

# Assembly and operating manual

**Rotary blower**

**CBC pr**

Number: 9\_9480 23 E

Manufacturer:

**KAESER KOMPRESSOREN SE**

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# 1 Regarding this document

## 1.1 Using this document

This document, hereafter called the service manual, contains important information about all life phases of the machine.

The operating manual is a component of the product. It describes the machine as it was at the time of first delivery after manufacture.

- Keep the operating manual in a safe place throughout the life of the machine.
- Supply any successive owner or user with this operating manual.
- Please insert any amendment or revision of the operating manual sent to you.
- Enter details from the machine nameplate and individual items of equipment in the table in chapter 2.

## 1.2 Further documents

Included with this operating manual are additional documents intended to assist in the safe operation of the machine:

- Manufacturer's/installation declaration according to applicable directives.
- Motor manual.

Missing documents can be requested from KAESER.

- Make sure all documents are complete and observe the instructions contained in them.
- Make sure you provide the data from the nameplate when ordering documents.

## 1.3 Copyright

This operating manual is protected by copyright. Any queries regarding the use or duplication of this documentation should be referred to KAESER. Correct use of information will be fully supported.

## 1.4 Symbols and labels

- Please note the symbols and labels used in this document.

### 1.4.1 Warnings

Warning notices indicate dangers that may result in injury when disregarded.

Warning notices indicate three levels of danger identified by the corresponding signal word:

| Signal term | Significance                               | Consequences of non-compliance           |
|-------------|--------------------------------------------|------------------------------------------|
| DANGER      | Warns of an imminent danger                | Will result in death or severe injury    |
| WARNING     | Warns of a potentially imminent danger     | May result in death or severe injury     |
| CAUTION     | Warns of a potentially dangerous situation | May result in a moderate physical injury |

Tab. 1 Danger levels and their definition (personal injury)

# 1 Regarding this document

## 1.4 Symbols and labels

Warning notices preceding a chapter apply to the entire chapter, including all sub-sections.

Example:



### **DANGER**

The type and source of the imminent danger is shown here!

The possible consequences of ignoring a warning are shown here.

If you ignore the warning notice, the "DANGER" signal word indicates a lethal or severe injury will occur.

- The measures required to protect yourself from danger are shown here.

Warning notes referring to a sub-section or the subsequent action are integrated into the procedure and numbered as an action.

Example:



### 1. **WARNING!**

The type and source of the imminent danger is shown here!

The possible consequences of ignoring a warning are shown here.

If you ignore the warning notice, the "WARNING" signal word indicates that a lethal or severe injury may occur.

- The measures required to protect yourself from danger are shown here.

### 2. Always read and comply with warning instructions.

## 1.4.2 Potential damage warnings

Contrary to the warnings shown above, damage warnings do not indicate a potential personal injury.

Warning notices for damages are identified by their signal term.

| Signal term | Significance                               | Consequences of non-compliance |
|-------------|--------------------------------------------|--------------------------------|
| NOTE        | Warns of a potentially dangerous situation | Damage to property is possible |

Tab. 2 Danger levels and their definition (damage to property)

Example:



### **NOTICE**

The type and source of the imminent danger is shown here!

Potential effects when ignoring the warning are indicated here.

- The protective measures against the damages are shown here.

- Carefully read and fully comply with warnings against damages.

## 1.4.3 Other alerts and their symbols



This symbol identifies particularly important information.

Material Here you will find details on special tools, operating materials or spare parts.

Precondition Here you will find conditional requirements necessary to carry out the task.  
The conditions relevant to safety shown here will help you to avoid dangerous situations.

Option H12 ➤ This symbol denotes lists of actions comprising one stage of a task.  
Operating instructions with several steps are numbered in the sequence of the operating steps.  
Information relating to one option only are marked with an option code (e.g., H12 indicates that this section applies only to machines with sound enclosure). Option codes used in this service manual are explained in chapter 2.2.



Information referring to potential problems are identified by a question mark.  
The cause is identified in the help text ...  
➤ ... as is a solution.



This symbol identifies important information or measures regarding the protection of the environment.

Further information Further subjects are introduced here.

## 2 Technical Specifications

### 2.1 Nameplate

The machine's nameplate provides the model designation and important technical information.

The nameplate is attached to the machine stand and at the left side wall of the sound enclosure (Option H12).

The nameplate data relates to Standard intake state of 1013 mbar and 20 °C.

➤ Enter here the nameplate data as a reference:

| Feature               | Value |
|-----------------------|-------|
| Rotary blowers        |       |
| Material no.          |       |
| Serial no.            |       |
| Year of manufacture   |       |
| Max. working pressure |       |
| Ambient temperature   |       |
| Rated motor speed     |       |
| Rated power           |       |
| Full load current     |       |
| Power Supply          |       |
| Electrical diagram    |       |

Tab. 3 Nameplate

### 2.2 Option codes

The table contains a list of possible options.

➤ Enter options here as a reference.

| Option                                | Option code | Available? |
|---------------------------------------|-------------|------------|
| Operating mode: Gauge pressure        | B13         | ✓          |
| Oil level monitoring                  | C5          | —          |
| Pressure switch                       | C9          |            |
| Speed monitor                         | C10         |            |
| Unloaded start valve (AFE)            | C11         |            |
| Temperature gauge switch              | C13         |            |
| Pressure transducer                   | C14         |            |
| Start-up pressure control valve (AFR) | C18         |            |
| Thermostat                            | C19         |            |
| Pressure gauge                        | C20         |            |

available: ✓

not available: —

| Option                              | Option code | Available? |
|-------------------------------------|-------------|------------|
| Under frequency control             | C32         |            |
| Filter differential pressure switch | F5          |            |
| Check valve                         | G1          |            |
| Auxiliary heating                   | H2          |            |
| Outdoor installation                | H3          |            |
| Intake from pipe network            | H11         |            |
| Sound enclosure                     | H12         |            |
| available: ✓                        |             |            |
| not available: —                    |             |            |

Tab. 4 Option codes

## 2.3 Weight

The indicated mass refers to the machine including the drive motor, but without options. The actual mass of individual machines depends on equipment fitted.

### Machine without sound enclosure

| Rated power [kW] | Mass [kg] * |             |
|------------------|-------------|-------------|
|                  | CB 111 C pr | CB 131 C pr |
| 5.5              | 195         | 220         |
| 7.5              | 205         | 230         |
| 11.0             | 220         | 245         |
| 15.0             | 225         | 250         |
| 18.5             | 265         | 290         |
| 22.0             | —           | 295         |
| 30.0             | —           | 380         |

\* Approximate values, actual mass can vary depending on the motor manufacturer

Tab. 5 Mass without sound enclosure

### Option H12 Machine with sound enclosure

| Rated power [kW] | Mass [kg] * |             |
|------------------|-------------|-------------|
|                  | CB 111 C pr | CB 131 C pr |
| 5.5              | 375         | 400         |
| 7.5              | 385         | 410         |
| 11.0             | 400         | 425         |
| 15.0             | 405         | 430         |
| 18.5             | 445         | 470         |
| 22.0             | —           | 475         |

\* Approximate values, actual mass can vary depending on the motor manufacturer

## 2 Technical Specifications

### 2.4 Drive motor

|                  | Mass [kg] * |             |
|------------------|-------------|-------------|
| Rated power [kW] | CB 111 C pr | CB 131 C pr |
| 30.0             | —           | 560         |

\* Approximate values, actual mass can vary depending on the motor manufacturer

Tab. 6 Mass with sound enclosure

### 2.4 Drive motor

| Feature                                                | Value |
|--------------------------------------------------------|-------|
| Rated power* [kW]                                      |       |
| Synchronous speed (2 poles/50 Hz) [min <sup>-1</sup> ] | 3000  |
| Synchronous speed (2 poles/60 Hz) [min <sup>-1</sup> ] | 3600  |
| Enclosure protection*                                  |       |

\* Copy the data from the motor nameplate or service plate into the table.

Tab. 7 Drive motor



The warranty for machine damage is invalid in the following cases, if the damage can be traced to the drive motor:

- The machine is shipped without drive motor.
- The customer supplies the drive motor.

### 2.5 Recommended oil

The lubricant type to be used depends on the operating conditions.

|                      | OMEGA FLUID                                            |                                                                                            |
|----------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                      | SB 220                                                 | FG 220                                                                                     |
| Description          | Synthetic oil                                          | Synthetic oil                                                                              |
| Application:         | Suitable for all applications, except food processing. | Specifically for applications where the compressed air comes into contact with foodstuffs. |
| Oil temperature [°C] | –10 – +120*                                            | –5 – +110                                                                                  |

\* Special measures are required for oil temperatures >120 °C. Consult KAESER for advice on this subject.

Tab. 8 Recommended oil

Further information An adhesive label identifying the used lubricant is attached to the blower block.  
Information on ordering oil is found in chapter 11.2.

### 2.6 Lubricating oil charge

The block oil chambers are filled with oil at the factory.

#### Guide value

| Lubricating oil charge<br>[l] ±15 % | CB 111 C pr | CB 131 C pr |
|-------------------------------------|-------------|-------------|
| Drive end                           | 0.15        | 0.25        |
| Control end                         | 0.13        | 0.30        |

Tab. 9 Lubricating oil charge

## 2.7 Temperature

|                                          | CB 111 C pr | CB 131 C pr | — |
|------------------------------------------|-------------|-------------|---|
| Maximum block discharge temperature [°C] | 160         | 160         | — |
| Maximum temperature differential [K] *   | 115         | 115         | — |

\* Discharge temperature minus inlet temperature

Tab. 10 Temperature

## 2.8 Ambient and intake conditions

The following conditions must be maintained:

- No saliferous atmosphere in the immediate vicinity of the machine.
- The air must be free of chemicals or explosive substances.

|                                                                                                                        | CB 111 C pr | CB 131 C pr | — |
|------------------------------------------------------------------------------------------------------------------------|-------------|-------------|---|
| Permissible ambient temperature [°C]                                                                                   | –5 – +40    | –5 – +40    | — |
| Machine with connected auxiliary heating and sound enclosure (Options H2, H12)<br>Permissible ambient temperature [°C] | –15 – +40   | –15 – +40   | — |
| Permissible intake temperature [°C]                                                                                    | –15 – +40   | –15 – +40   | — |
| Relative humidity [%]                                                                                                  | 0 – 80      | 0 – 80      | — |
| Maximum altitude AMSL [m]                                                                                              | 1000        | 1000        | — |

Tab. 11 Ambient and intake conditions



Differing ambient and intake conditions require the recalculation of the performance data, and are permissible only upon agreement by the manufacturer.

#### Further information

The wiring diagram for Option H2 in chapter 13.6.7 contains further details of the power supply connection.

### 2.9 Filter maintenance indicator

| Feature                | Data   |
|------------------------|--------|
| Indicator range [mbar] | 0 – 55 |

Tab. 12 Filter maintenance indicator

### 2.10 Noise emission

Operating state LOAD under the following conditions:

- Nominal speed
- Nominal flow rate
- Nominal pressure

Measuring condition according to DIN EN ISO 2151 and basic standard ISO 9614–2:

- Measuring distance: 1m
- Tolerance:  $\pm 3$  dB(A)
- Sound insulated pipeline

Further information The sound pressure level and sound power level values for your machine are provided in the tables shown in chapter 13.4.

These values refer to the design condition. They do not apply to the control range with frequency converter.

### 2.11 Power Supply

#### Basic requirements

The machine is designed in accordance with the conditions for an electrical power supply specified in EN 60204-1 (IEC 60204-1) section 4.3.

In the absence of other user-specified conditions, the limits laid down in this standard must be adhered to.

It is recommended that the user and the supplier reach an agreement on the basis of the EN 60204-1, Annex B.

The machine requires a symmetrical three-phase power supply.

In a symmetrical three-phase supply, the phase displacement and voltages are equal for all phases.

The machine may only be operated from an earthed TN or TT three-phase supply.

Connection to an IT supply is not permitted without taking further measures (earth leak detection, etc.).

When designing and creating an external user-provided switching system, it must be ensured that the load currents can be released only after the presence of the applicable supply voltage has been tested and verified.

In the case of the failure of a supply voltage (load circuit or control circuit), the other voltage must always be switched off as well.

#### Option C32 Under frequency control

Extended demands on a three-phase supply for a machine with frequency converter:

This machine may only be supplied from an earthed TN or TT three-phase supply in which the **neutral point** is earthed.

The machine may not be connected to a three-phase supply in which one of the phases is earthed, as this can lead to dangerous voltage surges.

Connection to an IT network is not permitted without further measures being taken (earth leak detection, specially designed frequency converter, etc.).

Further information The connection diagram in chapter 13.5 contains further details of the power supply connection.

### 2.12 Electrical connection – drive motor



- The supply cable conductor cross-section (copper multi-core) and fusing (slow-blow class gG) must be dimensioned for the actual ambient conditions and installation types. Comply with locally applicable legislation and regulations.

#### 2.12.1 Mains frequency 50 Hz

**Nominal voltage: 230V±10% / 3 / 50Hz (EN 60034-1)**

| Rated power [kW]         | 5.5  | 7.5  | 11.0 | 15.0 | 18.5 | 22.0 | 30.0 |
|--------------------------|------|------|------|------|------|------|------|
| Current draw [A] ± (10%) | 17.3 | 22.8 | 35.5 | 48.4 | 57.0 | 66.0 | 90.0 |

Tab. 13 Connection data 230V±10% / 3 / 50Hz

**Nominal voltage: 400V±10% / 3 / 50Hz (EN 60034-1)**

| Rated power [kW]         | 5.5  | 7.5  | 11.0 | 15.0 | 18.5 | 22.0 | 30.0 |
|--------------------------|------|------|------|------|------|------|------|
| Current draw [A] ± (10%) | 10.0 | 13.2 | 20.5 | 28.0 | 33.0 | 38.0 | 52.0 |

Tab. 14 Connection data 400V±10% / 3 / 50Hz

#### Network conditions 400V / 3 / 50Hz

The network conditions apply to machines with a rated motor power up to 37 kW connected to public mains supplies with the following characteristics.

- Mains frequency: 50 Hz
- Voltage between exterior and neutral lines 220 V...250 V
- Voltage between the exterior lines 380 V...430 V

They do not apply to private power supplies within industrial areas isolated from the public mains.

The rated motor powers listed in table are intended for operation with a public power supply with a system impedance at the transfer point (house connection) of maximum  $Z_{\max}$  [Ohm].

The operator must ensure that the machines are only connected to a network that meets these requirements. If necessary, ask the local electricity company for the value of the network impedance.

## 2 Technical Specifications

### 2.12 Electrical connection – drive motor

#### Direct on-line starting

| Rated power [kW]                                       | 5.5   | 7.5   | 11.0  | 15.0  | 18.5  | 22.0  | 30.0  |
|--------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Highest permissible system impedance* $Z_{\max}$ [Ohm] | 0.089 | 0.061 | 0.027 | 0.013 | 0.014 | 0.010 | 0.007 |

\*Specification related to the sum of impedances in external and neutral lines.

Tab. 15 System impedance (direct on-line start)

#### Star-delta starting

| Rated power [kW]                                       | 5.5   | 7.5   | 11.0  | 15.0  | 18.5  | 22.0  | 30.0  |
|--------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Highest permissible system impedance* $Z_{\max}$ [Ohm] | 0.242 | 0.188 | 0.110 | 0.068 | 0.070 | 0.053 | 0.035 |

\*Specification related to the sum of impedances in external and neutral lines.

Tab. 16 System impedance (start-delta start)

Machines with current consumption >16 A...<75 A comply fully with IEC 61000-3-12.

#### Nominal voltage: 500V±10% / 3 / 50Hz (EN 60034-1)

| Rated power [kW]         | 5.5 | 7.5  | 11.0 | 15.0 | 18.5 | 22.0 | 30.0 |
|--------------------------|-----|------|------|------|------|------|------|
| Current draw [A] ± (10%) | 7.9 | 10.4 | 15.5 | 21.4 | 26.0 | 30.0 | 42.0 |

Tab. 17 Connection data 500V±10% / 3 / 50Hz

### 2.12.2 Mains frequency 60 Hz

#### Nominal voltage: 230V±10% / 3 / 60Hz (NEMA MG-1)

| Rated power [kW]         | 5.5  | 7.5  | 11.0 | 15.0 | 18.5 | 22.0 | 30.0 |
|--------------------------|------|------|------|------|------|------|------|
| Current draw [A] ± (10%) | 17.6 | 23.0 | 35.2 | 48.0 | 57.0 | 67.0 | 93.0 |

Tab. 18 Connection data 230V±10% / 3 / 60Hz

#### Nominal voltage: 380V±10% / 3 / 60Hz (EN 60034-1)

| Rated power [kW]         | 5.5  | 7.5  | 11.0 | 15.0 | 18.5 | 22.0 | 30.0 |
|--------------------------|------|------|------|------|------|------|------|
| Current draw [A] ± (10%) | 10.7 | 13.9 | 21.3 | 29.1 | 34.0 | 41.0 | 56.0 |

Tab. 19 Connection data 380V±10% / 3 / 60Hz

#### Nominal voltage: 460V±10% / 3 / 60Hz (NEMA MG-1)

| Rated power [kW]         | 5.5 | 7.5  | 11.0 | 15.0 | 18.5 | 22.0 | 30.0 |
|--------------------------|-----|------|------|------|------|------|------|
| Current draw [A] ± (10%) | 8.8 | 11.5 | 17.6 | 24.0 | 28.5 | 34.0 | 46.5 |

Tab. 20 Connection data 460V±10% / 3 / 60Hz

Nominal voltage: 575V±10% / 3 / 60Hz (NEMA MG-1)

| Rated power [kW]         | 5.5 | 7.5 | 11.0 | 15.0 | 18.5 | 22.0 | 30.0 |
|--------------------------|-----|-----|------|------|------|------|------|
| Current draw [A] ± (10%) | 7.0 | 9.2 | 14.1 | 19.2 | 22.8 | 27.0 | 37.0 |

Tab. 21 Connection data 575V±10% / 3 / 60Hz

## 2.13 Options

Technical data for the options available for your machine are given in the following.

### 2.13.1 Option C9 Pressure switch

| Feature                                                   | Data           |
|-----------------------------------------------------------|----------------|
| Max. contact load at 250 V [A]                            | Inductive load |
|                                                           | Resistive load |
| Protection<br>(with cover, electrical connection upwards) | IP 54          |

Tab. 22 Pressure switch (option C9)

Further information The wiring diagram for Option C9 in chapter 13.6 contains further details of the power supply connection.

### 2.13.2 Option C10 Speed monitor

#### Sensor

| Feature                             | Data       |
|-------------------------------------|------------|
| Rated switching distance $S_n$ [mm] | 1 – 3      |
| Installation conditions             | Not flush  |
| Output function                     | DC PNP/NPN |
| Degree of protection                | IP 67      |
| Connection                          | M12        |
| Working principle                   | Inductive  |

Tab. 23 Speed monitoring sensor (Option C10)

#### Sensor

| Feature                | Data                                                 |
|------------------------|------------------------------------------------------|
| Nominal voltage [V]    | 110 – 240 AC/DC (50 – 60 Hz) /<br>27 DC (typ. 24 DC) |
| Contact load capacity  | 6 A (250 V AC); B300, R300                           |
| Power consumption [VA] | 5                                                    |

| Feature                                    | Data                               |
|--------------------------------------------|------------------------------------|
| Start override [s]                         | 0 – 1000                           |
| Ambient temperature [°C]                   | -20 – +60                          |
| Degree of protection - enclosure/terminals | IP 50 / IP 20                      |
| Cable connection                           | up to 2.5 mm <sup>2</sup> (AWG 14) |

Tab. 24 Speed monitoring device (Option C10)

#### Sensor setting

| Feature                                             | Data             |                  |          |
|-----------------------------------------------------|------------------|------------------|----------|
| Display format                                      | DIM=0 (rpm)      |                  |          |
| Number of control caps, input 1                     | NC1=2            |                  |          |
| Memory function outputs 1 and 2                     | SO1=0 (inactive) | SO2=0 (inactive) |          |
| Switching function outputs 1 and 2                  | FO1=2            | FO2=3            | AO3=4.0  |
| Analogue starting value for analogue output 3 [mA]  |                  |                  |          |
| Switching point outputs 1 and 2 [rpm]               | SP1=500          | SP2=1000         | FA3=1000 |
| Analogue starting value for analogue output 3 [rpm] |                  |                  |          |
| Hysteresis for switching points 1 and 2 [%]         | HY1=3            | HY2=5            |          |
| Start override time outputs 1 and 2 [s]             | ST1=60.0         | ST2=0.0          |          |
| Delay time outputs 1 and 2 [s]                      | DT1=10.0         | DT2=0.0          |          |
| Wiping function outputs 1 and 2 [s]                 | FT1=0.0          | FT2=0.0          |          |

Tab. 25 Setting of the speed monitor evaluation device (Option C10)

Further information The wiring diagram for Option C10 in chapter 13.6 contains further details of the power supply connection.

### 2.13.3 Option C11 Unloaded start valve

| Model                                  | AFE 15 | — |
|----------------------------------------|--------|---|
| Permissible pressure [bar] (a)         | 0 – 2  | — |
| Maximum delivery [m <sup>3</sup> /min] | 15     | — |
| Nominal width (DIN ISO 228–1)          | G 2 A  | — |

Tab. 26 Unloaded start valve (Option C11)

#### 2.13.4 Option C13 Temperature gauge switch

| Feature                                                                                                  |                | Data  |
|----------------------------------------------------------------------------------------------------------|----------------|-------|
| Switching capacity at 250 V(AC) [A]<br>Single pole micro-switch with changeover contact                  | Inductive load | 1.5   |
|                                                                                                          | Resistive load | 5.0   |
| Switching differential of the scale range [%]                                                            |                | < 3   |
| Switching point tolerance [%]<br>(of the scale range related to the cut-out point at rising temperature) |                | ± 0.5 |
| Minimum voltage [V] [AC]                                                                                 |                | 24    |
| Minimum current [mA]<br>(Switching safety)                                                               |                | 20    |
| Degree of protection                                                                                     | Front          | IP 53 |
|                                                                                                          | Rear           | IP 54 |

Tab. 27 Temperature gauge switch (Option C13)

Further information The wiring diagram for Option C13 in chapter 13.6 contains further details of the power supply connection.

#### 2.13.5 Option C14 Pressure sensor

| Feature                               | Data                                |
|---------------------------------------|-------------------------------------|
| Output signal [mA]                    | 4 – 20                              |
| Parasitic energy [V]                  | $U_B = DC\ 10 - 30$                 |
| Permissible apparent resistance [Ohm] | $R_A = (U_B [V] - 10\ V) / 0.02\ A$ |
| Enclosure protection                  | IP 65                               |

Tab. 28 Pressure sensor (option C14)

Further information The wiring diagram for Option C14 in chapter 13.6 contains further details of the power supply connection.

#### 2.13.6 Option C18 Start-up pressure control valve

| Model                                | AFR 10    | — |
|--------------------------------------|-----------|---|
| Permissible pressure [bar] (a)       | 0 – 2     | — |
| Maximum delivery [m³/min]            | 10        | — |
| Maximum pressure differential [mbar] | 950       | — |
| Regulating range [mbar]              | 200 – 950 | — |

|                                            |               |          |
|--------------------------------------------|---------------|----------|
| <b>Model</b>                               | <b>AFR 10</b> | <b>—</b> |
| Nominal width<br>(DIN ISO 228-1)           | G 2 A         | —        |
| Control line connection<br>(DIN ISO 228-1) | R 1/8 A       | —        |

Tab. 29 Start-up pressure control valve (Option C18)

#### 2.13.7 Option C19, H12 Thermostat

| Feature                                            | Data                                                                                      |
|----------------------------------------------------|-------------------------------------------------------------------------------------------|
| Spring switch with changeover contact              | 1-pole                                                                                    |
| Switching capacity NC contact (1-2)                | AC 230 V / 2.5 A / $\cos\phi=0.6$<br>AC 230 V / 16 A / $\cos\phi=1$<br>DC 230 V / 0.25 A  |
| Switching capacity NO contact (1-4)                | AC 230 V / 2.5 A / $\cos\phi=0.6$<br>AC 230 V / 6.3 A / $\cos\phi=1$<br>DC 230 V / 0.25 A |
| Switching differential scale starting position [%] | 6                                                                                         |
| Switching differential scale end position [%]      | 1.5                                                                                       |
| Degree of protection                               | IP 54                                                                                     |

Tab. 30 Thermostat (Option C19)

Further information The wiring diagram for Option C19 in chapter 13.6 contains further details of the power supply connection.

#### 2.13.8 Option C20 Pressure gauge

| Feature               | Data    |
|-----------------------|---------|
| Indicator range [bar] | 0 – 1.6 |

Tab. 31 Pressure gauge (option C20)

#### 2.13.9 Option F5 Filter pressure differential switch

| Feature                                  | Data                                                                |
|------------------------------------------|---------------------------------------------------------------------|
| Pressure differential, adjustable [mbar] | 2.5 – 50.0                                                          |
| Voltage [V]                              | (AC) eff., min. 10<br>(AC) max. 250<br>(DC) min. 12<br>(DC) max. 48 |
| Rated current [A]                        | (AC) 10                                                             |

| Feature              | Data                                                                                                                            |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Switching current    | (AC) eff., min. 20 mA<br>(AC) max. 6 A, $\cos\phi = 1.0$<br>(AC) max. 3 A, $\cos\phi = 0.6$<br>(DC) min. 20 mA<br>(DC) max. 1 A |
| Degree of protection | IP 54                                                                                                                           |

Tab. 32 Filter pressure differential switch (Option F5)

Further information The wiring diagram for Option F5 in chapter 13.6 contains further details of the power supply connection.

#### 2.13.10 Option G1 Check valve

| Nominal pipe size | Max. pressure and back pressure[bar] |
|-------------------|--------------------------------------|
| DN 100            | 1.5                                  |
| —                 | —                                    |

Tab. 33 Check valve (Option G1)

#### 2.13.11 Option H2, H12 Auxiliary heating

|                      |         |
|----------------------|---------|
| Rated voltage [V]    | 110–265 |
| Heating capacity [W] | 150     |
| Number of radiators  | 1       |

Tab. 34 Auxiliary heating (Option H2)

##### Thermostat

| Feature                                            | Data                                                                                      |
|----------------------------------------------------|-------------------------------------------------------------------------------------------|
| Snap switch with change-over contact               | 1–pole                                                                                    |
| Switching capacity NC contact (1–2)                | AC 230 V / 2.5 A / $\cos\phi=0.6$<br>AC 230 V / 16 A / $\cos\phi=1$<br>DC 230 V / 0.25 A  |
| Switching capacity NO contact (1–4)                | AC 230 V / 2.5 A / $\cos\phi=0.6$<br>AC 230 V / 6.3 A / $\cos\phi=1$<br>DC 230 V / 0.25 A |
| Switching differential scale starting position [%] | 6                                                                                         |
| Switching differential scale end position [%]      | 1.5                                                                                       |

| Feature              | Data  |
|----------------------|-------|
| Enclosure protection | IP 54 |

Tab. 35 Thermostatic auxiliary heating (Option H2)

Further information The wiring diagram for Option H2 in chapter 13.6 contains further details of the power supply connection.

#### 2.13.12 Option H3, H12 Outdoor installation

The dimensional drawings in chapter 13.2 include dimensions for outdoors installation.

#### 2.13.13 Option H11 Intake from pipe network

The dimensional drawings in chapter 13.2 include connection dimensions.

#### 2.13.14 Option H12 Fan (sound enclosure)



KAESER installs fans supplied by various manufacturers. The manufacturer is indicated on the fan's nameplate.

Set overload protection devices to 1.1 times nominal value.

Further information See chapter 6.7.9.2 for the fan connection and chapter 13.6.8 for the connection wiring diagram.

##### 2.13.14.1 Manufacturer SODECA

##### Delivery volume

| Feature         | Value |
|-----------------|-------|
| Delivery [m³/h] | 2200  |

Tab. 36 Delivery, SODECA fan (Option H12)

##### Power Supply

##### Three-phase power supply 50 Hz

| Nominal voltage [V]   | Δ-220/Y-380 | Δ-230/Y-400 | Y-500 |
|-----------------------|-------------|-------------|-------|
| Rated power ±10% [kW] | 0.12        | 0.12        | 0.12  |
| Current draw ±10% [A] | 0.83/0.48   | 0.83/0.48   | 0.32  |
| Degree of protection  | IP 55       | IP 55       | IP 55 |

Tab. 37 Fan motor 3~/50Hz SODECA (Option H12)

#### AC power: 50 Hz – 1/N/PE

|                       |       |
|-----------------------|-------|
| Nominal voltage [V]   | 230   |
| Rated power ±10% [kW] | 0.12  |
| Current draw ±10% [A] | 0.98  |
| Degree of protection  | IP 55 |

Tab. 38 Fan motor 1~/50Hz SODECA (Option H12)

#### Three-phase power supply 60 Hz

| Nominal voltage [V]   | Δ-208/Y-360 | Δ-220/Y-380 | Δ-230/Y-400 | Y-460 | Y-575 |
|-----------------------|-------------|-------------|-------------|-------|-------|
| Rated power ±10% [kW] | 0.12        | 0.12        | 0.12        | 0.12  | 0.14  |
| Current draw ±10% [A] | 0.92/0.53   | 0.83/0.48   | 0.68        | 0.37  | 0.32  |
| Degree of protection  | IP 55       | IP 55       | IP 55       | IP 55 | IP 55 |

Tab. 39 Fan motor 3~/60Hz SODECA (Option H12)

#### AC power: 60 Hz – 1/N/PE

| Nominal voltage [V]   | 115   | 230   |
|-----------------------|-------|-------|
| Rated power ±10% [kW] | 0.18  | 0.12  |
| Current draw ±10% [A] | 3.80  | 1.10  |
| Degree of protection  | IP 55 | IP 55 |

Tab. 40 Fan motor 1~/60Hz SODECA (Option H12)

#### 2.13.14.2 Manufacturer EBM



The fan's nameplate indicates the minimum value for the power consumption. The following tables show the maximum value for the power consumption.

#### Fan air delivery

| Feature         | Value       |
|-----------------|-------------|
| Delivery [m³/h] | 1800 – 2000 |

Tab. 41 Delivery, EBM fan (Option H12)

#### Power Supply

#### Three-phase power supply 50 Hz

| Nominal voltage [V]   | Δ-220/Y-380 | Δ-230/Y-400 |
|-----------------------|-------------|-------------|
| Rated power ±10% [kW] | 0.10        | 0.11        |
| Current draw ±10% [A] | 0.38/0.22   | 0.38/0.22   |
| Degree of protection  | IP 44       | IP 44       |

Tab. 42 Fan motor 3~/50Hz EBM (Option H12)

#### AC power: 50 Hz

|                             |       |
|-----------------------------|-------|
| Nominal voltage [V]         | 230   |
| Rated power $\pm 10\%$ [kW] | 0.12  |
| Current draw $\pm 10\%$ [A] | 0.58  |
| Degree of protection        | IP 44 |

Tab. 43 Fan motor 1~/50Hz EBM (Option H12)

#### Three-phase power supply 60 Hz

|                             |                     |                     |                     |       |
|-----------------------------|---------------------|---------------------|---------------------|-------|
| Nominal voltage [V]         | $\Delta$ -208/Y-360 | $\Delta$ -220/Y-380 | $\Delta$ -230/Y-400 | Y-460 |
| Rated power $\pm 10\%$ [kW] | 0.13                | 0.14                | 0.14                | 0.16  |
| Current draw $\pm 10\%$ [A] | 0.43/0.25           | 0.43/0.25           | 0.45/0.26           | 0.26  |
| Degree of protection        | IP 44               | IP 44               | IP 44               | IP 44 |

Tab. 44 Fan motor 3~/60Hz EBM (Option H12)

#### AC power: 60 Hz

|                             |       |       |
|-----------------------------|-------|-------|
| Nominal voltage [V]         | 115   | 230   |
| Rated power $\pm 10\%$ [kW] | 0.16  | 0.15  |
| Current draw $\pm 10\%$ [A] | 1.51  | 0.71  |
| Degree of protection        | IP 44 | IP 44 |

Tab. 45 Fan motor 1~/60Hz EBM (Option H12)

## 3 Safety and Responsibility

### 3.1 Basic instructions

The machine is manufactured to the latest engineering standards and acknowledged safety regulations. Nevertheless, dangers can arise through its operation:

- Danger to life and limb of the operator or third parties,
- Damages to the machine and other material assets.



Disregard of warning or safety instructions can cause serious injuries!

- Use this machine only if it is in a technically perfect condition and only for the purpose for which it is intended; observe all safety measures and the instructions in the service manual.
- Immediately rectify (have rectified) any faults that could be detrimental to safety!

### 3.2 Intended use

The machine is designed exclusively for the generation of overpressure in a commercial or industrial environment where air (in the following "compressed air") as delivery medium is approved for use. Any other use is considered incorrect. The manufacturer is not liable for any damages that may result from incorrect use. The user alone is liable for any risks incurred.

- Comply with the instructions in this operating manual.
- Operate the machine only within its performance limits and under the permitted ambient conditions.
- Do not use compressed air for breathing purposes unless it is specifically treated.
- Do not use compressed for any application that will bring it into direct contact with foodstuffs unless it is specifically treated.
- Operate the machine only when completely installed.

### 3.3 Improper use

Improper usage can cause damage to property and/or (severe) injuries.

- Only use the machine as intended.
- Never direct compressed air at persons or animals.
- Use hot cooling air for heating purposes only if there is no risk to the health of humans or animals. If necessary, hot cooling air should be treated by suitable means.
- Do not allow the machine to take in toxic, acidic, flammable or explosive gases or vapours.
- Do not operate the machine in areas in which specific requirements with regard to explosion protection are in force.
- Intake of solid particles > 0.1 mm is not permitted.

### **3.4 User's responsibilities**

The machine is delivered in a state in which it cannot be activated. The user must equip the machine with a drive motor of >2 kW and a current draw of >10 A, with a lockable main switch and appropriate fusing. The machine must also be equipped with a motor overload protection switch and an EMERGENCY-OFF switch in accordance with applicable local regulations before being commissioned.

#### **3.4.1 Observe statutory and universally accepted regulations**

This includes, for example, nationally implemented European directives and/or applicable national legislation, safety and accident prevention regulations.

- Observe relevant statutory and accepted regulations during installation, operation and maintenance of the machine.

#### **3.4.2 Determining personnel**

Suitable personnel are experts who, by virtue of their training, knowledge and experience as well as their knowledge of relevant regulations can assess the work to be done and recognize the possible dangers involved.

Authorised operators possess the following qualifications:

- are of legal age,
- are conversant with and adhere to the safety instructions and sections of the service manual relevant to operation,
- have received adequate training and authorization to operate electrical and compressed air devices.

Authorised installation and maintenance personnel have the following qualifications:

- are of legal age,
  - have read, are conversant with and adhere to the safety instructions and sections of the service manual applicable to installation and maintenance,
  - are fully conversant with the safety concepts and regulations of electrical and compressed air engineering,
  - are able to recognize the possible dangers of electrical and compressed air devices and take appropriate measures to safeguard persons and property,
  - have received adequate training in and authorization for the safe installation and maintenance of this machine.
- Ensure that personnel entrusted with operation, installation and maintenance are qualified and authorised to carry out their tasks.

### **3.5 Dangers**

#### **Basic instructions**

Information concerning the various forms of danger that can arise during machine operation are found here.

Basic safety instructions are found in this service manual at the beginning of each chapter in the section entitled 'Safety'.

Warning instructions are found before a potentially dangerous task.

### **3.5.1 Safely dealing with sources of danger**

The following describes the various forms of danger that can occur during machine operation.

#### **Electricity**

Touching voltage carrying components can result in electric shocks, burns or death.

- All power supplies must be fitted with lockable isolating devices by the user.
- Allow only qualified and authorised electricians or trained personnel under the supervision of a qualified and authorised electrician to carry out work on electrical equipment according to electrical engineering regulations.
- Before commissioning or re-commissioning the machine, the user must ensure adequate protection against electric shock from direct or indirect contact.
- Before starting any work on electrical equipment:  
Switch off and lock out the power supply disconnecting device, and verify the absence of any voltage.
- Switch off any external power sources.  
These may be connections to the electric machine heating for example.
- Use fuses corresponding to machine power.
- Regularly check that all electrical connections are tight and in proper condition.

#### **Forces of compression**

Compressed air is contained energy. Uncontrolled release of this energy can cause serious injury or death. The following information concerns work on components that could be under pressure.

- Close shut-off valves or otherwise isolate the machine from the distribution network to ensure that no compressed air can flow back into the machine.
- De-pressurise all pressurised components and enclosures.
- Allow no person or thing to remain near the blow-off valve during machine operation. In the event of operating pressure being exceeded, hot gas is blown off at high velocity and the valve tension rod is blown upward with great force.
- Do not carry out welding, heat treatment or mechanical modifications on pressurised components, as this adversely affects the components' resistance to pressure.  
The safety of the machine is then no longer ensured.

#### **Compressed air quality**

The composition of the compressed air must be suitable for the actual application in order to preclude health and life-threatening dangers.

- Use appropriate systems for air treatment before using the compressed air from this machine as breathing air and/or for the processing of foodstuffs.
- Use lubricating oil compatible with foodstuffs if compressed air can come into contact with them.

#### **Spring forces**

Springs under tension or compression store energy. Uncontrolled release of this energy can cause serious injury or death.

Pressure relief valve and unloaded-start valve are under powerful spring loading.

- Do not open or dismantle any valves.

#### **Rotating components**

Touching the fan wheel or the belt drive while the machine is running can result in serious injury.

- Do not remove separating protective installations when the machine is running.
- Switch off and lock out the power supply disconnecting device, and verify the absence of any voltage.
- Wear close-fitting clothes and a hair net if necessary.
- Ensure that all covers and safety guards are in place and secured before re-starting.

#### **Temperature**

High temperatures are generated during compression. Touching hot components may cause injuries.

- Avoid contact with hot components.  
These include, for example, blower blocks, silencers, oil and compressed air lines, motors and machine heaters.
- Wear protective clothing.
- If welding is carried out on or near the machine, take adequate measures to prevent sparks or heat from igniting oil vapours or parts of the machine.

#### **Noise**

The sound enclosure absorbs the machine noise to a tolerable level. This function will be effective only if the sound enclosure is closed.

- Wear hearing protection if necessary.  
The pressure relief valve blowing off can be particularly loud.

#### **Operating fluids/materials**

The used operating fluids and materials can cause adverse health effects. Suitable safety measures must be taken in order to prevent injuries.

- Strictly forbid fire, open flame and smoking.
- Follow safety regulations when dealing with oils, lubricants and chemical substances.
- Avoid contact with skin and eyes.
- Do not inhale oil mist and vapours.
- Do not eat or drink while handling lubricants.
- Keep suitable fire extinguishing agents ready for use.
- Use only KAESER approved operating materials.

#### **Unsuitable spare parts**

Unsuitable spare parts compromise the safety of the machine.

- Use only spare parts approved by the manufacturer for use in this machine.
- Use only genuine KAESER replacement parts on pressure bearing parts.

**Conversion or modification of the machine**

Modifications, additions or conversions to or of the machine can result in unpredictable hazards.

- Do not convert or modify the machine!
- Prior to any technical modification and expansions of the machine, obtain the written approval of the manufacturer.

**Extending or modifying the compressor station**

If dimensioned appropriately, pressure relief valves reliably prevent an impermissible rise in pressure. New dangers may arise if you modify or extend the compressed air station.

- When extending or modifying the compressed air system:  
Check the blow-off capacity of the pressure relief valves prior to installing the new machine.
- If the blow-off capacity is insufficient:  
Install pressure relief valves with larger blow-off capacity.

**3.5.2 Safe machine operation**

The following is information supporting you in the safe handling of the machine during individual product life phases.

**Personal protective equipment**

When working on the machine you may be exposed to dangers that can result in accidents with severe adverse health effects.

- Wear protective clothing as necessary.

Suitable protective clothing (examples):

- Safety workwear
- Protective gloves
- Safety boots
- Eye protection
- Ear protection

**Transporting**

The weight and size of the machine require safety measures during its transport to prevent accidents.

- Use suitable lifting gear that conforms to local safety regulations.
- Allow transportation only by personnel trained in the safe movement of loads.
- Attach lifting gear only to suitable lifting points.
- Be aware of the centre of gravity to avoid tipping.
- Make sure the danger zone is clear of personnel.
- Do not step onto machine components to climb up the machine.

**Assembly**

- Make sure no power is applied when electrical connections are made.
- Use only electrical cables that are suitable and approved for the surroundings and electrical loads applied.

- Never dismantle compressed air pipes until they are fully vented.
- Only use pressure lines that are suitable and approved for the maximum working pressure and the intended medium.
- Do not allow connection pipes to be placed under mechanical stress.
- Do not induce any forces into the machine via the connections, so that the compressive forces must be balanced by bracing.
- Do not step onto machine components to climb up the machine.

#### **Installation**

A suitable installation location for the machine prevents accidents and faults.

- Install the machine in a suitable compressor room.
- Ensure sufficient and suitable lighting such that the display can be read and work carried out comfortably and safely.
- Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.
- If installed outdoors, the machine must be protected from frost, direct sunlight, dust, rain and splashing water.
- Do not operate in areas in which specific requirements with regard to explosion protection are in force.  
For instance, the requirements of ATEX directive 94/9/EC "Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres".
- Ensure adequate ventilation.
- Place the machine in such a manner that the working conditions in its environment are not impaired.
- Comply with limit values for ambient temperature and humidity.
- The intake air must not contain any damaging contaminants,  
Damaging contaminants are for instance: explosive or chemically instable gases and vapours, acid or base forming substances such as ammonia, chlorine or hydrogen sulfide.
- Do not position the machine in the warm exhaust air flow from other machines.
- Keep suitable fire extinguishing agents ready for use.

#### **Commissioning, operation and maintenance**

During commissioning, operation and maintenance you may be exposed to dangers resulting from, e.g., electricity, pressure and temperature. Careless actions can cause accidents with severe adverse effects for your health.

- Allow maintenance work to be carried out only by authorised personnel.
- Wear close-fitting, flame-resistant clothing. Wear protective clothing as necessary.
- Switch off and lock out the power supply isolating device, and verify the absence of voltage.
- Check that there is no voltage on potential-free contacts.
- Close shut-off valves or otherwise isolate the machine from the distribution network to ensure that no compressed air can flow back into the machine.
- De-pressurise all pressurised components and enclosures.
- Allow the machine to cool down.
- Do not open the sound enclosure while the machine is switched on.
- Do not open or dismantle any valves.
- Use only spare parts approved by KAESER for use in this machine.

## 3 Safety and Responsibility

### 3.6 Danger areas

- Carry out regular inspections:  
for visible damages,  
of safety installations,  
of the EMERGENCY STOP command device,  
of any components requiring monitoring.
- Pay particular attention to cleanliness during all maintenance and repair work. Cover components and openings with clean cloths, paper or tape to keep them clean.
- Do not leave any loose components, tools or cleaning rags on or in the machine.
- Components removed from the machine can still be dangerous.  
Do not attempt to open or destroy any components taken from the machine.

#### De-commissioning, storage and disposal

Improper handling of old operating fluids and components represent a danger for the environment.

- Drain off fluids and dispose of them according to environmental regulations.  
These include, for example, lubricating oil.
- Dispose of the machine in accordance with local environmental regulations.

#### 3.5.3 Organisational measures

- Designate personnel and their responsibilities.
- Give clear instructions on reporting faults and damage to the machine.
- Give instructions on fire reporting and fire-fighting measures.

## 3.6 Danger areas

The table gives information on areas dangerous to personnel.

Only authorized personnel may enter these areas.

| Function     | Danger area                                                                          | Authorized personnel                                                                      |
|--------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Transporting | Within a 3 m radius of the machine.                                                  | Installation personnel for transporting preparation.<br>No personnel during transporting. |
|              | Beneath the lifted machine.                                                          | No personnel!                                                                             |
| Installation | Within the machine.<br>Within 1 m radius of the machine and its power supply cables. | Installation personnel                                                                    |
| Operation    | Within a 1 m radius of the machine.                                                  | Operating personnel                                                                       |
| Maintenance  | Within the machine.                                                                  | Maintenance personnel                                                                     |
|              | Within a 1 m radius of the machine.                                                  |                                                                                           |

Tab. 46 Danger areas

## 3.7 Safety devices

Various safety devices ensure safe working with the machine.

- Do not change, bypass or disable safety devices.

- Check safety devices for correct function regularly.
- Do not remove or obliterate labels and notices.
- Ensure that labels and notices are clearly legible.

Further information More information on safety devices is contained in chapter 4, section 4.2.

### 3.8 Safety signs

The diagram shows the positions of safety signs on the machine. The table 47 lists the various safety signs used and their meanings.

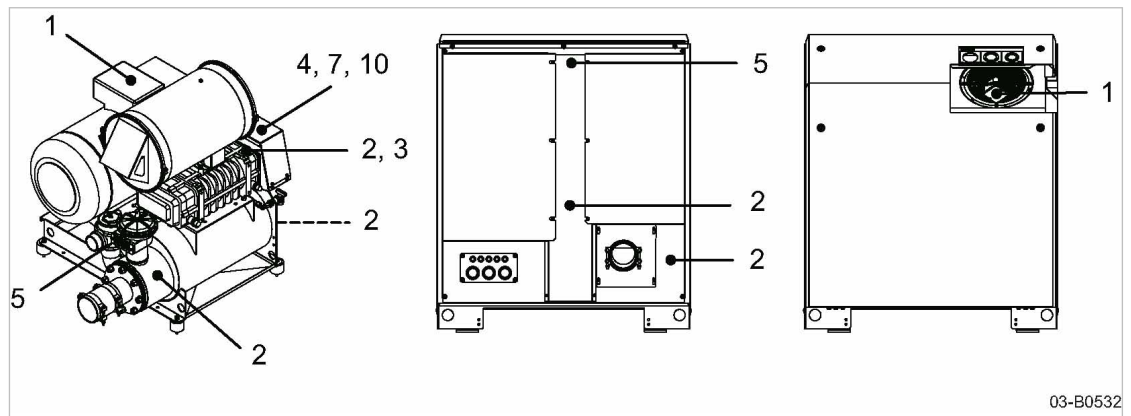


Fig. 1 Position of the safety signs at the machine

#### Options

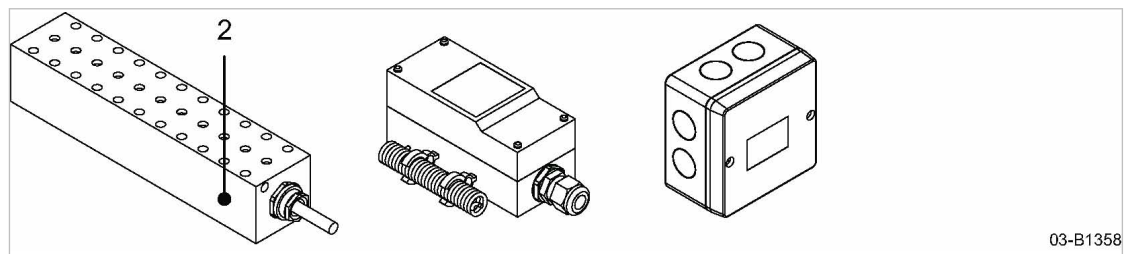


Fig. 2 Safety sign position, standstill heating, Option H2

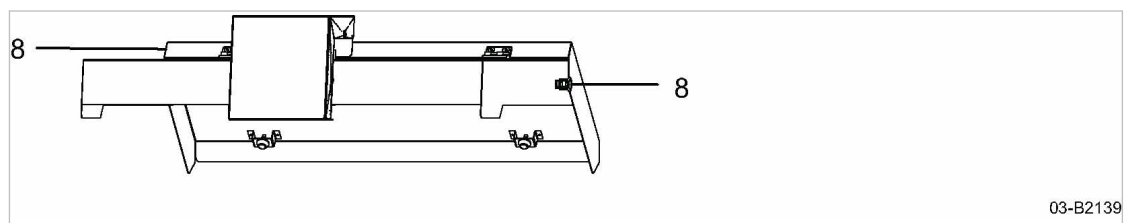


Fig. 3 Safety sign position, weather protection, Option H3

| Position | Symbol | Meaning                                                                                                                                                                                                                                                            |
|----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        |        | <p>Danger of fatal injury from electric shock!</p> <ul style="list-style-type: none"> <li>➤ Before starting any work on electrical equipment:<br/>Switch off and lock out the power supply disconnecting device, and verify the absence of any voltage.</li> </ul> |

## 3 Safety and Responsibility

### 3.9 In emergency

| Position | Symbol                                                                              | Meaning                                                                                                                                                                                                                                                                                                                                                       |
|----------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2        |    | <p>Hot surface!</p> <p>Risk of burns caused by contact with hot components.</p> <ul style="list-style-type: none"> <li>➤ Do not touch the surface.</li> <li>➤ Wear long-sleeved garments (not synthetics such as polyester) and protective gloves.</li> </ul>                                                                                                 |
| 3        |    | <p>Rotating rotors.</p> <p>Risk of serious lacerations or even severing of extremities (fingers) from rotating components.</p> <ul style="list-style-type: none"> <li>➤ Operate the machine only with an inlet silencer connected.</li> <li>➤ Prior to any work at the machine:<br/>Switch off and lock out the power supply disconnecting device.</li> </ul> |
| 4        |    | <p>Rotating belt drive!</p> <p>Risk of serious lacerations or even severing of extremities (fingers) from moving belts.</p> <ul style="list-style-type: none"> <li>➤ Never run the machine without a belt guard.</li> <li>➤ Prior to any work at the machine:<br/>Switch off and lock out the power supply disconnecting device.</li> </ul>                   |
| 5        |   | <p>Danger of burns from hot gas!</p> <ul style="list-style-type: none"> <li>➤ Do not enter danger zone.</li> <li>➤ Wear long-sleeved garments (not synthetics such as polyester) and protective gloves.</li> </ul>                                                                                                                                            |
| 7        |  | <p>Noise during machine operation (without sound enclosure)<br/>or<br/>noise due to opened service panel of the sound enclosure (Option H12)!</p> <ul style="list-style-type: none"> <li>➤ Hearing may be damaged.</li> <li>➤ Wear hearing protection.</li> </ul>                                                                                             |
| 8        |  | <p>Injuries (to the hands in particular) due to shearing effects.</p> <ul style="list-style-type: none"> <li>➤ Carefully close the flap in the weather protection roof.</li> <li>➤ Always wear protective gloves.</li> </ul>                                                                                                                                  |
| 10       |  | <p>Personal injury or damage to the machine by incorrect operation!</p> <ul style="list-style-type: none"> <li>➤ Read and understand the service manual and all safety signs before switching on this machine.</li> </ul>                                                                                                                                     |

Tab. 47 Safety signs

## 3.9 In emergency

### 3.9.1 Correct fire fighting

Suitable extinguishing agents

- Foam
- Carbon dioxide
- Sand or earth

## 3 Safety and Responsibility

### 3.10 Environment protection

Unsuitable or unsafe extinguishing agents

- Strong jet of water
- 1. Keep calm.
- 2. Give the alarm.
- 3. Switch off the power supply disconnecting device, if possible.
- 4. Move to safety.
  - Warn persons in danger.
  - Help incapacitated persons.
  - Close the doors.
- 5. Try to extinguish the fire if you have the skill to do so.

#### 3.9.2 Remove lubricating oil from the skin.

- Eye contact:  
Rinse eyes thoroughly with lukewarm water and seek medical assistance.
- Skin contact:  
Wash off immediately.

### 3.10 Environment protection

- Store and dispose of operating materials and replaced parts in accordance with local environment protection regulations.
- Observe national regulations.  
This applies particularly to parts contaminated with lubricating oil.



- Do not allow lubricating oil to escape to the environment or into the sewage system.

### 3.11 Warranty

This operating manual does not contain any independent warranty commitment. Our general terms and conditions apply with regard to warranty.

A condition of our warranty is that the machine is used solely for the purpose for which it is intended and under the conditions specified.

Due to the multitude of applications for which the machine is suitable, the user is obliged to determine its suitability for his specific application.

Furthermore, we do not assume any warranty obligation for damages caused by:

- the use of unsuitable parts or operating materials,
- arbitrary modifications,
- incorrect maintenance,
- incorrect repair.

Correct maintenance and repair includes the use of genuine KAESER spare parts and operating materials.

- Obtain confirmation from KAESER that your specific operating conditions are suitable.

## 4 Design and Function

### 4.1 Machine

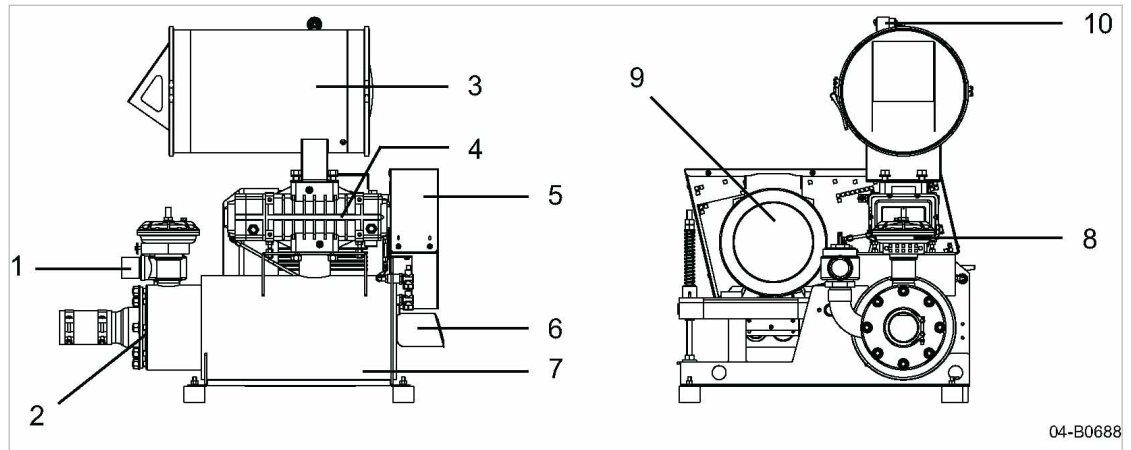


Fig. 4 Machine

- |   |                       |   |                               |
|---|-----------------------|---|-------------------------------|
| ① | Pressure relief valve | ⑥ | Display (option)              |
| ② | Check valve (option)  | ⑦ | Outlet silencer               |
| ③ | Inlet silencer        | ⑧ | Unloaded start valve (Option) |
| ④ | Blower block          | ⑨ | Drive motor                   |
| ⑤ | Belt guard            | ⑩ | Filter maintenance indicator  |

The motor ⑨ drives the block ④ via belts.

Air is drawn into the inlet silencer ③ and through a filter where it is cleaned.

The air is then pushed from the blower block in vertical direction into the outlet silencer ⑦, where the process forces pressure build-up.

#### 4.1.1 Blower block

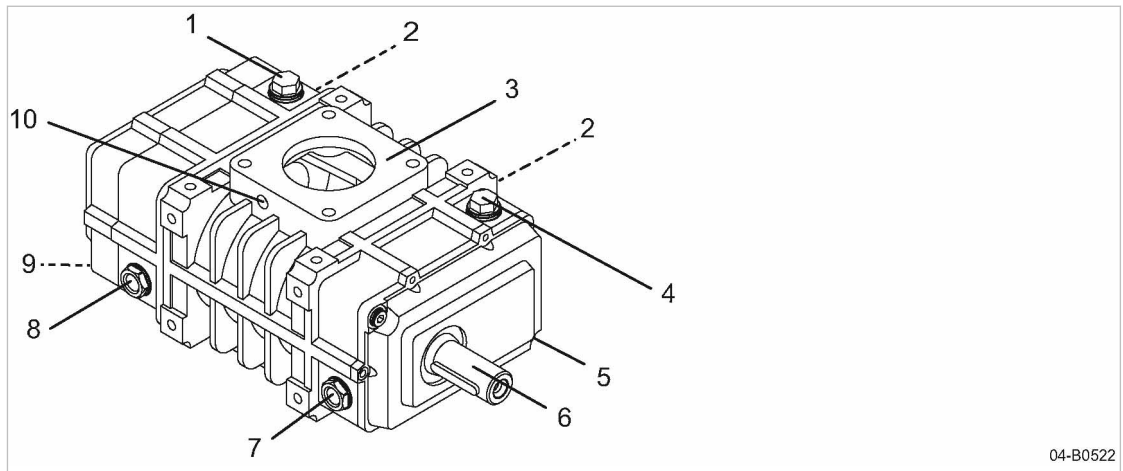


Fig. 5 Blower block

- |   |                                |   |                                                  |
|---|--------------------------------|---|--------------------------------------------------|
| ① | Gear-end oil inlet             | ⑥ | Drive shaft                                      |
| ② | Side gas drainage (closed)     | ⑦ | Drive-end oil sight glass                        |
| ③ | Flange connection (both sides) | ⑧ | Gear-end oil sight glass                         |
| ④ | Drive-end oil inlet            | ⑨ | Gear-end oil drain                               |
| ⑤ | Drive-end oil drain            | ⑩ | Connection for measuring instrument (both sides) |

A pair of rotors with intermeshing lobes turn in opposite directions within a casing. The rotors are synchronised by timing gears on one end. Air in the block inlet is trapped between the rotor lobes and the casing and moved round to the discharge port.

As there is no contact between the rotors themselves and the casing, oil film lubrication is not required.

#### 4.1.2 Pressure relief valve

The pressure relief valve protects the system from excessive pressure. It is factory set.

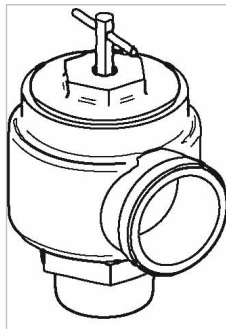


Fig. 6 Pressure relief valve

#### 4.1.3 Compensator

The compensator functions as follows:

- Inlet and outlet connections to silencers and accessories,
- Isolates the machine vibrations from the air pipeline.

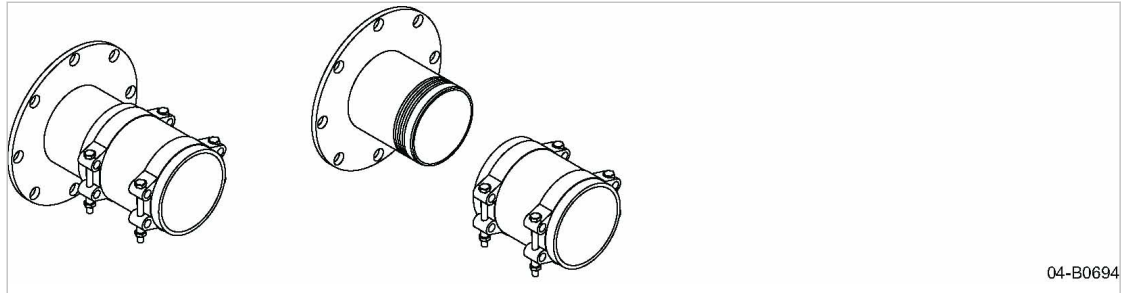


Fig. 7 Compensator

#### 4.1.4 Filter maintenance indicator

The maintenance indicator shows when the filter needs maintenance. When the filter becomes clogged and flow resistance rises to a set point, the maintenance signal is given.

### 4.2 Safety devices

The following safety devices are provided and may not be modified in any way.

- Blow-off valve.  
The blow-off valve protects the machine from excessive pressure build-up. It is factory set.
- Covers over moving parts and electrical connections:  
These protect against accidental contact.
- Sound enclosure (Option H12):  
The sound enclosure prevents excessive noise emission.
- Drive motor with 3 PTC thermistors:  
They protect the motor against overheating in connection with the user's protection cut-out.

### 4.3 Options

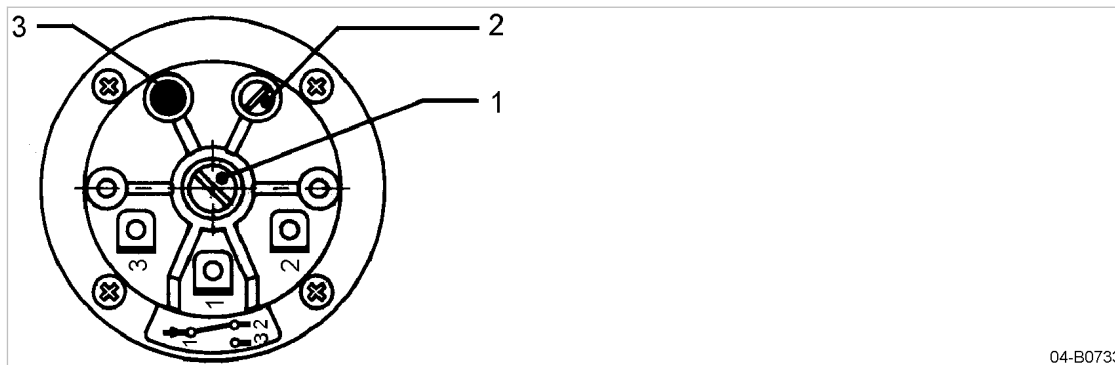
The options available for your machine are described below.

#### 4.3.1 Option C9 Pressure switch

The pressure switch sends a signal when the set pressure is exceeded.



The pressure switch is factory set according to the customers specification.  
In other cases it must be set according to the application..



04-B0733

Fig. 8 Pressure switch

- ① Switching point adjusting screw
- ② Switching differential adjusting screw
- ③ Screw sealed with a protective coating

The switching point can be adjusted by the screw ① while the machine is running.

Fine adjustment and switching differential is set with the adjusting screw ②.



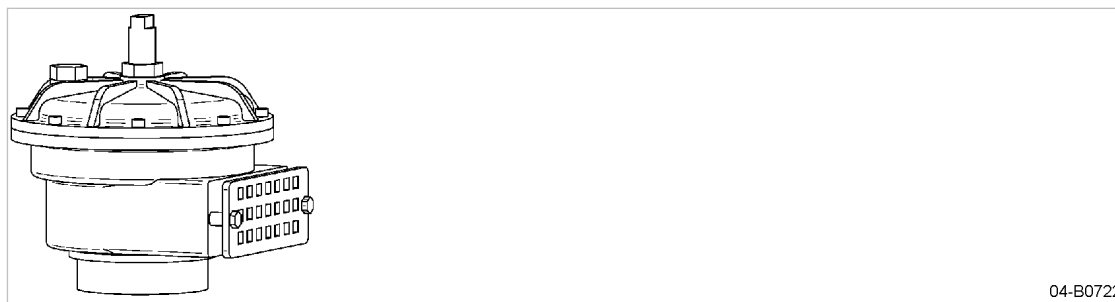
The screw ③ is sealed with a protective coating. It is not to be adjusted.

#### 4.3.2 Option C10 Speed monitor

The speed monitor measures the rotational speed of the blower block.

#### 4.3.3 Option C11 Unloaded start valve

The unloaded start valve prevents the machine starting against a load in the star-delta phase. The valve closes when the motor starter switches from star (Y) to delta (Δ).



04-B0722

Fig. 9 Unloaded start valve



The unloaded start valve is factory set.

### Functional description

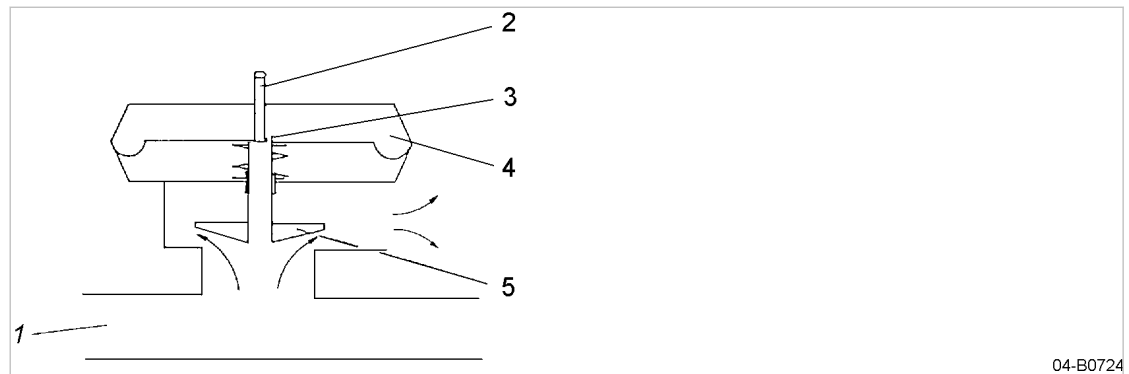


Fig. 10 Diagram of the unloaded start valve

- |                   |                     |
|-------------------|---------------------|
| ① Air network     | ④ Diaphragm chamber |
| ② Adjusting screw | ⑤ Valve cone        |
| ③ Nozzle          |                     |

When the machine is shut down the valve cone ⑤ is open.

When the machine is started, air passes through the blow-off aperture to atmosphere.

Screwing in the adjusting screw ② reduces the gap between the valve cone ⑤ and its seating so that it closes at a lower flow rate.

(100 mbar pressure is needed in the network to close the valve cone ⑤)

Back pressure enters through the nozzle ③ into the upper diaphragm chamber ④ to close the valve cone. The closing time can be influenced by changing the position of the valve cone with the adjusting screw ②.

Changing the closing time with the adjusting screw:

- Clockwise - shorter closing time
- Anticlockwise - longer closing time

### 4.3.4 Option C13 Temperature gauge switch

The gauge shows the temperature in the block discharge port and has a floating relay changeover contact that can be set to switch at a selected temperature.



The switching point is factory set to 145 °C.

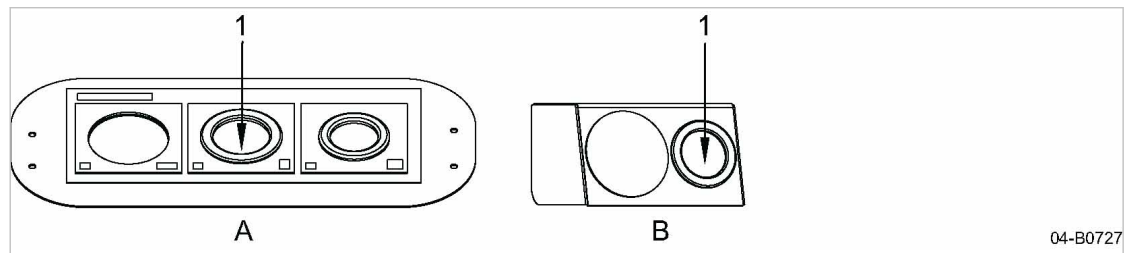


Fig. 11 Location of the temperature gauge

- |   |                                          |
|---|------------------------------------------|
| ① | Display: Machine with sound enclosure    |
| ② | Display: Machine without sound enclosure |
| ③ | Temperature gauge                        |

**Setting instructions**

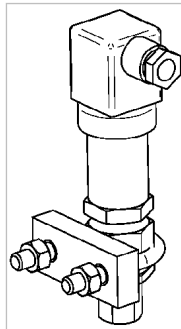
The switching point can be adjusted by means of the screw beneath the protective cover on the front plate.

Possible adjustment for working conditions on site:

- Block discharge temperature lower than 145 °C
  - If the average block discharge temperature is significantly lower than 145 °C the gauge, switching point can be adjusted down.  
The recommended switching point is the average block discharge temperature + 15 K.
- Block discharge temperature higher than 145 °C
  - If the average block discharge temperature is near to or higher than 145 °C, adjust the switching point upward.  
The maximum permissible value: 155 °C.

**4.3.5 Option C14  
Pressure sensor**

The sensor measures the actual block discharge pressure.



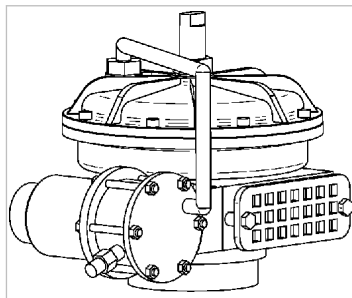
04-B0734

Fig. 12 Pressure sensor

**4.3.6 Option C18  
Start-up pressure control valve**

The start-up regulating valve is a medium-controlled valve with the following functions:

- Unloaded starting
- Pressure regulating during operation



04-B0723

Fig. 13 Start-up pressure control valve

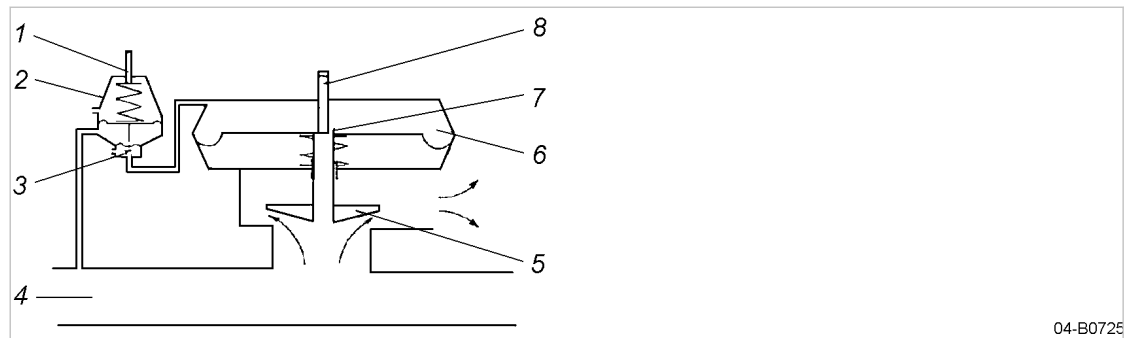


Fig. 14 Diagram of the start-up pressure control valve

- |   |                       |   |                   |
|---|-----------------------|---|-------------------|
| ① | Adjusting screw       | ⑤ | Valve cone        |
| ② | Control air regulator | ⑥ | Diaphragm chamber |
| ③ | Valve cone            | ⑦ | Nozzle            |
| ④ | Air network           | ⑧ | Adjusting screw   |

#### Unloaded starting

When the machine is stopped the valve cone ⑤ is open and valve cone ③ closed. When the machine is started, air flows over the valve cone ⑤ and is blown off to atmosphere. The pressure build-up in the air network ④ is transmitted through the hollow spindle and nozzle ⑦ into the upper diaphragm chamber ⑥. The resulting pressure on the diaphragm closes the valve cone ⑤.

Changing the closing time:

The closing time is adjusted by means of the adjusting screw ⑧ that influences the flow rate through the nozzle ⑦.

- Clockwise - shorter closing time
- Anticlockwise - longer closing time

The unloaded start function only works if the pressure in the air network ④ reaches at least 100 mbar.

#### Overflow regulation



The control air regulator is set to atmospheric pressure.

After starting, the network pressure and the pressure on the control air regulator ② rises. As soon as the set network pressure is reached the valve cone ③ opens. Pressure in the upper diaphragm chamber ⑥ bleeds off to atmosphere and the valve cone ⑤ opens.

The set network pressure is kept constant.

Changing the pressure setting:

Remove the rubber cap from the control regulator to change network pressure. Undo the locknut and adjust the screw with a screwdriver.

- Clockwise - lower pressure
- Anticlockwise - higher pressure

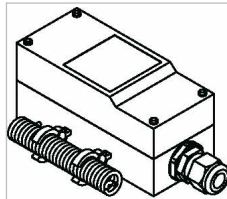
Lock the screw in position after adjusting and replace the rubber cap.

#### 4.3.7 Option C19, H12 Thermostat

The thermostat controls the temperature within the sound enclosure. It consists of a temperature sensor with a floating relay changeover contact.



The switching point is factory set to 60°C.

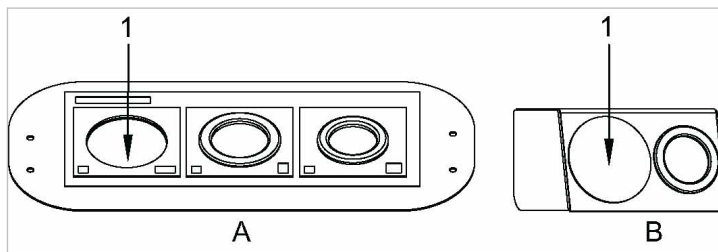


04-B0731

Fig. 15 Thermostat

#### 4.3.8 Option C20 Pressure gauge

The pressure gauge shows the pressure in the blower block discharge port.



04-B0693

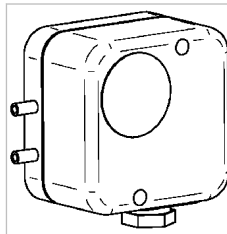
Fig. 16 Location of the pressure gauge

- (A) Display: Machine with sound enclosure
- (B) Display: Machine without sound enclosure
- (1) Pressure gauge

#### 4.3.9 Option F5 Filter pressure differential switch

The filter pressure differential switch monitors contamination of the intake filter.

The switch is triggered by pressure differential. Falling below or rising above the set value causes the current flow to switch on, switch off or changeover according to how the switch is wired.



04-B0776

Fig. 17 Filter pressure differential switch

#### Pressure connection diagram

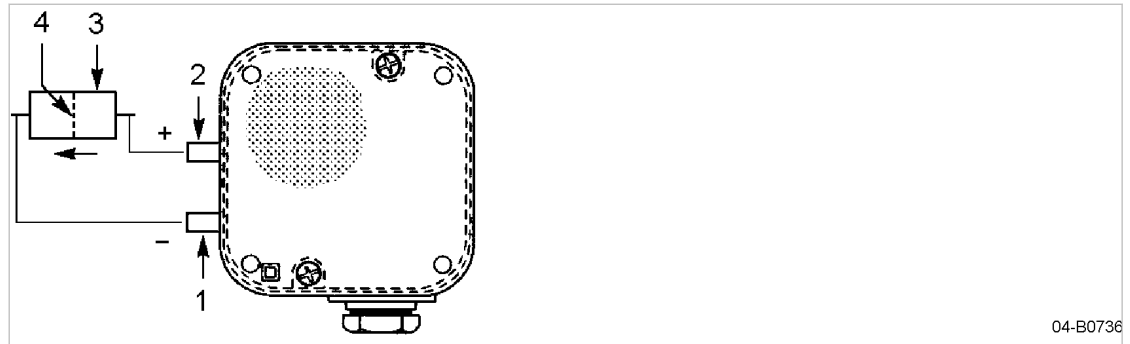


Fig. 18 Pressure connection to the filter pressure differential switch

- |                              |                  |
|------------------------------|------------------|
| ① Low pressure connection    | ③ Inlet silencer |
| ② Higher pressure connection | ④ Filter         |

#### Switching function

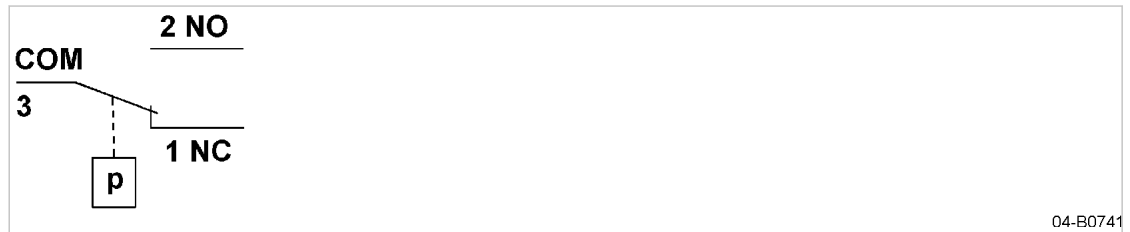


Fig. 19 Filter pressure differential switch function

Switching with rising pressure:

- 1 NC opens
- 2 NO closes

Switching with falling pressure:

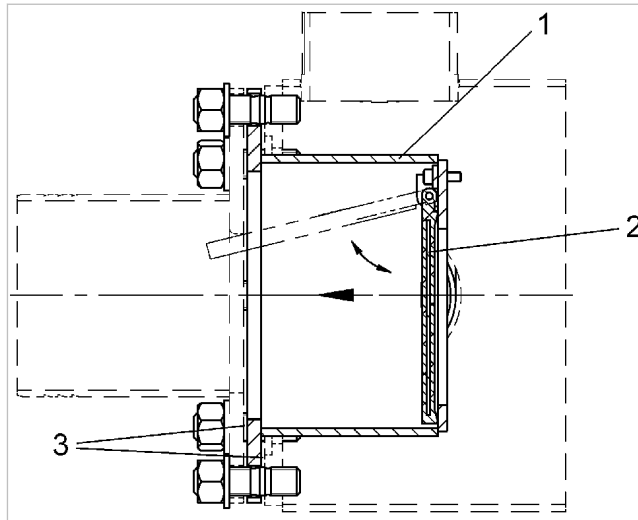
- 1 NC closes
- 2 NO opens

#### 4.3.10 Option G1 Check valve

The check valve prevents a reversal of the normal air flow direction.

The valve is closed when the machine is at standstill.

The check valve is integrated in the outlet silencer.



04-B0721

Fig. 20 Check valve

- ① Housing
- ② Closing mechanism
- ③ Gasket

#### 4.3.11 Option H2, H12 Auxiliary heating

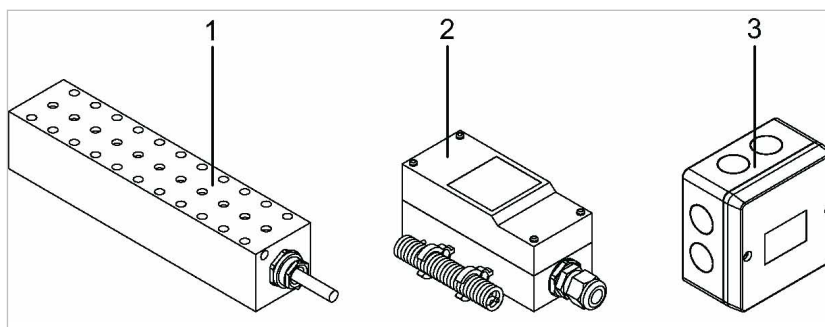
The auxiliary heating has the following functions:

- Prevents condensation forming on the machine in climates of high humidity.
- Pre-warms the machine when ambient temperatures are below  $-5^{\circ}\text{C}$ .

The heating is designed to raise the machine temperature by about  $15^{\circ}\text{C}$ .



The thermostat switching point is factory set to  $5^{\circ}\text{C}$ .



04-B0775

Fig. 21 Auxiliary heating

- ① Radiator
- ② Thermostat
- ③ Terminal box

#### 4.3.12 Option H3, H12 Outdoor installation

The sound enclosure (Option H12) is fitted with a weather protection roof.

When the machine is installed outdoors, the sound enclosure in the cover roof area and the instruments are protected against direct sunlight, rain and, snow.

#### 4.3.13 Option H11 Intake from pipe network

The air is drawn from the pipe network into the machine's intake silencer.

#### 4.3.14 Option H12 Sound enclosure

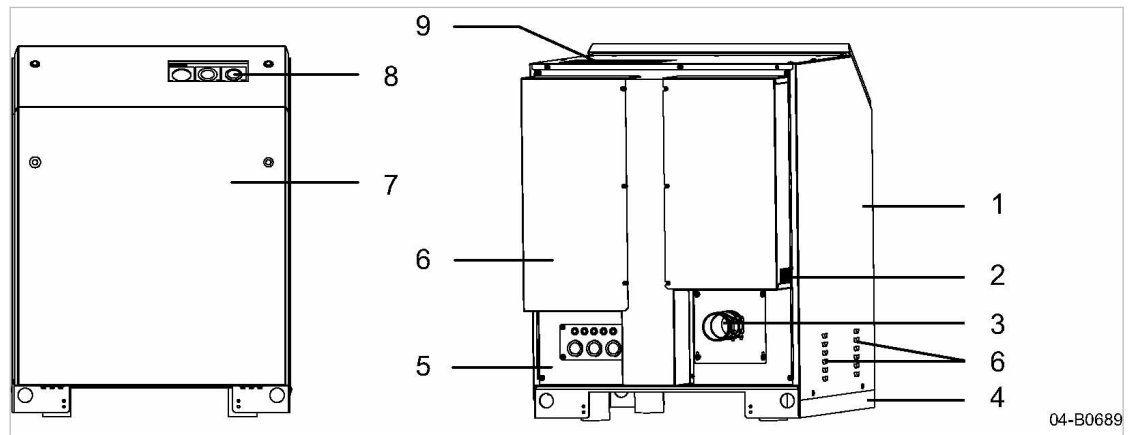


Fig. 22 Sound enclosure overview

- |                            |                      |
|----------------------------|----------------------|
| ① Side panel               | ⑥ Cooling air inlet  |
| ② Intake air inlet         | ⑦ Removable panel    |
| ③ Pressure line connection | ⑧ Display (option)   |
| ④ Frame                    | ⑨ Cooling air outlet |
| ⑤ Back plate               |                      |

The motor fan draws cooling air through the inlet ⑥ into the sound enclosure to cool the drive motor and the machine.

Cooling air flow is supplemented by a fan within the enclosure. Warm air is blown out to protect the machine from overheating.

Air to be compressed is drawn in through the intake air inlet ②. This ensures that only air at ambient temperature is compressed.

The sound enclosure has a removable access panel ⑦.

Latches are released by a key supplied with the machine.

The sound enclosure has several functions when it is closed:

- Sound insulation
- Protection against contact with components
- Airflow control

The sound enclosure is not suitable for the following uses:

- Persons walking, standing or sitting on the machine.
- Use as resting place or storage of any kind of load.

## 5 Installation and Operating Conditions

### 5.1 Ensuring safety

The conditions in which the machine is installed and operated have a decisive effect on safety. Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

#### Complying with safety notes

Disregarding the safety instructions may cause unpredictable dangers!

- Strictly forbid fire, open flame and smoking.
- If welding is carried out on or near the machine, take adequate measures to prevent sparks or heat from igniting oil vapours or parts of the machine.
- Do not store flammable material in the vicinity of the machine.
- The machine is not explosion-proof!  
Do not operate in areas in which specific requirements with regard to explosion protection are in force.  
For instance, the requirements of ATEX directive 94/9/EC "Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres".
- Ensure sufficient and suitable lighting such that the display can be read and work carried out comfortably and safely.
- Keep suitable fire extinguishing agents ready for use.
- Comply with the permissible ambient and intake conditions.
- Ensure the correct composition of the intake air:
  - clean with no damaging contaminants (e.g., dust, fibres, fine sand)
  - free of explosive or chemically unstable gases or vapours
  - free of acid/alkaline forming substances, particularly ammonia, chlorine or hydrogen sulphide.

#### Noise

The sound enclosure absorbs the machine noise to a tolerable level. This function will be effective only if the sound enclosure is closed.

- If necessary, wear hearing protection or take hearing protection measures on-site.

### 5.2 Installation conditions

#### 5.2.1 Determining location and clearances

The machine is intended for installation in an appropriate machine room. Information on distances from walls and ventilation is given below.



The distances quoted are recommended distances and ensure unhindered access to all machine parts.

- Please consult KAESER if you cannot comply with these recommendations.

**Precondition** The floor must be level, firm and capable of bearing the mass.  
 No special foundation is necessary.

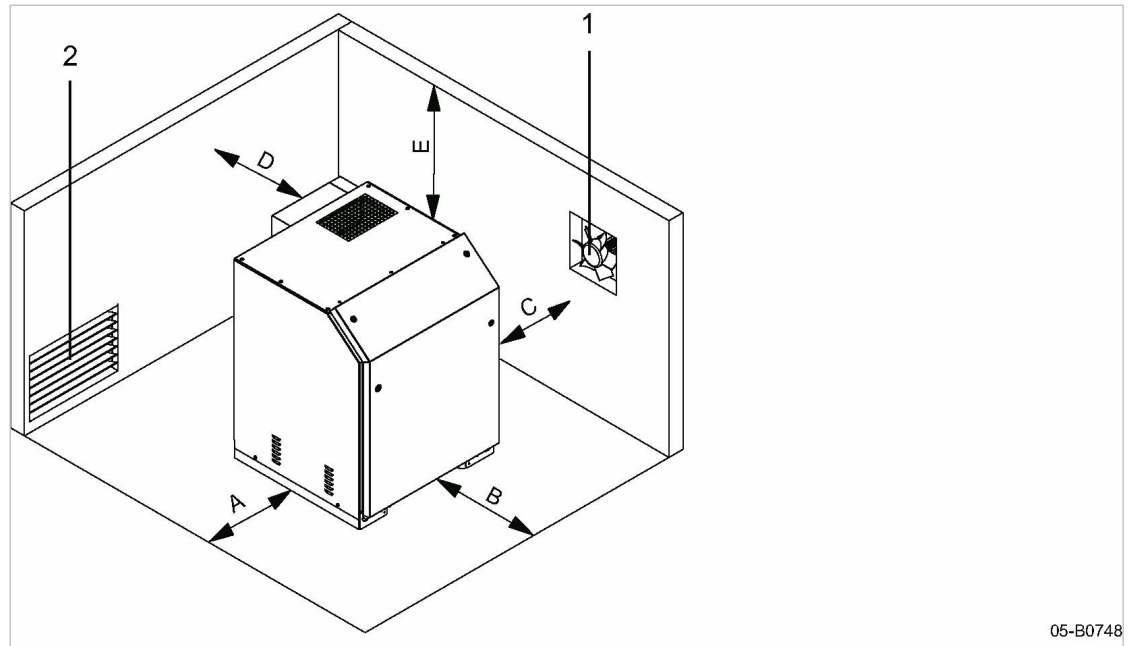


Fig. 23 Recommended machine placement and minimum dimensions [mm]

|     |           |     |                    |
|-----|-----------|-----|--------------------|
| (A) | 50 or 700 | (E) | 700                |
| (B) | 800       | (1) | Exhaust fan        |
| (C) | 0 or 700  | (2) | Air inlet aperture |
| (D) | 800       |     |                    |

- The distance (A) or (C) must be at least 700 mm.  
 Version 1: A = 50 mm and C = 700 mm  
 Version 2: A = 700 mm and C = 0 mm



#### 1. **NOTICE!**

Ambient temperature too low!  
 Frozen condensate and highly viscous lubricating oil can cause damage when starting the machine.

- Ensure that the temperature of the machine is at least +3 °C before starting.
- 2. Heat the machine room adequately or install an auxiliary heater.
- Ensure accessibility so that all work on the machine can be carried out without danger or hindrance.
- Do not position the machine in the warm exhaust air flow from other machines.
- When installing multiple machines, ensure that all intake and exhaust air openings are arranged at one side.
- Anchoring the machine.
- If installed outdoors, protect the machine against frost, direct sunlight, dust and rain.

### 5.2.2 Ensuring adequate ventilation



If the ventilation is insufficient, a partial vacuum can be created in the room.

- Ensure that the volume of air flowing into the machine room is at least equivalent to that being removed from it by the machine and exhaust fan.
- Make sure that the machine and exhaust fan can only operate when the inlet aperture is actually open.
- Keep the inlet and exhaust apertures free of obstructions so that the cooling air can flow freely through the room.

### **5.3 Option H3, H12 Outdoor installation**

The sound enclosure (Option H12) is fitted with a weather protection roof.

When the machine is installed outdoors, the sound enclosure in the cover roof area and the instruments are protected against direct sunlight, rain and, snow.

## 6 Installation

### 6.1 Ensuring safety

Follow the instructions below for safe installation.

Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

#### Complying with safety notes

Disregarding the safety instructions can cause unpredictable dangers.

- Follow the instructions in chapter 3 'Safety and Responsibility'.
- Installation work may only be carried out by authorised personnel.
- Make sure that no one is working on the machine.
- Ensure that all panels are closed.

#### When working on live components

Touching voltage carrying components can result in electric shocks, burns or death.

- Work on electrical equipment may only be carried out by authorised electricians.
- Switch off and lock out the power supply isolating device, and verify the absence of voltage.
- Check that there is no voltage on potential-free contacts.

#### When working on the compressed air system

Compressed air is contained energy. Uncontrolled release of this energy can cause serious injury or death. The following safety concerns relate to any work on components that could be under pressure.

- Switch off and lock out the power supply isolating device, and verify the absence of voltage.
- Close shut-off valves or otherwise isolate the machine from the distribution network to ensure that no compressed air can flow back into the machine.
- De-pressurise all pressurised components and enclosures.
- Do not open or dismantle any valves.

#### When working on the drive system

Touching voltage carrying components can result in electric shocks, burns or death.

Touching the fan wheel or the belt drive while the machine is running can result in serious injury.

- Switch off and lock out the power supply isolating device, and verify the absence of voltage.
- Do not open the panels while the machine is switched on.

Further information Details of authorised personnel are found in chapter 3.4.2.  
Details of dangers and their avoidance are found in chapter 3.5.

## 6.2 Reporting transport damage

1. Check the machine for visible and hidden transport damage.
2. Inform the carrier and the manufacturer in writing of any damage without delay.

## 6.3 Anchoring the machine

Suitable fixings are delivered with the machine.

- Use appropriate fixing bolts to anchor the machine to the floor and prevent it from shifting.

Further information The foundation plan is contained in the dimensional drawing in chapter 13.2.

## 6.4 Connecting the power supply

Precondition The power supply is switched off,  
the device is locked off,  
the absence of any voltage has been verified.

The tolerance limits of the mains voltage (power supply) are within the permissible tolerance limits of the nominal voltage (machine).

1. The power supply must only be connected by authorised installation personnel or an authorised electrician.
2. Carry out protection measures as stipulated in relevant regulations (e.g IEC 364 or DIN VDE 0100) and in national accident prevention regulations (BGV A3 in Germany). In addition, observe the regulations of the local electricity supplier.
3. Select supply cable conductor diameters and fusing in accordance with local regulations.
4. The user must provide the machine with a lockable power supply disconnecting device. This could be, for example, a load disconnect switch with fused input. If a circuit breaker is used it must be suitable for the motor starting characteristics.
5. Connect the drive motor to the mains power supply in accordance with the electrical diagrams.
6. The user's safety devices must be correctly connected to the machine's electrical system by a qualified person.
7. If the machine is driven by a frequency converter, observe also the specifications provided in the documentation for this unit.



### 8. **DANGER!**

Danger of fatal injury from electric shock!

- Switch off and lock out the power supply disconnecting device and check the absence of any voltage.
- When working with the frequency converter:  
Wait at least 5 minutes for dangerous voltages to subside.

9. Connect the machine to the power supply.

### 6.4.1 Connecting the drive motor

Precondition The supply isolating device is switched off,  
the device is locked off,  
a check has been made that no voltage is present.

1. Determine the cable diameters and fusing according to the operation conditions.
2. Connect the drive motor according to the wiring diagram.

Further information See electrical diagram in chapter 13.5.

#### **6.4.2 Option C32**

##### **Under frequency control**



If the machine is delivered by KAESER including the frequency converter, the regulation behaviour and operating mode of the frequency converter will be preset.

- Adapt and optimize the actual properties to the customer system on-site.

1. Comply with the following provisions if you operate machines with a frequency converter:
  - Operate the machine only within its performance limits and under the permitted ambient conditions.
  - The frequency converter must be suitable for the operation of a working machine with constant torque. Models with squared torque may not be used.
  - When operating the machine with frequency converter, the drive motor must be designed as follows:
    - Voltage  $< 500\text{ V} \geq 75\text{ kW}$ :  
Standard winding and isolated bearing or bearing shield at the control side, regardless of the model.
    - Voltage  $\geq 500\text{ V} < 75\text{ kW}$ :  
Enhanced winding isolation, standard bearing, regardless of the model.
    - Voltage  $\geq 500\text{ V} \geq 75\text{ kW}$ :  
Enhanced winding isolation and isolated bearing or bearing shield at the drive and the control side, regardless of the model.
  - Frequency converters providing a lower initial voltage than the rated motor voltage will cause an increased power consumption and heat development in the drive motor. This results in a reduced nominal motor power that can be utilised and thus a decrease in the machine's regulating range. To avoid damage to the drive motor, please consult with the manufacturer of the frequency converter.
  - Use a frequency converter with IGBT transistors.
  - The speed change should be approx. 5 Hz per second. This value applies also for the starting ramp from standstill to reaching minimum frequency. Deviating settings, either slower or faster, may be possible after verification by KAESER Service.
  - The frequency converter may be switched to a motor in standstill only, in order to avoid malfunctions.
  - Upon deactivation of the frequency converter, it must be impossible to reactivate it until after complete machine standstill.
  - For a shut-down in the event of a malfunction, integrate the following devices in the user's controller:
    - PTC resistor for monitoring the winding temperature of the drive motor.
    - Thermostat for monitoring the compression discharge temperature.
  - For safety-technical reasons, an automatic restart of the machine is not permitted and must be fully deactivated when parametrising the frequency converter.
  - The maximum conductor length between output frequency converter and drive motor is 30 m. Longer conductors may be possible upon verification by the KAESER Service.
  - Only screened conductors may be used to connect the machine to ensure an EMC compliant connection and machine operation.
    - Do not twist the braided screen of these conductors. The braided screen must be generously spread two-sided across the earth potential.
    - Use only EMC shield clamps or EMC-compliant screwed cable glands.
    - This also applies to other connecting cables, such as the thermistor sensors (PTC) of the drive motor.
2. Consult with KAESER to determine an appropriate frequency converter.

## 6.5 Creating the compressed air connection

**Precondition** The machine is factory assembled up to the point of connection to the discharge silencer.  
The air main is at atmospheric pressure.



### WARNING

Serious injury or death can result from loosening or opening components under pressure.  
➤ De-pressurise all pressurised components and enclosures.



If the system has a tendency for air/gas under pressure to flow back to the machine when it is stopped, a non-return device must be installed to allow for unloaded starting of the machine.

➤ Consult KAESER on a suitable check valve and expert installation.

1. Use an elastic connector to create the compressed air connection to the pipeline system or the consumer and install, complying with the torques specified below:

| Connection                     | Torque [Nm] |
|--------------------------------|-------------|
| Compensator, customer pipeline | 100         |

Tab. 48 Torques for customer pipeline

2. Support the weight of the pipework and any other connecting components.

## 6.6 Safety devices installed by the user

- The user must install the necessary safety devices.
  - Three PTC thermistor sensors should be installed by the user to protect against drive motor overheating or overloading.
  - A motor overload protection switch/overload relay (if not included with the deliverables) must be installed to monitor maximum current draw(s).
  - EMERGENCY OFF command device for immediate shut-down of the machine.
- The user must monitor the following parameters:
  - Permissible final pressure
  - Maximum block discharge temperature
- Consult KAESER for advice on this subject.



Pressure relief valves and check valves are not regulating means in case of overpressure.  
The activation of the pressure relief valve constitutes an impermissible operating state requiring immediate remedial measures.

## 6.7 Options

All options are mechanically installed/mounted. The electrical connections and evaluations are the customer's responsibility.

- Instructions on individual options should be followed.

**6.7.1 Option C9**  
**Connecting the pressure switch**

- Connecting the pressure switch

Further information See electrical diagram in chapter 13.6.1.

**6.7.2 Option C10**  
**Connecting the speed monitor**

The sensor and transmitter are mechanically installed.

- A speed monitor sensor is supplied separately when ordered individually. Install in the user's control cabinet and wire up.

Further information See chapter 2.13.2 for the settings of the evaluation device.  
The wiring diagram for the speed monitor is found in chapter 13.6.2.

**6.7.3 Option C13**  
**Connecting the temperature gauge switch**

- Connect the temperature gauge switch.

Further information See electrical diagram in chapter 13.6.3.

**6.7.4 Option C14**  
**Connecting the pressure sensor**

- Connecting the pressure sensor

Further information See chapter 13.6.4.

**6.7.5 Option C19**  
**Connecting the thermostat**

- Connect the thermostat.

Further information See electrical diagram in chapter 13.6.5.

**6.7.6 Option F5**  
**Connecting the filter pressure differential switch**

- Connect the filter pressure differential switch.

Further information See electrical diagram in chapter 13.6.6.

**6.7.7 Option H2**  
**Connecting the auxiliary heater**

- Connect the auxiliary heater in the terminal box.

Further information See electrical diagram in chapter 13.6.7.

### **6.7.8 Option H11**

#### **Connecting the suction line**

If air is sucked in from the pipeline, the inlet silencer is connected using a compensator.

**Precondition** The compressed air system is vented completely to atmospheric pressure.

- Secure the pipeline securely before the compensator.
- Connect to the compressed air network.

**Further information** Dimensional drawings for the pipeline connection is given in chapter 13.2.

### **6.7.9 Option H12**

#### **Sound enclosure**

##### **6.7.9.1 Electrical connections**

Subsequent work enables the access to the electrical connections of drive motor, fan and accessories.

1. Remove the access panel of the sound enclosure.  
Latches are released by a key supplied with the machine.
2. Make the electrical connections.
3. Insert the access panel, close the latch.

##### **6.7.9.2 Connecting the fan**

The fan motor has a terminal box for direct supply connection.

The drive motor and the fan must run simultaneously.

Ensure correct direction of rotation when connecting the fan. The fan must blow air out of the sound enclosure.

The fan should run on for ca. 15 minutes after machine shut down to avoid temperature peaks inside the sound enclosure.

**Precondition** The power supply is switched off,  
the device is locked off,  
the absence of any voltage has been verified.

1. Select sufficient cable length.
2. Connect cables to the terminal box without mechanical stress.
3. Connect the protective earth.

**Further information** See electrical diagram in chapter 13.6.8.

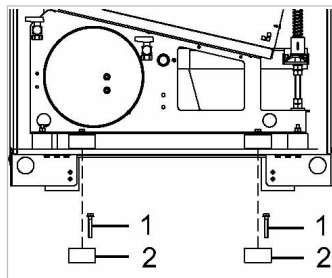
**6.8 Option H12****Sound enclosure: Remove transport securing devices**

Fig. 24 Removing the transport securing devices

- ① Screw
- ② Spacer

Remove the transport securing devices after the machine has been installed.

1. Remove the access panel of the sound enclosure.
2. Remove the transport securing device and store for future transports.

## 7 Initial Start-up

### 7.1 Ensuring safety

This chapter provides instructions for safe commissioning of the machine.  
Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

#### Complying with safety notes

Disregarding the safety instructions can cause unpredictable dangers.

- Follow the instructions in chapter 3 'Safety and Responsibility'.
- Commissioning tasks may only be carried out by authorised personnel!
- Make sure that no one is working on the machine.
- Ensure that all panels are closed.

#### When working on live components

Touching voltage carrying components can result in electric shocks, burns or death.

- Work on electrical equipment may only be carried out by authorised electricians.
- Switch off and lock out the power supply isolating device, and verify the absence of voltage.
- Check that there is no voltage on potential-free contacts.

#### When working on the compressed air system

Compressed air is contained energy. Uncontrolled release of this energy can cause serious injury or death. The following safety concerns relate to any work on components that could be under pressure.

- Switch off and lock out the power supply isolating device, and verify the absence of voltage.
- Close shut-off valves or otherwise isolate the machine from the distribution network to ensure that no compressed air can flow back into the machine.
- De-pressurise all pressurised components and enclosures.
- Do not open or dismantle any valves.

#### When working on the drive system

Touching voltage carrying components can result in electric shocks, burns or death.

Touching the fan wheel or the belt drive while the machine is running can result in serious injury.

- Switch off and lock out the power supply isolating device, and verify the absence of voltage.
- Do not open the panels while the machine is switched on.

Further information Details of authorised personnel are found in chapter 3.4.2.  
Details of dangers and their avoidance are found in chapter 3.5.

## 7.2 Checking installation and operating conditions

- Check and confirm all the items in the checklist before commissioning the machine.

| To be checked                                                                                                                            | See chapter | Complied? |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------|
| ➤ Have all packing materials, tool and transport securing means been removed from the machine?                                           | –           |           |
| ➤ Are the operators fully conversant with safety regulations?                                                                            | –           |           |
| ➤ Have all the positioning conditions been complied with?                                                                                | 5           |           |
| ➤ Has the automatic machine shut-down by the user's safety devices in the event of a fault been realised?                                | 6.6         |           |
| ➤ Are the power supply cable conductor diameters and fuse ratings adequate?                                                              | –           |           |
| ➤ Are the tolerance limits of the mains voltage (power supply) within the permissible tolerance limits of the nominal voltage (machine)? | 2.12        |           |
| ➤ Has the drive motor connection been checked?                                                                                           | 6.4         |           |
| ➤ Has the fan connection (sound enclosure) been checked? (Option H12)                                                                    | 6.7.9.2     |           |
| ➤ Has the direction of rotation of drive motor and fan (sound enclosure) been checked?                                                   | 7.4         |           |
| ➤ All electrical connections checked for tightness?<br>(The check must be repeated after 50 operating hours)                             | –           |           |
| ➤ Is there adequate lubricating oil in the drive-end and gear-end of the block?<br>(Level in the centre of the sight glass)              | 10.5        |           |
| ➤ Has the connection to the compressed air network been made with a hose or compensator?                                                 | 6.5         |           |
| ➤ Has the drive belt tension been checked?<br>(The check must be repeated after 24 operating hours)                                      | 10.4        |           |
| ➤ Is the machine anchored to the floor?                                                                                                  | 6.3         |           |
| ➤ Are the access panel of the sound enclosure and other panels inserted and locked? (Option H12)                                         | 4.3.14      |           |

Tab. 49 Installation conditions checklist

## 7.3 Instructions to be observed before commissioning or re-commissioning

Incorrect or improper commissioning can cause injury to persons and damage to the machine.

## 7 Initial Start-up

### 7.4 Checking the direction of rotation

- Commissioning may only be carried out by authorised installation and service personnel who have been trained on this machine.

#### Special measures for re-commissioning after storage

| Storage period longer than: | Remedy                                                                                                                                                                 |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12 months                   | <ul style="list-style-type: none"> <li>➤ Change the lubricating oil.</li> <li>➤ Have the motor bearings checked by an authorised KAESER Service Technician.</li> </ul> |
| 36 months                   | <ul style="list-style-type: none"> <li>➤ Have the overall technical condition checked by an authorised KAESER Service Technician.</li> </ul>                           |

Tab. 50 Re-commissioning after storage

## 7.4 Checking the direction of rotation

### 7.4.1 Drive motor

If the block rotors turn in the wrong direction the direction of airflow through the machine will also be wrong.

An arrow indicating direction of rotation is fixed on the side of the block at the drive end and at the belt guard.



#### 1. **NOTICE!**

Wrong direction of rotation!

This may result in machine damage by drawing foreign bodies or excessive vacuum.

- Ensure the correct direction of rotation.

2. Remove the inlet silencer filter maintenance cover on the inlet silencer or inlet filter and/or remove the inlet check valve.

3. Verify the direction of phase rotation with a phase sequence meter.

4. If the direction of rotation is incorrect, interchange the phases L1 and L2.



You do not have a phase sequence meter?

- Switch the machine on and off again after 1 second.
- Compare the direction of rotation of the motor with the arrows on the belt guard and the block casing.
- If the direction of rotation is incorrect, interchange the phases L1 and L2.

### 7.4.2 Option H12 Fan (sound enclosure)

An arrow is also to be found on the ventilator to indicate its correct direction of rotation.

The extractor must blow air out of the sound enclosure.

- **Single-phase fan:** If the direction of rotation is incorrect, switch the electric connection in the terminal box of the fan. Instructions regarding "Right" and "Left" operation are provided in the cover of the terminal box.

- **Three-phase fan:** If the direction of rotation is incorrect, interchange the phases L1 and L2.

## 8 Operation

### 8.1 Switching on and off

Switching on and off follows to a large extent the procedure established for the equipment provided for this action. The equipment is provided by the user and not part of the scope of supply of the machine unless ordered as an option.



- Make sure the machine is technically sound before switching on.  
If the machine has a sound enclosure, a check must be made that the fan is fully functional.

#### 8.1.1 Switching on



- Switch the machine on only when it is fully stopped.  
Maximum frequency of motor starts per hour 6 times

**Precondition** A suitable unloaded start device is installed in the case of back-pressure.



1. **WARNING!**  
Possible serious injury from compressed air!
  - Make sure that no one is working on the machine.
2. Switch the machine on at the user's control cabinet.

**Further information** Information on the function of the user's control cabinet should be taken from the cabinet manufacturer's documentation.

#### **Option C32 Under frequency control**



- Maximum frequency of motor starts per hour: any

**Precondition** A suitable unloaded start device is installed in the case of back-pressure.



1. **WARNING!**  
Possible serious injury from compressed air!
  - Make sure that no one is working on the machine.
2. Switch the machine on at the frequency converter.

#### 8.1.2 Switching off

- Switch the machine off at the user's control cabinet.

**Further information** Information on the function of the user's control cabinet should be taken from the cabinet manufacturer's documentation.

#### **Option C32 Under frequency control**

- Switch the machine off at the frequency converter.

## 8.2 Switching off in an emergency

The machine is not equipped with an emergency stop device. Such a device must be provided by the user unless it is part of an ordered option.

- Ensure the machine can be stopped immediately in an emergency.

## 8.3 Option H12

### Checking the fan function (sound enclosure)



#### **NOTICE**

Overheating inside the sound enclosure!

A standstill of the ventilator can result in a breakdown of the blower block or other components.

- If the ventilator stops, immediately provide an alternative flow of cooling air through the sound enclosure.
- Check that air is actually being blown out of the enclosure cooling air outlet, e.g. by holding a sheet of paper in front of the outlet.

Further information KAESER Service will advise on suitable measures.

The following tables are intended to assist in locating faults.

1. Do not attempt fault rectification measures other than those given in this manual.
2. In all other cases,  
have the fault rectified by an authorised KAESER Service Technician.

## 9.2 Alarms

| Fault                                    | Possible cause                                              | Remedy                                                                               |
|------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Unusual noise when running.              | Too much backlash in the timing gears.                      | Contact KAESER Service.                                                              |
|                                          | Too much play in the rotor bearings.                        | Contact KAESER Service.                                                              |
|                                          | Rotors not synchronised.                                    | Keep to the pressure differential and speed as specified.<br>Contact KAESER Service. |
| Block runs too hot.                      | Pressure differential too great.                            | Check and correct pressure differential.                                             |
|                                          | Clogged inlet filter reducing air intake volume.            | Clean the inlet filter.                                                              |
|                                          | Rotor clearance too large.                                  | Contact KAESER Service.                                                              |
| Oil leaks from the gas drain.            | Oil level too high.                                         | Drain off oil until the correct level is reached.                                    |
| Oil leaking from around the drive shaft. | Shaft seal defective.                                       | Contact KAESER Service.                                                              |
| Reduced air inlet flow.                  | Rotor clearance too large because of wear.                  | Contact KAESER Service.                                                              |
|                                          | Intake resistance too high.                                 | Clean the inlet filter.                                                              |
| Black film on the oil sight glasses.     | Oil not changed at the correct interval.                    | Change the lubricating oil.<br>Clean or renew the sight glass.                       |
|                                          | Insufficient oil.                                           | Change the lubricating oil.<br>Clean or renew the sight glass.                       |
|                                          | Oil overheated.                                             | Contact KAESER Service.                                                              |
|                                          | Block overloaded.                                           | Contact KAESER Service.                                                              |
| Water in the oil.                        | Condensate build-up by prolonged storage and high humidity. | Change the lubricating oil.                                                          |
| Pressure relief valve activates.         | Inadmissible operating state, operating pressure too high.  | Bring the machine to a permissible operational state or shut down.                   |

| Fault                | Possible cause               | Remedy                                   |
|----------------------|------------------------------|------------------------------------------|
| PTC relay trips out. | Operating pressure too high. | Check and correct pressure differential. |

Tab. 51 Faults and remedies

### 9.3 Options

This section provides remedies for technical faults concerning the machine's optional equipment.

#### 9.3.1 Option H12 Sound enclosure faults

| Fault                                   | Possible cause                                         | Remedy                                                                             |
|-----------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------------|
| Overheating inside the sound enclosure! | Extractor defective or turning in the wrong direction. | Check connection.<br>Contact KAESER Service.                                       |
|                                         | Flow of cooling air blocked.                           | Check and clean cooling air apertures.<br>Check the cooling air inlet temperature. |
|                                         | Drive motor overloaded.                                | Check operating conditions.                                                        |

Tab. 52 Faults and remedies (option H12)

#### 9.3.2 Option C14 Faulty pressure sensor

| Fault                                               | Possible cause                                                         | Remedy                                                                                          |
|-----------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| No output signal.                                   | No power supply, broken wire.                                          | Check power supply and wires.                                                                   |
|                                                     | Pressure transducer incorrectly connected.                             | Check power supply and wires.                                                                   |
|                                                     | No input pressure.                                                     | Check pressure feed.                                                                            |
|                                                     | Electronic defect from power supply voltage surge or external voltage. | Contact KAESER Service.                                                                         |
| Output signal does not respond to pressure changes. | Input channel blocked.                                                 | Clean the input channel and throttle screw, being careful not to damage the delicate diaphragm. |
|                                                     | Electronic defect from power supply voltage surge or external voltage. | Contact KAESER Service.                                                                         |
|                                                     | Pressure transducer defective from mechanical overloading.             | Contact KAESER Service.                                                                         |

| Fault                                                          | Possible cause                                                         | Remedy                  |
|----------------------------------------------------------------|------------------------------------------------------------------------|-------------------------|
| Output signal too high and not responding to pressure changes. | Electronic defect from power supply voltage surge or external voltage. | Contact KAESER Service. |

Tab. 53 Faults and remedies (option C14)

## 10 Maintenance

### 10.1 Ensuring safety

Follow the instructions below to ensure safe machine maintenance.  
Warning instructions are located before a potentially dangerous task.



Disregard of warning instructions can cause serious injuries!

#### **Complying with safety notes**

Disregarding the safety instructions can cause unpredictable dangers.

- Follow the instructions in chapter 3 'Safety and Responsibility'.
- Allow maintenance work to be performed by authorised personnel only.
- Make sure that no one is working on the machine.
- Ensure that all panels are closed.

#### **When working on live components**

Touching voltage carrying components can result in electric shocks, burns or death.

- Work on electrical equipment may only be carried out by authorised electricians.
- Switch off and lock out the power supply isolating device, and verify the absence of voltage.
- Check that there is no voltage on potential-free contacts.

#### **When working on the compressed air system**

Compressed air is contained energy. Uncontrolled release of this energy can cause serious injury or death. The following safety concerns relate to any work on components that could be under pressure.

- Switch off and lock out the power supply isolating device, and verify the absence of voltage.
- Close shut-off valves or otherwise isolate the machine from the distribution network to ensure that no compressed air can flow back into the machine.
- De-pressurise all pressurised components and enclosures.
- Do not open or dismantle any valves.

#### **When working on the drive system**

Touching voltage carrying components can result in electric shocks, burns or death.

Touching the fan wheel or the belt drive while the machine is running can result in serious injury.

- Switch off and lock out the power supply isolating device, and verify the absence of voltage.
- Do not open the panels while the machine is switched on.

Further information Details of authorised personnel are found in chapter 3.4.2.  
Details of dangers and their avoidance are found in chapter 3.5.

## 10.2 Maintenance schedule

### 10.2.1 Logging maintenance work



- The maintenance intervals given are those recommended for average operating conditions.
- Maintenance tasks should be carried out more frequently where operating conditions are unfavourable (e.g. dusty atmosphere) or when the equipment is in constant use.
  - Adjust the maintenance intervals with regard to local installation and operating conditions.

- Keep a log of all maintenance and service work.

This enables the frequency of individual maintenance tasks and deviations from our recommendations to be determined.

Further information A prepared list is provided in chapter 10.12.

### 10.2.2 Regular maintenance tasks

The table below lists maintenance tasks required.



When operating conditions are unfavourable (e.g. dusty atmosphere) or when the equipment is in constant use, maintenance tasks must be carried out more frequently (shorter intervals).

- Carry out maintenance tasks punctually taking ambient and operating conditions into consideration.

| Interval                                   | Maintenance task                                          | See chapter |
|--------------------------------------------|-----------------------------------------------------------|-------------|
| 24 hours after initial commissioning       | Check belt tension.                                       | 10.4        |
| 50 hours after initial commissioning       | Check all electrical connections and attach if necessary. | –           |
| 500 hours after initial commissioning      | Change the lubricating oil.                               | 10.7        |
| Up to 500 h or monthly                     | Check the oil level.                                      | 10.5        |
|                                            | Check belt tension.                                       | 10.4        |
|                                            | Check the air filter.                                     | 10.8        |
| Up to 3 000 h* at least once a year        | Change the lubricating oil FG 220 .                       | 10.7        |
| Up to 3 000 h annually at the latest       | Change the air filter.                                    | 10.8        |
| Annually                                   | Check the pressure relief valve.                          | 10.10       |
|                                            | Check all electrical connections and attach if necessary. | –           |
| Up to 6 000 h* at the latest every 2 years | Change the lubricating oil SB 220 .                       | 10.7        |

h = operating hours

\* The intervals for lubricating oil changes at high thermal stresses must be reduced and can be determined upon analyses of the oil.

| Interval                                          | Maintenance task                | See chapter |
|---------------------------------------------------|---------------------------------|-------------|
| Up to 12 000 h<br>at the latest every<br>4 years. | Replace the drive belts.        | 10.4        |
| As required                                       | Check rotors for contamination. | 10.11       |

h = operating hours

\* The intervals for lubricating oil changes at high thermal stresses must be reduced and can be determined upon analyses of the oil.

Tab. 54 Regular maintenance tasks

### 10.2.3 Regular service tasks

The table below lists necessary service tasks.

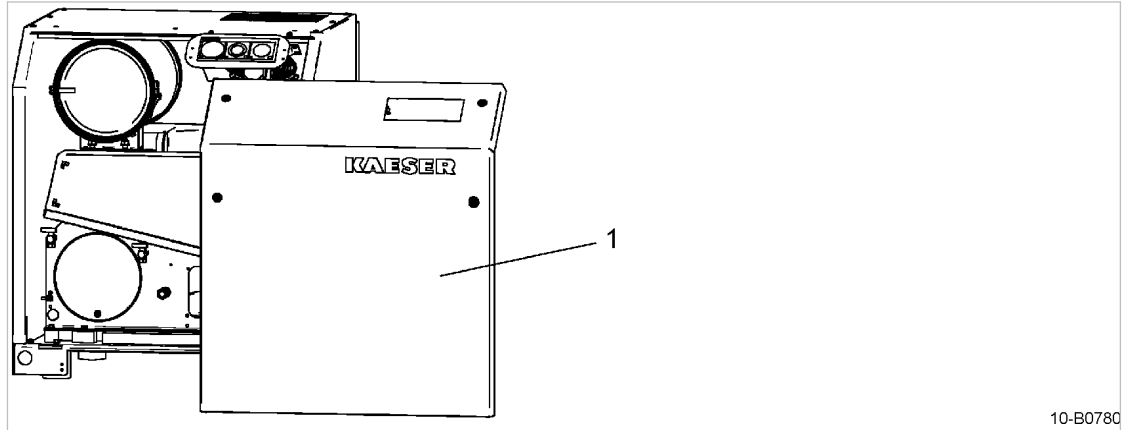
- Only an authorised KAESER Service Technician should carry out service work.
- Have service tasks carried out punctually taking ambient and operating conditions into account.

| Interval                                          | Service task                                                                                                                                                                                                                              |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Up to 12 000 h                                    | Permanently greased drive motor bearings:<br>Replace the motor bearings.                                                                                                                                                                  |
| Up to 36 000 h                                    | Blower block<br>Replace the radial shaft sealing ring.<br><br>(Option H12) Sound enclosure fan:<br>Replace the fan.<br><br>(Option C11) Maintain the unloaded start valve.<br><br>(Option C18) Maintain the start pressure control valve. |
| Up to 36 000 h<br>at the latest every<br>8 years. | (Option G1) Maintain the check valve.<br>Replace the compensators                                                                                                                                                                         |

h = operating hours

Tab. 55 Regular service tasks

### 10.3 Option H12 Sound enclosure



10-B0780

Fig. 25 Sound enclosure

① Removable panel

➤ Remove the panel ① for maintenance work.



Latches are released by a key supplied with the machine.

### 10.4 Drive belt maintenance

Material Spare parts (if required)

Precondition The supply disconnecting device is switched off,  
the device is locked off,  
the absence of voltage has been verified.  
The machine has cooled down.



#### **WARNING**

Touching the moving drive belt may result in severe bruising or even loss of limb or extremities.

➤ Switch off and lock out the power supply isolating device and verify the absence of voltage.

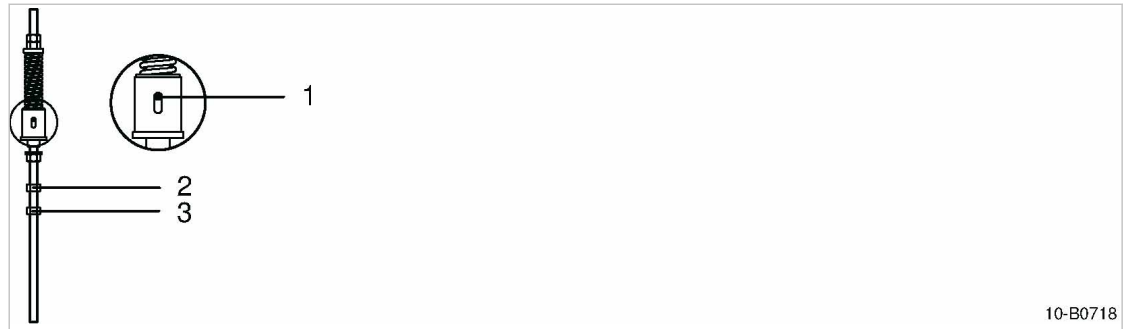


Fig. 26 Drive belt maintenance

- ① Marker pin (shown as: belt tensioning required)
- ② Clamping nut
- ③ Clamping nut

### Checking the belt tension and adjustment

The tensioning device uses spring force to apply correct tension to the belts.

Adjust the tension when the marker pin reaches the **top** end of the elongated hole.

1. Loosen the locking nut ②.
2. Use the adjusting nut ③ to adjust the spring tension until the marker pin reaches the lower end of the elongated hole.
3. Tighten the locking nut ②.

### Visually check for damages.



1. **CAUTION!**  
 Danger of pinching between belt and pulley!  
 ➤ Work carefully.
2. Turn the pulley by hand so that the entire belt can be inspected for damage.
3. In case of damage: Replace the drive belt immediately.



When individual belts fail in multiple-groove drives, all belts must be replaced.

### Changing the belt

1. Remove the belt guard.
2. Loosen the locking nut ③.
3. Turn the adjusting nut ② to loosen the tension on the belts until they can be removed from the pulley.
4. Install the new set of belts and use the adjusting nut ② to the adjust tension until the marker pin reaches the lower end of the elongated hole.
5. Tighten the locking nut ③.
6. Replace the belt guard.
7. Check the tension after the new belts have been in operation for 50 hours.

### 10.5 Checking the oil level

The true oil level can be seen in the oil sight glass only when the machine is stopped.



The gear-end and drive-end oil chambers are not connected.



#### WARNING

Danger of burns from hot components!

- Wear long-sleeved clothing and gloves.

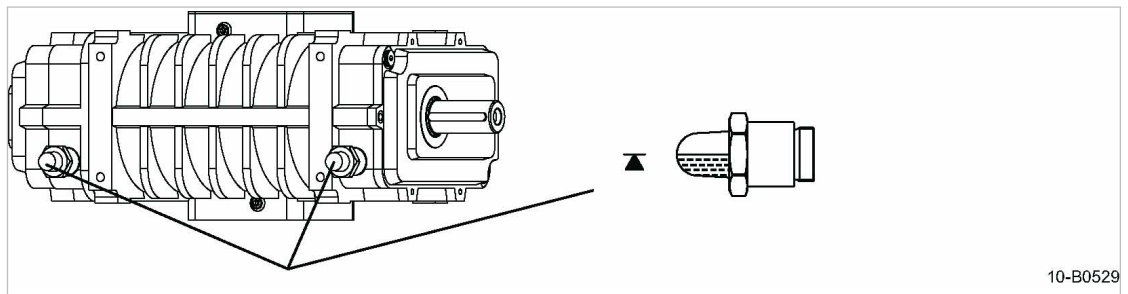


Fig. 27 Checking the oil level

1. Check the oil level in the sight glasses on both ends of the block.
2. Replenish the lubricating oil as soon as the level has fallen as follows:
  - CB 111 C pr to 5 mm below the sight glass middle
  - CB 131 C pr to 8 mm below the sight glass middle

### 10.6 Replenishing lubricating oil

Labels giving the oil type for topping up are to be found on the blower block and belt guard.



The machine must be isolated from the compressed air network and completely vented before undertaking any work on the pressure system.

**Precondition** The power supply disconnecting device is switched off, the disconnecting device is locked in the off position, the oil level has settled.



#### WARNING

Danger of burns from hot components and oil!

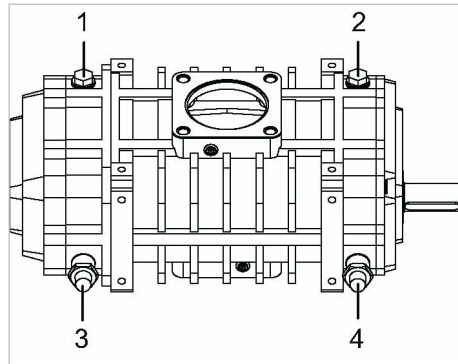
- Wear long-sleeved clothing and gloves.



#### NOTICE

Unsuitable oil can damage the block!

- Never mix different types of oil.
- Never top up with a different type of oil to that already used in the block.



10-B0530

Fig. 28 Replenishing lubricating oil

- |                                        |                             |
|----------------------------------------|-----------------------------|
| ① Plug<br>(gear-end oil filling port)  | ③ Gear-end oil sight glass  |
| ② Plug<br>(drive-end oil filling port) | ④ Drive-end oil sight glass |

1. Slowly remove the plug ① and/or ②.
2. Top up until the level is at the marking on the sight glass ③ and/or ④.
3. Screw in the plugs.
4. Visually check for leaks.

## 10.7 Changing the oil



The machine must be isolated from the compressed air network and completely vented before undertaking any work on the pressure system.

The oil should be changed with the block temperature at 55 °C to ensure the oil flows freely.

Drain the oil thoroughly from the blower block:

- Control end
- Drive end

Material Lubricating oil  
Oil receptacle

Precondition The power supply isolating device is switched off,  
the device is locked off,  
the absence of any voltage has been verified.



### WARNING

Danger of burns from hot components and oil!

- Wear long-sleeved clothing and gloves.

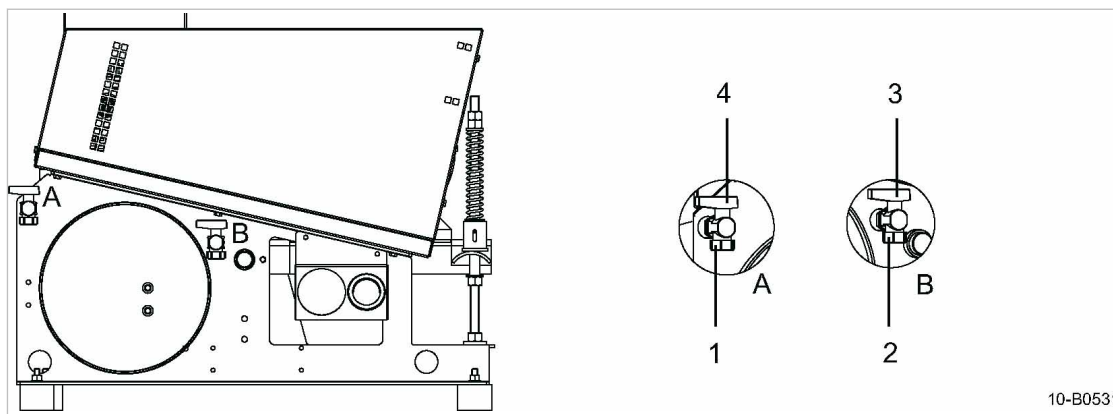


Fig. 29 Changing the oil

- |     |             |     |               |
|-----|-------------|-----|---------------|
| (A) | Drive end   | (2) | Cap           |
| (B) | Control end | (3) | Oil drain tap |
| (1) | Cap         | (4) | Oil drain tap |

### Drain the oil

1. Prepare an oil receptacle.
2. Open the filler plugs at the oil inlet of the blower block (1) and (2) (Fig. 28).
3. Take off the caps (1) and (2) and open the oil drain taps (3) and (4).
4. Drain the lubricating oil.



Dispose of the old oil in accordance with local environmental protection regulations.

### Filling with fresh oil

1. Fill with fresh oil.
2. Allow the oil drain taps to remain open until fresh oil begins to run out (bleeding the oil drain lines).
3. Close the oil drain taps (3) and (4).
4. Check the oil level in both sight glasses (Fig. 28) and top up as necessary.
5. Screw on the caps (1) and (2).
6. Replace and tighten the plugs of the oil inlets at the blower block.
7. Visually check for leaks.

## 10.8 Air filter maintenance

The air filter protects the supplied pressure system from dirt entering.



### NOTICE

Machine damage caused by unsuitable air filter!  
 Dirt can enter the compressed air system and cause damage to the machine.  
 ➤ Use suitable air filters.



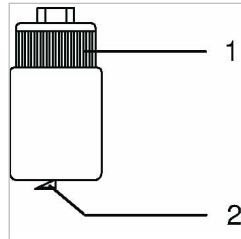
The air filter cannot be cleaned.

**10.8.1 Filter maintenance indicator**

The maintenance indicator shows when the filter needs maintenance. When the filter becomes clogged and flow resistance rises to a set point, the maintenance signal is given.

**Machine without sound enclosure**

The filter maintenance indicator is installed at the intake silencer.

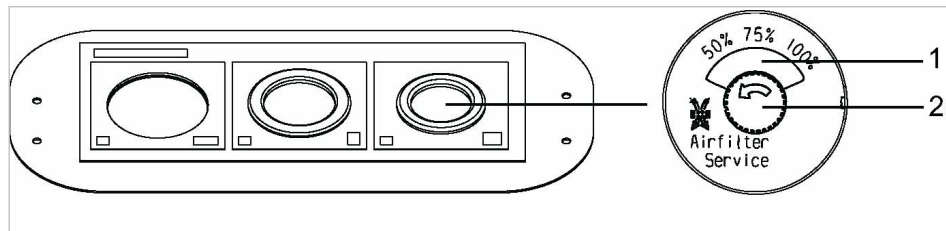


10-B0717

Fig. 30 Filter maintenance indicator

- ① Signal ring
- ② Reset button

1. Change the air filter when the signal ring ① shows red.
2. Unlatch the signal ring by pressing the reset button ②.

**Option H12 Machine with sound enclosure**

10-B0716

Fig. 31 Filter maintenance indicator (sound enclosure)

- ① Indicator range
- ② Reset button

1. Replace the filter when the maintenance indicator reads more than 50 %.
2. Reset to the indication range ① by pressing the reset button ②.

**10.8.2 Option F5  
Filter pressure differential switch**

The filter pressure differential switch monitors contamination of the intake filter.

The switch is triggered by pressure differential. Falling below or rising above the set value causes the current flow to switch on, switch off or changeover according to how the switch is wired.

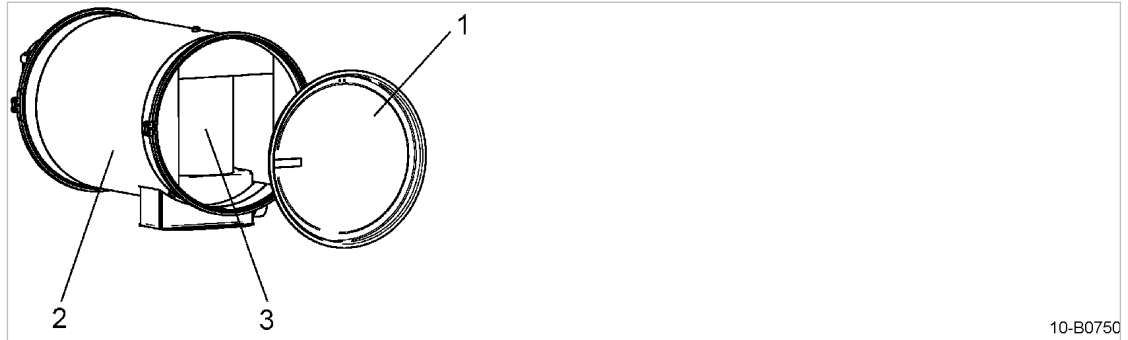
- Change the air filter if the pressure differential switch activates.

**10.8.3 Changing the air filter**

The machine must be isolated from the compressed air network and completely vented before undertaking any work on the pressure system.

Material Spares

Precondition The power supply isolating device is switched off,  
the device is locked off,  
the absence of any voltage has been verified.  
The machine has cooled down.



10-B0750

Fig. 32 Changing the air filter

- ① Cover
- ② Inlet silencer
- ③ Air filter

1. Open the snap fastener on the inlet silencer cover.
2. Take off the cover ①.
3. Loosen the Velcro strip and remove the air filter ③.
4. Clean all parts and sealing surfaces.
5. Place the new filter around the perforated inlet port and secure with the Velcro strip.
6. Attach the cover to the inlet silencer.

## 10.9 Motor maintenance

### 10.9.1 Permanently greased drive motor bearings

The motor bearings are greased for life. Re-greasing is not necessary.

- The motor bearings must be replaced in the course of regular service calls by an authorised KAESER Service.

Further information For further information to the motor, please consult the motor manual.

### 10.9.2 Option H12 Sound enclosure fan motor

The motor bearings are greased for life. Re-greasing is not necessary.

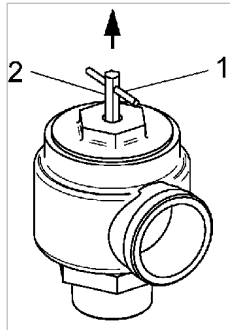
- The fan must be replaced in the course of regular service calls by an authorised KAESER Service.

## 10.10 Checking the pressure relief valve

The valve opens as soon as maximum working pressure is exceeded.

Free movement of the pressure relief valve's tension rod is checked by hand or with a lifting device.

Precondition The machine is switched off.  
The machine is de-pressurised.



10-B0720

Fig. 33 Checking the pressure relief valve

- ① Opening lever
- ② Tension rod

- Check for free movement of the tension rod ② by pulling vertically at the opening lever ①.
- Never operate the machine without a correctly functioning pressure relief valve.
- Do **not** adjust the pressure relief valve.
- Replace a defective pressure relief valve.

### 10.11 Checking rotors for contamination

Any dust in the conveyed medium can build up inside the block.



The machine must be isolated from the compressed air network and completely vented before undertaking any work on the pressure system.

Precondition The power supply isolating device is switched off,  
the device is locked off,  
the absence of any voltage has been verified.  
The machine has cooled down.



#### CAUTION

Rotating rotors.  
Danger of squashing or severing.

- Switch off and lock out the power supply isolating device and verify the absence of voltage.

1. Disconnect the flange connections and look for contamination inside the block.
2. If necessary, have the block cleaned by an authorised KAESER Service Technician.

## 10.12 Documenting maintenance and service work

Machine number:

- Enter any maintenance and service work carried out in the list.

Tab. 56    Logged maintenance tasks

## 11 Spares, Operating Materials, Service

### 11.1 Note the nameplate

The nameplate contains all information to identify your machine. This information is essential to us in order to provide you with optimal service.

- Please give the information from the nameplate with every enquiry and order for spares.

### 11.2 Ordering spares and operating fluids/materials

KAESER spares and operating fluids/materials have the same characteristics as the originals. They are specifically selected for use in KAESER machines.



#### **WARNING**

There is risk of personal injury or damage to the machine resulting from the use of unsuitable spares or operating fluids/materials.

Non-Kaeser parts and operating fluids/materials may be unsuitable or of poor quality and can damage the machine or impair its proper function.

Personal injury may result from damage.

- Use only original KAESER parts and operating fluids/materials.
- Have an authorised KAESER Service Technician carry out regular maintenance.

#### **Machine**

| Name            | Number |
|-----------------|--------|
| Air filter      | 1250   |
| Drive belt      | 1800   |
| Lubricating oil | 1600   |

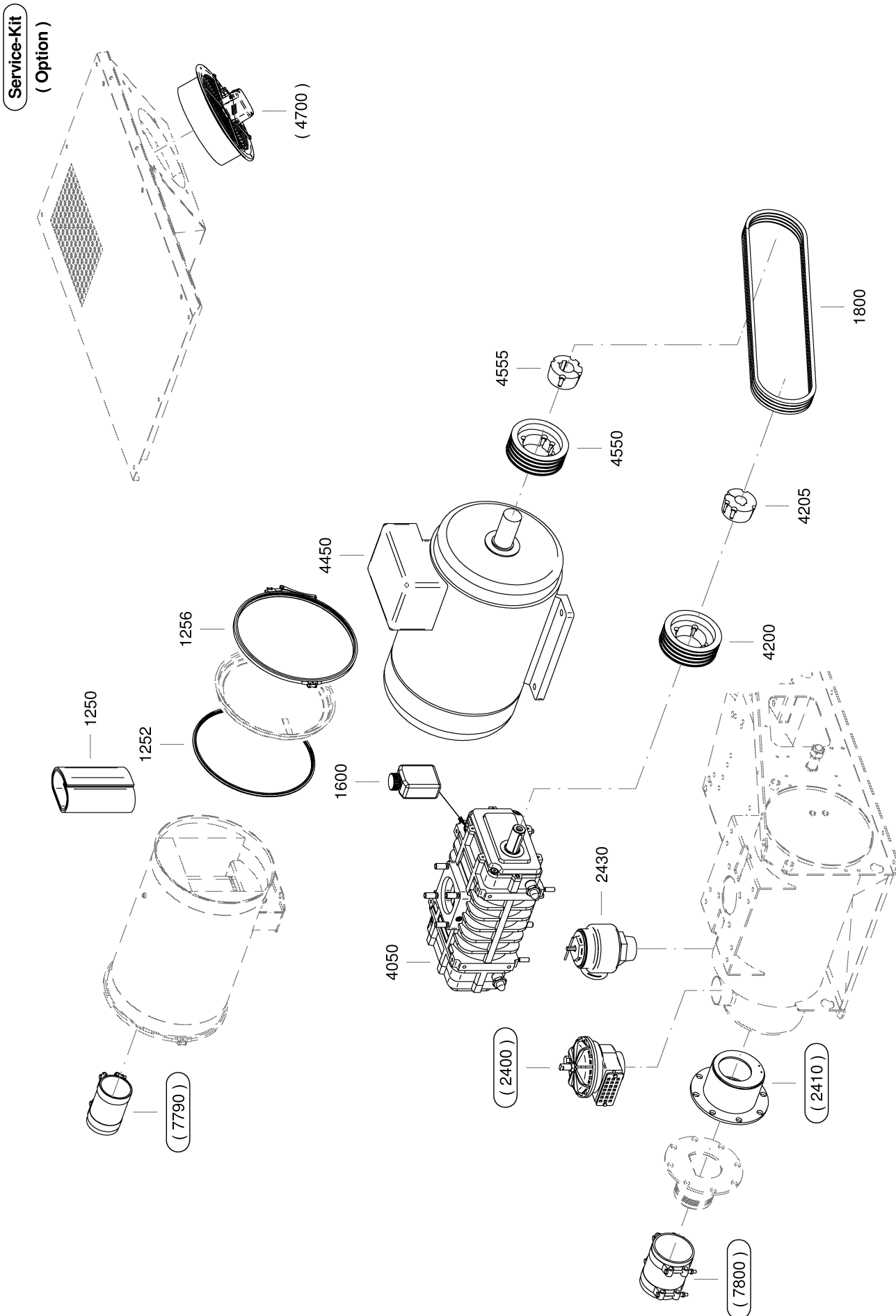
Tab. 57 Ordering spares and operating fluids/materials

### 11.3 Spares for service and repair

With the help of this parts list you can plan your material requirement according to operating conditions and order the spare parts you need.



- Make sure that any service or repair tasks not described in this manual are carried out by an authorized KAESER Service Technician.



| Legend |        | KAESER        |
|--------|--------|---------------|
|        | CBC pr | SEL-3924_01 E |

| Item | Description                  | Option |
|------|------------------------------|--------|
| 1250 | Air filter insert            |        |
| 1252 | Inlet silencer gasket        |        |
| 1256 | Canopy fastener              |        |
| 1600 | OMEGA FLUID                  |        |
| 1800 | Drive belt                   |        |
| 2400 | Start control valve          | X      |
| 2410 | Check valve                  | X      |
| 2430 | Pressure limiting valve      |        |
| 4050 | OMEGA blower block           |        |
| 4200 | Airend pulley                |        |
| 4205 | Tapered bushing, airend      |        |
| 4450 | Drive motor                  |        |
| 4550 | Drive motor pulley           |        |
| 4555 | Tapered bushing, drive motor |        |
| 4700 | Fan unit                     | X      |
| 7790 | Compensator, air inlet       | X      |
| 7800 | Compensator, air outlet      | X      |

Please quote the part number and serial number of the machine together with the item number and the description of the part when ordering.

Before and during all work, be sure to read and follow the safety and service instructions in the machine's service manual!

\*) see cooling oil recommendations

## **11.4 KAESER AIR SERVICE**

KAESER AIR SERVICE offers:

- Authorised service technicians with KAESER factory training
  - Increased operational reliability ensured by preventive maintenance
  - Energy savings achieved by avoidance of pressure losses
  - optimum conditions for operation of the compressed air system,
  - The security of genuine KAESER spares.
  - Increased legal certainty as all regulations are kept to.
- It make sense to sign a KAESER AIR SERVICE maintenance agreement.  
Your advantage:  
lower costs and higher compressed air availability.

## **11.5 Service Addresses**

Addresses of KAESER agents are given at the end of this manual.

## **11.6 Completing the contamination declaration**

Every company (user) is responsible for the health and safety of its employees. This extends to personnel who carry out servicing work at the user or service contractor.

A Declaration of Contamination must be completed and signed whenever maintenance or repair work is to be carried out on the machine.

### **Shipping the machine**

Precondition    Correct preparation of the machine for shipment.

1. Drain the lubricating oil.
2. Seal all openings.
3. Remove filter elements.
4. Use appropriate packing.
5. Ship in a suitable container.
6. Attach a copy of the Declaration of Contamination to the **outside** of the packing.

Further information    A Declaration of Contamination form is provided in chapter 13.7.

## 12 Decommissioning, Storage and Transport

### 12.1 De-commissioning

De-commissioning is necessary, for example, under the following circumstances:

- The machine is (temporarily) not needed
- The machine is to be moved to another location.
- The machine is to be scrapped.

#### Temporary de-commissioning

Precondition The machine can be started at regular intervals.

- Run the machine once a week for at least 30 minutes at operating temperature to ensure corrosion protection.

#### Long-term de-commissioning

Precondition The power supply isolator is switched off (all poles),  
the device is locked off,  
the absence of voltage has been verified.

The machine is fully vented.

1. Allow the machine to completely cool down.
2. Disconnect all air and electrical connections.
3. Relax the drive belt.
4. Spray the machine inside and out with a preservative to prevent corrosion.
5. Store the machine in a dry, frost-proof room.

Further information Details of preservatives are found in chapter 12.4.

### 12.2 Packing

A wooden crate is required for overland transport to protect the machine from mechanical damage. Other measures must be taken for the transport of machines by sea or air. Please contact KAESER SERVICE for more information.

Material Protective plastic sheeting  
Wooden transport crate

Precondition The machine is decommissioned.  
The machine is dry and cooled down.

1. Wrap the machine fully in plastic sheeting.
2. Protect the machine in a wooden crate against mechanical damages.

## **12.3 Transport**

### **12.3.1 Safety**

Mass and centre of gravity determine the most suitable method of transportation. Both are specified in the dimensional drawings in chapter 13.2.

**Precondition** Transport only by pallet truck, forklift truck or lifting gear by personnel trained in the safe transportation of loads.

- Make sure the danger area is clear of personnel.

### **12.3.2 Option H12 Sound enclosure**

- Install the transport safety devices (see chapter 6.8).

### **12.3.3 Transporting with a pallet truck**

- The machine must not collide with anything.
1. Use a steel lever bar to lift the machine ca. 60 mm one side at a time and place it on wooden blocks.
  2. Drive the pallet truck fully beneath the machine and transport with care.
  3. Carry the wooden blocks with the machine to the new location.
  4. Lower the machine onto the blocks.
  5. Use the lever to lift the machine and remove the blocks.

#### **Option H12 Sound enclosure**

- Drive the pallet truck fully beneath the machine and transport with care.

### **12.3.4 Transport with a forklift truck**

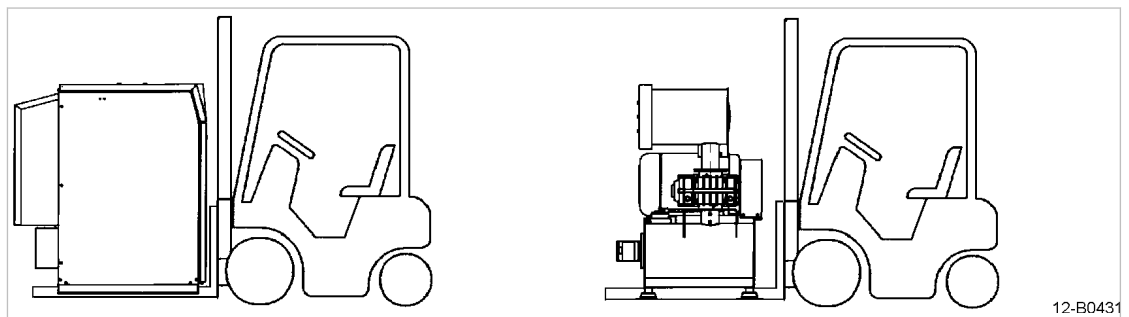


Fig. 34 Transporting with a forklift truck

- Drive the forks completely under the machine or pallet and lift carefully.

### **12.3.5 Transport with a crane**

Suitable lifting gear ensures correct transportation.  
The lifting slings must be fed under the machine.  
The slings may not press on the sides of the machine cabinet.

Examples of unsuitable fixing points:

- Pipe sockets
- Flanges
- Attached accessories
- Rain protection covers

**Precondition** The lifting gear complies with local safety regulations.  
 No pressure should bear on the sides of the machine cabinet.

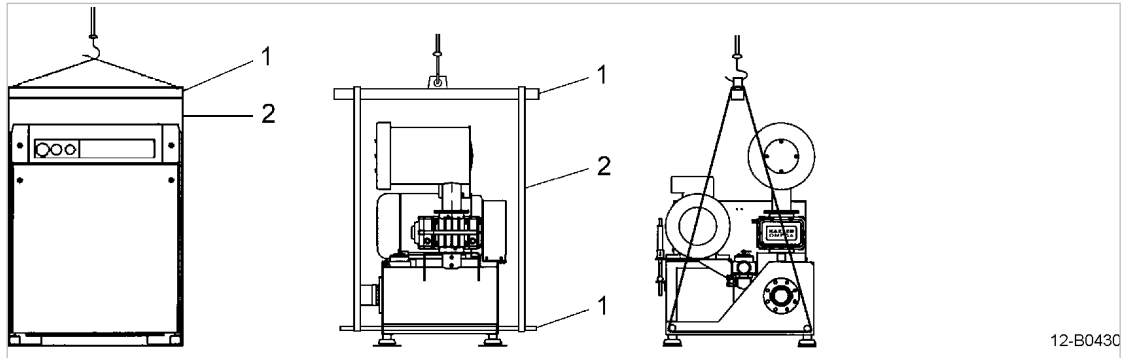


Fig. 35 Transport with a crane

- ① Lifting gear
- ② Slings



1. **NOTICE!**

The machine can be damaged by incorrect attachment of the lifting gear!

- Do not attach the lifting gear to any of the machine components.
- The manufacturer can advise on the use of suitable lifting gear.

2. Use the lifting gear correctly and lift the machine carefully.

## 12.4 Storage

Moisture can lead to corrosion, particularly on the surfaces of the blower block. The storage temperature must not fall below  $-30\text{ }^{\circ}\text{C}$ .



Advice can be obtained from KAESER on storage and re-commissioning.



**CAUTION**

Rotating piston!

Danger of squashing or severing of limbs.

- Do not reach into the interior of the block.



**NOTICE**

Moisture and frost can damage the machine!

- Prevent ingress of moisture and formation of condensation.

- Store the machine in a dry, frost-proof room.

- Protect the flange connections, drive shaft and delivery space of the block by spraying with appropriate conservation oil, e.g., ANTICORIT OHK.
- Seal off the inlet and discharge ports to prevent entry of dirt.
- Each month, manually turn the motor shaft by about 30°.
- Change the lubricating oil annually.

**After lengthy storage**

- Remove the preservative from the flow chamber with cleaning solvent.
- Observe the procedures for assembly and initial start-up.
- Change the lubricating oil.
- Re-grease the drive motor bearings if they are not of the permanently greased type.
- Check the condition and tension of the drive belts.

**12.5 Disposal**

When disposing of a machine, drain out all liquids and remove old filters.

Precondition The machine is decommissioned.

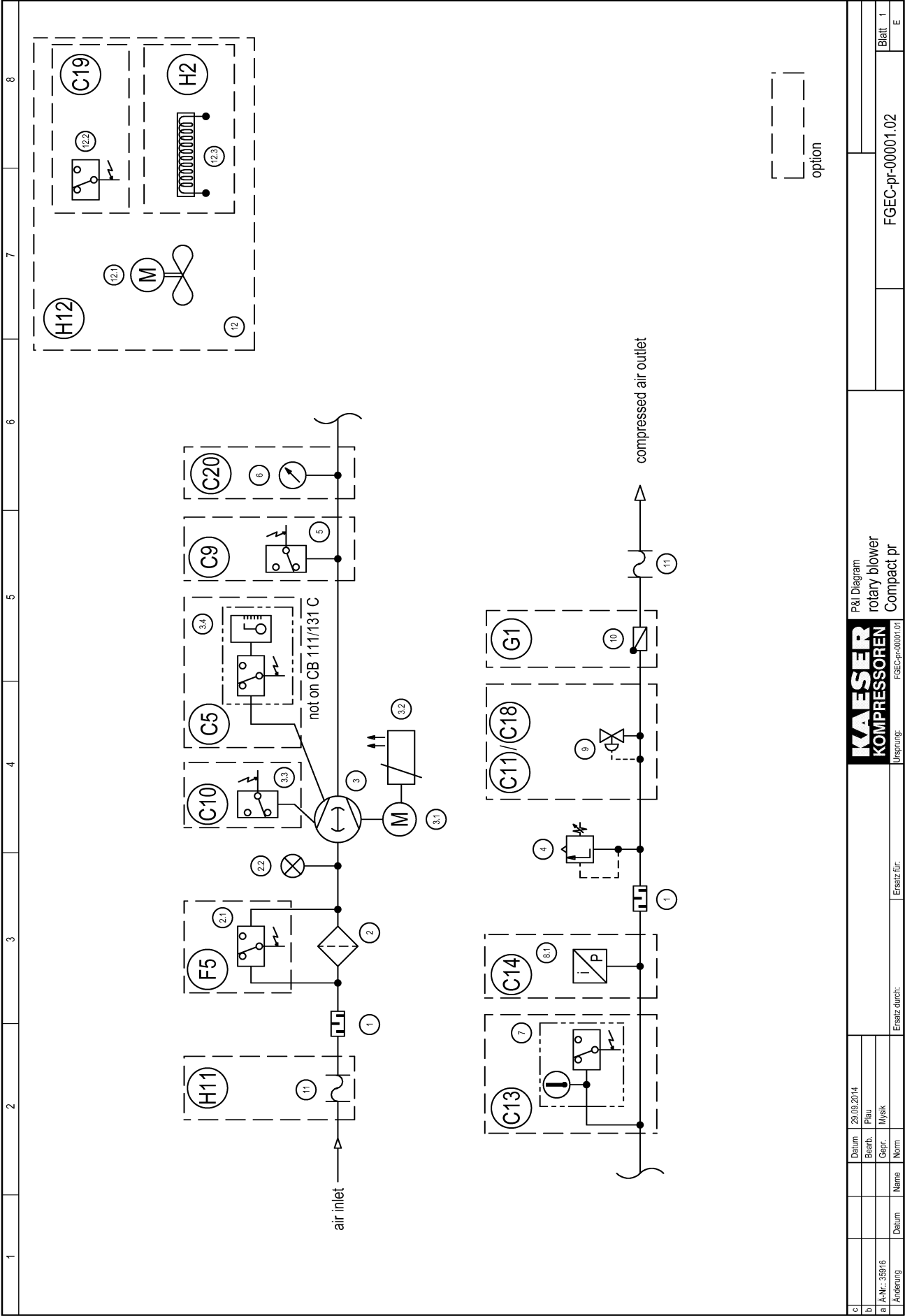
1. Completely drain the oil from the machine.
2. Remove old filters.
3. Hand the machine over to an authorised disposal expert.



- Components contaminated with oil must be disposed of in accordance with local environment protection regulations.

## **13 Annex**

### **13.1 Pipeline and instrument flow diagram (P&I diagram)**



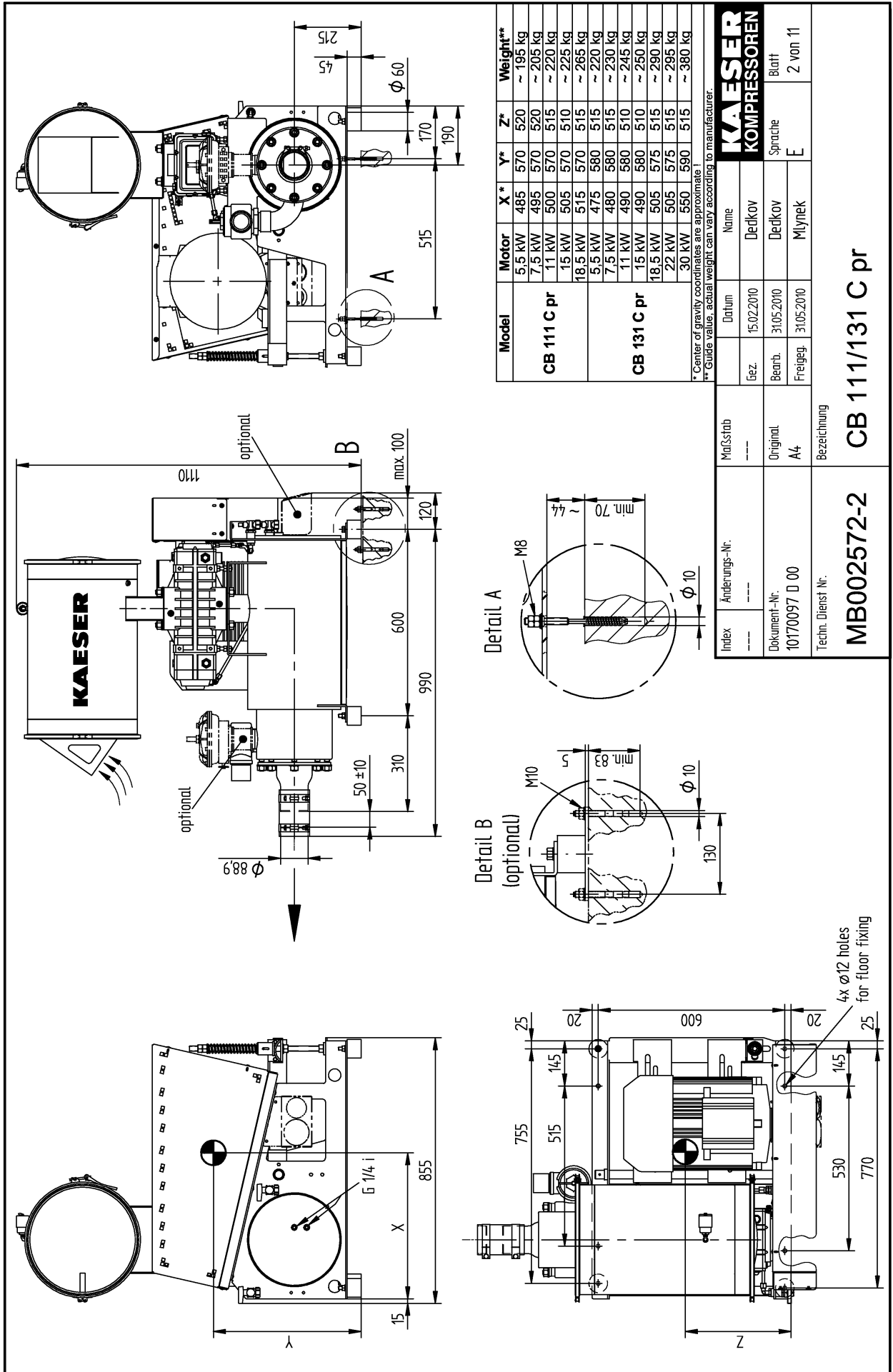


## 13.2 Dimensional drawing

Entwicklungsbedingte Änderungen vorbehalten. Zeichnung darf nur über CAD geändert werden.

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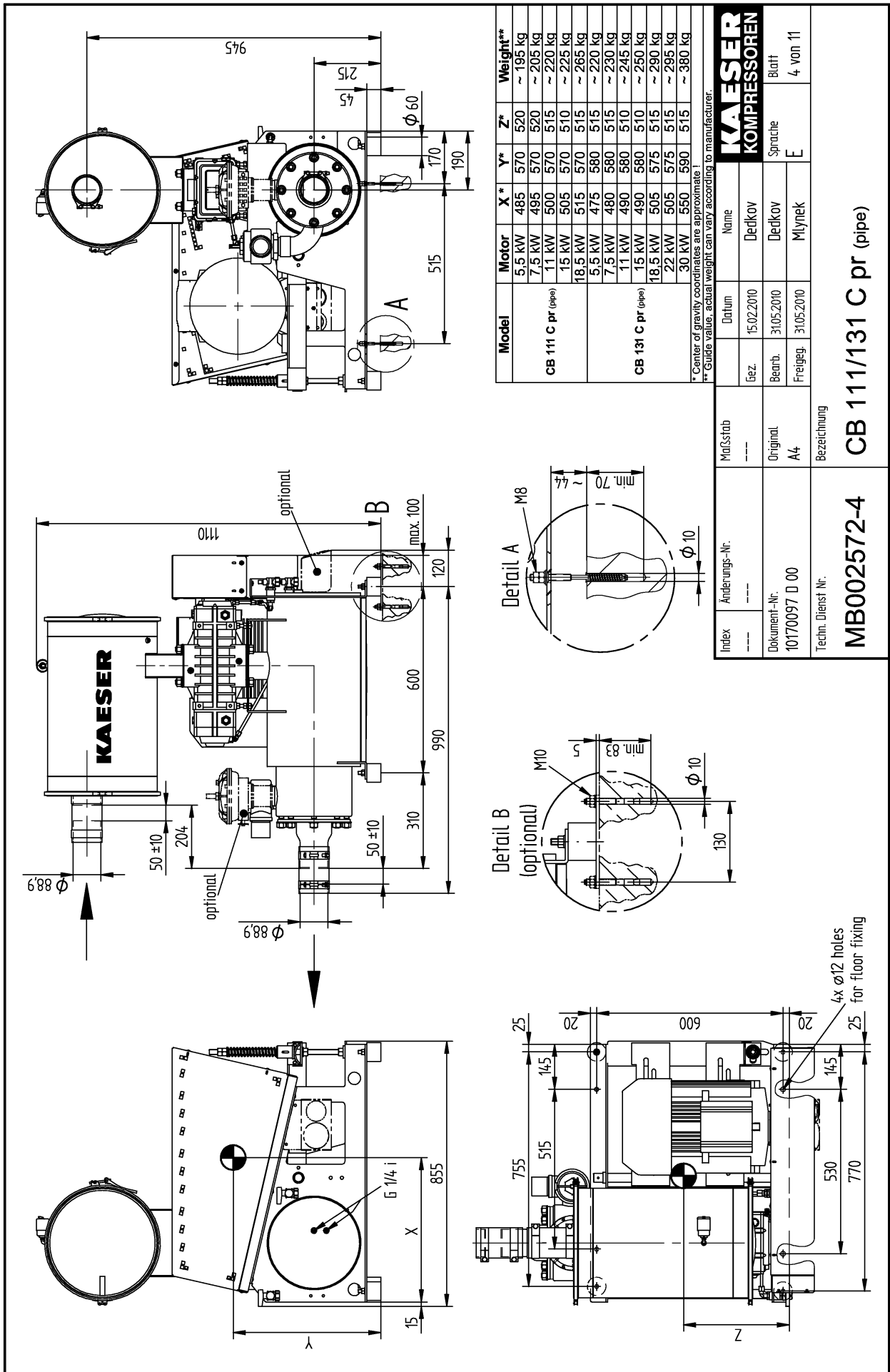
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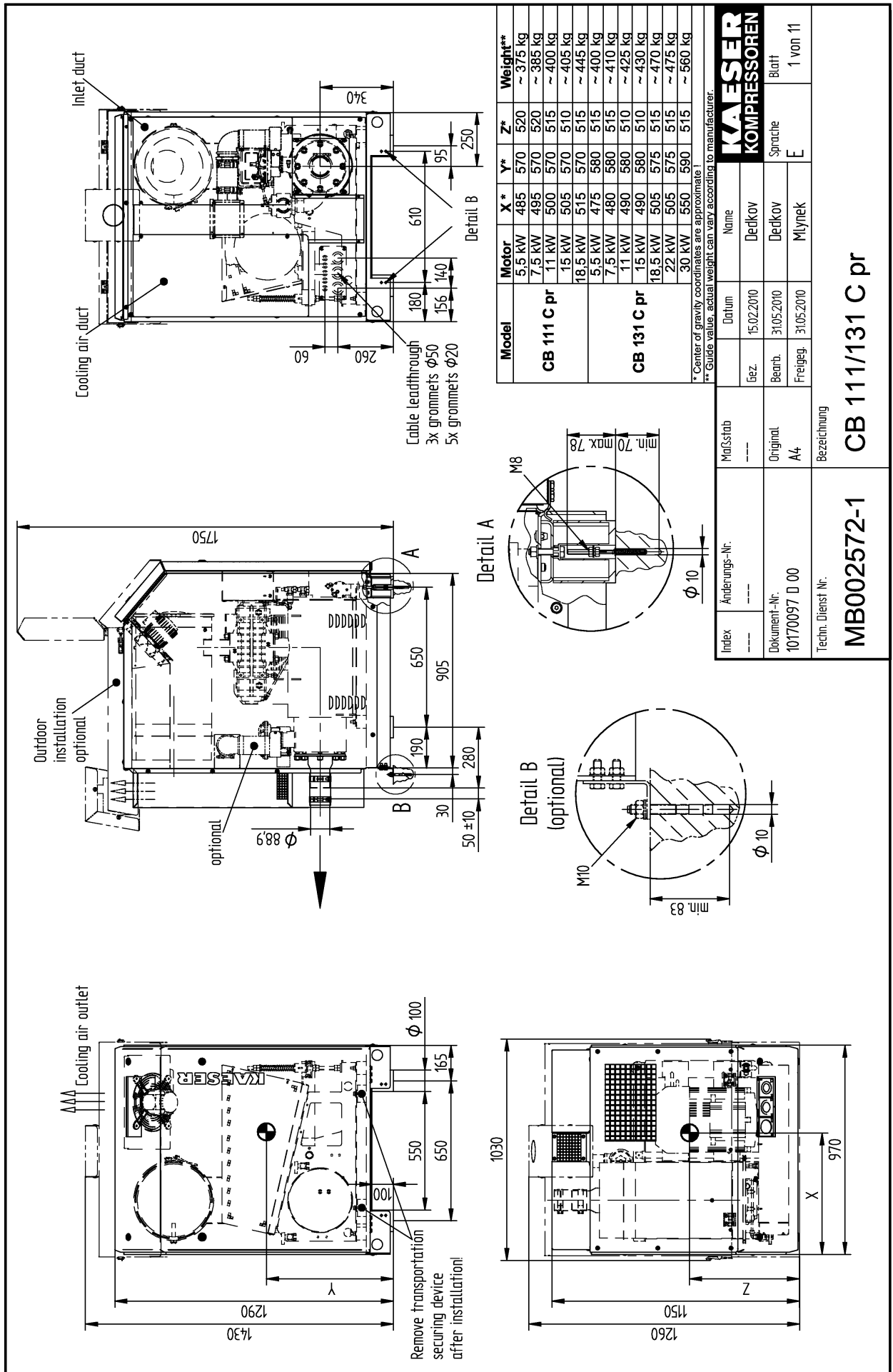
Die Zeichnung bleibt unser ausschließliches Eigentum. Sie wird nur zu dem vereinbarten Zweck anvertraut und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verarbeitung oder Verbreitung unter Verwendung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck angefertigt werden. Weder Original noch Vervielfältigungen dürfen Dritten ausgehändigt oder in sonstiger Weise zugänglich gemacht werden.



Entwicklungsbedingte Änderungen vorbehalten. Zeichnung darf nur über CAD geändert werden.

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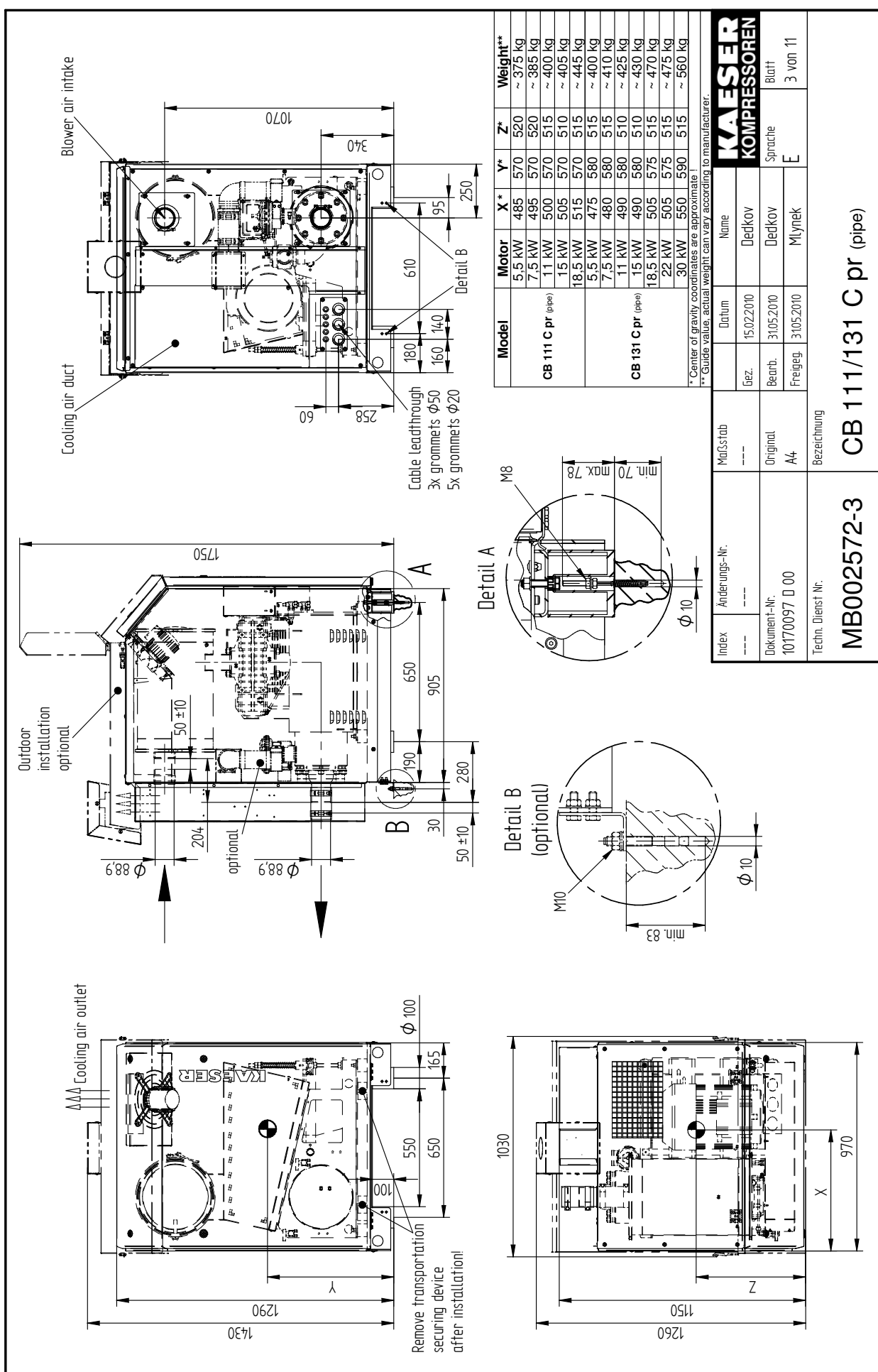
Die Zeichnung bleibt unser ausschließliches Eigentum. Sie wird nur zu dem vereinbarten Zweck anvertraut und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verarbeitung oder Verbreitung unter Verwendung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck angefertigt werden. Weder Original noch Vervielfältigungen dürfen Dritten ausgehändigt oder in sonstiger Weise zugänglich gemacht werden.



Entwicklungsbedingte Änderungen vorbehalten. Zeichnung darf nur über CAD geändert werden.

Drawings remain our exclusive property. They are entrusted only for the agreed purpose. Copies or any other reproduction, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither originals nor reproductions may be given to or made available to third parties.

Die Zeichnung bleibt unser ausschließliches Eigentum. Sie wird nur zu dem vereinbarten Zweck anvertraut und darf zu keinem anderen Zweck verwendet werden. Kopien oder sonstige Vervielfältigungen einschließlich Speicherung, Verarbeitung oder Verbreitung unter Verwendung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck angefertigt werden. Weder Original noch Vervielfältigungen dürfen Dritten ausgeliefert oder in sonstiger Weise zugänglich gemacht werden.



## 13.3 Design diagrams



The diagrams relate to the blower block.

|                      | CB 111 C pr   | CB 131 C pr   |
|----------------------|---------------|---------------|
| Blower block diagram | OMEGA 24 PLUS | OMEGA 41 PLUS |

Tab. 58 Blower block diagram (machine layout)

The following data can be found in the diagrams:

|   | Diagram legend                                                      |
|---|---------------------------------------------------------------------|
| A | Over-pressure operation<br>Intake state: air at 1013 mbar and 20 °C |
| B | $\Delta p$ [mbar]                                                   |
| C | Blower speed [ $\text{min}^{-1}$ ]                                  |
| D | Blower shaft power [kW]                                             |
| E | FAD [ $\text{m}^3/\text{min}$ ]<br>(relative to the intake state)   |
| F | Temperature rise [K]                                                |

Tab. 59 Diagram legend

# OMEGA 24PLUS

(A) Gauge pressure operation  
Inlet conditions: air at 1013mbar and 20°C

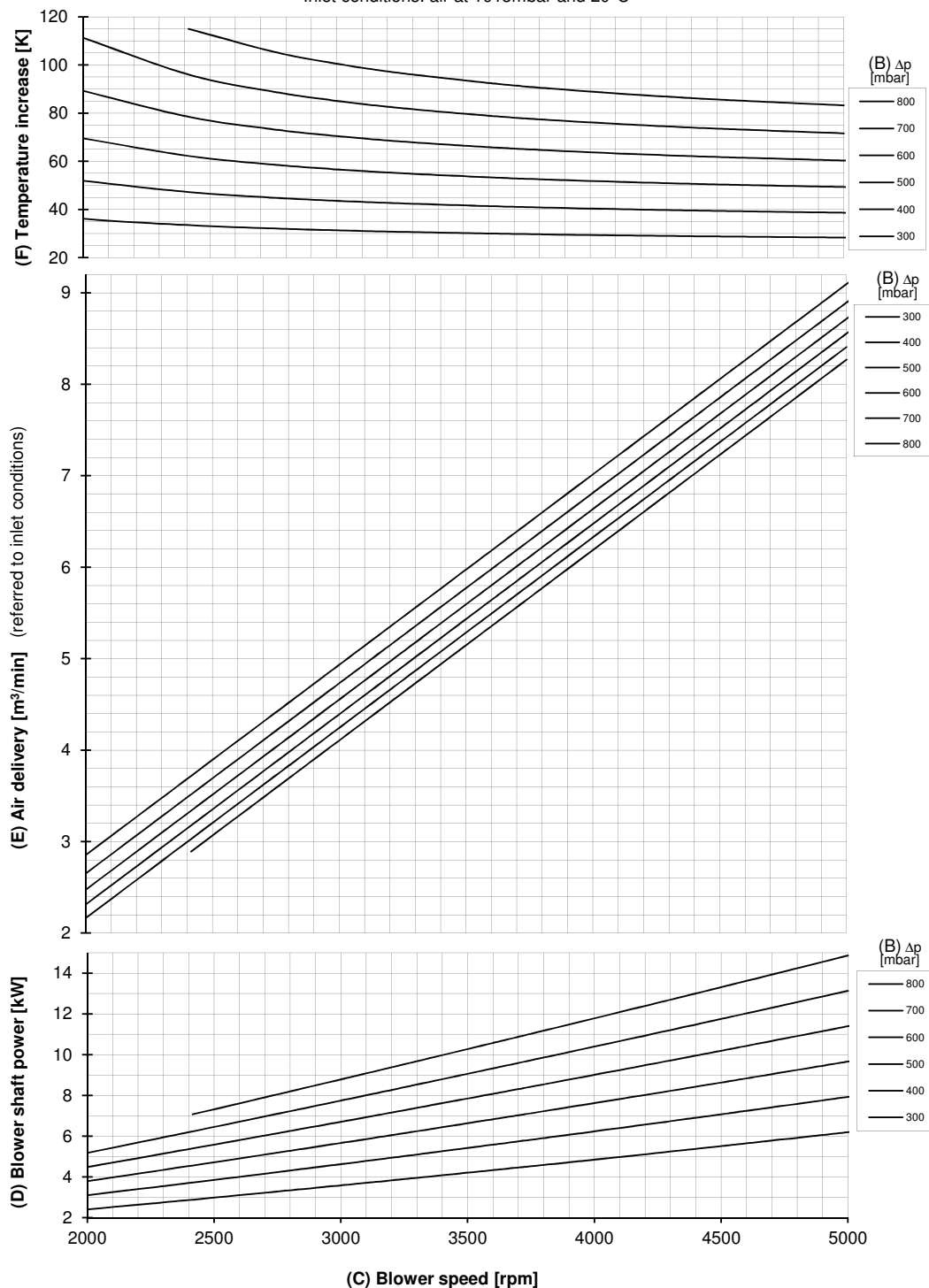


Diagramm O24P

Stand: 01.2010

# OMEGA 41PLUS

(A) Gauge pressure operation  
Inlet conditions: air at 1013mbar and 20°C

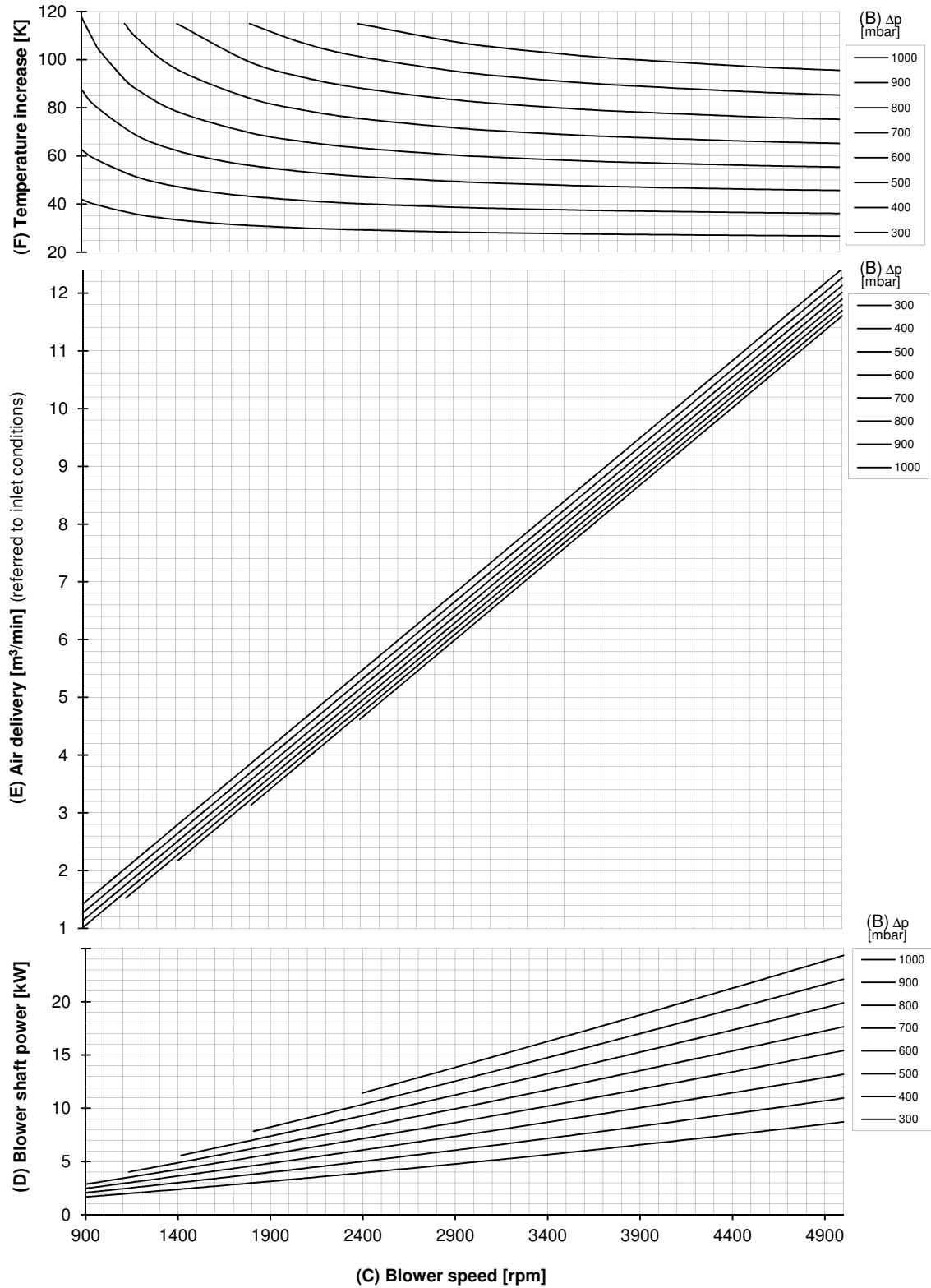


Diagramm O41P

Stand: 01.2010

## 13.4 Noise emission

The values for sound pressure levels and sound power levels are provided in the tables below:  
Each table discusses one model.

The values applicable to the machine result from the combination of the blower block speed and the differential pressure

If the texts of the tables are not provided in the chosen language, a translation can be found here.

|    | Table legend            |
|----|-------------------------|
| a) | Model                   |
| b) | without sound enclosure |
| c) | with sound enclosure    |
| d) | Blower block speed      |
| e) | Pressure differential   |
| f) | Sound pressure level    |
| g) | Sound power level       |

Tab. 60 Noise emission - legend

| a) CB111C            |                          |       | b) without sound enclosure |                      | c) with sound enclosure |                      |
|----------------------|--------------------------|-------|----------------------------|----------------------|-------------------------|----------------------|
| d) block speed       | e) pressure differential |       | f) sound level             | g) sound power level | f) sound level          | g) sound power level |
| [min <sup>-1</sup> ] | [mbar]                   | [psi] | [dB(A)]                    | [dB(A)]              | [dB(A)]                 | [dB(A)]              |
|                      |                          |       | ± 3 dB(A)                  | ± 3 dB(A)            | ± 3 dB(A)               | ± 3 dB(A)            |
| 2090                 | 200                      | 3     | 81                         | 96                   | 69                      | 85                   |
| 2090                 | 300                      | 4     | 82                         | 97                   | 70                      | 85                   |
| 2090                 | 400                      | 6     | 82                         | 97                   | 70                      | 86                   |
| 2090                 | 500                      | 7     | 82                         | 97                   | 69                      | 85                   |
| 2090                 | 600                      | 9     | 82                         | 97                   | 71                      | 86                   |
| 2090                 | 690                      | 10    | 82                         | 97                   | 71                      | 86                   |
| 2210                 | 200                      | 3     | 81                         | 96                   | 69                      | 85                   |
| 2210                 | 300                      | 4     | 82                         | 97                   | 70                      | 86                   |
| 2210                 | 400                      | 6     | 82                         | 97                   | 70                      | 86                   |
| 2210                 | 500                      | 7     | 82                         | 97                   | 69                      | 85                   |
| 2210                 | 600                      | 9     | 82                         | 97                   | 71                      | 86                   |
| 2210                 | 690                      | 10    | 82                         | 97                   | 71                      | 86                   |
| 2470                 | 200                      | 3     | 81                         | 96                   | 69                      | 85                   |
| 2470                 | 300                      | 4     | 82                         | 97                   | 70                      | 86                   |
| 2470                 | 400                      | 6     | 82                         | 97                   | 70                      | 86                   |
| 2470                 | 500                      | 7     | 82                         | 97                   | 69                      | 85                   |
| 2470                 | 600                      | 9     | 82                         | 97                   | 71                      | 87                   |
| 2470                 | 690                      | 10    | 82                         | 97                   | 71                      | 87                   |
| 2600                 | 200                      | 3     | 81                         | 96                   | 69                      | 85                   |
| 2600                 | 300                      | 4     | 82                         | 97                   | 70                      | 86                   |
| 2600                 | 400                      | 6     | 82                         | 97                   | 70                      | 86                   |
| 2600                 | 500                      | 7     | 82                         | 97                   | 69                      | 85                   |
| 2600                 | 600                      | 9     | 82                         | 97                   | 71                      | 87                   |
| 2600                 | 700                      | 10    | 82                         | 97                   | 71                      | 87                   |
| 2600                 | 790                      | 11    | 82                         | 97                   | 71                      | 87                   |
| 2750                 | 200                      | 3     | 81                         | 96                   | 69                      | 85                   |
| 2750                 | 300                      | 4     | 82                         | 97                   | 70                      | 86                   |
| 2750                 | 400                      | 6     | 82                         | 97                   | 70                      | 86                   |
| 2750                 | 500                      | 7     | 82                         | 97                   | 69                      | 85                   |
| 2750                 | 600                      | 9     | 82                         | 97                   | 71                      | 87                   |
| 2750                 | 700                      | 10    | 83                         | 98                   | 71                      | 87                   |
| 2750                 | 790                      | 11    | 83                         | 98                   | 71                      | 87                   |
| 2910                 | 200                      | 3     | 81                         | 96                   | 70                      | 85                   |
| 2910                 | 300                      | 4     | 82                         | 97                   | 70                      | 86                   |
| 2910                 | 400                      | 6     | 82                         | 97                   | 71                      | 86                   |
| 2910                 | 500                      | 7     | 82                         | 98                   | 70                      | 85                   |
| 2910                 | 600                      | 9     | 82                         | 98                   | 71                      | 87                   |
| 2910                 | 700                      | 10    | 83                         | 98                   | 71                      | 87                   |
| 2910                 | 800                      | 12    | 83                         | 98                   | 71                      | 87                   |
| 3260                 | 200                      | 3     | 82                         | 97                   | 70                      | 85                   |
| 3260                 | 300                      | 4     | 83                         | 98                   | 70                      | 86                   |
| 3260                 | 400                      | 6     | 83                         | 98                   | 71                      | 86                   |
| 3260                 | 500                      | 7     | 83                         | 98                   | 70                      | 85                   |
| 3260                 | 600                      | 9     | 83                         | 98                   | 72                      | 87                   |
| 3260                 | 700                      | 10    | 84                         | 99                   | 72                      | 87                   |
| 3260                 | 800                      | 12    | 84                         | 99                   | 72                      | 87                   |
| 3430                 | 200                      | 3     | 82                         | 97                   | 70                      | 86                   |
| 3430                 | 300                      | 4     | 83                         | 98                   | 70                      | 86                   |
| 3430                 | 400                      | 6     | 83                         | 98                   | 71                      | 87                   |
| 3430                 | 500                      | 7     | 83                         | 98                   | 70                      | 86                   |
| 3430                 | 600                      | 9     | 83                         | 98                   | 72                      | 87                   |
| 3430                 | 700                      | 10    | 84                         | 99                   | 72                      | 87                   |
| 3430                 | 800                      | 12    | 84                         | 99                   | 72                      | 87                   |
| 3630                 | 200                      | 3     | 82                         | 98                   | 70                      | 86                   |
| 3630                 | 300                      | 4     | 83                         | 99                   | 70                      | 86                   |
| 3630                 | 400                      | 6     | 83                         | 99                   | 71                      | 87                   |
| 3630                 | 500                      | 7     | 84                         | 99                   | 70                      | 86                   |
| 3630                 | 600                      | 9     | 84                         | 99                   | 72                      | 88                   |
| 3630                 | 700                      | 10    | 85                         | 100                  | 72                      | 88                   |
| 3630                 | 800                      | 12    | 85                         | 100                  | 72                      | 88                   |

| a) CB111C            |                          |       | b) without sound enclosure |                      | c) with sound enclosure |                      |
|----------------------|--------------------------|-------|----------------------------|----------------------|-------------------------|----------------------|
| d) block speed       | e) pressure differential |       | f) sound level             | g) sound power level | f) sound level          | g) sound power level |
| [min <sup>-1</sup> ] | [mbar]                   | [psi] | [dB(A)]                    | [dB(A)]              | [dB(A)]                 | [dB(A)]              |
|                      |                          |       | ± 3 dB(A)                  | ± 3 dB(A)            | ± 3 dB(A)               | ± 3 dB(A)            |
| 3840                 | 200                      | 3     | 83                         | 98                   | 70                      | 86                   |
| 3840                 | 300                      | 4     | 84                         | 99                   | 71                      | 87                   |
| 3840                 | 400                      | 6     | 84                         | 99                   | 70                      | 86                   |
| 3840                 | 500                      | 7     | 84                         | 99                   | 72                      | 88                   |
| 3840                 | 600                      | 9     | 84                         | 99                   | 72                      | 88                   |
| 3840                 | 700                      | 10    | 85                         | 101                  | 71                      | 86                   |
| 3840                 | 800                      | 12    | 85                         | 101                  | 72                      | 88                   |
| 4050                 | 200                      | 3     | 83                         | 99                   | 70                      | 86                   |
| 4050                 | 300                      | 4     | 84                         | 100                  | 71                      | 86                   |
| 4050                 | 400                      | 6     | 84                         | 100                  | 71                      | 87                   |
| 4050                 | 500                      | 7     | 85                         | 100                  | 70                      | 86                   |
| 4050                 | 600                      | 9     | 85                         | 100                  | 72                      | 88                   |
| 4050                 | 800                      | 12    | 86                         | 101                  | 72                      | 88                   |
| 4050                 | 700                      | 10    | 86                         | 101                  | 72                      | 88                   |
| 4270                 | 200                      | 3     | 84                         | 99                   | 70                      | 86                   |
| 4270                 | 300                      | 4     | 85                         | 100                  | 71                      | 87                   |
| 4270                 | 400                      | 6     | 85                         | 100                  | 71                      | 87                   |
| 4270                 | 500                      | 7     | 86                         | 101                  | 70                      | 86                   |
| 4270                 | 600                      | 9     | 86                         | 101                  | 72                      | 88                   |
| 4270                 | 700                      | 10    | 87                         | 102                  | 72                      | 88                   |
| 4270                 | 800                      | 12    | 87                         | 102                  | 72                      | 88                   |
| 4530                 | 200                      | 3     | 85                         | 100                  | 70                      | 86                   |
| 4530                 | 300                      | 4     | 86                         | 101                  | 71                      | 87                   |
| 4530                 | 400                      | 6     | 86                         | 101                  | 71                      | 87                   |
| 4530                 | 500                      | 7     | 87                         | 102                  | 70                      | 86                   |
| 4530                 | 600                      | 9     | 87                         | 102                  | 73                      | 88                   |
| 4530                 | 700                      | 10    | 88                         | 103                  | 73                      | 88                   |
| 4530                 | 800                      | 12    | 88                         | 103                  | 73                      | 88                   |
| 4850                 | 200                      | 3     | 86                         | 102                  | 70                      | 86                   |
| 4850                 | 300                      | 4     | 87                         | 103                  | 71                      | 87                   |
| 4850                 | 400                      | 6     | 87                         | 103                  | 71                      | 87                   |
| 4850                 | 500                      | 7     | 88                         | 103                  | 70                      | 86                   |
| 4850                 | 600                      | 9     | 88                         | 103                  | 73                      | 89                   |
| 4850                 | 700                      | 10    | 89                         | 105                  | 73                      | 89                   |
| 4850                 | 800                      | 12    | 89                         | 105                  | 73                      | 89                   |

| a) CB131C            |                          |       | b) without sound enclosure |                      | c) with sound enclosure |                      |
|----------------------|--------------------------|-------|----------------------------|----------------------|-------------------------|----------------------|
| d) block speed       | e) pressure differential |       | f) sound level             | g) sound power level | f) sound level          | g) sound power level |
| [min <sup>-1</sup> ] | [mbar]                   | [psi] | [dB(A)]                    | [dB(A)]              | [dB(A)]                 | [dB(A)]              |
|                      |                          |       | ± 3 dB(A)                  | ± 3 dB(A)            | ± 3 dB(A)               | ± 3 dB(A)            |
| 2040                 | 200                      | 3     | 79                         | 95                   | 69                      | 85                   |
| 2040                 | 300                      | 4     | 79                         | 95                   | 69                      | 85                   |
| 2040                 | 400                      | 6     | 80                         | 95                   | 69                      | 85                   |
| 2040                 | 500                      | 7     | 81                         | 96                   | 69                      | 85                   |
| 2040                 | 600                      | 9     | 82                         | 97                   | 70                      | 86                   |
| 2040                 | 700                      | 10    | 82                         | 98                   | 70                      | 86                   |
| 2040                 | 800                      | 12    | 83                         | 98                   | 70                      | 85                   |
| 2040                 | 890                      | 13    | 83                         | 98                   | 70                      | 86                   |
| 2150                 | 200                      | 3     | 80                         | 95                   | 69                      | 85                   |
| 2150                 | 300                      | 4     | 80                         | 95                   | 69                      | 85                   |
| 2150                 | 400                      | 6     | 80                         | 95                   | 70                      | 85                   |
| 2150                 | 500                      | 7     | 81                         | 97                   | 70                      | 85                   |
| 2150                 | 600                      | 9     | 82                         | 97                   | 70                      | 86                   |
| 2150                 | 700                      | 10    | 83                         | 98                   | 70                      | 86                   |
| 2150                 | 800                      | 12    | 83                         | 99                   | 70                      | 86                   |
| 2150                 | 890                      | 13    | 83                         | 98                   | 70                      | 86                   |
| 2270                 | 200                      | 3     | 81                         | 96                   | 70                      | 85                   |
| 2270                 | 300                      | 4     | 81                         | 96                   | 70                      | 85                   |
| 2270                 | 400                      | 6     | 81                         | 96                   | 70                      | 85                   |
| 2270                 | 500                      | 7     | 82                         | 97                   | 70                      | 85                   |
| 2270                 | 600                      | 9     | 82                         | 98                   | 70                      | 86                   |
| 2270                 | 700                      | 10    | 83                         | 98                   | 70                      | 86                   |
| 2270                 | 800                      | 12    | 84                         | 99                   | 70                      | 86                   |
| 2270                 | 900                      | 13    | 83                         | 99                   | 70                      | 86                   |
| 2270                 | 950                      | 14    | 83                         | 99                   | 72                      | 87                   |
| 2420                 | 200                      | 3     | 81                         | 97                   | 70                      | 85                   |
| 2420                 | 300                      | 4     | 81                         | 97                   | 70                      | 85                   |
| 2420                 | 400                      | 6     | 82                         | 97                   | 70                      | 86                   |
| 2420                 | 500                      | 7     | 82                         | 98                   | 70                      | 86                   |
| 2420                 | 600                      | 9     | 83                         | 98                   | 70                      | 86                   |
| 2420                 | 700                      | 10    | 83                         | 98                   | 70                      | 86                   |
| 2420                 | 800                      | 12    | 84                         | 99                   | 70                      | 86                   |
| 2420                 | 900                      | 13    | 84                         | 99                   | 71                      | 86                   |
| 2420                 | 990                      | 14    | 84                         | 99                   | 72                      | 87                   |
| 2570                 | 200                      | 3     | 82                         | 97                   | 70                      | 86                   |
| 2570                 | 300                      | 4     | 82                         | 97                   | 70                      | 86                   |
| 2570                 | 400                      | 6     | 82                         | 97                   | 70                      | 86                   |
| 2570                 | 500                      | 7     | 83                         | 98                   | 70                      | 86                   |
| 2570                 | 600                      | 9     | 83                         | 99                   | 71                      | 86                   |
| 2570                 | 700                      | 10    | 84                         | 99                   | 71                      | 86                   |
| 2570                 | 800                      | 12    | 84                         | 99                   | 71                      | 86                   |
| 2570                 | 900                      | 13    | 84                         | 99                   | 72                      | 88                   |
| 2570                 | 1000                     | 15    | 84                         | 99                   | 71                      | 87                   |
| 2760                 | 200                      | 3     | 83                         | 98                   | 70                      | 86                   |
| 2760                 | 300                      | 4     | 83                         | 98                   | 70                      | 86                   |
| 2760                 | 400                      | 6     | 83                         | 98                   | 70                      | 86                   |
| 2760                 | 500                      | 7     | 84                         | 99                   | 70                      | 86                   |
| 2760                 | 600                      | 9     | 84                         | 99                   | 71                      | 87                   |
| 2760                 | 700                      | 10    | 84                         | 99                   | 71                      | 86                   |
| 2760                 | 800                      | 12    | 84                         | 100                  | 72                      | 88                   |
| 2760                 | 900                      | 13    | 84                         | 100                  | 71                      | 87                   |
| 2760                 | 1000                     | 15    | 84                         | 100                  | 71                      | 87                   |
| 2920                 | 200                      | 3     | 84                         | 99                   | 70                      | 86                   |
| 2920                 | 300                      | 4     | 84                         | 99                   | 70                      | 86                   |
| 2920                 | 400                      | 6     | 84                         | 99                   | 70                      | 86                   |
| 2920                 | 500                      | 7     | 84                         | 99                   | 70                      | 86                   |
| 2920                 | 600                      | 9     | 84                         | 99                   | 71                      | 87                   |
| 2920                 | 700                      | 10    | 84                         | 100                  | 71                      | 87                   |
| 2920                 | 800                      | 12    | 85                         | 100                  | 72                      | 88                   |
| 2920                 | 900                      | 13    | 85                         | 100                  | 71                      | 87                   |

| a) CB131C            |                          |       | b) without sound enclosure |                      | c) with sound enclosure |                      |
|----------------------|--------------------------|-------|----------------------------|----------------------|-------------------------|----------------------|
| d) block speed       | e) pressure differential |       | f) sound level             | g) sound power level | f) sound level          | g) sound power level |
| [min <sup>-1</sup> ] | [mbar]                   | [psi] | [dB(A)]                    | [dB(A)]              | [dB(A)]                 | [dB(A)]              |
|                      |                          |       | ± 3 dB(A)                  | ± 3 dB(A)            | ± 3 dB(A)               | ± 3 dB(A)            |
| 2920                 | 1000                     | 15    | 85                         | 100                  | 71                      | 87                   |
| 3100                 | 200                      | 3     | 84                         | 99                   | 70                      | 86                   |
| 3100                 | 300                      | 4     | 84                         | 99                   | 70                      | 86                   |
| 3100                 | 400                      | 6     | 84                         | 99                   | 70                      | 86                   |
| 3100                 | 500                      | 7     | 85                         | 100                  | 70                      | 86                   |
| 3100                 | 600                      | 9     | 85                         | 100                  | 71                      | 87                   |
| 3100                 | 700                      | 10    | 85                         | 100                  | 71                      | 87                   |
| 3100                 | 800                      | 12    | 85                         | 100                  | 71                      | 87                   |
| 3100                 | 900                      | 13    | 85                         | 100                  | 72                      | 87                   |
| 3100                 | 1000                     | 15    | 85                         | 100                  | 72                      | 88                   |
| 3320                 | 200                      | 3     | 85                         | 100                  | 70                      | 86                   |
| 3320                 | 300                      | 4     | 85                         | 100                  | 70                      | 86                   |
| 3320                 | 400                      | 6     | 85                         | 100                  | 71                      | 86                   |
| 3320                 | 500                      | 7     | 85                         | 100                  | 71                      | 86                   |
| 3320                 | 600                      | 9     | 85                         | 100                  | 71                      | 87                   |
| 3320                 | 700                      | 10    | 85                         | 100                  | 71                      | 87                   |
| 3320                 | 800                      | 12    | 85                         | 100                  | 72                      | 87                   |
| 3320                 | 900                      | 13    | 85                         | 100                  | 72                      | 88                   |
| 3320                 | 1000                     | 15    | 85                         | 100                  | 72                      | 88                   |
| 3560                 | 200                      | 3     | 85                         | 101                  | 71                      | 86                   |
| 3560                 | 300                      | 4     | 85                         | 101                  | 71                      | 86                   |
| 3560                 | 400                      | 6     | 86                         | 101                  | 71                      | 86                   |
| 3560                 | 500                      | 7     | 86                         | 101                  | 71                      | 86                   |
| 3560                 | 600                      | 9     | 86                         | 101                  | 71                      | 87                   |
| 3560                 | 700                      | 10    | 86                         | 101                  | 71                      | 87                   |
| 3560                 | 800                      | 12    | 85                         | 101                  | 72                      | 88                   |
| 3560                 | 900                      | 13    | 86                         | 101                  | 72                      | 88                   |
| 3560                 | 1000                     | 15    | 86                         | 101                  | 72                      | 88                   |
| 3780                 | 200                      | 3     | 86                         | 101                  | 71                      | 86                   |
| 3780                 | 300                      | 4     | 86                         | 101                  | 71                      | 86                   |
| 3780                 | 400                      | 6     | 86                         | 101                  | 71                      | 87                   |
| 3780                 | 500                      | 7     | 86                         | 101                  | 71                      | 87                   |
| 3780                 | 600                      | 9     | 86                         | 101                  | 71                      | 87                   |
| 3780                 | 700                      | 10    | 86                         | 101                  | 71                      | 87                   |
| 3780                 | 800                      | 12    | 86                         | 101                  | 72                      | 88                   |
| 3780                 | 900                      | 13    | 86                         | 101                  | 72                      | 88                   |
| 3780                 | 1000                     | 15    | 86                         | 101                  | 72                      | 88                   |
| 4000                 | 200                      | 3     | 86                         | 102                  | 71                      | 87                   |
| 4000                 | 300                      | 4     | 86                         | 102                  | 71                      | 87                   |
| 4000                 | 400                      | 6     | 86                         | 102                  | 71                      | 87                   |
| 4000                 | 500                      | 7     | 86                         | 102                  | 71                      | 87                   |
| 4000                 | 600                      | 9     | 86                         | 102                  | 72                      | 87                   |
| 4000                 | 700                      | 10    | 86                         | 101                  | 71                      | 87                   |
| 4000                 | 800                      | 12    | 86                         | 101                  | 72                      | 88                   |
| 4000                 | 900                      | 13    | 86                         | 102                  | 72                      | 88                   |
| 4000                 | 1000                     | 15    | 86                         | 102                  | 72                      | 88                   |
| 4220                 | 200                      | 3     | 87                         | 102                  | 71                      | 87                   |
| 4220                 | 300                      | 4     | 87                         | 102                  | 71                      | 87                   |
| 4220                 | 400                      | 6     | 87                         | 102                  | 71                      | 87                   |
| 4220                 | 500                      | 7     | 87                         | 102                  | 71                      | 87                   |
| 4220                 | 600                      | 9     | 87                         | 102                  | 72                      | 87                   |
| 4220                 | 700                      | 10    | 87                         | 102                  | 72                      | 87                   |
| 4220                 | 800                      | 12    | 86                         | 102                  | 72                      | 88                   |
| 4220                 | 900                      | 13    | 87                         | 102                  | 72                      | 88                   |
| 4220                 | 1000                     | 15    | 87                         | 102                  | 72                      | 88                   |
| 4450                 | 200                      | 3     | 87                         | 102                  | 71                      | 87                   |
| 4450                 | 300                      | 4     | 87                         | 102                  | 71                      | 87                   |
| 4450                 | 400                      | 6     | 87                         | 102                  | 71                      | 87                   |
| 4450                 | 500                      | 7     | 87                         | 102                  | 71                      | 87                   |
| 4450                 | 600                      | 9     | 87                         | 102                  | 72                      | 87                   |

| a) CB131C            |                          |       | b) without sound enclosure |                      | c) with sound enclosure |                      |
|----------------------|--------------------------|-------|----------------------------|----------------------|-------------------------|----------------------|
| d) block speed       | e) pressure differential |       | f) sound level             | g) sound power level | f) sound level          | g) sound power level |
| [min <sup>-1</sup> ] | [mbar]                   | [psi] | [dB(A)]                    | [dB(A)]              | [dB(A)]                 | [dB(A)]              |
|                      |                          |       | ± 3 dB(A)                  | ± 3 dB(A)            | ± 3 dB(A)               | ± 3 dB(A)            |
| 4450                 | 700                      | 10    | 87                         | 102                  | 72                      | 87                   |
| 4450                 | 800                      | 12    | 87                         | 102                  | 72                      | 88                   |
| 4450                 | 900                      | 13    | 87                         | 102                  | 72                      | 88                   |
| 4450                 | 1000                     | 15    | 87                         | 102                  | 72                      | 88                   |
| 4720                 | 200                      | 3     | 87                         | 102                  | 71                      | 87                   |
| 4720                 | 300                      | 4     | 87                         | 102                  | 71                      | 87                   |
| 4720                 | 400                      | 6     | 87                         | 102                  | 71                      | 87                   |
| 4720                 | 500                      | 7     | 87                         | 102                  | 71                      | 87                   |
| 4720                 | 600                      | 9     | 87                         | 102                  | 72                      | 87                   |
| 4720                 | 700                      | 10    | 87                         | 103                  | 72                      | 87                   |
| 4720                 | 800                      | 12    | 87                         | 102                  | 72                      | 88                   |
| 4720                 | 900                      | 13    | 87                         | 102                  | 72                      | 88                   |
| 4720                 | 1000                     | 15    | 87                         | 102                  | 73                      | 88                   |
| 4970                 | 200                      | 3     | 87                         | 102                  | 71                      | 87                   |
| 4970                 | 300                      | 4     | 87                         | 102                  | 71                      | 87                   |
| 4970                 | 400                      | 6     | 87                         | 102                  | 71                      | 87                   |
| 4970                 | 500                      | 7     | 87                         | 102                  | 71                      | 87                   |
| 4970                 | 600                      | 9     | 87                         | 103                  | 72                      | 87                   |
| 4970                 | 700                      | 10    | 88                         | 103                  | 72                      | 87                   |
| 4970                 | 800                      | 12    | 88                         | 103                  | 72                      | 88                   |
| 4970                 | 900                      | 13    | 88                         | 103                  | 73                      | 88                   |
| 4970                 | 1000                     | 15    | 88                         | 103                  | 72                      | 88                   |

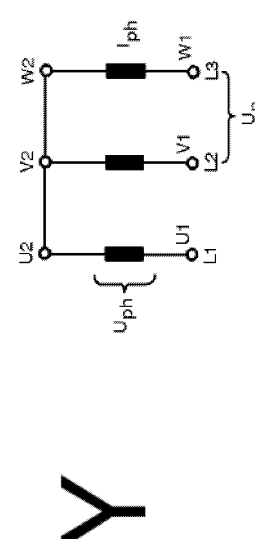
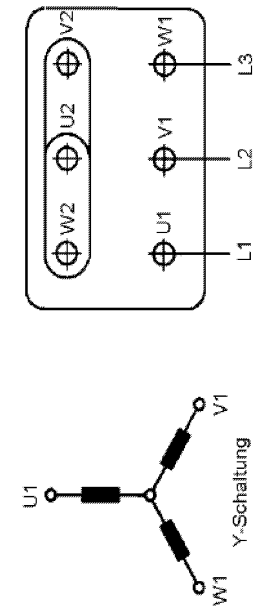
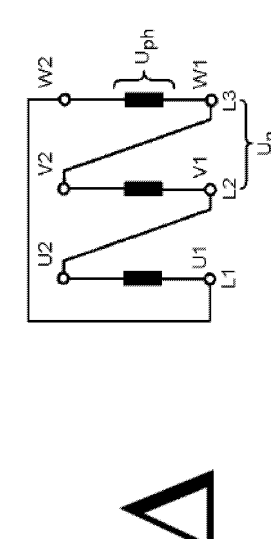
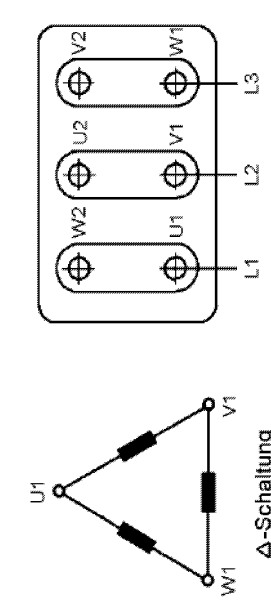
## **13.5 Drive motor electrical diagram**

The connection diagram is a common diagram for the mains voltage and frequency.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |               |   |                   |   |           |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------|---|-------------------|---|-----------|---|
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2 | 3             | 4 | 5                 | 6 | 7         | 8 |
| <div>Schaltungsunterlagen<br/>Electrical diagrams<br/><br/>Anschlussbild Motor+Option<br/>connection diagram motor+option<br/><br/>TT/TN-Netz mit geerdetem Sternpunkt<br/>TT/TN power supply with common point grounding</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |               |   |                   |   |           |   |
| <div>Hersteller: KAESER KOMPRESSOREN GmbH<br/>Postfach 2143<br/>96410 Coburg</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |   |               |   |                   |   |           |   |
| <div>Dieses Dokument beinhaltet einen Sammelplan für alle hier aufgeführten Anlagentypen, Netzspannungen und Frequenzen. Unter welchen tatsächlichen Spannungen, Frequenzen und Umgebungsbedingungen die jeweilige Anlage ausschließlich betrieben werden darf, ist dem Typenschild der Anlage sowie der beiliegenden Betriebsanleitung zu entnehmen.</div> <div>The document gives collective information on power supply voltages and frequencies for all machines. The voltage and frequency and local conditions under which any particular machine may be used are given on the nameplate of the machine and in the accompanying service manual.</div> <div>Die Schaltungsunterlagen bleiben unser ausschließliches Eigentum. Sie werden nur zu dem vereinbarten Zweck anvertraut. Kopien oder sonstige Vervielfältigungen einschließlich der Speicherung, Verarbeitung und Verbreitung unter Verwendung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck angefertigt werden. Weder Originale noch Vervielfältigungen dürfen Dritten ausgehändigt oder in sonstiger Weise zugänglich gemacht werden.</div> <div>The drawings remain our exclusive property. They are entrusted only for the agreed purpose. Copies or any other reproductions, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither originals nor reproductions must be forwarded or otherwise made accessible to third parties.</div> |   |               |   |                   |   |           |   |
| c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   | Datum         |   | 03.11.2014        |   | D         |   |
| b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   | Bearbeiter    |   | M.Zeeth           |   |           |   |
| a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   | Geprüft       |   | M.Zeeth           |   |           |   |
| A. Änderung                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |   | Datum         |   | Name              |   | Norm      |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   | Ersatz durch: |   | Ersatz für:       |   | Ursprung: |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |               |   | Deckblatt         |   |           |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |               |   | =                 |   |           |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |               |   | +                 |   |           |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |               |   | SX.B.DSG-03022.01 |   |           |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |               |   | Blatt 1           |   |           |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |               |   | 1 Bl.             |   |           |   |

| 1                                                                                                                                            | 2                                            | 3               | 4      | 5                                            | 6        | 7               | 8      |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------|--------|----------------------------------------------|----------|-----------------|--------|
| <b>Schaltung der Motoren (eintourig) (6-poliger Klemmkasten)</b><br><b>Connection diagram for motor (single speed) (6-lead terminal box)</b> |                                              |                 |        |                                              |          |                 |        |
| Typenschild<br>name plate                                                                                                                    | Start in 50Hz – Netz<br>start in 50Hz – line |                 |        | Start in 60Hz – Netz<br>start in 60Hz – line |          |                 |        |
| 200V Δ - 50Hz                                                                                                                                | 200V Y/Δ                                     | /               | 200V Δ | direkt / d.o.l.                              | 200V Y/Δ | /               | 200V Δ |
| 208V Δ - 60Hz                                                                                                                                |                                              |                 |        |                                              | 208V Y/Δ | /               | 208V Δ |
| 220V Δ / 360V Y - 60Hz                                                                                                                       | 220V Y/Δ                                     | /               | 220V Δ | direkt / d.o.l.                              | 220V Y/Δ | /               | 220V Δ |
| 220V Δ / 380V Y - 50Hz                                                                                                                       | 220V Y/Δ                                     | /               | 220V Δ | direkt / d.o.l.                              | 220V Y/Δ | /               | 220V Δ |
| 220V Δ / 380V Y - 60Hz                                                                                                                       | 220V Y/Δ                                     | /               | 220V Δ | direkt / d.o.l.                              | 220V Y/Δ | /               | 220V Δ |
| 230V Δ / 400V Y - 50Hz                                                                                                                       | 230V Y/Δ                                     | /               | 230V Δ | direkt / d.o.l.                              | 230V Y/Δ | /               | 230V Δ |
| 460V Y - 60Hz                                                                                                                                |                                              |                 |        |                                              | 460V Y   | direkt / d.o.l. |        |
| 240V Δ / 415V Y - 50Hz                                                                                                                       | 240V Y/Δ                                     | /               | 240V Δ | direkt / d.o.l.                              | 240V Y/Δ | /               | 240V Δ |
| 230V Δ / 460V Y - 60Hz                                                                                                                       | 230V Y/Δ                                     | /               | 230V Δ | direkt / d.o.l.                              | 230V Y/Δ | /               | 230V Δ |
| 380V Δ - 50Hz                                                                                                                                | 380V Y/Δ                                     | /               | 380V Δ | direkt / d.o.l.                              | 380V Y/Δ | /               | 380V Δ |
| 380V Δ - 60Hz                                                                                                                                |                                              |                 |        |                                              | 380V Y/Δ | /               | 380V Δ |
| 380V Δ / 660V Y - 50Hz                                                                                                                       | 380V Y/Δ                                     | /               | 380V Δ | direkt / d.o.l.                              | 380V Y/Δ | /               | 380V Δ |
| 380V Δ / 660V Y - 60Hz                                                                                                                       | 380V Y/Δ                                     | /               | 380V Δ | direkt / d.o.l.                              | 380V Y/Δ | /               | 380V Δ |
| 400V Δ - 50Hz / 460V Δ - 60Hz                                                                                                                | 400V Y/Δ                                     | /               | 400V Δ | direkt / d.o.l.                              | 400V Y/Δ | /               | 400V Δ |
| 400V Δ / 690V Y - 50Hz                                                                                                                       | 400V Y/Δ                                     | /               | 400V Δ | direkt / d.o.l.                              | 400V Y/Δ | /               | 400V Δ |
| 460V Δ - 60Hz                                                                                                                                |                                              |                 |        |                                              | 460V Y/Δ | /               | 460V Δ |
| 400V Δ - 60Hz                                                                                                                                |                                              |                 |        |                                              | 400V Y/Δ | /               | 400V Δ |
| 415V Δ - 50Hz                                                                                                                                | 415V Y/Δ                                     | /               | 415V Δ | direkt / d.o.l.                              | 415V Y/Δ | /               | 415V Δ |
| 440V Δ - 60Hz                                                                                                                                |                                              |                 |        |                                              | 440V Y/Δ | /               | 440V Δ |
| 460V Δ - 60Hz                                                                                                                                |                                              |                 |        |                                              | 460V Y/Δ | /               | 460V Δ |
| 480V Δ - 60Hz                                                                                                                                |                                              |                 |        |                                              | 480V Y/Δ | /               | 480V Δ |
| 500V Δ - 50Hz / 575V Δ - 60Hz                                                                                                                | 500V Y/Δ                                     | /               | 500V Δ | direkt / d.o.l.                              | 500V Y/Δ | /               | 500V Δ |
| 535V Δ - 50Hz                                                                                                                                | 535V Y/Δ                                     | /               | 535V Δ | direkt / d.o.l.                              | 535V Y/Δ | /               | 535V Δ |
| 550V Δ - 50Hz                                                                                                                                | 550V Y/Δ                                     | /               | 550V Δ | direkt / d.o.l.                              | 550V Y/Δ | /               | 550V Δ |
| 550V Δ - 60Hz                                                                                                                                |                                              |                 |        |                                              | 550V Y/Δ | /               | 550V Δ |
| 660V Δ - 50Hz                                                                                                                                | 660V Y/Δ                                     | /               | 660V Δ | direkt / d.o.l.                              | 660V Y/Δ | /               | 660V Δ |
| 690V Δ - 50Hz                                                                                                                                | 690V Y/Δ                                     | /               | 690V Δ | direkt / d.o.l.                              | 690V Y/Δ | /               | 690V Δ |
| 690V Y - 50Hz                                                                                                                                | 690V Y                                       | direkt / d.o.l. |        |                                              | 690V Y   | direkt / d.o.l. |        |
| 690V Δ - 60Hz                                                                                                                                |                                              |                 |        |                                              | 690V Y/Δ | /               | 690V Δ |
| 690V Y - 60Hz                                                                                                                                |                                              |                 |        |                                              | 690V Y   | direkt / d.o.l. |        |

|          |            |            |                      |      |                    |  |                  |  |
|----------|------------|------------|----------------------|------|--------------------|--|------------------|--|
| c        | Datum      | 03.11.2014 | Schaltungsunterlagen |      | Übersicht Spannung |  | =                |  |
| b        | Bearbeiter | M.Zeich    | KOMPRESSOREN         |      | summary voltage    |  | +                |  |
| a        | Geprüft    | M.Zeich    | Ersatz für:          |      | Ersatz durch:      |  | SXB:SSG-03022.01 |  |
| Änderung |            | Datum      | Name                 | Norm | Blatt              |  | 1                |  |
|          |            |            |                      |      |                    |  | 7 Bl.            |  |

|                                                                                                                                                                                                                                                                                                                                                                |   |   |                                                                                       |   |             |   |                      |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---------------------------------------------------------------------------------------|---|-------------|---|----------------------|--|
| 1                                                                                                                                                                                                                                                                                                                                                              | 2 | 3 | 4                                                                                     | 5 | 6           | 7 | 8                    |  |
| <b>Sternschaltung</b><br>Für eine Sternschaltung müssen die Klemmen W2, U2, V2 zusammengeschlossen und die Stellen U1, V1 und W1 gespeist werden. Der Phasenstrom und die Phasenspannung:<br>$I_{ph} = I_n$ $U_{ph} = U_n / \sqrt{3}$<br>wobei $I_n$ der Netzstrom und $U_n$ die Netzspannung ist.                                                             |   |   |    |   |             |   |                      |  |
| <b>Sternschaltung</b><br>Connecting together the W2, U2, V2 terminals (star point) and connecting to the mains the U1, V1, W1 terminals a star connection is obtained. The phase current $I_{ph}$ and the phase voltage $U_{ph}$ are the following:<br>$I_{ph} = I_n$ $U_{ph} = U_n / \sqrt{3}$<br>where $I_n$ the line current and $U_n$ is the line voltage. |   |   |      |   |             |   |                      |  |
| <b>Dreieckschaltung</b><br>Für eine Dreieckschaltung muss das Ende der Phase an den Beginn der nächsten Phase angeschlossen werden. Der Phasenstrom $I_{ph}$ und die Phasenspannung $U_{ph}$ sind:<br>$I_{ph} = I_n / \sqrt{3}$<br>$U_{ph} = U_n$<br>wobei $I_n$ der Netzstrom und $U_n$ die Netzspannung ist.                                                 |   |   |  |   |             |   |                      |  |
| <b>Delta connection</b><br>Connecting the end of each winding to the beginning of the next winding a delta connection is obtained. The phase current $I_{ph}$ and the phase voltage $U_{ph}$ are the following:<br>$I_{ph} = I_n / \sqrt{3}$<br>$U_{ph} = U_n$<br>where $I_n$ the line current and $U_n$ is the line voltage.                                  |   |   |    |   |             |   |                      |  |
| c                                                                                                                                                                                                                                                                                                                                                              |   |   | Datum                                                                                 |   | 03.11.2014  |   | =                    |  |
| b                                                                                                                                                                                                                                                                                                                                                              |   |   | Bearbeiter                                                                            |   | M.Zeeth     |   | +                    |  |
| a                                                                                                                                                                                                                                                                                                                                                              |   |   | Geprüft                                                                               |   | M.Zeeth     |   | 2                    |  |
| Änderung                                                                                                                                                                                                                                                                                                                                                       |   |   | Datum                                                                                 |   | Name        |   | Norm                 |  |
|                                                                                                                                                                                                                                                                                                                                                                |   |   | Ersatz durch:                                                                         |   | Ersatz für: |   | Ursprung:            |  |
|                                                                                                                                                                                                                                                                                                                                                                |   |   |                                                                                       |   |             |   | Schaltungsunterlagen |  |
|                                                                                                                                                                                                                                                                                                                                                                |   |   |                                                                                       |   |             |   | Schaltungsvarianten  |  |
|                                                                                                                                                                                                                                                                                                                                                                |   |   |                                                                                       |   |             |   | wiring variants      |  |
|                                                                                                                                                                                                                                                                                                                                                                |   |   |                                                                                       |   |             |   | SX.B.SSG-03022.01    |  |
|                                                                                                                                                                                                                                                                                                                                                                |   |   |                                                                                       |   |             |   | Blatt                |  |
|                                                                                                                                                                                                                                                                                                                                                                |   |   |                                                                                       |   |             |   | 7 Bl.                |  |

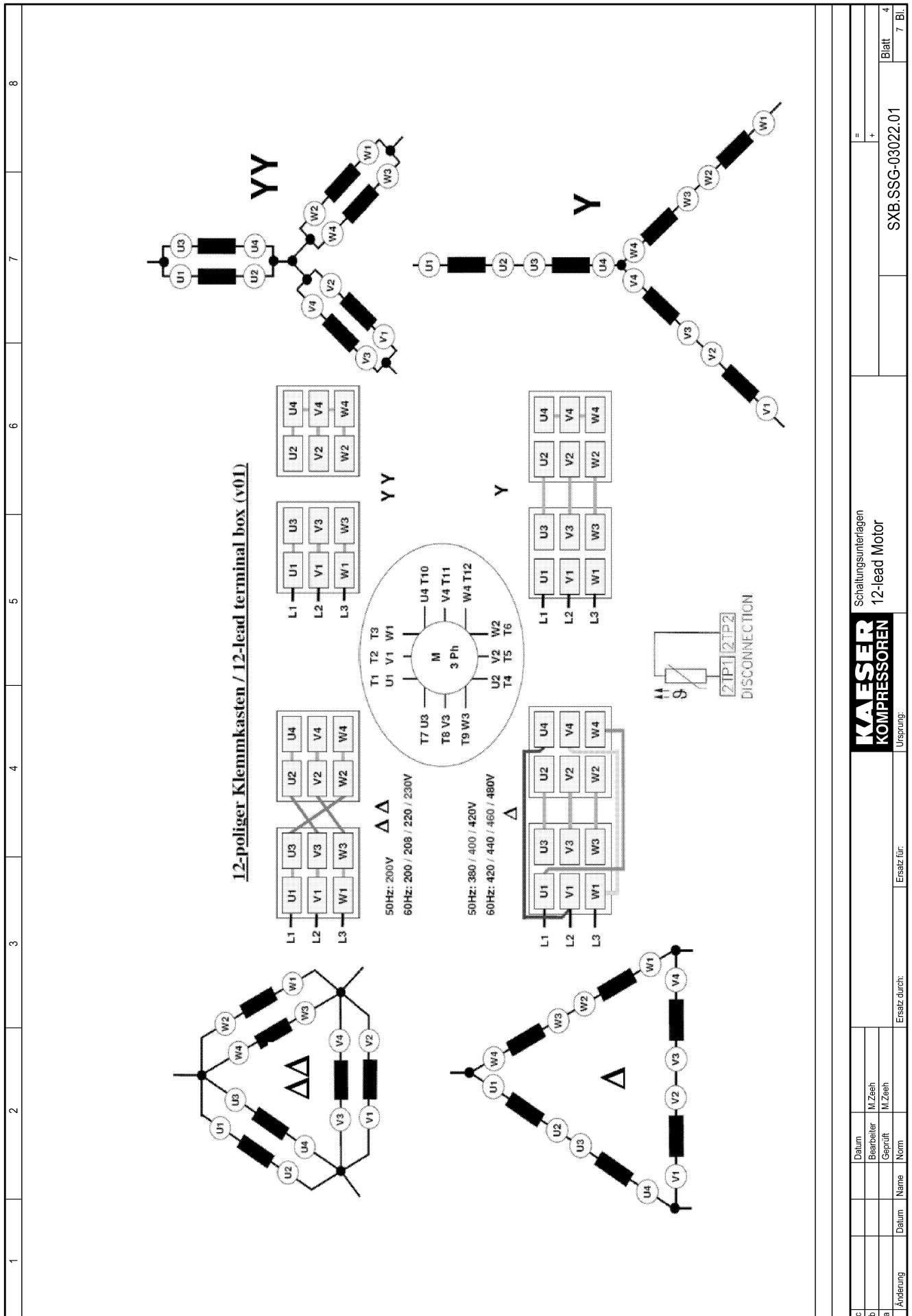
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |   |   |   |   |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| <div style="margin-bottom: 20px;"> <p><b>Stern-Dreieck-Anlauf:</b></p> <p>Der Stern-Dreieck-Anlauf ist die einfachste Art, den Strom und das Anlaufdrehmoment zu reduzieren. Die Motoren, deren Nennspannung bei Dreieckschaltung der Netzspannung entspricht, können mit der Stern-Dreieck-Methode angelassen werden.</p> </div> <div> <p><b>Star-Delta starting:</b></p> <p><i>The star-delta starting is an easy way to reduce the starting current and starting torque.</i></p> <p><i>Motors can be started with star-delta starting method whenever the supply voltage correspond to the rated voltage of the motors in delta connections.</i></p> </div> |   |   |   |   |   |   |   |

|          |       |            |      |               |             |           |  |
|----------|-------|------------|------|---------------|-------------|-----------|--|
| c        |       | Datum      |      | Datum         |             | =         |  |
| b        |       | Bearbeiter |      | M. Zeesh      |             | +         |  |
| a        |       | Geprüft    |      | M. Zeesh      |             | =         |  |
| Änderung | Datum | Name       | Norm | Ersatz durch: | Ersatz für: | Ursprung: |  |
|          |       |            |      |               |             |           |  |

|                      |  |                  |    |
|----------------------|--|------------------|----|
| Schaltungsunterlagen |  |                  |    |
| Stern-Dreieck-Anlauf |  |                  |    |
| 'wye-delta start     |  |                  |    |
|                      |  | Blatt            | 3  |
|                      |  | 7                | Rl |
|                      |  | SYB.SSG-03022.01 |    |



1

2

3

4

5

6

7

8

| 12-Lead Motoren - technische Daten / technical data |                       |            |           |                      |                                 |           |
|-----------------------------------------------------|-----------------------|------------|-----------|----------------------|---------------------------------|-----------|
| Spannung                                            | Schaltung             | Start      | Toleranz  | Servicefaktor F/F    | Isolationsklasse F<br>IE3   NPE | Bemerkung |
| Voltage                                             | terminal<br>(circuit) | start      | tolerance | servicefactor<br>F/F | isolation class F<br>IE3   NPE  | note      |
| 200 V / 50 Hz                                       | ΔΔ                    | YY-ΔΔ / ΔΔ | ± 5%      | 1,1                  | ja / yes                        | ja / yes  |
| nicht möglich / not available                       |                       |            |           |                      |                                 |           |
| 230 V / 50 Hz                                       |                       |            |           |                      |                                 |           |
| 380 V / 50 Hz                                       | Δ                     | Y-Δ / Δ    | ± 5%      | 1,1                  | nein / no                       | nein / no |
| 400 V / 50 Hz                                       | Δ                     | Y-Δ / Δ    | ± 5%      | 1,1                  | ja / yes                        | ja / yes  |
| 420 V / 50 Hz                                       | Δ                     | Y-Δ / Δ    | ± 5%      | 1,1                  | nein / no                       | nein / no |
|                                                     |                       |            |           |                      |                                 |           |
| 200 V / 60 Hz                                       | ΔΔ                    | YY-ΔΔ / ΔΔ | ± 10%     | 1,15                 | nein / no                       | nein / no |
| 208 V / 60 Hz                                       | ΔΔ                    | YY-ΔΔ / ΔΔ | ± 10%     | 1,15                 | ja / yes                        | ja / yes  |
| 220 V / 60 Hz                                       | ΔΔ                    | YY-ΔΔ / ΔΔ | ± 10%     | 1,15                 | ja / yes                        | ja / yes  |
| 230 V / 60 Hz                                       | ΔΔ                    | YY-ΔΔ / ΔΔ | ± 10%     | 1,15                 | ja / yes                        | ja / yes  |
| 420 V / 60 Hz                                       | Δ                     | Y-Δ / Δ    | ± 10%     | 1,15                 | nein / no                       | nein / no |
| 440 V / 60 Hz                                       | Δ                     | Y-Δ / Δ    | ± 10%     | 1,15                 | ja / yes                        | ja / yes  |
| 460 V / 60 Hz                                       | Δ                     | Y-Δ / Δ    | ± 10%     | 1,15                 | ja / yes                        | ja / yes  |
| 480 V / 60 Hz                                       | Δ                     | Y-Δ / Δ    | ± 10%     | 1,15                 | nein / no                       | nein / no |
|                                                     |                       |            |           |                      |                                 |           |

c)

b)

a)

Datum

Beurteiler

M.Zeeh

Geprüft

M.Zeeh

Norm

Datum

Name

Ersatz durch:

Datum

Für:

Schaltungsunterlagen

12-lead Motor

KAESER

KOMPRESSOREN

Ursprung:

=

+

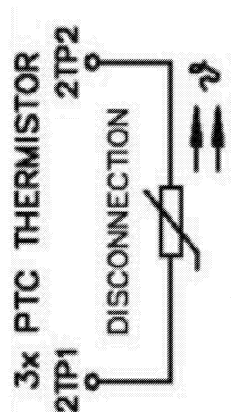
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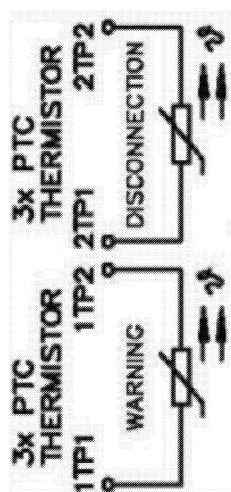
SXB.SSG-03022.01

### Anschlussbild Option (1/2) / connection diagram option (1/2)



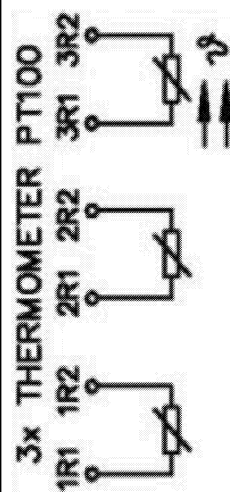
**3x Kaltleiter (PTC) für Abschaltung**  
Anschluss der intergriierten Kaltleiter (PTC) über die Klemmen 2TP1 und 2TP2 im Motorklemmkasten  
(Achtung: keine Spannung über 2,5V anlegen !)

**3x thermistor (PTC) for Disconnection**  
Please connect the 3 thermistors (3x PTC) on lead 2TP1 and 2TP2 in the terminal box of the motor.  
(Attention: No voltage higher than 2,5V on T1 and T2 !!)



**6x Kaltleiter (PTC) für Warnung und Abschaltung**  
Anschluss der intergriierten Kaltleiter (PTC) über die  
Klemmen 1TP1/1TP2 + 2TP1/2TP2 im Motorklemmkasten  
(Achtung: keine Spannung über 2,5V anlegen !)

6x thermistor (PTC) for Warning and Disconnection  
Please connect the thermistors (PTC) on lead  
1 TP1/1 TP2+2 TP1/2 TP2 in the terminal box of the motor.  
(Attention: No voltage higher than 2.5V on T1 and T2 !)



**3x Widerstandsthermometer PT100**  
Anschluss der integrierten Widerstandsthermometer  
PT100 über die Klemmen 1R1/1R2 + 2R1/2R2 + 3R1/3R2  
im Motorklemmkasten.

**3x resistance thermometers (PT100)**  
Please connect the resistance thermometers on lead  
1R1/1R2 + 2R1/2R2 + 3R1/3R2 in the terminal box of the motor.

|               |       |            |            |                                      |                                                               |                 |   |
|---------------|-------|------------|------------|--------------------------------------|---------------------------------------------------------------|-----------------|---|
| c             |       | Datum      | 03.11.2014 | <b>KAESER</b><br><b>KOMPRESSOREN</b> | Schaltungsunterlagen                                          | =               |   |
| b             |       | Bearbeiter | M.Zeeh     |                                      | Anschlussbild Option (1/2)<br>connection diagram option (1/2) |                 | + |
| a             |       | Geprüft    | M.Zeeh     |                                      |                                                               |                 |   |
| Anderruno     | Datum | Name       | Norm       |                                      |                                                               |                 |   |
| Ersatz durch: |       |            |            | Ersatz für:                          | USB.SSG-03022.01                                              | Blatt 6<br>7 RI |   |
|               |       |            |            | Ursprung:                            |                                                               |                 |   |

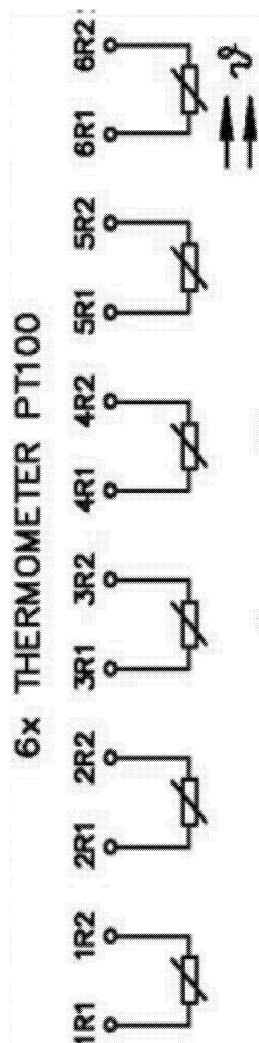
## Anschlussbild Option (2/2) / connection diagram option (2/2)

6x Widerstandsthermometer PT100

Anschluss der integrierten Widerstandsthermometer PT100 über die Klemmen 1 R1/1 R2 + 2 R1/2 R2 + 3 R1/3 R2 und 4 R1/4 R2 + 5 R1/5 R2 + 6 R1/6 R2 im Motorklemmkasten.

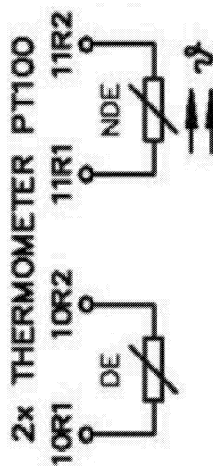
## 6x resistance thermometers (PT100)

Please connect the resistance thermometers on lead 1R1/1R2 + 2R1/2R2 + 3R1/3R2 and 4R1/4R2 + 5R1/5R2 + 6R1/6R2 in the terminal box of the motor.



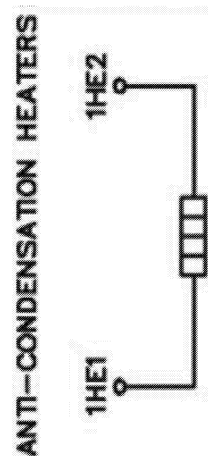
## 2x PT100 Einschraubthermometer in Grundschielung bei Wälzlager

Anschluss der integrierten Widerstandsthermometer PT100 über die Klemmen 10R1/10R2 + 11R1/11R2 im Motorklemmkasten.



## 2x PT100 screwed-in resistance thermometers (basic circuit) for rolling-contact bearing

Please connect the resistance thermometers on lead 10R1/10R2 + 11R1/11R2 in the terminal box of the motor.

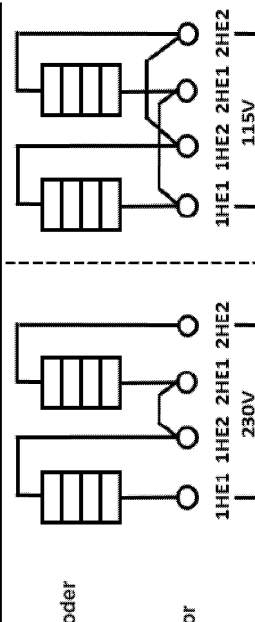


**Option Stillstandsheizung:**

230V (1Ph/N/PE)  
115V (1Ph/N/PE)

**Option Anticondensation heaters:**

230V (1Ph/N/PE)  
115V (1Ph/N/PE)



|           |       |            |            |                                      |                                                                                       |                 |
|-----------|-------|------------|------------|--------------------------------------|---------------------------------------------------------------------------------------|-----------------|
| c         |       | Datum      | 03.11.2014 | <b>KAESER</b><br><b>KOMPRESSOREN</b> | Schaltungsunterlagen<br>Anschlussbild Option (2/2)<br>connection diagram option (2/2) | =               |
| b         |       | Bearbeiter | M.Zeesh    |                                      |                                                                                       |                 |
| a         |       | Geprüft    | M.Zeesh    |                                      |                                                                                       |                 |
| Andrerung | Datum | Name       | Norm       | Ersatz für:                          | SXB: SSG-03022.01<br>7 Ri                                                             | Blatt 7<br>7 Ri |
|           |       |            |            | Ersatz durch:                        |                                                                                       |                 |

## 13.6 Electrical diagrams for options

Electrical diagrams for the options available for your machine are given in the following.

### 13.6.1 Option C9

#### Pressure switch wiring diagram

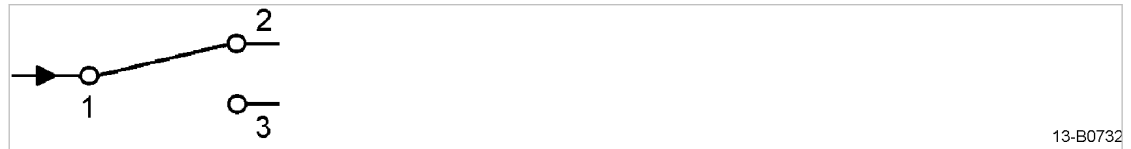


Fig. 36 Pressure switch wiring diagram

- ① Supply
- ② Break contact
- ③ Make contact

### 13.6.2 Option C10

#### Speed monitor wiring diagram

Sensor / evaluation device

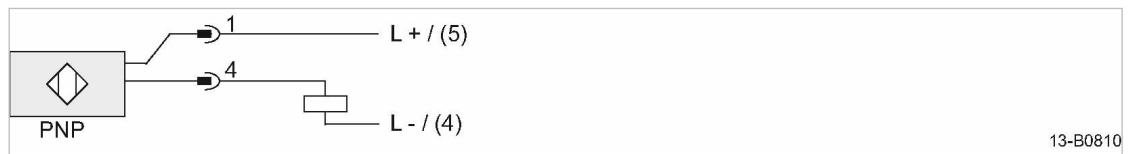


Fig. 37 Speed monitor wiring diagram

### 13.6.3 Option C13

#### Temperature gauge switch wiring diagram

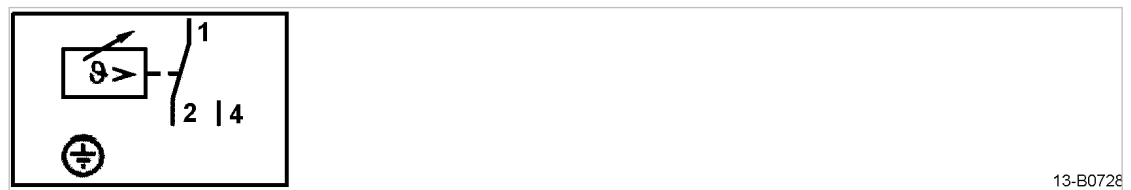


Fig. 38 Temperature gauge switch wiring diagram

### 13.6.4 Option C14 Pressure sensor connections

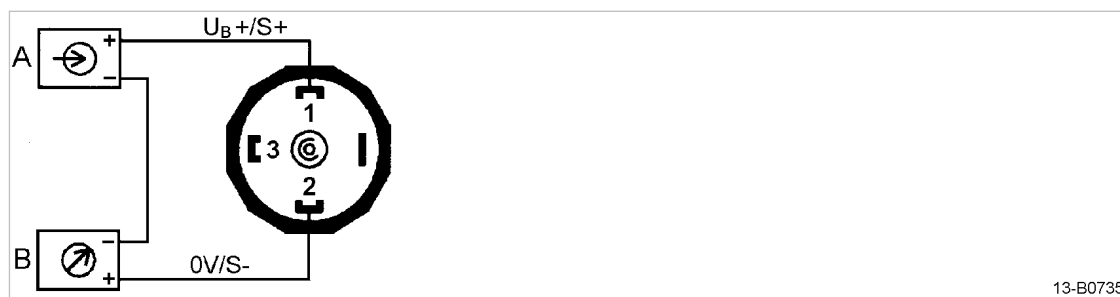


Fig. 39 Pressure sensor connections

- (A) Power supply
- (B) Evaluation/display

### 13.6.5 Option C19 Thermostat wiring diagram

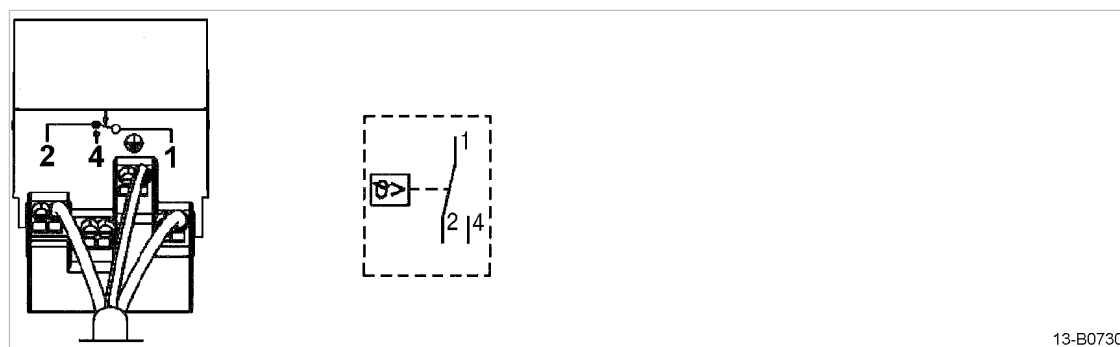
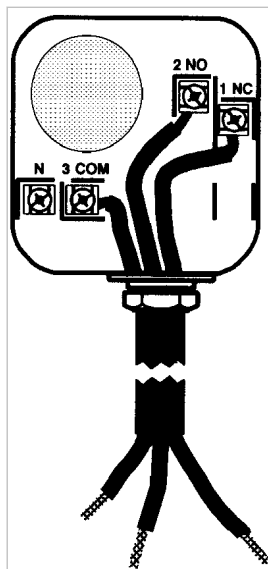


Fig. 40 Thermostat wiring diagram

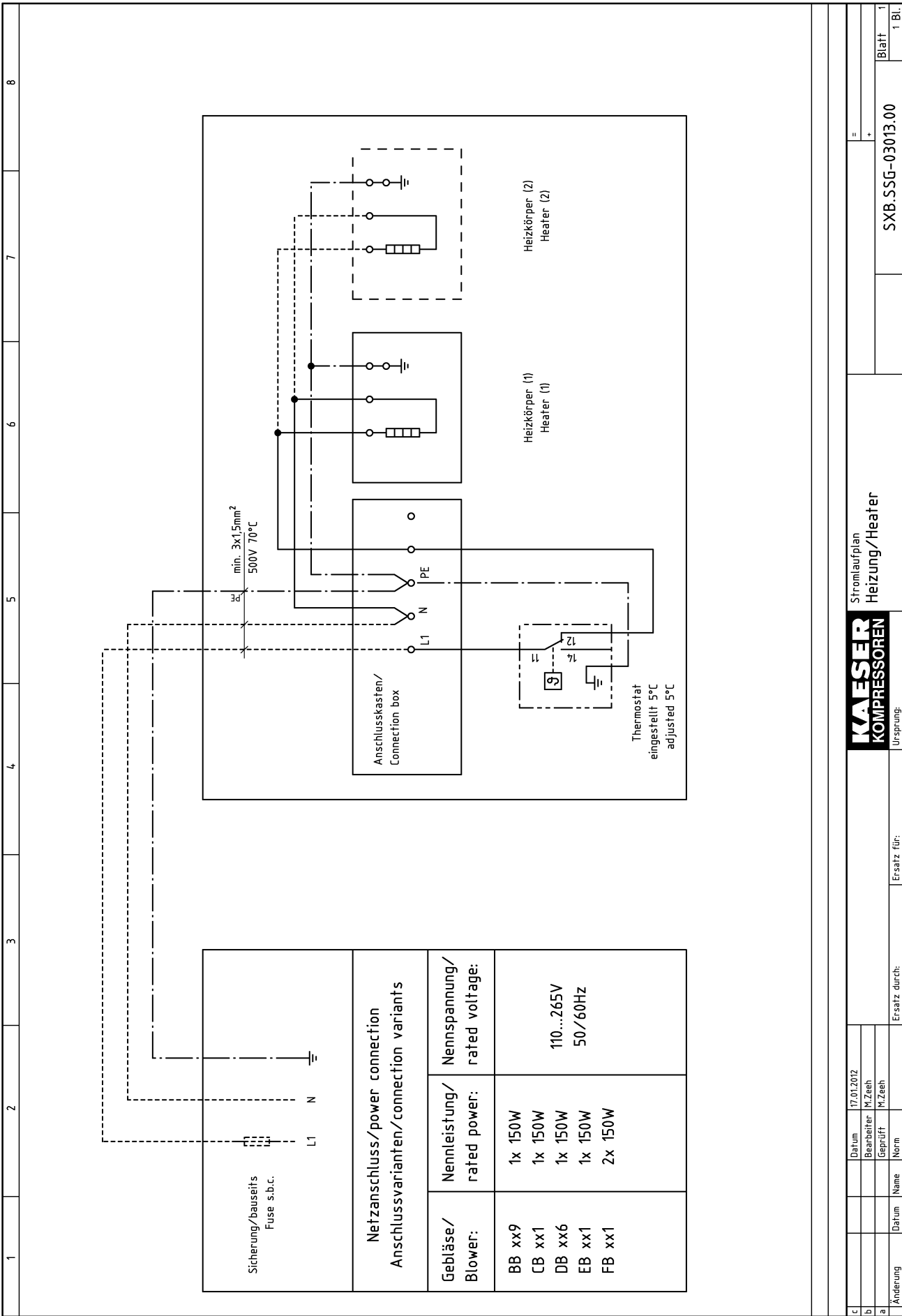
**13.6.6 Option F5****Filter pressure differential switch wiring diagram**

13-B0737

Fig. 41 Filter pressure differential switch wiring diagram

**13.6.7 Option H2****Auxiliary heater wiring diagram**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |                                     |   |                                  |   |                          |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------|---|----------------------------------|---|--------------------------|---|
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2 | 3                                   | 4 | 5                                | 6 | 7                        | 8 |
| <div style="border: 1px solid black; padding: 10px; margin: 10px;"> <p style="text-align: center;"><b>Schaltungsunterlagen</b><br/><b>Electrical diagrams</b></p> <p style="text-align: center;">Gebläse/Blower</p> <p style="text-align: center;">Heizung/Heater – 110...265V 50/60Hz</p> <p style="text-align: center;">TT/TN-Netz mit geerdetem Sternpunkt<br/>TT/TN power supply with common point grounding</p> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |   |                                     |   |                                  |   |                          |   |
| <p>Hersteller: KAESER KOMPRESSOREN GmbH<br/>Postfach 2143<br/>96410 Coburg</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                                     |   |                                  |   |                          |   |
| <p>Dieses Dokument beinhaltet einen Sammelplan für alle hier aufgeführten Anlagentypen, Netzspannungen und Frequenzen. Unter welchen tatsächlichen Spannungen, Frequenzen und Umgebungsbedingungen die jeweilige Anlage ausschließlich betrieben werden darf, ist dem Typenschild der Anlage sowie der beiliegenden Betriebsanleitung zu entnehmen.</p> <p>The document gives collective information on power supply voltages and frequencies for all machines. The voltage and frequency and local conditions under which any particular machine may be used are given on the nameplate of the machine and in the accompanying service manual.</p> <p>Die Schaltungsunterlagen bleiben unser ausschließliches Eigentum. Sie werden nur zu dem vereinbarten Zweck anvertraut. Kopien oder sonstige Vervielfältigungen einschließlich der Speicherung, Verarbeitung und Verbreitung unter Verwendung elektronischer Systeme dürfen nur zu dem vereinbarten Zweck angefertigt werden. Weder Originale noch Vervielfältigungen dürfen Dritten ausgehändigt oder in sonstiger Weise zugänglich gemacht werden.</p> <p>The drawings remain our exclusive property. They are entrusted only for the agreed purpose. Copies or any other reproductions, including storage, treatment and dissemination by use of electronic systems must not be made for any other than the agreed purpose. Neither originals nor reproductions must be forwarded or otherwise made accessible to third parties.</p> |   |                                     |   |                                  |   |                          |   |
| <p><b>KAESER KOMPRESSOREN</b><br/>Ursprung: SSS-00081</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   | <p>Deckblatt<br/>Heizung/Heater</p> |   | <p>= +<br/>SX.B.DSG-03013.00</p> |   | <p>Blatt 1<br/>1 Bl.</p> |   |



Änderung Datum Name

b Bearbeiter

a Geprüft

Ersatz durch: Ersatz für:

Datum 17.01.2012

M. Zeeh

M. Zeeh

Stromlaufplan  
Heizung/Heater

SXB.SSG-03013.00

Blatt 1  
1 Bl.

**13.6.8 Option H12**
**Extractor motor wiring plan (sound enclosure)**


KAESER installs fans supplied by various manufacturers. The manufacturer is indicated on the fan's nameplate.

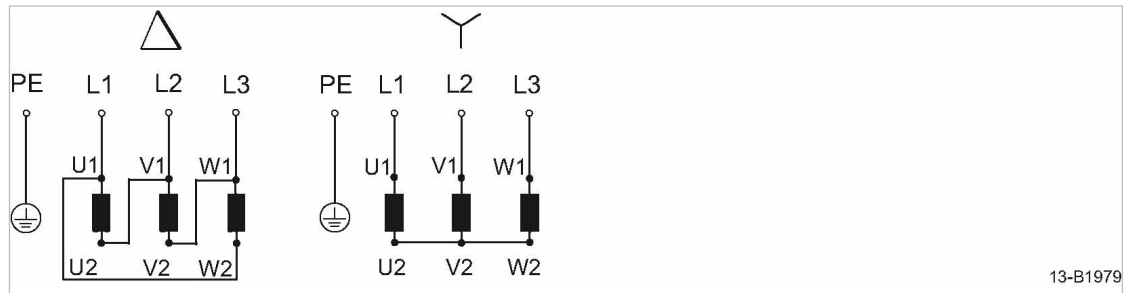
**13.6.8.1 Manufacturer EBM**
**Three-phase motor connection**


Fig. 42 Extractor motor star-delta connection EBM

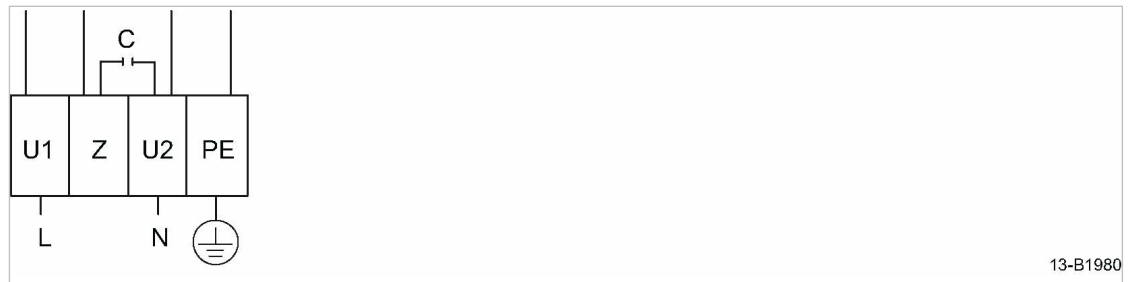
**Single-phase motor connection**


Fig. 43 Single-phase extractor motor diagram EBM

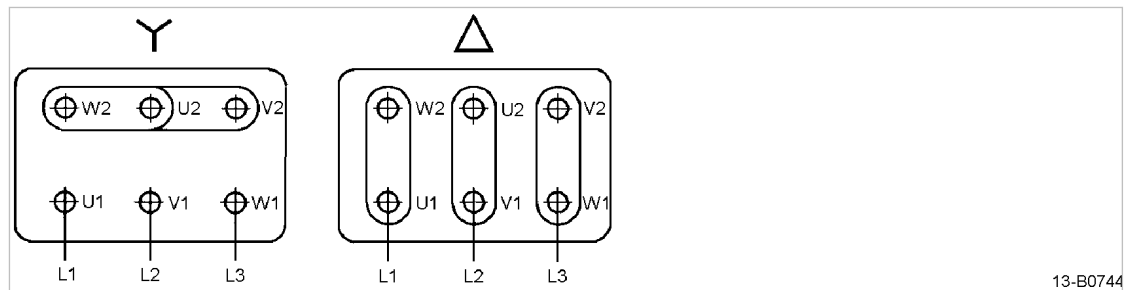
**13.6.8.2 Manufacturer SODECA**
**Three-phase motor connection**


Fig. 44 Extractor motor star-delta connection SODECA

Single-phase motor connection

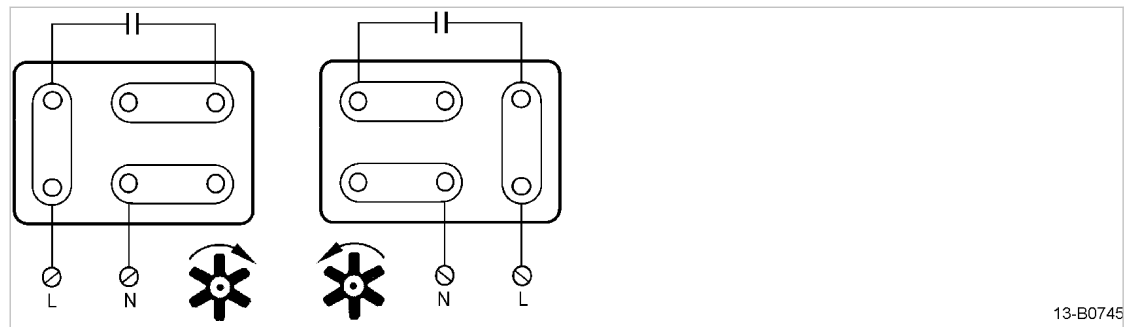


Fig. 45 Single-phase extractor motor diagram SODECA

## 13.7 Declaration concerning contamination



**Declaration of Contamination**  
concerning compressors, blowers, vacuum pumps and components

Repair and/or maintenance work will only be carried out on items for which a Declaration of Contamination form has been filled out and attached. **A completed Declaration is required for each item.** Any item not accompanied by a Declaration is liable to be returned untouched. Items that have been contaminated with microbiological, explosive or radioactive substances will only be accepted when accompanied by confirmation that they have been **fully decontaminated** according to regulation. This Declaration may only be filled out and signed by the authorized representative of the ordering party (sender of the item).

Sender/dept.: \_\_\_\_\_

Contact name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone / Fax: \_\_\_\_\_

Reason for sending the item: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(use rear side of form if necessary)

**Specification of the item:**

Model/type name: \_\_\_\_\_

Part no.: \_\_\_\_\_

Serial no.: \_\_\_\_\_

Oil used: \_\_\_\_\_

Accessories: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Condition of the item:**

|                                 | <b>yes</b>               | <b>no</b>                | <b>not known</b>         |
|---------------------------------|--------------------------|--------------------------|--------------------------|
| - has it been used?             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - emptied/vented?               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - all openings airtight closed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - cleaned / decontaminated?     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Cleaning substance used: \_\_\_\_\_

Cleaning method: \_\_\_\_\_

**Information on contaminants:**

- with what substances has the item been in contact?

|    | Trade name | Chemical name | Characteristics |
|----|------------|---------------|-----------------|
| a) |            |               |                 |
| b) |            |               |                 |
| c) |            |               |                 |
| d) |            |               |                 |

|                                                        | <b>yes</b>               | <b>no</b>                | <b>not known</b>         |
|--------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| - Are the substances listed above hazardous to health? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Are any hazardous substances given off by heating?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Which? \_\_\_\_\_

We declare that the information given in this declaration is true and complete and that the signatory is authorized and in a position to make this declaration. We are aware of our liability for any damages resulting from false or incomplete information given in this declaration and we engage to hold the contractor free of claims from third parties for compensation for damages resulting from such incomplete or false information.

Name of the authorized signatory (please print): \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Authorized signature

\_\_\_\_\_  
Sender's company seal:

Gera/QUM/V-190501 Kontaminierungserklärung Gebläse-2/28.09.2007-E

## **13.8 Customer-specific design data**

If the customer-specific data sheet is not available in the chosen language, a translation can be found here.

The identity sheet lists all design versions possible.

Specifications not relevant to your specific design are hidden when generating the design data.

| <b>KAESER KOMPRESSOREN</b> |                        | 1  |  | 2  |  | 3        |        | 1     |   |
|----------------------------|------------------------|----|--|----|--|----------|--------|-------|---|
| 4                          | :                      |    |  |    |  | 5        | :      |       |   |
| 6                          | :                      |    |  |    |  |          |        |       |   |
| 7                          | :                      | 8  |  | 17 |  | 18       | :      | 19    |   |
| 9                          | :                      | 10 |  |    |  |          |        | 20    | : |
| 11                         | :                      |    |  |    |  | 21       | :      | kg/m³ |   |
| 12                         | :                      |    |  |    |  | 22       | :      | mbar  |   |
| 13                         | :                      |    |  |    |  | 23       | :      | mbar  |   |
| 14                         | :                      |    |  |    |  | Torr     |        |       |   |
| 15                         | :                      |    |  |    |  | %        |        |       |   |
| 16                         | :                      |    |  |    |  | °C       |        |       |   |
| 17                         | :                      |    |  |    |  | m ü.N.N. |        |       |   |
| 24                         |                        |    |  |    |  |          |        |       |   |
| 25                         |                        |    |  |    |  |          |        |       |   |
| 26                         | :                      |    |  |    |  |          |        |       |   |
| 27                         | :                      |    |  |    |  |          |        |       |   |
| 28                         | :                      |    |  |    |  | 31       | ( Hz): | 1/min |   |
| 29                         | :                      |    |  |    |  | NW :     |        |       |   |
| 30                         | :                      |    |  |    |  |          |        |       |   |
| 32                         | :                      |    |  |    |  | 33       |        | 34    |   |
| 35                         | Δ p:                   |    |  |    |  | mbar     |        | mbar  |   |
| 36                         | Q <sub>f</sub>         |    |  |    |  | m³/min   |        | m³/h  |   |
| 37                         | Q <sub>1</sub> ( 38 ): |    |  |    |  | Nm³/min  |        | Nm³/h |   |
| 39                         |                        |    |  |    |  |          |        |       |   |
| 40                         | ***:                   |    |  |    |  | °C       |        | °C    |   |
| 41                         | *:                     |    |  |    |  | kW       |        | kW    |   |
| 42                         | *:                     |    |  |    |  | kW       |        | kW    |   |
| 43                         | *:                     |    |  |    |  | kW       |        | kW    |   |
| 44                         | **:                    |    |  |    |  | dB(A)    |        | dB(A) |   |
| 45                         | **:                    |    |  |    |  | dB(A)    |        | dB(A) |   |
| 46                         | **:                    |    |  |    |  | dB(A)    |        | dB(A) |   |
| 47                         | **:                    |    |  |    |  | dB(A)    |        | dB(A) |   |
| 48                         |                        |    |  |    |  |          |        |       |   |
| 49                         | ( )                    |    |  |    |  | mm       |        | mm    |   |
| 50                         |                        |    |  |    |  | kg       |        | kg    |   |
| 51                         |                        |    |  |    |  |          |        |       |   |
| 52                         | *                      |    |  |    |  |          |        |       |   |
| 53                         | **                     |    |  |    |  |          |        |       |   |
| 54                         | ***                    |    |  |    |  |          |        |       |   |

13-B0793

Fig. 46 Identification sheet - standard

**Legend**

|    |                                                                                       |
|----|---------------------------------------------------------------------------------------|
| 1  | OMEGA/OMEGA PLUS ROTARY BLOWER<br>CHOICE OF VERSIONS                                  |
| 2  | Date                                                                                  |
| 3  | Page                                                                                  |
| 4  | Project                                                                               |
| 5  | Person in charge                                                                      |
| 6  | Specification                                                                         |
| 7  | Operating mode                                                                        |
| 8  | Pressure                                                                              |
| 9  | Type of machine                                                                       |
| 10 | Compact machine                                                                       |
| 11 | Inlet temperature                                                                     |
| 12 | Inlet pressure                                                                        |
| 13 | Humidity                                                                              |
| 14 | Ambient conditions                                                                    |
| 15 | Temperature                                                                           |
| 16 | Height                                                                                |
| 17 | User-defined                                                                          |
| 18 | Conveyed medium                                                                       |
| 19 | Dry air<br>Humid air<br>Nitrogen                                                      |
| 20 | Kappa                                                                                 |
| 21 | Density in standard state                                                             |
| 22 | Pressure differential                                                                 |
| 23 | Final pressure                                                                        |
| 24 | —                                                                                     |
| 25 | Note! If the ambient temperature is above 40 °C, please consult KAESER.               |
| 26 | Technical Specification                                                               |
| 27 | Model                                                                                 |
| 28 | Engine                                                                                |
| 29 | Power supply                                                                          |
| 30 | Calculation with more powerful motor<br>Calculation with motor 2-steps more powerful. |
| 31 | Block speed                                                                           |
| 32 | Operating data                                                                        |
| 33 | Maximum loading                                                                       |
| 34 | Design condition                                                                      |
| 35 | Pressure differential                                                                 |

|    |                                                                                                                                      |
|----|--------------------------------------------------------------------------------------------------------------------------------------|
| 36 | Delivery                                                                                                                             |
| 37 | Delivery                                                                                                                             |
| 38 | Standard condition                                                                                                                   |
| 39 | For 0 °C and 1013 mbar                                                                                                               |
| 40 | Discharge temperature                                                                                                                |
| 41 | Effective motor power                                                                                                                |
| 42 | Motor shaft power                                                                                                                    |
| 43 | Drive power at the block                                                                                                             |
| 44 | Without sound enclosure                                                                                                              |
| 45 | With sound enclosure                                                                                                                 |
| 46 | Sound pressure level                                                                                                                 |
| 47 | Sound power level                                                                                                                    |
| 48 | Dimensions (dependent on motor manufacturer)                                                                                         |
| 49 | (LxDxH)                                                                                                                              |
| 50 | Weight                                                                                                                               |
| 51 | Ambient conditions are taken into account when calculating the motor power.                                                          |
| 52 | Performance data according to ISO 1217, part 1, annex C                                                                              |
| 53 | Measured according to DIN EN ISO 2151, specification $\pm 3$ dB(A), with sound insulated pipe-work and/or fitted discharge silencer. |
| 54 | Recommended theoretical arithmetic value                                                                                             |

Tab. 61 Legend for the identification sheet (standard)