

Operation & Maintenance

Translation of the original operating instruction



AIR HEATER

WD-A, WD-U:

For Recirculating Air,
Mixed Air, Outside Air
for Wall and Ceiling Installation



Spirit of Air

Quality Assurance



Veren zur Qualitätssicherung und Zertifizierung
für den Mittelstand e.V.

QZV DIN EN ISO 9001:2015

ZERTIFIKAT

Der Verein zur Qualitätssicherung und Zertifizierung für den Mittelstand e.V. bescheinigt, dass das Unternehmen

WOLF Anlagen-Technik GmbH & Co. KG
Münchener Straße 54
85290 Geisenfeld

ein Qualitätsmanagement-System entsprechend der DIN EN ISO 9001:2015 eingerichtet hat und unterhält.
 Der Nachweis wurde in einem Audit erbracht.

Prüfberichtsnummer: **12291181**

erstellt durch: 
 Prof. Dr. rer. oec. Gerhard Krause

Dieses Zertifikat wurde ausgestellt am: 14.10.2021 und gilt bis zum: 13.10.2024
 Zertifikat-Registernummer: **12191191**




für den QZV Axel Klotz

QZV e.V. Schleierstr. 40, 81539 München
 Registrierungsnummer 33100102 (ACB e.V.)



Declaration of incorporation

WOLF Anlagen-Technik GmbH & Co. KG
 Münchener Str. 54
 85290 Geisenfeld, GERMANY



Einbauerklärung

Im Sinne der Maschinenrichtlinie 2006/42/EG, Anhang I, Teil 1, Abschnitt B vom 17.06.2006
 Declaration of Incorporation in the sense of Machine Directive 2006/42/EC, Annex I, Part 1, Para. B-iii, 17.06.2006

Hiermit erkläre ich, dass die nachfolgend beschriebene unvollständige Maschine zum Zusammenbau mit anderen Maschinen/Maschinenteilen zur bestimmungsgemäßen Verwendung geeignet ist und dass seine Inbetriebnahme solange unterliegt ist, bis festgestellt wurde, dass die, unter Beachtung unserer aktuellen Montage-, Betriebs- und Wartungsanleitung (s. Anhang VI), durch Zusammenbau erstellte Maschine, bzw. Anlage oder die Maschine eingebaut werden soll, den Bestimmungen der Richtlinie 2006/42/EG entspricht und die EG-Konformitätserklärung gemäß Anhang IX vorliegt. Bei einer nicht mit uns abgestimmten Änderung der unvollständigen Maschine verliert diese Erklärung ihre Gültigkeit. Diese Einbauerklärung gilt nur im Zusammenhang mit den gültigen Datenblättern und der aktuellen Montage-, Betriebs- und Wartungsanleitung.

We hereby declare that the incomplete machine described below is suitable for assembly with other machines/machine parts for the intended use and that its commissioning is prohibited until it has been determined that the machine or system created by assembly according to our current assembly, operating and maintenance instructions (according to Appendix VI) the machine or plant created by assembly or the machine is to be installed, complies with the provisions of Directive 2006/42/EC and the EC Declaration of Conformity according to Annex IX is available. This declaration becomes invalid if the incomplete machine is modified without our agreement. This declaration of incorporation is only valid in conjunction with the valid data sheets and the current assembly, operating and maintenance instructions.

Diese Einbauerklärung gilt nur im Zusammenhang mit den gültigen Datenblättern und der aktuellen Montage-, Betriebs- und Wartungsanleitung und bezieht sich nur auf den auftragsbezogenen Leistungs- und Lieferumfang.
 The declaration of incorporation is only valid in conjunction with the valid data sheets and the current assembly, operating and maintenance instructions and only refers to the order-related scope of supply and services.

<p>Produktbezeichnung Product Name</p> <p>Serien-/Typenbezeichnung Serial / Type Name</p> <p>Fabrikationsnummer Production Number</p> <p>Baugröße Type of Construction</p> <p>Einzelgültige EG-Richtlinien und Verordnungen: Relevant EC Directives and Regulations</p>	<p>Luftheizer in Wand- und Deckenauführung Central Air Handling Unit heater in wall and ceiling design</p> <p>FS-A...WD-A...WD-U...ZD-A...HY-QUIET-COOL-LINE...</p> <p>siehe Typenschild am Gerät See nameplate on the machine</p> <p>2024</p> <p>Maschinenrichtlinie 2006/42/EG Machine Directive 2006/42/EC</p> <p>EMV-Richtlinie 2014/53/EU EMF Directive 2014/53/EU</p> <p>Druckgeräterichtlinie 2014/68/EU Pressure Equipment Directive 2014/68/EU</p>
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Bevollmächtigter der WOLF Anlagen-Technik GmbH & Co. KG für die Zusammenstellung aller technischen Unterlagen ist
 Herr Viktor Ritschold, Leitung Technik
 Authorized Representative of WOLF Anlagen-Technik GmbH & Co. KG for compiling all technical documents is
 Mr. Viktor Ritschold, Technical Management

Geisenfeld, 08.01.2024


 206
 Viktor Ritschold, Mitglied der Geschäftsführung
 Viktor Ritschold, Member of Management

Seite 1 von 2

Declaration of conformity

WOLF Anlagen-Technik GmbH & Co. KG
 Münchener Str. 54
 85290 Geisenfeld, GERMANY



EG-Konformitätserklärung

Im Sinne der Lüftungsgeräte-Richtlinie (EU) 1253/2014 (EU), Artikel 5 vom 07.07.2014
 zur Durchführung der Ökodesign-Richtlinie 2009/125/EG vom 21.10.2009.
 EC-Declaration of Conformity in the sense of Eco-design Regulation for Ventilation Equipment (EU) 1253/2014 (EU), Art. 5 (a) 07.07.2014
 for implementation of Eco-design Directive 2009/125/EC of 21.10.2009

Hiermit erkläre ich, dass die nachfolgend beschriebene unvollständige Maschine zum Zusammenbau mit anderen Maschinen/Maschinenteilen zur bestimmungsgemäßen Verwendung geeignet ist und dass seine Inbetriebnahme solange unterliegt ist, bis festgestellt wurde, dass die, unter Beachtung unserer aktuellen Montage-, Betriebs- und Wartungsanleitung (s. Anhang VI), durch Zusammenbau erstellte Maschine, bzw. Anlage oder die Maschine eingebaut werden soll, den Bestimmungen der Richtlinie 2009/125/EG entspricht und die EG-Konformitätserklärung gemäß Anhang IX vorliegt. Wir erklären außerdem, dass die nachfolgend beschriebene unvollständige Maschine den Ökodesignanforderungen der Lüftungsgeräte-Ökodesignverordnung entspricht. Bei einer nicht mit uns abgestimmten Änderung der Maschine verliert diese Erklärung ihre Gültigkeit. Diese Einbauerklärung gilt nur im Zusammenhang mit den gültigen Datenblättern und der aktuellen Montage-, Betriebs- und Wartungsanleitung.

We hereby declare that the incomplete machine described below is suitable for assembly with other machines/machine parts for the intended use and that its commissioning is prohibited until it has been determined that the machine or system created by assembly according to our current assembly, operating and maintenance instructions (according to Appendix VI) the machine or plant created by assembly or the machine is to be installed, complies with the provisions of Directive 2009/125/EC and the EC Declaration of Conformity according to Annex IX is available. We also declare that the incomplete machine designated below complies with the eco-design requirements of the Ventilation Unit Eco-design Ordinance. This declaration becomes invalid if the incomplete machine is modified without our agreement. This declaration of incorporation is only valid in conjunction with the valid data sheets and the current assembly, operating and maintenance instructions.

Diese Konformitätserklärung gilt nur im Zusammenhang mit den gültigen Datenblättern und der aktuellen Montage-, Betriebs- und Wartungsanleitung und bezieht sich nur auf den auftragsbezogenen Leistungs- und Lieferumfang.
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Seite 2 von 2



Content

1. Notes and regulations for the operator	4
2. Proper Use	4
3. Safety	5
4. Goods Acceptance	6
04.01 Transport Damages	6
04.02 Indications to Packing (non-returnable).	6
5. Assembly	6
05.01 Fixing	6
05.02 Roof Safeguarding	7
05.03 Wall and Ceiling Assembly	7
05.04 Connection Pipes	7
05.05 Ventilation Valve and Emptying Cock	8
05.06 Motor Protection Louver	8
05.07 Lamellae Adjustment, manual	9
05.08 Lamellae Adjustment, automatic	9
05.09 Lamellae Adjustment, automatic – Adjustment, Function	10
05.10 Adjustment Choke Louver with Servo-Motor	10
6. Electrical connections	11
7. Switchgear AC	13
8. Commissioning	18
08.01 Motor connection	18
9. Maintenance	21
09.01 Warranty	21
09.02 Motor	21
09.03 Heat exchanger	21
09.04 Air filter	21
10. Stopping Procedure, Dismantling and Elimination	22
10.01 Decommissioning	22
10.02 Dismantling and disposal	22

1. Notes and regulations for the operator

Meaning of the operating instructions

Read these operating and maintenance instructions carefully before installation and commissioning to ensure correct use! We would like to point out that these operating and maintenance instructions only apply to the unit and in no case to the complete system! All unit-specific data such as order number, energy data, weight, dimensions, etc. can be found either on the type plate of the respective unit component or in the technical order confirmation. These operating and maintenance instructions are intended for safe working on and with the above-mentioned unit. They contain safety instructions that must be observed as well as information that is necessary for trouble-free operation of the unit. The operating and maintenance instructions must be kept with the unit. It must be ensured that all persons who have to carry out activities on the unit can consult the operating and maintenance instructions at any time. The operating and maintenance instructions must be kept for further use and must be passed on to every user or end customer.

Duty of care of the operator

- The contractor or operator must ensure that the equipment and operating materials are operated and maintained in accordance with the applicable rules and legal regulations.
- The operator is obliged to operate the unit only when it is in perfect condition.
- The unit may only be used for its intended purpose („area of use“).
- The safety devices must be checked regularly for proper functioning.
- The operating and maintenance instructions must always be kept available in a legible condition and complete at the place of use of the unit.
- The personnel must be regularly instructed in all applicable questions of occupational safety and environmental protection and must know the operating and maintenance instructions and in particular the safety instructions contained therein.
- All safety and warning notices attached to the unit must not be removed and must remain legible.

2. Proper Use

Decentral Air Heater for Ventilation and Air-Conditioning of

- Offices
- Meeting and Exhibition Rooms
- Lounges
- Industrial and Production Companies
- Greenhouses
- Sales Rooms, Supermarkets, Shopping Centres

WD-A Units are suitable for

- ▶ Supply of air which is
 - dust-free
 - without pollutants
 - non-aggressive
 - not developing corrosion
 - incombustible
- ▶ Preparation of Air for
 - Filtering
 - Heating
- ▶ As well as acc. to the operating parameters determined in the quotation and orders and on the identification plates, like
 - media temperatures, media pressure (air, water, refrigerant, vapour etc.)
 - air humidity

Any other use is expressly excluded by us. Other uses require the prior agreement or approval of the manufacturer.

RLT-machines for supplying combustible or explosive gases, vapours, mists or dusts must especially be rated.

Without respective remark in our technical ratings, standard air heaters must not be operated in these danger zones.

3. Safety

The authorized specialized staff charged with

- assembly
- commissioning
- maintenance

must be informed about the observance of these operating instructions without starting work.

Non-observance of the operating instructions can endanger the persons charged with this work and can damage the machine.



Attention!

Work on air heaters must be started or done only when the following functions are fulfilled:

- Repair switches fixed at the machine are connected to the circuit
- Power supply is dead on all poles
- Power-operated, rotating parts are secured against re-starting (repair switch lockable)
- standstill of the rotating parts
- machine components have cooled down to normal ambient temperatures (room temperature)



Attention!

Only qualified, specialized staff must be charged with work on electric components.
The local EVU- and VDE-regulations have to be observed.

The RLT-machine must not be modified nor added, since otherwise the manufacturer's conformity declaration will expire!

Symbols:



Opposite symbol is indicated in the operating instructions at any place where in case of non-observance

- there is danger to life and limb of persons
- damages of the machine can occur.



Opposite symbol is indicated in the operating instructions at any place where there is danger from electric components.



Opposite symbol is indicated in the operating instructions at indications which must not be realized.



Opposite symbol in the operating instructions indicates guidelines or cross-references which are important for the operation of the RLT-plant.



Opposite symbol in the operating instructions indicates information or application tips.

4. Goods Acceptance

04.01 Transport Damages



Unpack the goods in the driver's presence and check them acc. to our delivery note regarding completeness and damage. Transport damages must be confirmed by forwarder (date and signature). Later complaints will be refused by forwarding insurances.

04.02 Indications to Packing (non-returnable)

The packing is a mere transport packing. Its quantity has been reduced to the indispensable minimum in order to be able to transport and unload the high-grade parts without damage.

The material can be completely recycled and thus can be given to reutilization. The elimination costs now as before have to be borne by the consignee of the goods.

As an alternative, it is possible to return the packing material to us. The transport costs have to be borne by the consignee of the goods. Please note that the packing material must not be contaminated and must be brought separated in groups.

5. Assembly

05.01 Fixing

The installation of the unit may only be carried out by qualified personnel. The qualified personnel are obliged to comply with the general accident prevention regulations (e.g. UVV in Germany) and to wear the necessary personal protective equipment.

The units have to be fixed at the wall (to be provided by customer) with fixing material approved by the Building Supervisory Board (dowels, screws) acc. to the wall construction. Weights of the respective unit combination cf. WD-A-catalogue.

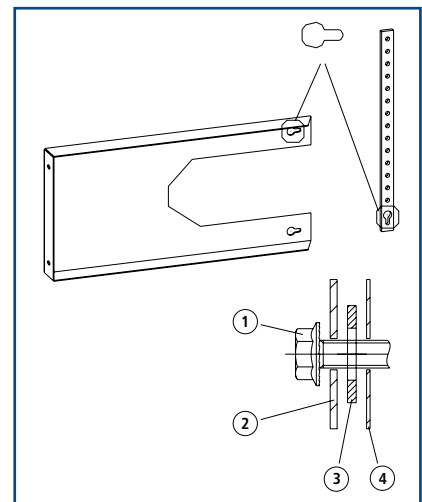
Unit assembly with

- sheet bracket Order No. 650 (for wall and ceiling when using the motor protection louver => page 8)
- sheet brackets Order No. 651 (for wall and ceiling)
- ceiling suspension Order No. 6531 + D (ceiling).

The supplied suspension devices have got special sockets.

Bracket fixing at the unit:

1. Loosen hexagonal screws □ on one side ~3 mm.
2. Insert sheet bracket □ or ceiling suspension with large boring by hexagonal screws □ and pull it towards the back, so that screw □ is in the small slot.
3. Press washer □ to the WD-A-housing □.
4. Tighten firmly hexagonal screw □.



Unit assembly with accessories without sheet brackets, ceiling suspension.

When using the following accessories, the unit can be fixed without sheet brackets or ceiling suspension.

511 - Mixed air part | 521 - Recirculating air part | 530 - Outdoor air section | 541 - Filter part

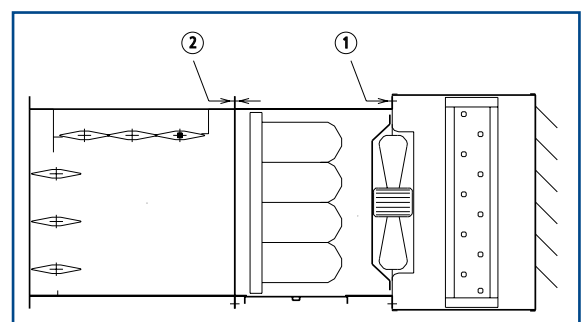
Connection of Unit Parts (Accessories)

Glue one sealing strip 12 x 6 mm to one frame profile of each connection flange.

□ = sheet screw 6,3 x 13

□ = hexagonal screw M 6 x 16,

with washer, spring washer and nut.




Attention:

When using accessories, outside air operation is possible, so:

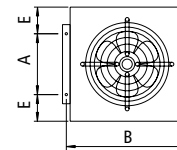
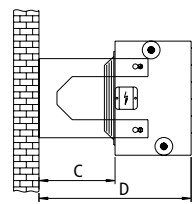
- Provide an anti-frost thermostat at the heat exchanger.
- All ducts transporting outside air must be insulated inside the building on the outside in order to avoid deposit of moisture.

05.02 Roof Safeguarding

The roof safeguarding for accessories led through the roof – rain hood or ducts – must be provided by customer. Roof safeguardings are not included in the scope of supply

05.03 Wall and Ceiling Assembly

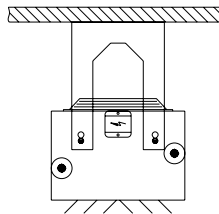
Typ WD-A	100	200	300	400
A	240	2x185	2x210	3x183
B	480	610	760	890
D	620	620	620	620
E	105	105	155	155,5
C	320	320	320	320



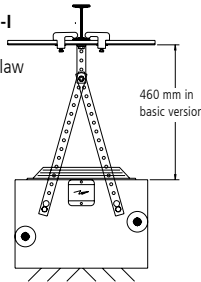
Order No. 651
2 sheet brackets short

Order No. 650
2 sheet brackets long

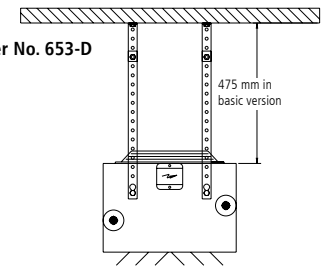
Order No. 651
2 sheet brackets short



Order No. 653-I
Clamping range
of the support claw
0 - 15 mm



Order No. 653-D



The static stressability of the wall or ceiling construction must be checked by customer.

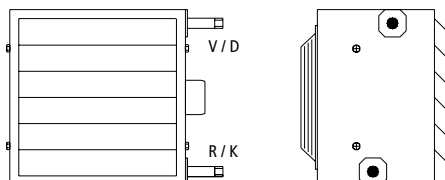
Fixing at the wall or ceiling must be effected with fixing elements (dowels, screws) approved by the Building Supervisory Board.

For suspensions with larger distance, additional flat irons can be ordered.

05.04 Connection Pipes

Connection right-hand (standard design)
for pump warm water, pump hot water, thermal oil

Connection right-hand (spezial design)
for vapour
Standard design cannot be used



**for pump warm water, pump hot water,
thermal oil**

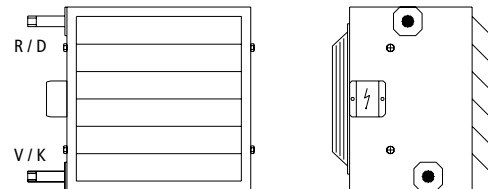
V = advance

R = return

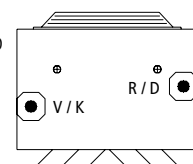
for vapor

K = condensate discharge D = steam entrance

Connection left-hand (standard design)
for pump warm water, pump hot water, thermal oil



Connection Ceiling Unit
for pump warm water, pump
hot water, thermal oil
and steam




Important:

In case of steam, pay attention that the heat exchanger is installed absolutely horizontally or in steam direction with a slope of 1 % to condensate discharge, respectively. There must be no condensate accumulation in the heat exchanger.

An efficient ventilation has to be provided.

Pay attention to the condensate discharge manufacturer's assembly instructions.

Due to insufficient emptying and ventilation, Connections towards above or below are not possible.


Do not twist connection piece!

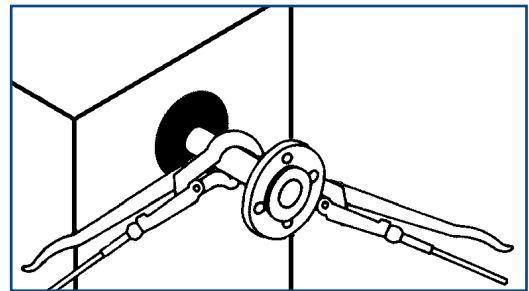
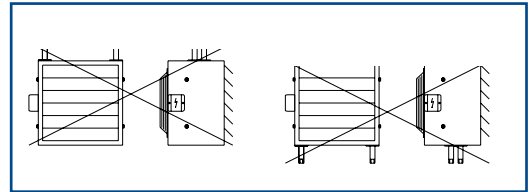
(This will destroy the heat exchanger. No warranty).

When fixing screwed flanges at the advance and return of the heat exchanger, hold against with a suitable tool.

For later inspection work, it is purposeful to provide a slide valve in front of the heat exchanger.

Remove the protection caps from the connecting pipes.

Important: Connect the machine acc. to the counterflow principle. Advance and return cf. 05.04.


Frost protection for heat exchanger:

In case of outside air operation, provide anti-frost thermostat on the air exit side of the heat exchanger!

05.05 Ventilation Valve and Emptying Cock



Pay attention that the ventilation valve is installed at the highest point. Arrange the emptying cock at the lowest point, so that a complete emptying of the heat exchanger is possible. As a precaution, blow through the heat exchanger with compressed air in order to achieve a complete emptying (**frost protection**).

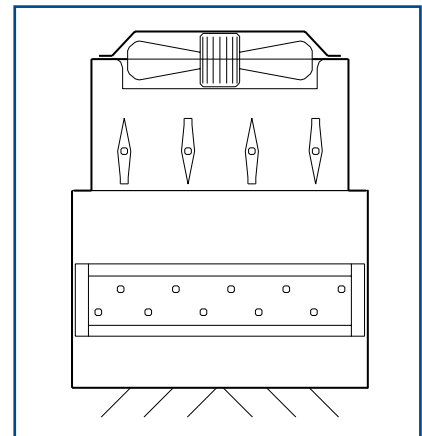
05.06 Motor Protection Louver



The installation of the motor protection louver is necessary in case of higher heating media in order to protect the fan motor from overheating when it stands still. The thermo-contacts integrated in the motor would react and stop the motor. Therefore use motor protection louver in case of high advance temperature of the heating medium. Without motor protection louver, WD-A-machines may be operated up to an advance temperature of the heating medium of:

	Wall Machine	Ceiling Machine
without accessories (free suction- extraction)	130 °C	120 °C
with accessories (at the suction)	120 °C	120 °C

In case of higher heating media from pump hot water 130 /100 on, from vapour 4 bar on, the motor protection louver (order No. 595) must be installed between heat exchanger and motor.



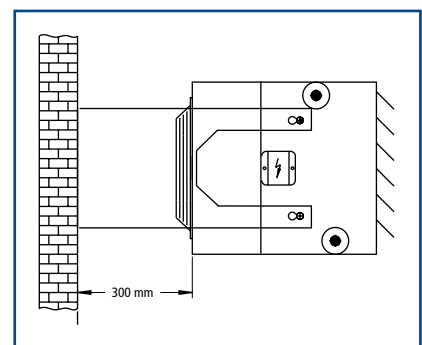
Attention: When using the motor protection louver, the sheet bracket long (order No. 650) is required for wall and ceiling assembly.

Additional measures / replacement measures:

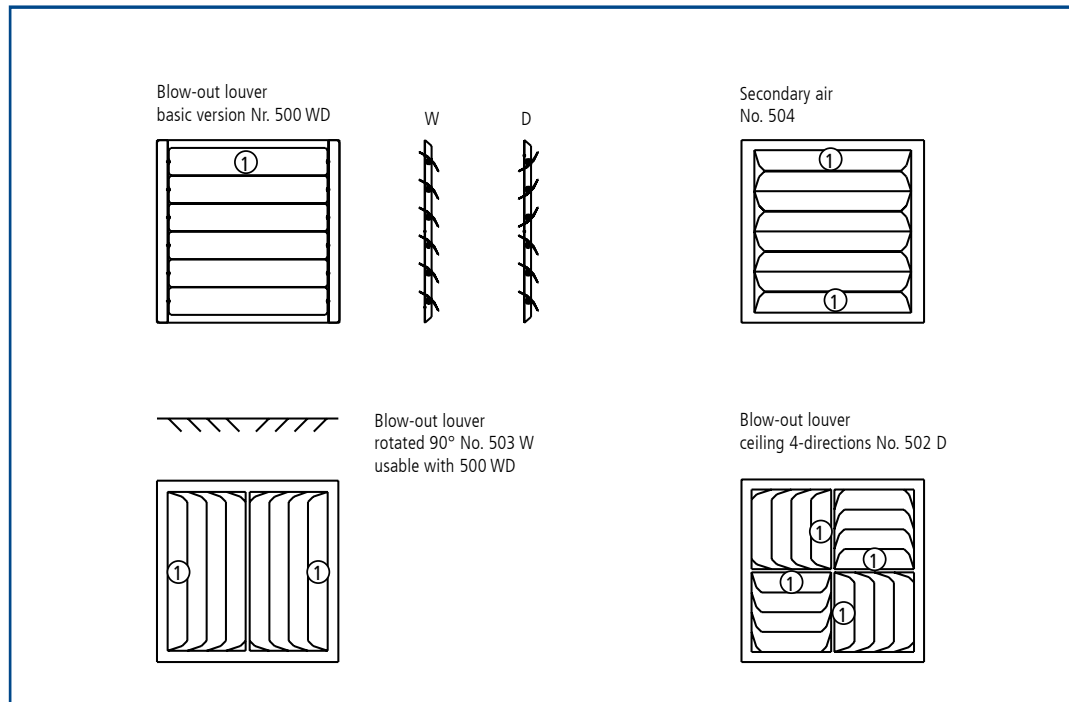
- If the operation is unregulated by the heating medium, install motor protection louver.
- If the operation is regulated by the heating medium, provide fan disconnection, when the regulation valve is closed. Especially in case of an advance temperature of the heating medium of more than 180 °C, to be provided by all means.

Apart from the motor protection function, the motor protection louver can also be used as frost protection flap at machines with pure outside air operation.

Function: Fan off - motor protection louver (frost protection flap) closed.



05.07 Lamellae Adjustment, manual



1. First bend lamella □ manually into the requested position.
2. Adjust remaining lamellae manually.

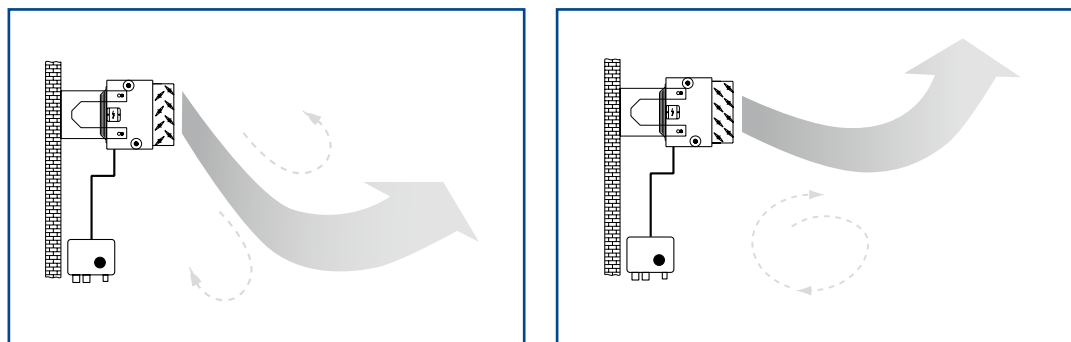
In case of corrections of the adjustment angle, the lamellae can be bent several times without problems.



Attention!

Blow-out louver 503-W is installed behind the blow-out louvers 500-W, 501-D.
Firstly adjust lamellae 500-W, 501-D, then proceed with 503-W as described above.

05.08 Lamellae Adjustment, automatic



Energy-saving louver 505-W/506-D-S, with switching device 678, prevents drifting of the primary air stream by high temperature difference between primary air and room air.

By using the energy-saving louver, the drifting (thermal lift) of the primary air stream, especially during the heating-up period, can be opposed. In choke position, there are single air jets, so that secondary air (room air) is mixed to the primary air stream. Thus, the air inlet - primary air stream is increased and cooled in the core.

By the control device (order No. 678), the temperature difference between nominal and real value of the room temperature is permanently determined.

Acc. to the determined difference as well as the adjustment at the control device (steepness of the control curve), the servo-motor for the choke louver is activated.

> high temperature difference = choke position

< low or no temperature difference (heating-up finished) = unchoked position.

05.09 Lamellae Adjustment, automatic – Adjustment, Function

Function:

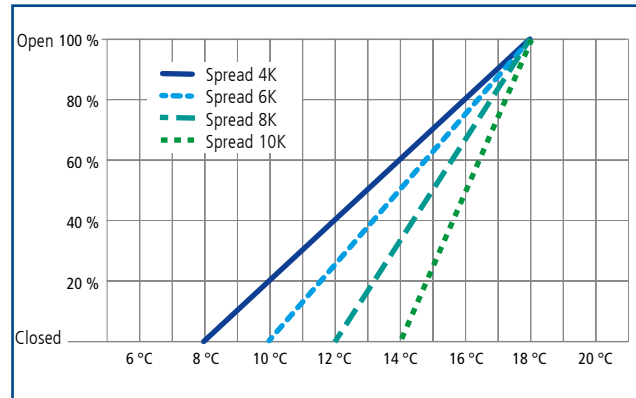
The nominal temperature (5 - 40 °C) is adjusted at the outside scale. The steepness of the control curve (spread) can be adjusted inside the housing.

According to the determined temperature difference between nominal and real value of the room temperature as well as adjusted spread of the control curve, the servo-motor for the choke louver is activated.

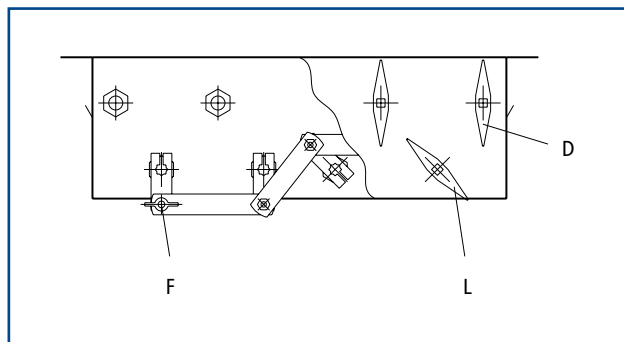
When the room temperature exceeds the adjusted nominal value, the flap is completely open.

Example:

Hall temperature (nominal value adjustment)
18 °C / Spread 10 K
Flap choked up to ... 8 K
Flap opened > 8 °C
Flap completely opened at 18 °C



05.10 Adjustment Choke Louver with Servo-Motor



In order to achieve a low resistance with opened choke louver, the choke louver should stand parallel to the adjustment louver.

1. Adjustment of Steering Louver

Adjust steering louver L to the requested blow-out direction of the primary air stream and fix it with clamping device F.

2. Adjustment of Choke Louver

Open the box. Adjust Nominal Value Potentiometer to left, to 5 °C.

Adjust the requested spread 1 - 10 by the internal knob (Spread = Spreizung). Now the servo-motor opens the choke louver D.

After about 2 - 3 minutes, the position of the choke louver can be adjusted parallel to the steering louver by the knob (max. opening angle of Flap).

Adjust the knob (min. opening angle of Flap) to left stop. Close the box.

Now the room temperature can be adjusted at the Nominal Value Potentiometer, the system is ready for operation.



Operating Elements:

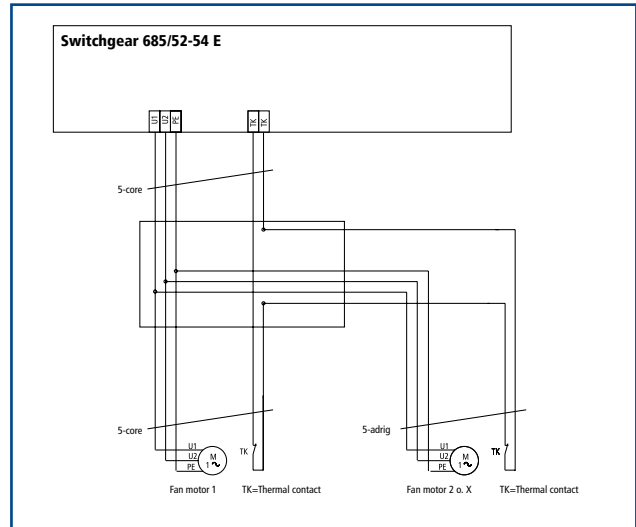
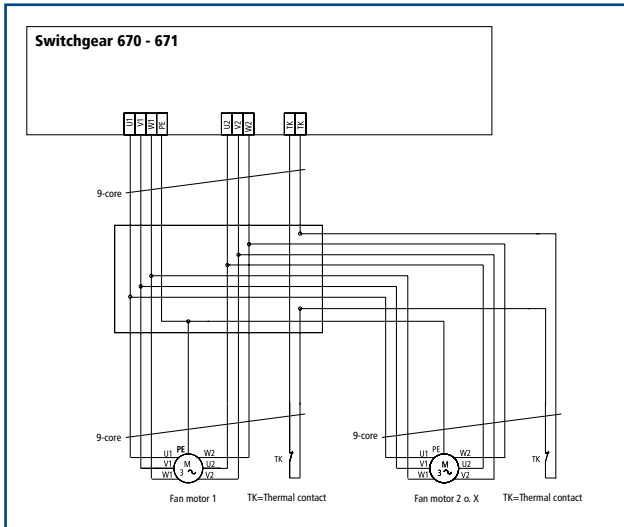
- Adjusting Knob Nominal Temperature (adjustable outside and inside)
- Adjusting Knob Spread (adjustable in opened box, only)
- Adjusting Knob Min. Opening Angle (adjustable in opened box, only)
- Adjusting Knob Max. Opening Angle (adjustable in opened box, only)

For detailed information see the instruction sheet enclosed with the control box.

6. Electrical connections

06.01 Parallel connection of WD units

Connecting the unit to the mains, electrical installation or repair work may only be carried out by qualified personnel. Qualified personnel are obliged to comply with the general accident prevention regulations (e.g. UVV in Germany) and to wear the necessary personal protective equipment.

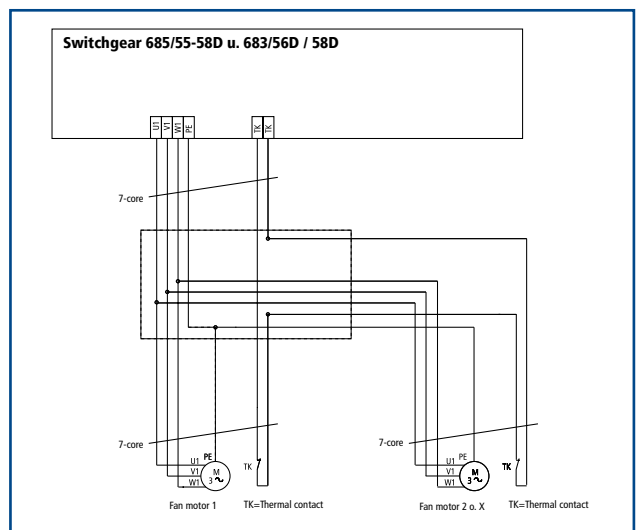


Clip box and wiring to be provided by customer!

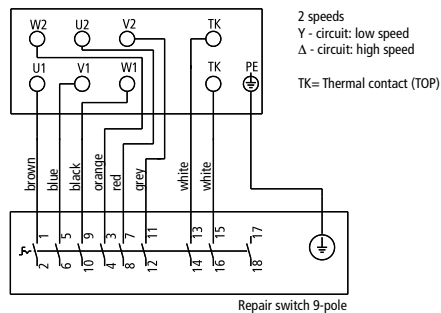
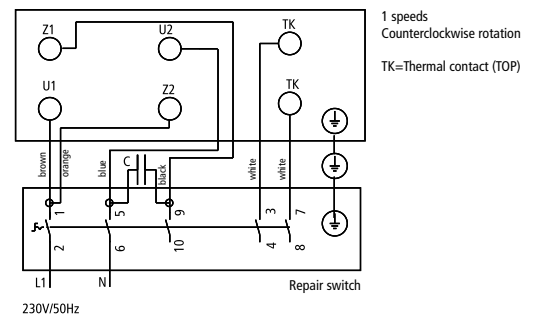


Attention! Max. number of fan motors on one switching device: cf. table in these operating and maintenance instructions.

The cable cross-sections are guidance values and must be adjusted to the valid VDE-regulations VDE 0100 and the TAB.



06.02 Repair switch

Motor 001

Motor 003


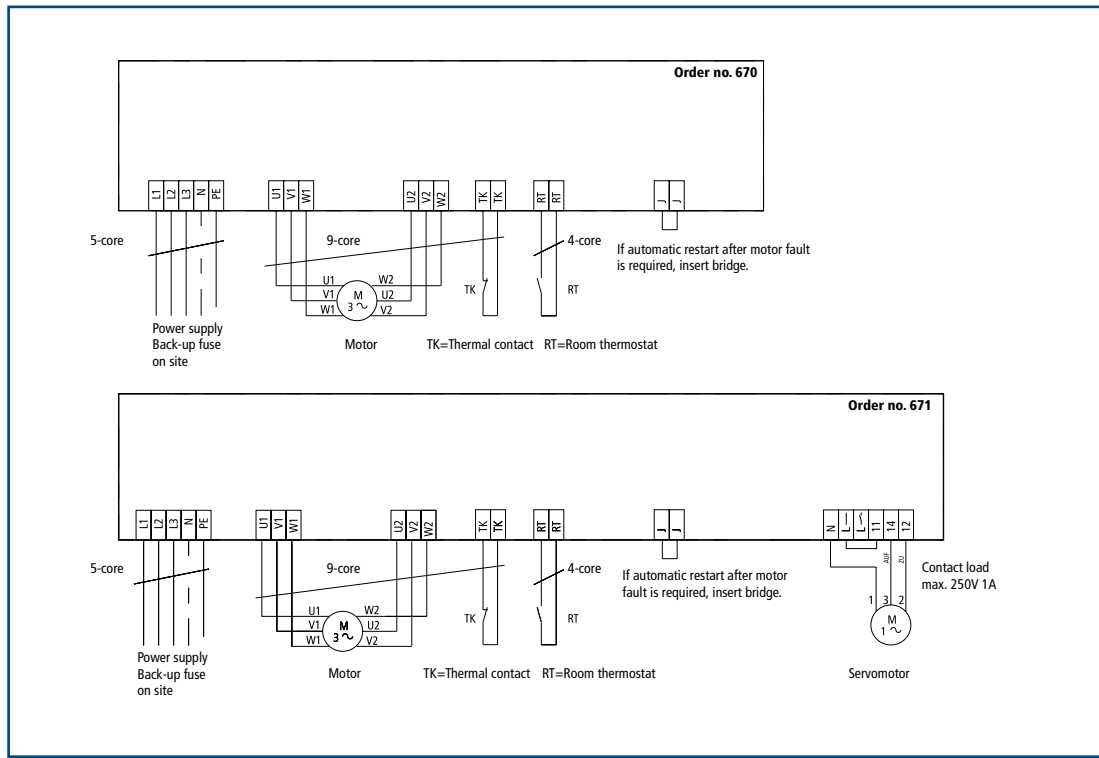
06.03 Maximum number of WD units on one switching device

Switchgear	Typ WD															
	101	201	301	401	102	202	302	402	103	203	303	403	106	206	306	406
670	50	20	14	6									50	20	14	6
671	50	20	14	6									50	20	14	6
676	50	20	14	6												
677	1	1	1	1												
685/52 E									7	1	1					
685/53 E									15	3	3	1				
685/54 E									24	6	5	3				
685/55 D	5	2	1													
685/56 D	10	4	2	1												
685/57 D	20	8	5	2												
685/58 D	35	14	10	4												
685/57ExD					2	2	2	2								

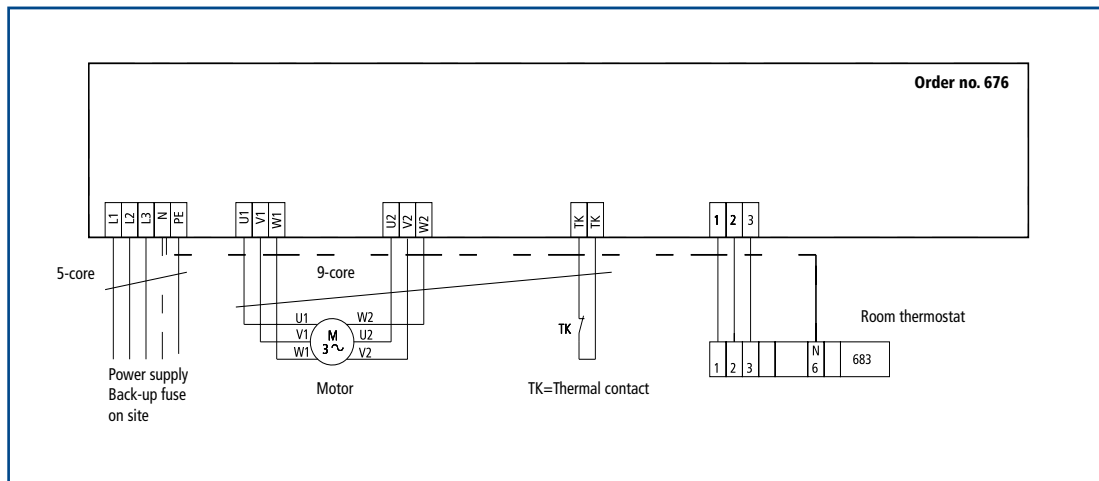
Switchgear EC	WD 10E	WD 20E	WD 30E	WD 40E
690-EC	15	15	15	15
691-EC	15	15	15	15
692-EC	15	15	15	15

7. Switchgear AC

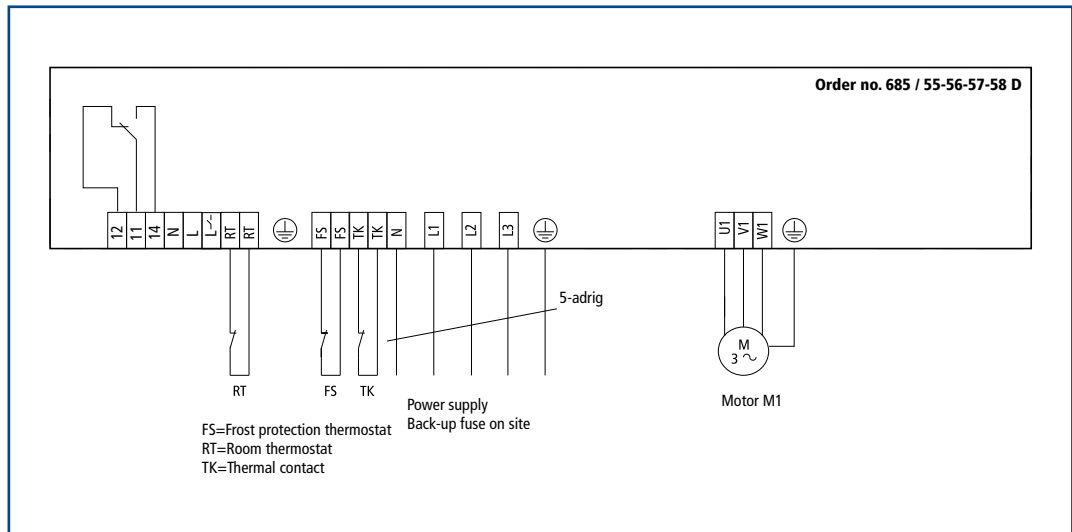
07.01 Switchgear, 2 speeds 400 V (motor 001)



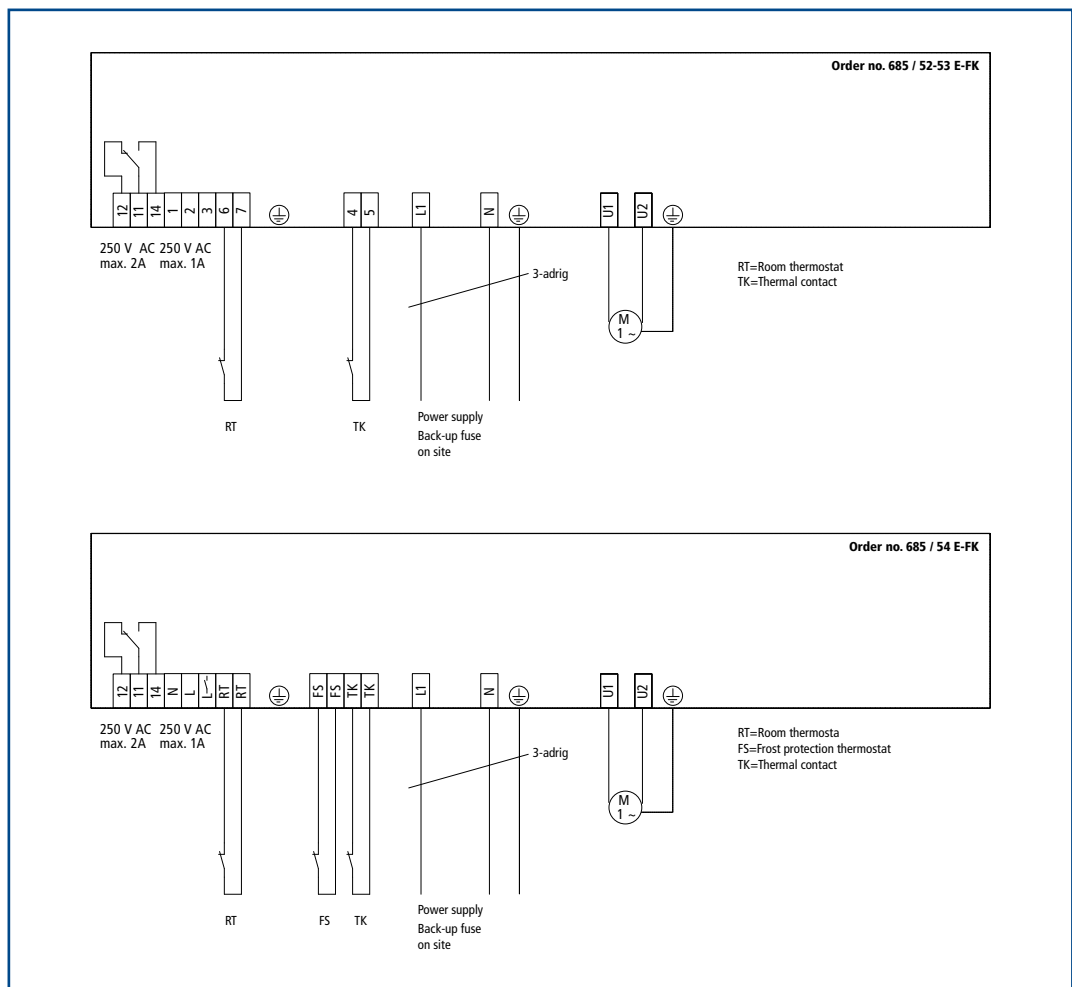
07.02 Automatic switchgear, 2 speeds 400 V (motor 001)



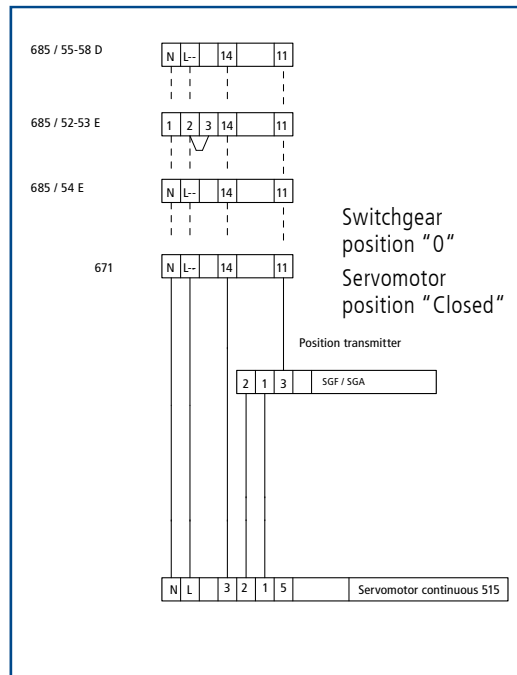
07.03 5-step switchgear, 5 speeds 400 V (motor 001)



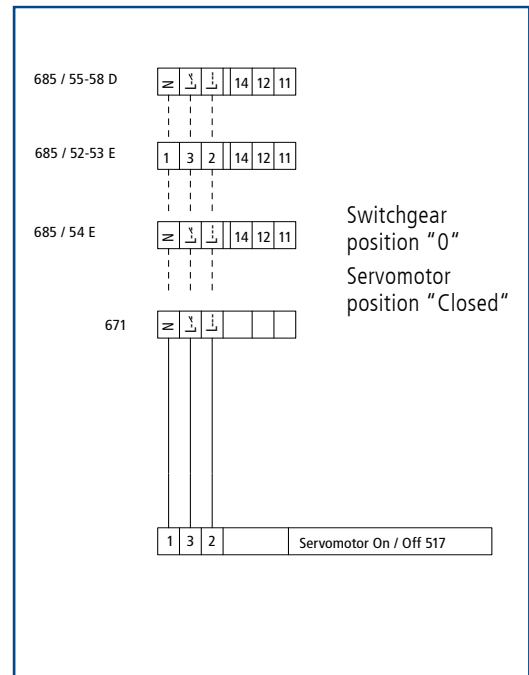
07.04 5-stage switchgear, 5 speeds 230 V (motor 003)



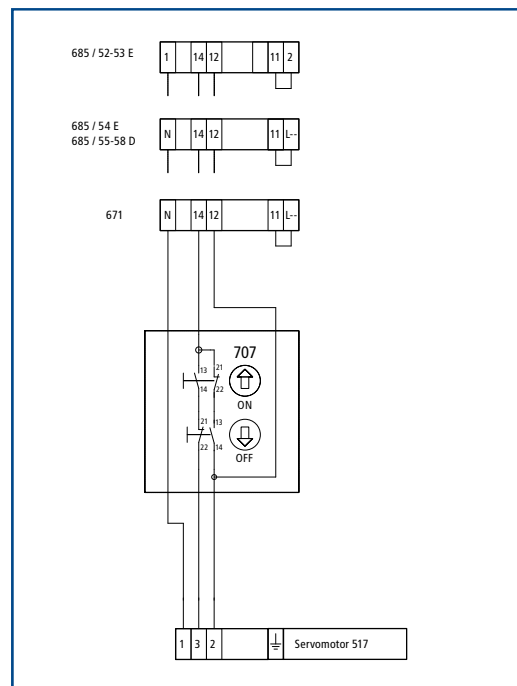
07.05 Switchgear with servomotor continuous 515



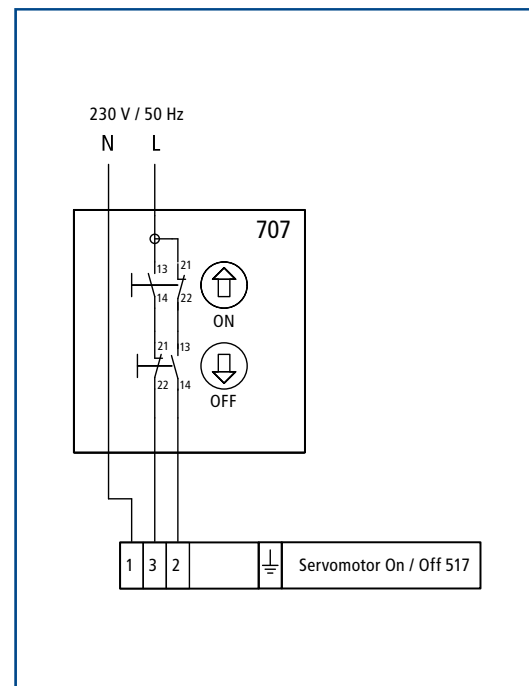
07.06 Switchgear with servomotor ON / OFF 517



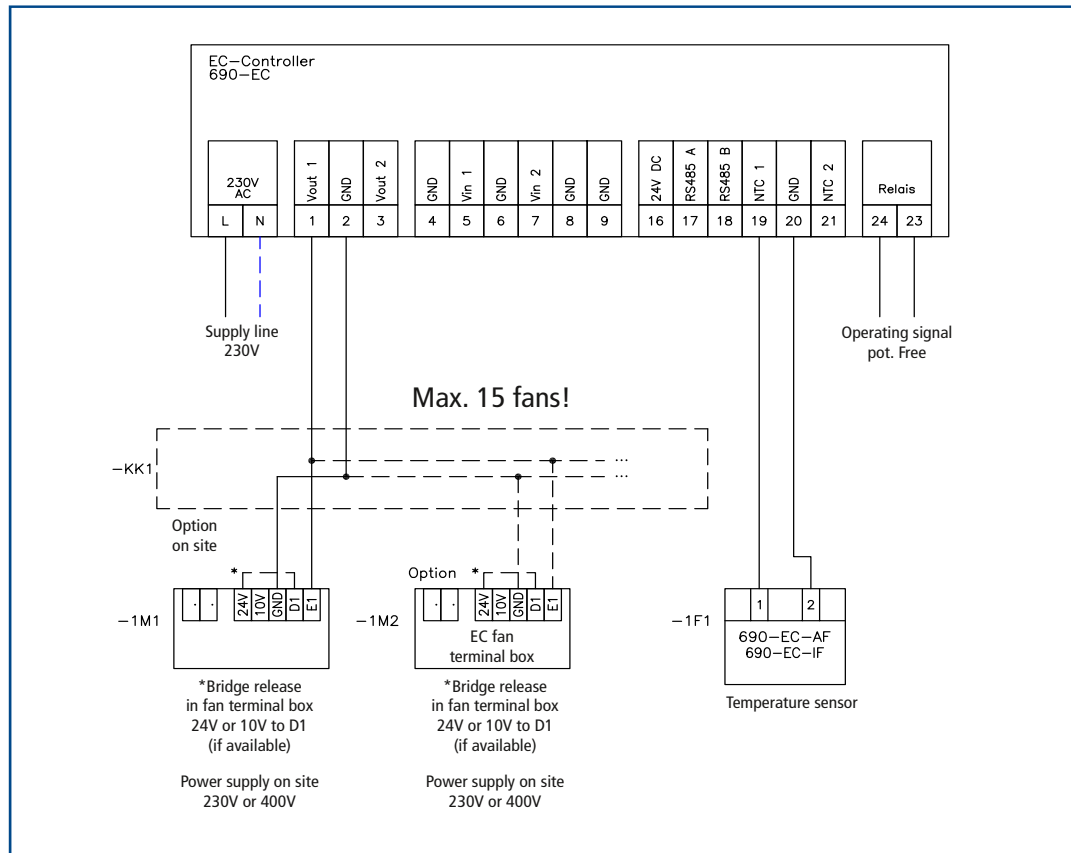
07.07 Switchgear with control unit 707 and servomotor ON / OFF 517



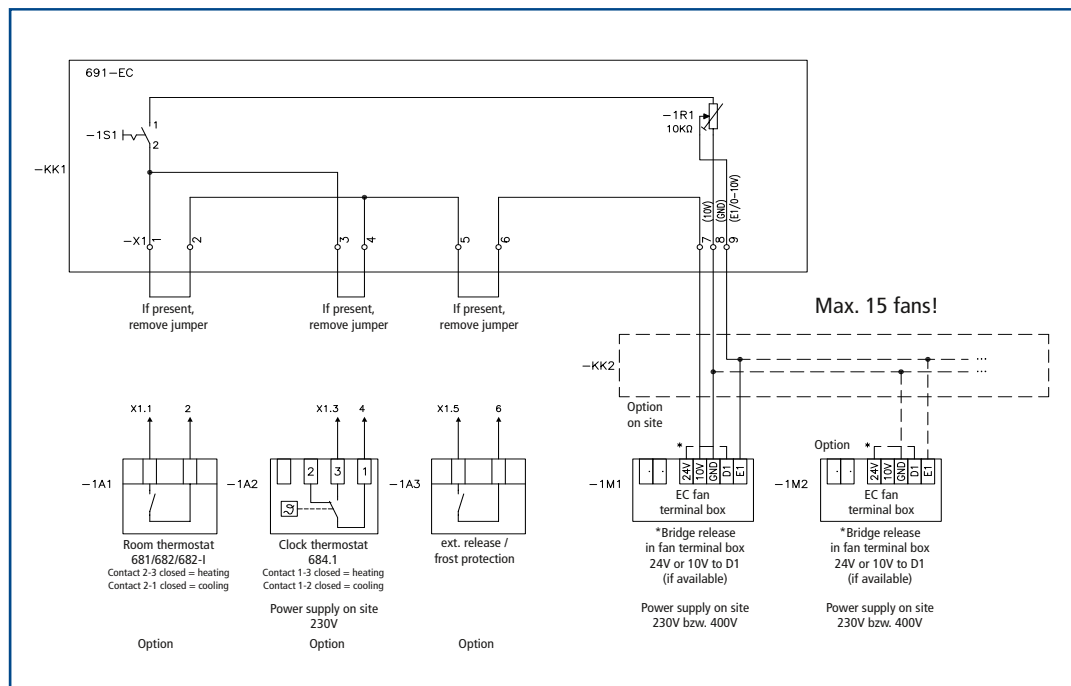
07.08 Switchgear with room thermostat and servomotor ON / OFF 517



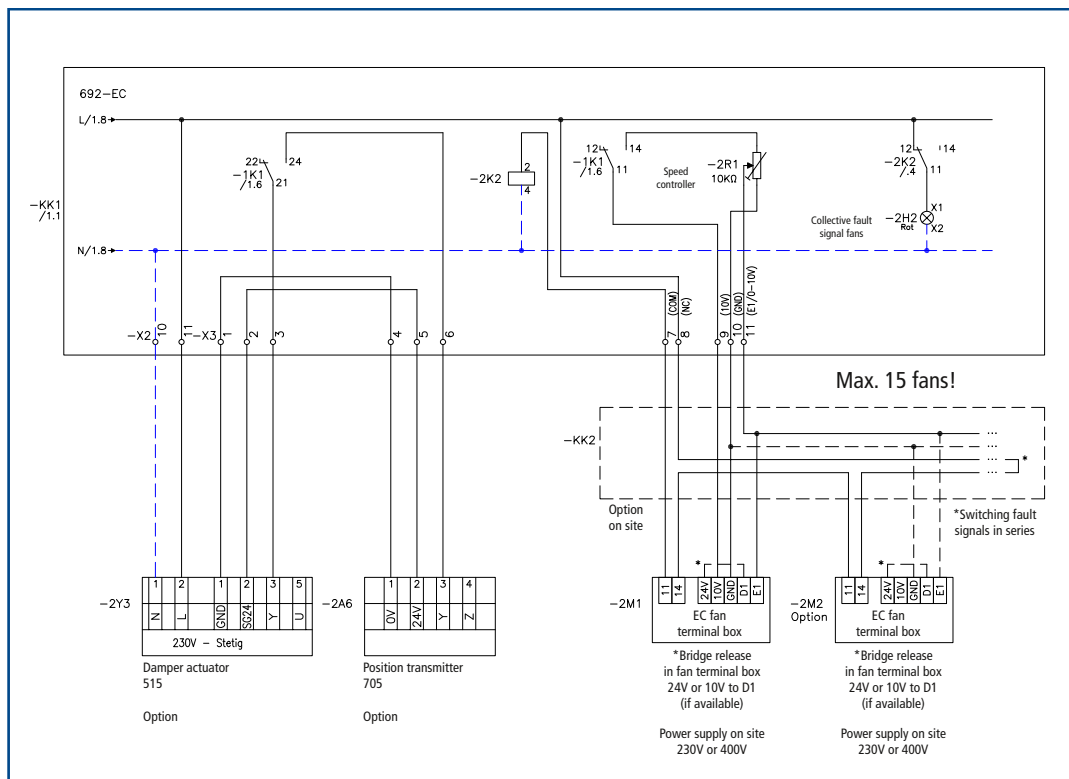
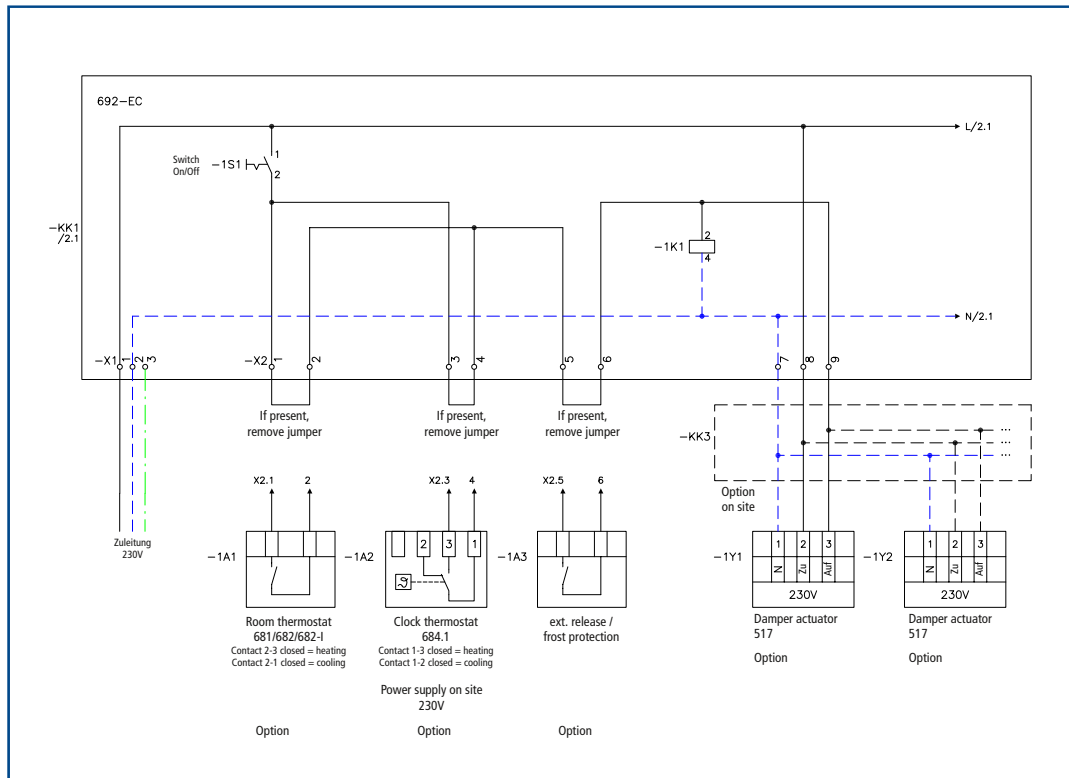
07.09 Switchgear with EC controller 690 EC



07.10 Switchgear with EC controller 691 EC



07.11 Switchgear with EC controller 692 EC with damper actuator



8. Commissioning

08.01 Motor connection

Commissioning may only be carried out by qualified personnel. The qualified personnel are obliged to comply with the general accident prevention regulations (e.g. UVV in Germany) and to wear the necessary personal protective equipment.



Attention!

When commissioning the unit, the designed limits (see information on the type plate on the unit) must not be exceeded. No warranty is given for any consequential damage resulting from this.



In addition, the individual operating and maintenance instructions for the built-in parts or supplied parts must be observed.

The rated voltage specified on the type plate applies. Three-phase motors designed for a nominal voltage of 400 V can be used in the range $400\text{ V} + 6\% - 10\%$ according to DIN / IEC 38, single-phase AC motors 230 V in the range $230\text{ V} + 6\% - 10\%$.

Connecting cable made of EVA ethylene vinyl acetate hose cable 4 GJ1 according to VDE 0208 / 3.69. This cable is approved for operating voltages up to 500 V, the thermal resistance is max. $120\text{ }^{\circ}\text{C}$. The cable construction complies with VDE 0282 part 804.

All motors are fully protected by thermal contacts. If the permissible temperature limit of $135\text{ }^{\circ}\text{C}$ is exceeded (e.g. due to excessive ambient temperature, heating up due to high heating medium temperatures), these contacts come into action and switch off the motor.



This full motor protection is only achieved with our switchgear.

No motor guarantee can be given when using third-party products.

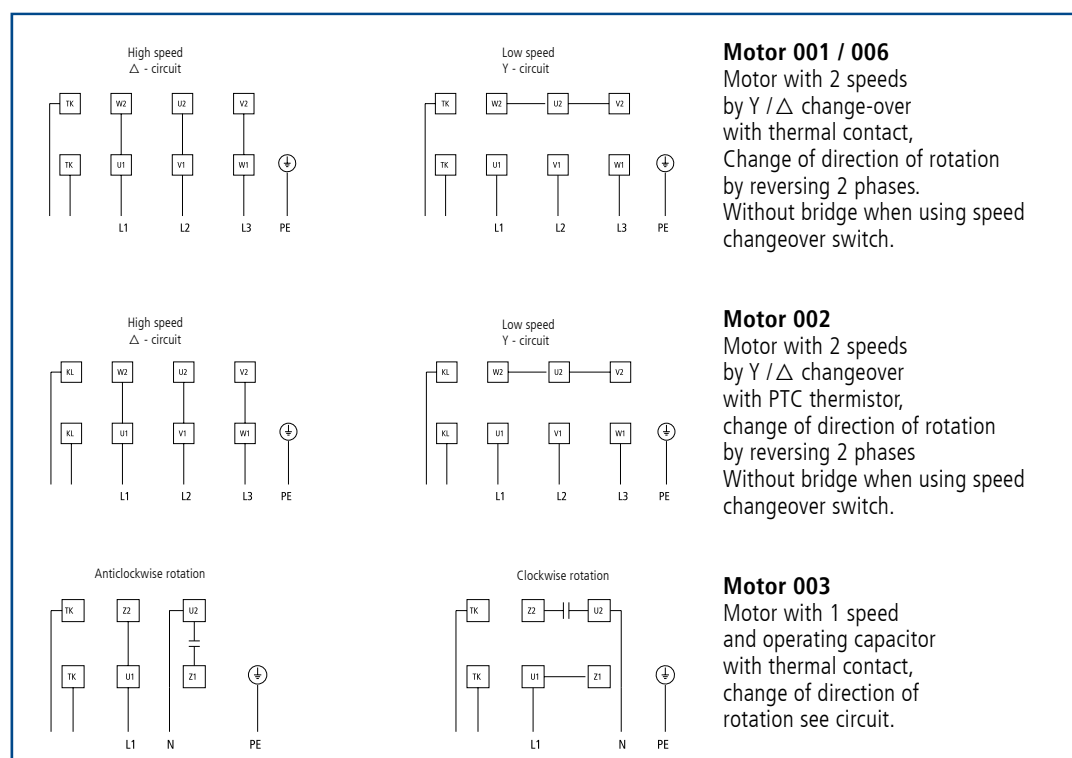


Attention! The operator must have the equipotential bonding of the unit connected to the on-site equipotential bonding system by a qualified electrician in accordance with the legal requirements, standards and guidelines and ensure proper functioning. Mounted equipotential bonding must not be removed.

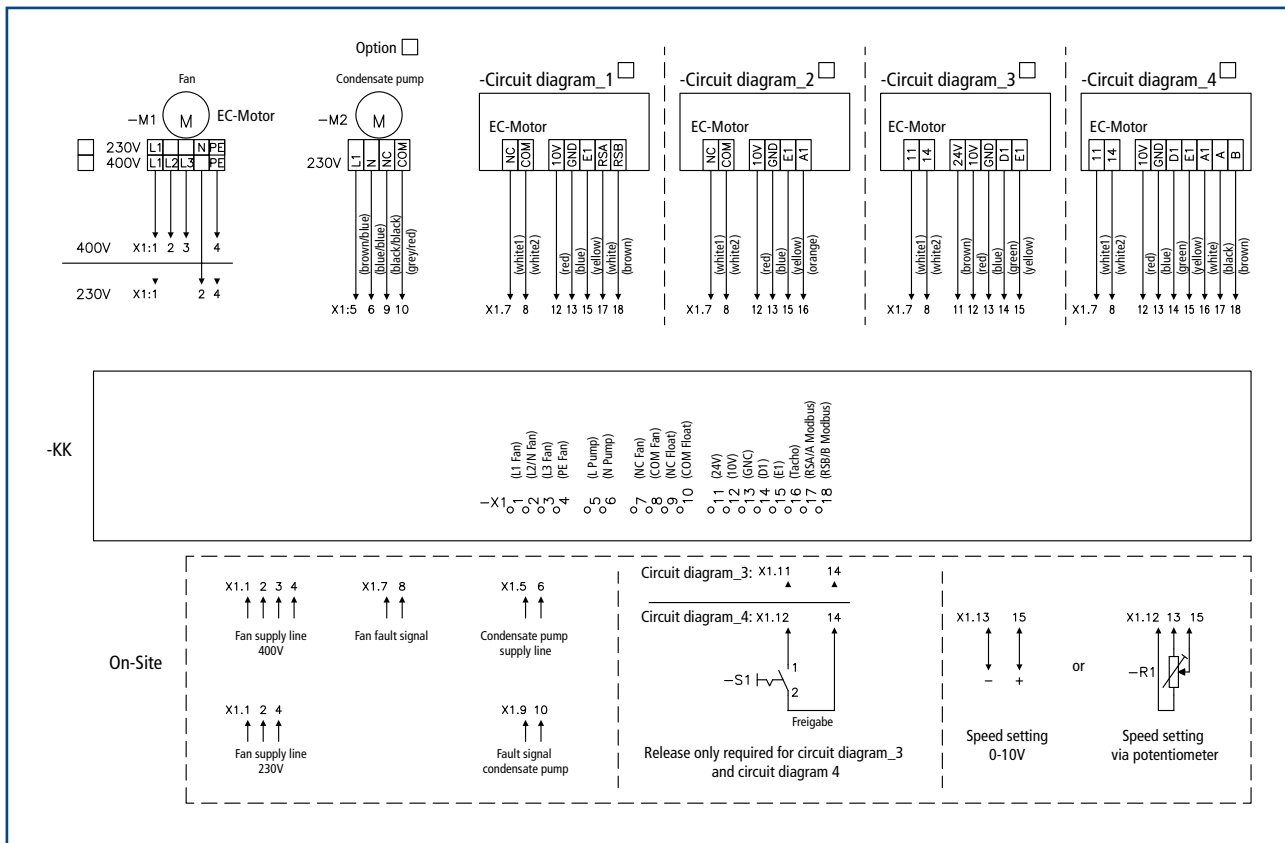
Important: Switching capacity: $10\text{ A at } \cos \varphi = 1,0$
 $6\text{ A at } \cos \varphi = 0,6$
 Rated voltage: 250 V
 Dielectric strength: $2\,000\text{ V eff.}$

If the full motor protection is activated, the motor should only be put back into operation after it has cooled down and the selector switch on the switchgear has been reset to zero (except switchgear 670.1).

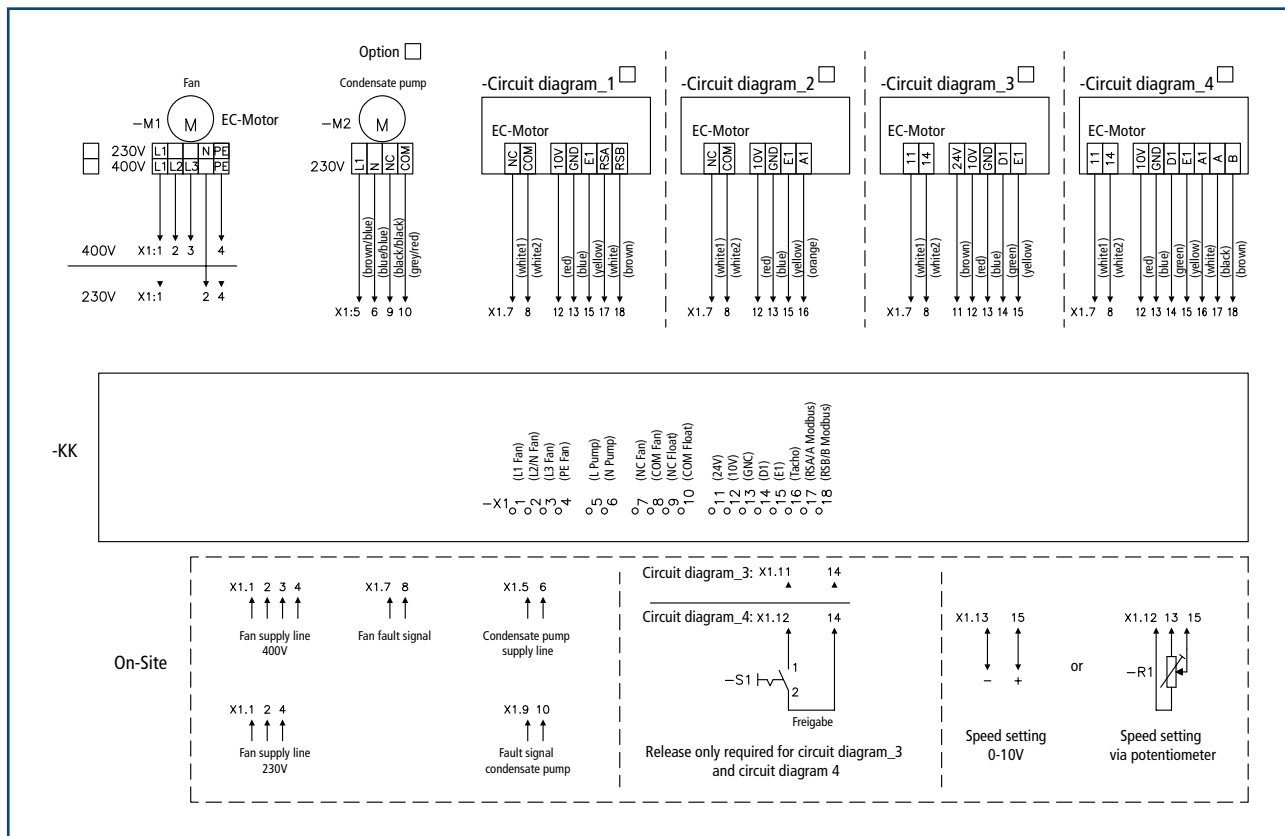
After connection, check the direction of rotation of the fan. Fan runs correctly when air comes out of the blind frame. Change the direction of rotation by exchanging 2 phases. When connecting the switchgear and motors, observe the local regulations.



08.02 Fan connection EC with repair switch



08.03 Fan connection EC with terminal box



08.04 Assignment of fan connection EC with repair switch

Unit type	Wiring diagram number	Supply voltage
12 E, 13 E, 14 E	4	230
22 E, 23 E, 24 E	4	230
32 E-E, 33 E-E, 34 E-E	2	230
32 E-D, 33 E-D, 34 E-D	2	400
42 E-E, 43 E-E, 44 E-E	1	230
42 E-D, 43 E-D, 44 E-D	1	400

The nominal voltage specified on the type plate applies. Three-phase AC motors designed for a nominal voltage of 380 V can be used in accordance with DIN / EC 38 in the range 400 V + 6 / - 10 %, single-phase AC motors 220 V in the range 230 V + 6 / - 10 %.

Connecting cable made of EVA ethylene vinyl acetate hose cable 4 GJ1 according to VDE 0208 / 3.69. This cable is approved for operating voltages up to 500 V, the thermal resistance is max. 120 °C. The cable construction complies with VDE 0282 part 804.

All motors are fully protected by thermal contacts. If the permissible temperature limit of 135 °C is exceeded (e.g. due to excessive ambient temperature, heating up due to high heating medium temperatures), these come into action and switch off the motor.



Work on electrical installations may only be carried out by a qualified electrician.

- **A repair switch must be fitted to each unit in order to be able to switch off all poles of the drive motor without voltage during maintenance work.**
- Only operate motors when the blow-out blinds and motor protection blinds are open.
- The motors, switchgear and other electrical accessories must be connected in accordance with the relevant standards (VDE 0100; EMC law; regulations of the power supply company).
- No frequency converters should be used for speed control, as this can lead to increased heating of the motor in the lower speed range. The motors are voltage controllable, i.e. their speed range can be controlled via transformer control units or phase angle control.
- Ambient air intake temperature maximum 40 °C.

9. Maintenance

09.01 Warranty

Our warranty is void if damage is caused by improper handling, operation and maintenance. Experience has shown that improper or inadequate maintenance causes greater damage as the products age.

Consumable and wear parts are generally excluded from the warranty. Warranty claims are only possible within the applicable periods (see General Terms and Conditions).

The legislator clearly specifies annual maintenance intervals for safety equipment, e.g. Ordinance on Workplaces § 4.

The installation, maintenance, repair and inspection of safety equipment may only be carried out by qualified personnel. The personnel is obliged to comply with the general accident prevention regulations (e.g. UVV in Germany) and to wear the necessary personal protective equipment. Before starting work, the unit must be de-energised and must be secured against being switched on again.

They should have a sufficient level of knowledge/training on the following points:

- Compliance with country-specific laws, standards, regulations and directives.
- Compliance with safety and accident prevention regulations
- Wearing the necessary personal protective equipment
- If the hygiene requirements VDI6022 must be complied with. Need training for maintenance and servicing work in accordance with category B or C as per VDI6022.

09.02 Motor

The motor is maintenance-free. Remove dust deposits from time to time.



Attention! All work on electrical connections and wiring must be carried out by a qualified electrician. The applicable standards must be observed.

Any work is prohibited as long as the system has not been disconnected from the electrical power supply and secured against being switched on again (repair switch can be shut off). EC motors may still have a residual voltage after the power supply has been disconnected.

09.03 Heat exchanger

Blow out the heat exchanger with compressed air as required or clean off oily dust deposits with a light, oil-soluble cleaning agent. In case of stubborn deposits, use a steam jet.



Caution! Use low pressure and keep a distance of at least 300 mm between the nozzle and the heat exchanger.

The unit must be switched off and secured against being switched on again (repair switch can be shut off). The heat exchanger may only be cleaned when cold, otherwise there is a risk of burns from hot surfaces and damage to the heat exchanger.

09.04 Air filter



Caution! Filter dusts can cause allergic reactions to skin, eyes or respiratory organs on contact. Maintenance and changing of the air filters may only be carried out by qualified personnel. Qualified personnel are obliged to comply with the general accident prevention regulations (UVV) and to wear the necessary personal protective equipment, e.g. breathing mask, protective goggles, protective clothing.

The unit must be switched off and secured against being switched on again (repair switch can be shut off). If the bag filter is dirty, remove it from the filter section and replace it.

10. Stopping Procedure, Dismantling and Elimination

10.01 Decommissioning

Reduce the system to minimum output via the regulation/control system:

- Close the fresh air damper to prevent cooling and the risk of frost.
- Close all control valves
- Switch off circulation pumps
- Drain built-in parts at risk of frost
- Blow through the heat exchanger and connection pipes with compressed air until they are completely empty, let the fan run until all surfaces are dry.
- Switch off the main switch and lock the system.



Restart

Carry out a visual inspection to see if there is any visible damage.

- Slowly refill drained components - carefully ventilate.
- Open all valves
- Operate the main switch
- Switch on the regulation / control system

10.02 Dismantling and disposal



Dismantling - Disassembly

Before starting dismantling, the air heater or the consumers installed in it must be disconnected from the power supply.

All current-carrying connection lines must be removed by a qualified electrician.

Dismantling may only be carried out by qualified personnel. The qualified personnel are obliged to comply with the general accident prevention regulations (e.g. UVV in Germany) and to wear the necessary personal protective equipment (e.g. breathing mask, protective goggles, protective clothing).



Furthermore, all media-carrying components must be completely drained. This must be carried out by a specialist company that carries out a professional disposal of water with antifreeze.

After this, the air heater can be disassembled on site into the individual units or into its individual parts. This should also be carried out by a specialist company that is familiar with the environmentally friendly disposal of the individual parts.

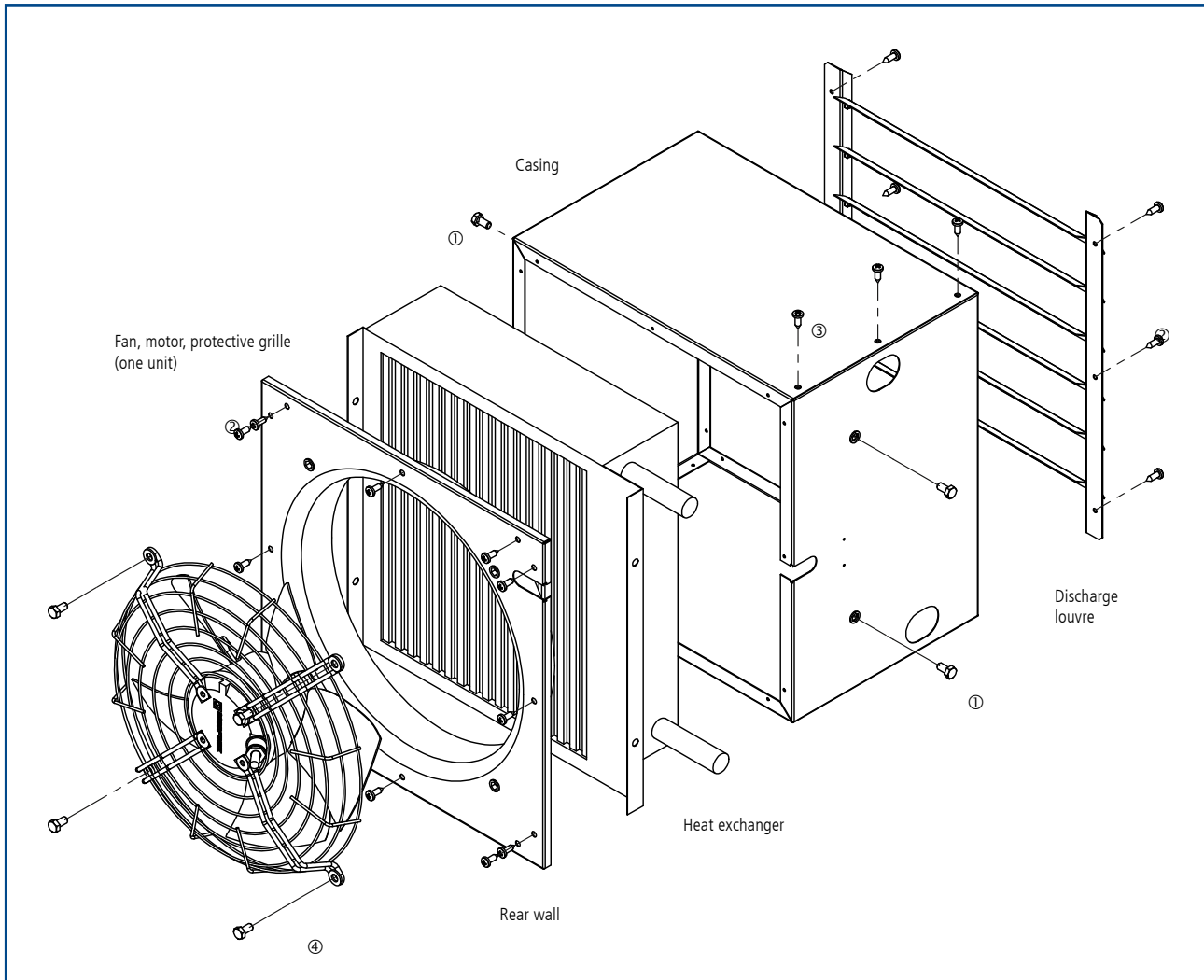


Suitable personal protective equipment must be worn when handling dusty / dirty components.

Disposal must be carried out in accordance with the valid, relevant and local environmental and recycling regulations of your country and municipality.

The following materials are used in our units:

- hot-dip galvanised sheet steel, partially coated
- Aluminium
- Copper
- Brass
- PVC
- EPDM
- Electric motor



1. Switch off and lock the main switch.
2. Disconnect the electrical supply line and the electrical connection in the terminal box.
3. Shut off and dismantle the hot water supply and return.
4. Remove the unit from the suspension.
Remove the M8 ① fastening screws on the side and remove the unit.
5. Remove the air discharge damper and the rear panel with the fan by loosening the self-tapping screws ②.
6. Unscrew the sheet metal screws ③ diagonally at the lateral corners and remove the outer casing halves in lateral direction. Remove the heat exchanger.
7. If necessary, remove the motor with protection grille from the rear wall by loosening the screw ④.

HEATING VENTILATION AIR CONDITIONING



The latest version of the operating and maintenance instructions can be found at:
www.wolf-geisenfeld.de/downloads



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