# Operating manual

## Reciprocating compressor system

KCCD/KCD

9_6984 31 E




Manufacturer:

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# Contents

**1 About this document**
1.1 Warning notices ..... 6
1.2 Material damage warnings ..... 6
1.3 Symbols and pictograms ..... 7
1.4 Related documents and documentation ..... 7
1.5 Copyright ..... 8
1.6 Warranty ..... 8
1.7 Protected brands and trademarks ..... 8
1.8 Worldwide contact details ..... 8

**2 Technical data**
2.1 Nameplate ..... 9
2.2 Options ..... 9
2.3 Weight ..... 10
2.4 Airend ..... 10
2.5 Ambient conditions ..... 11
2.6 Pressure switch setting ..... 11
2.7 Pressure ..... 12
2.8 Sound emission ..... 12
2.9 Motor and power ..... 12
2.9.1 Mains frequency 50 Hz ..... 13
2.9.2 Mains frequency 60 Hz ..... 13
2.10 Compressor oil ..... 14
2.10.1 Compressor oil specification ..... 14
2.10.2 Compressor oil fill volume ..... 14
2.11 Electrical connection data ..... 15
2.11.1 Machine ..... 15
2.11.2 C5 Oil level monitoring ..... 18
2.11.3 K6 Condensate drain floating contacts ..... 19
2.12 Mains conditions ..... 19
2.12.1 Mains conditions at 400 V / 3 / 50 Hz ..... 19
2.13 Machine duty cycle ..... 20
2.14 Tightening torques for screws and nuts ..... 21

**3 Safety and responsibility**
3.1 Intended use ..... 22
3.2 Improper use ..... 22
3.3 Dangers ..... 22
3.4 Danger areas ..... 25
3.5 Safety devices ..... 26
3.6 Safety and information signs ..... 26
3.7 Operator responsibilities ..... 28
3.7.1 Determining suitable personnel ..... 28
3.7.2 Organisational measures ..... 28
3.7.3 Complying with inspection intervals ..... 29
3.8 Emergencies ..... 29
3.8.1 Correct conduct in the event of fire ..... 29
3.8.2 First aid measures following contact with compressor oil ..... 29
3.9 Environmental protection ..... 30

**4 Design and function**
4.1 Machine layout ..... 31
4.2 Machine operation ..... 32
4.3 Operating points and control modes ..... 32
4.3.1 Machine operating points ..... 32
4.3.2 Control modes ..... 32

4.3.3 C23 External controller ... 32
4.4 Options ... 33
4.4.1 C5 Oil level monitoring ... 33
4.4.2 C8 Operating hours counter ... 33
4.4.3 C9 Pressure switch: Low pressure warning message ... 34
4.4.4 C23 Motor starter ... 34
4.4.5 H9 Air filter: Paper filter ... 34
4.4.6 H10 Air filter: Corrosion-resistant paper filter ... 34
4.4.7 H12 Sound enclosure ... 35
4.4.8 H29 Bolt-down rubber buffers ... 35
4.4.9 K5 / K6 ECO-DRAIN condensate drain ... 35
4.4.10 P4 Filter pressure reducer ... 36

**5 Transport and storage**
5.1 Transport damage ... 38
5.2 Transportation ... 38
5.2.1 Transporting the machine by forklift ... 38
5.2.2 Transporting the machine with a hoist ... 39
5.3 Packaging ... 39
5.4 Storage ... 40

**6 Installation and operating conditions**
6.1 Installation conditions ... 41
6.2 Machine room ventilation ... 42
6.3 Power supply ... 42
6.3.1 Three-phase current ... 43
6.4 Connection to a compressed air network ... 43

**7 Assembly and installation**
7.1 Installing the rubber buffers ... 44
7.2 Installing the air filter ... 44
7.3 Connecting the machine to a compressed air network ... 45
7.4 Connecting the machine to a power supply ... 46
7.4.1 Connecting KCD 840-350, 230 V / 60 Hz to a power supply network ... 46
7.4.2 C23 Motor starter ... 47
7.5 Options ... 47
7.5.1 C5 Oil level monitoring ... 47
7.5.2 H29 Anchoring the machine ... 49
7.5.3 K5 / K6 ECO-DRAIN condensate drain ... 49
7.5.4 K6 Connecting floating contacts to the condensate drain ... 52

**8 Commissioning**
8.1 To be observed before each commissioning ... 53
8.2 Checking installation and operating conditions ... 53
8.3 Switching the machine on for the first time ... 54
8.4 Checking the direction of rotation ... 54
8.4.1 Automatic phase sequence detection ... 55
8.4.2 Determining the phase sequence direction ... 55
8.5 Motor protection ... 56
8.5.1 Setting the motor contactor (Direct online start) ... 56
8.5.2 Setting the motor contactor (Star-delta start) ... 56
8.6 Network pressure ... 57
8.6.1 Setting the network pressure MDR 3 ... 57
8.7 P4 Setting the filter regulator ... 58

**9 Operation**
9.1 Switching on and off ... 60
9.1.1 Switching on ... 60
9.1.2 Switching off ... 60

**10 Fault recognition and rectification**

10.1 Basic information ..... 61
10.2 Faults and rectifying measures ..... 61

**11 Maintenance**
11.1 Maintenance schedule ..... 64
11.1.1 Planning maintenance work ..... 64
11.1.2 Compressor oil change intervals ..... 66
11.2 Ordering spare parts and operating fluids/materials ..... 67
11.3 Compressed air cooler or fan guard maintenance ..... 67
11.4 Air filter maintenance ..... 68
11.4.1 Cleaning or replacing the air filter (wire mesh) ..... 68
11.4.2 H9 Cleaning or replacing the air filter ..... 69
11.4.3 H10 Cleaning or replacing the air filter ..... 69
11.5 Compressor motor maintenance ..... 70
11.6 Checking the compressor oil level ..... 70
11.7 Replenishing the compressor oil ..... 71
11.8 Changing the compressor oil ..... 72
11.9 Safety valve ..... 73
11.9.1 Testing the safety valve on the cylinder head / collecting pipe / check valve ..... 73
11.9.2 Testing the safety valve on the air receiver ..... 74
11.9.3 Testing the safety valve actuating pressure ..... 75
11.10 Air receiver maintenance ..... 75
11.10.1 Checking the air receiver ..... 75
11.10.2 Draining condensate from the air receiver ..... 75
11.11 K5 / K6 ECO-DRAIN condensate drain ..... 75
11.11.1 K5 / K6 Testing the condensate drain ..... 76
11.11.2 K5 / K6 Replacing the service unit ..... 76
11.12 P4 Servicing the filter pressure reducer ..... 78
11.12.1 P4 Draining condensate ..... 78
11.12.2 P4 Cleaning or replacing the filter element ..... 78
11.13 Venting the machine (depressurising) ..... 79
11.13.1 Venting via the condensate outlet ..... 80
11.13.2 Venting via the safety valve ..... 80
11.14 Cylinder head and valves ..... 80
11.15 Maintenance log ..... 81

**12 Decommissioning, dismantling and disposal**
12.1 Decommissioning and dismantling the machine ..... 82
12.2 Disposal ..... 82

**13 Documents and drawings**
13.1 Flow diagram ..... 83
13.2 Wiring diagram ..... 88
13.3 Dimensions and connection sizes ..... 91

**14 Glossary**

**Index** ..... 148

# 1 About this document



Read the operating manual carefully and ensure you are familiar with the contents before using machine.

The operating manual is an integral part of the product and describes the machine at the point of initial delivery following completion. Keep the operating manual throughout the entire lifetime of the machine and pass it on to any subsequent owner or user.

For reasons of improved readability, the simultaneous use of the male, female and plural language forms has been dispensed with. All personal designations apply equally to all genders.

Supplement the operating manual with any amendments that may be provided by KAESER. Provide the data from the nameplate wherever you are asked to do so. This simplifies orientation for every user.

The illustrations in this operating manual are basic representations, which may differ from the actual in minor details.

Throughout the remainder of this operating manual, the motor starter is referred to as the external controller.

C23 Throughout the remainder of this operating manual, the motor starter is referred to either by that designation or as the external controller.

## 1.1 Warning notices

Warning notices warn of hazards that can lead to personal injury and provide instructions on how to avoid damage. Warning notices precede actions associated with hazards and also apply to sub-chapters if they precede the chapter.

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

| Signal word | Consequence if the hazard is not avoided |
|---|---|
| DANGER | Hazard with a high level of risk that will result in death or serious injury if not avoided |
| WARNING | Hazard with a medium level of risk that may lead to death or serious injury if not avoided |
| CAUTION | Hazard with a low level of risk that may lead to minor or moderate injury if not avoided |

Tab. 1 Signal words and their consequences

Example:



**⚠ WARNING**

**Description of the hazard, cause and consequences**

► Instructions on how to avoid the hazard

## 1.2 Material damage warnings

Material damage warnings warn of situations that can lead to material/property damage and provide instructions on how to avoid damage. Material damage warnings precede actions associated with risks and also apply to sub-chapters if they precede the chapter.

Material damage warnings are identified by their signal word NOTICE.

Example:

**NOTICE**

**Description of the hazard, cause and consequences**

► Instructions on how to avoid the damage

## 1.3 Symbols and pictograms

Symbols and pictograms in this document draw your attention to information that requires special attention. Follow all instructions provided to prevent damage.

| Representation | Meaning | Representation | Meaning |
|---|---|---|---|
| A1 | Section or information relating to an optional equipment feature | Softkey | Software-dependent button on display for triggering an operating function |
| ► | This symbol indicates an individual action requirement | 1. ...<br>2. ...<br>3. ... | A series of action requirements are numbered consecutively. Follow the sequence accordingly. |
| «Operating element» | Visualisation of an operating element, e.g. a key | *Display element* | Visualisation of a display element, e.g. a control indicator |
|  | Safety-related condition that must be fulfilled in order to be able to perform the subsequent activity |  | Prerequisite that must be met in order to be able to perform the subsequent activity |
|  | Useful information or information that needs to be observed |  | Reference to another source of information |
|  | Materials and tools |  | Spare parts |
|  | Tool |  | Information or action relating to environmental protection |
|  | Assistance relating to an activity |  | Assistance relating to an individual action step |
|  | Result of an implemented activity |  | Result of an individual action step |

Tab. 2 Symbols and pictograms

## 1.4 Related documents and documentation

In addition to this operating manual, further documents and documentation are applicable to this machine and must be observed:

- Certificate of acceptance including pressure vessel operating manual
- Declaration of conformity in accordance with the applicable guideline or directive

Check that all documentation is complete and ensure that related documents are retained together with the operating manual. Your authorised service partner can assist you should you wish to reorder any documents. To do so, you must provide the material number and serial number for the machine as found on the nameplate.

## 1.5 Copyright

This manual is copyright protected. Should you have any queries relating to usage and duplication of this documentation, please contact KAESER. KAESER will be glad to provide advice regarding the appropriate use of the information.

## 1.6 Warranty

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

The provision of warranty by KAESER is conditional upon the machine being used only for the purposes for which it is intended. As the operator, you are responsible for ensuring that the machine is used only for the purposes for which it is intended in the context of your specific application.

## 1.7 Protected brands and trademarks

All brands and trademarks mentioned in this operating manual and (where applicable) protected by third parties, are subject without restriction to the stipulations of the applicable trademark law, as well as the ownership rights of the respective registered owner. The mention of a trademark alone does not imply that the trademark in question is not protected by the rights of a third party.

## 1.8 Worldwide contact details

To contact KAESER, use the link provided or scan the QR code: https://www.kaeser.com/addresses/

# 2 Technical data

The technical specifications reflect the nominal values of a new machine. The installed equipment and maintenance condition of the machine, as well as the ambient and operating conditions, can influence these values.

## 2.1 Nameplate

Important technical data can be found on the machine nameplate. The nameplate is clearly visible on the outside of the machine.

Complete the nameplate data in the table for reference:

| Characteristic | Value |
|---|---|
| Reciprocating compressor | |
| Material No. | |
| Serial no. | |
| Ambient temperature [°C] | 5 – 35 |
| Rated power [kW] | |
| Compressor block shaft power [kW] | |
| Maximum working pressure PS [bar] | |
| Rated motor speed [$min^{-1}$] | |
| Flow rate [l/min] (bei … [bar]) | |
| Phases | 3 |
| Frequency [Hz] | |
| Voltage [V] | |
| Full-load current [A] | |
| Wiring diagram | SKK-03015 |
| Year/month of manufacture (YYYY/MM) | |

Tab. 3 Nameplate

## 2.2 Options



This operating manual lists the options possible for the machine. Some options are only available on certain machine types.

The options for this machine are displayed on the nameplate.

Fill in the options in the table for reference:

| Option | Code | Installed?[1)] |
|---|---|---|
| Oil level monitoring | C5 | |
| Operating hours counter | C8 | |
| Warning message (pressure low) | C9 | |

1) Installed: ✓

| Option | Code | Installed?[1)] |
|---|---|---|
| START CONTROL BASIC DUO motor starter | C23 | |
| Air filter: Paper filter | H9 | |
| Air filter: Corrosion-resistant paper filter | H10 | |
| Sound enclosure | H12 | |
| Bolt-down rubber buffers | H29 | |
| ECO-DRAIN condensate drain | K5 | |
| ECO-DRAIN condensate drain<br>With floating contacts | K6 | |
| Filter pressure reducer | P4 | |

1) Installed: ✓

Tab. 4 Options

## 2.3 Weight

The values indicated are maximum values. The actual weight of a machine depends on the equipment individually specified.

| Compressor type | Air receiver size [l] | Weight [kg] | Weight with sound enclosure [kg] |
|---|---|---|---|
| **KCCD 130-100** | 90 | 90 | 220 |
| **KCCD 130-350** | 350 | 155 | 265 |
| **KCD 350-100** | 90 | 105 | 230 |
| **KCD 350-350** | 350 | 230 | 265 |
| **KCD 450-100** | 90 | 105 | 240 |
| **KCD 450-350** | 350 | 190 | 260 |
| **KCD 630-350** | 350 | 230 | 400 |
| **KCD 840-350** | 350 | 230 | 400 |

Tab. 5 Weight

## 2.4 Airend

Flow rate as per ISO 1217:2009 (Annexe C) is the continuously delivered volume relative to intake conditions.

| Compressor type | Airend | Flow rate [l/min] (at … [bar]) | Number of cylinders |
|---|---|---|---|
| **KCCD 130-100** | KCC 130 | 2x 80 (6) | 1 |
| **KCCD 130-350** | KCC 130 | 2x 80 (6) | 1 |
| **KCD 350-100** | KC 350 | 2x 195 (6) | 1 |
| **KCD 350-350** | KC 350 | 2x 195 (6) | 1 |
| **KCD 450-100** | KC 450 | 2x 280 (6) | 2 |

| Compressor type | Airend | Flow rate [l/min] (at … [bar]) | Number of cylinders |
|---|---|---|---|
| **KCD 450-350** | KC 450 | 2x 280 (6) | 2 |
| **KCD 630-350** | KC 630 | 2x 410 (6) | 2 |
| **KCD 840-350** | KC 840 | 2x 590 (6) | 2 |

Tab. 6 Compressor block data

## 2.5 Ambient conditions

| Characteristic | Value |
|---|---|
| Maximum installation elevation above sea level[1] [m] | 1000 |
| Permissible ambient temperature [°C] | 5 – 35 |
| Maximum relative humidity[2] [%] | 5 ... 95 |
| Maximum absolute humidity[2] [g/m³] | 25 |
| Condensation | Not permissible |

1) Higher installation locations only possible following consultation with the manufacturer

2) Values for high relative humidity are limited by the values for maximum absolute humidity

Tab. 7 Ambient conditions

## 2.6 Pressure switch setting

The indicated pressures are factory-set.
Customer-specific settings may deviate.

| Characteristic | Pressure switch value | |
|---|---|---|
| | Base load | Peak load |
| Cut-in pressure [bar] | 6.8 | 7.5 |
| Cut-out pressure [bar] | 8,3 | 9.0 |
| Minimum setting range[1] [bar] | 3/4 | |
| Maximum permissible pressure differential at 20 %[2] [bar] | 2,2 | |
| Air receiver pressure [bar] | 11 | |

1) Minimum setting range: Cut-in / cut-out pressure

2) The fatigue strength of the air receiver is rated for a pressure fluctuation range of 20 %.

Tab. 8 Pressure switch setting



Further information regarding pressure adjustment to individual operating conditions can be found in chapter 8.6 Network pressure.

## 2.7 Pressure

Maximum machine working pressure: 10 bar

| Compressor type | Safety valve actuating pressure [bar] | |
|---|---|---|
| | On air receiver | on cylinder head/collecting pipe/check valve |
| **KCCD 130-100** | 11 | — |
| **KCCD 130-350** | 11 | — |
| **KCD 350-100** | 11 | 12,5[1)] |
| **KCD 350-350** | 11 | 12,5[1)] |
| **KCD 450-100** | 11 | 12,5[2)] |
| **KCD 450-350** | 11 | 12,5[2)] |
| **KCD 630-350** | 11 | 12.5[3)] |
| **KCD 840-350** | 11 | 12.5[3)] |

1) On check valve (machine-dependent)
2) on cylinder head (machine-dependent)
3) On collecting pipe

Tab. 9 Pressure specifications

## 2.8 Sound emission

Sound pressure level as per ISO 2151 and basic standard ISO 9614-2; operation at maximum working pressure; uncertainty: ±3 dB(A):

| Compressor type | Sound pressure level [dB(A)] | Sound pressure level with sound enclosure [dB(A)] |
|---|---|---|
| **KCCD 130-100** | 69 | 62 |
| **KCCD 130-350** | 69 | 62 |
| **KCD 350-100** | 75 | 66 |
| **KCD 350-350** | 73 | 66 |
| **KCD 450-100** | 76 | 67 |
| **KCD 450-350** | 76 | 67 |
| **KCD 630-350** | 82 | 74 |
| **KCD 840-350** | 83 | 78 |

Tab. 10 Sound emission [dB(A)]

## 2.9 Motor and power

The protection class for the motor is indicated on the motor nameplate.

Motor voltage tolerances as per DIN EN 60034-1:2015-02.

## 2.9.1 Mains frequency 50 Hz

**Power and speed, mains frequency 50 Hz**

| Compressor type | Compressor block shaft power[1] [kW] | Rated power [kW] | Rated motor speed [min$^{-1}$] | Maximum permissible no. of starts [1/h] |
|---|---|---|---|---|
| **KCCD 130-100** | 0.75 | 0.75 | 1360 | 20 |
| **KCCD 130-350** | 0.75 | 0.75 | 1360 | 20 |
| **KCD 350-100** | 1,7 | 1,7 | 1380 | 20 |
| **KCD 350-350** | 1,7 | 1,7 | 1380 | 20 |
| **KCD 450-100** | 2,4 | 2,4 | 1360 | 20 |
| **KCD 450-350** | 2,4 | 2,4 | 1360 | 20 |
| **KCD 630-350** | 3.0 | 4,1 | 1420 | 20 |
| **KCD 840-350** | 4.0 | 4,9 | 1410 | 20 |

1) Output shaft power

Tab. 11 Power and speed, mains frequency 50 Hz

## 2.9.2 Mains frequency 60 Hz

**Power and speed with 60 Hz mains frequency**

| Compressor type | Compressor block shaft power[1] [kW] | Rated power [kW] | Rated motor speed [min$^{-1}$] | Maximum permissible no. of starts [1/h] |
|---|---|---|---|---|
| **KCCD 130-100** | 0.75 | 0.75 | 1630 | 20 |
| **KCCD 130-350** | 0.75 | 0.75 | 1630 | 20 |
| **KCD 350-100** | 1,7 | 1,7 | 1690 | 20 |
| **KCD 350-350** | 1,7 | 1,7 | 1690 | 20 |
| **KCD 450-100** | 2,4 | 2,4 | 1680 | 20 |
| **KCD 450-350** | 2,4 | 2,4 | 1680 | 20 |
| **KCD 630-350** | 3.0 | 4.8 | 1740 | 20 |
| **KCD 840-350** | 4,0 | 5.9 | 1730 | 20 |

1) Output shaft power

Tab. 12 Power and speed, mains frequency 60 Hz

# 2.10 Compressor oil

## 2.10.1 Compressor oil specification

The type of compressor oil used for the initial fill at the factory is indicated on the compressor block. If you use a different oil type, enter the new details there immediately.

**Synthetic compressor oils for general applications**

| | KAESER FLUID PISTON S-68 / SAE 5 W30 | KAESER FLUID PISTON S-150 | VDL 150 |
|---|---|---|---|
| Description | Compressor oil based on synthesis technology | Synthetic compressor oil | Synthetic compressor oil |
| Application area | Compressor oil for all applications except the processing of food products. | Compressor oil for all applications except the processing of food products. | Compressor oil for all applications except the processing of food products. May contain traces of silicone. |
| Viscosity class[1)] | ISO VG 68 | ISO VG 150 | ISO VG 150 |

1) ISO 3448:1992

Tab. 13 Synthetic compressor oils for general applications

**Compressor oils for food-processing applications**

| | KAESER FLUID PISTON FG-220 | FGP |
|---|---|---|
| Description | Synthetic compressor oil | Synthetic compressor oil |
| Application area | Compressor oil for machines that require a lubricant approved in accordance with NSF H1 | Compressor oil for machines that require a lubricant approved in accordance with NSF H1 |
| Approval | NSF H1 | NSF H1 |
| Viscosity class[1)] | ISO VG 220 | ISO VG 150 |

1) ISO 3448:1992

Tab. 14 Compressor oils for food-processing applications

## 2.10.2 Compressor oil fill volume

| Compressor type | Total fill volume [l] | Refill volume [l] (minimum–maximum) |
|---|---|---|
| **KCCD 130-100** | 2x 0.13 | 2x 0.05 |
| **KCCD 130-350** | 2x 0.13 | 2x 0.05 |
| **KCD 350-100** | 2x 0.2 | 2x 0.1 |
| **KCD 350-350** | 2x 0.2 | 2x 0.1 |

| Compressor type | Total fill volume [l] | Refill volume [l] (minimum–maximum) |
|---|---|---|
| **KCD 450-100** | 2x 1.1 | 2x 0.25 |
| **KCD 450-350** | 2x 1.1 | 2x 0.25 |
| **KCD 630-350** | 2x 1.4 | 2x 0.22 |
| **KCD 840-350** | 2x 1.4 | 2x 0.22 |

Tab. 15 Compressor oil fill volume

# 2.11 Electrical connection data

## 2.11.1 Machine

Fuses (operating class gG) or circuit breakers (tripping characteristic C) and supply cable cross sections are designed in accordance with DIN VDE 0100 Part 430 (IEC 60364-4-43) and DIN VDE 0298-4:2023-06 (IEC 60364-5-52) under the following conditions:

- Multicore copper conductors with an operating temperature of up to 70 °C
- Max. cable length (230 V): Fuse (gG) 30 m / circuit breaker (C) 20 m
- Max. cable length (from 380 V): Fuse (gG) 50 m / circuit breaker (C) 30 m
- For an ambient temperature of 30 °C
- Installation type C: Without cable contact
- Current-carrying capacity of cables: Table 3, column 11 (DIN VDE 0298-4:2023-06)
- Cable bundling: Table 22 (DIN VDE 0298-4:2023-06)
  - Single layer on wall or floor
  - Spacing ≥ Outside diameter

For deviating operating conditions, check and determine the supply cable cross sections in accordance with national regulations or the stipulations of the local energy provider.

Deviating installation conditions include, for example:

- Higher ambient temperature
- Different cable installation method
- Different cable bundling
- Longer cable length

If the machine is supplied with a mains cable and connector, the fuse protection may correspond to the nominal current of the connector system.

### 2.11.1.1 Mains frequency 50 Hz

**Rated voltage 230 V / 3 / 50 Hz**

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCCD 130-100** | 2x 3.5 | 2x 6 | 2x (4 x 1.5) |
| **KCCD 130-350** | 2x 3.5 | 2x 6 | 2x (4 x 1.5) |
| **KCD 350-100** | 2x 6.9 | 2x 10 | 2x (4 x 1.5) |
| **KCD 350-350** | 2x 6.9 | 2x 10 | 2x (4 x 1.5) |
| **KCD 450-100** | 2x 9.9 | 2x 16 | 2x (4 x 2.5) |
| **KCD 450-350** | 2x 9.9 | 2x 16 | 2x (4 x 2.5) |

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCD 630-350** | 2x 11.8 | 2x 25 | 2x (4 x 4) |
| **KCD 840-350** | 2x 17.3 | 2x 35 | 2x (4 x 4) |

Tab. 16 Connection data 230 V / 3 / 50 Hz

**Rated voltage 400 V / 3 / 50 Hz**

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCCD 130-100** | 2x 2.0 | 2x 4 | 2x (4 x 1.5) |
| **KCCD 130-350** | 2x 2.0 | 2x 4 | 2x (4 x 1.5) |
| **KCD 350-100** | 2x 4.0 | 2x 10 | 2x (4 x 1.5) |
| **KCD 350-350** | 2x 4.0 | 2x 10 | 2x (4 x 1.5) |
| **KCD 450-100** | 2x 5.7 | 2x 10 | 2x (4 x 1.5) |
| **KCD 450-350** | 2x 5.7 | 2x 10 | 2x (4 x 1.5) |
| **KCD 630-350** | 2x 6.8 | 2x 16 | 2x (4 x 2.5) |
| **KCD 840-350** | 2x 10.0 | 2x 20 | 2x (4 x 2.5) |

Tab. 17 Connection data 400 V / 3 / 50 Hz

**Rated voltage 500 V / 3 / 50 Hz**

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCCD 130-100** | — | — | — |
| **KCCD 130-350** | — | — | — |
| **KCD 350-100** | 2x 3.2 | 2x 10 | 2x (4 x 1.5) |
| **KCD 350-350** | 2x 3.2 | 2x 10 | 2x (4 x 1.5) |
| **KCD 450-100** | 2x 4.4 | 2x 10 | 2x (4 x 1.5) |
| **KCD 450-350** | 2x 4.4 | 2x 10 | 2x (4 x 1.5) |
| **KCD 630-350** | 2x 5.2 | 2x 10 | 2x (4 x 1.5) |
| **KCD 840-350** | 2x 8.0 | 2x 16 | 2x (4 x 2.5) |

Tab. 18 Connection data 500 V / 3 / 50 Hz

**Rated voltage 690 V / 3 / 50 Hz**

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCCD 130-100** | — | — | — |
| **KCCD 130-350** | — | — | — |
| **KCD 350-100** | — | — | — |
| **KCD 350-350** | — | — | — |
| **KCD 450-100** | 2x 3.3 | 2x 10 | 2x (4 x 1.5) |
| **KCD 450-350** | 2x 3.3 | 2x 10 | 2x (4 x 1.5) |
| **KCD 630-350** | 2x 3.9 | 2x 10 | 2x (4 x 1.5) |

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCD 840-350** | 2x 5.8 | 2x 10 | 2x (4 x 1.5) |

Tab. 19 Connection data 690 V / 3 / 50 Hz

### 2.11.1.2 Mains frequency 60 Hz

**Rated voltage 230 V / 3 / 60 Hz**

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCCD 130-100** | 2x 3.5 | 2x 6 | 2x (4 x 1.5) |
| **KCCD 130-350** | 2x 3.5 | 2x 6 | 2x (4 x 1.5) |
| **KCD 350-100** | 2x 6.9 | 2x 16 | 2x (4 x 2.5) |
| **KCD 350-350** | 2x 6.9 | 2x 16 | 2x (4 x 2.5) |
| **KCD 450-100** | 2x 10.0 | 2x 20 | 2x (4 x 2.5) |
| **KCD 450-350** | 2x 10.0 | 2x 20 | 2x (4 x 2.5) |
| **KCD 630-350** | 2x 10.9 | 2x 20 | 2x (4 x 2.5) |
| **KCD 840-350** | 2x 17.4 | 2x 35 | 2x (4 x 6)[1)] |

1) For connecting the machine to a power supply network, see chapter 7.4.1 Connecting KCD 840-350, 230 V / 60 Hz to a power supply network

Tab. 20 Connection data 230 V / 3 / 60 Hz

**Rated voltage 380 V / 3 / 60 Hz**

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCCD 130-100** | — | — | — |
| **KCCD 130-350** | — | — | — |
| **KCD 350-100** | 2x 4.2 | 2x 10 | 2x (4 x 1.5) |
| **KCD 350-350** | 2x 4.2 | 2x 10 | 2x (4 x 1.5) |
| **KCD 450-100** | 2x 6.1 | 2x 16 | 2x (4 x 2.5) |
| **KCD 450-350** | 2x 6.1 | 2x 16 | 2x (4 x 2.5) |
| **KCD 630-350** | 2x 7.1 | 2x 16 | 2x (4 x 2.5) |
| **KCD 840-350** | 10.5 | 2x 20 | 2x (4 x 2.5) |

Tab. 21 Connection data 380 V / 3 / 60 Hz

**Rated voltage 440 V / 3 / 60 Hz**

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCCD 130-100** | — | — | — |
| **KCCD 130-350** | — | — | — |
| **KCD 350-100** | — | — | — |
| **KCD 350-350** | — | — | — |
| **KCD 450-100** | 2x 5.2 | 2x 10 | 2x (4 x 1.5) |
| **KCD 450-350** | 2x 5.2 | 2x 10 | 2x (4 x 1.5) |

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCD 630-350** | — | — | — |
| **KCD 840-350** | 9.1 | 2x 16 | 2x (4 x 2.5) |

Tab. 22 Connection data 440 V / 3 / 60 Hz

**Rated voltage 460 V / 3 / 60 Hz**

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCCD 130-100** | 2x 1.9 | 2x 4 | 2x (4 x 1.5) |
| **KCCD 130-350** | 2x 1.9 | 2x 4 | 2x (4 x 1.5) |
| **KCD 350-100** | 2x 3.5 | 2x 6 | 2x (4 x 1.5) |
| **KCD 350-350** | 2x 3.5 | 2x 6 | 2x (4 x 1.5) |
| **KCD 450-100** | 2x 5.0 | 2x 10 | 2x (4 x 1.5) |
| **KCD 450-350** | 2x 5.0 | 2x 10 | 2x (4 x 1.5) |
| **KCD 630-350** | 2x 5.9 | 2x 16 | 2x (4 x 2.5) |
| **KCD 840-350** | 2x 8.7 | 2x 16 | 2x (4 x 2.5) |

Tab. 23 Connection data 460 V / 3 / 60 Hz

### 2.11.1.3 C23 Motor starter

Motor starter: START CONTROL BASIC DUO

**Rated voltage 400 V / 3 / 50 Hz**

| Compressor type | Full load current [A] | Backup fuse [A] | Supply cable [mm²] |
|---|---|---|---|
| **KCCD 130-100** | 4,0 | 6 | 4 x 1.5 |
| **KCCD 130-350** | 4,0 | 6 | 4 x 1.5 |
| **KCD 350-100** | 8,0 | 10 | 4 x 1.5 |
| **KCD 350-350** | 8,0 | 10 | 4 x 1.5 |
| **KCD 450-100** | 11.4 | 16 | 4 x 2.5 |
| **KCD 450-350** | 11.4 | 16 | 4 x 2.5 |
| **KCD 630-350** | 13.6 | 20 | 4 x 2.5 |
| **KCD 840-350** | 20.0 | 25 | 4 x 4 |

Tab. 24 C23 Connection data with START CONTROL BASIC DUO motor starter

## 2.11.2 C5 Oil level monitoring

| Characteristic | Value |
|---|---|
| Contact load capacity | Max. 1 A<br>Max. 230 V AC / 48 V DC<br>Max. 26 VA / 20 W |
| Maximum medium temperature | 110 °C |
| Maximum ambient temperature | 110 °C |

| Characteristic | Value |
|---|---|
| Protection class | IP 65 |

Tab. 25 C5 Connection data for oil level monitoring

### 2.11.3 K6 Condensate drain floating contacts

The floating contacts are designed to switch either loads or low-level signals.

| Floating contact | Value |
|---|---|
| Switch load | Max. 1 A<br>Max. 250 V AC[1)]<br>Max. 30 V DC[2)] |
| Switch low-level signal | Min. 5 V DC[2)] / 10 mA |

1) Alternating current

2) Direct current

Tab. 26 K6 Connection data for condensate drain floating contacts

## 2.12 Mains conditions

The mains conditions apply to machines connected to a public power supply network with the following characteristics:

- Mains frequency: 50 Hz
- Rated voltage between outer and neutral conductors 220 V – 250 V
- Rated voltage between outer conductors 380 V – 430 V

These do not apply to power supply networks inside industrial facilities that are isolated from the public power supply network.

The machines listed in the table are intended for operation on a public power supply network with a mains impedance at the transfer point (site connection) of maximum $Z_{max}$ [Ω].

The operator must ensure that machines are only connected to a network that meets these requirements. If necessary, check the mains conditions with your local power supply company.

### 2.12.1 Mains conditions at 400 V / 3 / 50 Hz

Machines with a full load current from > 16 A – ≤ 75 A are in compliance with IEC-61000--3-12.

| Compressor type | Start type[1)] | Max. permissible no. of starts[2)] [1/h] | Highest permissible system impedance[3)] $Z_{max}$ [Ω] |
|---|---|---|---|
| **KCCD 130-100** | ● | 20 | 4) |
| | ○ | | 4) |
| **KCCD 130-350** | ● | 20 | 4) |

1) ●: Direct start; ○: With START CONTROL BASIC DUO motor starter

2) The maximum permissible no. of starts may only be exceeded following consultation with the manufacturer.

3) Figures relate to the sum of impedances in the outer and neutral conductors.

4) No specification required. Compliance with IEC-61000--3-3 is assured on the basis of the conditions specified.

| Compressor type | Start type[1] | Max. permissible no. of starts[2] [1/h] | Highest permissible system impedance[3] $Z_{max}$ [Ω] |
|---|---|---|---|
| | ○ | | 4) |
| **KCD 350-100** | ● | 20 | 4) |
| | ○ | | 0.462 |
| **KCD 350-350** | ● | 20 | 4) |
| | ○ | | 0.462 |
| **KCD 450-100** | ● | 20 | 0.347 |
| | ○ | | 0.250 |
| **KCD 450-350** | ● | 20 | 0.347 |
| | ○ | | 0.250 |
| **KCD 630-350** | ● | 20 | 0.141 |
| | ○ | | 0.113 |
| **KCD 840-350** | ● | 20 | 0.113 |
| | ○ | | 0.086 |

1) ●: Direct start; ○: With START CONTROL BASIC DUO motor starter

2) The maximum permissible no. of starts may only be exceeded following consultation with the manufacturer.

3) Figures relate to the sum of impedances in the outer and neutral conductors.

4) No specification required. Compliance with IEC-61000--3-3 is assured on the basis of the conditions specified.

Tab. 27 Mains impedance at 400 V / 3 / 50 Hz

## 2.13 Machine duty cycle

When calculating the duty cycle, the maximum load time must be taken into account for the **Time in** LOAD parameter!

**Calculating the duty cycle**

$$\text{Duty cycle [\%]} = \frac{\text{Time in LOAD}}{\text{Time in LOAD + time at standstill}} \times 100$$

**Example**

$$70\% = \frac{7 \text{ minutes}}{10 \text{ minutes}} \times 100$$

The following values are valid for:

- Ambient temperature 20 °C
- Relative humidity 30 %
- Air pressure 1013 mbar

| Compressor type | Permissible duty cycle [%] | Maximum load time[1] [min] |
|---|---|---|
| **KCCD 130-100** | ≤70 | 7 |
| **KCCD 130-350** | ≤70 | 7 |

1) on basis of the Energy Efficiency Directive:(EU) 2019/1781 (23)

| Compressor type | Permissible duty cycle [%] | Maximum load time[1)] [min] |
|---|---|---|
| **KCD 350-100** | ≤ 70 | 7 |
| **KCD 350-350** | ≤ 70 | 7 |
| **KCD 450-100** | ≤ 70 | 7 |
| **KCD 450-350** | ≤ 70 | 7 |
| **KCD 630-350** | ≤ 70 | 7 |
| **KCD 840-350** | ≤ 70 | 7 |

1) on basis of the Energy Efficiency Directive:(EU) 2019/1781 (23)

Tab. 28 Machine duty cycle

## 2.14 Tightening torques for screws and nuts

The tightening torques for standard threads depend on the associated strength class.

Request the tightening torques from KAESER or an authorised service partner.

# 3 Safety and responsibility

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

- Danger to life and limb for the operator or third parties.
- Damage to the machine and other material assets



To prevent injury, follow all safety instructions.

Only use the machine as intended.

Only use the machine if it is in perfect technical condition. Faults that could impair safety must be rectified immediately.

## 3.1 Intended use

The machine is designed for the use of specialist personnel in trades or industrial applications.

The function of the machine is to compress ambient air.

Any other use shall be considered improper. The manufacturer shall not be liable for any damage that may result from improper use. The operator shall be solely liable for any risks incurred.

In particular, please note the following:

- Follow the instructions in this operating manual; only operate the machine within the specified performance limits and in accordance with the permissible ambient conditions.
- The use of compressed air as breathing air or in contact with food products is permitted only in combination with the appropriate treatment.
- The use of exhaust heat is only permitted in conjunction with suitable measures which preclude any health risk for humans and animals.
- Only use genuine KAESER spare parts for pressure-bearing components.

## 3.2 Improper use

No toxic, acidic, alkaline, inflammable or explosive gases or vapours may be drawn in for compression.

Modifications to the machine or controller can result in unforeseen dangers. The operator shall be solely liable for any risks incurred.

In particular, please note the following:

- Never direct compressed air at people or animals.
- It is prohibited to operate the machine in potentially explosive areas.
- Do not make any unauthorised modifications or conversions to the machine.

## 3.3 Dangers

This section provides information regarding the various types of danger that can arise in connection with operating the machine.

Observe the following whenever any work is performed on the machine:

- Arrange for work to be performed by authorised personnel only.
- Before commencing any work, switch off the power supply isolating device (all poles), secure it against reactivation, then verify the absence of all voltage.
- Fully vent all pressurised components and enclosures, and verify the absence of all pressure.
- Do not use any part of the machine as a climbing aid.
- Pay strict attention to cleanliness during all work.

- To prevent ingress of dirt and dust, cover components and exposed openings with clean cloths, paper or masking tape.
- Do not leave any loose components, tools or cleaning cloths on or in the machine.
- Do not open or destroy any dismantled components.
- Regularly check the following on the machine:
  - For visible damage
  - Safety devices
  - Components that require monitoring

Wear suitable protective clothing for all work, e.g.:

- Approved work clothing, close-fitting and flame-retardant
- Protective gloves
- Safety shoes
- Eye protection
- Ear protection

**Electricity**

Touching live components can result in electric shocks, burns, or death:

- Allow only qualified and authorised certified electricians or trained personnel under the supervision of a qualified and authorised certified electrician to carry out work on electrical equipment in accordance with electrical engineering regulations.
- In order to prevent electrical accidents, follow the below rules in the sequence provided:
  - Switch off the power supply isolating device (all poles)
  - Secure the power supply isolating device against reactivation
  - Verify the absence of voltage (all poles)
- As the operator, before each commissioning of the machine you must establish and check protection against direct or indirect touch voltages.
- Verify the absence of all voltage from the power supply and any external voltage sources. External voltage sources could include connections to floating relay contacts or electrical machine heating, for example.
- Use electrical fuses that correspond to the power of the machine.
- Regularly check that all electrical connections are tightened and in proper condition.

**Pressure**

Compressed air is stored energy. Uncontrolled release of compressed air may result in serious injury or death:

- Close shut-off valves or otherwise isolate the machine from the compressed air network so as to ensure that no compressed air can flow back into the machine.
- Verify that all enclosures are completely free from pressure.
- Install compressed air lines only when they are in a pressure-free state.
- Do not carry out welding, heat treatment or mechanical modifications on pressure-bearing components (e.g. piping, pressure vessels).

**Compressed air quality**

To prevent danger to life and limb, the composition of the compressed air must be suitable for the specific application:

- Use suitable compressed air treatment systems when using the compressed air from this machine as breathing air and/or for the processing of food products.
- Use food-grade compressor oil for applications where the compressed air may come into contact with food products.

**Spring tension**

Springs under tension store energy. Uncontrolled release of springs may result in serious injury or death.

- Do not dismantle any valves.
- Return removed valves to KAESER or an authorised service partner.

**Rotating components**

Touching rotating components whilst the machine is switched on can result in serious injury:

- Keep the machine housing closed.
- If you wear your hair long, use protective clothing and a suitable hairnet.
- Ensure that safety guards and covers are fitted properly before switching on the machine.

**Heat**

High temperatures are generated during the compression of gases. Touching hot components may lead to injury.

- Allow the machine to cool down sufficiently.
- Take suitable measures to prevent sparks or high temperatures from igniting oil vapours or machine components. This may be necessary, for example, when welding work is being performed on, or in the vicinity of, the machine.

**Noise**

Safety valve blow-off results in high noise emissions.

- Wear ear protection.

H12 The sound enclosure effectively reduces machine noise emissions to a low level. This sound insulation is only effective when the sound enclosure is closed.

- Only operate the machine with complete sound insulation.

**During transportation**

In order to prevent accidents, the weight and size of the machine require that safety measures be taken during transportation:

- Ensure that the danger zone is clear of personnel.
- Use suitable hoists that comply with local safety regulations.
- Ensure that the machine is transported only by personnel who, due to their training, possess the appropriate authorisation for safe handling of transported goods.
- Only attach hoists to suitable load-bearing points.
- To prevent the machine from tipping, pay attention to the centre of gravity.

**During installation**

A suitable installation location helps to ensure reliable operation of the machine:

- Ensure sufficient ventilation of the machine room.
- Position the machine in such a manner that the working conditions in the immediate vicinity are not impaired.
- In order to be able to read displays without glare and to be able to perform work safely, ensure sufficient and suitable lighting.
- Do not operate the machine in areas where specific requirements apply in relation to explosion protection. For example, the requirements for “intended use in potentially explosive atmospheres” as per 2014/34/EU[1)]
- Ensure clean intake air with no damaging contaminants. Damaging contaminants include, for example:
  - Explosive or chemically unstable gases and vapours
  - Acids or base-forming chemicals such as ammonia, chlorine or hydrogen sulphide
- Do not use any part of the machine as a climbing aid.

**During assembly**

Note the following when performing installation work:

- Only use electrical cables that are suitable and approved for the relevant surroundings and electrical loads.
- Only use compressed air lines that are suitable and approved for the maximum working pressure and the intended medium.

1) ATEX Directive

- In order to prevent them from being transferred to the connection points, compensate for the forces exerted by pipelines on the machine.

**Operating fluids/materials**

The operating fluids and materials used can cause adverse health effects. To avoid injury, take the appropriate precautionary measures:

- Follow all safety regulations relating to oils, lubricants or chemical substances.
- Avoid contact with the skin and eyes.
- Do not inhale oil mist or oil vapours.
- Do not eat or drink if you have been handling oils, lubricants or chemical substances.
- Fire, naked flame and smoking must all be prohibited.
- Keep suitable fire-extinguishing media close to hand.
- Only use KAESER-approved operating fluids/materials.
- Dispose of used operating fluids/materials via a certified disposal specialist, in accordance with the applicable local regulations.

**Spare parts**

Unsuitable spare parts compromise the safety of the machine:

- Only use spare parts approved by KAESER for use in this machine.
- Only use genuine KAESER spare parts on pressure-bearing components.
- Dispose of any spare parts contaminated with environmentally harmful operating fluids/materials in accordance with the applicable local regulations.

**Expanding or modifying the compressed air station**

When appropriately dimensioned, safety valves reliably prevent impermissible pressure rise:

- Check the actuating pressure and blow-off capacity of the safety valves in the downstream compressed air network prior to installing any additional compressed air generators.
- Install appropriately dimensioned safety valves.

## 3.4 Danger areas

The following table provides information regarding the areas which are potentially dangerous to personnel.

Only authorised personnel may access these areas:

| Task | Danger area | Authorised personnel |
|---|---|---|
| Transportation | 3 m radius around the machine | Installation personnel for transport preparation<br>No personnel during transportation |
| | Beneath the raised machine | No personnel |
| Installation | Inside the machine<br>1 m radius around the machine and its power supply cables | Installation personnel |
| Operation | 1 m radius around the machine | Operating personnel |
| Maintenance | Inside the machine<br>1 m radius around the machine | Maintenance personnel |

Tab. 29 Danger areas

## 3.5 Safety devices

Safety devices ensure safe operation of the machine. Safety devices must not be modified or bypassed. Check safety devices regularly to ensure reliable function.

The following safety devices are provided and must not be modified or disabled:

- Safety valve:
  The safety valve protects the pressure system against an impermissible pressure rise. The safety valve is set at the factory.
- Check valve:
  The check valve prevents the flow of compressed air from the air receiver back to the compressor block when the machine is stopped.
- Housing and panels:
  Protective panels provide protection from rotating, hot and electrical components.

## 3.6 Safety and information signs

The safety signs on the machine are easily visible and serve to indicate dangers.

- Do not remove or render unrecognisable any safety or information signs.
- Ensure that safety and information signs always remain clearly recognisable.

The following illustration shows the location of the safety and information signs on the machine. Depending on the machine version, certain safety and information signs are located either on the machine or on the sound enclosure. The following table provides information regarding the safety and information signs used.

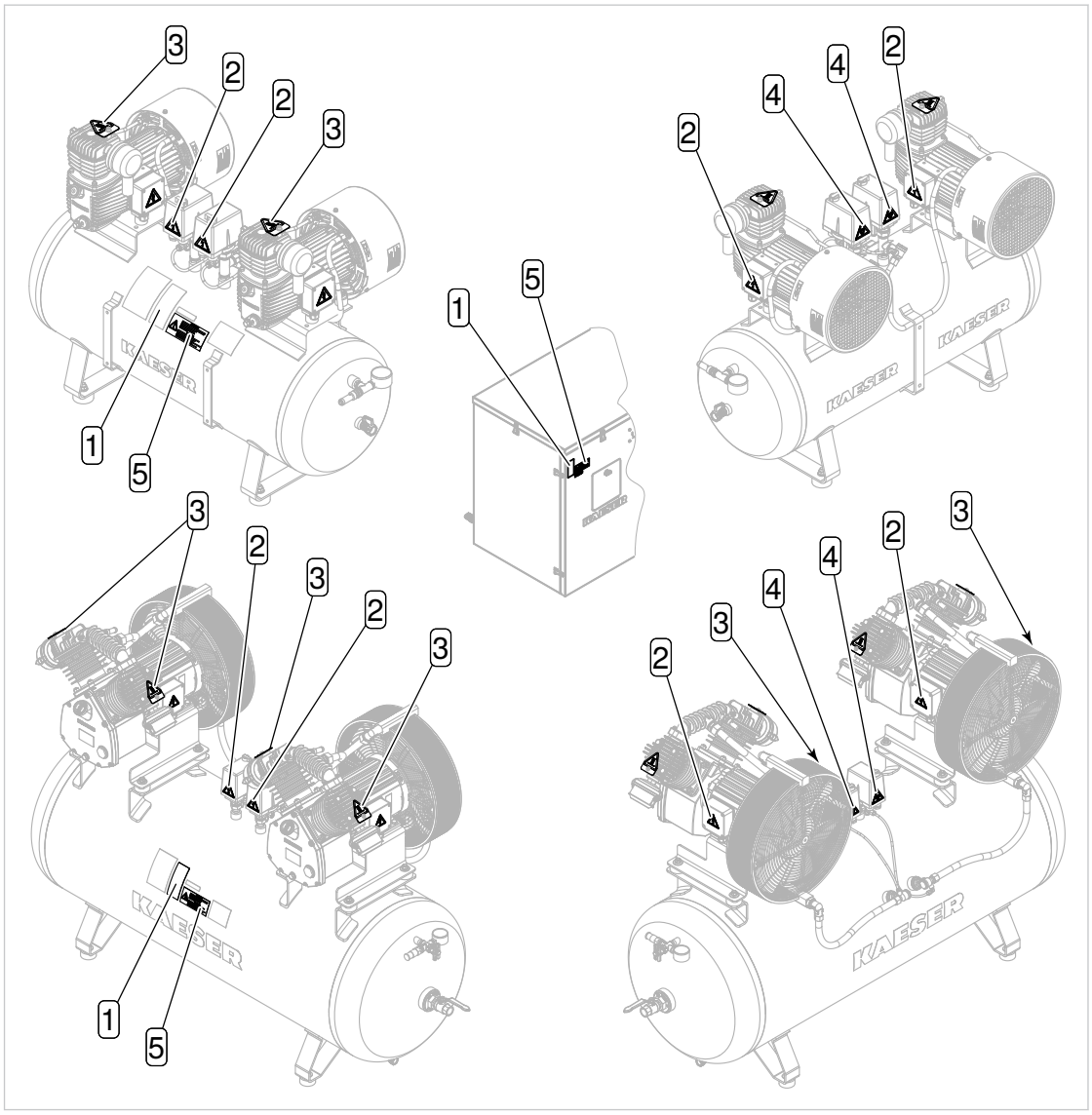



Fig. 1 Location of safety and information signs

| Location | Pictogram | Meaning |
|---|---|---|
| 1 |  | **Danger of injury from incorrect operation**<br>► Ensure that you have read and understood the operating manual and all related safety information before switching on this machine |
| 1 |  | **Air filter**<br>► Clean or replace the air filter regularly |
| 1 |  | **Oil level**<br>► Check the oil level regularly<br>► Adhere to the specified oil change intervals |
| 1 |  | **Condensate**<br>► Drain the condensate daily<br>► If installed, check the automatic condensate drainage regularly |

| Location | Pictogram | Meaning |
|---|---|---|
| 2 |  | **Danger of fatal injury from electric shock**<br>► Disconnect the machine from the power supply (all poles)<br>► Secure the power supply isolating device against reactivation<br>► Verify the absence of voltage (all poles) |
| 3 |  | **Danger of burns from hot surface**<br>► Do not touch the hot surface<br>► Wear protective clothing |
| 4 |  | **Danger of injury from automatic start-up of the machine**<br>► Disconnect the machine from the power supply (all poles) and secure against reactivation |
| 5 |  | **Danger of fatal injury from components under pressure**<br>Prior to transportation or any work on the machine:<br>► Disconnect the machine from the power supply (all poles)<br>► Isolate the machine from the compressed air network<br>► Vent the machine completely<br>► Verify the absence of pressure |

Tab. 30 Safety and information signs

## 3.7 Operator responsibilities

Observe the relevant statutory regulations and recognised technical rules when installing, operating and performing maintenance on the machine.

Statutory regulations and recognised rules are, for example, the European directives implemented in national law, or the laws, safety regulations and accident prevention regulations applicable in the country of use.

### 3.7.1 Determining suitable personnel

The machine may only be operated by specialists who are of legal age and who have read and understood these instructions. Personnel must have specialist training, experience and knowledge of the relevant regulations and therefore be able to perform work accordingly, as well as to recognise dangers.

Personnel tasked with commissioning, operation and maintenance must be familiar with the safety concepts and regulations relating to the following technical fields:

- Compressed air technology
- Electrical engineering

Ensure that the personnel entrusted with installation, operation and maintenance have the relevant qualifications and authorisation required for the respective activity.

### 3.7.2 Organisational measures

As the operator, you must take the following organisational measures:

- Determine personnel and regulate responsibilities.

- Regulate the obligation to report any faults with or damage to the machine.

### 3.7.3 Complying with inspection intervals

The machine is subject to national inspection regulations. Determine the regulations applicable at the installation site and organise the necessary measures.

## 3.8 Emergencies

### 3.8.1 Correct conduct in the event of fire

In the event of a fire, calm and considered action can save lives:

- Remain calm.
- Report the fire:
  - Give your name and location.
  - Provide a telephone number on which you can be reached.
  - Describe what has occurred, what is on fire, who is injured or in need of help and where.
  - Give the location of the fire as precisely as possible and provide directions for the fire brigade.
- If any people are in danger, warn them or assist them to safety.
- Close all doors and windows.
- Disconnect as many supply lines as possible:
  - Power supply

Only attempt to extinguish a fire using the following media if you possess sufficient knowledge of how to do so:

- Extinguishing foam
- Carbon dioxide
- Sand or earth

### 3.8.2 First aid measures following contact with compressor oil

In the event of accident or illness, call a doctor immediately. In case of doubt or should symptoms appear, always consult a doctor.

**Contact with the eyes**

Compressor oil can cause irritation to the eyes:

- If contact lenses are worn, remove them if possible and gently rinse the eyes with water for a few minutes.
- In the event of eye irritation, consult a doctor.

**Skin contact**

Compressor oil can cause irritation following prolonged contact with the skin:

- Remove dirty clothing or clothes soaked with compressor oil.
- Wash the skin gently with water.
- In the event of skin irritation, consult a doctor.

**Inhalation**

Oil mist can impair the breathing and cause breathing difficulties:

- Move outside to fresh air and allow injured persons to breathe without hindrance.
- In the event of breathing difficulties or respiratory arrest, begin artificial respiration.

**Ingestion**

In the event of ingestion, compressor oil can cause irritation to the mucous membranes:

- Immediately rinse the mouth and drink plenty of water.
- DO NOT induce vomiting.
- Never administer anything by mouth to an unconscious person or someone who is experiencing convulsions.

## 3.9 Environmental protection

Operating fluids/materials, particularly oils and greases, must not be released into the environment or sewer system. Store and dispose of all operating fluids/materials and used parts in accordance with the applicable national environmental protection regulations.

# 4 Design and function

## 4.1 Machine layout

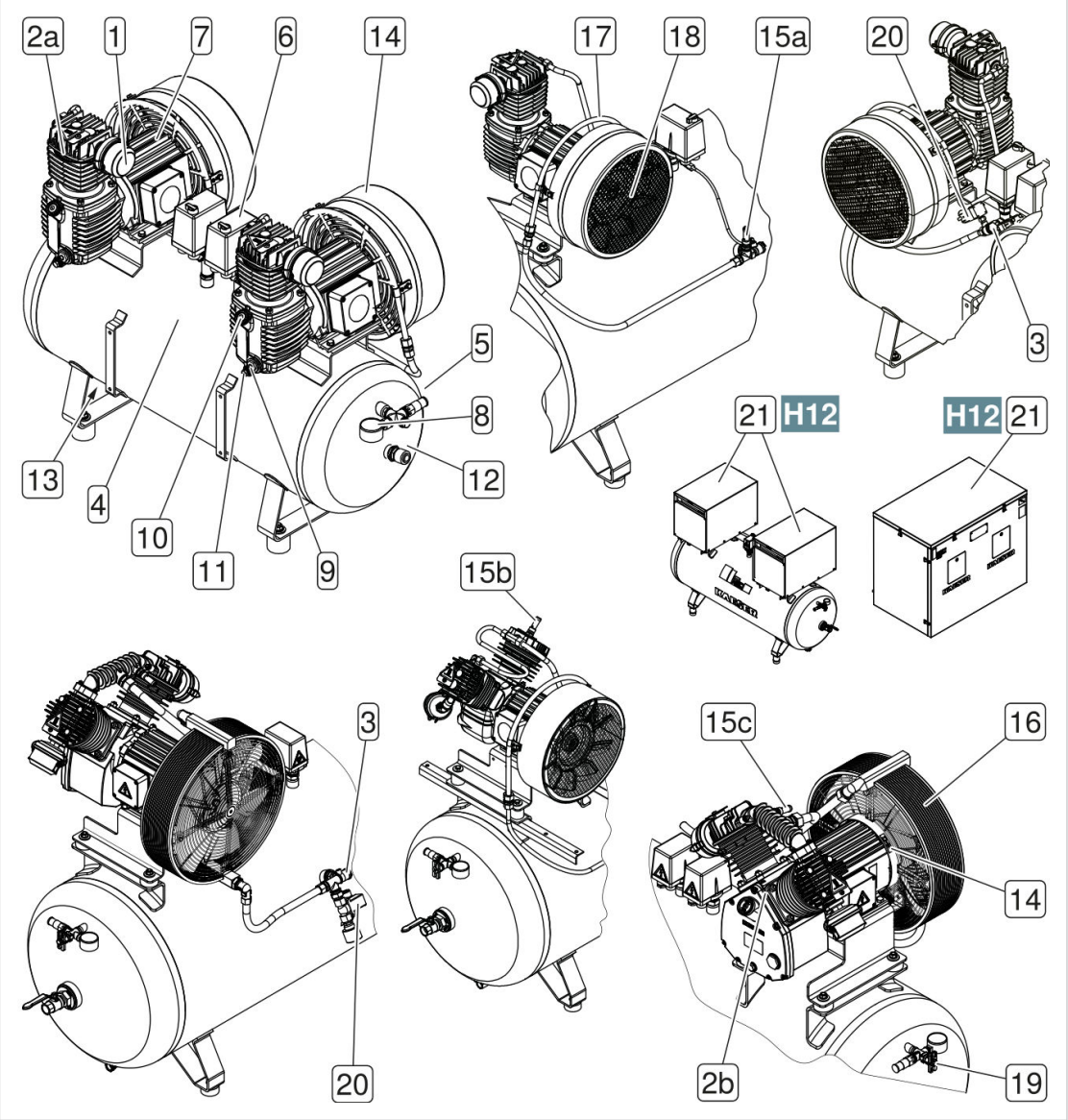



Fig. 2 Machine overview

| | |
|---|---|
| 1 | Air filter |
| 2 | Compressor block |
| 2a | 1-cylinder |
| 2b | 2-cylinder |
| 3 | Check valve |
| 4 | Air receiver |
| 5 | Air receiver safety valve |
| 6 | Pressure switch |
| 7 | Compressor motor |
| 8 | Pressure gauge |
| 9 | Oil sight glass |
| 10 | Oil filler port |
| 11 | Oil drain plug |
| 12 | Compressed air outlet |
| 13 | Condensate outlet |
| 14 | Direction of rotation arrow |
| 15 | Safety valve |
| 15a | On check valve* |
| 15b | on cylinder head* |
| 15c | On collecting pipe* |
| 16 | Compressed air cooler* |
| 17 | Cooling pipe* |
| 18 | Fan with fan guard* |
| 19 | Test flange |
| 20 | Solenoid valve* |
| 21 | H12 Sound enclosure |
| * | Machine-dependent |

## 4.2 Machine operation

Ambient air is drawn in through the air filter, whereby it is cleaned.

When the piston moves downwards, the compressor block draws ambient air into the cylinder via the air filter. As the piston moves upwards again, it compresses the intake air.

The compressed air, which becomes heated during compression, is cooled in the downstream cooling pipe or compressed air cooler before flowing into the air receiver. The check valve prevents compressed air from flowing backwards from the air receiver to the compressor block.

A compressor motor (electric motor) drives the compressor block and the machine-cooling fan wheel.

## 4.3 Operating points and control modes

### 4.3.1 Machine operating points

The machine runs in two operating points:

**READY**

- No air is compressed.
- The check valve prevents compressed air from flowing back into the compression chamber.
- The compressor block is vented.
- The compressor motor is at standstill.

**LOAD**

- The compressor block delivers compressed air.
- The relief valve is closed.
- The compressor motor runs.

### 4.3.2 Control modes

**Pressure switch**

The pressure switch switches the machine back and forth between the LOAD and READY operating points in accordance with the set switching points. The pressure switch setting is fixed at the factory.

**C23 Motor starter:**

The START CONTROL BASIC DUO motor starter operates according to START/STOP control mode. In START/STOP control mode, the controller switches the machine back and forth between LOAD and READY in order to maintain the pressure between the specified minimum and maximum values.

### 4.3.3 C23 External controller

The primary function of a controller is to start the compressor motor (electric motor). This enables an unloaded start of the machine.

In addition to the power electronics, the controller can incorporate monitoring functions, indicators and operating elements.

The controller can contain different components, depending on the machine type, mains voltage and start type.

The controller is not an integral part of the machine and must be provided by the user.

Use the START CONTROL BASIC DUO controller from KAESER.

The following components must be connected to the controller:

- Motor
- Pressure switch
- Solenoid valve
- C5 Oil level monitoring

**⚠ WARNING**

**Incorrect controller voltage can cause irreparable damage to electrical components**

► Take note of the controller voltage!

The following points must be observed:

- Install the controller in accordance with EN 60204-1.
- Select components in accordance with the motor power.
- Connect the solenoid valve so that it closes when the compressor motor starts.

## 4.4 Options

This section contains a list of available options for your machine and a description of them.

### 4.4.1 C5 Oil level monitoring

The oil level in the machine is monitored automatically. The machine is automatically shut down if the oil level falls below minimum.

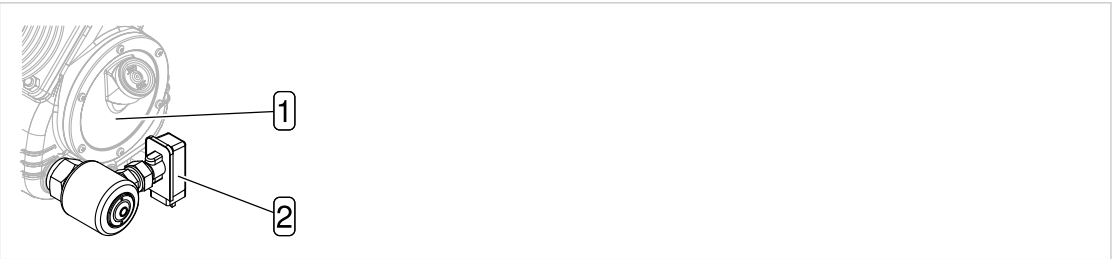



Fig. 3 C5 Oil level monitoring

1 Airend
2 Oil level monitoring

### 4.4.2 C8 Operating hours counter

Maintenance intervals can be kept to better with the help of the operating hours counter.




Fig. 4 C8 Operating hours counter

1 Pressure switches
2 Operating hours counter

### 4.4.3 C9 Pressure switch: Low pressure warning message

An additional pressure switch with floating relay contacts can provide warning messages to a control centre if pressure falls too low.

### 4.4.4 C23 Motor starter

The START CONTROL BASIC DUO motor starter is a sequencer that switches both units on and off depending on the pressure.

### 4.4.5 H9 Air filter: Paper filter

This air filter increases the purity of the intake air.

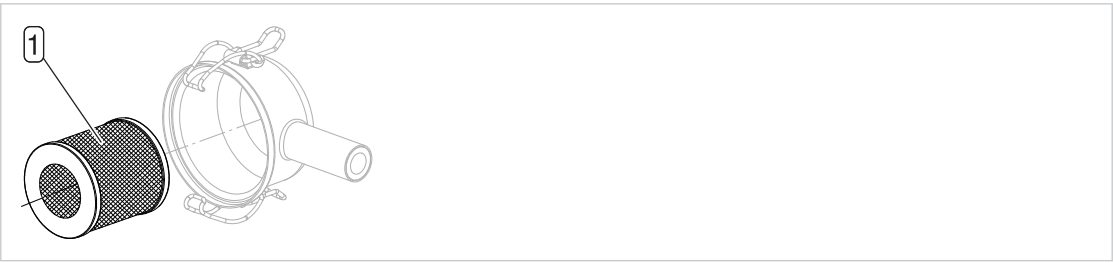



Fig. 5 H9 Air filter: Paper filter

1 Air filter (paper filter)

### 4.4.6 H10 Air filter: Corrosion-resistant paper filter

This air filter is suitable for unfavourable ambient conditions, since the plastic housing is corrosion-resistant. In addition, it increases the purity of the intake air.




Fig. 6 H10 Air filter: Corrosion-resistant paper filter

1 Air filter (paper filter)

### 4.4.7 H12 Sound enclosure

The sound enclosure effectively reduces machine noise emissions.

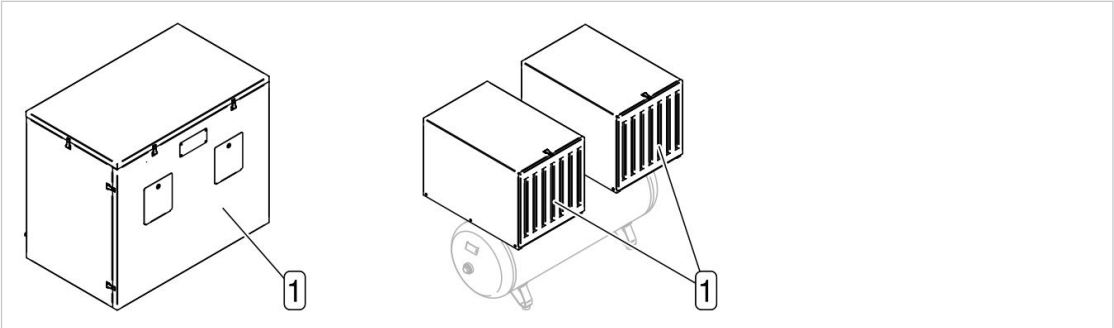



Fig. 7 H12 Sound enclosure

1 Sound enclosure

Should you wish to retrofit a sound enclosure to your machine, contact an authorised service partner.

### 4.4.8 H29 Bolt-down rubber buffers

Bolt-down rubber buffers enable the machine to be anchored securely to the ground.

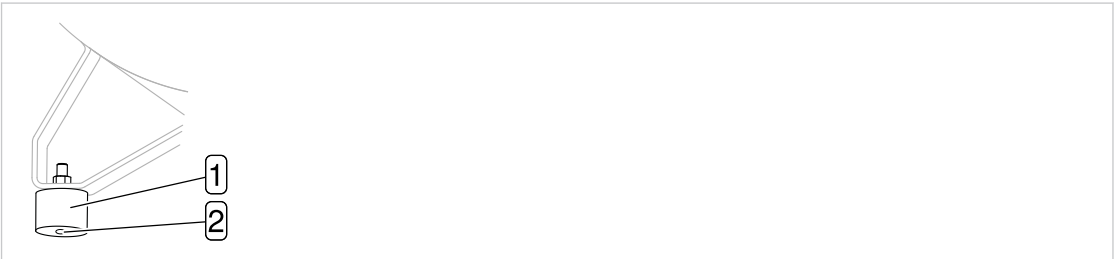



Fig. 8 H29 Bolt-down rubber buffers

1 Bolt-down rubber buffer
2 Threaded connection

### 4.4.9 K5 / K6 ECO-DRAIN condensate drain

The accumulated condensate is removed by an electronic condensate drain.

With option version K6 of the electronic condensate drain with fault message contact, a signal is transmitted by means of a floating contact in the event of an error.

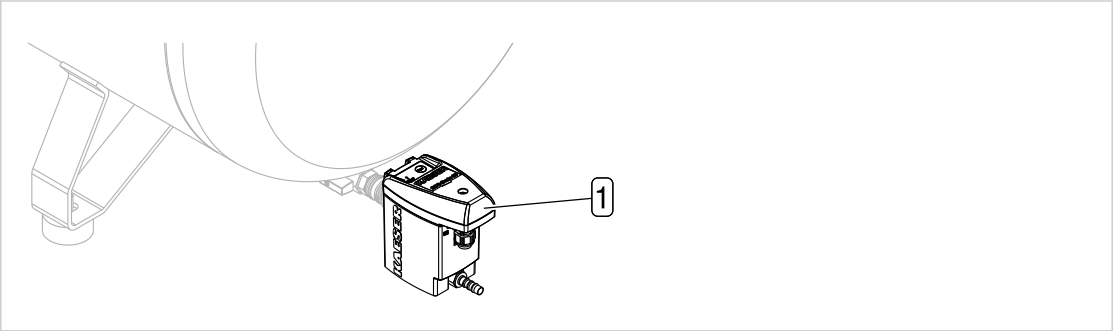
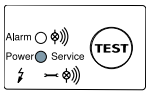
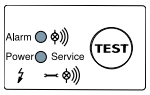
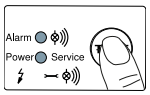



Fig. 9 K5 / K6 ECO-DRAIN condensate drain

1 Condensate drain

**Condensate drain operating states**

The operating states for the condensate drain are indicated via control indicators:

| Indicator | Operating state | Function |
|---|---|---|
|   | *Ready* | Voltage present. |
|   | *Fault/alarm* | Fault present.<br>Valve opens cyclically to resolve the fault automatically. |
|   | Testing the valve function | To test the valve function, hold down the «TEST» key for approx. 2 seconds. |
| | Testing the 1) alarm function | To test the 2) alarm function, press the «TEST» key for at least 1 minute. |

1) Alarm function for K5 not available.

2) Alarm function for K5 not available

Tab. 31 K5 / K6 condensate drain operating states

## 4.4.10 P4 Filter pressure reducer

The pressure regulator reduces the discharge pressure to the required working pressure of the consumers.

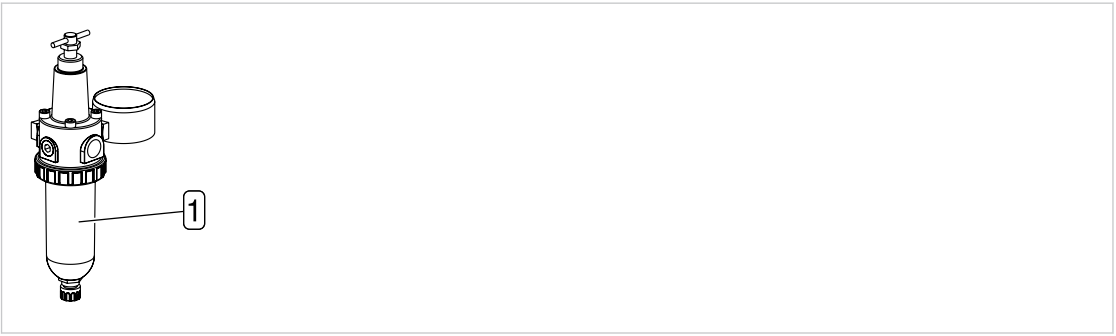



Fig. 10 P4 Filter pressure reducer

1 Filter pressure reducer

# 5 Transport and storage

## 5.1 Transport damage

The machine is shipped in perfect condition. Nevertheless, damage may have occurred during transportation.

Check the machine for visible transport damage. If damage has occurred, report it immediately to the carrier or supplier.

## 5.2 Transportation

Weight and centre of gravity determine the required method of transportation. The centre of gravity is shown in the dimensional drawing in chapter 13.3 Dimensions and connection sizes.

Consult KAESER or an authorised service partner if you intend to transport the machine in freezing temperatures.

Allow the machine to be transported only by personnel who, due to their training, possess the appropriate authorisation for safe handling of transported goods.

Only transport the machine by forklift, or use suitable load-carrying equipment.

If the machine is already connected to a compressed air network, decommission the machine as described in chapter 12 Decommissioning, dismantling and disposal before transporting it.

**⚠ WARNING**

**Risk of accident during transportation**

- ► Adhere to the permissible load limits for transportation aids
- ► Ensure that connections at the load lifting points are established correctly

### 5.2.1 Transporting the machine by forklift

- The machine is standing on a transport pallet

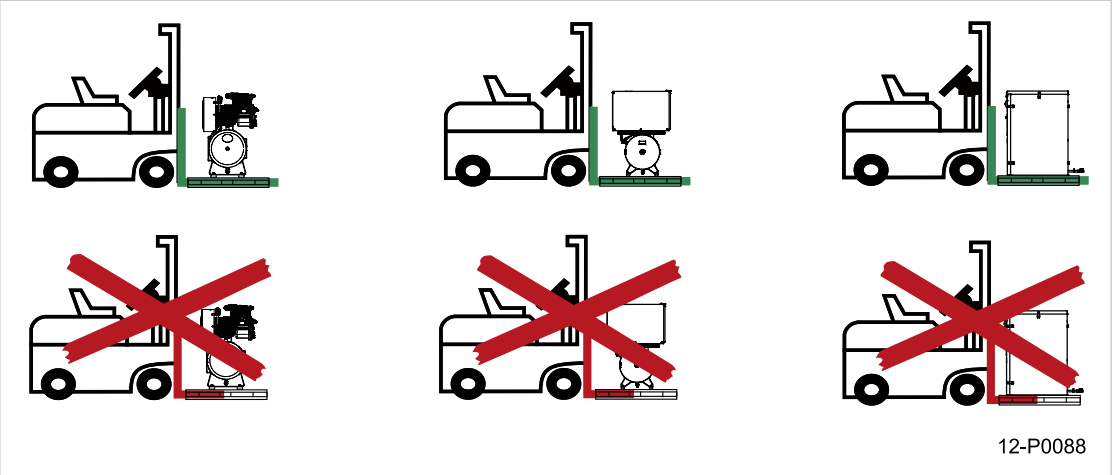



Fig. 11 Transporting by forklift

Proceed as follows:

1. Note position of the centre of gravity.

2. Position the forks completely underneath the machine or pallet.
3. Lift slowly.

### 5.2.2 Transporting the machine with a hoist

Only suitable and approved load-carrying and lifting equipment can ensure proper transportation of the machine using a hoist, e.g. a crane. Consult KAESER or an authorised service partner should you require suitable load-carrying or lifting equipment, or have any queries regarding their correct use.

The machine is not equipped with any load-fastening points. In order to prevent damage, use suitable spreader beams or load traverses to ensure sufficient distance between the lifting equipment and the machine housing.

Unsuitable load-fastening points include the following components:

- Pipe socket
- Add-on components, e.g. condensate drains



1. Load-carrying and lifting equipment correspond to local safety regulations
2. No personnel are in danger from the hoist, load-carrying equipment, lifting equipment or the lifted machine
3. The lifting slings must be fed under the machine

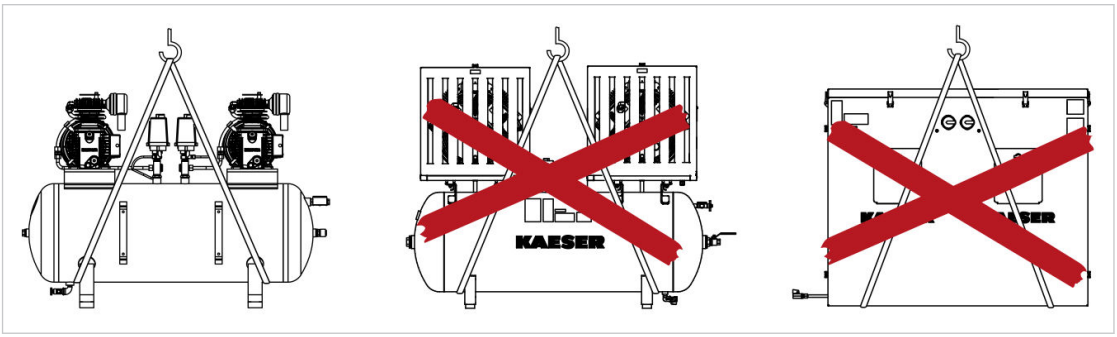



Fig. 12 Transporting the machine with a hoist

Proceed as follows:

1. Use the load-carrying and lifting equipment correctly:
   - Ensure proper distribution of load-fastening points relative to the centre of gravity (symmetrical load distribution)
   - Ensure a maximum horizontal tilt of 6° for the machine
   - Ensure sufficient distance between the lifting equipment and the machine
   - Do not attach the lifting equipment to any of the machine's components
2. Conduct a lifting test:
   To check the horizontal positioning of the machine and to avoid a swinging motion, raise the machine slightly.
3. Only transport the machine after conducting a successful lifting test.

## 5.3 Packaging

Protect the machine from mechanical damage during transportation. The original packaging or a wooden crate is suitable for overland transport.

Additional measures must be taken for transportation of the machine by sea or air. Detailed information can be obtained from KAESER or an authorised service partner.



- Desiccant: Silica gel or activated clay
- Protective sheet
- Original packaging or wooden crate as transport packaging



- The machine has been decommissioned
- The machine has cooled down

Proceed as follows:

1. Wrap the machine completely with a protective sheet to safeguard against precipitation and dirt.
2. Place a sufficient quantity of desiccant inside the sheet.
3. Protect the machine against mechanical damage by placing it in the original packaging or a suitable wooden crate.

## 5.4 Storage

Ensure that the machine is stored in a dry and frost-free location. This also applies to machines that have not yet been commissioned.

Prevent humidity and condensation from forming inside the machine. Humidity leads to corrosion. Frozen humidity or moisture can damage components, valve diaphragms and seals.



Contact an authorised service partner if you wish to store the machine at other temperatures.

# 6 Installation and operating conditions

## 6.1 Installation conditions

This chapter provides you with information on how to design a suitable machine room.

The clearances specified guarantee unhindered access to all machine parts.

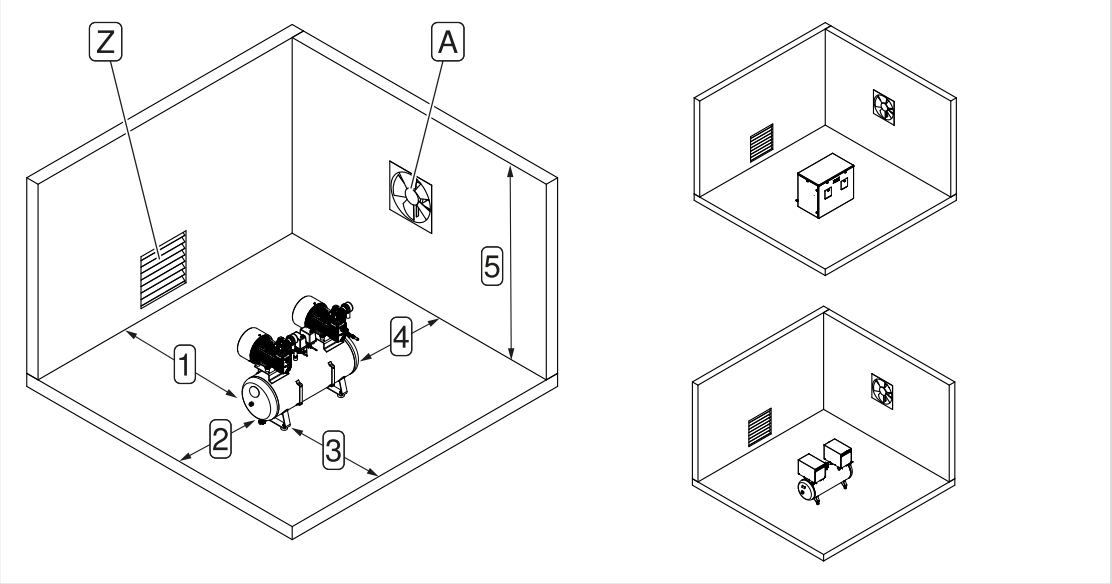



Fig. 13 Recommended installation, dimensions [mm]

A Exhaust fan
Z Air inlet aperture
1 700 mm
2 900 mm
3 700 mm
4 900 mm
5 >2500 mm

To install the machine correctly, the following points must be observed:

- Install the machine in a suitable frost-free machine room with full protection from the weather.
- In doing so, ensure that the machine is protected from dew formation, frost, direct sunlight, dust, rain, and splash water.
- Ensure that the ground beneath is level, firm, and capable of bearing the weight of the machine.
- Ensure that power cables and compressed air hoses are installed securely to protect personnel and the machine against damage.
- Ensure optimal accessibility and sufficient lighting. It must be ensured that all work on the machine can be carried out without hindrance.
- Take any additional clearances specified by local health and safety regulations and construction regulations into account. Escape and rescue routes must remain safely accessible when the machine housing is open.
- Ensure that all air inlet and exhaust air apertures in the machine housing remain open and that the air flow is not impaired in any way.
- Ensure that the machine can be warmed up to at least the permissible minimum temperature before switching on. You can achieve this by heating the machine room, for example. Further information can be found in chapter 2.5 Ambient conditions
- Ensure that the machine room is maintained in a clean condition and free from extraneous equipment and other objects.

If the machine is installed together with other components (compressors, refrigeration dryers, etc.), under **no** circumstances may hot exhaust air from the other components be directed towards the cooling air inlet side of the machine.
Hot exhaust air can cause damage to the machine.

## 6.2 Machine room ventilation

Adequate ventilation effectively removes the heat generated by the machine from the machine room and prevents negative pressure from occurring within the machine room. This section provides you with information on how to ventilate your machine room sufficiently.



The lower the intake air temperature and the better the exhaust air conveyance, the more efficiently the machine functions.

Please note the following with regard to ventilation of the machine room:

- Ensure that the machine is located in the air flow between the air inlet and exhaust air apertures.
- Arrange the air inlet aperture close to the floor and the exhaust air aperture for the exhaust fan diagonally opposite, in the upper part of the machine room.
- Install a suitably dimensioned exhaust fan.
- Ensure that the machine can only be operated when the air inlet aperture is open.
- Keep the air inlet and exhaust air apertures free from obstruction so that the air can flow freely through the machine room.
- Ensure proper functioning of the machine by maintaining clean air with no damaging contaminants inside the machine room. Damaging contaminants include, for example: dust, fibres, fine sand.
- Ensure that no salty air / salt spray (e.g. sea salt) is drawn in by the machine. This can lead to impermissible corrosion on components.

**Air inlet aperture and exhaust fan**

| Compressor type | Air inlet aperture[1] [m²] | Exhaust fan[2] [m³/h] |
|---|---|---|
| **KCCD 130-100** | 0.4 | 225 |
| **KCCD 130-350** | 0.4 | 225 |
| **KCD 350-100** | 0.4 | 510 |
| **KCD 350-350** | 0.4 | 510 |
| **KCD 450-100** | 0,4 | 720 |
| **KCD 450-350** | 0,4 | 720 |
| **KCD 630-350** | 0,4 | 900 |
| **KCD 840-350** | 0,4 | 1200 |

1) Minimum free cross section

2) Forced ventilation: Required air volume for exhaust fan at static compression 100 Pa (system in room without ducting and ΔT≙10 K)

Tab. 32 Air inlet aperture and exhaust fan

## 6.3 Power supply

The machine is designed in accordance with the conditions of a power supply as per EN 60204-1 (IEC 60204-1), Section 4.3.

If no other conditions are specified by the operator, the threshold values described in this standard must be adhered to.

You as the operator must coordinate this with the supplier of the machine, using EN 60204-1, Annexe B as a basis.

### 6.3.1 Three-phase current

For the electrical connection, the machine requires a symmetrical three-phase power supply. With a symmetrical three-phase supply, the voltage and phase shift between the individual phases are all equal.

The machine must be operated exclusively from an earthed TN or TT three-phase power supply, in which the **neutral point** is earthed.

Connection to an IT three-phase power supply or a three-phase supply with one earthed phase is not permitted.

- When connecting to a European mains power supply, the requirements detailed in chapter 2.12 Mains conditions must also be adhered to.
- The wiring diagram in chapter 13.2 Wiring diagram contains further details regarding the electrical connection.

## 6.4 Connection to a compressed air network

If the machine is connected to a compressed air network, the network working pressure must not exceed the permissible final pressure of the machine.

Consult KAESER for advice in this respect.

# 7 Assembly and installation



**⚠ DANGER**

**Danger of electric shock from live components**

- ► Switch off the power supply isolating device (all poles)
- ► Secure the power supply isolating device against reactivation
- ► Verify the absence of voltage (all poles)



**⚠ WARNING**

**Danger of force being exerted on the body from sudden release of pressure**

- ► Fully vent all pressurised components and enclosures
- ► Verify the complete absence of pressure

Unless specified otherwise, the tightening torques for regular threads are based on the relevant strength class.



- Further information regarding the size and location of the connection points is provided in Chapter 13.3 Dimensions and connection sizes.
- Further information regarding clamp assignment and adjustment values can be found in Chapter 13.2 Wiring diagram.

## 7.1 Installing the rubber buffers



**⚠ CAUTION**

**Danger of tipping due to high centre of gravity and weight of the machine**

- ► Machine-dependent:
  Secure machines with vertical air receiver against tipping
- ► Use transportation slings to lift the machine

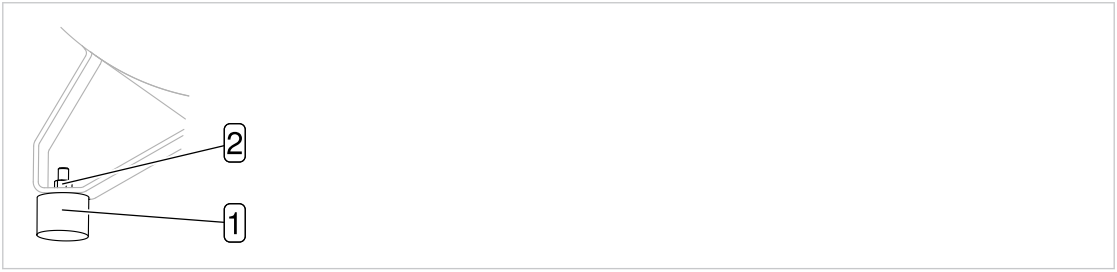



Fig. 14 Installing the rubber buffers

1 Rubber buffer
2 Hexagon nut

Proceed as follows:

1. Remove the wooden frame from the vessel feet.
2. Screw the rubber buffers to the vessel feet using hexagon nuts.

## 7.2 Installing the air filter



Depending on the machine, the air filter is supplied loose.

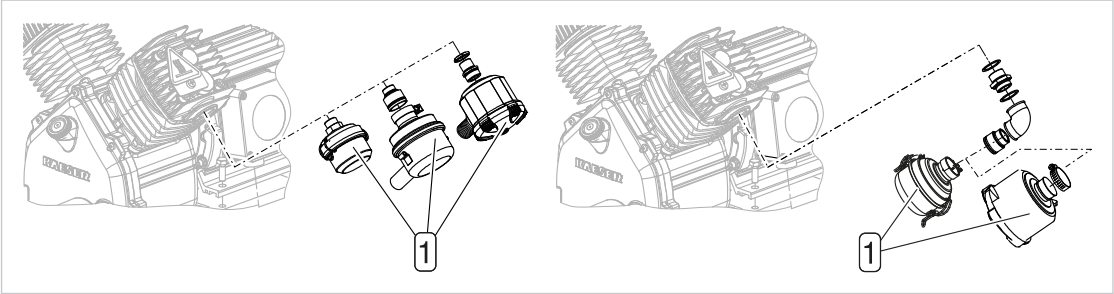



Fig. 15 Installing the air filter

[1] Air filter

Proceed as follows:

► Install the air filter so that the intake opening is pointing downwards.
✓ The machine is ready for operation.

Further information regarding the air filter can be found in chapter 11.4 Air filter maintenance.

## 7.3 Connecting the machine to a compressed air network

Condensate in the compressed air network can damage the piping. Only use corrosion-resistant piping, taking the electrochemical series into account.

Only use fluoroelastomer sealing rings

- Flexible compressed air line or compensator
- Required sealing rings

**⚠ WARNING**

**Danger of force being exerted on the body from sudden release of pressure**

► Fully vent all pressurised components and enclosures
► Verify the complete absence of pressure

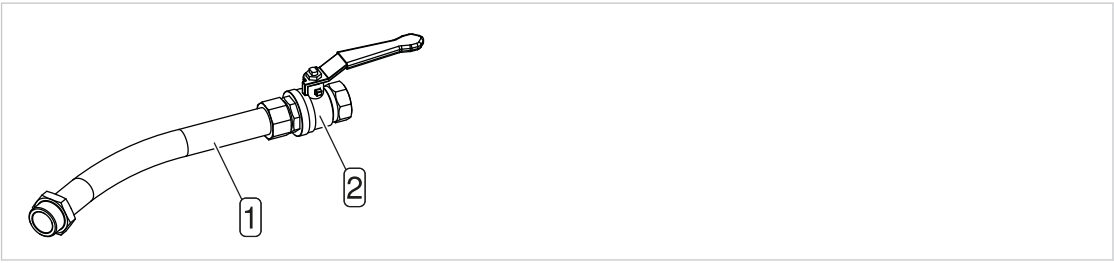



Fig. 16 Compressed air line

[1] Flexible compressed air line
[2] User's shut-off valve

Proceed as follows:

1. Install a user-provided shut-off valve in the connecting line.
2. Connect the machine to the compressed air network using a flexible compressed air line.

## 7.4 Connecting the machine to a power supply

Carry out the necessary protective measures in accordance with the relevant regulations and national accident prevention regulations. Relevant regulations include, for example, IEC 60364 or DIN VDE 0100. National accident prevention regulations include, for example, DGUV Regulation 3 in Germany. Take any additional regulations from the local electricity supplier into account.

Measure the supply cable cross sections and backup fuses for the overcurrent protection device in accordance with EN 60204-1:2018 (7.2) and local regulations.

Use a power supply isolating device that complies with the requirements of EN 60204-1:2018 (5.3), e.g. a load isolating switch with upstream fuses. When using a circuit breaker, take the start-up characteristics of the compressor motor (electric motor) into account.

A suitable plug/socket combination may also be used for machines with a rated current below 30 A. These must meet the requirements of EN 60204-1:2018 (13.4.5) and be capable of being pulled out under load.

Proceed as follows:

1. Check whether the tolerance limits of the mains voltage from the power supply network are within the permissible tolerance limits of the rated voltage for the machine.
2. Check the permissible shutdown times for the overcurrent protection device in the event of an error.

**⚠ DANGER**

**Danger of electric shock from live components**

- ► Disconnect the machine from the power supply (all poles)
- ► Secure the power supply isolating device against reactivation
- ► Verify the absence of voltage (all poles)

3. The machine must be fitted with a user-provided lockable power supply isolating device.
4. Connect the machine to the power supply network.

Further information regarding electrical connection of the machine can be found in chapter 13.2 Wiring diagram.

### 7.4.1 Connecting KCD 840-350, 230 V / 60 Hz to a power supply network

- Machine connecting cable (3 m, cable cross section 4 mm²)

Proceed as follows:

**⚠ DANGER**

**Danger of electric shock from live components**

- ► Disconnect the machine from the power supply (all poles)
- ► Secure the power supply isolating device against reactivation
- ► Verify the absence of voltage (all poles)

1. Equip the machine with a user-provided lockable power supply isolating device.
2. Set the junction box.
3. Connect the connecting cable for the machine (4 mm²) to the user-provided connecting cable (6 mm²) and the connector box.

### 7.4.2 C23 Motor starter

Detailed information regarding electrical connection of the controller can be found in the START CONTROL BASIC DUO motor starter operating manual supplied with the controller.

## 7.5 Options

In this section, you can find information regarding connection or installation of available options to your machine.

### 7.5.1 C5 Oil level monitoring

Oil level monitoring does not relieve you of the obligation to visually check the oil level at regular intervals.

**⚠ DANGER**

**Danger of electric shock from live components**

- ► Switch off the power supply (all poles)
- ► Secure the power supply against reactivation
- ► Verify the absence of voltage (all poles)

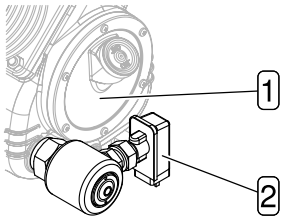



Fig. 17 C5 Oil level monitoring

1 Compressor block
2 Oil level monitoring

#### 7.5.1.1 C5 Connecting the oil level monitor

The contact in the oil level monitor is wired at the factory as a normally open contact.

| Oil level | Electrical contact |
|---|---|
| rises | closes |
| drops | opens |

Tab. 33 C5 Oil level monitoring factory setting

The oil level monitoring is connected on machines with direct online starting. The low-voltage cut-out in the pressure switch shuts down the machine if the oil falls to its minimum permissible level.

If the machine is shut down by the undervoltage trip, the machine does **not** restart automatically when power is restored after a power cut.

Proceed as follows:

► Switch on and off the compressor at the pressure switch.

### 7.5.1.2 C5 Connecting the oil level monitor

The contact in the oil level monitor is wired at the factory as a normally open contact.

| Oil level | Electrical contact |
|---|---|
| rises | closes |
| drops | opens |

Tab. 34 C5 Oil level monitoring factory setting

If the machine is controlled by an external controller, the oil level monitor must be connected to this controller in such a manner that the controller shuts the machine down as soon as the oil level falls to the minimum set level.

### 7.5.1.3 C5 Float switch

The float switch has been set at the factory as follows:

- As soon as the oil level drops to the minimum permissible level, the machine switches off.
- 2 mm of the red arrow tip is visible.

Proceed as follows:

► Check the setting and adjust if required.

#### Adjusting the setting

The switching point can be adjusted slightly by shifting the contact sensor.

The switching point can be fine-tuned by shifting along the length of the arrow:

- Shifting towards the arrow head reduces the switching point to a lower oil level.
- Shifting towards the end of the arrow raises the switching point to a higher oil level.



**⚠ DANGER**

**Danger of electric shock from live components**

► Disconnect the machine from the power supply (all poles)
► Secure the power supply isolating device against reactivation
► Verify the absence of voltage (all poles)

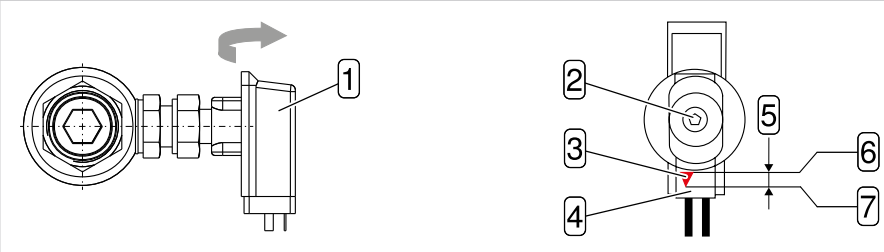



Fig. 18 C5 Adjusting the oil level monitoring switching point

1 Switch knob cover
2 Screw
3 Red arrow
4 Contact sensor
5 Setting range
6 Higher oil level
7 Lower oil level

Proceed as follows:

1. Switch the machine off.
2. Open the switch knob cover.
3. Loosen the screw.
4. Shift the contact sensor.
5. Retighten the screw.
6. Close the cover until it snaps shut.
7. Switch the machine on.

### 7.5.2 H29 Anchoring the machine

**⚠ CAUTION**

**Danger of tipping due to high centre of gravity and weight of the machine**

- ► Machine-dependent:
  Secure machines with vertical air receiver against tipping
- ► Use transportation slings to lift the machine

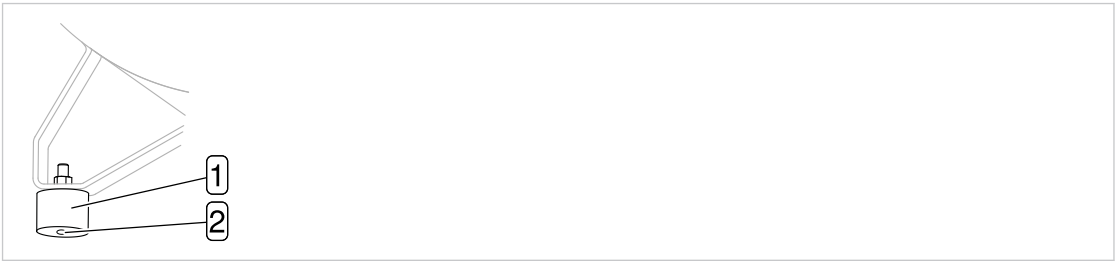



Fig. 19 H29 Securing the bolt-down rubber buffers

1 Bolt-down rubber buffer
2 Threaded connection

Proceed as follows:

1. Remove the wooden frame from the receiver feet.
2. Determine suitable fixing elements for the ground beneath the machine.
3. Secure the bolt-down rubber buffers to the ground.
4. Lift the machine, position with the vessel feet resting on the rubber buffers, and anchor in place using hexagon nuts.

### 7.5.3 K5 / K6 ECO-DRAIN condensate drain

#### 7.5.3.1 K5 Connecting condensate drain / K6

The electronic condensate drain is supplied loose (machine-dependent).

Install the condensate drain vertically.

Do **not** bond the plug-in nipple.




Fig. 20 K5 / K6 ECO-DRAIN condensate drain

1 ECO-DRAIN condensate drain
2 Male hose coupling
3 Plug-in nipple
4 Quick-release coupling
5 Shut-off valve

**⚠ DANGER**

**Danger of electric shock from live components**

- ► Disconnect the machine from the power supply (all poles)
- ► Secure the power supply isolating device against reactivation
- ► Verify the absence of voltage (all poles)

Proceed as follows:

1. Insert the plug-in nipple on the condensate drain into the quick-release coupling on the air receiver condensate outlet.
2. The user must establish the electrical connection (see condensate drain operating manual).
3. Connect the condensate drain to the condensate collection pipe as described below.
4. Open the shut-off valve upstream of the condensate drain.

### 7.5.3.2 Connecting the condensate line

The condensate drain is fitted with a male hose coupling for connection to a condensate line. Ensure that the condensate can drain away unhindered.

Only connect machines to the condensate collection pipe which do not exceed the permissible maximum working pressure of 16 bar.

**Condensate line**

| Characteristic | Value |
|---|---|
| Maximum length[1)] [m] | 15 |
| Maximum delivery head [m] | 5 |
| Material (pressure-resistant, corrosion-resistant) | Copper<br>Stainless steel<br>Plastic |

1) Longer lengths only possible following consultation with an authorised service partner

Tab. 35 K5 / K6 Condensate line

**Condensate collection pipe**

| Characteristic | Value |
|---|---|
| Maximum length[1)] [m] | 20 |

1) Longer lengths only possible following consultation with an authorised service partner

| Characteristic | Value |
|---|---|
| Gradient [%] | ≥3 |
| Material (pressure-resistant, corrosion-resistant) | Copper<br>Stainless steel<br>Plastic |

1) Longer lengths only possible following consultation with an authorised service partner

Tab. 36 K5 / K6 Condensate collection pipe

**Required diameter for condensate collection pipe**

| Compressed air flow rate[1] [m³/min] | Diameter [Inch] |
|---|---|
| <10 | ¾ |
| 10–20 | 1 |
| 21–40 | 1 ½ |
| > 40 | 2 |

1) Compressed air flow rate as an indicator for the amount of condensate to be expected

Tab. 37 K5 / K6 Required diameter for condensate collection pipe

The following illustration depicts an installation recommendation for the condensate line connection. Condensate flows downwards into the condensate collection pipe. This type of connection prevents condensate from flowing back into the machine from the condensate collection pipe. Connect each condensate line directly to the condensate collection pipe. To enable each condensate line to be shut off individually, install a shut-off valve in each condensate line.

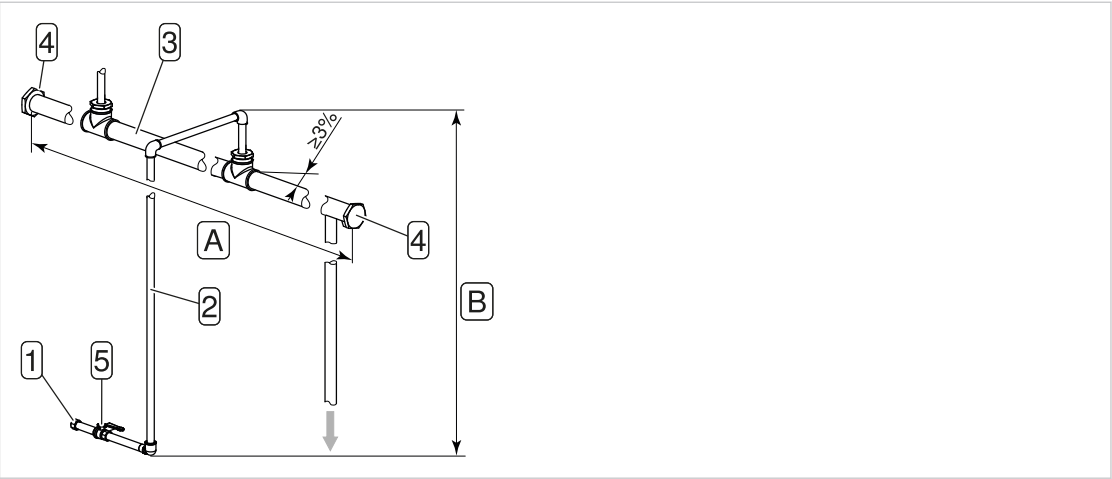



Fig. 21 K5 / K6 Connecting the condensate line

1 Connection at condensate drain
2 Condensate line
3 Condensate collection pipe
4 Screw plug
5 Shut-off valve
A Length of condensate collection pipe
B Delivery head

Proceed as follows:

1. Install a shut-off valve in the condensate line.
2. Connect the condensate line directly to the condensate collection pipe.

Conduct the condensate into a suitable collection tank and dispose of it in accordance with the applicable environmental protection regulations.

### 7.5.4 K6 Connecting floating contacts to the condensate drain



**⚠ DANGER**

**Danger of electric shock from live components**

- ► Disconnect the machine from the power supply (all poles)
- ► Secure the power supply isolating device against reactivation
- ► Verify the absence of voltage (all poles)

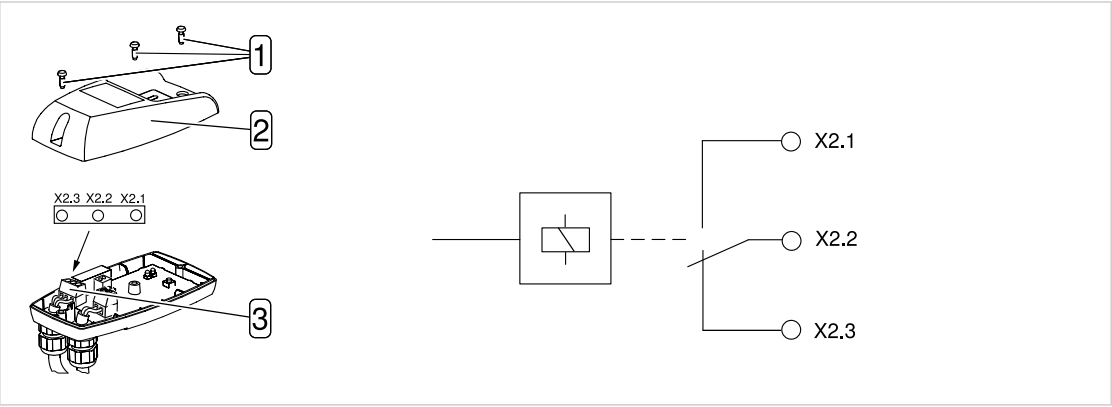



Fig. 22 K6 Connecting floating contacts to the condensate drain

1 Screw
2 Enclosure top
3 Connection for floating contacts

Proceed as follows:

1. Carry out the necessary protective measures in accordance with the relevant regulations and national accident prevention regulations. Relevant regulations include, for example, IEC 60364 or DIN VDE 0100. National accident prevention regulations include, for example, DGUV Regulation 3 in Germany.
2. Remove the screw and take off the enclosure top.
3. Should the floating contact carry dangerous touch voltages, install a power supply isolating device.
4. Select a suitable cable and connect to X2.
5. When using a multicore cable to connect the floating contact, its rated data must be suitable for the highest occurring voltage and the expected temperature range.
6. Place the enclosure top in position and hand-tighten the screws.

# 8 Commissioning



**⚠ DANGER**

**Danger of electric shock from live components**

- ► Disconnect the machine from the power supply (all poles)
- ► Secure the power supply isolating device against reactivation
- ► Verify the absence of voltage (all poles)



**⚠ WARNING**

**Danger of force being exerted on the body from sudden release of pressure**

- ► Fully vent all pressurised components and enclosures
- ► Verify the complete absence of pressure

## 8.1 To be observed before each commissioning

In addition to when using the machine for the first time, commissioning is required after any longer periods of downtime.

For safe and reliable operation of the machine, adhere to the following measures:

| Downtime periods of longer than | Preparatory measure |
|---|---|
| 36 months | Arrange for the technical condition of the machine to be checked by an authorised service partner |

Tab. 38 Commissioning following extended downtime

## 8.2 Checking installation and operating conditions

| To be checked | See chapter | Fulfilled? |
|---|---|---|
| Are operating personnel familiar with the safety regulations? | 3.7.1 Determining suitable personnel | |
| Have all of the installation conditions been fulfilled? | 6 Installation and operating conditions | |
| Has a lockable, user-provided power supply isolating device been installed? | 7.4 Connecting the machine to a power supply | |
| Is the electrical voltage from the mains power supply in accordance with the rated voltage for the machine? | 2.1 Nameplate | |
| Are the cable cross section and fuse protection sufficient? | 2.11 Electrical connection data | |
| Has the loose-supplied air filter (machine-dependent) been installed? | 7.2 Installing the air filter | |
| Has the motor protection switch been set in accordance with the motor current? | 8.5 Motor protection | |
| Have all electrical connections been checked for tightness? | — | |
| Has the direction of rotation been checked? | 8.4 Checking the direction of rotation | |

| To be checked | See chapter | Fulfilled? |
|---|---|---|
| Has the connection to the compressed air network been established including a shut-off valve and flexible compressed air line? | 7.3 Connecting the machine to a compressed air network | |
| Has the airend been filled with the required volume of compressor oil? | 11.6 Checking the compressor oil level | |
| C5<br>Is the oil level monitoring connected to the external controller? | 7.5.1 C5 Oil level monitoring | |
| H12<br>Is the machine housing fully closed? | — | |
| H29<br>Is the machine firmly anchored to the ground? | 7.5.2 H29 Anchoring the machine | |
| K5 / K6<br>Ist der Kondensatableiter angeschlossen? | 7.5.3 K5 / K6 ECO-DRAIN condensate drain | |
| Are all safety guards and covers fixed in place? | — | |

Tab. 39 Checklist for installation conditions

## 8.3 Switching the machine on for the first time

- No personnel are working on the machine.
- The direction of rotation has been checked, see chapter 8.4 Checking the direction of rotation.
- The motor contactor has been set correctly, see chapter 8.5 Motor protection.

Proceed as follows:

1. All cover panels are secured in place.
2. Open the shut-off valve to the air network.
3. Switch on the power supply isolating device.
4. Switch the machine on using the *ON/OFF* switch (see chapter 9 Operation).
   ✓ The compressor motor starts up, the machine switches to LOAD and delivers compressed air.
5. Monitor the machine for any malfunctions occurring during the first few hours of operation.
6. Carry out the following tasks after the first 50 operating hours:
   a) Check that all electrical connections are secure.
   b) Change the compressor oil.

## 8.4 Checking the direction of rotation

The machine is designed for a three-phase connection with a clockwise phase sequence.

Depending on the version, the machine is equipped with a CEE phase changeover plug. The phase changeover plug automatically detects the direction of rotation.

On machines without a phase changeover plug, the direction of rotation must be checked manually.

### 8.4.1 Automatic phase sequence detection

The machine is equipped with a CEE phase changeover plug with phase sequence indicator. If the direction of rotation is incorrect, the control indicator illuminates in red.

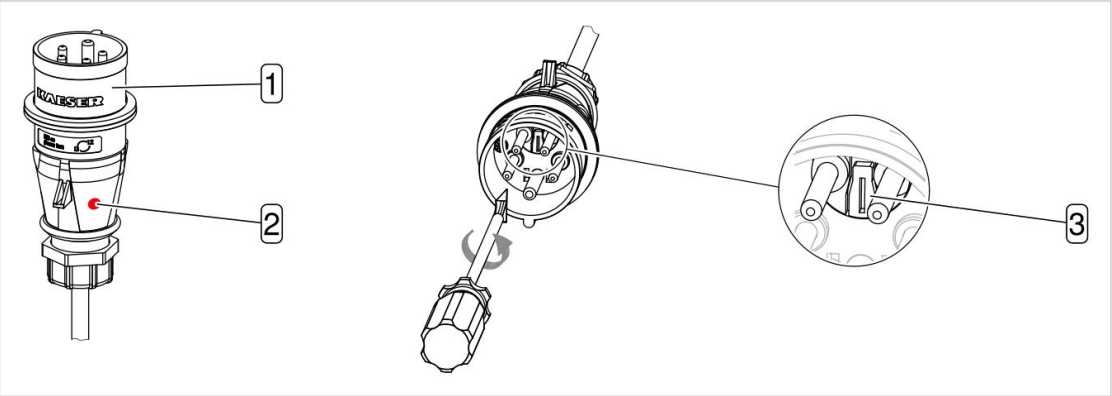



Fig. 23 Automatic phase sequence indicator

1 CEE phase changeover plug
2 Control indicator
3 Phase changeover unit

Proceed as follows:

► Connect the machine to the power supply network.

Should the control indicator illuminate:

- Disconnect the machine from the power supply network.
- Using a suitable screwdriver, push the phase changeover unit inwards and turn through 180° until it locks in place.

### 8.4.2 Determining the phase sequence direction

Ideally, the phase sequence direction should be measured with a phase sequence indicator. Alternatively, switch the machine on briefly and observe the direction of rotation for the compressor motor fan wheel.

Proceed as follows:

1. Check that no personnel are working on the machine.
2. Switch on the power supply isolating device.
3. Check the machine supply cables for a clockwise phase sequence using a phase sequence indicator.

   In the event that you detect an anticlockwise phase sequence, isolate the machine immediately from the power supply and exchange machine supply cables L1 and L2.
4. Close the machine housing completely.

In the absence of a phase sequence indicator:

- Switch the machine on and back off again as soon as the compressor motor starts up.
- Verify the direction of rotation against the arrow indicated.
- Should the direction of rotation be incorrect, reverse L1 and L2.

## 8.5 Motor protection

The machine should only be operated with a correctly adjusted motor protection device to protect the motor from overloading.

A motor overload protection switch that is set too high provides no protection. Incorrect settings can lead to irreparable motor damage.

### 8.5.1 Setting the motor contactor (Direct online start)

The machine starts directly and is controlled by a pressure switch. The pressure switch switches the machine on and off within the set pressure limits.

Motor contactor setting value:
In order to prevent voltage fluctuations, temperature influences or component tolerances from actuating the motor contactor, the set value must be 10% higher than the rated current.
Read off the rated current from the corresponding nameplate and calculate the value.

Rated current
On machines with the S3 operating mode, use the full load current indicated on the machine nameplate as the rated current.
For all other motors (operating mode S1), use the nominal current indicated on the motor nameplate as the rated current.

The motor contactor in the pressure switch is preset at the factory.

Proceed as follows:

► Check the motor contactor setting.

If the motor contactor shuts down despite being set correctly, contact an authorised service partner.

### 8.5.2 Setting the motor contactor (Star-delta start)

The machine is started by an external controller via a star-delta start.

Motor contactor setting value:
With a star-delta start, the phase current is routed via the motor contactor. This phase current is 0.58 times the rated current.
In order to prevent voltage fluctuations, temperature influences or component tolerances from actuating the motor contactor, the set value must be 10% higher than the calculated phase current.
Read off the rated current from the corresponding nameplate and calculate the value.

Rated current
On machines with the S3 operating mode, use the full load current indicated on the machine nameplate as the rated current.
For all other motors (operating mode S1), use the nominal current indicated on the motor nameplate as the rated current.

Before initial commissioning of the machine, proceed as follows:

► Arrange for the motor contactor in the external controller to be set to the correct value by an authorised service partner or a qualified specialist (see chapter 3.7.1 Determining suitable personnel).

## 8.6 Network pressure

The network pressure (working pressure) is set at the factory.
It is possible to adjust the pressure to suit the individual operating conditions.

The pressure can only be set via an installed and pressurised pressure switch. Take the maximum permissible pressure differential into account.

### 8.6.1 Setting the network pressure MDR 3

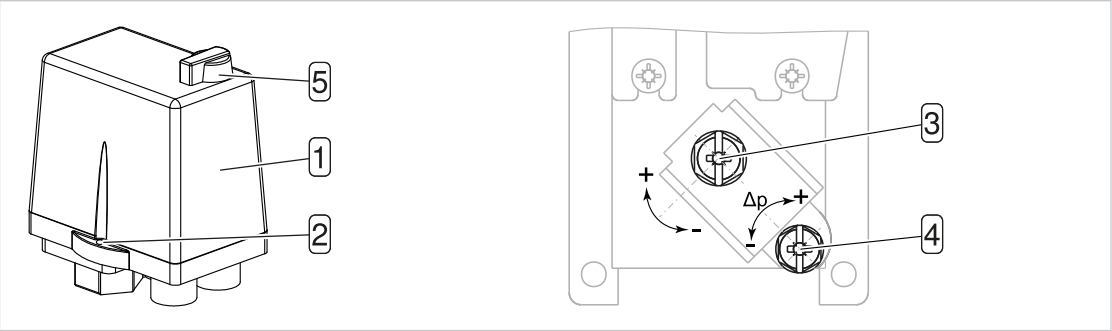



Fig. 24 Setting the network pressure MDR 3

1 Enclosure
2 Screw
3 Adjusting screw for upper pressure value (Cut-out pressure)
4 Adjusting screw pressure differential
5 “ON/OFF” switch (machine-dependent)

Proceed as follows:

**⚠ DANGER**

**Danger of electric shock from live components**

- ► Disconnect the machine from the power supply (all poles)
- ► Secure the power supply isolating device against reactivation
- ► Verify the absence of voltage (all poles)

1. Fully remove the screws from the enclosure.
2. Remove the enclosure.

**⚠ WARNING**

**Danger of force being exerted on the body from sudden release of pressure**

- ► Fully vent all pressurised components and enclosures
- ► Verify the complete absence of pressure

3. Adjust the setting for the pressure switch as per the table.

| Adjusting the setting | Action |
|---|---|
| Cut-out pressure[1)] should be increased. | ► Turn adjusting screw 3 to the right (direction: +). |
| Cut-out pressure[1)] should be lower. | ► Turn adjusting screw 3 to the left (direction: –). |
| The pressure differential between the cut-in and cut-out pressure should be increased. | ► Turn adjusting screw 4 to the right (direction: +). |
| The pressure differential between the cut-in and cut-out pressure should be lower. | ► Turn adjusting screw 4 to the left (direction: –). |

1) Cut-in pressure + pressure differential = Cut-out pressure

Tab. 40 Adjusting the pressure switch setting

4. Should the switching frequency need to be reduced:
   a) Increase the pressure differential between cut-in and cut-out pressure.
   b) Increase the buffer volume by means of a larger, downstream air receiver.
5. Refit the enclosure.

Further information regarding the duty cycle can be found in chapter 2.13 Machine duty cycle.
Further information regarding the switching frequency can be found in chapter 2.9 Motor and power.
Further information regarding the pressure switch setting can be found in chapter 2.6 Pressure switch setting.

## 8.7 P4 Setting the filter regulator

The working pressure of a compressor fluctuates according to the limits set on the pressure switch.

The filter regulator unit reduces this fluctuation to the required pressure and holds it constant.

- The machine is isolated from the air consumers.

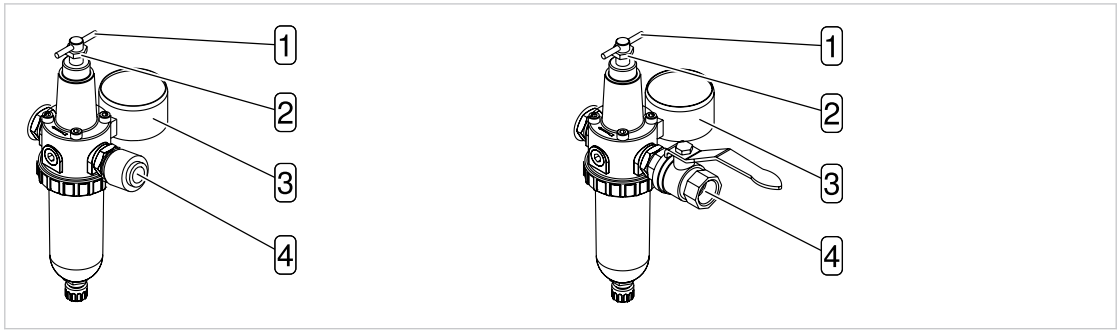



Fig. 25 P4 Setting the filter pressure reducer

1 Adjusting screw
2 Locknut
3 Pressure gauge (working pressure)
4 Compressed air outlet

Proceed as follows:

1. Start the machine and run it up to cut-out pressure.
2. To relieve the filter regulator, turn the adjusting screw anticlockwise until no more resistance is felt.

3. Turn the adjusting screw clockwise until the pressure gauge reads the required working pressure.
4. Tighten the locknut to fix the adjusting screw in position.

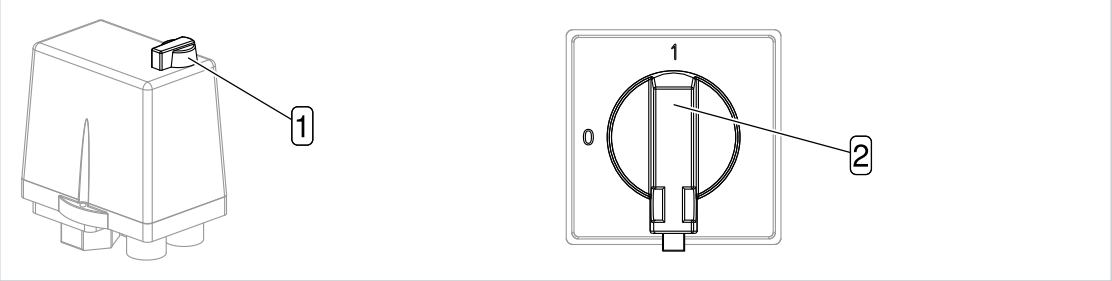
# 9 Operation

## 9.1 Switching on and off

Always switch the machine on and off using the *ON/OFF* switch (switch position I/0).

Location of *ON/OFF* switch, depending on start type:

- On pressure switch
- On external controller or motor starter C23 or sound enclosure H12




1 *ON/OFF* switch on pressure switch
2 *ON/OFF* switch on external controller
or motor starter C23
or sound enclosure H12

### 9.1.1 Switching on

In the event of a power failure, the compressor motor is **not** locked off against automatic restart. As soon as the power supply returns, the compressor motor can start automatically.

- Machine-dependent: An external controller or motor starter C23 has been installed
- A user-provided power supply isolating device has been installed
- No personnel are working on the machine
- All cover panels are secured in place
- H12: The machine housing is closed completely
- The machine has warmed up to the permissible minimum temperature
  Further information can be found in chapter 2.5 Ambient conditions.

Proceed as follows:

1. Switch on the power supply isolating device.
2. Switch the machine on using the *ON/OFF* switch.

The machine starts up as soon as the network pressure drops below the cut-in pressure.

### 9.1.2 Switching off

Proceed as follows:

1. Switch the machine off using the *ON/OFF* switch.
2. Switch off the power supply isolating device (all poles) and secure against reactivation.

The machine is completely shut down and isolated from the power supply.

# 10 Fault recognition and rectification

## 10.1 Basic information

The faults applicable to your machine are dependent upon the individual machine equipment.

- Do not attempt any measures other than those described in this operating manual!
- In all other cases:
  Arrange for errors to be rectified by KAESER SERVICE or an authorised service partner.

## 10.2 Faults and rectifying measures

| Fault | Possible cause | Measure |
|---|---|---|
| Machine does not start | Fuse has blown and machine is disconnected from power supply. | Check motor connection and fuse |
| | Pressure switch contacts defective | Contact an authorised service partner |
| | Motor contactor has tripped | Allow motor to cool down |
| | Compressor motor defective: Damage to bearings or short in windings | Contact an authorised service partner |
| | Compressor block defective | Contact an authorised service partner |
| Machine does not start | C5 Undervoltage trip in pressure switch for oil level monitoring has tripped | Arrange for undervoltage trip in pressure switch to be checked<br>Switch machine on at pressure switch |
| Machine starts with difficulty | Solenoid valve[1)] not opening | Contact an authorised service partner |
| | Relief valve on pressure switch not opening | Contact an authorised service partner |
| | Bearing damage | Contact an authorised service partner |
| | Piston seized due to insufficient or incorrect oil | Contact an authorised service partner |
| | Power supply fault | Check power supply |
| | Oil level too high | Drain off some oil |
| Machine running hot | Ambient temperature too high | Ensure lower ambient temperature |

1) Machine-dependent

| Fault | Possible cause | Measure |
|---|---|---|
| | Incorrect direction of rotation for compressor motor and therefore also fan wheel | Turn phase changeover unit by 180° or reverse supply cables L1 and L2 |
| | Fan cannot draw air in freely | Ensure unrestricted inlet air for fan |
| | Valves[1)] or valve plate between cylinder head and cylinder leaking or contaminated | Contact an authorised service partner |
| | Pressure valve reed broken | Contact an authorised service partner |
| Motor contactor trips after short period | Power supply fault | Check power supply |
| | Motor error | Contact an authorised service partner |
| Motor contactor trips after longer period | Current consumption too high due to undervoltage | Check power supply cable cross sections<br>Check connection terminals or tighten screws |
| Machine running continuously without reaching final pressure | Air filter clogged | Clean or replace air filter |
| | Valves[1)] or valve plate between cylinder head and cylinder leaking or contaminated | Contact an authorised service partner |
| | Pressure valve reed broken | Contact an authorised service partner |
| | Machine leaking | Resolve leaks or replace affected components |
| | Consumer in compressed air network leaking | Resolve leaks |
| | Compressed air requirement exceeds machine flow rate | Use a larger machine |
| | Solenoid valve blows off continuously<br>Solenoid coil defective | Contact an authorised service partner |
| Machine switching too frequently | Air receiver filled with condensate | Drain condensate<br>K5 / K6 Check electronic condensate drain. |
| Machine switches off | C5 Undervoltage trip in pressure switch for oil level monitoring has tripped | Replenish oil<br>Switch machine on at pressure switch |

1) Machine-dependent

| Fault | Possible cause | Measure |
|---|---|---|
| Machine switches off, air escapes from relief valve | Check valve defective | Contact an authorised service partner |
| Pressure switch does not vent after switching off | Relief valve contaminated | Contact an authorised service partner |
| Compressed air escaping from pressure switch whilst machine is operating | Pressure switch diaphragm defective | Contact an authorised service partner |
| | Relief valve not closing | Contact an authorised service partner |
| Whistling sound from cylinder head | Screws on cylinder head loose<br>Seal defective | Contact an authorised service partner |
| Safety valve blowing off although cut-out pressure not yet reached | Pressure switch set incorrectly | Check pressure switch setting |
| | Valve spring defective | Contact an authorised service partner |
| | Dirt particles in valve seat | Allow safety valve to blow off briefly |
| Machine consuming too much oil | Viscosity too low | Fill with oil as per operating manual |
| | Piston rings worn or damaged | Contact an authorised service partner |
| Piston rings worn or damaged after short operating period | Contaminated oil | Install a finer air filter |

1) Machine-dependent

Tab. 41 Other faults and rectifying measures

# 11 Maintenance

Proper maintenance is essential in order to ensure a reliable compressed air supply, efficient operation and a long service life for the machine. Perform maintenance work only when the machine is switched off and has cooled down. Work on live components must be performed by a qualified electrician only.

Before performing any maintenance work in which the pressure system is opened, the pressure-free state of the machine must be ensured. In order to achieve this, disconnect the machine from the compressed air network and completely vent the remaining pressure from machine's pressure system, see chapter .



**⚠ CAUTION**

**Danger of burns from hot components and surfaces**

- ► Wear protective clothing
- ► Allow the machine to cool down

Warn other people by blocking off access to the work area and displaying appropriate signage whilst work is being performed on the machine:

| Pictogram | Meaning |
|---|---|
|  | Prohibition:<br>Do not switch on |
|  | Warning:<br>Maintenance work in progress |

Tab. 42 Labelling the machine

Once work has been completed and before switching the machine back on, ensure the following:

- No personnel are working on the machine.
- No tools have been left on or in the machine.
- All protective devices and cover panels are fitted.
- The housing is closed completely.

## 11.1 Maintenance schedule

### 11.1.1 Planning maintenance work

The following two tables show the maintenance tasks that must be carried out at regular intervals. The respective interval specifies the latest deadline by which a maintenance task must be completed. For intervals specified in operating hours and years, the period that elapses first applies.

The deadlines apply to average operating conditions and the use of genuine KAESER parts. If the utilisation rate is high, shorten the maintenance intervals accordingly. Arrange for an authorised service partner to advise you in this regard.

The following operating conditions lead to heavy machine stress:

- High ambient temperature
- High dust levels
- High start frequency
- Low duty cycles

Only carry out maintenance tasks described in this operating manual. Arrange for any preventative maintenance to be carried out exclusively by an authorised service partner. Log all completed tasks using the list at the end of the chapter.

#### 11.1.1.1 Regular maintenance tasks

| Task<br>●: Applicable<br>○: Not applicable<br>h: Operating hours<br>(...): Maintenance package[1)] | Daily | Monthly | Every 1000 h (A) | Every 2000 h (B) | Every 6000 h (C) | Every 12000 h (D) | Every ... years |
|---|---|---|---|---|---|---|---|
| Compressor oil: | | | | | | | |
| 11.6 Checking the compressor oil level | ●[2)] | ○ | ○ | ○ | ○ | ○ | ○ |
| 11.8 Changing the compressor oil | As per 11.1.2 Compressor oil change intervals | | | | | | |
| Service air receiver: | | | | | | | |
| 11.10.2 Draining condensate from the air receiver | ●[3)] | ○ | ○ | ○ | ○ | ○ | ○ |
| Test and service condensate drain: | | | | | | | |
| 11.11.1 K5 / K6 Testing the condensate drain | ○ | ● | ○ | ○ | ○ | ○ | ○ |
| 11.11.2 K5 / K6 Replacing the service unit | ○ | ○ | ○ | ● | ● | ● | 2 |
| Clean air filter: | | | | | | | |
| 11.4 Air filter maintenance | ○ | ○ | ● | ○ | ○ | ○ | 1 |
| Replace air filter: | | | | | | | |
| 11.4 Air filter maintenance | ○ | ○ | ○ | ● | ● | ● | 2 |
| Service filter pressure reducer: | | | | | | | |
| 11.12.1 P4 Draining condensate | ● | ○ | ○ | ○ | ○ | ○ | ○ |
| 11.12.2 P4 Cleaning or replacing the filter element | ○ | ○ | ● | ● | ● | ● | 1 |
| Test safety valve: | | | | | | | |
| 11.9.1 Testing the safety valve on the cylinder head / collecting pipe / check valve | ○ | ○ | ○ | ○ | ○ | ○ | 1 |
| 11.9.2 Testing the safety valve on the air receiver | ○ | ○ | ○ | ○ | ○ | ○ | 1 |
| Check network pressure settings: | | | | | | | |
| 8.6 Network pressure | ○ | ● | ○ | ○ | ○ | ○ | ○ |

1) Depending on the machine, also referred to as Maintenance Package

2) Not required for option C5

3) Not required for option K5 / K6

Tab. 43 Regular maintenance tasks

#### 11.1.1.2 Preventative maintenance tasks

| Task<br>●: Applicable<br>○: Not applicable<br>h: Operating hours<br>(...): Maintenance package[1)] | Daily | Monthly | Every 1000 h (A) | Every 2000 h (B) | Every 6000 h (C) | Every 12000 h (D) | Every ... years |
|---|---|---|---|---|---|---|---|
| Service check valve | ○ | ○ | ○ | ● | ● | ● | 2 |
| Replace relief valve on pressure switch | ○ | ○ | ○ | ● | ● | ● | 2 |
| Service solenoid valve | ○ | ○ | ○ | ● | ● | ● | 2 |
| Inspect valve plate, replace if necessary | ○ | ○ | ○ | ● | ● | ● | 2 |
| Arrange for plastic piping to be replaced | ○ | ○ | ○ | ○ | ● | ● | 6 |
| Replace hose lines | ○ | ○ | ○ | ○ | ● | ● | 6 |

1) Depending on the machine, also referred to as Maintenance Package

Tab. 44 Preventative maintenance tasks

### 11.1.2 Compressor oil change intervals

Duty cycle and ambient conditions are important factors influencing the number and length of the oil change intervals.

KAESER can assist you in determining the optimal change interval for the individual operating situation applicable to your machine.

Determine the operating conditions for the machine on-site and adjust the required replacement interval to these conditions. Record the results in the following table for reference:

| | Maximum permissible change interval [operating hours/years] | |
|---|---|---|
| | Favourable operating conditions[1)] | Adjusted change interval |
| KAESER FLUID PISTON S-68 | 1000/1 | |
| SAE 5 W30 | 1000/1 | |
| KAESER FLUID PISTON S-150 | 2000/1 | |
| VDL 150 | 2000/1 | |
| KAESER FLUID PISTON FG-220 | 2000/1 | |
| FGP | 2000/1 | |

1) Cool to moderate ambient temperatures, low humidity, medium to high duty cycle.

Tab. 45 Change interval



Further information regarding the compressor oil to be used can be found in chapter 2.10 Compressor oil.

## 11.2 Ordering spare parts and operating fluids/materials

Spare parts and operating fluids/materials must meet the technical requirements specified by KAESER and be approved for use in this machine. Otherwise, the machine may become damaged or its function may be significantly impaired. By using genuine KAESER parts, you ensure that these key requirements are met.

KAESER accepts no liability for damage caused by the use of non-genuine spare parts.

Please provide all of the information from the nameplate when making any enquiries and when ordering spare parts.

| Designation | Number |
|---|---|
| Air filter | 1250 |
| K5 / K6 Service Unit ECO-DRAIN condensate drain | 9602 |
| P4 Filter element, filter pressure reducer | 6505 |
| Compressor oil | 1600 |

Tab. 46 Machine spare parts

## 11.3 Compressed air cooler or fan guard maintenance

Regular cleaning ensures reliable cooling of the machine and compressed air. The required frequency depends heavily on ambient conditions at the installation location.

Depending on the machine, either a compressed air cooler or a fan with fan guard is installed.

- Brush
- Vacuum cleaner
- If required: Respiratory protection

1. The machine is switched off
2. The machine is disconnected from its power supply (all poles), the power supply isolating device has been locked off and the absence of all voltage has been verified
3. The machine has cooled down

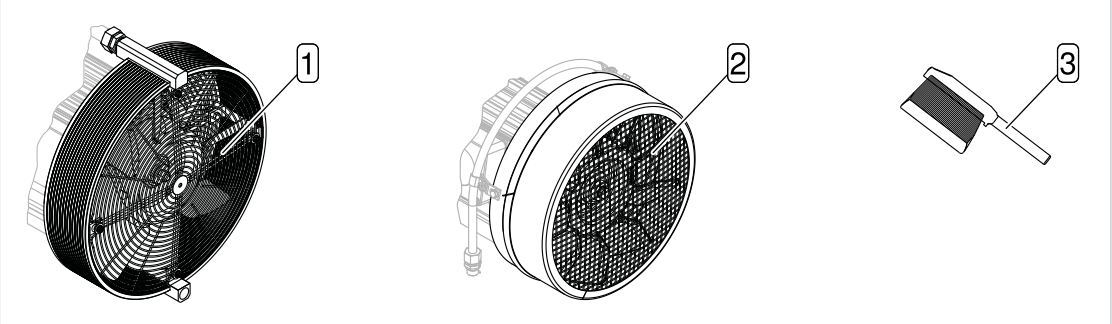



Fig. 26 Cleaning the compressed air cooler or fan guard

1 Compressed air cooler
2 Fan with fan guard
3 Brush

Do not use sharp objects to clean the compressed air cooler or fan guard. The compressed air cooler or fan guard could be damaged. Avoid stirring up dust.

Proceed as follows:

1. Dry-brush the compressed air cooler or fan guard and safety guard.
2. Vacuum clean any dirt off the compressed air cooler or fan guard.

In the event that the compressed air cooler or fan guard cannot be cleaned, arrange for heavy contamination to be removed by an authorised service partner.

## 11.4 Air filter maintenance

The air filter version can vary depending on the machine.
Below you will find information regarding cleaning or replacement of the air filter.

### 11.4.1 Cleaning or replacing the air filter (wire mesh)

The air filter wire mesh is not removable.

- Compressed air for blowing out
- Lukewarm water with household detergent
- Cleaning cloth

1. The machine is switched off
2. The machine is disconnected from its power supply (all poles), the power supply isolating device has been locked off and the absence of all voltage has been verified
3. The machine has cooled down

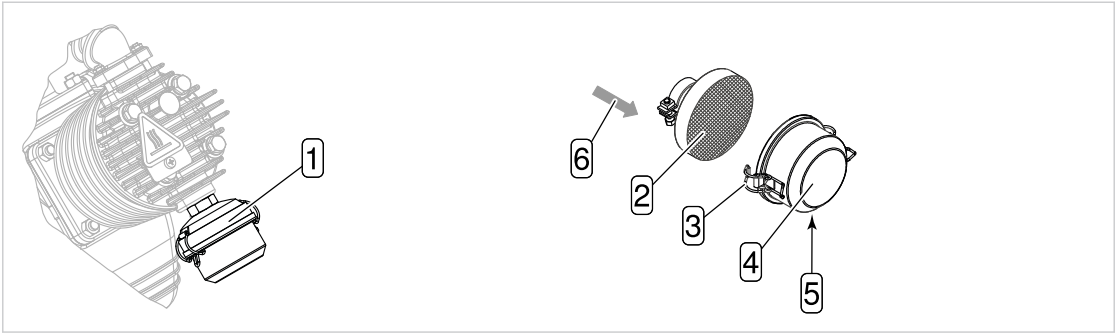



Fig. 27 Cleaning or replacing the air filter (wire mesh)

1 Air filter housing
2 Air filter (wire mesh)
3 Retaining clip
4 Air filter housing cover
5 Intake opening
6 Blow-out direction

Proceed as follows:

1. Unscrew the air filter housing from the cylinder head.
2. Release the retaining clip and take off the air filter housing cover.
3. Rinse the air filter with lukewarm water and household detergent.
4. In the event of heavy contamination of the air filter and cover, use dry compressed air (<2bar) to blow dirt out at an angle from the inside to the outside.
5. Replace the air filter if it is damaged, if cleaning is not possible, or if the replacement interval has expired.

6. Lightly moisten the air filter with oil after cleaning.
7. Clean the air filter housing and sealing surfaces.
8. Position the air filter housing cover and close the retaining clip.
9. Mount the air filter housing on the cylinder head so that the intake opening is facing downwards.
10. Switch on the power supply isolating device.

## 11.4.2 H9 Cleaning or replacing the air filter

All sealing surfaces have been designed to match one another. The use of unsuitable air filters can permit dirt to enter the pressure system, thereby causing damage to the machine.

- Compressed air for blowing out

1. The machine is switched off
2. The machine is disconnected from its power supply (all poles), the power supply isolating device has been locked off and the absence of all voltage has been verified
3. The machine has cooled down

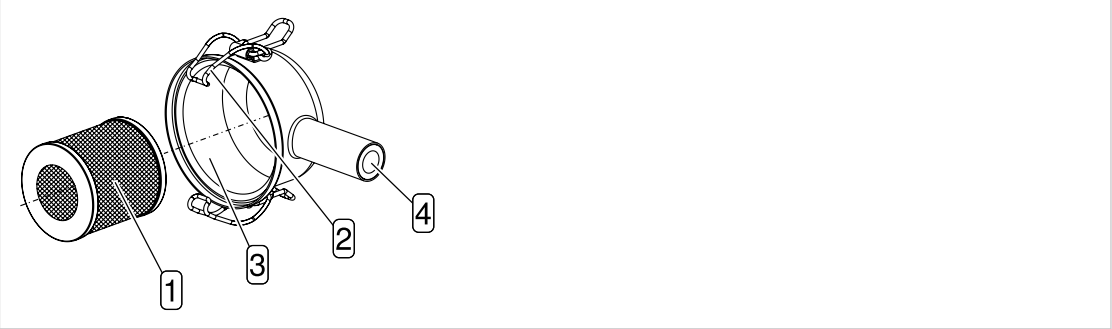



Fig. 28 H9 Cleaning or replacing the air filter

1 Air filter (paper filter)
2 Retaining clip
3 Air filter housing cover
4 Intake air opening

Proceed as follows:

1. Release the retaining clip and take off the air filter housing cover.
2. Pull out the air filter.
3. Use dry compressed air (<2 bar) to blow dirt from the surface of the air filter at an angle, from the inside to the outside.
4. Replace the air filter if it is damaged, if cleaning is not possible, or if the replacement interval has expired.
5. Clean the air filter housing and sealing surfaces.
6. Insert the air filter.
7. Position the air filter housing cover and close the retaining clip.
8. Switch on the power supply isolating device.

## 11.4.3 H10 Cleaning or replacing the air filter

All sealing surfaces have been designed to match one another. The use of unsuitable air filters can permit dirt to enter the pressure system, thereby causing damage to the machine.

- Compressed air for blowing out

1. The machine is switched off
2. The machine is disconnected from its power supply (all poles), the power supply isolating device has been locked off and the absence of all voltage has been verified
3. The machine has cooled down

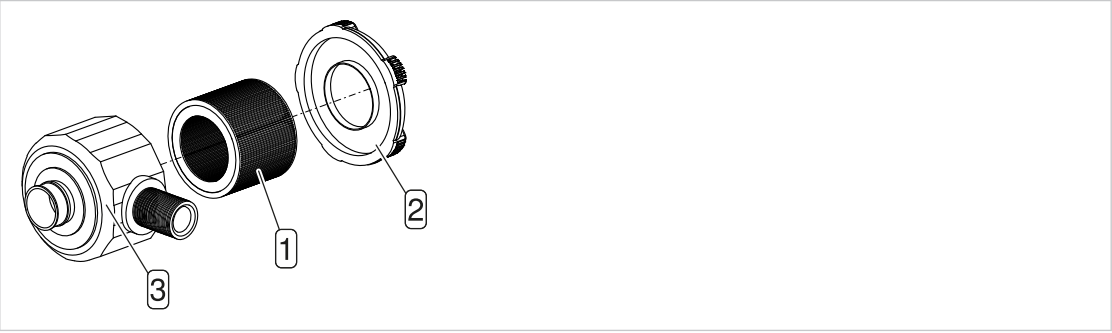



Fig. 29 H10 Cleaning or replacing the air filter

1 Air filter (paper filter)
2 Cover
3 Air filter housing (corrosion-resistant)

Proceed as follows:

1. Unscrew the air filter housing cover and remove.
2. Remove the air filter.
3. Use dry compressed air (<2 bar) to blow dirt from the surface of the air filter at an angle, from the inside to the outside.
4. Replace the air filter if it is damaged, if cleaning is not possible, or if the replacement interval has expired.
5. Clean the air filter housing and sealing surfaces.
6. Insert the air filter.
7. Position the air filter housing and secure in place.
8. Switch on the power supply isolating device.

## 11.5 Compressor motor maintenance

The compressor motor bearings are permanently lubricated. No re-lubrication is required.

Proceed as follows:

► Arrange for the motor bearings to be checked by an authorised service partner during the course of regular maintenance.

## 11.6 Checking the compressor oil level

The oil level can be read off from the oil sight glass.

- The machine is switched off.

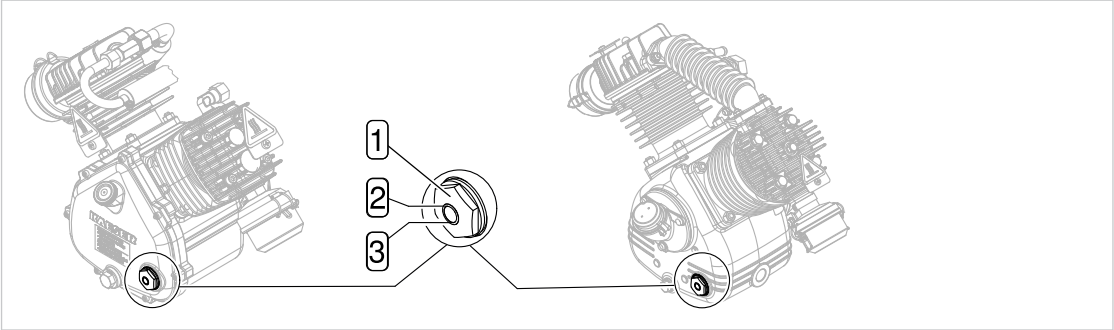



Fig. 30 Checking the compressor oil level

1 Oil sight glass
2 Maximum compressor oil level
3 Minimum compressor oil level

Proceed as follows:

1. Check the compressor oil level daily and before each start-up.
2. Replenish when the minimum compressor oil level is reached.

Further information on replenishing the compressor oil can be found in chapter 11.7 Replenishing the compressor oil.

## 11.7 Replenishing the compressor oil

A sticker on the compressor block indicates the type of compressor oil used for the initial fill at the factory. Further information can be found in chapter 2.10 Compressor oil.

### NOTICE

**Damage to machine from use of incompatible compressor oils**

- ► Do **not** mix different compressor oils
- ► Replenish exclusively with compressor oil of the same type

1. The machine is switched off
2. The machine is disconnected from its power supply (all poles), the power supply isolating device has been locked off and the absence of all voltage has been verified
3. The machine has cooled down

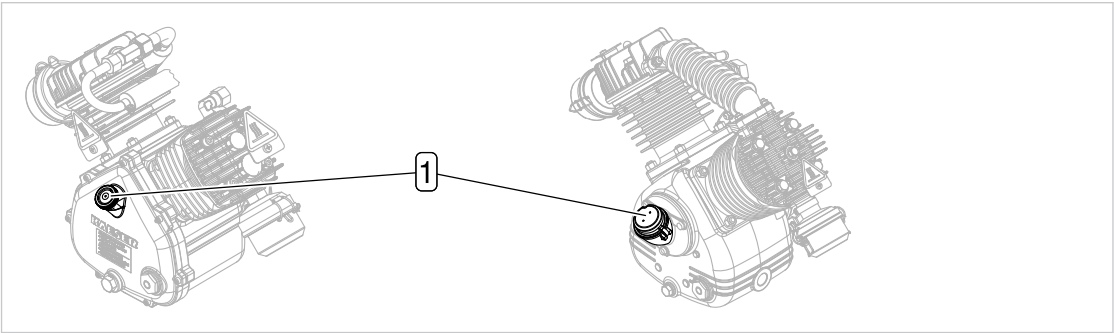



Fig. 31 Replenishing the compressor oil

1 Housing ventilation

Proceed as follows:

1. Remove the housing ventilation from the oil filler port.

2. Note the replenishment volume and replenish with compressor oil accordingly.
3. Refit the housing ventilation.
4. Switch the machine on and check the compressor oil level after approx. 2 Minutes; replenish if necessary.
5. Switch the machine off and visually check for leaks.

## 11.8 Changing the compressor oil

Change the initial fill of compressor oil as specified in chapter 2.10 Compressor oil.

Fully drain the compressor oil from the compressor block.

If oil level monitoring is fitted, check its function as specified in chapter 7.5.1 C5 Oil level monitoring.

If the compressor oil shows a milky-white discolouration, condensation has formed. Contact an authorised service partner if condensate is detected in the compressor oil.

- Compressor oil receptacle

1. The machine is switched off
2. The machine is disconnected from its power supply (all poles), the power supply isolating device has been locked off and the absence of all voltage has been verified
3. The machine has cooled down

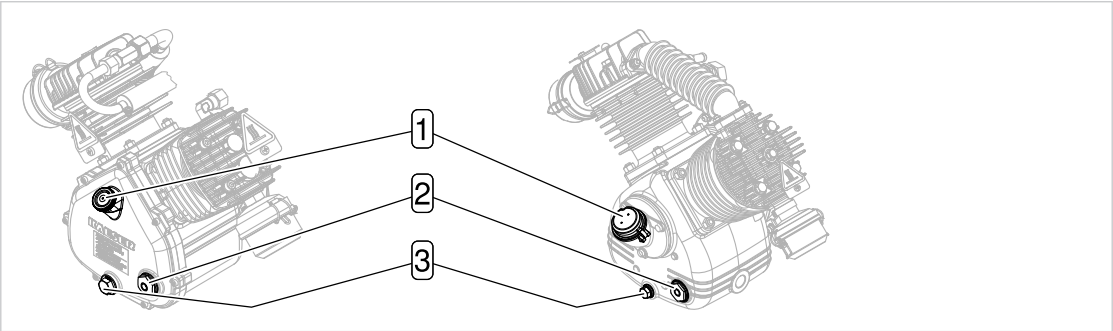



Fig. 32 Changing the compressor oil

1 Oil filler port
2 Oil drain plug
3 Oil sight glass

Proceed as follows:

**⚠ CAUTION**

**Danger of burns from hot components or hot compressor oil**

► Wear protective clothing

1. Draining the compressor oil
   a) Prepare an oil receptacle.
   b) Remove the oil drain plug and allow the compressor oil to drain into the receptacle.
   c) Fit a new seal to the oil drain plug and tighten with a tightening torque of 15 Nm.

2. Filling with compressor oil
   a) Remove the housing ventilation from the oil filler port.
   a) Fill with fresh compressor oil to the maximum mark on the oil sight glass.
   b) Refit the housing ventilation.
3. Switch the machine on and check the compressor oil level after approx. 2 minutes; replenish if necessary.
4. Switch the machine off and visually check for leaks.

Dispose of the drained compressor oil in accordance with applicable environmental protection regulations.

## 11.9 Safety valve

Should the maximum permissible working pressure be exceeded, the corresponding safety valve opens to protect the machine.

- Only operate the machine with a functioning safety valve.
- Do not adjust the safety valve.

Subject the safety valve to various recurring tests in accordance with the relevant subchapters.

Testing the safety valve: In order to prevent the safety valve seat from sticking, it must be actuated at regular intervals – once per year at a minimum.

Testing the actuating pressure of the safety valve: Test the safety valve on the test bench.

### 11.9.1 Testing the safety valve on the cylinder head / collecting pipe / check valve

- The machine is running in LOAD.

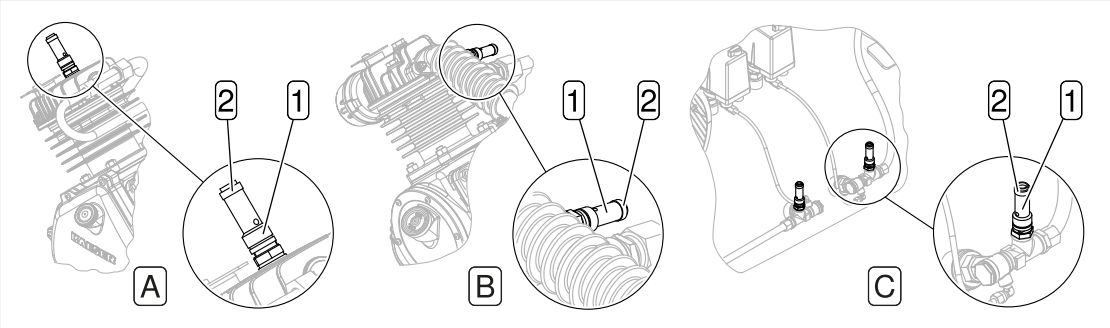



Fig. 33 Testing the safety valve on the cylinder head / collecting pipe / check valve

1 Safety valve
2 Knurled screw
A Safety valve on cylinder head*
B Safety valve on collecting pipe*
C Safety valve on check valve*
* Machine-dependent

Proceed as follows:

**⚠ CAUTION**

**Danger of burns from hot components and surfaces**

► Wear protective clothing
► Allow the machine to cool down

**⚠ WARNING**

**Danger of hearing damage when safety valve blows off**

► Wear ear protection

**⚠ WARNING**

**Danger of impact from released particles when safety valve blows off**

► Wear protective clothing

1. Turn the knurled screw on the safety valve anticlockwise until compressed air blows off. Do **not** turn the knurled screw too far.
2. Turn the knurled screw back to its original position.

In the event that the safety valve does not blow off during the test, arrange for the defective safety valve to be replaced urgently by an authorised service partner.

### 11.9.2 Testing the safety valve on the air receiver

1. The machine has been switched off while under LOAD (air receiver is at maximum pressure)
2. The power supply is switched off (all poles) and secured against reactivation, the absence of all voltage has been verified
3. The user-provided shut-off valve between the machine and compressed air network is closed

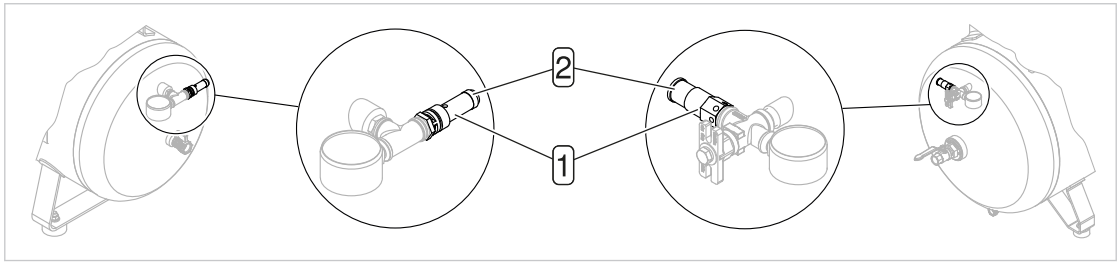



Fig. 34 Testing the safety valve on the air receiver

[1] Safety valve
[2] Knurled screw

Proceed as follows:

**⚠ WARNING**

**Danger of hearing damage when safety valve blows off**

► Wear ear protection

**⚠ WARNING**

**Danger of impact from released particles when safety valve blows off**

► Wear protective clothing

1. Turn the knurled screw on the safety valve anticlockwise until compressed air blows off. Do **not** turn the knurled screw too far.
2. Turn the knurled screw back to its original position.
3. Open the user-provided shut-off valve between the machine and the compressed air network.
   ✓ The machine can now be switched back on again.

In the event that the safety valve does not blow off during the test, arrange for the defective safety valve to be replaced urgently by an authorised service partner.

### 11.9.3 Testing the safety valve actuating pressure

To test the actuating pressure and function of the safety valve, it must be removed by an authorised service partner and tested on a text bench.

Further information regarding the safety valve actuating pressure can be found in chapter 2.7 Pressure.

## 11.10 Air receiver maintenance

### 11.10.1 Checking the air receiver

In accordance with legal regulations, the pressure vessel must be inspected at regular intervals. Observe the relevant national regulations.

### 11.10.2 Draining condensate from the air receiver

The condensable moisture contained within the compressed air condenses inside the air receiver.

- Receptacle

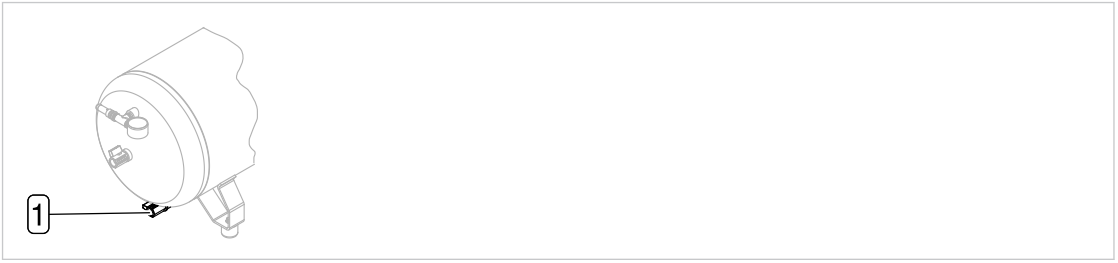



Fig. 35 Draining condensate from the air receiver

1 Condensate shut-off valve

Proceed as follows:

► Drain the condensate daily.

With option K5 / K6 (ECO-DRAIN condensate drain) or option K14 (KAESER-DRAIN condensate drain), the condensate is drained automatically.

Drain the condensate into a receptacle and dispose of it in accordance with the applicable environmental protection regulations.

## 11.11 K5 / K6 ECO-DRAIN condensate drain

Condensate accumulating in the air receiver is removed via an electronic condensate drain.

The condensate drain cannot be cleaned. When condensate no longer drains away, the service unit must be replaced.

Proceed as follows:

► Check the condensate drain regularly as described below and replace the service unit when required.

### 11.11.1 K5 / K6 Testing the condensate drain

Depending on the condensate drain version, the control unit is additionally equipped with an Alarm control indicator.

- A power supply is available
- The machine is pressurised
- The *Power* control indicator on the condensate drain is illuminated

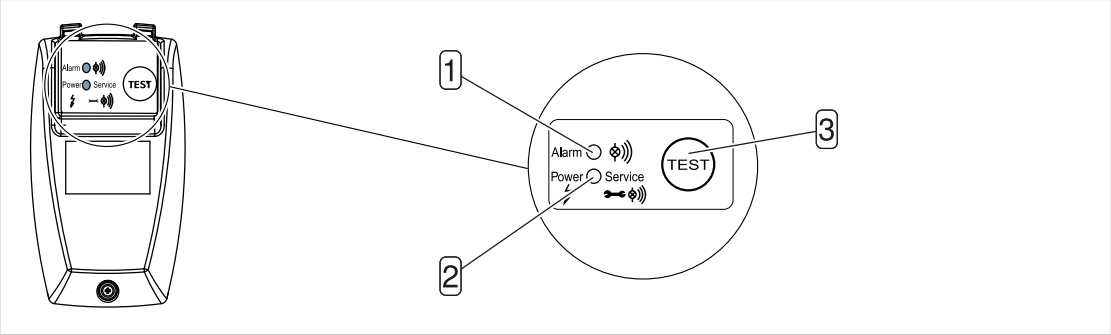



Fig. 36 K5 / K6 Checking the condensate drain

1 *Alarm* control indicator
2 *Power* control indicator
3 «TEST» key

Proceed as follows:

1. With one hand, lightly touch the condensate line on the condensate drain.
2. With your other hand, press and hold down the «TEST» key on the condensate drain for at least 2 s.
   - ✓ As soon as the condensate drain opens, you will feel a brief pressure surge in the condensate line.
   - ? In the event that you do **not** feel a pressure surge, replace the service unit.

### 11.11.2 K5 / K6 Replacing the service unit

The condensate drain cannot be cleaned. If condensate no longer drains away, replace the service unit.

- The *Power* control indicator on the condensate drain is illuminated
- The machine is switched off

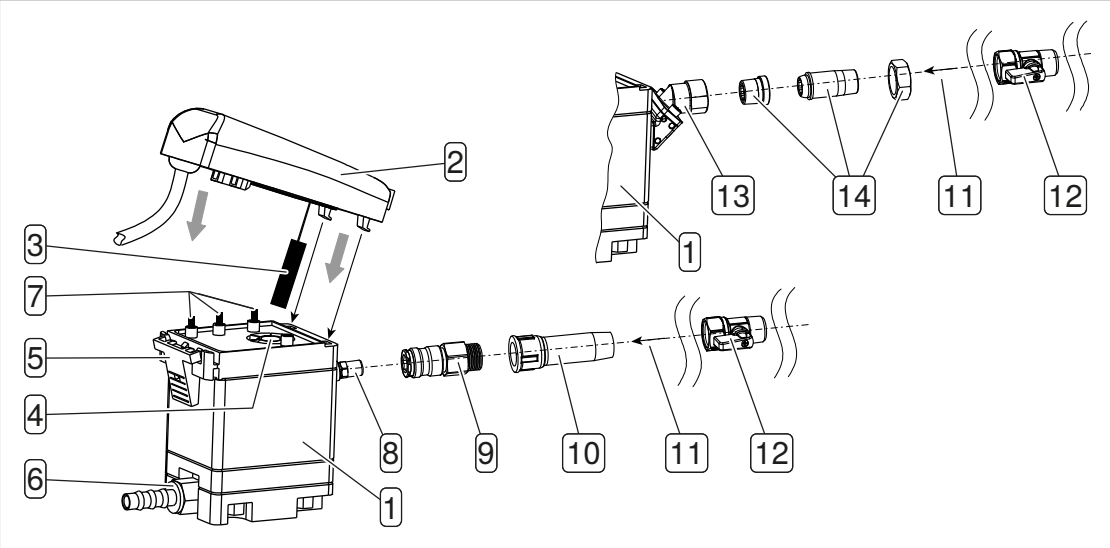



Fig. 37 K5 / K6 Replacing the service unit

1 Service unit
2 Control unit
3 Sensor
4 Opening for sensor
5 Snap fastener
6 Condensate line screw connection
7 Contact springs
8 Plug-in nipple*
9 Quick-release coupling*
10 Extension*
11 Condensate inlet
12 Shut-off valve
13 Intermediate adapter
14 Screw connection*
* Machine-dependent

Proceed as follows:

1. Close the shut-off valve upstream of the condensate drain.
2. In order to vent the service unit, hold down the «TEST» key on the control unit for at least 2 s.
   ? In the event that the service unit cannot be vented via the condensate line, vent the machine completely.
3. Remove the service unit:
   a) Unscrew the screw connection on the condensate line.
   b) Press the snap fastener and slowly remove the control unit from the service unit.
   c) In order to bring the control unit to a defined initial state (reset), hold down the «TEST» key on the control unit for at least 5 s.
   d) Machine-dependent: Carefully pull the service unit from the quick-release coupling.
   e) Machine-dependent: Loosen the screw connection and remove the service unit.
   f) Unscrew the plug-in nipple or intermediate adapter from the service unit.
4. Install the new service unit:
   a) Screw the plug-in nipple or intermediate adapter into the service unit at the inlet.
   b) Carefully insert the sensor for the control unit into the opening on the service unit.
   c) Machine-dependent: Insert the plug-in nipple into the quick-release coupling on the service unit.
   d) Machine-dependent: Install the intermediate adapter on the shut-off valve using the screw connection.
   e) Insert the hook on the control unit into the eyes on the service unit and press the control unit against the service unit until you hear the locking hook click into place.
   f) Connect the condensate line.
5. Open the shut-off valve upstream of the condensate drain.

# 11.12 P4 Servicing the filter pressure reducer

## 11.12.1 P4 Draining condensate

Empty accumulating condensate from the filter pressure reducer at regular intervals, once per day at a minimum.

- Collection tank

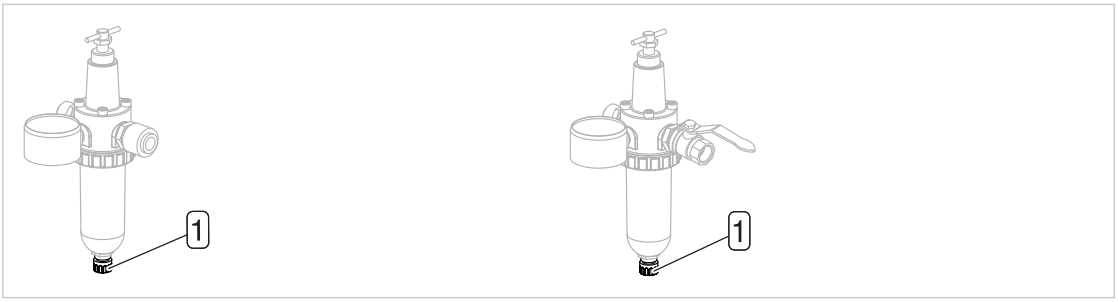



Fig. 38 P4 Draining condensate
1 Condensate outlet

Proceed as follows:

1. Place a collection tank beneath the condensate outlet.
2. Open the drain plug on the condensate outlet.
3. Drain the condensate into the collection tank.
4. Close the drain plug on the condensate outlet.

Dispose of condensate in accordance with the applicable environmental protection regulations.

## 11.12.2 P4 Cleaning or replacing the filter element

- Compressed air for blowing out
- Cleaning cloth
- Spare parts if required

1. The machine is switched off
2. The machine is disconnected from its power supply (all poles), the power supply isolating device has been locked off and the absence of all voltage has been verified
3. The machine is fully vented, the absence of all pressure has been verified
4. The machine has cooled down




Fig. 39 P4 Cleaning or replacing the filter pressure reducer

1 Condensate outlet
2 Housing
3 Filter element

Note the information on the housing for the filter pressure reducer.

Proceed as follows:

1. Unscrew the housing.
2. Take out the filter element.
3. Clean the filter element and blow out with compressed air (<2bar) if required. Should it be too heavily contaminated, replace the filter element.
4. If required, blow out the housing components with compressed air (<2bar).
5. Reassemble the components and ensure they are correctly seated.

## 11.13 Venting the machine (depressurising)

Once it has been switched off, the machine remains under pressure from the compressed air network as far as the check valve.

The machine must be isolated from the compressed air network and fully vented prior to undertaking any maintenance work that involves opening the pressure system.

In the event that no user-end shut-off valve has been installed between the machine and the compressed air network, then the entire network must be vented.

Generally, the machine can be vented by means of the shut-off valve on the condensate outlet or the safety valve on the air receiver.

Normally, the machine is vented via the condensate outlet. Should free blow-off of the compressed air be prevented by the presence of an add-on condensate drain, the machine is vented via the safety valve.

1. The machine is switched off
2. The machine is disconnected from its power supply (all poles), the power supply isolating device has been locked off and the absence of all voltage has been verified
3. The machine has cooled down

**⚠ WARNING**

**Danger of force being exerted on the body from sudden release of pressure**

- ► Fully vent all pressurised components and enclosures
- ► Verify the complete absence of pressure

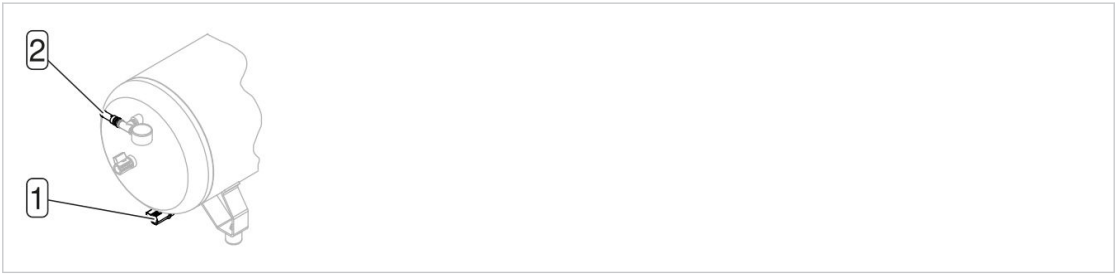



Fig. 40 Venting the machine (depressurising)

1 Condensate shut-off valve
2 Air receiver safety valve

### 11.13.1 Venting via the condensate outlet

Proceed as follows:

1. Close the user's shut-off valve between the machine and the air distribution network.
2. Open the condensate shut-off valve slowly and release pressure completely.
3. Verify the absence of pressure using a suitable measuring device (pressure gauge).

### 11.13.2 Venting via the safety valve

Proceed as follows:

1. Close the user-provided shut-off valve between the machine and the compressed air network.
2. Turn the knurled screw on the safety valve anticlockwise until air blows off. Do **not** turn the knurled screw too far.
   a) Wait until no further air is emitted.
   b) Turn the knurled screw back to its original position.
3. Verify the absence of pressure using a suitable measuring device (pressure gauge).

Should the machine not be fully depressurised following ventilation:
The user-provided shut-off valve remains open or the air receiver safety valve is defective.

- Close the shut-off valve or arrange for the safety valve to be checked by an authorised service partner.
- If manual ventilation does **not** achieve complete depressurisation: Notify an authorised service partner.

## 11.14 Cylinder head and valves

Allow maintenance work on the cylinder head and valves to be performed by an authorised service partner only.

## 11.15 Maintenance log

Log the maintenance tasks performed in the following table and enter the material number and serial number for the machine:

| **Material no. _____** | | **Serial no. _____** | |
|---|---|---|---|
| **Date** | **Task** | **Operating hours** | **Signature** |
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Tab. 47 Maintenance log

# 12 Decommissioning, dismantling and disposal

## 12.1 Decommissioning and dismantling the machine

Decommissioning is necessary in circumstances such as the following:

- The machine is temporarily not required.
- The machine is to be transported to another location.
- The machine is to be scrapped.

If it is possible for the machine to remain connected, a temporary decommissioning is possible. To prevent corrosion, switch the machine on once per week and ensure that it runs in the LOAD operating point for approx. 30 minutes.



1. The machine is switched off
2. The machine is disconnected from its power supply (all poles), the power supply isolating device has been locked off and the absence of all voltage has been verified
3. The machine is fully vented, the absence of all pressure has been verified
4. The machine has cooled down

Proceed as follows:

1. Drain and collect the condensate from all condensate drains.
2. Remove user-provided condensate lines.
3. Remove the connection to the compressed air network.
4. Remove the connecting cables for the power supply.
5. Properly close all open connection ports.
6. If necessary, or if the machine is to be scrapped:
   Fully drain and collect the compressor oil.

## 12.2 Disposal

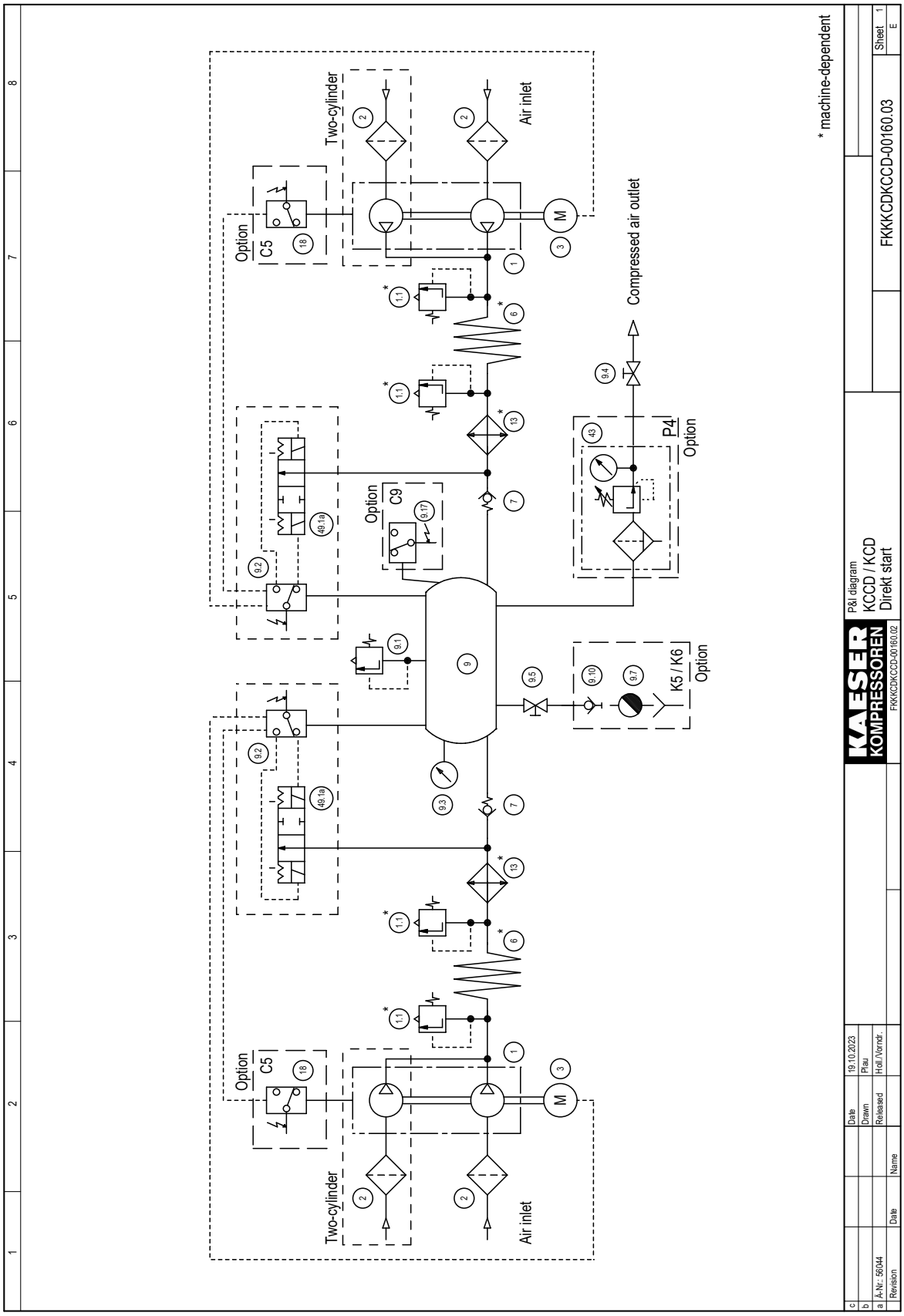
Proper disposal is required by law. If separated appropriately from regular waste, substances which are harmful to the health of living things and the environment can be recycled or disposed of in a controlled manner. Deliver all removed components and used operating fluids/materials to the designated disposal system in accordance with environmental regulations. Finally, hand the machine over to a certified disposal agent.

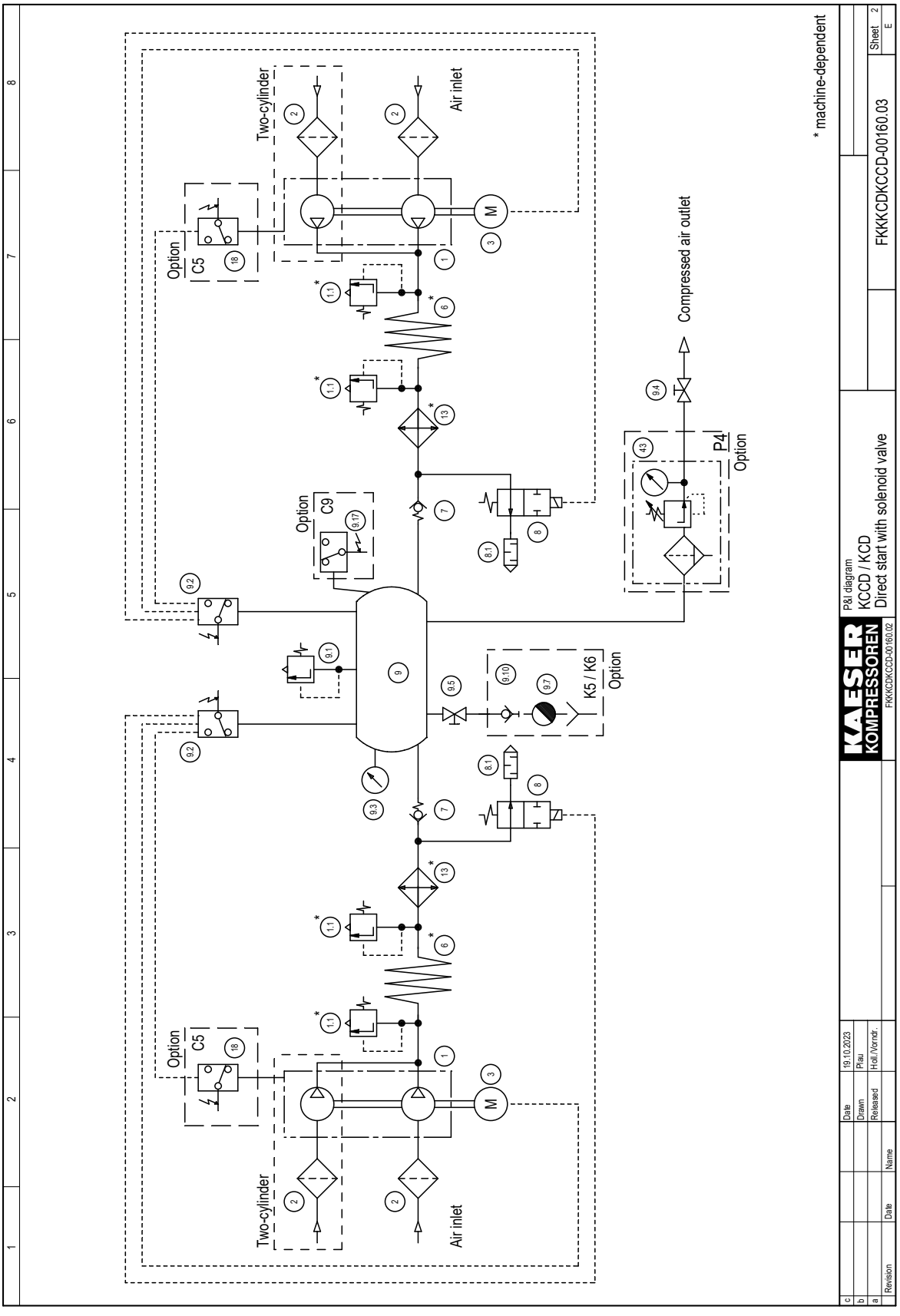
Proceed as follows:

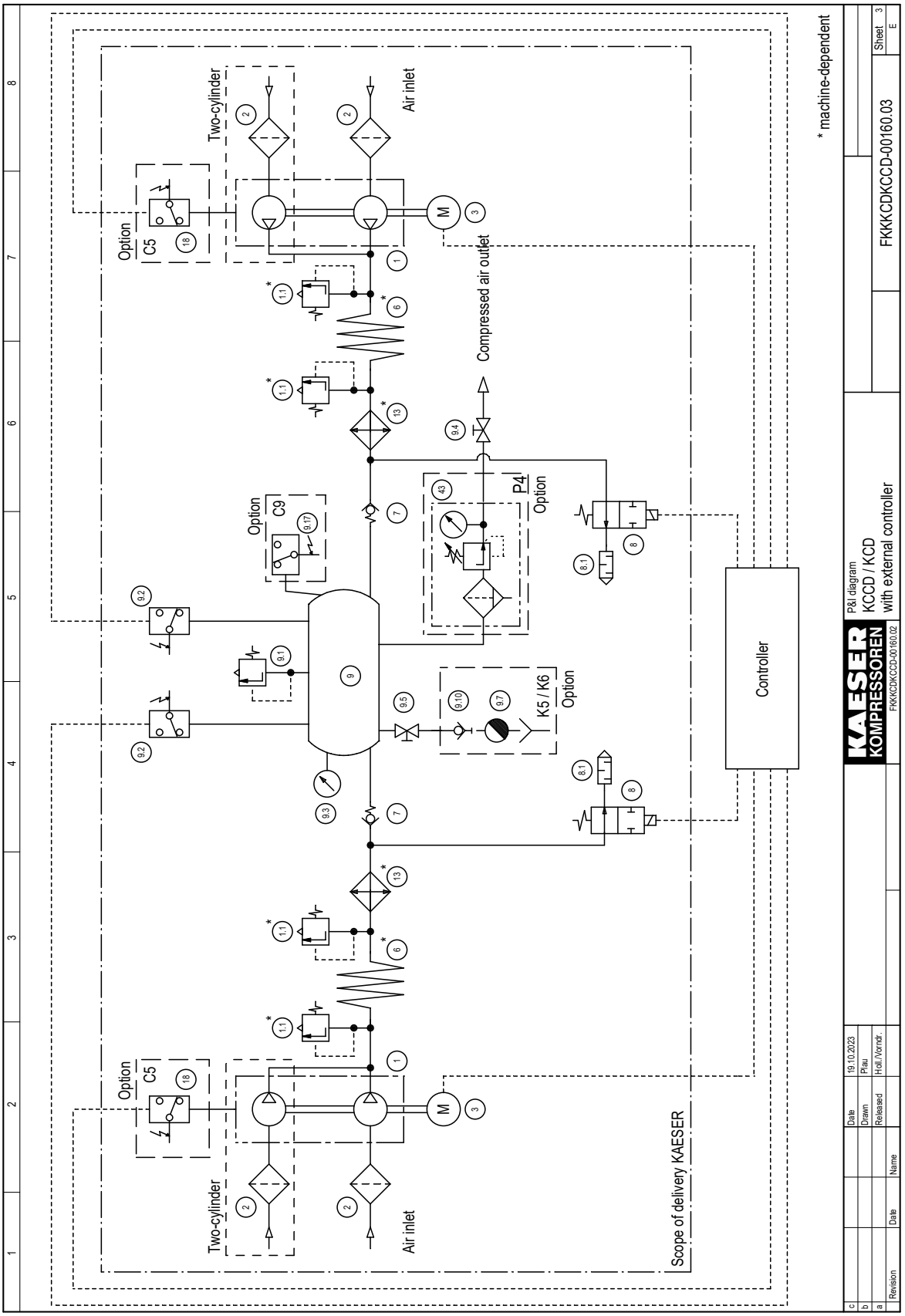
1. Deliver used operating fluids/materials to the designated disposal system.
2. Dispose of components and cleaning cloths contaminated with compressor oil in accordance with applicable environmental regulations.
3. Deliver the machine to a certified disposal agent.

# 13 Documents and drawings

## 13.1 Flow diagram


* machine-dependent
Two-cylinder
Air inlet
Option
C5
Compressed air outlet
P4
Option
C9
K5 / K6
Option
M
P&I diagram
KCCD / KCD
Direkt start
FKKKCDKCCD-00160.02
FKKKCDKCCD-00160.03
Sheet 1
E
Date
Drawn
Released
Name
19.10.2023
Piau
Holl./Vorndr.
Art-Nr.: 56044
Revision


* machine-dependent
Two-cylinder
Air inlet
Option
C5
Compressed air outlet
P4
Option
C9
K5 / K6
Option
Two-cylinder
Air inlet
Option
C5
KAESER KOMPRESSOREN
FKKKCDKCCD-00160.02
P&I diagram
KCCD / KCD
Direct start with solenoid valve
FKKKCDKCCD-00160.03
Sheet 2
E
Date
Drawn
Released
19.10.2023
Plau
Holl./Vorndr.
Name
Date
Revision


* machine-dependent
Two-cylinder
Air inlet
Option
C5
Compressed air outlet
P4
Option
C9
K5 / K6
Option
Controller
Scope of delivery KAESER
P&I diagram
KCCD / KCD
with external controller
FKKKCDKCCD-00160.03
Sheet 3
E
KAESER KOMPRESSOREN
FKKKCDKCCD-00160.02
Date
Drawn
Released
Name
19.10.2023
Plau
Holl./Vorndr.
Revision
Date

| | | | |
|---|---|---|---|
| 1 | Compressor block | 9.7 | Condensate drain |
| 1.1 | Safety valve (machine-dependent) | 9.10 | Hose coupling |
| 2 | Air filter | 9.17 | Pressure switch – pressure low |
| 3 | Compressor motor | 13 | Compressed air cooler (machine-dependent) |
| 6 | Cooling pipe (machine-dependent) | 18 | Oil level sensor (switching) |
| 7 | Check valve | 43 | Filter pressure reducer |
| 8 | Solenoid valve (open when de-energised) | 49.1 | Relief valve on the pressure switch |
| 8.1 | Silencer | | |
| 9 | Air receiver | Option | |
| 9.1 | Safety valve | C5 | Oil level monitoring |
| 9.2 | Pressure switch | C9 | Low pressure warning message |
| 9.3 | Pressure gauge | K5/K6 | Condensate drain ECO-DRAIN |
| 9.4 | Shut-off valve - Compressed air outlet | P4 | Filter pressure reducer |
| 9.5 | Shut-off valve - Condensate outlet | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| c | | | | Date | 19.10.2023 | KAESER KOMPRESSOREN | P&I diagram legend KCCD / KCD | | |
| b | | | | Drawn | Plau | | | | |
| a | | | | Released | Holl./Vorndr. | | | FKKKCDKCCD-00160.03 | Sheet 4 E |
| | Revision | Date | Name | | | FKKKCDKCCD-00160.02 | | | |

## 13.2 Wiring diagram

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

# Electrical diagrams

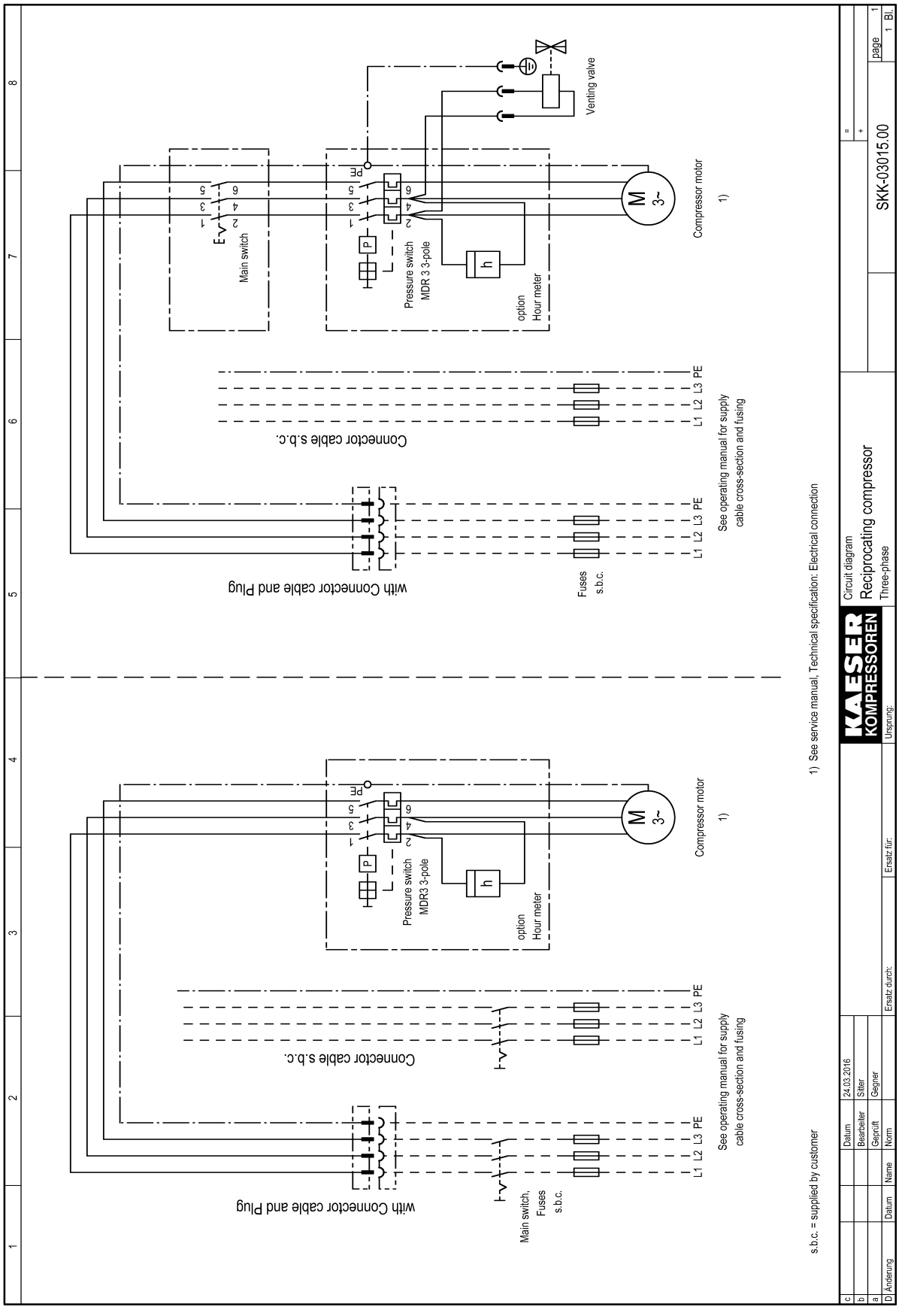
# Reciprocating compressor

TT/TN power supply with common point grounding

Manufacturer: KAESER KOMPRESSOREN SE
96450 Coburg
GERMANY

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| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| c | | | | Datum | 24.03.2016 E | | KAESER KOMPRESSOREN | Cover page | = | |
| b | | | | Bearbeiter | Sitter | | | Reciprocating compressor | + | |
| a | | | | Geprüft | Gegner | | | Three-phase | DKK-03015.00 | page 1 |
| A | Änderung | Datum | Name | Norm | | Ersatz durch: | Ersatz für: | Ursprung: | | 1 Bl. |


Venting valve
Compressor motor
1)
Main switch
Pressure switch
MDR 3 3-pole
option
Hour meter
Connector cable s.b.c.
L1 L2 L3 PE
See operating manual for supply
cable cross-section and fusing
with Connector cable and Plug
Fuses
s.b.c.
1) See service manual, Technical specification: Electrical connection
s.b.c. = supplied by customer
Main switch,
Fuses
s.b.c.
KAESER KOMPRESSOREN
Circuit diagram
Reciprocating compressor
Three-phase
SKK-03015.00
page 1
1 Bl.
Datum 24.03.2016
Bearbeiter Sitter
Geprüft Gegner
Norm
Name
Datum
Änderung

## 13.3 Dimensions and connection sizes

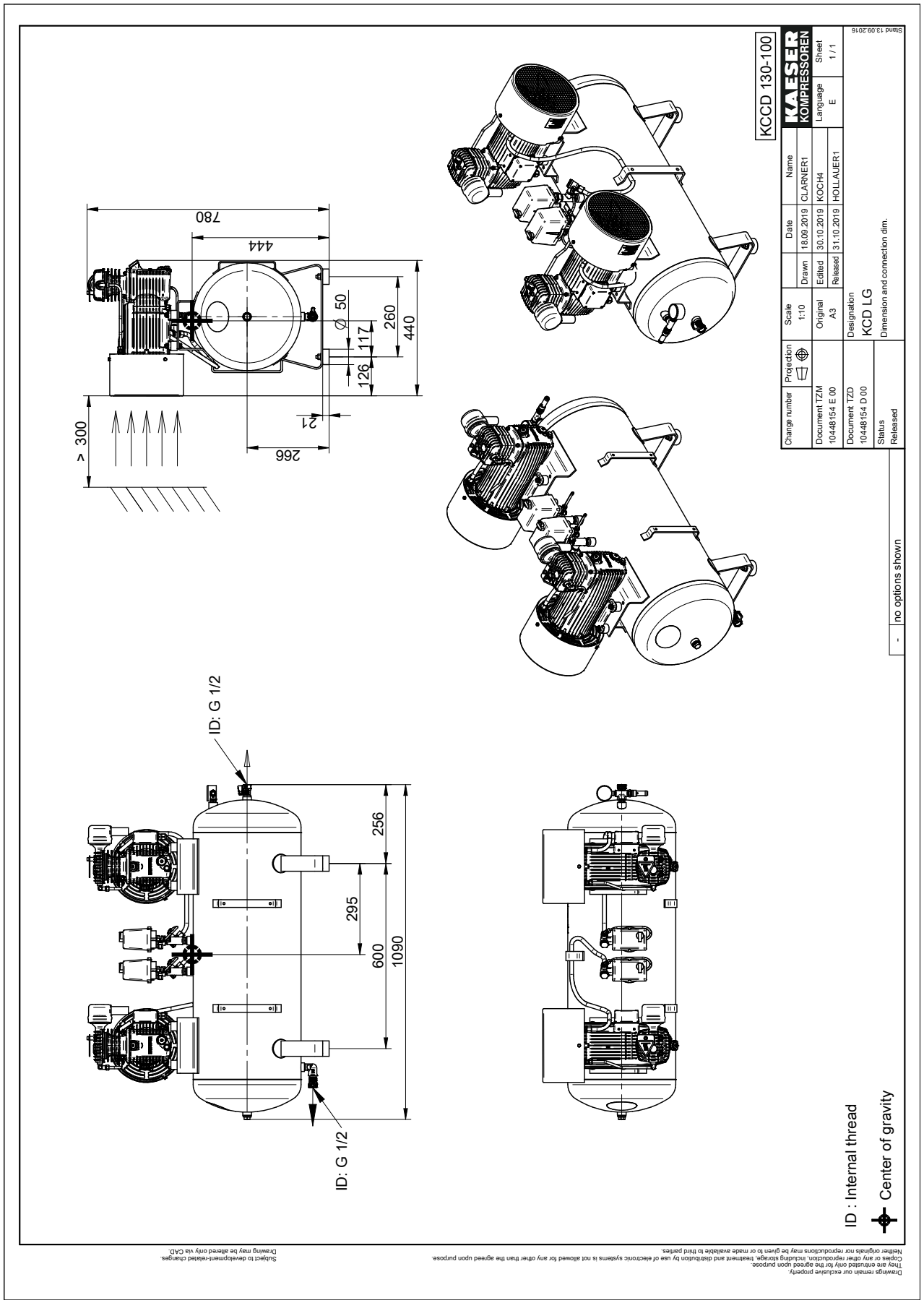
In the following overview, you can find the dimensional drawing corresponding to your machine

.

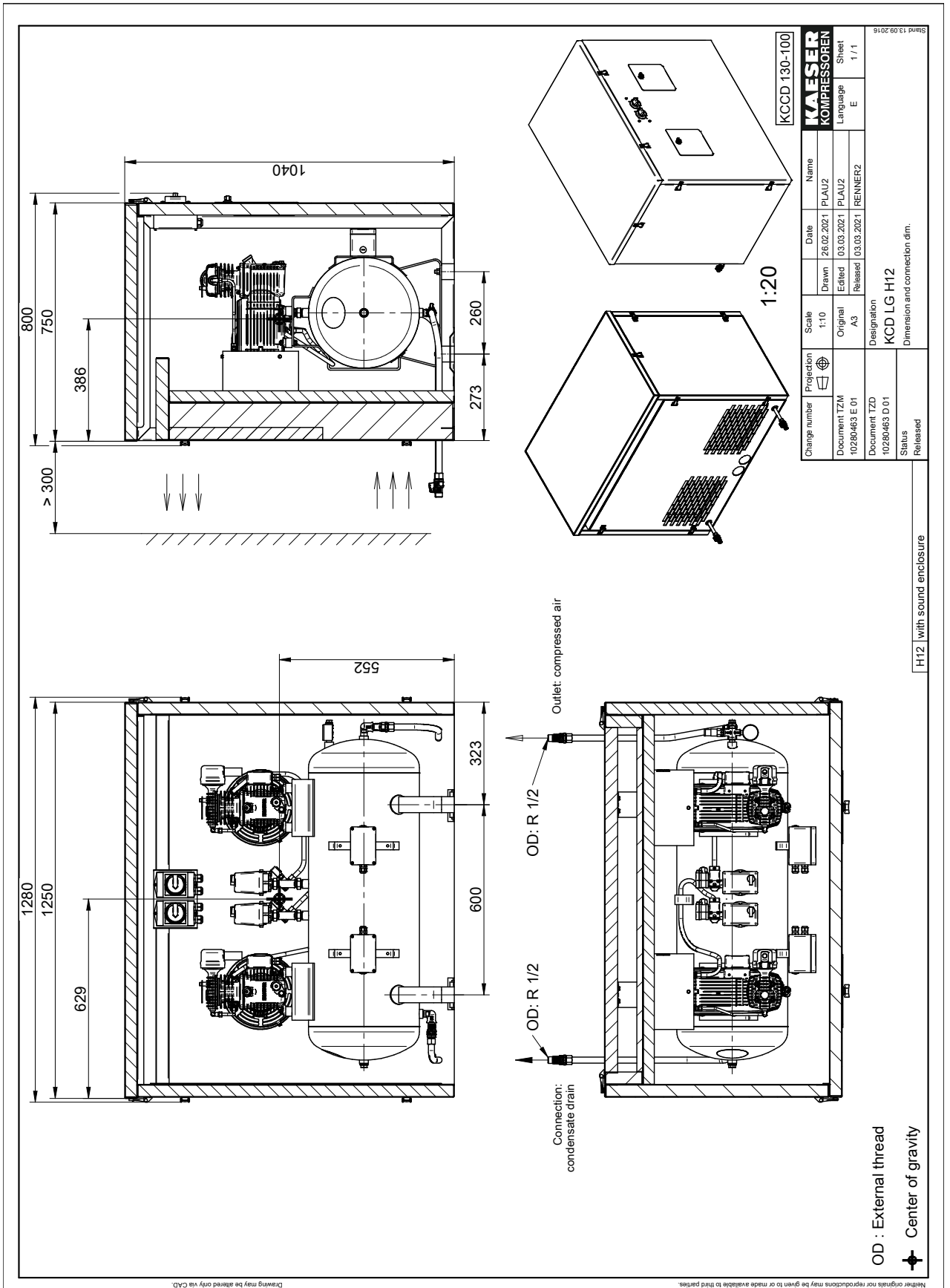
| Compressor type | Material number | Corresponding dimensional drawing / (TZM document) |
|---|---|---|
| **KCCD 130-100** | 1.1712.2 | 10448154 |
| **KCCD 130-100** | 1.1712.20010 | 10280463 |
| **KCCD 130-100** | 1.1712.20020 | 10448250 |
| **KCCD 130-100** | 1.1712.20050 | 10252659 |
| **KCCD 130-100** | 1.1712.20070 | 10448463 |
| **KCCD 130-100** | 1.1712.20080 | 10589107 |
| **KCCD 130-100** | 1.1712.20090 | 10606232 |
| **KCCD 130-100** | 1.1712.20100 | 10612396 |
| **KCCD 130-350** | 1.1714.1 | 10448511 |
| **KCCD 130-350** | 1.1714.10030 | 10448624 |
| **KCCD 130-350** | 1.1714.10040 | 14048671 |
| **KCCD 130-350** | 1.1714.10050 | 10448680 |
| **KCCD 130-350** | 1.1714.10060 | 10507938 |
| **KCD 350-100** | 1.5253.2 | 10298233 |
| **KCD 350-100** | 1.5253.20020 | 10298311 |
| **KCD 350-100** | 1.5253.20040 | 10298391 |
| **KCD 350-100** | 1.5253.20050 | 10298433 |
| **KCD 350-100** | 1.5253.20060 | 10316397 |
| **KCD 350-100** | 1.5253.20100 | 10564149 |
| **KCD 350-100** | 1.5253.20120 | 10466769 |
| **KCD 350-100** | 1.5253.20130 | 10532799 |
| **KCD 350-100** | 1.5253.20150 | 10466769 |
| **KCD 350-100** | 1.5253.20160 | 10577007 |
| **KCD 350-100** | 1.5253.20170 | 10616758 |
| **KCD 350-350** | 1.5894.1 | 10451329 |
| **KCD 350-350** | 1.5894.10020 | 10451356 |
| **KCD 350-350** | 1.5894.10030 | 10512270 |
| **KCD 350-350** | 1.5894.10040 | 10451374 |
| **KCD 350-350** | 1.5894.10050 | 10451381 |
| **KCD 350-350** | 1.5894.10060 | 10564234 |
| **KCD 350-350** | 1.5894.10070 | 10576994 |

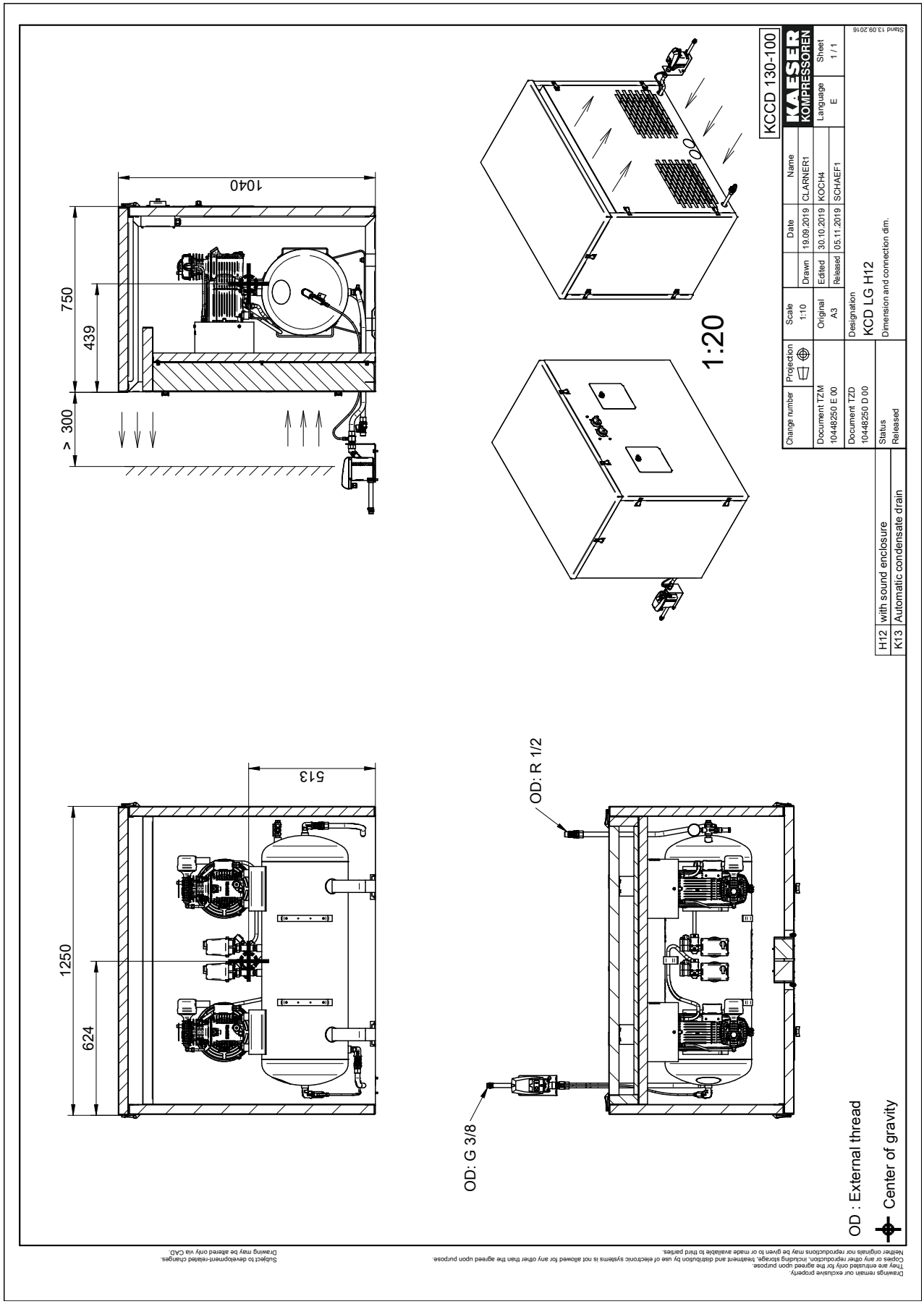
| Compressor type | Material number | Corresponding dimensional drawing / (TZM document) |
|---|---|---|
| **KCD 350-350** | 1.5894.10080 | 10633090 |
| **KCD 350-350** | 1.5894.10090 | 10564234 |
| **KCD 450-100** | 1.5254.0 | 10448709 |
| **KCD 450-100** | 1.5254.0010 | 10448727 |
| **KCD 450-100** | 1.5254.00030 | 10448760 |
| **KCD 450-100** | 1.5254.00040 | 10448804 |
| **KCD 450-100** | 1.5254.00050 | 10467578 |
| **KCD 450-100** | 1.5254.00060 | 10582415 |
| **KCD 450-350** | 1.5883.1 | 10449329 |
| **KCD 450-350** | 1.5883.10010 | 10449479 |
| **KCD 450-350** | 1.5883.10031 | 10450966 |
| **KCD 450-350** | 1.5883.10040 | 10451322 |
| **KCD 450-350** | 1.5883.10050 | 10575543 |
| **KCD 450-100** | 1.5883.10060 | 10646986 |
| **KCD 630-350** | 1.5255.1 | 10448819 |
| **KCD 630-350** | 1.5255.10020 | 10449068 |
| **KCD 630-350** | 1.5255.10030 | 10449077 |
| **KCD 630-350** | 1.5255.10040 | 10449093 |
| **KCD 630-350** | 1.5255.10050 | 10588481 |
| **KCD 840-350** | 1.5256.1 | 10449098 |
| **KCD 840-350** | 1.5256.10010 | 10449106 |
| **KCD 840-350** | 1.5256.10040 | 10449200 |
| **KCD 840-350** | 1.5256.10050 | 10449260 |
| **KCD 840-350** | 1.5256.10070 | 10606281 |
| **KCD 840-350** | 1.5256.10080 | 10449260 |
| **KCD 840-350** | 1.5256.10090 | 10645411 |

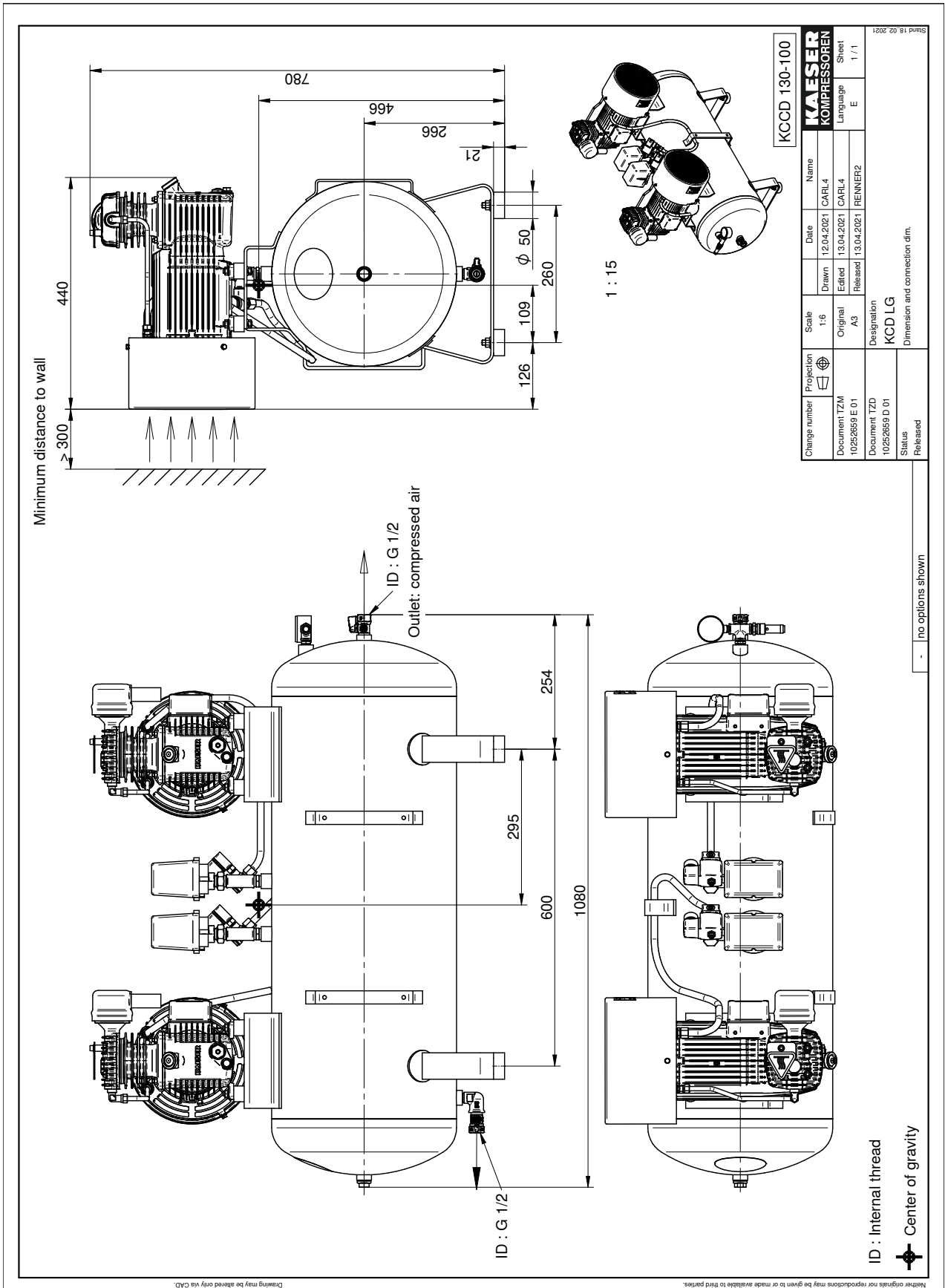
Tab. 48 Assignment: Compressor type/Dimensional drawing number

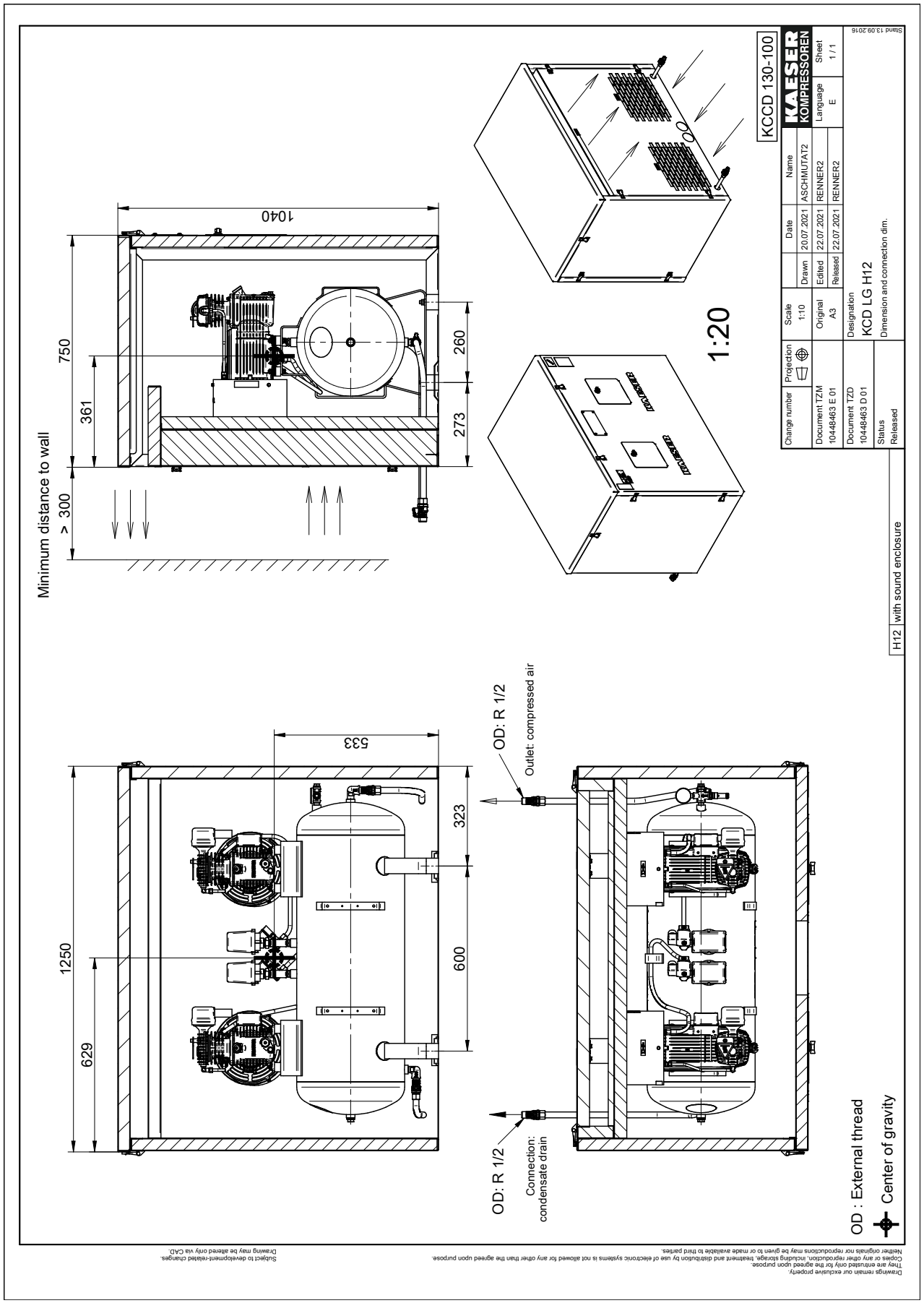



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Drawing may be altered only via CAD.

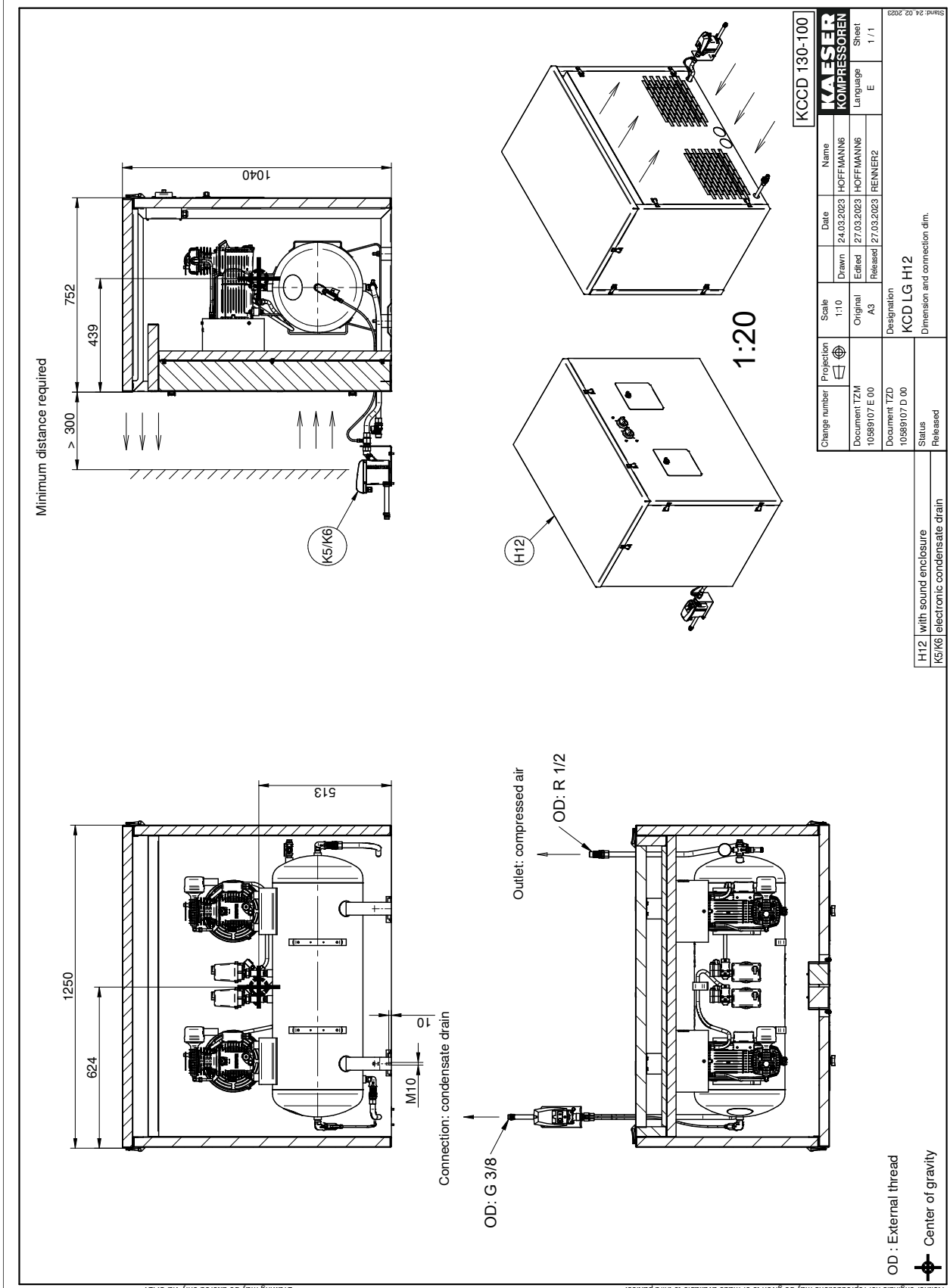

KCCD 130-100
1:20
1040
800
750
386
260
273
> 300
552
1280
1250
629
323
600
OD: R 1/2
OD: R 1/2
Outlet: compressed air
Connection: condensate drain
OD : External thread
Center of gravity
H12 with sound enclosure
Change number
Projection
Scale 1:10
Original A3
Drawn 26.02.2021 PLAU2
Edited 03.03.2021 PLAU2
Released 03.03.2021 RENNER2
Name
Language E
Sheet 1 / 1
Document TZM 10280463 E 01
Document TZD 10280463 D 01
Status Released
Designation KCD LG H12
Dimension and connection dim.
Stand 13.09.2016
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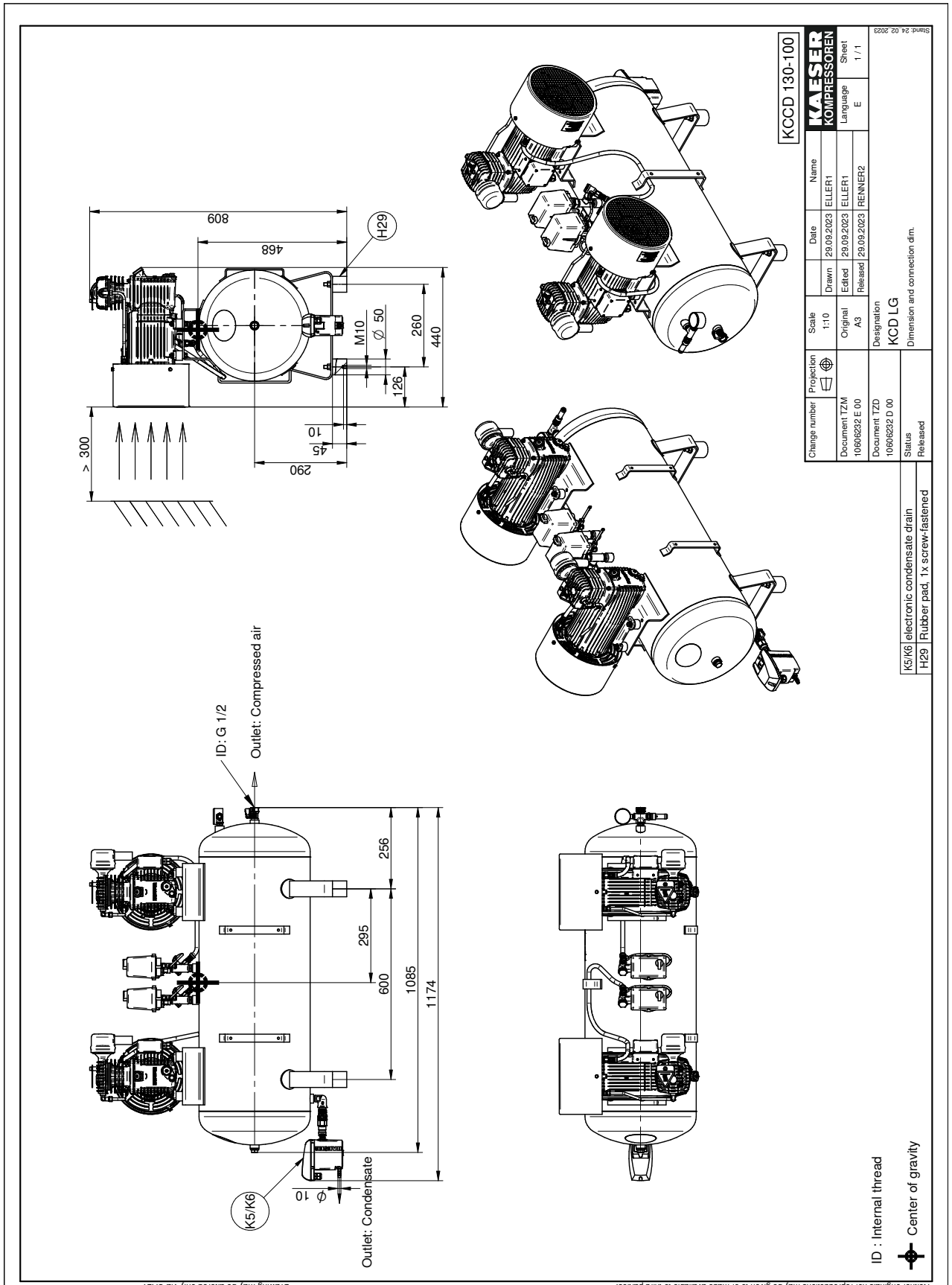

KCCD 130-100
KAESER KOMPRESSOREN
Sheet 1 / 1
Language E
Name
Date
CLARNER1 19.09.2019
KOCH4 30.10.2019
SCHAEF1 05.11.2019
Drawn
Edited
Released
Scale 1:10
Original A3
Projection
Change number
Document TZM 10448250 E 00
Document TZD 10448250 D 00
Designation KCD LG H12
Dimension and connection dim.
Status Released
H12 with sound enclosure
K13 Automatic condensate drain
Stand 13.09.2016
1040
750
439
> 300
1:20
513
1250
624
OD: R 1/2
OD: G 3/8
OD : External thread
Center of gravity
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KCCD 130-100
780
466
266
21
440
Minimum distance to wall
≥ 300
ϕ 50
260
109
126
1 : 15
ID : G 1/2
Outlet: compressed air
254
295
600
1080
ID : G 1/2
ID : Internal thread
Center of gravity
Change number
Projection
Scale 1:6
Original A3
Drawn 12.04.2021 CARL4
Edited 13.04.2021 CARL4
Released 13.04.2021 RENNER2
Name
Language E
Sheet 1 / 1
Document TZM 10252659 E 01
Document TZD 10252659 D 01
Designation KCD LG
Dimension and connection dim.
Status Released
- no options shown
Stand 18.02.2021
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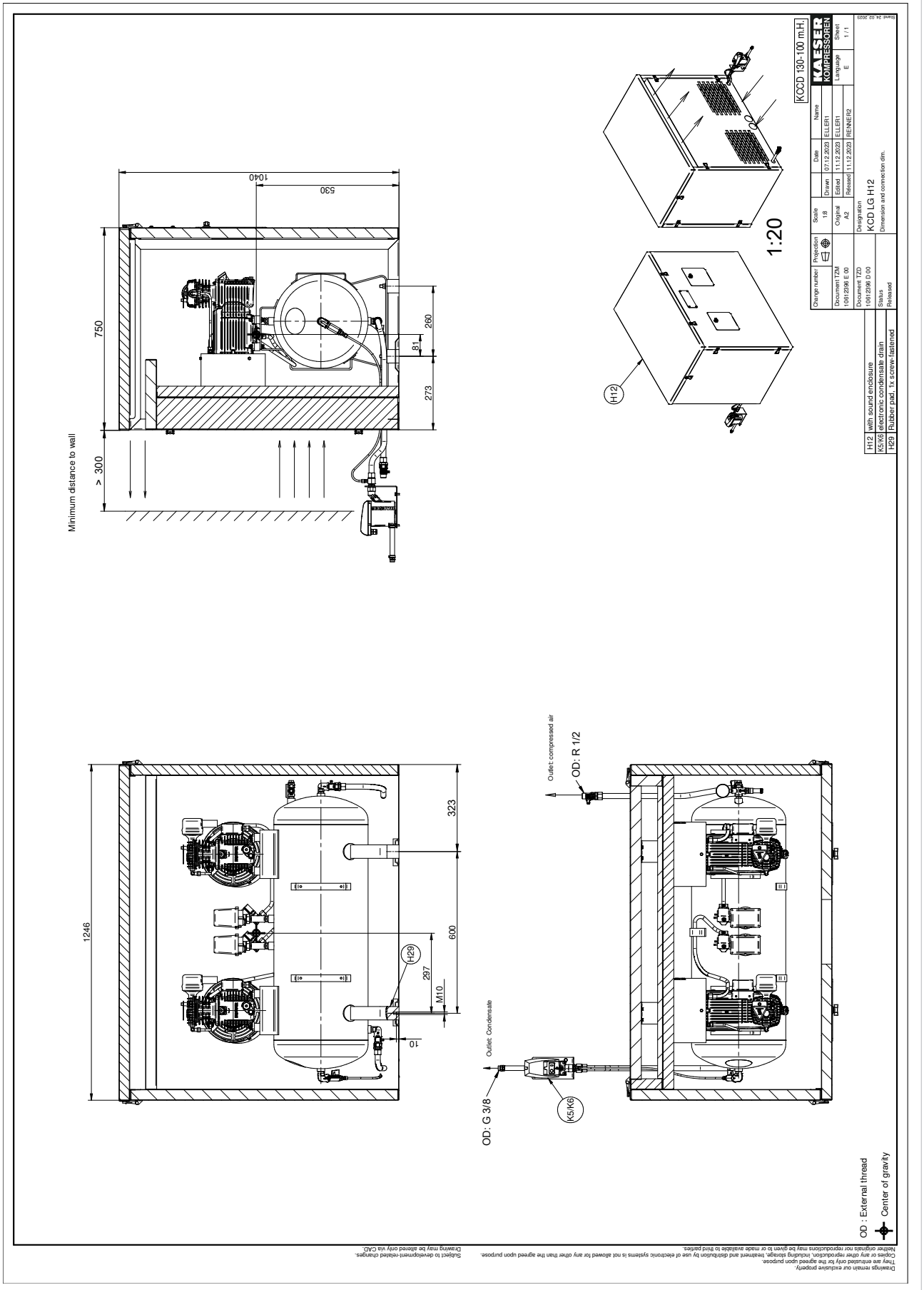


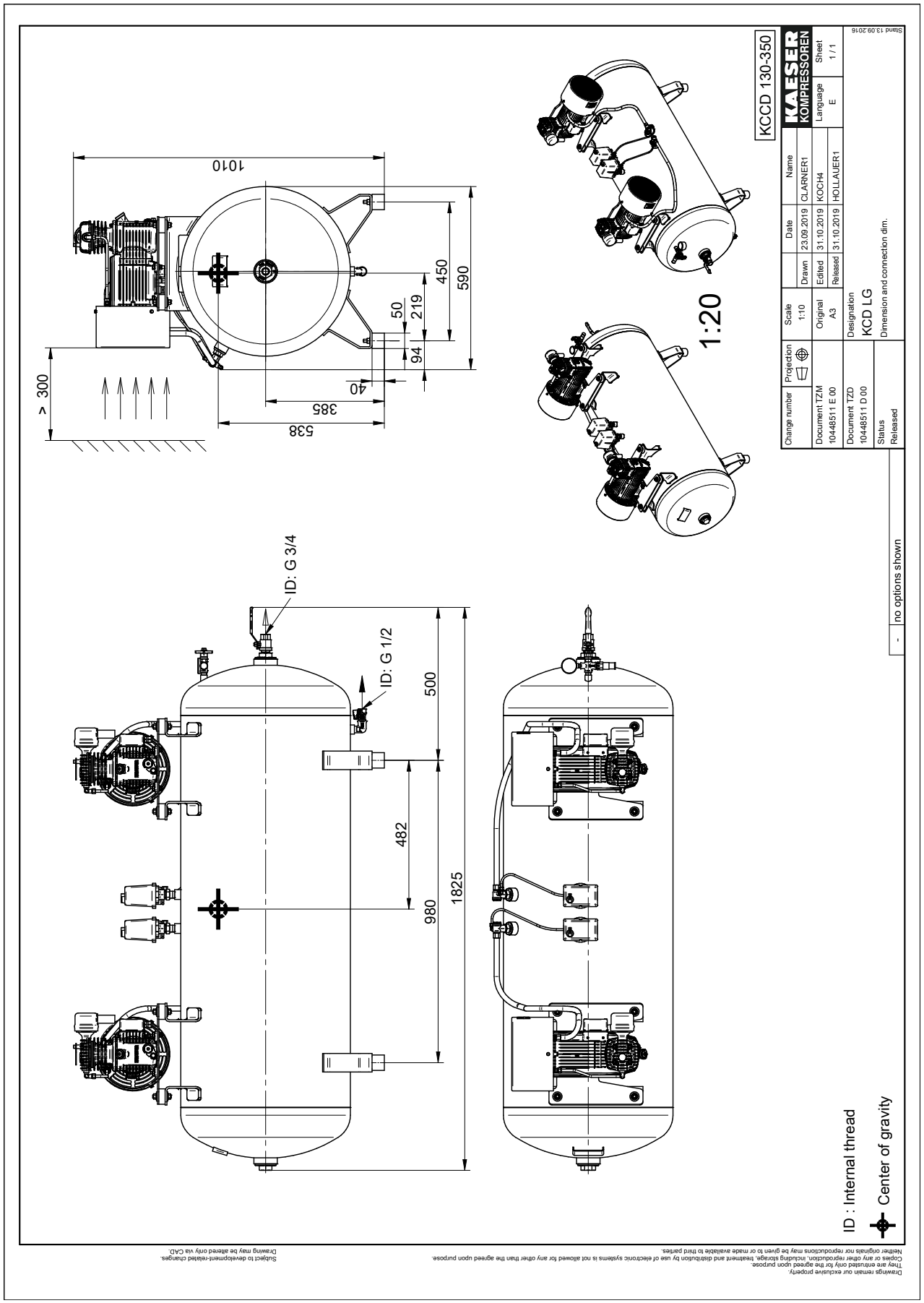

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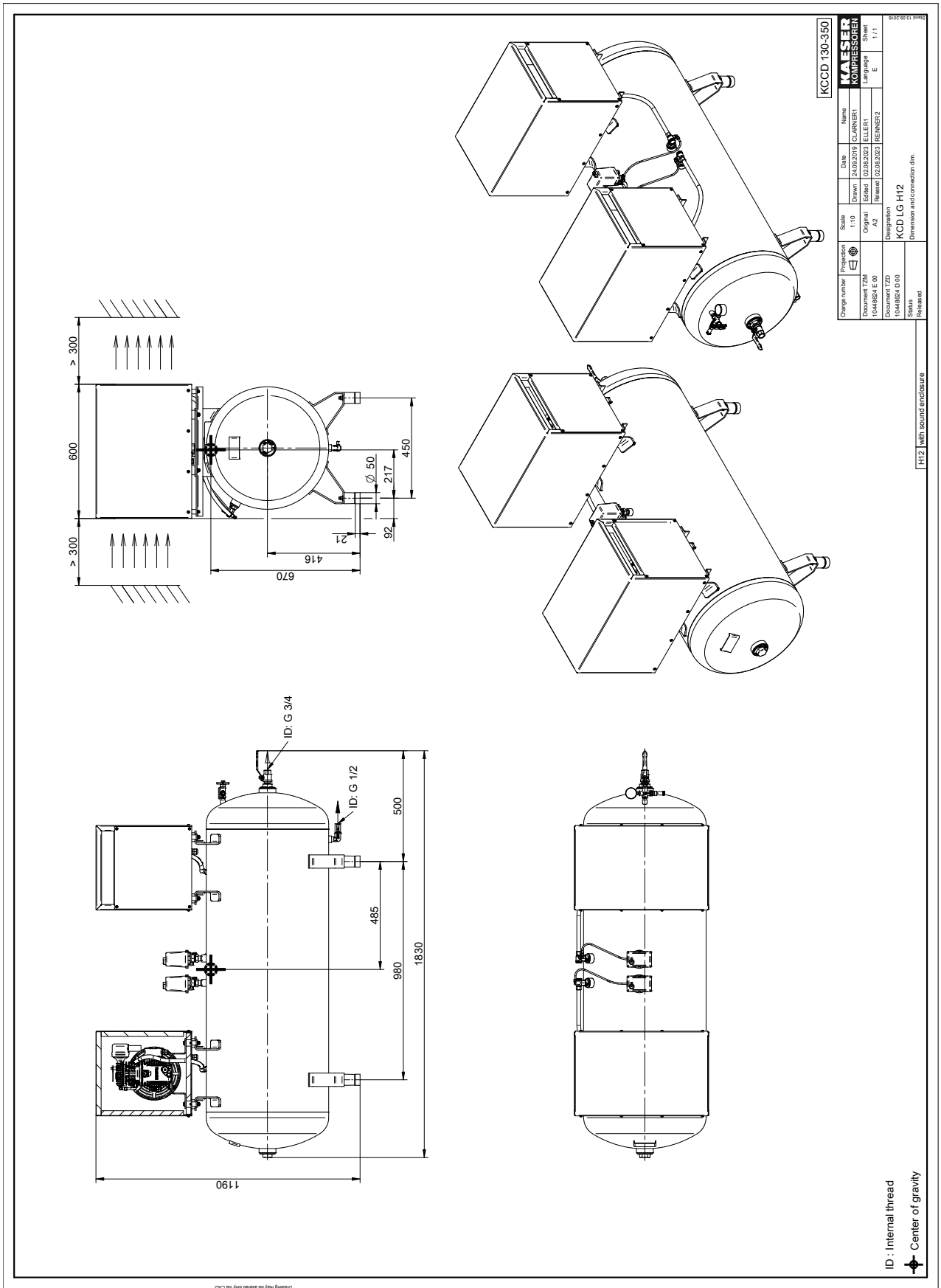

KCCD 130-100
KAESER KOMPRESSOREN
Stand: 24. 02. 2023
Change number
Projection
Scale 1:10
Original A3
Drawn 24.03.2023 HOFFMANN6
Edited 27.03.2023 HOFFMANN6
Released 27.03.2023 RENNER2
Language E
Sheet 1 / 1
Document TZM 10589107 E 00
Document TZD 10589107 D 00
Designation KCD LG H12
Dimension and connection dim.
Status Released
H12 with sound enclosure
K5/K6 electronic condensate drain
1:20
H12
K5/K6
Minimum distance required
> 300
439
752
1040
513
1250
624
10
M10
Connection: condensate drain
OD: G 3/8
Outlet: compressed air
OD: R 1/2
OD : External thread
Center of gravity
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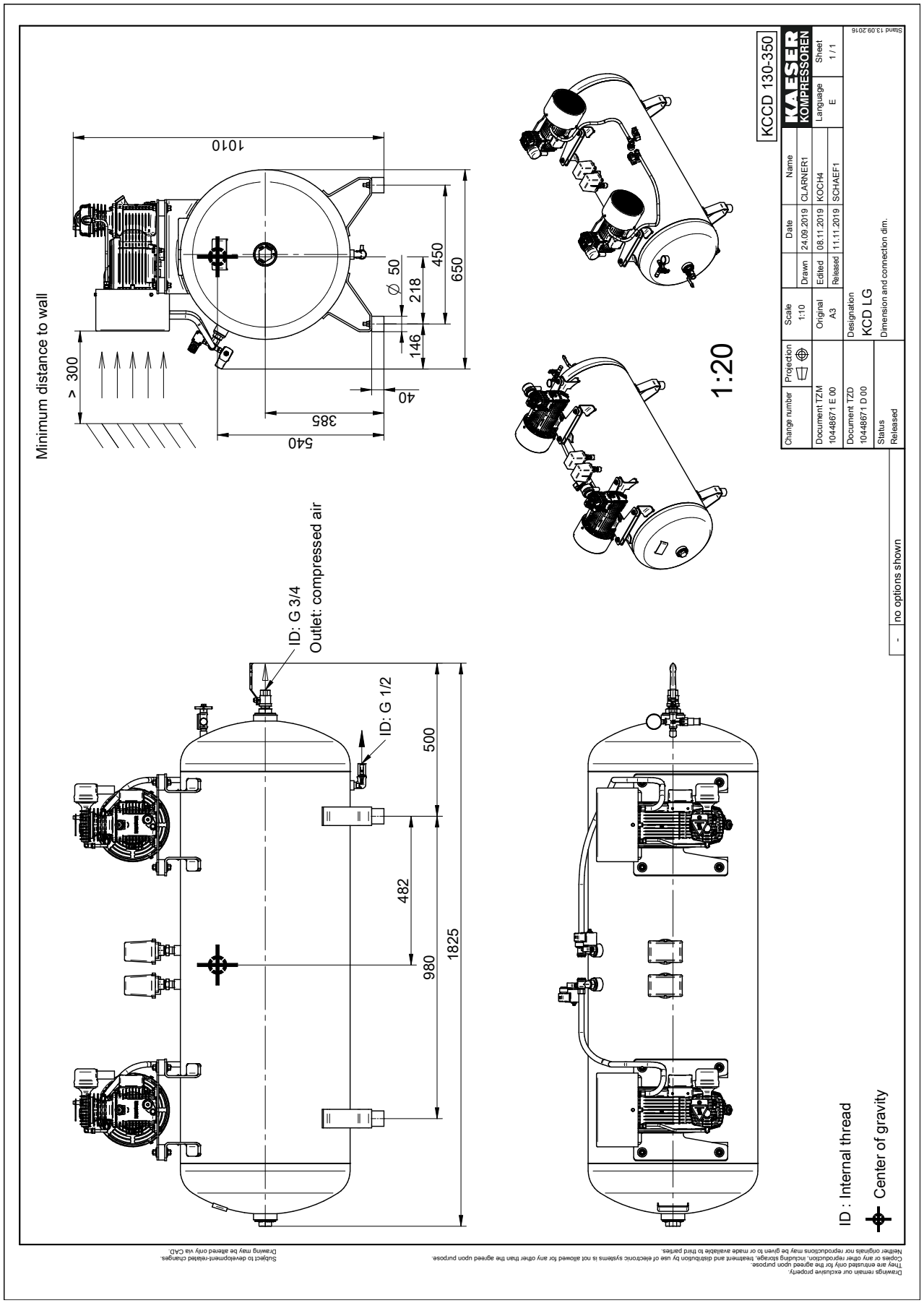


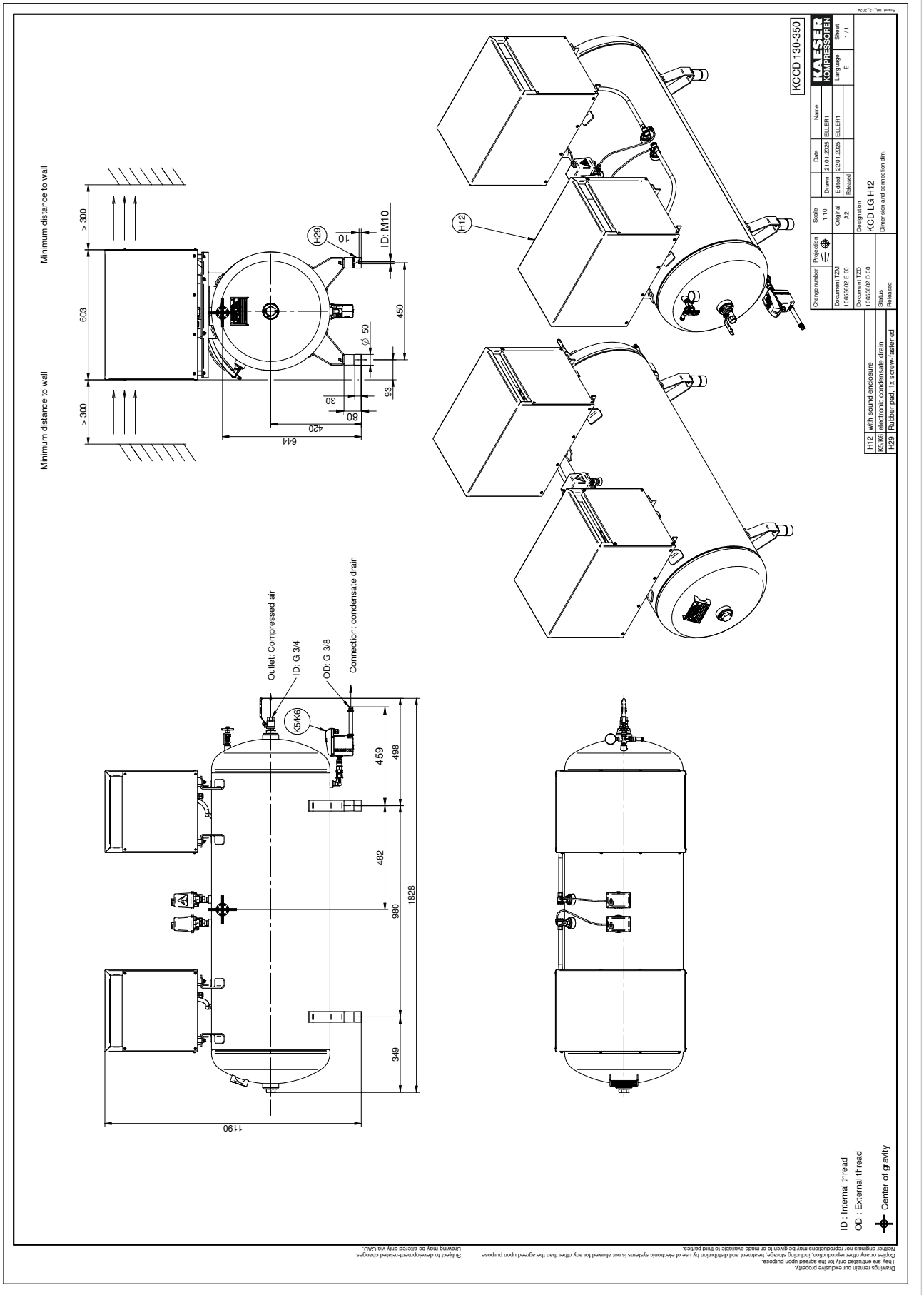

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Drawing may be altered only via CAD.

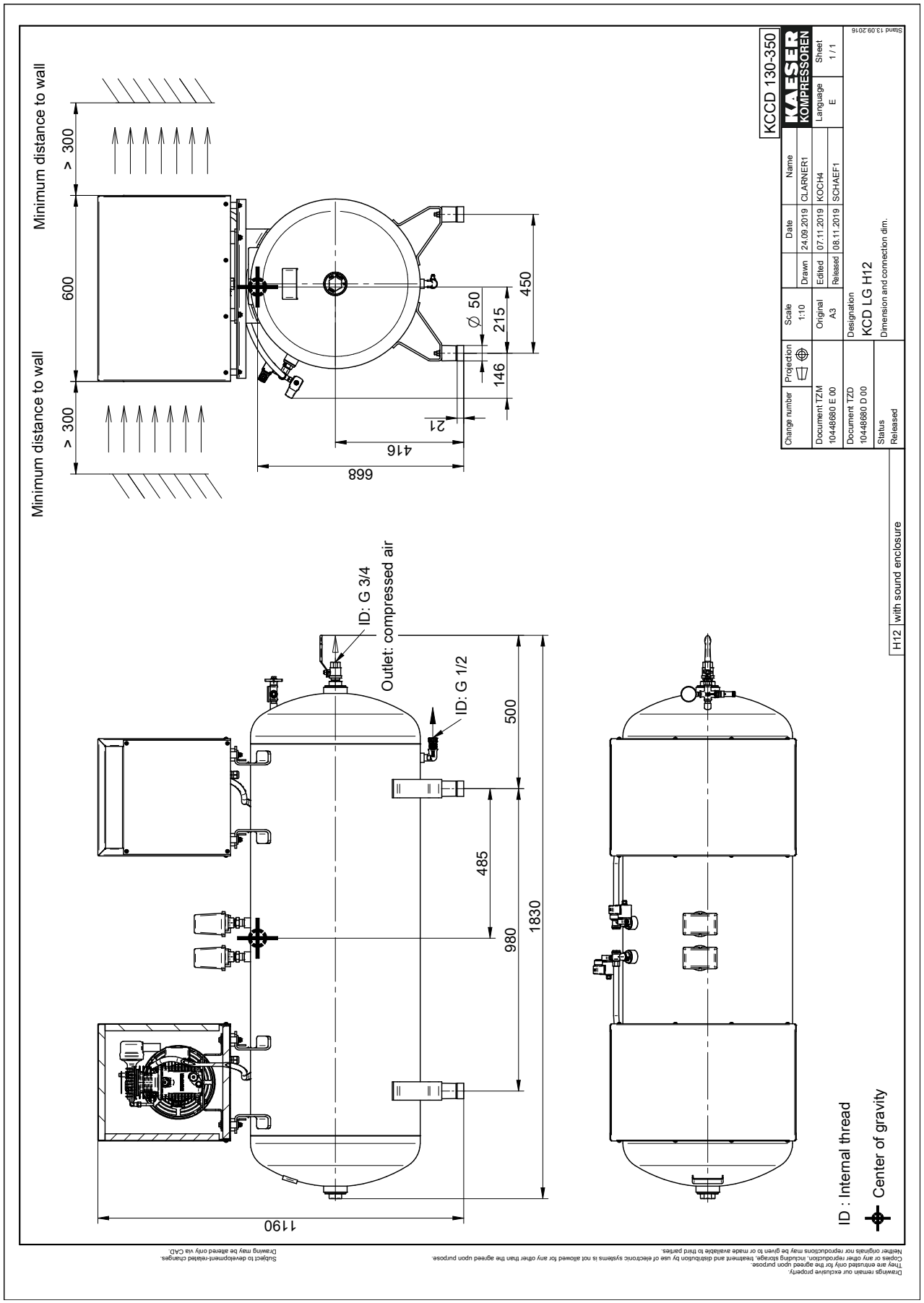

KCCD 130-100 m.H.
KAESER KOMPRESSOREN
Drawn 24. 02. 2023
Change number
Projection
Scale 1:8
Original A2
Drawn 07.12.2023 ELLER1
Edited 11.12.2023 ELLER1
Released 11.12.2023 REINER2
Name
Language E
Sheet 1 / 1
Document TZM 1061 2396 E 00
Document TZD 1061 2396 D 00
Designation KCD LG H12
Status Released
Dimension and connection dim.
H12 With sound enclosure
K5/K6 Electronic condensate drain
H23 Rubber pad, 1x screw-fastened
1:20
1040
530
750
260
81
273
> 300
Minimum distance to wall
323
600
1246
H23
297
M10
10
Outlet: compressed air
OD: R 1/2
Outlet: Condensate
OD: G 3/8
K5/K6
OD : External thread
Center of gravity
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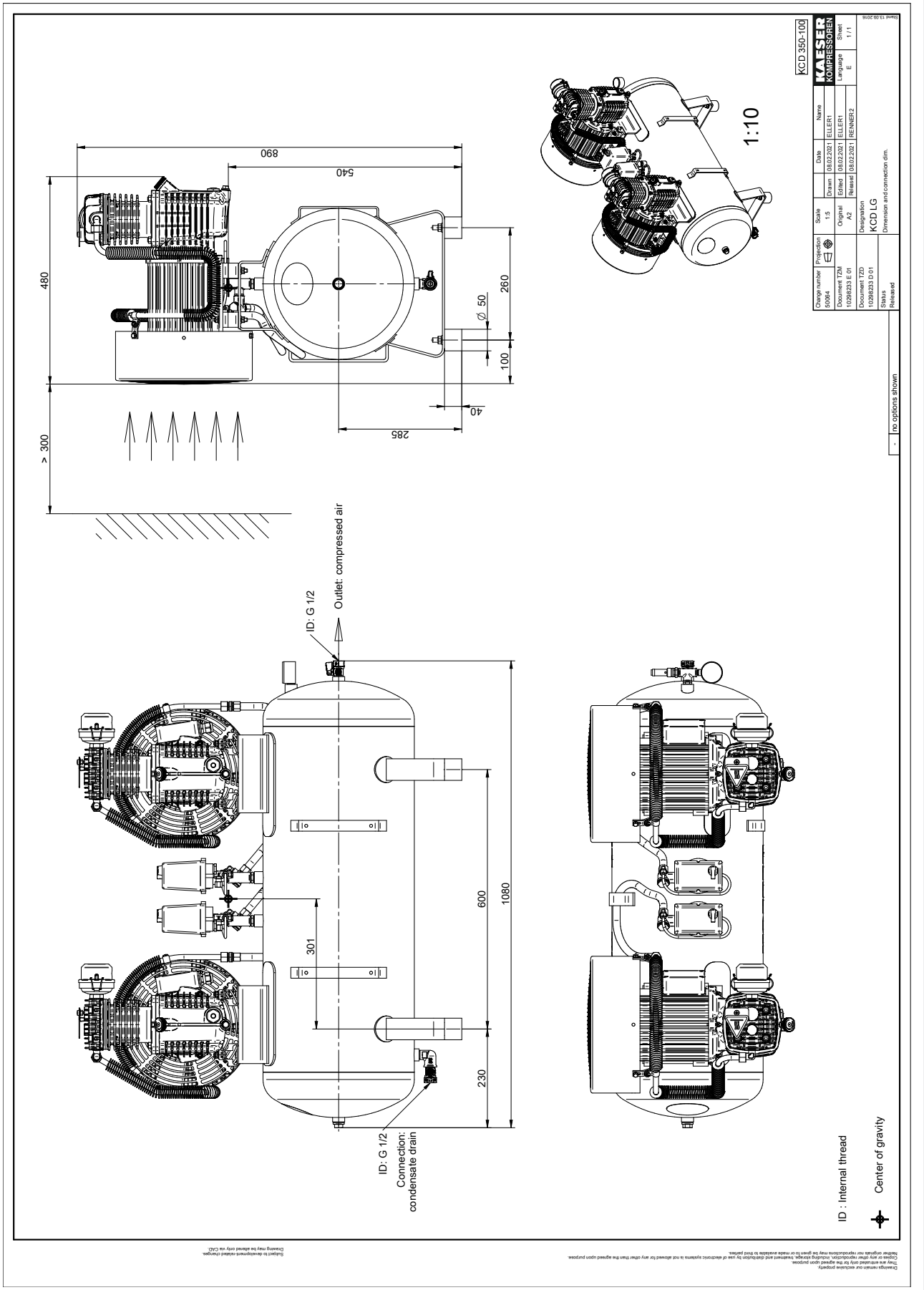

KCCD 130-350
1:20
1010
450
590
50
219
94
40
385
538
> 300
ID: G 3/4
ID: G 1/2
500
482
980
1825
ID : Internal thread
Center of gravity
- no options shown
Change number
Projection
Scale 1:10
Original A3
Drawn 23.09.2019 CLARNER1
Edited 31.10.2019 KOCH4
Released 31.10.2019 HOLLAUER1
Language E
Sheet 1 / 1
Document TZM 10448511 E 00
Document TZD 10448511 D 00
Designation KCD LG
Dimension and connection dim.
Status Released
Stand 13.09.2016
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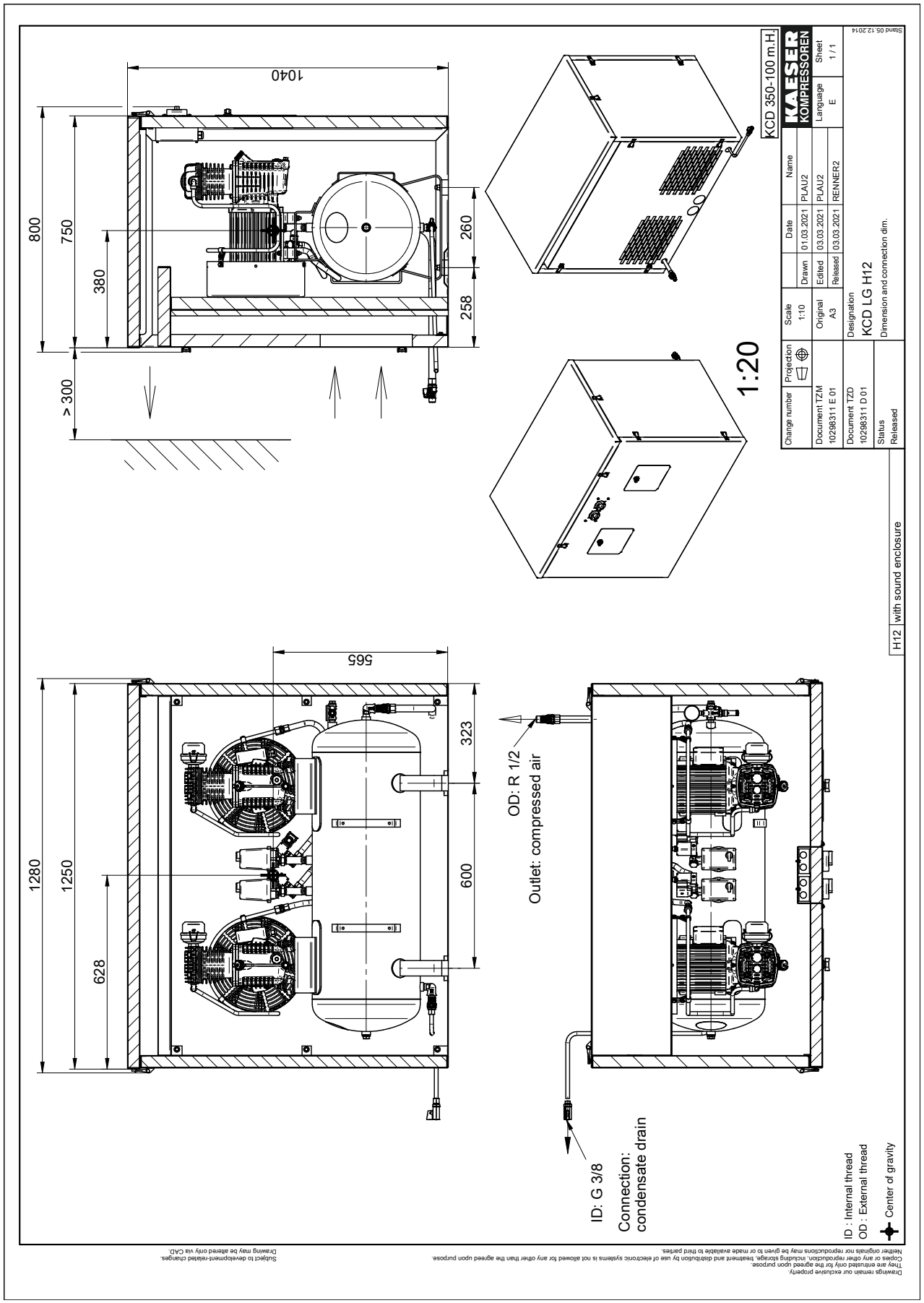

KCCD 130-350
KAESER KOMPRESSOREN
Drawn 24.09.2019 CLARNER1
Edited 02.08.2023 ELLER1
Released 02.08.2023 REINER2
Language E
Sheet 1 / 1
Scale 1:10
Original A2
Designation KCD LG H12
Dimension and connection dim.
Document TZM 10448624 E 00
Document TZD 10448624 D 00
Status Released
H12 With sound enclosure
> 300
600
> 300
450
Ø 50
217
92
21
416
670
ID: G 3/4
ID: G 1/2
500
485
980
1830
1190
ID : Internal thread
Center of gravity

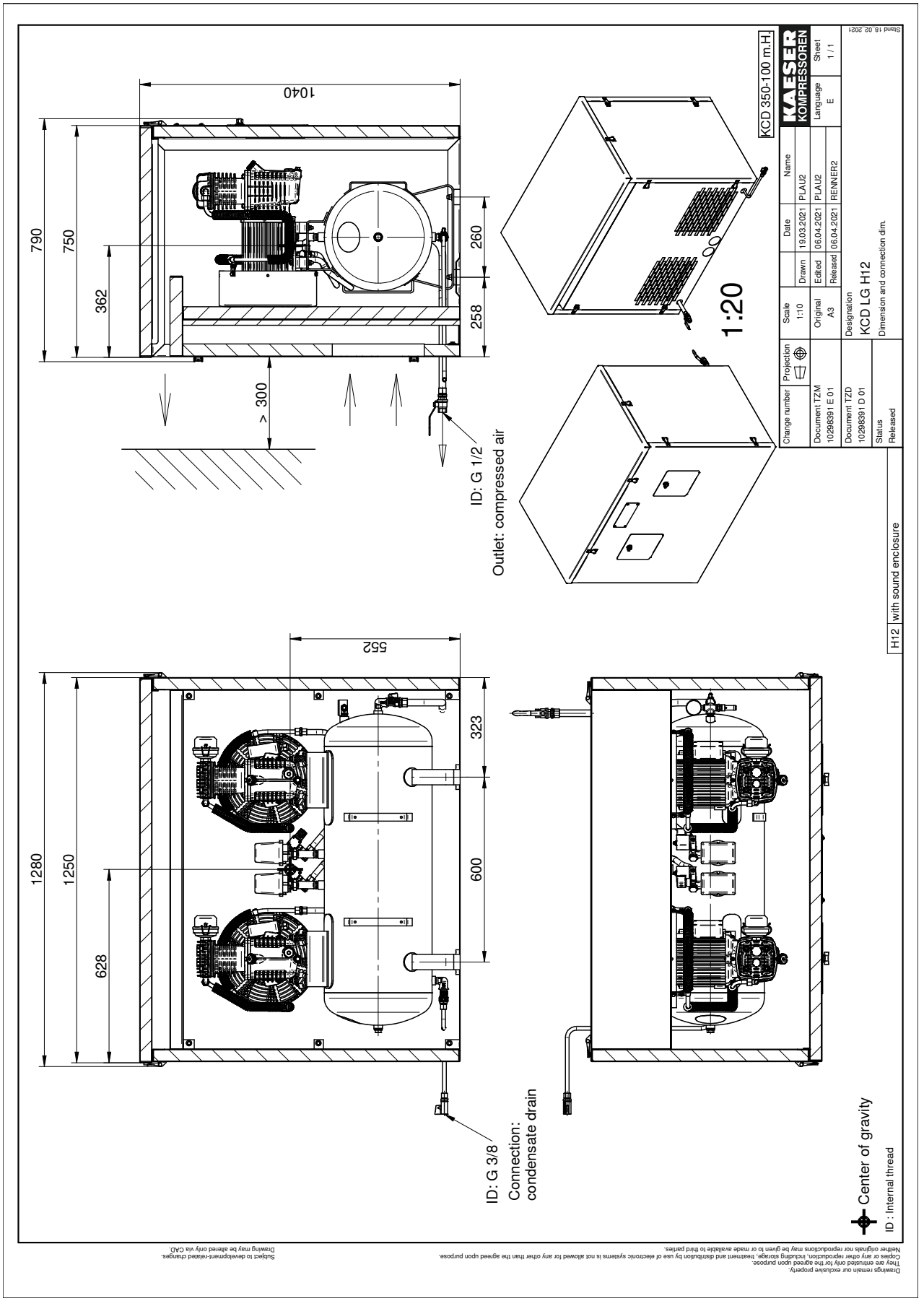

KCCD 130-350
KAESER KOMPRESSOREN
Stand 13.09.2016
Change number
Projection
Scale 1:10
Original A3
Drawn 24.09.2019 CLARNER1
Edited 08.11.2019 KOCH4
Released 11.11.2019 SCHAEF1
Language E
Sheet 1 / 1
Document TZM 10448671 E 00
Document TZD 10448671 D 00
Designation KCD LG
Dimension and connection dim.
Status Released
- no options shown
1:20
Minimum distance to wall
> 300
1010
540
385
40
146
218
450
650
∅ 50
ID: G 3/4
Outlet: compressed air
ID: G 1/2
500
482
980
1825
ID : Internal thread
Center of gravity
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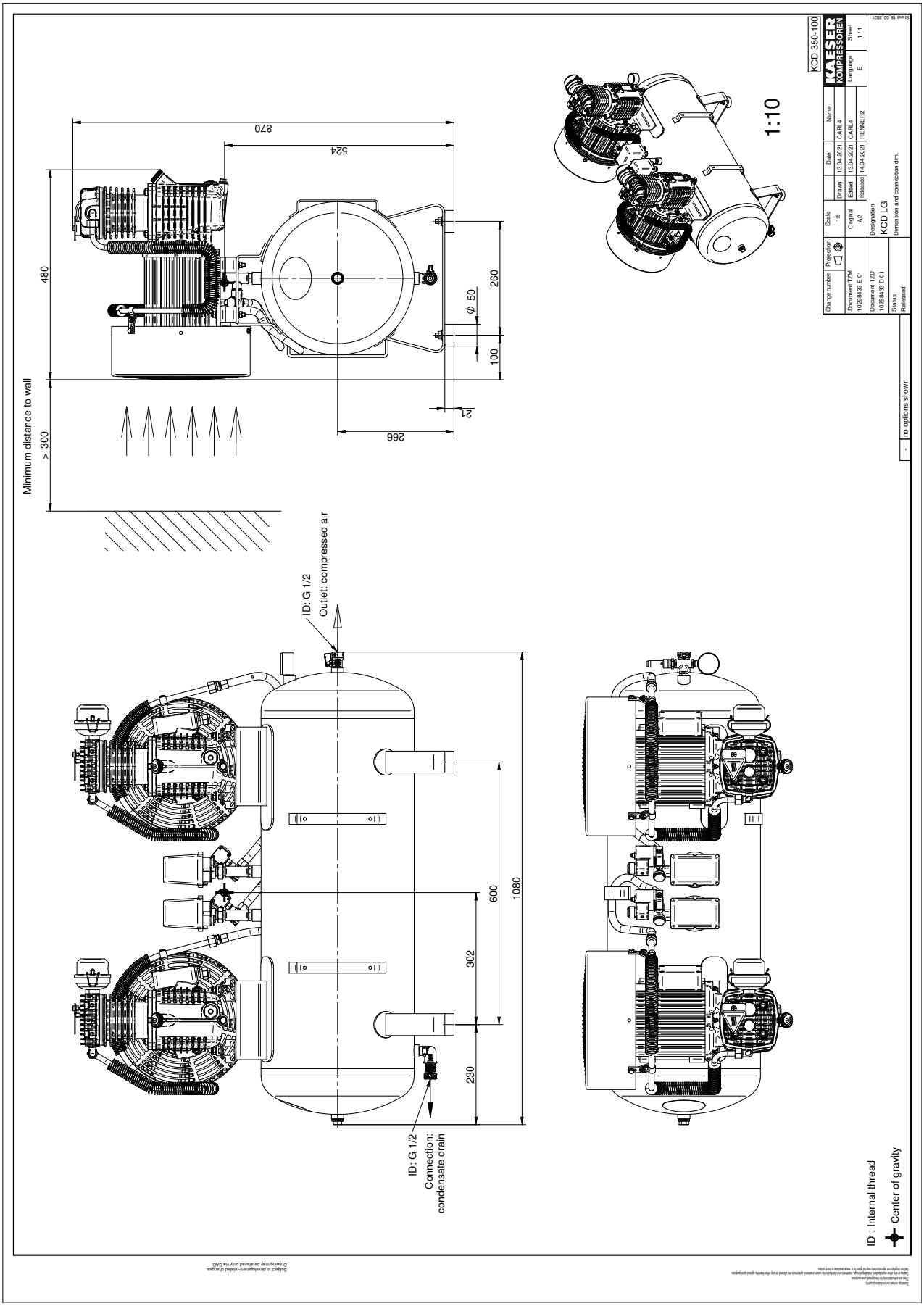

KCCD 130-350
KAESER KOMPRESSOREN
Minimum distance to wall
> 300
603
> 300
Minimum distance to wall
H29
10
ID: M10
450
Ø 50
93
30
80
420
644
H12
Outlet: Compressed air
ID: G 3/4
OD: G 3/8
Connection: condensate drain
K5/K6
459
498
482
980
1828
349
1190
H12 With sound enclosure
K5/K6 Electronic condensate drain
H29 Rubber pad, 1x screw-fastened
KCD LG H12
Dimension and connection dim.
ID : Internal thread
OD : External thread
Center of gravity

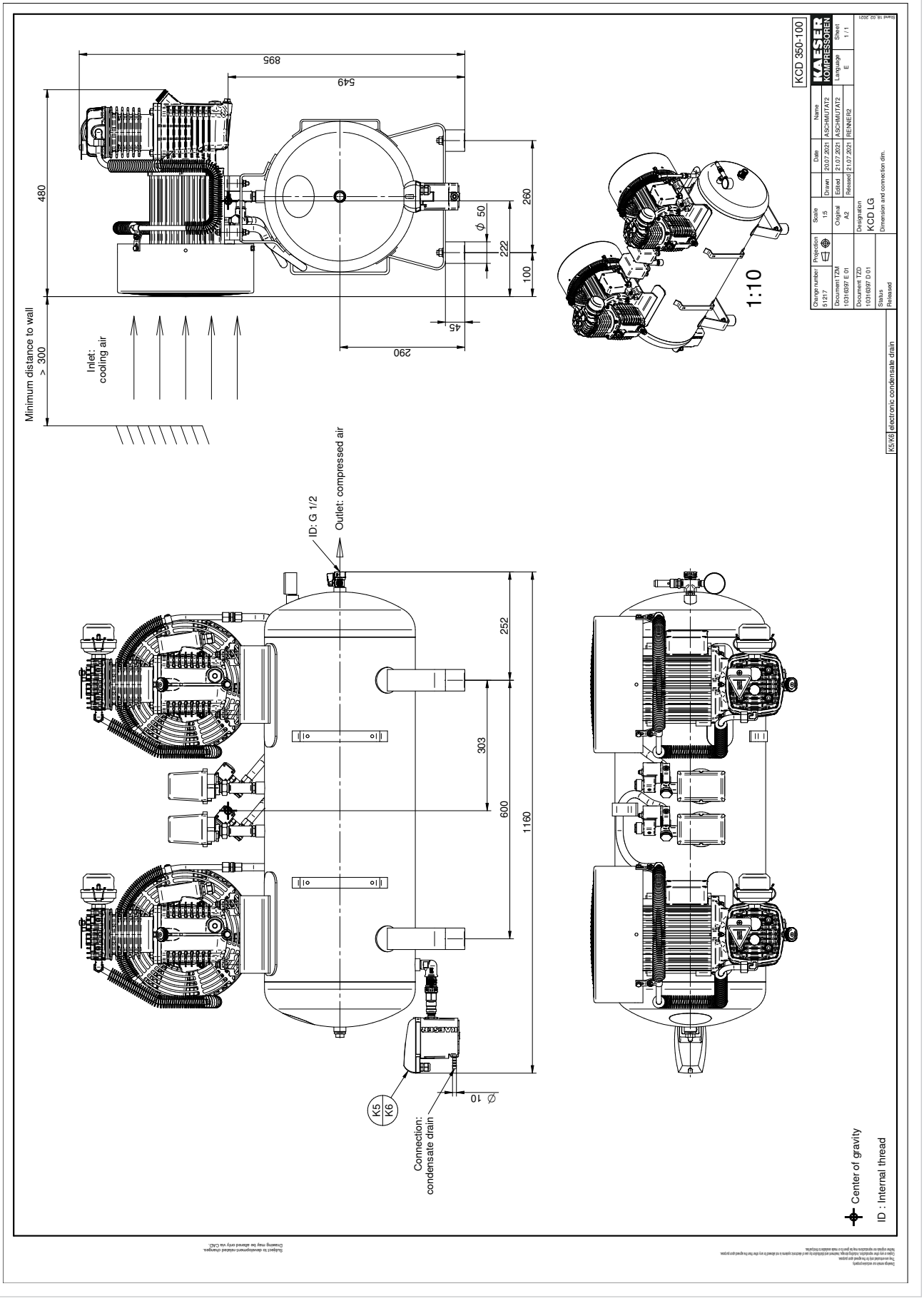

KCCD 130-350
KAESER KOMPRESSOREN
Sheet 1 / 1
Language E
Name
Date
Drawn 24.09.2019 CLARNER1
Edited 07.11.2019 KOCH4
Released 08.11.2019 SCHAEF1
Scale 1:10
Original A3
Designation KCD LG H12
Dimension and connection dim.
Projection
Change number
Document TZM 10448680 E 00
Document TZD 10448680 D 00
Status Released
H12 with sound enclosure
Stand 13.09.2016
Minimum distance to wall
> 300
600
> 300
Minimum distance to wall
450
Ø 50
215
146
21
416
899
Outlet: compressed air
ID: G 3/4
ID: G 1/2
500
485
980
1830
1190
ID : Internal thread
Center of gravity
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Drawing may be altered only via CAD.

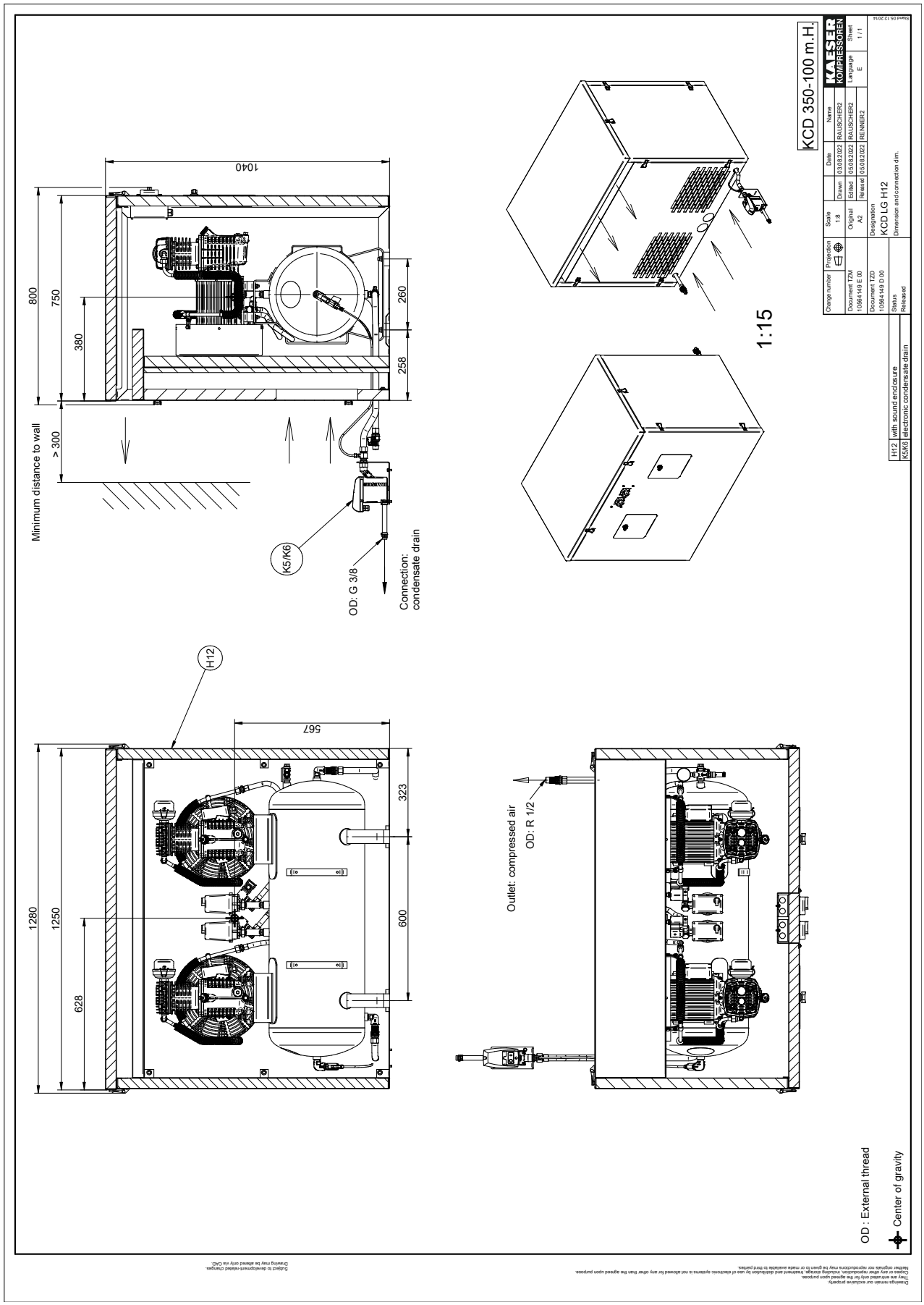

KCD 350-100
1:10
890
540
480
260
Ø 50
100
40
285
> 300
ID: G 1/2
Outlet: compressed air
600
1080
301
230
ID: G 1/2
Connection: condensate drain
ID : Internal thread
Center of gravity
no options shown
Dimension and connection dim.
KCD LG
Drawing 13.09.2018


1040
800
750
380
260
258
> 300
1:20
565
1280
1250
628
323
600
OD: R 1/2
Outlet: compressed air
ID: G 3/8
Connection:
condensate drain
ID : Internal thread
OD : External thread
Center of gravity
KCD 350-100 m.H.
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:10
Original A3
Drawn 01.03.2021 PLAU2
Edited 03.03.2021 PLAU2
Released 03.03.2021 RENNER2
Name
Date
Language E
Sheet 1/1
Document TZM t0298311 E 01
Document TZD t0298311 D 01
Designation KCD LG H12
Dimension and connection dim.
Status Released
H12 with sound enclosure
Stand 05.12.2014
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KCD 350-100 m.H.
KAESER KOMPRESSOREN
Sheet 1 / 1
Language E
Name
Date
Drawn 19.03.2021 PLAU2
Edited 06.04.2021 PLAU2
Released 06.04.2021 RENNER2
Scale 1:10
Original A3
Projection
Change number
Document TZM 10298391 E 01
Document TZD 10298391 D 01
Status Released
Designation KCD LG H12
Dimension and connection dim.
H12 with sound enclosure
Stand 18.02.2021
1040
790
750
362
260
258
> 300
ID: G 1/2
Outlet: compressed air
1:20
552
1280
1250
628
323
600
ID: G 3/8
Connection: condensate drain
Center of gravity
ID : Internal thread
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Drawing may be altered only via CAD.

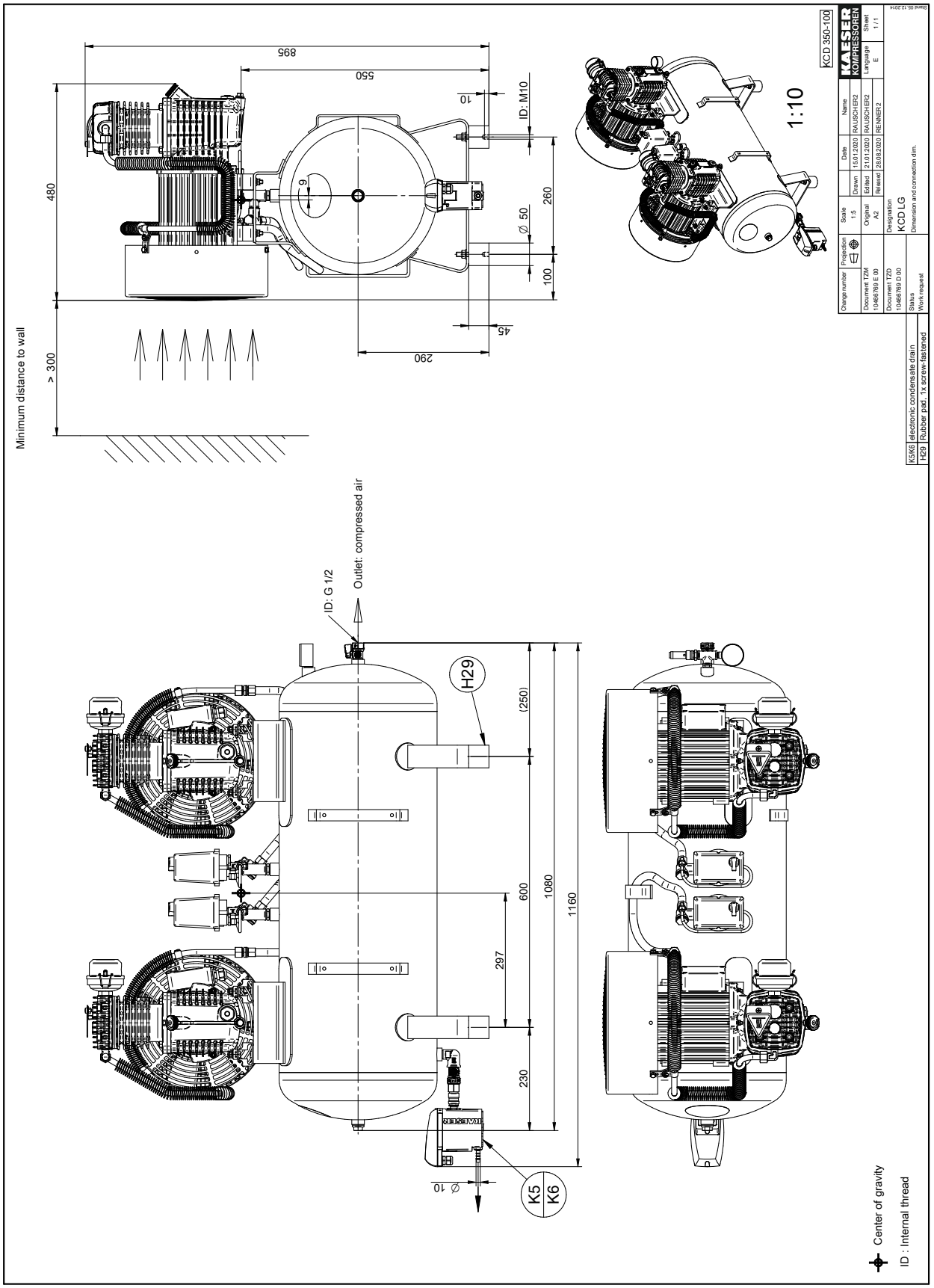

KCD 350-100
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:5
Original A2
Drawn 13.04.2021 CARL4
Edited 13.04.2021 CARL4
Released 14.04.2021 RENNER2
Language E
Sheet 1 / 1
Document TZM 1029843 E 01
Document TZD 1029843 D 01
Status Released
Designation KCD LG
Dimension and connection dim.
- no options shown
1:10
870
524
480
Minimum distance to wall
> 300
260
ϕ 50
100
21
266
ID: G 1/2
Outlet: compressed air
1080
600
302
230
ID: G 1/2
Connection: condensate drain
ID : Internal thread
Center of gravity

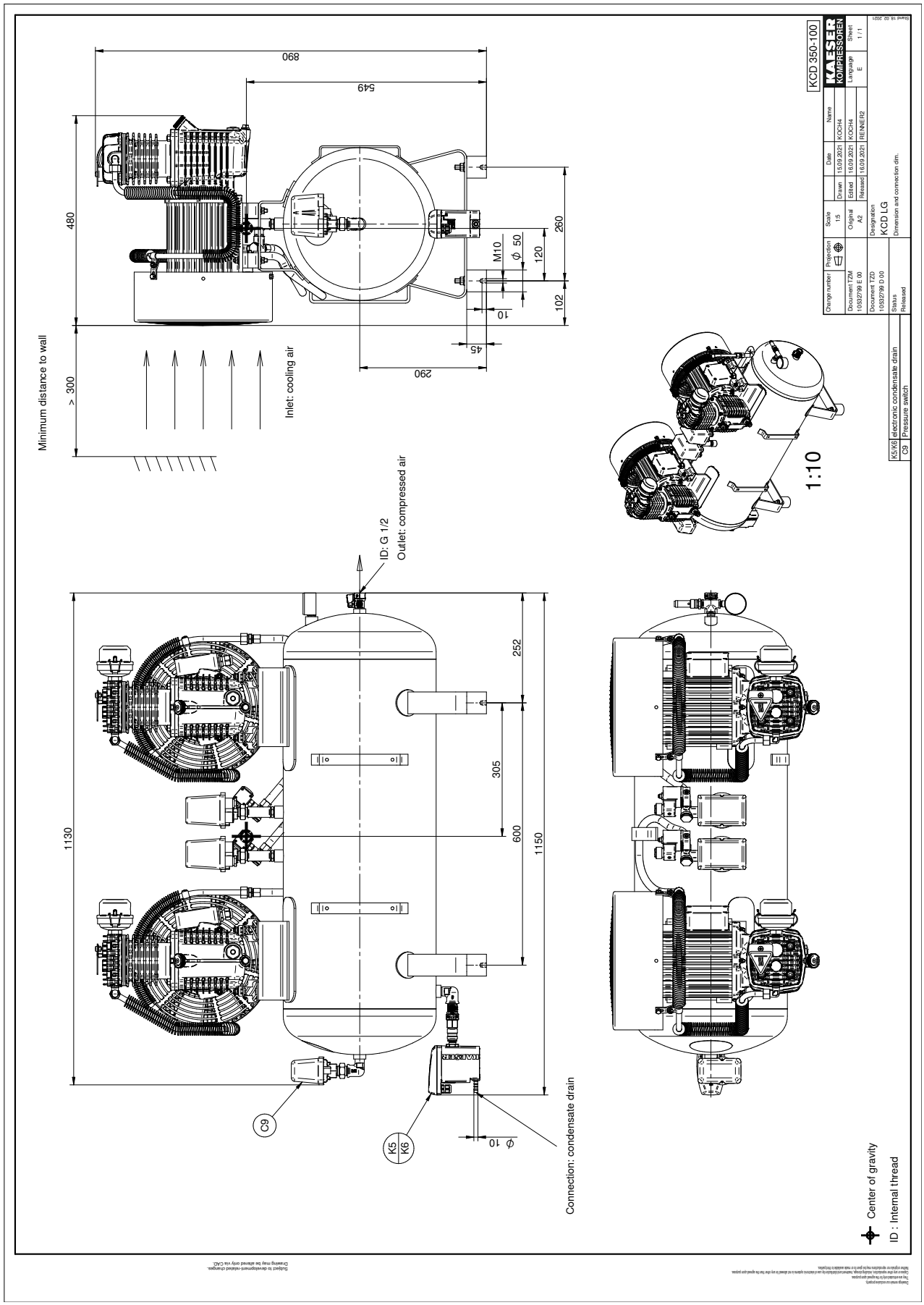

KCD 350-100
KAESER KOMPRESSOREN
Drawing no. acc. to data input
Sheet 16.02.2021
Change number 51217
Projection
Scale 1:5
Original A2
Drawn 20.07.2021 ASCHMUTAT2
Edited 21.07.2021 ASCHMUTAT2
Released 21.07.2021 REHNER2
Language E
Sheet 1 / 1
Document TZM 1031697 E 01
Document TZD 1031697 D 01
Status Released
Designation KCD LG
Dimension and connection dim.
K5/K6 electronic condensate drain
895
549
480
260
Ø 50
222
100
45
290
Minimum distance to wall > 300
Inlet: cooling air
1:10
ID: G 1/2
Outlet: compressed air
252
303
600
1160
K5
K6
Ø 10
Connection: condensate drain
Center of gravity
ID : Internal thread
Subject to development-related changes.
Drawing may be altered only via CAD.

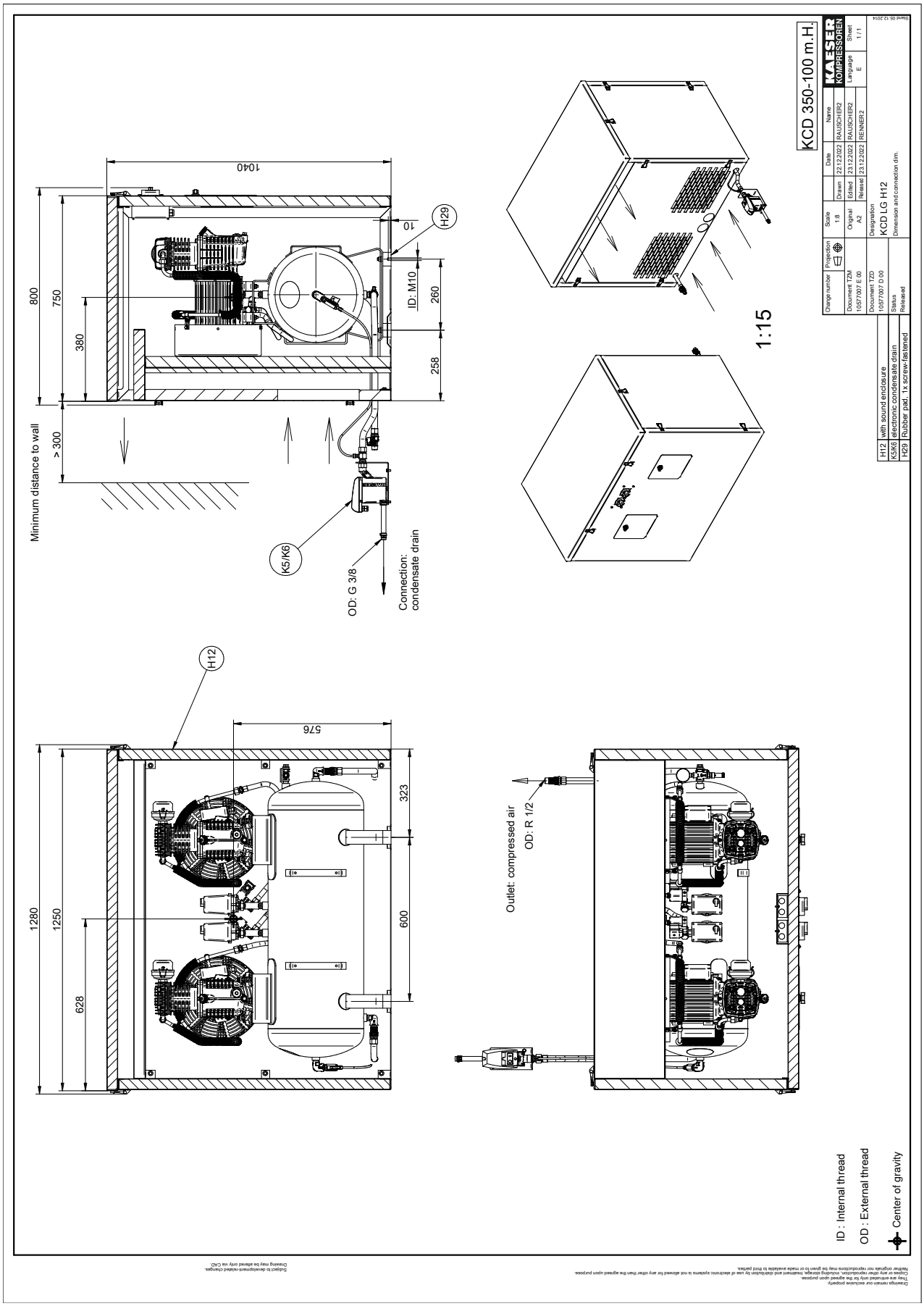


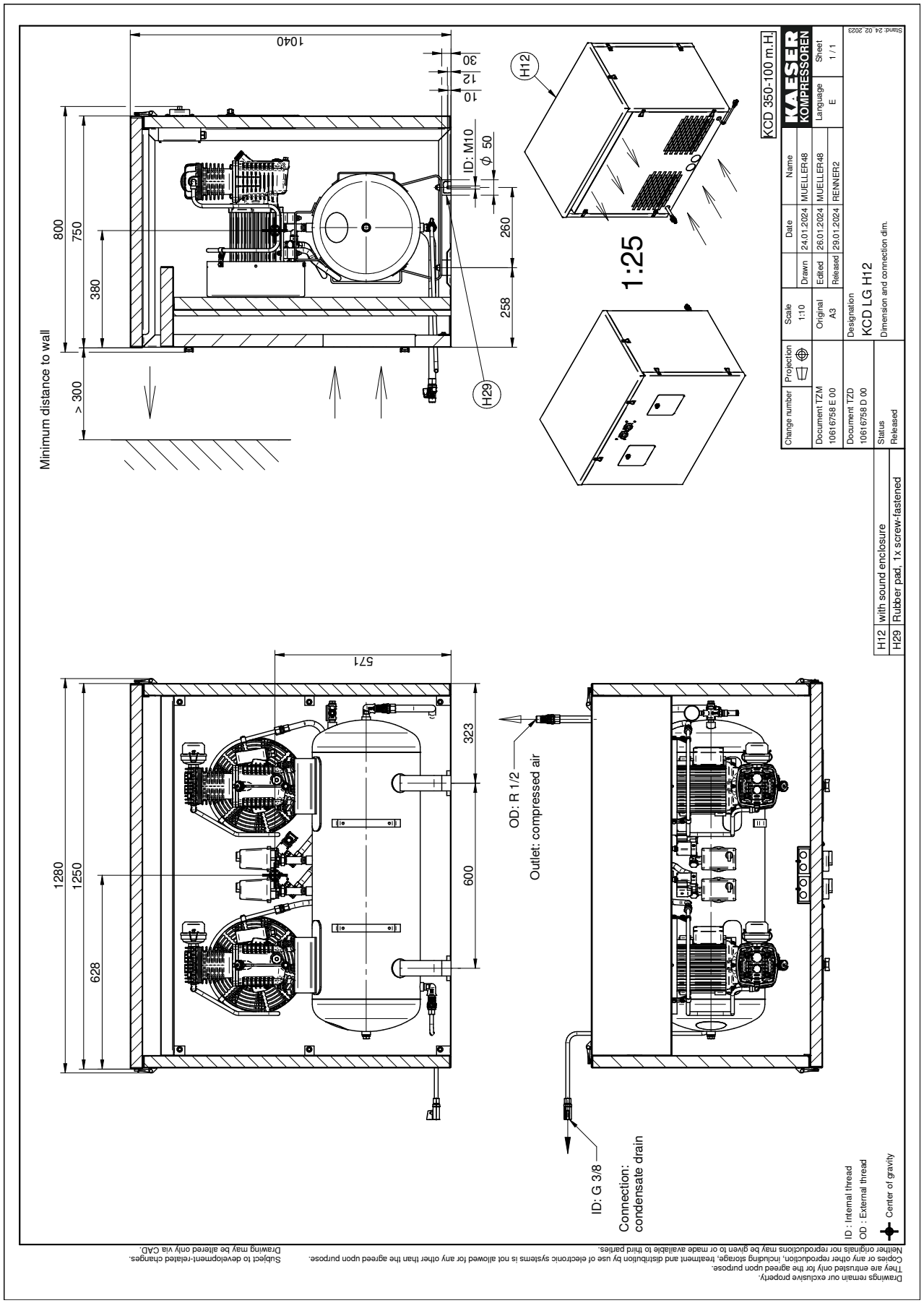

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Drawing may be altered only via CAD!

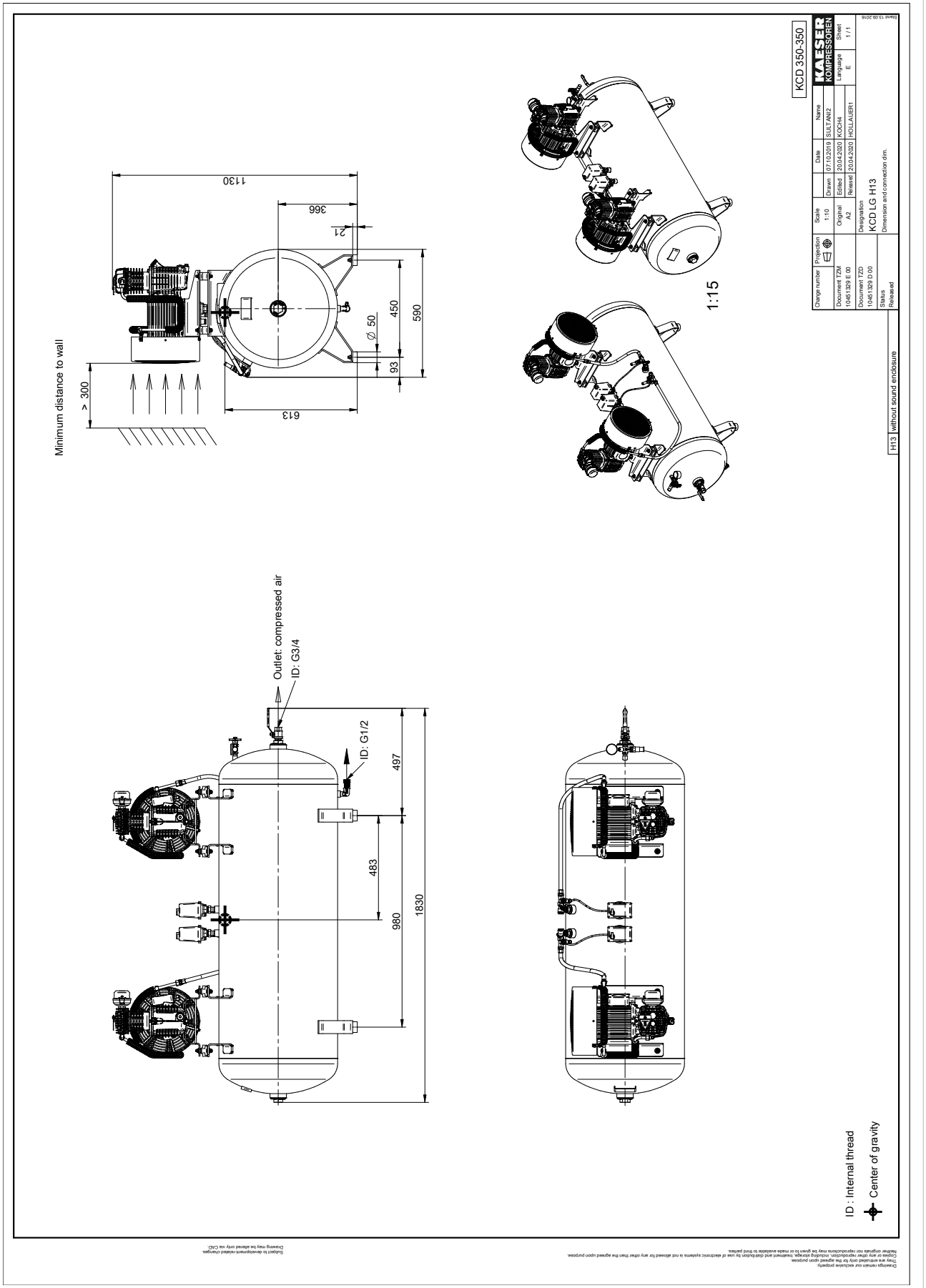

KCD 350-100
1:10
895
550
480
10
ID: M10
260
Ø 50
100
45
290
6
> 300
Minimum distance to wall
ID: G 1/2
Outlet: compressed air
H29
(250)
600
1080
1160
297
230
Ø 10
K5
K6
Center of gravity
ID : internal thread
K5/K6 Electronic condensate drain
H23 Rubber pad, 1x screw-fastened
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:5
Original A2
Drawn 15.01.2020 RAUSCHER2
Edited 21.01.2020 RAUSCHER2
Released 28.08.2020 REHNER2
Name
Date
Language E
Sheet 1 / 1
Document TZM 1046769 E 00
Document TZD 1046769 D 00
Designation KCD LG
Status Work request
Dimension and connection dim.
Stand: 05.12.2014

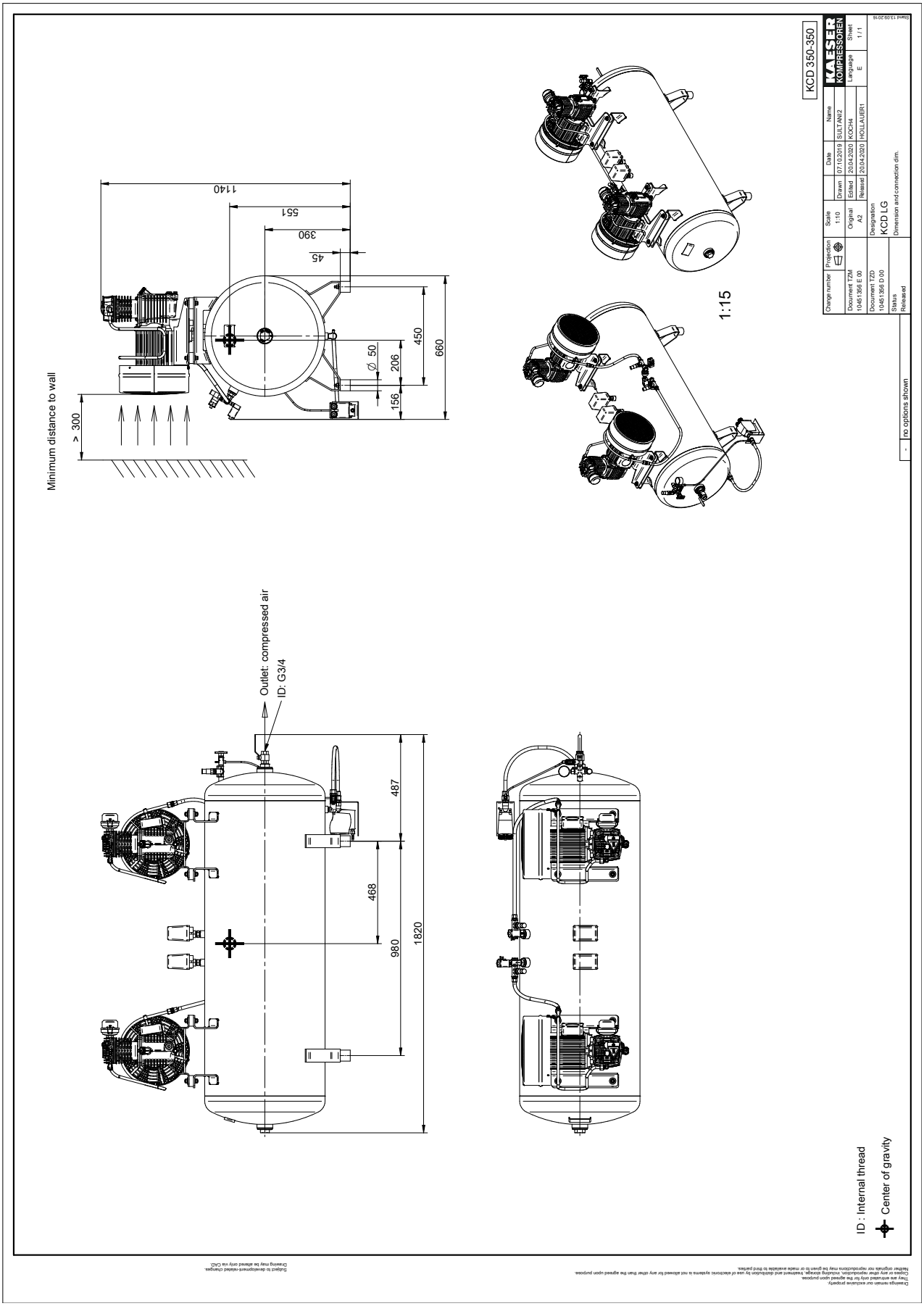

KCD 350-100
KAESER KOMPRESSOREN
890
549
480
> 300
Minimum distance to wall
Inlet: cooling air
M10
ϕ 50
120
260
102
10
45
290
1:10
ID: G 1/2
Outlet: compressed air
1130
252
305
600
1150
C9
K5
K6
ϕ 10
Connection: condensate drain
K5/K6 electronic condensate drain
C9 Pressure switch
Center of gravity
ID : Internal thread
Change number
Projection
Scale 1:5
Original A2
Drawn 16.09.2021 KOCH4
Edited 16.09.2021 KOCH4
Released 16.09.2021 REINHER2
Language E
Sheet 1 / 1
Document TZM 1053/799 E 00
Document TZD 1053/799 D 00
Designation KCD LG
Status Released
Dimension and connection dim.
Drawing must not be shared with third parties.
Subject to technical changes.
Drawing may be scaled only via CAD.

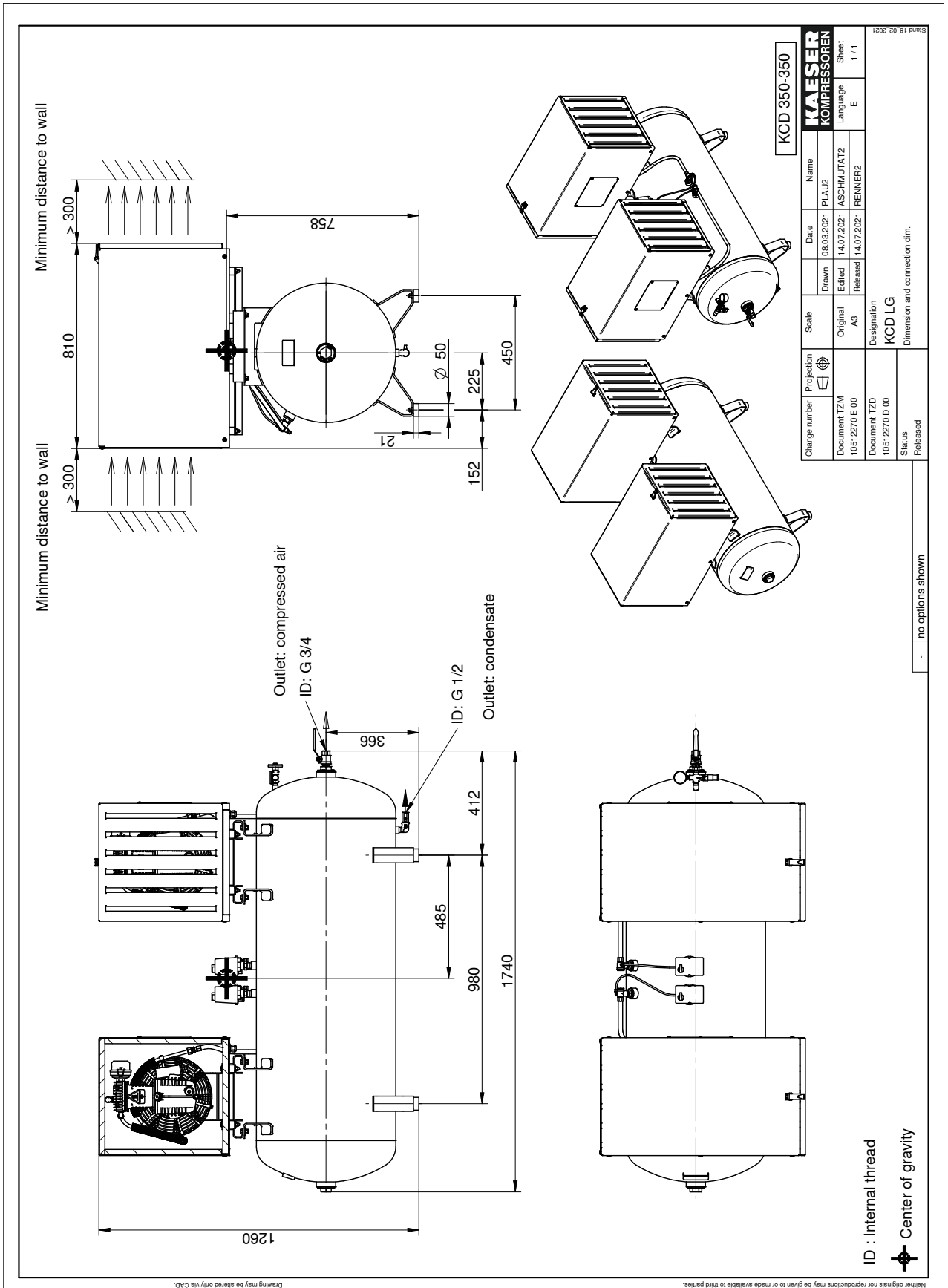

KCD 350-100 m.H.
1:15
1040
800
750
380
> 300
Minimum distance to wall
10
H29
ID: M10
260
258
K5/K6
OD: G 3/8
Connection: condensate drain
H12
576
323
600
1280
1250
628
Outlet: compressed air
OD: R 1/2
H12 with sound enclosure
K5/K6 electronic condensate drain
H29 Rubber pad, 1x screw-fastened
KCD LG H12
Dimension and connection dim.
ID : Internal thread
OD : External thread
Center of gravity



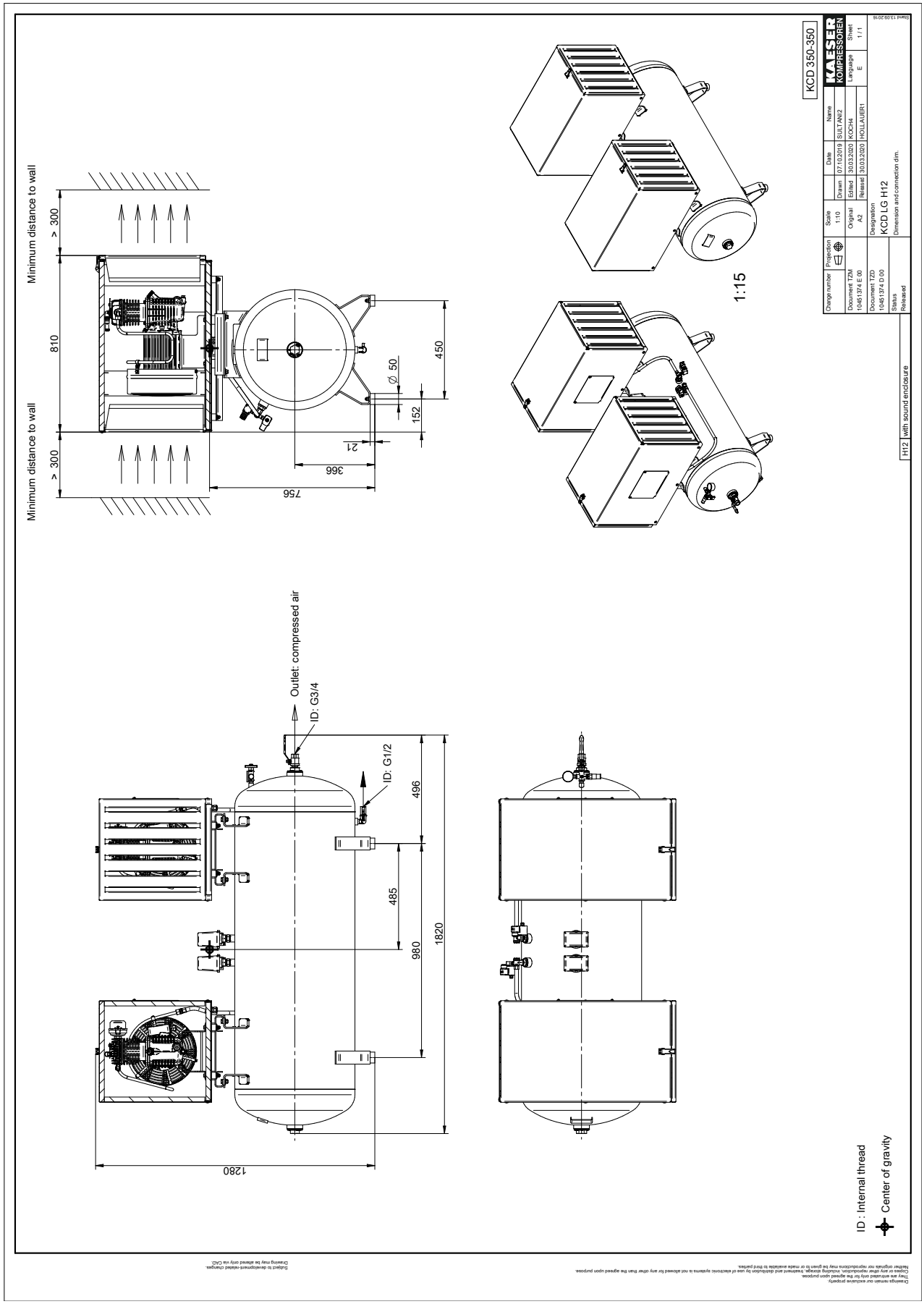

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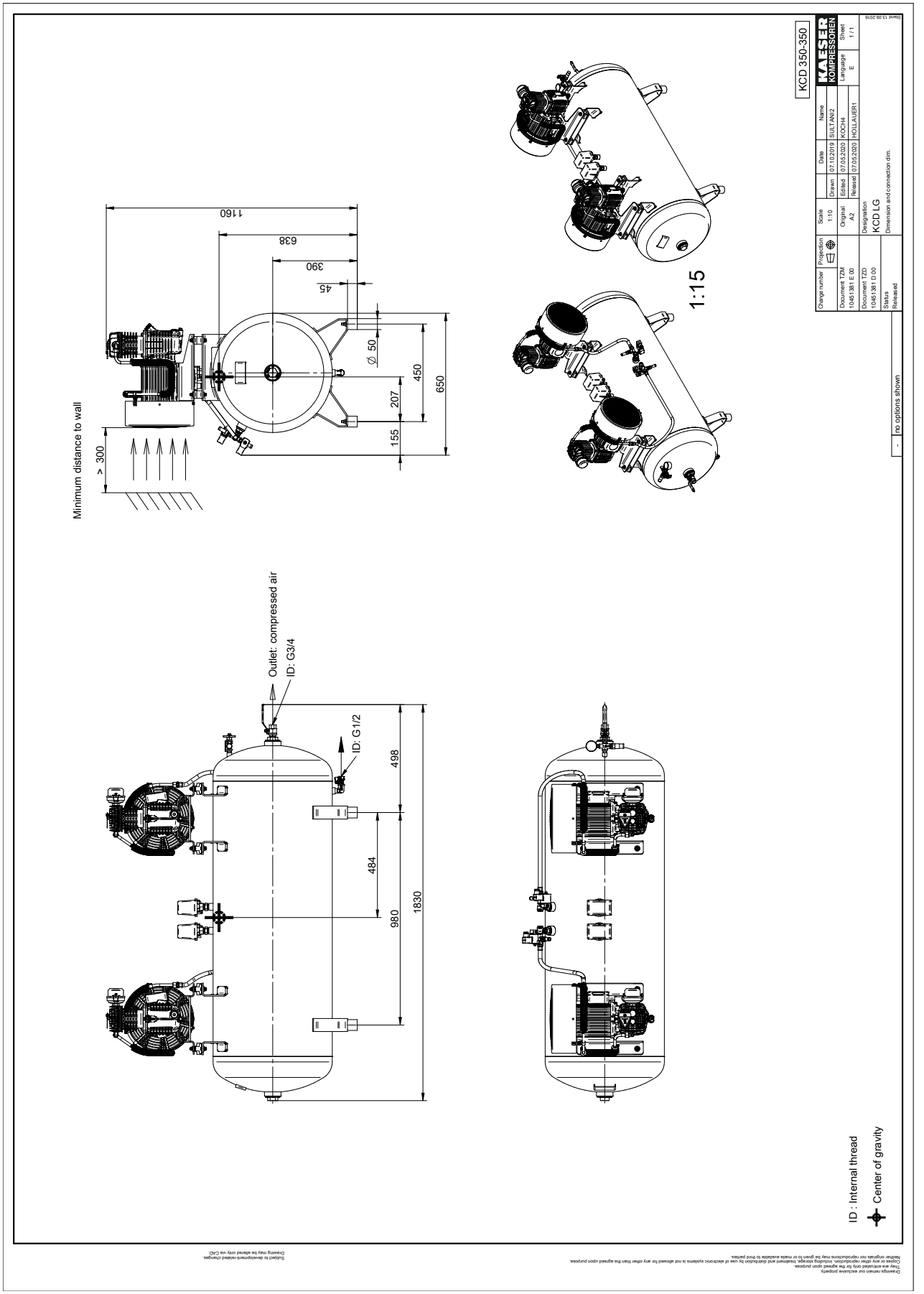

KCD 350-350
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:10
Date
Name
Drawn 07.10.2019 SULTANI2
Edited 20.04.2020 KOCH4
Released 20.04.2020 HOLLAUER1
Language E
Sheet 1 / 1
Document TZM 10451329 E 00
Original A2
Designation KCD LG H13
Document TZD 10451329 D 00
Status Released
Dimension and connection dim.
H13 Without sound enclosure
1130
366
21
Ø 50
450
590
93
613
Minimum distance to wall
> 300
1:15
Outlet: compressed air
ID: G3/4
ID: G1/2
497
483
980
1830
ID : Internal thread
Center of gravity

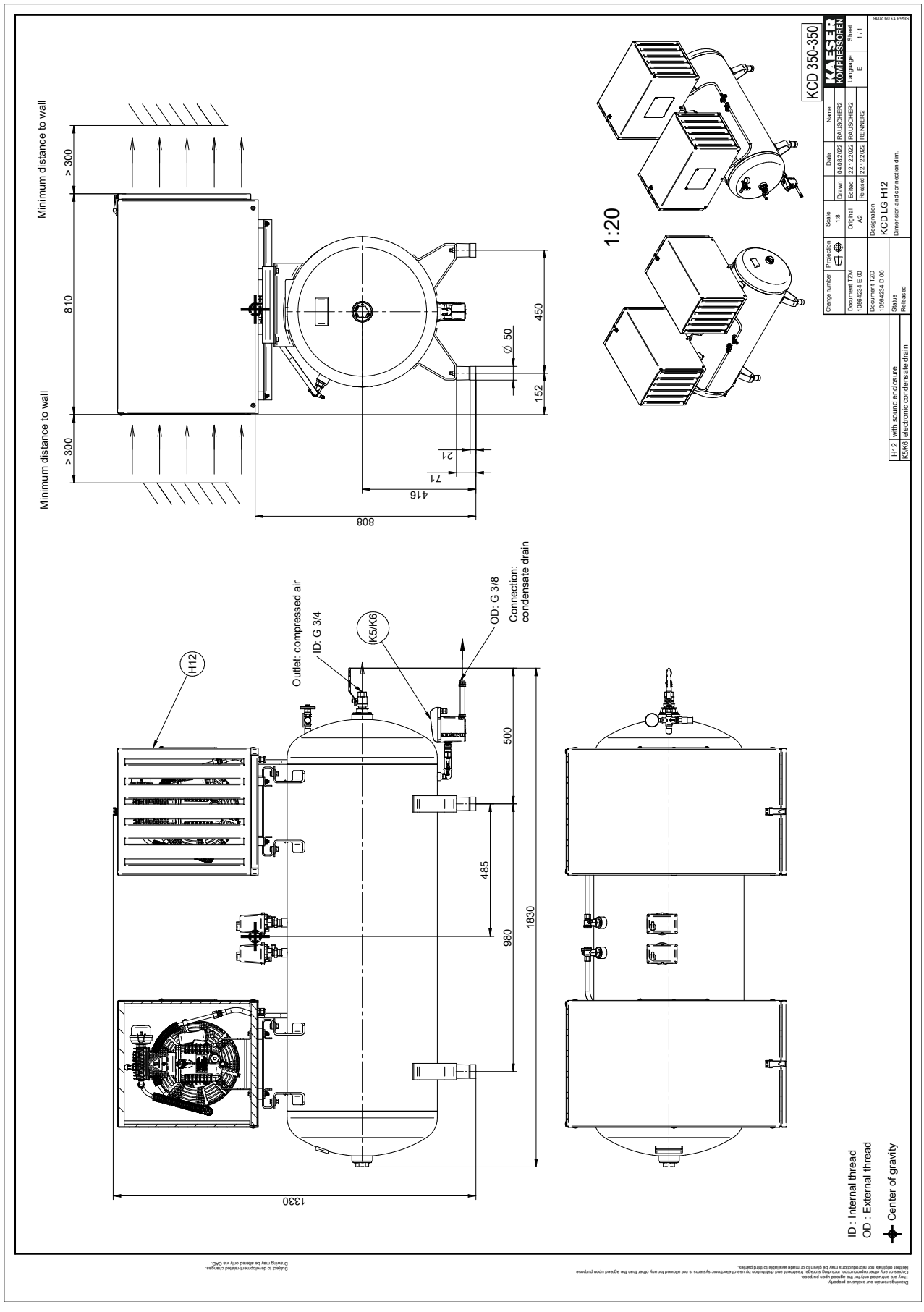

KCD 350-350
1140
551
390
45
450
660
Ø 50
206
156
Minimum distance to wall
> 300
1:15
Outlet: compressed air
ID: G3/4
487
468
980
1820
ID : Internal thread
Center of gravity
Scale 1:10
Original A2
Drawn 07.10.2019 SIELTAN2
Edited 20.04.2020 KOCH4
Released 20.04.2020 HOLLAUER1
Language E
Sheet 1 / 1
Designation KCD LG
Dimension and connection dim.
Document TZD 10451366 D 00
Status Released
Document TZM 10451365 E 00
Change number
Projection
no options shown




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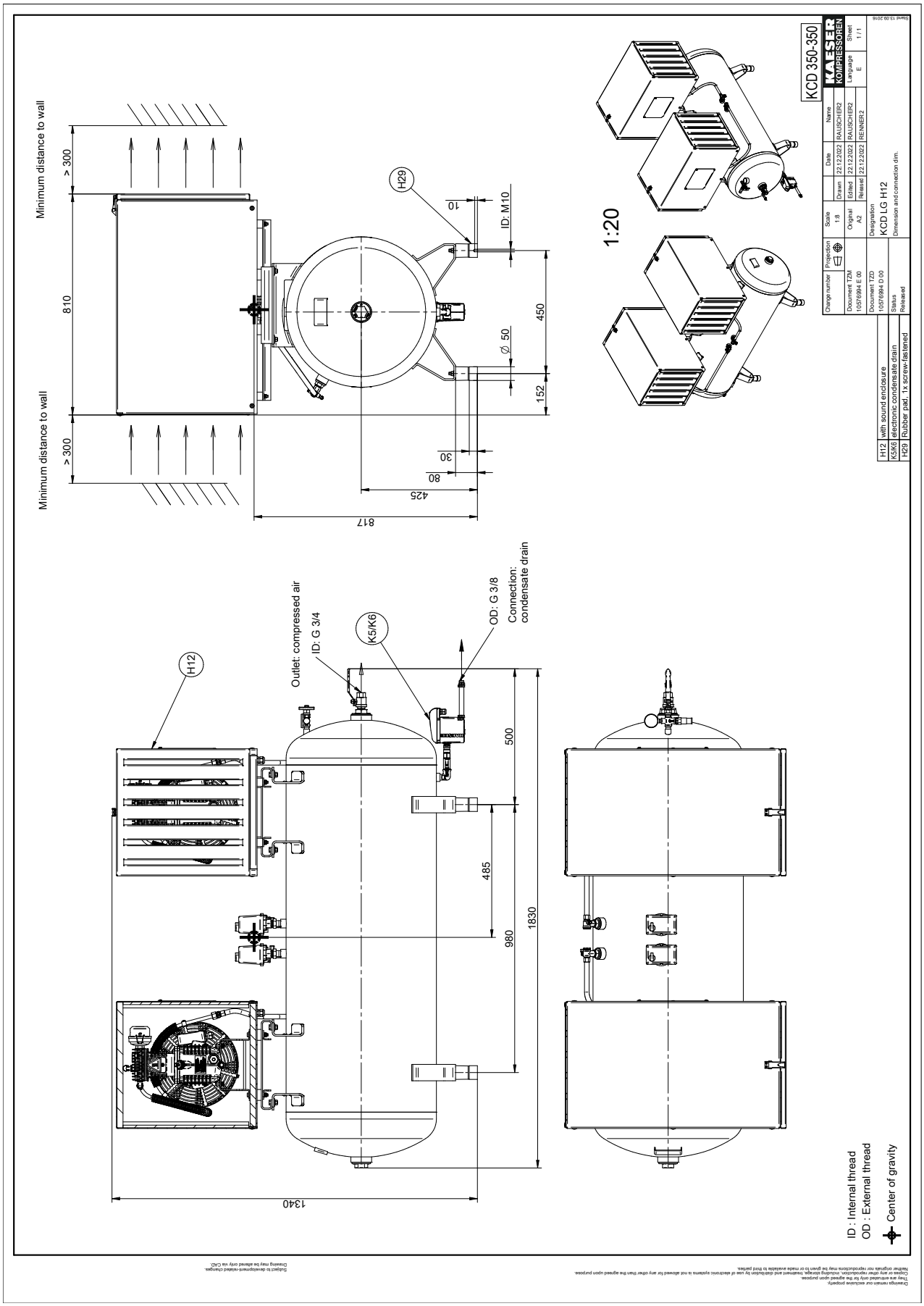

KCD 350-350
KAESER KOMPRESSOREN
Drawn 07.10.2019 SIELTJENS2
Edited 30.03.2020 KOCH4
Released 30.03.2020 HOLLAUER1
Language E
Sheet 1 / 1
Scale 1:10
Original A2
Designation KCD LG H12
Dimension and connection dim.
Document TZM 1045137/4 E 00
Document TZD 1045137/4 D 00
Status Released
H12 with sound enclosure
Minimum distance to wall
> 300
810
> 300
Minimum distance to wall
450
Ø 50
152
21
366
756
1:15
Outlet: compressed air
ID: G3/4
ID: G1/2
496
485
980
1820
1280
ID : Internal thread
Center of gravity

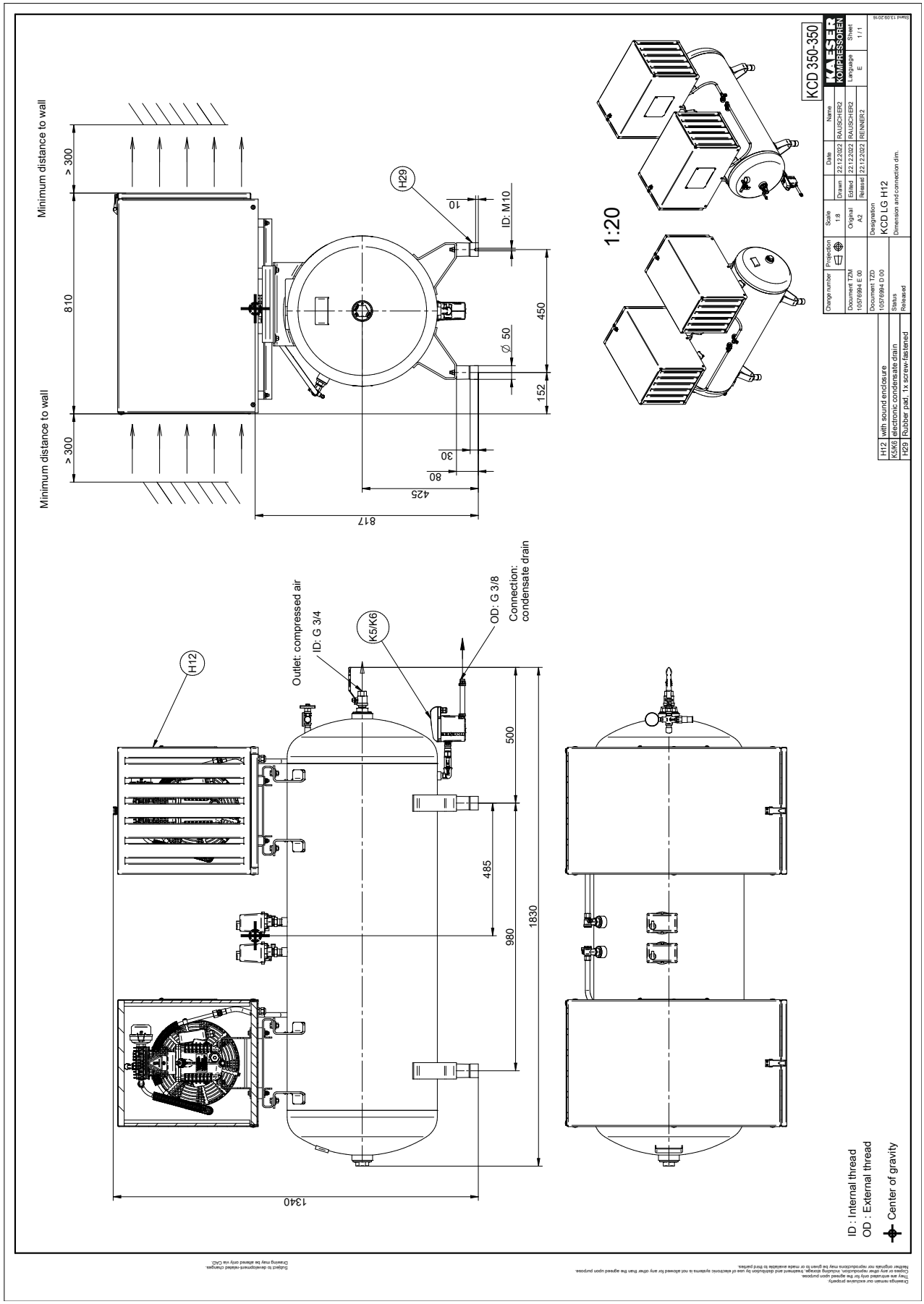

KCD 350-350
1160
638
390
45
Ø 50
450
650
207
155
Minimum distance to wall
> 300
1:15
Outlet: compressed air
ID: G3/4
ID: G1/2
498
484
980
1830
ID : Internal thread
Center of gravity
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:10
Original A2
Drawn 07.10.2019 SULT ANI2
Edited 07.05.2020 KOCH4
Released 07.05.2020 HOLLAUER1
Language E
Sheet 1 / 1
Document TZM 10451381 E 00
Document TZD 10451381 D 00
Designation KCD LG
Status Released
Dimension and connection dim.
no options shown
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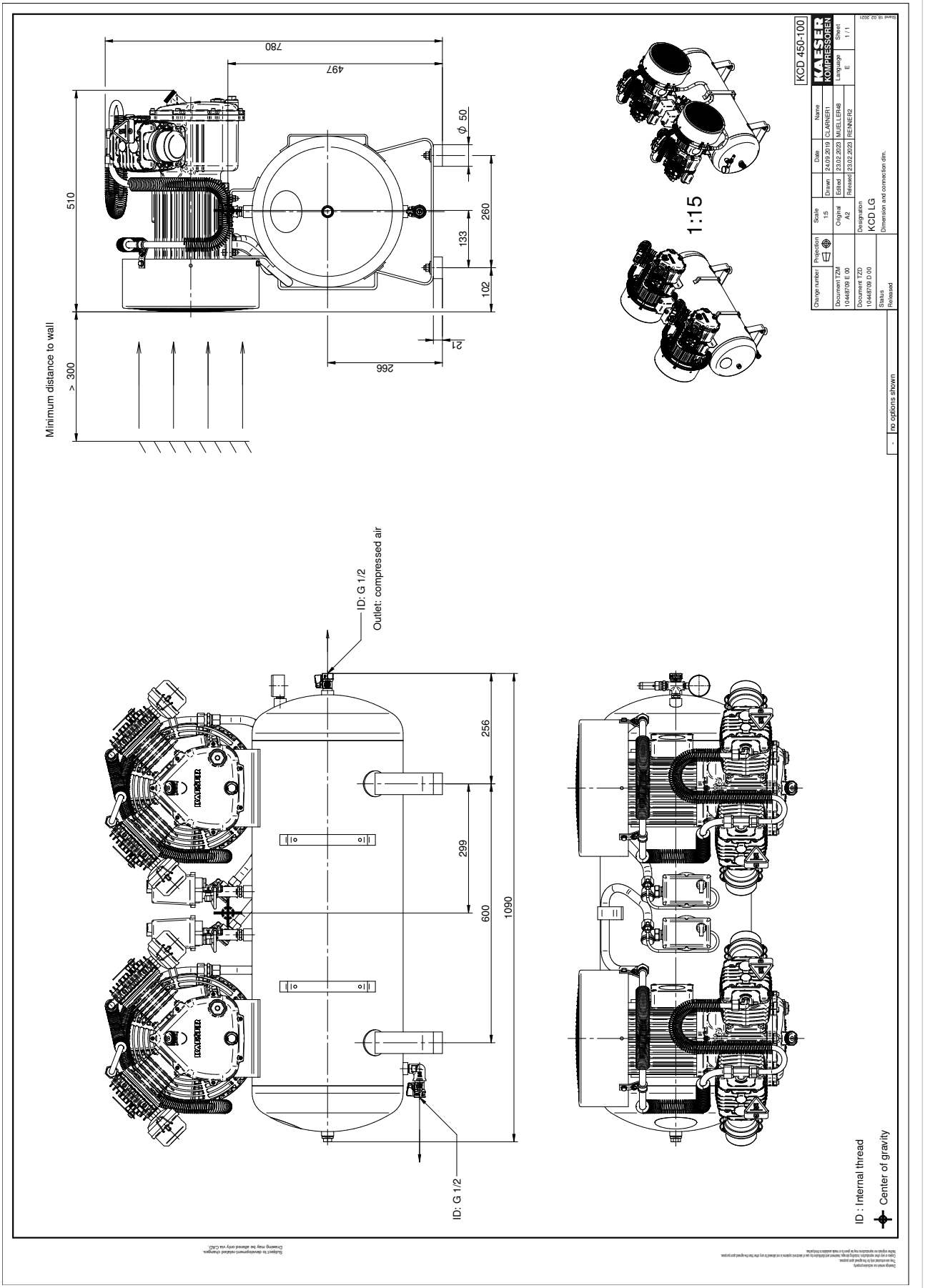


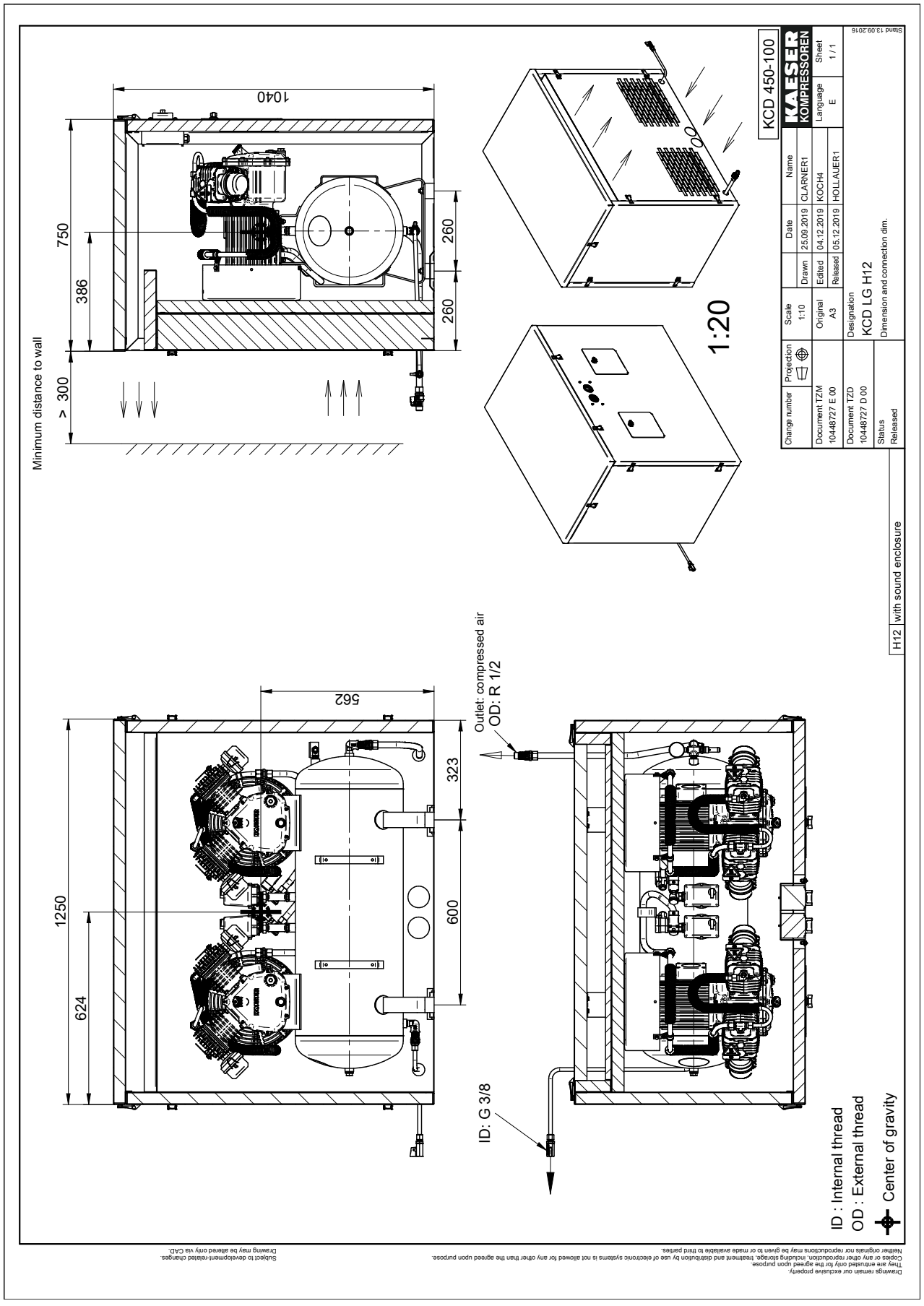

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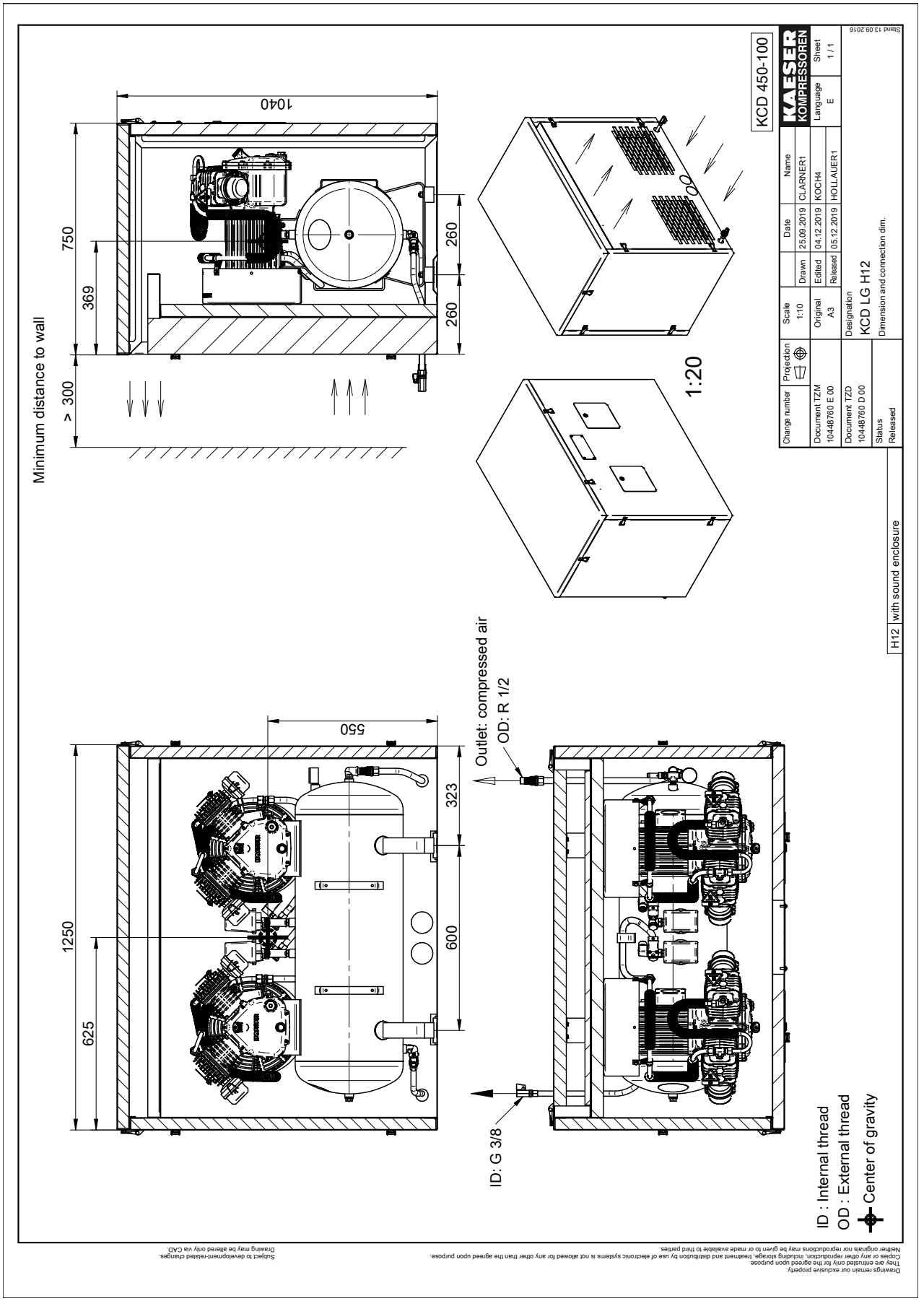
Subject to development-related changes.
Drawing may be altered only via CAD!

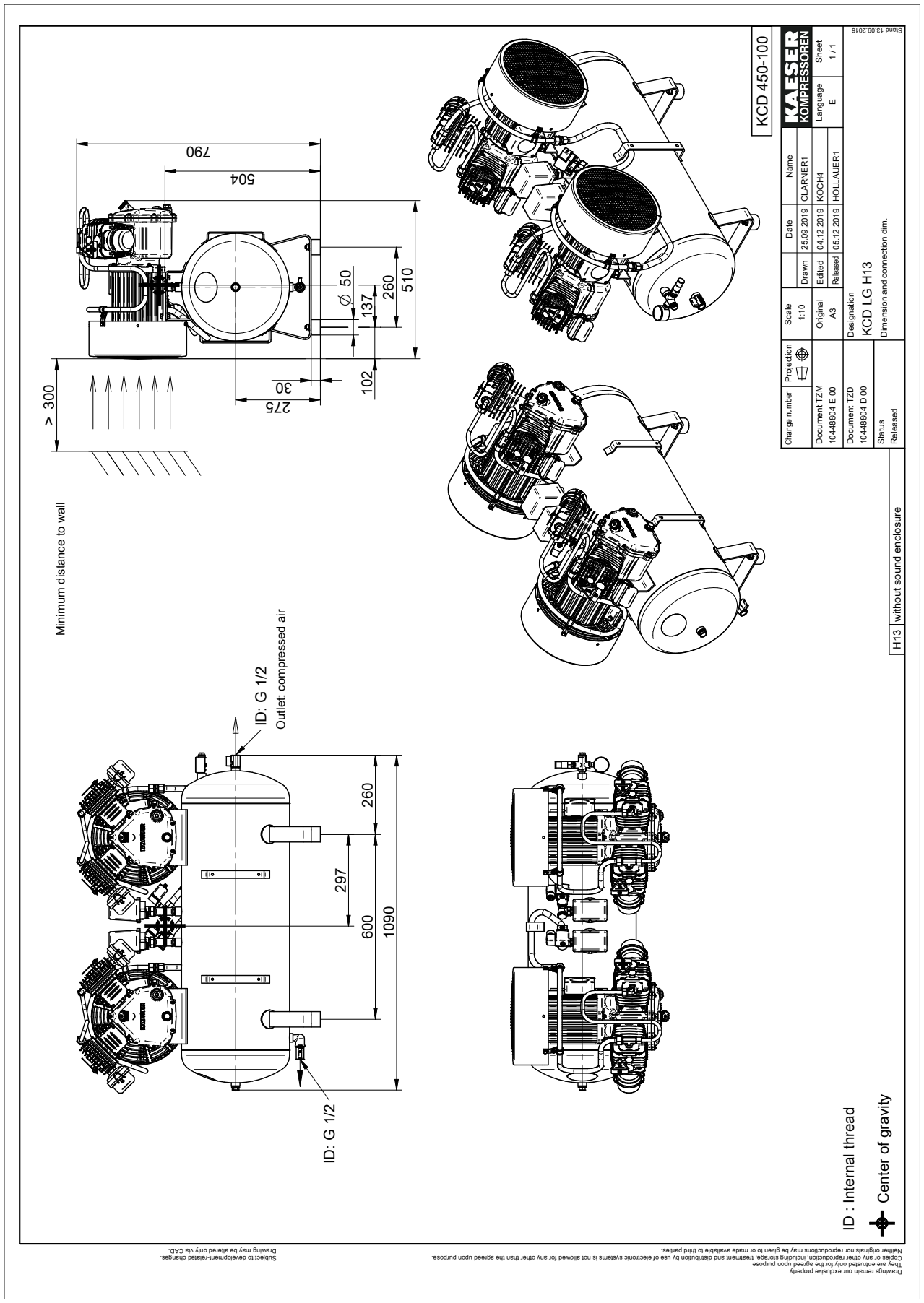

KCD 350-350
KAESER KOMPRESSOREN
Minimum distance to wall
> 300
810
> 300
H29
10
ID: M10
450
Ø 50
152
30
80
425
817
1:20
H12
Outlet: compressed air
ID: G 3/4
K5/K6
OD: G 3/8
Connection: condensate drain
500
485
980
1830
1340
H12 With sound enclosure
K5/K6 electronic condensate drain
H23 Rubber pad, 1x screw-fastened
Change number
Projection
Scale 1:8
Original A2
Designation KCD LG H12
Dimension and connection dim.
Document TZM 1057/6984 E 00
Document TZD 1057/6984 D 00
Status Released
Drawn 22.12.2022 RAUSCHER2
Edited 22.12.2022 RAUSCHER2
Released 22.12.2022 RE-NNER2
Language E
Sheet 1 / 1
ID : Internal thread
OD : External thread
Center of gravity

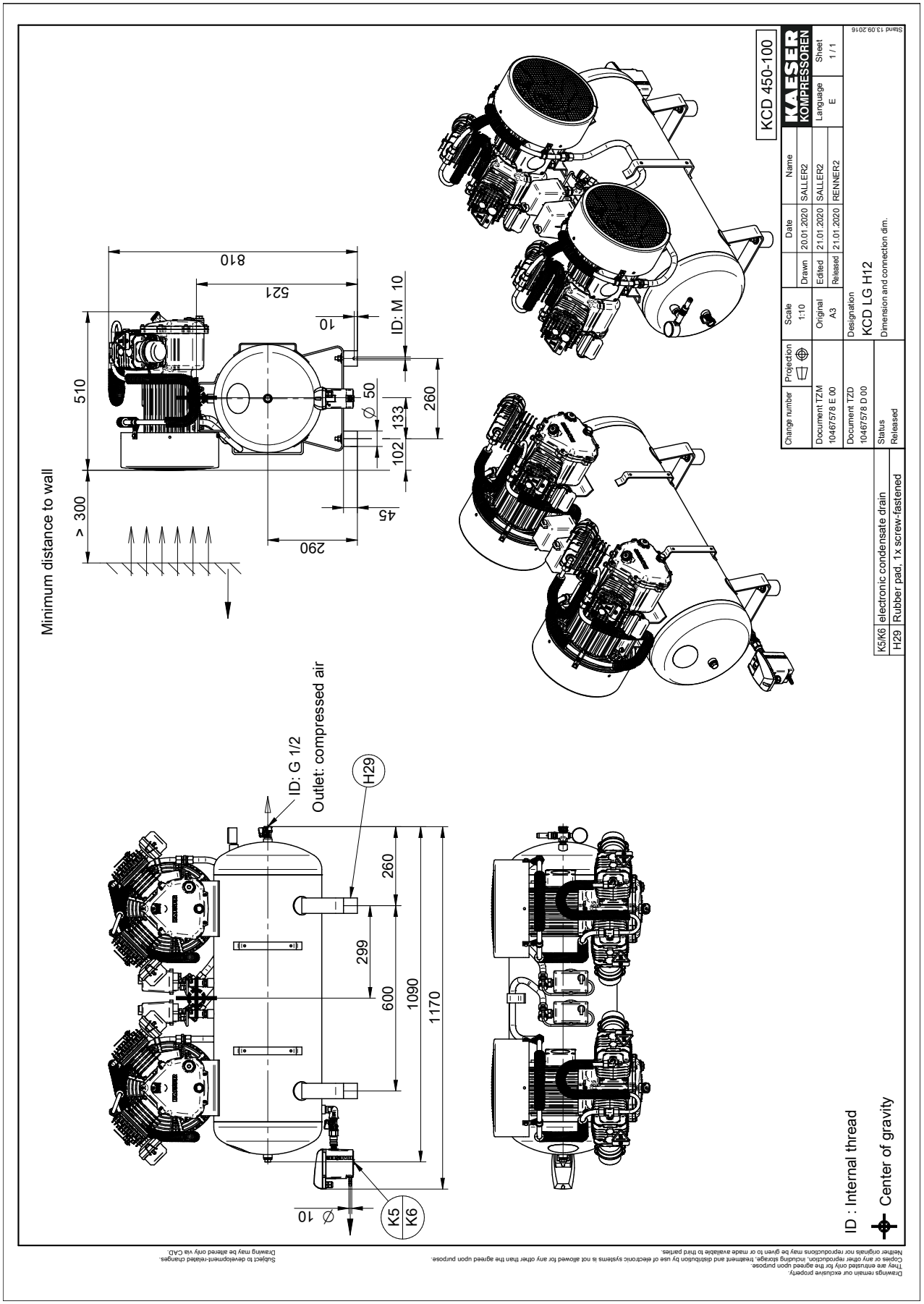

KCD 350-350
KAESER KOMPRESSOREN
Minimum distance to wall
> 300
810
> 300
H29
10
ID: M10
450
Ø 50
152
30
80
425
817
1:20
H12
Outlet: compressed air
ID: G 3/4
K5/K6
OD: G 3/8
Connection: condensate drain
500
485
980
1830
1340
H12 with sound enclosure
K5/K6 electronic condensate drain
H29 Rubber pad, 1x screw-fastened
Change number
Projection
Scale 1:8
Original A2
Drawn 22.12.2022 RAUSCHER2
Edited 22.12.2022 RAUSCHER2
Released 22.12.2022 RENNER2
Language E
Sheet 1 / 1
Document TZM 1057/6984 E 00
Document TZD 1057/6984 D 00
Designation KCD LG H12
Dimension and connection dim.
Status Released
ID : Internal thread
OD : External thread
Center of gravity

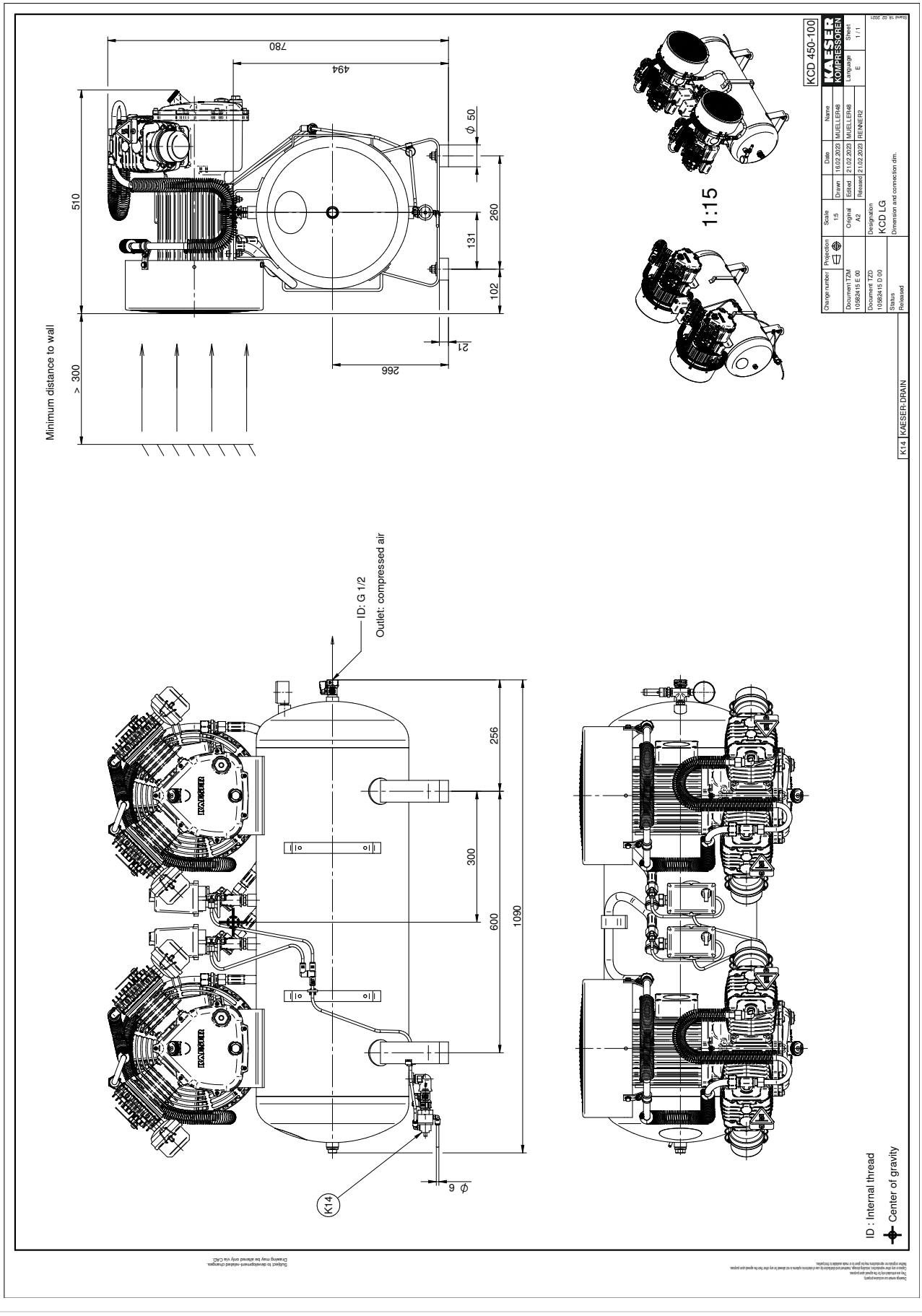

780
497
ϕ 50
510
260
133
102
21
266
Minimum distance to wall
> 300
1:15
KCD 450-100
KAESER KOMPRESSOREN
Sheet 1 / 1
Language E
Name
Date
Drawn 24.09.2019 CLARNER1
Edited 23.02.2023 MUELLER48
Released 23.02.2023 REINER2
Scale 1:5
Original A2
Projection
Change number
Document TZM 10448709 E 00
Document TZD 10448708 D 00
Designation KCD LG
Status Released
Dimension and connection dim.
no options shown
Outlet: compressed air
ID: G 1/2
256
299
600
1090
ID: G 1/2
ID : Internal thread
Center of gravity

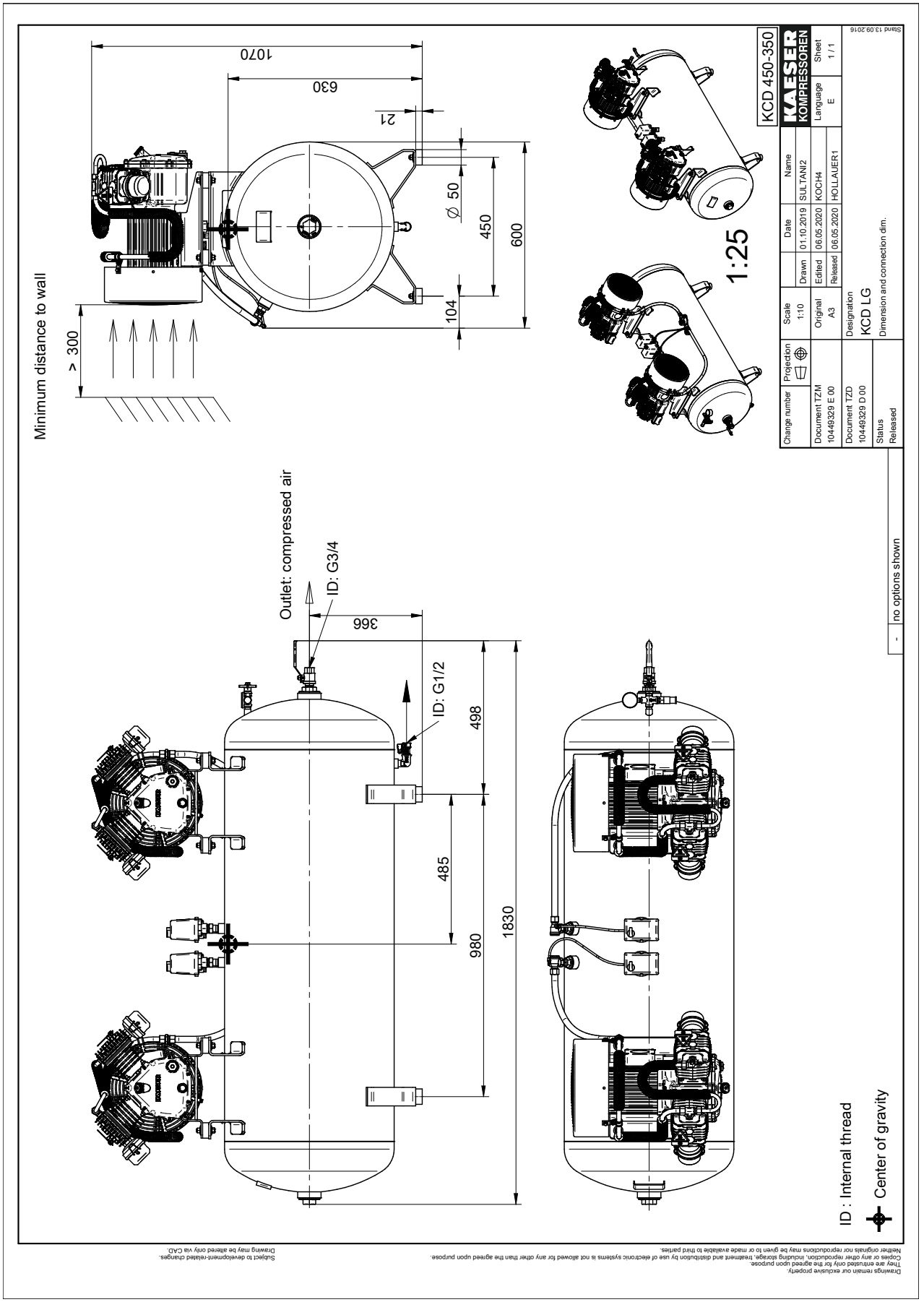

KCD 450-100
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:10
Original A3
Drawn
Edited
Released
Date
25.09.2019
04.12.2019
05.12.2019
Name
CLARNER1
KOCH4
HOLLAUER1
Language E
Sheet 1 / 1
Document TZM 10448727 E 00
Document TZD 10448727 D 00
Designation KCD LG H12
Status Released
Dimension and connection dim.
H12 with sound enclosure
Stand 13.09.2016
1040
750
386
260
260
> 300
Minimum distance to wall
1:20
562
323
600
1250
624
Outlet: compressed air
OD: R 1/2
ID: G 3/8
ID : Internal thread
OD : External thread
Center of gravity
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KCD 450-100
Minimum distance to wall
> 300
750
369
1040
260
260
1:20
550
1250
625
323
600
Outlet: compressed air
OD: R 1/2
ID: G 3/8
ID : Internal thread
OD : External thread
Center of gravity
H12 with sound enclosure
Change number
Projection
Scale 1:10
Original A3
Drawn 25.09.2019 CLARNER1
Edited 04.12.2019 KOCH4
Released 05.12.2019 HOLLAUER1
Name
Language E
Sheet 1 / 1
Document TZM 10448760 E 00
Document TZD 10448760 D 00
Designation KCD LG H12
Dimension and connection dim.
Status Released
Stand 13.09.2016
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Subject to development-related changes.
Drawing may be altered only via CAD.


KCD 450-100
790
504
Ø 50
137
260
510
> 300
30
275
102
Minimum distance to wall
ID: G 1/2
Outlet: compressed air
260
297
600
1090
ID: G 1/2
ID : Internal thread
Center of gravity
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:10
Drawn 25.09.2019 CLARNER1
Edited 04.12.2019 KOCH4
Released 05.12.2019 HOLLAUER1
Language E
Sheet 1 / 1
Document TZM 10448804 E 00
Original A3
Designation KCD LG H13
Document TZD 10448804 D 00
Status Released
Dimension and connection dim.
H13 without sound enclosure
Stand 13.09.2016
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Drawing may be altered only via CAD.

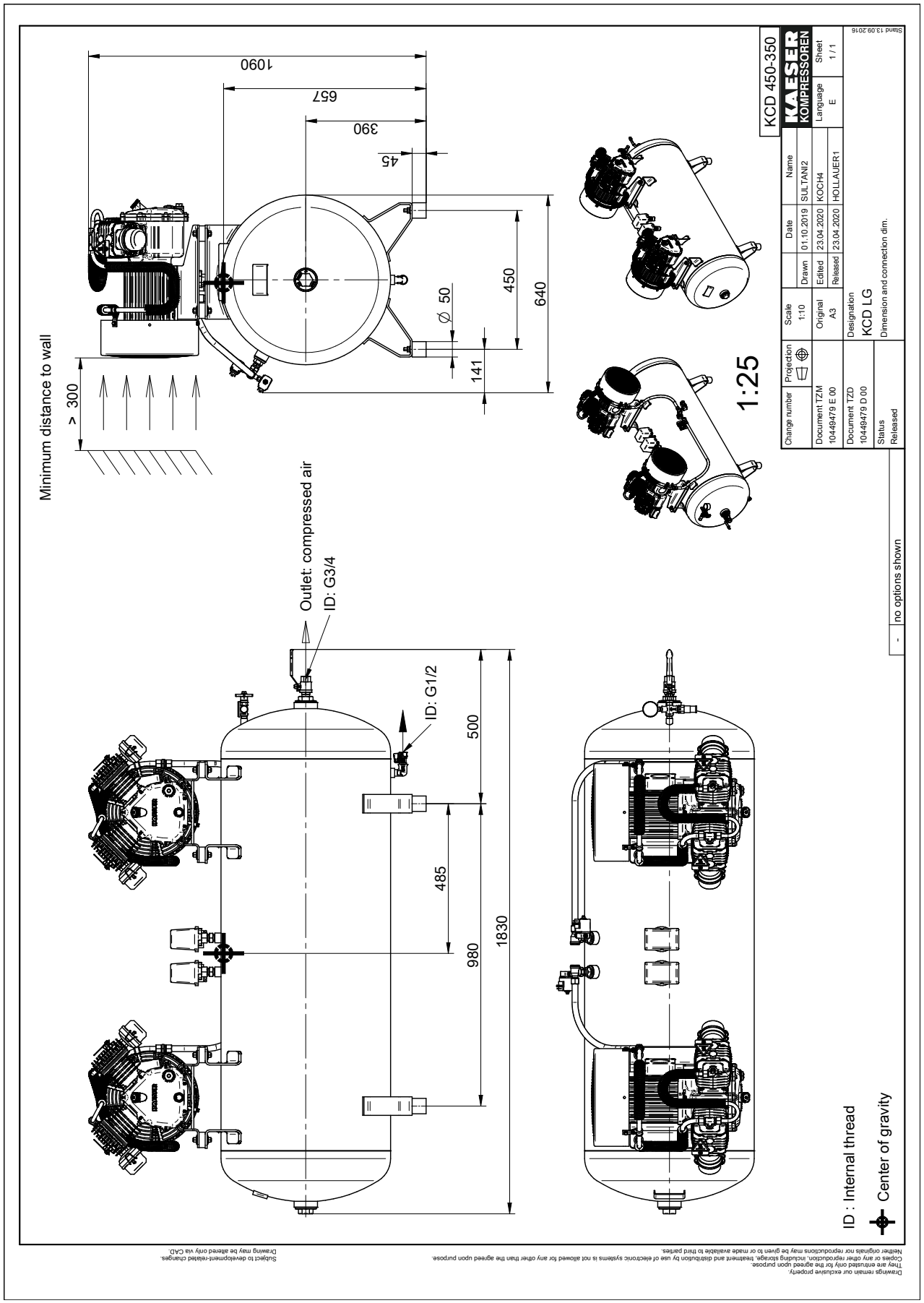

KCD 450-100
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:10
Original A3
Drawn
Edited
Released
Date
20.01.2020
21.01.2020
21.01.2020
Name
SALLER2
SALLER2
RENNER2
Language E
Sheet 1 / 1
Stand 13.09.2016
Document TZM 10467578 E 00
Document TZD 10467578 D 00
Designation KCD LG H12
Dimension and connection dim.
Status Released
K5/K6 electronic condensate drain
H29 Rubber pad, 1x screw-fastened
Minimum distance to wall
> 300
510
810
521
10
ID: M 10
260
133
102
50
45
290
ID: G 1/2
Outlet: compressed air
H29
260
299
600
1090
1170
10
K5
K6
ID : Internal thread
Center of gravity
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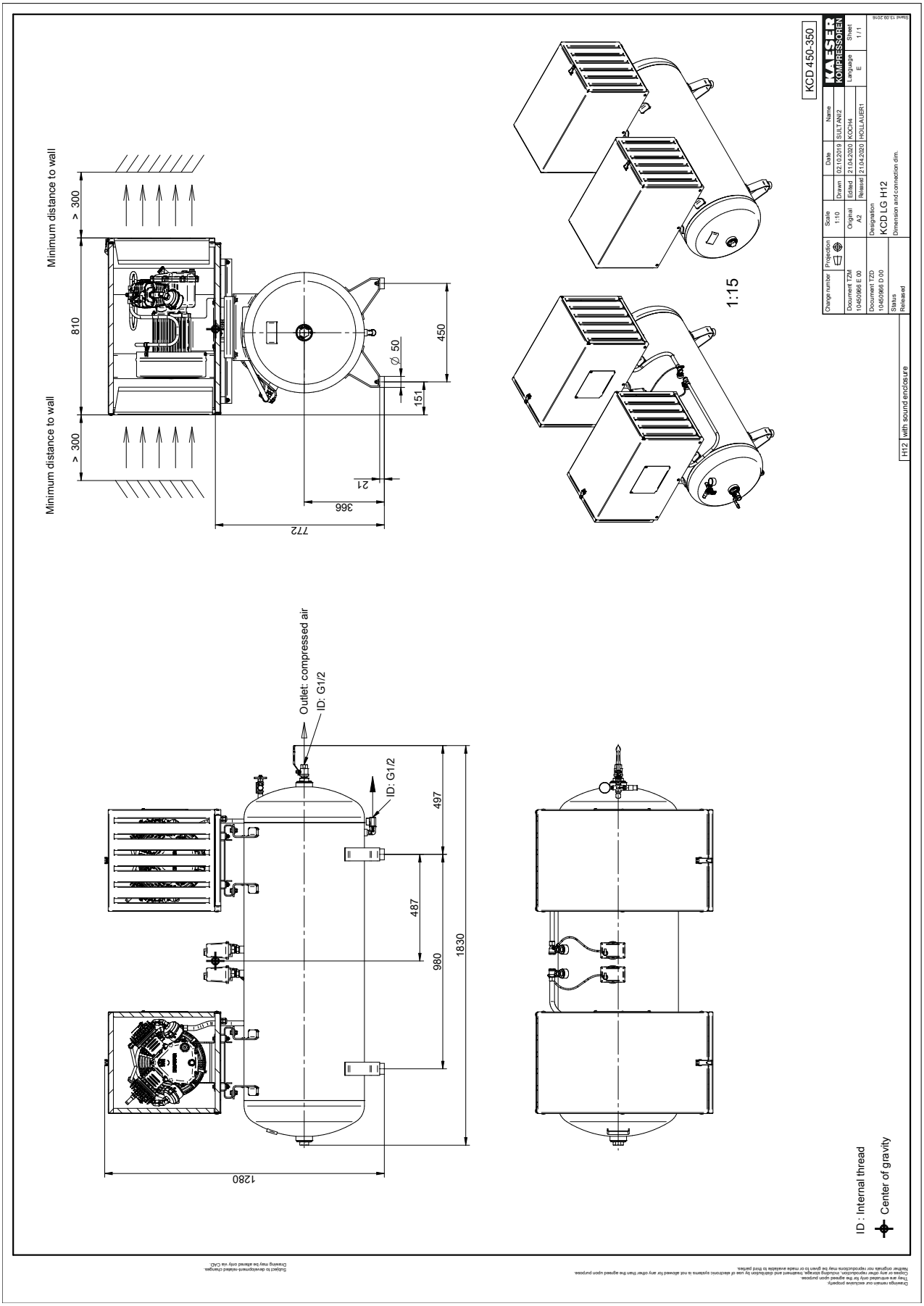

KCD 450-100
KAESER KOMPRESSOREN
780
494
510
Minimum distance to wall
> 300
ϕ 50
260
131
102
21
266
1:15
ID: G 1/2
Outlet: compressed air
256
300
600
1090
ϕ 6
K14
KAESER
ID : Internal thread
Center of gravity
K14 KAESER-DRAIN
Change number
Projection
Scale 1:5
Original A2
Drawn 16.02.2023 MUELLER48
Edited 21.02.2023 MUELLER48
Released 21.02.2023 REINHER2
Date
Name
Language E
Sheet 1 / 1
Designation KCD LG
Dimension and connection dim.
Document TZM 1093614 15 E 00
Document TZD 1093615 D 00
Status Released



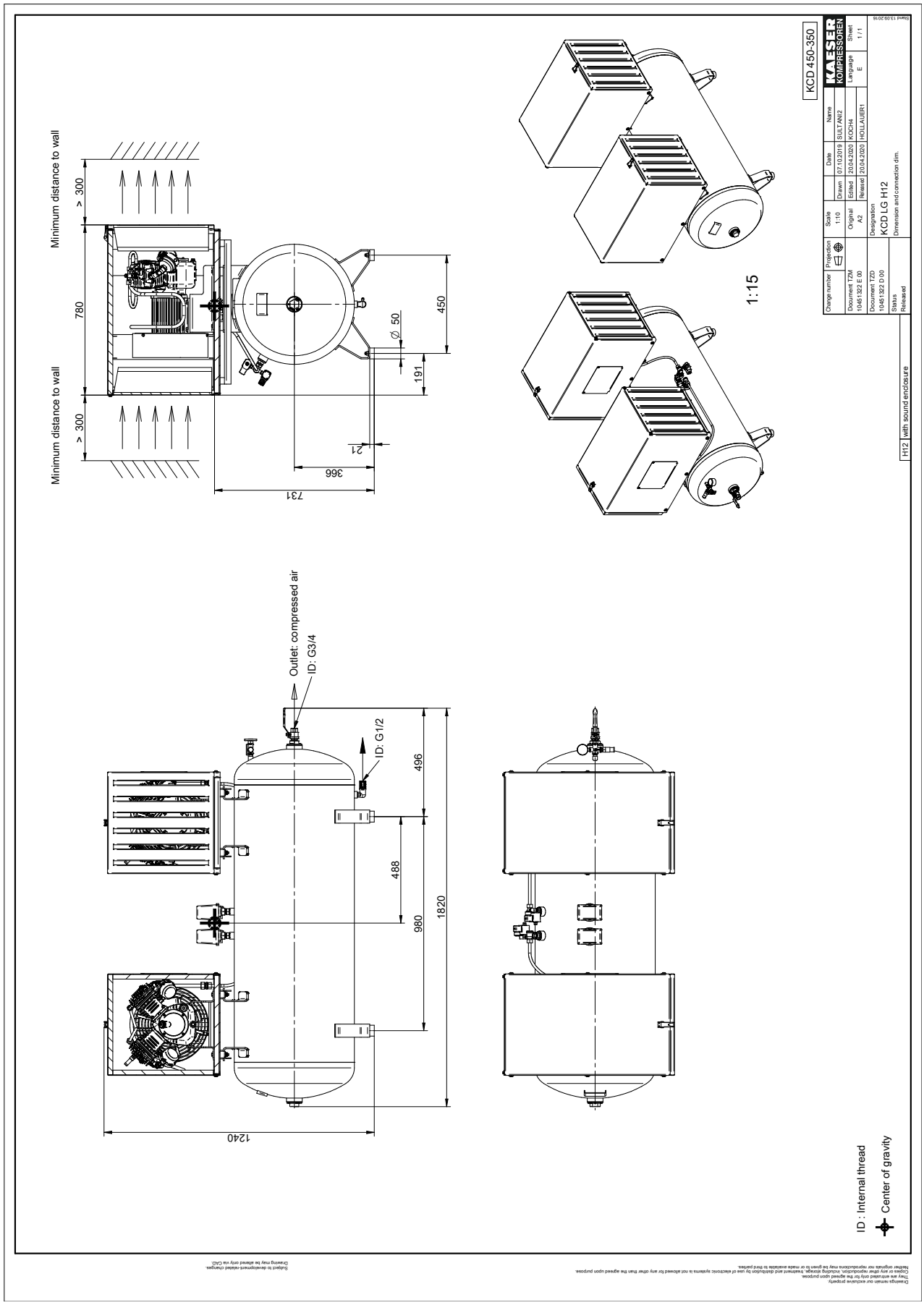

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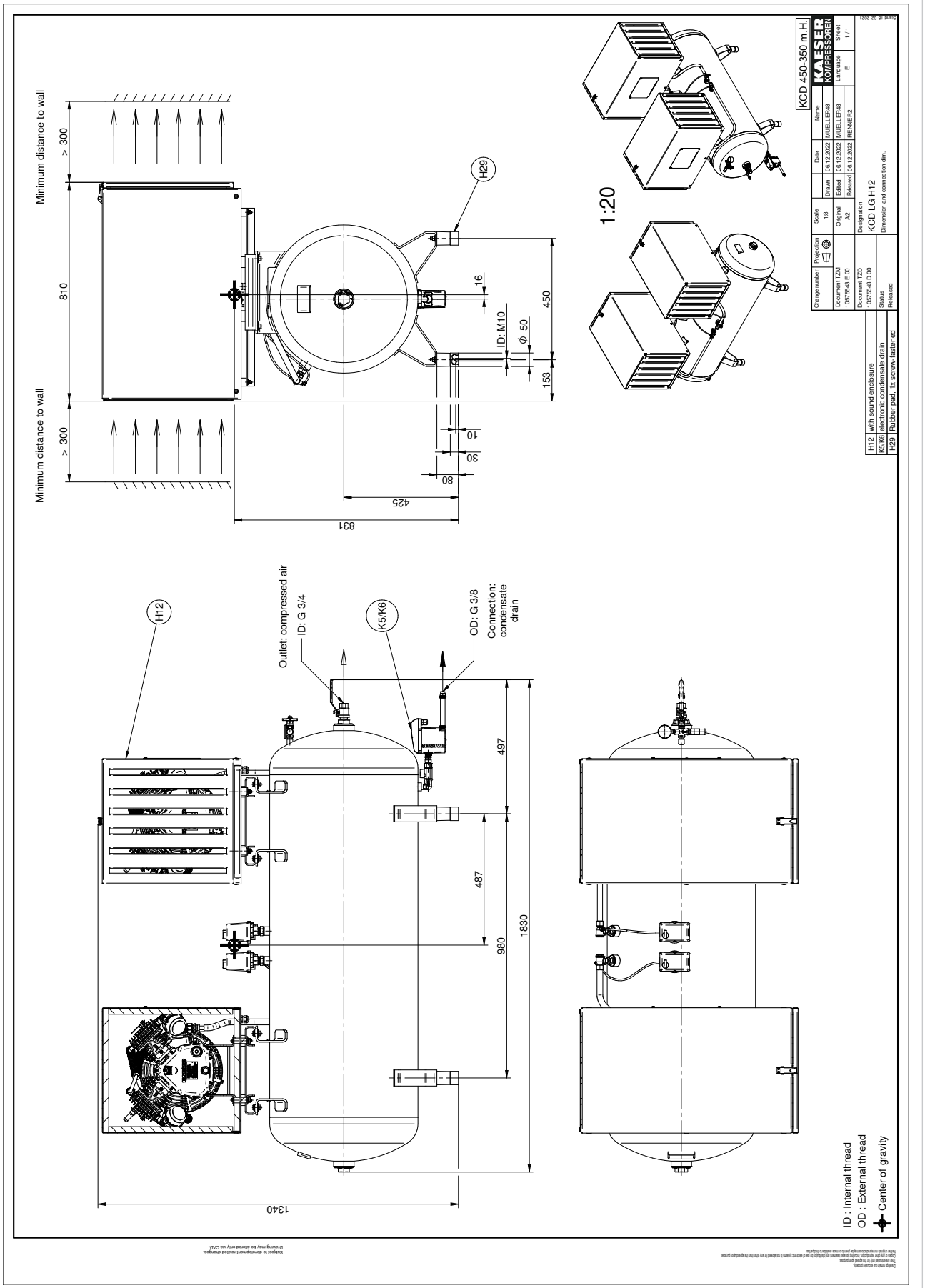
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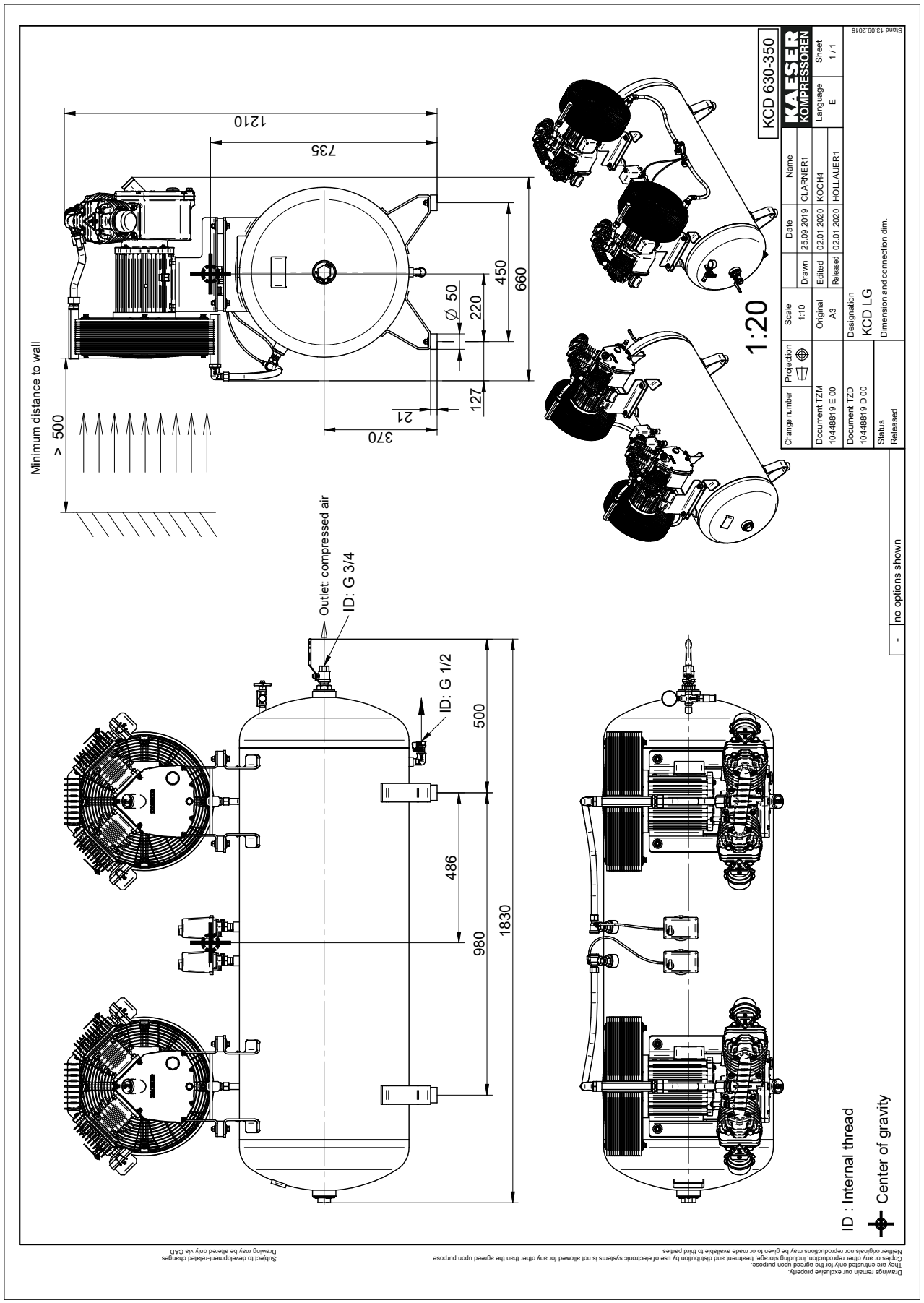

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KAESER KOMPRESSOREN
Stand 13.09.2016
Change number
Projection
Scale 1:10
Original A3
Drawn 01.10.2019 SULTANI2
Edited 23.04.2020 KOCH4
Released 23.04.2020 HOLLAUER1
Name
Language E
Sheet 1 / 1
Document TZM 10449479 E 00
Document TZD 10449479 D 00
Designation KCD LG
Dimension and connection dim.
Status Released
- no options shown
1:25
1090
657
390
45
450
640
∅ 50
141
> 300
Minimum distance to wall
Outlet: compressed air
ID: G3/4
ID: G1/2
500
485
980
1830
ID : Internal thread
Center of gravity
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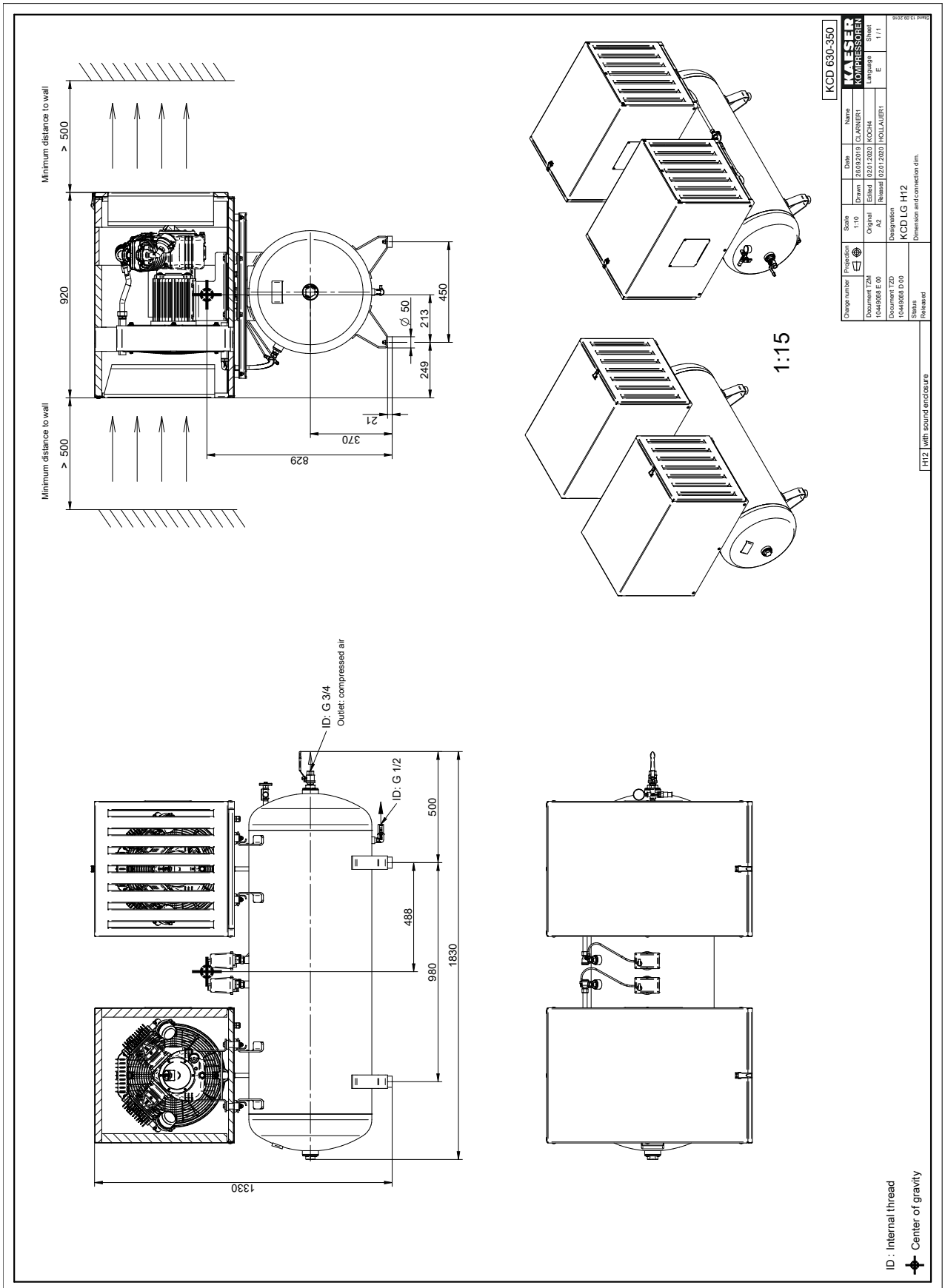

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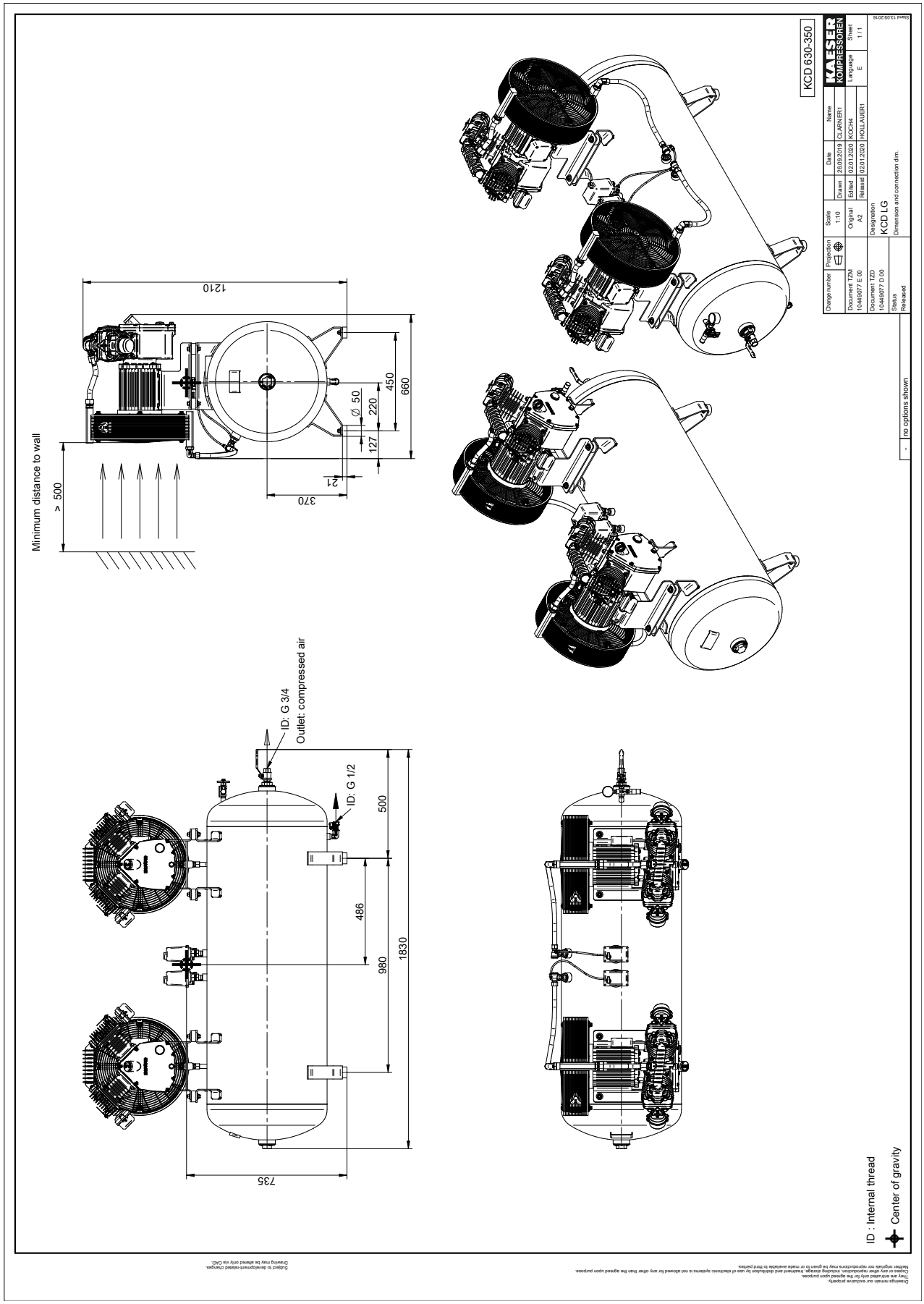

KCD 450-350
Minimum distance to wall
> 300
780
> 300
Minimum distance to wall
450
Ø 50
191
21
366
731
1:15
Outlet: compressed air
ID: G3/4
ID: G1/2
496
488
980
1820
1240
ID : Internal thread
Center of gravity
KAESER KOMPRESSOREN
Designation
KCD LG H12
Dimension and connection dim.
H12 with sound enclosure

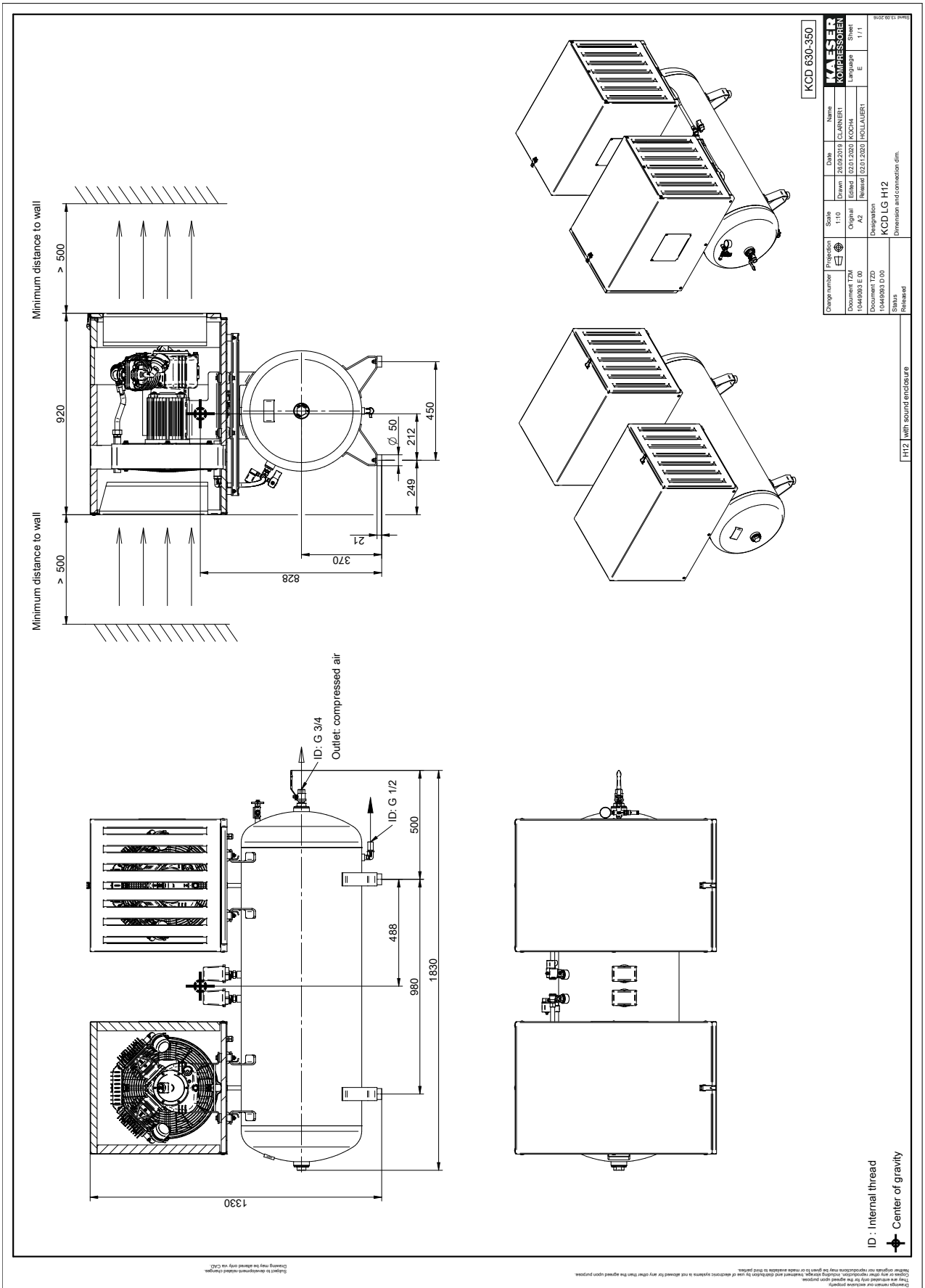

KCD 450-350 m.H.
KAESER KOMPRESSOREN
Sheet 1 / 1
Language E
Name
Date
Drawn 06.12.2022 MUELLER48
Edited 06.12.2022 MUELLER48
Released 06.12.2022 REINER2
Scale 1:8
Original A2
Projection
Change number
Document TZM 1057/5/43 E 00
Document TZD 1057/5/43 D 00
Designation KCD LG H12
Status Released
Dimension and connection dim.
H12 With sound enclosure
K5/K6 electronic condensate drain
H29 Rubber pad, 1x screw-fastened
Minimum distance to wall
> 300
810
H29
16
ID: M10
ϕ 50
450
153
10
30
80
425
831
1:20
H12
Outlet: compressed air
ID: G 3/4
K5/K6
OD: G 3/8
Connection: condensate drain
497
487
980
1830
1340
ID : Internal thread
OD : External thread
Center of gravity

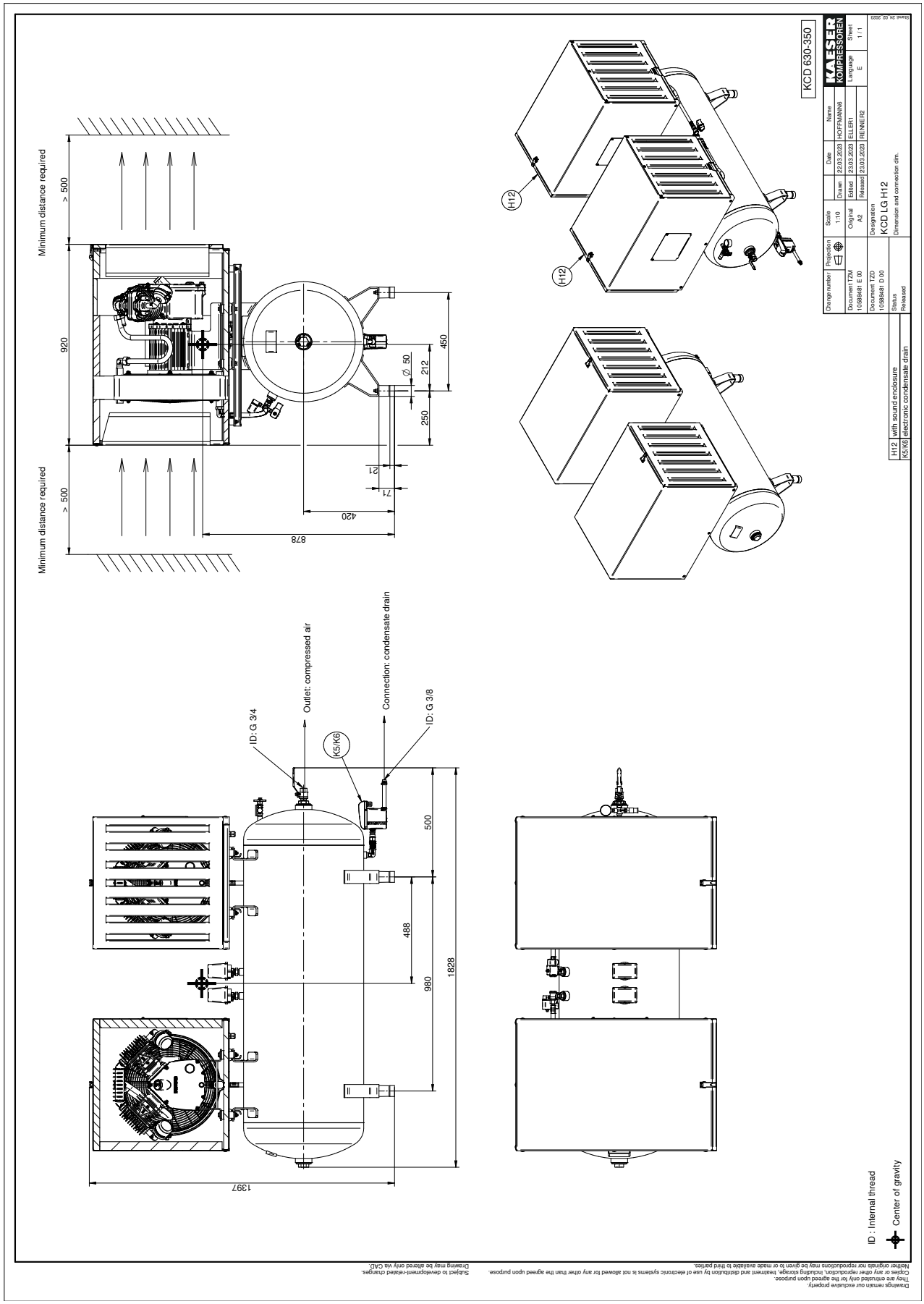


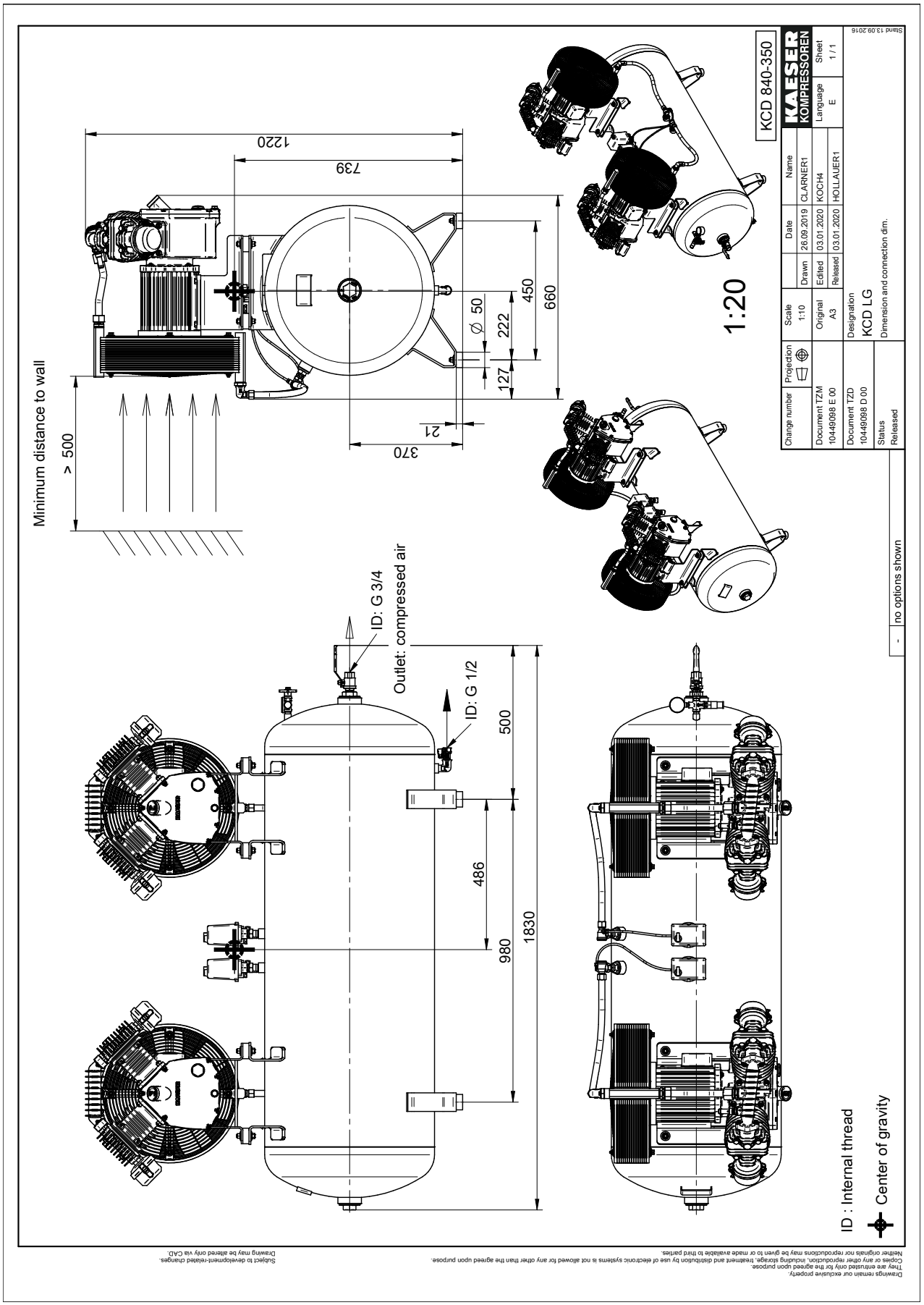

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KCD 630-350
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:10
Original A2
Drawn 28.09.2019 CLARNER1
Edited 02.01.2020 KOCH4
Released 02.01.2020 HOLLAUER1
Language E
Sheet 1 / 1
Document TZM 10449088 E 00
Document TZD 10449088 D 00
Designation KCD LG H12
Status Released
Dimension and connection dim.
H12 With sound enclosure
Minimum distance to wall
> 500
920
829
370
21
450
213
Ø 50
249
1:15
ID: G 3/4
Outlet: compressed air
ID: G 1/2
500
488
980
1830
1330
ID : Internal thread
Center of gravity


KCD 630-350
1210
450
660
Ø 50
220
127
21
370
Minimum distance to wall
> 500
ID: G 3/4
Outlet: compressed air
ID: G 1/2
500
486
980
1830
735
ID : Internal thread
Center of gravity
KAESER KOMPRESSOREN
Scale 1:10
Original A2
Drawn 26.09.2019 CLARNER1
Edited 02.01.2020 KOCH4
Released 02.01.2020 HOLLAUER1
Language E
Sheet 1 / 1
Designation KCD LG
Dimension and connection dim.
Document TZD 1044907 D 00
Status Released
Document TZM 1044907 E 00
Change number -
no options shown

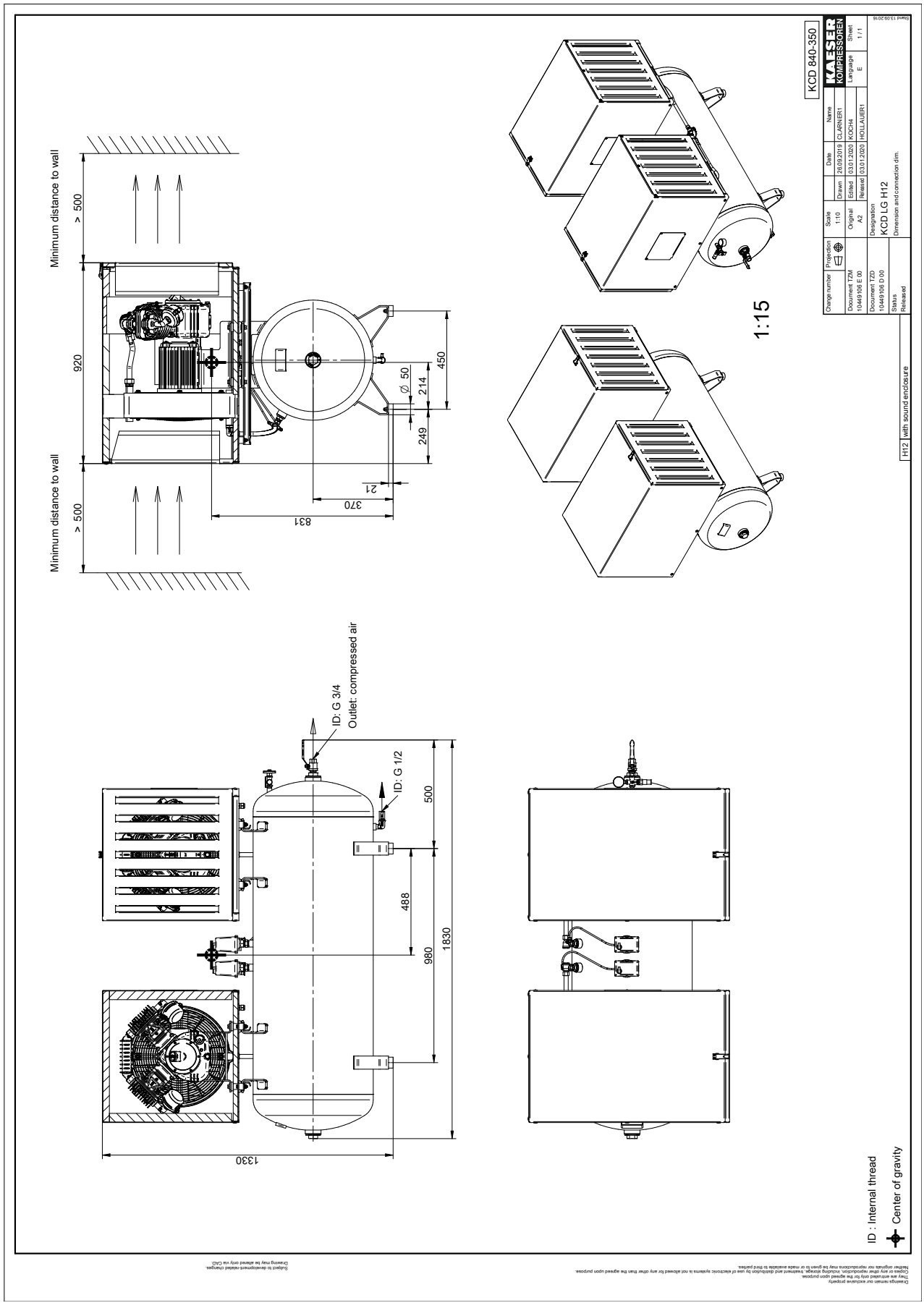

KCD 630-350
Minimum distance to wall
> 500
920
> 500
Minimum distance to wall
450
212
50
249
21
370
828
ID: G 3/4
Outlet: compressed air
ID: G 1/2
500
488
980
1830
1330
H12 with sound enclosure
ID : Internal thread
Center of gravity
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:10
Date
Name
Drawn 26.09.2019 CLARNER1
Edited 02.01.2020 KOCH4
Released 02.01.2020 HOLLAUER1
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Document TZM 10449093 E 00
Original A2
Designation KCD LG H12
Document TZD 10449093 D 00
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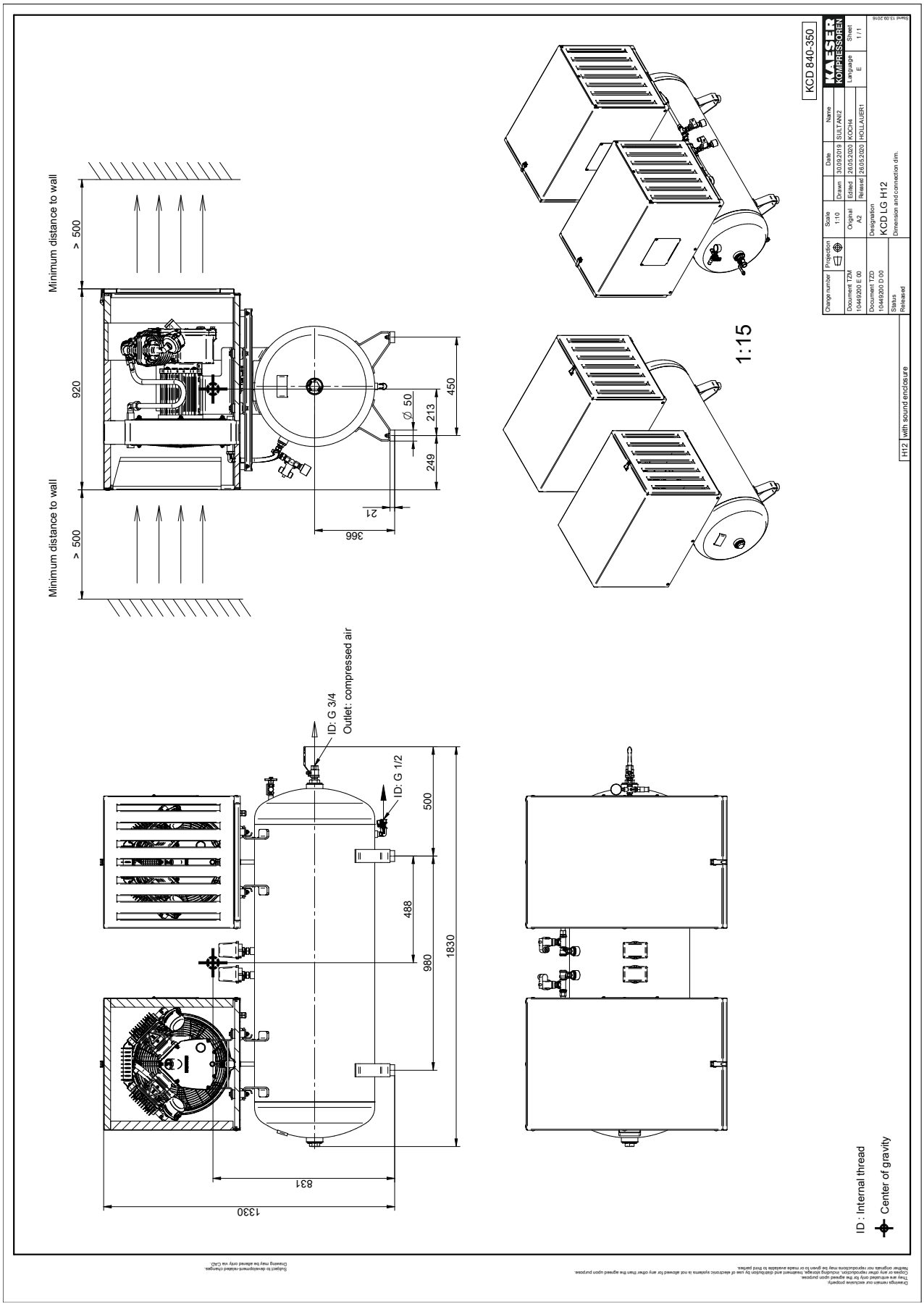

KCD 630-350
Minimum distance required
> 500
920
> 500
450
212
Ø 50
250
21
71
420
878
H12
H12
Outlet: compressed air
Connection: condensate drain
ID: G 3/4
ID: G 3/8
K5/K6
500
488
980
1828
1397
ID : Internal thread
Center of gravity
KAESER KOMPRESSOREN
Change number
Projection
Scale 1:10
Original A2
Drawn 27.03.2023 HOFFMANN
Edited 27.03.2023 ELLERI
Released 23.03.2023 REINER
Language E
Sheet 1 / 1
Document TZM 10589481 E 00
Document TZD 10589481 D 00
Designation KCD LG H12
Dimension and connection dim.
Status Released
H12 with sound enclosure
K5/K6 electronic condensate drain
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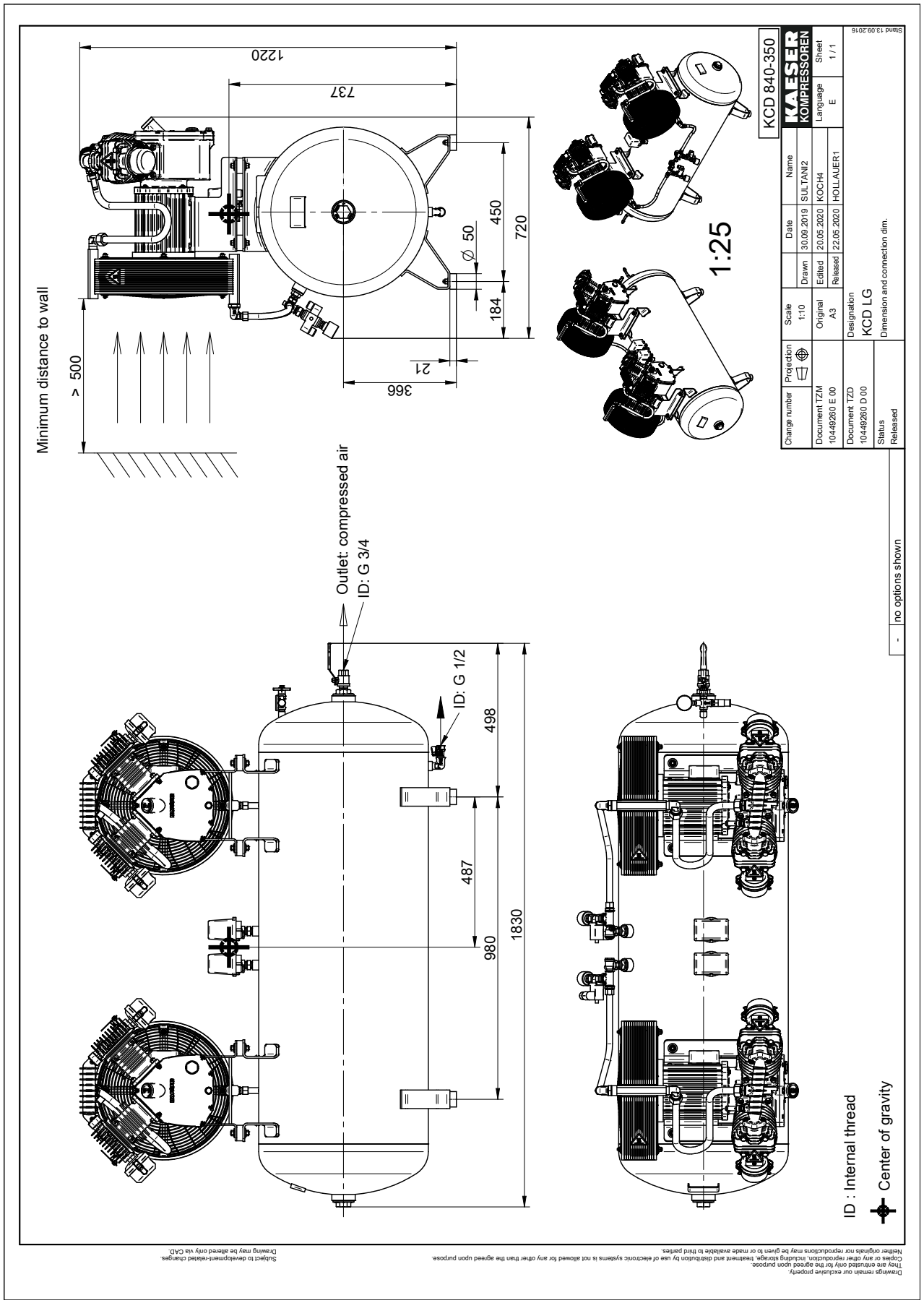


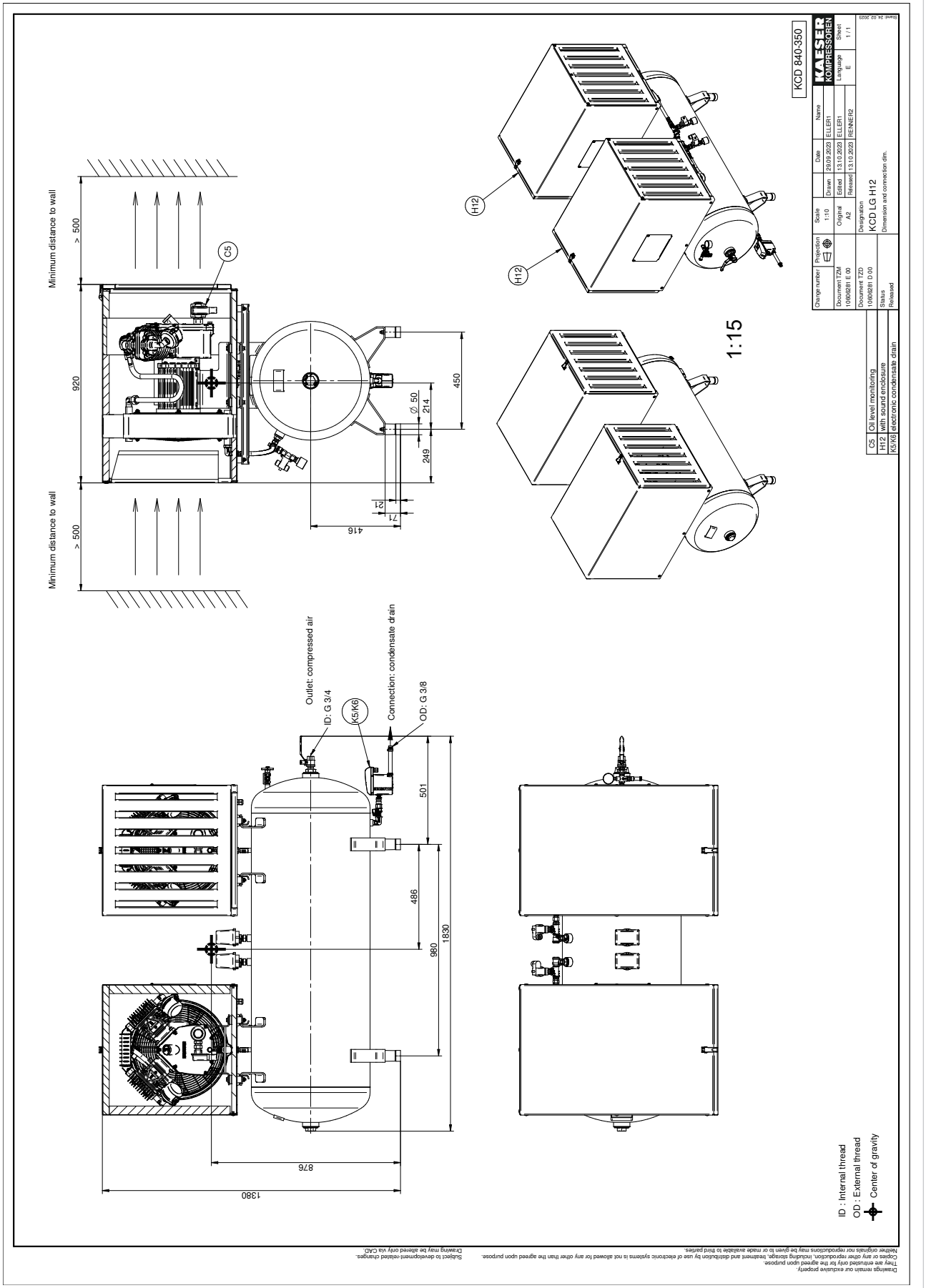

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Drawing may be altered only via CAD.

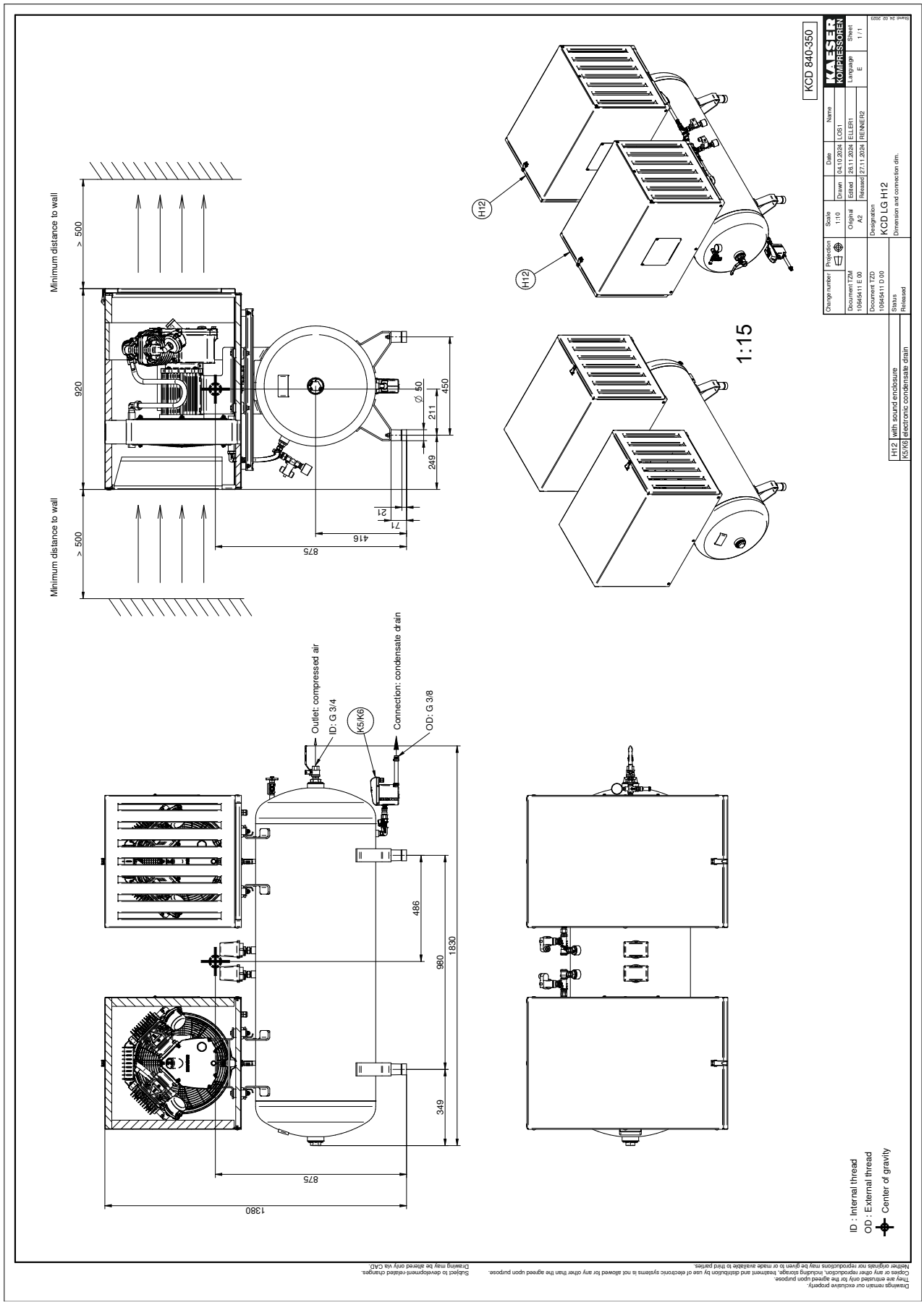

KCD 840-350
KAESER KOMPRESSOREN
Drawing 13.09.2018
Change number
Projection
Scale 1:10
Date
Name
Drawn 26.09.2019 CLARNER1
Edited 03.01.2020 KOCH4
Released 03.01.2020 HOLLAUER1
Language E
Sheet 1 / 1
Document TZM 10449106 E 00
Original A2
Designation KCD LG H12
Document TZD 10449106 D 00
Status Released
Dimension and connection dim.
H12 with sound enclosure
1:15
Minimum distance to wall
> 500
920
450
Ø 50
214
249
21
370
831
ID: G 3/4
Outlet: compressed air
ID: G 1/2
500
488
980
1830
1330
ID : Internal thread
Center of gravity
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Subject to development-related changes.


KCD 840-350
KAESER KOMPRESSOREN
Drawn 30.09.2019 SULT ANI2
Edited 28.05.2020 KOCH4
Released 28.05.2020 HOLLAUER1
Language E
Sheet 1 / 1
Original A2
Scale 1:10
Projection
Change number
Document TZM 10449200 E 00
Document TZD 10449200 D 00
Designation KCD LG H12
Status Released
Dimension and connection dim.
H12 With sound enclosure
1:15
Minimum distance to wall
> 500
920
450
213
Ø 50
249
21
366
ID: G 3/4
Outlet: compressed air
ID: G 1/2
500
488
980
1830
831
1330
ID : Internal thread
Center of gravity


KCD 840-350
KAESER KOMPRESSOREN
Stand 13.09.2016
Change number
Projection
Scale 1:10
Original A3
Drawn
Edited
Released
Date
30.09.2019
20.05.2020
22.05.2020
Name
SULTANI2
KOCH4
HOLLAUER1
Language E
Sheet 1 / 1
Document TZM 10449260 E 00
Document TZD 10449260 D 00
Designation KCD LG
Dimension and connection dim.
Status Released
- no options shown
1:25
1220
737
450
720
∅ 50
184
21
366
> 500
Minimum distance to wall
Outlet: compressed air
ID: G 3/4
ID: G 1/2
498
487
980
1830
ID : Internal thread
Center of gravity
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# 14 Glossary

This chapter provides an alphabetical index of technical terms with explanations.

**Air-cooling**
Process in which ambient air is used as the primary heat-dissipating coolant.

**Base load**
Required flow rate for all compressed air consumers in a compressed air network, which is maintained throughout the course of a day.

**Control mode**
The controller switches the machine back and forth between the operating points according to certain rules (the control mode), in order to keep the working pressure of the machine between the specified cut-in pressure and cut-out pressure, regardless of the flow rate consumed.

**Flow diagram**
Descriptive diagram of a system, e.g. of piping, measuring points and control points, in system and process engineering.

**Flow rate**
Flow rate is the volume of a gaseous or liquid fluid moving through a cross-section within a certain unit of time under defined conditions.

In the case of compressed air generators, the continuously conveyed volume is commonly referred to as “delivery volume”. The specified value relates to the volume of a compressed fluid in its expanded state under atmospheric conditions.

**Gauge pressure**
Term for pressure that is measured relative to atmospheric pressure.

**Maintenance**
Combination of all technical, administrative and management measures taken during the life cycle of a machine. Maintenance serves to either maintain or restore the machine’s functional condition, so that it can fulfil the required function.

**Motor starter (external controller)**
The primary function of a motor starter is to start the compressor motor (electric motor). In addition to the power electronics, the motor starter can incorporate monitoring functions, indicators, and operating elements.

External controller, e g. START CONTROL BASIC DUO from KAESER

**Network pressure**
Network pressure is the current pressure in the compressed air network.

**Network pressure setpoint**
The network pressure setpoint is the required pressure in the compressed air network.

**Operating point**
When a machine is operating, it takes up different points on a characteristic curve. These points depend on the characteristics of the machine, as well as external influences; they are referred to as “operating points”.

**P&I diagram**

Piping and instrument flow diagram in plant and process engineering. The P&I diagram displays as symbols all devices required for operating the station, such as:

- Compressors
- Blowers
- Air receivers
- Separators
- Filters
- Valves
- Fans/ventilators
- Cooling devices
- Piping
- Actuators
- Sensors

**Peak load**

Temporarily high air demand in a compressed air network.

**Pressure dew point**

The temperature above which liquid water forms in a moisture-laden gas (e.g. air) at a certain gauge working pressure.

**Rated value**

The rated value is a value for a variable which applies to a specified operating condition, e.g. electrical voltage. This value is generally determined by the manufacturer for a component, device or piece of equipment, e.g. rated voltage, rated current or rated speed. The rated value may be greater than or equal to the nominal value and specifies the maximum value for a variable in normal operation.

**Relief**

Device permitting start-up without back pressure

**Remote control**

The machine is controlled from a decentralised control station.

**Required pressure**

The required pressure is the minimum pressure required by the compressed air consumers.

**TD document**

Designation within the title block of the dimensional drawing that indicates the dimensional drawing number.

**Ventilation**

Equipment for purging an overpressure system to atmospheric pressure.

**Water-cooling**

Process by which water or a water mixture is used as the primary heat-dissipating coolant.

**Working pressure**

Pressure value above atmospheric pressure within a pressure system during operation.

## A

Absence of pressure 79
Actuating pressure 12
Addresses 8
Air filter
- Cleaning 68, 69
- H10 34
- H9 34
- Installing 44
- Maintenance 68
- Replacing 68, 69

Air inlet aperture 42
Air receiver
- Checking 75
- Draining condensate 75

Ambient condition 11

## B

Bolt-down rubber buffers H29 35
- Installing 49

## C

Cable cross section
- Standard 15

Check valve 26
Commissioning 53
Component identifier
- Machine 31

Components
- Rotating 22

Compressed air
- Blowing off 79

Compressed air cooler
- Cleaning 67

Compressed air network
- Connecting 45
- Isolating 79

Compressed air quality 22
Compressor oil
- Change interval 66
- Changing 72
- Check oil level 70
- Fill volume 14
- First aid 29
- Recommendation 14
- Replenishing 71

Connection
- Compressed air network 43
- Electrical 42, 43, 46
- KCD 840-350, 230 V / 60 Hz 46
- Motor starter C23 47

Connection data
- Electrical 15
- Machine 15, 17
- Motor starter C23 18

Connection sizes 91
Contact details 8
Control modes 32
Copyright 8

## D

Danger 22
Danger area 25
Decommissioning 82
Dimensional drawing 91
Dimensions 91
Direction of rotation
- Checking 54

Directive 28
Disassembly 82
Disposal 82
Document 6
- Documentation 7
- Related 7

Draining condensate
- From air receiver 75
- From the filter pressure reducer 78

Duty cycle 20

## E

ECO-DRAIN condensate drain
- Draining condensate 50

ECO-DRAIN condensate drain K5 / K6
- Connecting 49
- Floating contacts K6 52
- Operating states 35
- Replacing the service unit 76
- Testing 76

Electric shock 22
Emergency 29
Environmental protection 30
Exhaust fan 42
External controller 32
Extinguishing media 29

## F

Fan guard
- Cleaning 67

Filter pressure reducer P4 36
- Cleaning the filter element 78
- Draining condensate 78
- Replacing the filter element 78
- Setting 58

Fires 29
Flow diagram 83
Flow rate 10
Function description 32
Fuse
- Standard 15

## G

Guideline 28

## I

Information signs 26
Inspection interval 29
Installation condition 41, 53

## M

Machine
  Switching on 54
Machine room
  Ventilation 42
Mains conditions 19
  Three-phase current 19
Maintenance 64
Maintenance schedule 64
Maintenance tasks
  Preventative 66
  Regular 65
Maintenance work
  Planning 64
Material damage 6
Measure
  Organisational 28
Motor
  Maintenance 70
  Power 12
  Speed 12
Motor contactor 56
  Setting 56
Motor starter C23 34
  Connection 47
  Connection data 18
  Power supply 47

## N

Nameplate 9
Network pressure 57
  Setting MDR 3 57
Noise 22

## O

Oil level monitoring C5 33
  Adjusting the setting 48
  Connecting 47, 48
Operating condition 53
Operating fluids/materials 67
Operating hours counter C8 33
Operating point 32
  LOAD 32
  READY 32
Operator 28
Option 9
  C23 34
Option
  C5 33, 47, 48
  C8 33
  C9 34
  H10 34, 69
  H12 35
  H29 35, 49
  H9 34, 69
  K5 35, 49, 76
  K6 35, 49, 52, 76
Option P4 36, 58, 78

## P

Packaging 39
Personnel 28
Phase sequence detection
  Automatic 55
  Manual 55
Pictogram 7, 26
Power supply 42
  Connecting the machine 46
  KCD 840-350, 230 V / 60 Hz 46
  Motor starter C23 47
  Three-phase current 43
Pressure 22
Pressure switch
  Setting 11
Pressure switches
  Low pressure warning message C9 34
Protective clothing 22

## Q

QR code 8

## R

Rated voltage 15, 17, 18
Regulation 28
Responsibility 28
Rubber buffers
  Installing 44

## S

Safety 22
Safety device 26
Safety signs 26
Safety valve 12, 26, 73
  Testing 73, 74
  Testing the actuating pressure 75
Sound emission 12
Sound enclosure H12 35
Sound pressure 12
Spare parts 67
Spring tension 22
Switching frequency 12
Switching off 60
Switching on 60

Symbol 7

## T

Transportation 22
- Forklift 38
- Hoist 39
- Safety 38
- Transport damage 38

Troubleshooting 61

## U

Use
- Improper 22
- Intended 22

## V

Ventilation
- Machine room 42

Venting 79

## W

Warning notice 6
Warranty 8
Weight 10
Wiring diagram 88
Worldwide 8