **all** models of axial fans:

- Enough space must be available! Mounting surfaces must be even
- Ensure there is an even gap between fan blade and mounting plate
- If the blade wheel does not move freely, this can lead to fan failure
- In the case of a vertical motor shaft (IP 44), the underlying condensation water drains must be open

The following clamping torque for screws should be observed for the assembly of motors and fans:

- Blade mounting (A2 screws, strength grade 80):

M5 = 6Nm M6 = 8Nm M8 = 22Nm

- Grille and fan mounting (A2 screws, strength grade 80):

M5 = 6Nm M6 = 8Nm M8 = 22Nm M10 = 43Nm M12 = 75Nm

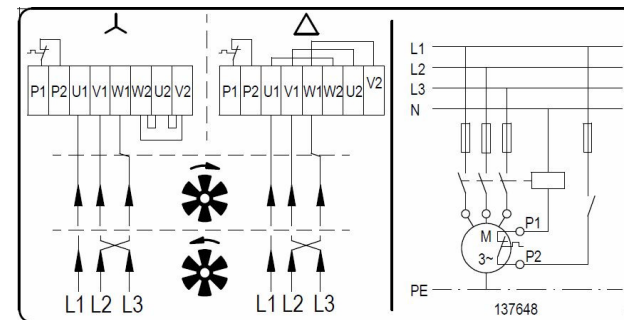
6.2.3 Cable gland

The connecting cable is led through the cable gland into the terminal box. Please see the following table for the corresponding clamping range of the screws used:

Winding / Size	Art.-No.	Model	Motor series	Material	Clamping range [mm]
9	117251	KV PG-9	1	PA 6.6	4-8
PG 13.5	126799	KV PG-13,5	0 (IP66)	PA 6	6-12
16	150930	KV PG-16	1	PA 6.6	10-14
16	163313	KV M16x1,5	2	PA 6.6	4-10
M 20	163760	KV M20x1,5	2 / 3	PA 6	8-13
24	160431	KV M24x1,5	GL Motor	Brass	12-14,5

6.2.4 Electrical connection

- Electrical connection according to connection diagram in the terminal box



Example of connection diagram

- **Do not use metal compression gland fittings with plastic terminal box. Risk of electric shock if connection is made incorrectly!**
- Torques for cap screw connection
 - Plastic design 2.0 Nm
 - Metal design 3.0 Nm
- Fix fan connection cable with cable clips to safety grille or motor support.
- The connection pins of the installed temperature limiter are situated at the feeder clamps marked with "P" and are to be connected using suitable switch elements. Maximum control voltage: 250V AC, 60V DC; necessary minimum current 50mA. Install contactor in such a way that machine switches off safely in the case of a fault and **no unwanted automatic re-start can occur** after cooling off phase. Joint protection of several motors via one protection device is possible. In this case temperature limiters for each motor must switch in series. Please note that in the event of a temperature fault in one motor all motors are switched off at the same time. In practice therefore, motors are combined into groups so that in the case of motor failure, it is possible to continue running with reduced performance in emergency operation mode.

- If the installed temperature limiter is activated, an all-pole disconnection must be ensured using an all-pole cut-off device. The contact must be broken at each pole with a minimum distance of 3 mm.



- Thermal contacts fitted in the winding function as motor protection and must be connected
- In the case of motors without a temperature control, it is imperative that a motor circuit breaker is used
- If the fans are completed with components from other manufacturers, the manufacturer or operator of the aggregate machine is responsible for observing the EMC guideline 89/336/EWC

6.3 Initial operation



WARNING!

During commissioning unexpected and dangerous circumstances can occur in the aggregate machine because of incorrect settings, faulty components or wrong electrical connection.

Prior to initial operation, please check:

- Mounting and electrical installation carried out correctly; ground wires connected
- Safety equipment mounted (contact protection)
- Assembly residues and foreign bodies removed from fan
- Temperature limiter (protector) / motor circuit breaker properly connected by trained staff and functioning
- Cable entry sealed (see "Assembly")
- Does the installation match the positioning of the condensation drain holes
- Do the connection data match the data on the rating plate

Commissioning can occur only when all safety instructions have been checked and all dangers eliminated.

- Check direction of rotation / direction of airflow
- Check for smooth running:
Strong vibrations from imbalance e.g. due to damage in transit or unprofessional handling can lead to failure

7. Operation and maintenance

7.1 Safety



WARNING!

- Danger of injury through improper use!
- Before switching on device, make sure that all covers and protective equipment are installed and function properly!
- Do not operate fan in explosive atmosphere!
- When operating the fan, the maximum permissible speed must not be exceeded!

7.2 Operating conditions

☞ See also chapter 3 "Technical Data"

Switching frequency:

The fan is designed for S1 continuous operation. The control system must not allow extreme switching!

Süd-Electric axial fans are suitable for operation with frequency inverters if the following points are observed:

- All-pole sinusoidal filters (sinusoidal output voltage phase to phase, phase to ground wire) are to be installed between inverter and motor as offered by some inverter manufacturers
- **du/dt filters (also called motor filters) must not be used instead of sine filters**
- When using sine filters, it is possible that shielded motor input leads, metal terminal boxes and a second earth connection at the motor are not necessary. (please contact supplier of sine filter)

For further explanations on this topic, please refer to our current technical information.

If under normal operating conditions the leakage current of 3.5 mA is exceeded, the earthing requirements in accordance with DIN VDE 0160/5.88, Art. 6.5.2.1 must be met.

In the case of speed control by electronic voltage reduction (phase cutting), an increase in noise level can occur depending on the installation. Also, higher currents than shown on the rating plate can occur.

7.3 Outdoor installation

When idle for a longer period of time in a humid atmosphere it is recommended that fans be operated for at least 2 hours each month to allow any moisture to evaporate.

7.4 Maintenance and service



WARNING!

- Please observe information in the chapter "Safety"!
- When carrying out repair and maintenance work, please observe standard operation and safety procedures in accordance with DIN EN 50110, IEC 364, DIN EN VDE 0105, BGV A2!
- Repairs may only be carried out by qualified specialists!
- The motor must be disconnected from the mains power supply and secured against re-start!
- No maintenance work on fans which are running!
- Before opening electrical components, wait 3 minutes to enable electrical discharge!
- Keep all airways free – danger from expelled objects!

- Regular inspection of any deposits necessary and, if necessary, the cleaning thereof (see below) in order to prevent imbalance caused by dirt particles. Imbalance can lead to damage (danger of fatigue breakage). The impeller can burst!
- Service intervals depend on degree of soiling on fan wheel.
- If there is a danger of caking or ice build-up, the fan must be checked at regular intervals.
- Ensure smooth running. In the case of imbalance: re-balance impeller.
- Check impeller for possible cracks.
- In the case of 1~motors, the capacitor capacity can deteriorate with time. Life expectancy 30,000 hours in accordance with DIN EN 60252.
- Check for unusual noises!
- Due to the use of bearings with "lifetime lubrication", the axial fan is service-free. At the end of the grease service life (for standard usage 30 – 40,000 h), the bearings must be changed.
- Change bearings at the end of the grease service lifetime or in the event of damage. Please contact our service department (special tools!).
- When changing bearings, use only original bearings (special lubrication by Süd-Electric).
- Check fan and cable for damage and have changed if necessary by professionally trained staff.
- For all other types of damage (e.g. damage to windings), please contact our service department.
- Multipiece fan-wheels may only be repaired by persons authorised by Süd-Electric AG. The manufacturer is not liable for any damage caused by unprofessional repair.

7.5 Cleaning



DANGER FROM ELECTRICAL CURRENT!

- The motor must be disconnected from the mains and secured against re-start!
- Wet cleaning when connected to mains can give you an electric shock – DANGER TO LIFE!



WARNING!

- No aggressive, paint-dissolving detergents may be used for cleaning.

In the case of cleaning with water:

- Please note that no water should enter the inside of the motor, observe protection class (IP). IP44 motors are protected against splash water, IP66 motors are protected against heavy sea or strong water jet / flooding protection.
- Do not point water-jet at operation-warm motor. Keep 30 minutes cooling time until cleaning.
- Do not point water-jet directly at motor openings and motor seals
- Never use high-pressure cleaner
- After cleaning, the fan must be operated at rated speed for 30 minutes in order to dry!

8. Fault diagnostics

8.1 Safety



WARNING!

- Danger of injury from improper repair work!
- Improper repair work can lead to serious personal injury and/or material damage!
- Please observe safety instructions in the chapters "Safety" and "Assembly and Installation, Initial Operation" at all times!

8.2 What to do in the case of failure and disruptions

The following general rules apply:

1. In the case of failures which may constitute a danger for persons or material, operate emergency stop switch
2. Investigate cause of failure
3. Inform person responsible at the site of operation
4. If necessary, contact manufacturer: service address ☞ "Important Basic Information"

8.3 Fault diagnostics and elimination

Type of error	Possible cause(s)	Action
Fan does not turn (no longer turns)	No voltage from mains	Check mains power supply
	Phase outage	
	Under- or overvoltage	
	Short to ground	Check cable and motor insulation
	Short to winding	Exchange fan
	Thermal motor protection is activated (motor is overloaded)	Check for free airways; if necessary remove foreign bodies ☞ "impeller blocked or dirty" Check temperature of supply air Check voltage
	Impeller is blocked or dirty	- Switch off motor and secure against re-start - Check that motor is set to zero-potential - Remove safety grille - Remove foreign bodies or dirt particles

Type of error	Possible cause(s)	Action
		- Put back safety grille - Next steps as in chapter "Initial Operation"
Fan does not start	Temperature too low for bearing grease	Use bearings with special lubrication suitable for cold temperatures
	Airflow in wrong direction (Motor turns the wrong way round at high speed)	Check airflow
	☞ "fan does not turn"	
Fans turns too slowly	Impeller/Blade cannot move freely	- Turn off fan immediately - If necessary, remove foreign body/dirt from the fan
	Capacity of operating capacitor (only for 1~motor)	Check capacitor, change if necessary
Airflow rate too low	☞ "Fan turns too slowly"	
	Airways blocked	Check that airways are free (ingoing/outgoing air flaps, filters) ☞ "impeller is blocked or dirty"
	Loss of pressure differs from that which was projected	Check choice of fan
Vibrations	Imbalance	Check blades for damage, dirt particles or icing ☞ "Impeller is blocked or dirty"
Unusual noises	Bearing faulty/worn	Change bearing
	Impeller/blade rubs	If necessary remove foreign bodies/dirt from the fan ☞ "Impeller is blocked or dirty"
	Operation beyond stall point (in the case of axial fans)	Check for free airways (incoming / outgoing air flaps, filters)

9. Disassembly and waste disposal

9.1 Safety



WARNING!

- Please observe instructions in chapter “Safety”!
- Disassembly only by qualified specialists!
- When handling, use safety footwear and gloves!

9.2 Disassembly

The following general rules apply:

- Switch motor to zero-potential and secure against re-start
- Check that motor is set to zero-potential
- Remove safety grilles and fan
- Handle with appropriate hoisting devices
- Observe weight stipulations at all times and the permissible bearing load of the relevant means of transport
- On no account stand underneath the suspended fan. A defect in the hoisting device may lead to severe injury or death.

9.3 Waste disposal / Recycling

Fans must be disposed of properly and in an environmentally friendly manner in accordance with legal requirements.

10. Declaration of incorporation

EG-Einbauerklärung - Original

EC Declaration of Incorporation - Translation of the original

im Sinne der EG-Richtlinie Maschinen 2006/42/EG, Anhang II B
as defined by the EC Machinery Directive 2006/42/EEC, Annex II B

Die Bauart der unvollständigen Maschinen
Type of incomplete machine

Produktgruppe <i>Product group</i>	Produkttyp (gemäß Typenschild) <i>Product type (according to label)</i>
Axialventilatoren <i>Axial fans</i>	L

entspricht noch nicht den Anforderungen von Anhang I Artikel 1.1.2, 1.1.5, 1.4.1, 1.5.1 der EG-Richtlinie Maschinen 2006/42/EG
does not yet comply with the requirements set out in Appendix I, Articles 1.1.2, 1.1.5, 1.4.1, 1.5.1 of the EC Machinery Directive 2006/42/EC

Die Inbetriebnahme dieser unvollständigen Maschine ist solange untersagt, bis sichergestellt ist, dass die Maschine, in die sie eingebaut wurde, den Bestimmungen der EG-Richtlinie Maschine 2006/42/EG entspricht.

It is prohibited to commission this incomplete machine until it has been ensured that the machine into which it was incorporated complies with the stipulations of the EC Machinery Directive 2006/42/EG.

Hersteller
Manufacturer

SÜD-ELECTRIC AG
Westring 1-7
D-85614 Kirchseeon bei München

Folgende EG-Richtlinien und harmonisierte Normen sind angewandt:
The following EC Directives and harmonized standards are in use:

EN 60204-1:2006 Sicherheit von Maschinen – Elektrische Ausrüstung von Maschinen – Teil 1: Allgemeine Anforderungen
Safety of Machinery; Electrical equipment of machines; Part 1: general requirements

EN ISO 12100:2003 Sicherheit von Maschinen – Grundbegriffe, allgemeine Gestaltungsleitsätze
Safety of Machinery; basic concepts, general principles for design

EN ISO 13857:2008 Sicherheit von Maschinen – Sicherheitsabstände gegen das Erreichen von Gefahrenstellen mit oberen Gliedmaßen
Safety of Machinery; safety distances to prevent danger zones being reached by the upper limbs

Direktive: **Die Einhaltung der EN ISO 13857:2008 bezieht sich nur dann auf den montierten Berührschutz, sofern dieser zum Lieferumfang gehört**
Compliance with EN ISO 13857:2008 relates only to the installed accidental contact protection, provided that it is within the scope of delivery

Hinweise:

Remarks:

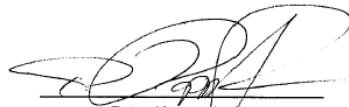
Die speziellen Technischen Unterlagen gemäß Anhang VI B sind erstellt und vollständig vorhanden.
The specific technical documentation in accordance with Appendix VI B has been written and is available in its entirety.

Bevollmächtigte Person für das Zusammenstellen der speziellen Technischen Unterlagen ist: Leitung Technik.
Anschrift siehe oben
The person authorised to compile the specific technical documentation is: Head of Technical Engineering, See above for address

Auf begründetes Verlangen werden die speziellen Unterlagen an die staatliche Stelle übermittelt. Die Übermittlung kann elektronisch, auf Datenträger oder auf Papier erfolgen. Alle Schutzrechte verbleiben bei o.g. Hersteller.
The specific documentation will be transmitted to the official authorities on justified request. The transmission can be electronic, on data carriers or on paper. All industrial property rights remain with the above-mentioned manufacturer.

Kirchseeon, den 7. Dezember 2010

Ort, Datum
Place, date



Peter Koppenhöfer
Vorstand Süd-Electric AG
Managing Director