## Document history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Author</th>
<th>Amendment(s)</th>
<th>Status</th>
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<td>1.0</td>
<td>03/31/2010</td>
<td>M. Schmid</td>
<td>Layout / Structure</td>
<td></td>
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<td>07/23/2010</td>
<td>St. Haferl</td>
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<td>2.0</td>
<td>10/30/2012</td>
<td>R. Moser</td>
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<td>3.0</td>
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<td>R. Moser</td>
<td>Update Chapter 2+3</td>
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<td>R. Moser</td>
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<td>5.0</td>
<td>07/09/2015</td>
<td>M. Schmid</td>
<td>Change Shell Daial</td>
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Caution:

- Read the manual before setting to work!
- Always keep cooling unit in upright position and do not shock
- Power supply 230 V 50Hz!
- Run cooling unit always with correct coolant level otherwise damage of pump may occur!
- Only use cooling hoses with sufficient pressure and coolant resistance!
- Never operate damaged or leaking equipment!
- Before starting any service work disconnect the cooling unit from power supply!
- Never carry out any work at the refrigeration cycle, this work must be carried out at manufacturer site!
## Contents

1. Description ................................................................................................... 5

2. Technical data ................................................................................................ 6

3. Performance chart ....................................................................................... 7

4. Setting to work ............................................................................................. 8

5. Settings ........................................................................................................ 9

6. Maintenance .................................................................................................. 11

7. Outline drawing ............................................................................................ 12

8. Circuit Diagrams ........................................................................................... 13

   8.1 Electrical diagram ........................................................................................ 13

   8.2 Block diagram .............................................................................................. 14

9. Declaration of conformity ............................................................................ 15
1 Description

The cooling unit XRCA-5001-OA is designed to provide a continues flow of cooling fluid at a constant temperature. Oil circulates between the cooling unit and the heat source. The oil is chilled by an air-cooled refrigeration system (refrigerant R 134A). The cooling unit has a main switch to start the refrigeration system. The oil level in the reservoir is supervised by a level switch. If the level drops below minimum, the refrigeration cycle stops and the pilot lamp "Oil level low" is activated and the safety circuit is activated.

The maximum cooling capacity of the cooling unit depends on the ambient and the fluid temperature. The cooling capacity is 5000W related to 40 °C ambient temperature and +30 °C ± 2°C fluid temperature.

Cooling hoses are connected to the cooling unit via screw connection (M26x1,5). Oil inlet and outlet are marked with symbols:

Inlet: ⬇️ Outlet: ⬆️

The oil outlet temperature is monitored by an electronic temperature controller. This controller is provided with additional contacts and for temperature maximum signal. The signals "temperature maximum" and "oil level low" are combined in a potential free safety circuit. The oil pressure of the pump is limited by an adjustable bypass valve.

⚠️ Note: Flow switch, thermal switch and bypass valve are factory adjusted according to specification. Use only Shell Daial S4 ZX-I to refill the cooling circuit!
2 Technical data

Physical dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>1120 mm</td>
</tr>
<tr>
<td>Width</td>
<td>750 mm</td>
</tr>
<tr>
<td>Height</td>
<td>980 mm</td>
</tr>
<tr>
<td>Weight without oil</td>
<td>180 kg</td>
</tr>
<tr>
<td>Coolant capacity</td>
<td>12.5 l</td>
</tr>
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</table>

Performance data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
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<tbody>
<tr>
<td>Cooling capacity</td>
<td>5000 W at 40°C ambient temperature</td>
</tr>
<tr>
<td>Oil flow</td>
<td>≥ 22 l/min at 3.5 bar</td>
</tr>
<tr>
<td>Voltage rating</td>
<td>230 V (available in 50 Hz or 60 Hz version)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>&lt; 8.2 A</td>
</tr>
<tr>
<td>Noise level</td>
<td>≤ 70 dB(A), distance 1 m in any direction</td>
</tr>
<tr>
<td>Airflow at 50Hz (60Hz)</td>
<td>3400 m³/h (4400 m³/h)</td>
</tr>
<tr>
<td>Safety class</td>
<td>IP 33</td>
</tr>
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</table>

Environmental specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Range</th>
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<tbody>
<tr>
<td>Ambient temperature</td>
<td>+ 5 °C ... + 40°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>- 25°C... + 70°C (storage without oil)</td>
</tr>
<tr>
<td>Air humidity</td>
<td>20 % ... 90 % non condensing</td>
</tr>
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</table>

Refrigeration cycle

<table>
<thead>
<tr>
<th>Refrigerant</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>R 134A</td>
<td>3.0 kg</td>
</tr>
</tbody>
</table>

Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum pressure</td>
<td>≤ 8,5 bar</td>
</tr>
<tr>
<td>Oil outlet temperature (T1):</td>
<td>+ 30°C</td>
</tr>
<tr>
<td>Anti freezing (T2):</td>
<td>+ 5°C</td>
</tr>
<tr>
<td>Temperature MAX (T3):</td>
<td>+ 50°C</td>
</tr>
<tr>
<td>Flow switch open:</td>
<td>&lt; 22 l/min</td>
</tr>
</tbody>
</table>
3 Performance chart

![Graph showing performance chart with flow temperature in °C on the y-axis, ambient temperature lines, and power in kW on the x-axis.](image)
4 Setting to work

- The cooling unit must be positioned in an upright and free-standing position for sufficient air circulation
- use locking brake at caster
- remove side cover
- connect hoses with cooling unit
- remove plug of filler, fill the cooling unit with oil up to top indicator
- establish electrical connection

Note: Operate equipment only with correct coolant level, otherwise danger of pump destruction!

- switch on the equipment for some minutes for the ventilation of the circuit
- replace transport cap of reservoir by applied plastic cap
- mount cover
5 Settings

Note:
The temperature controller the flow rate and the bypass valve are adjusted according specification. Settings of oil outlet temperature, temperature maximum (parameter P1) and anti freezing should not be changed. If it is necessary to change these settings refer to the following:

Temperature controller
Description of indicating LED's:

LED 1:
LED on: cooling on
LED off: "heating" of refrigeration circuit

LED 2:
LED on: Temperature maximum exceeded
LED off:

LED 3:
LED on: cooling unit ready
LED off: Temperature below anti freezing, running of refrigeration system impossible

Oil outlet temperature (rated value) T1

Press SET-key and keep it pressed (rated value is shown on display)
Adjust new value with keys □ (UP) or □ (DOWN)
Release SET-key (actual value is shown on display)

Note: Hysteresis of T3 is adjusted at ± 4°C symmetrical to rated value

Anti freezing T2
Press keys □ (UP) and □ (DOWN) simultaneously for 4 seconds, P1 is shown on display
Select to parameter P30 with key □ (UP)
Press SET-key and keep it pressed
(value of T2 is shown on display)

Note: Hysteresis of anti freezing T2 is adjusted at 4°C. If temperature drops below anti freezing temperature (+5 °C) refrigerating unit runs only if temperature exceeds +9 °C.
Temperature maximum T3

Press keys □ (UP) and □ (DOWN) simultaneously for 4 seconds, P1 is shown on display
Press SET-key and keep it pressed (value of P1 is shown on display)

Note: Hysteresis of T3 adjusted at ±2.5°C symmetrical to parameter P1.

Example:

<table>
<thead>
<tr>
<th>Value P1:</th>
<th>32.5°C</th>
</tr>
</thead>
</table>

- Temperature maximum T3:
- fault indication ON: 35.0°C
- fault indication OFF: 20.0°C
- Adjust new value with keys □ (UP) or □ (DOWN)
- Release SET-key (P1 is shown on display)
- Press keys □ (UP) and □ (DOWN) simultaneously for 4 seconds to return to run-mode (if there is no changing of parameters, the temperature controller returns automatically into run-mode after 45 seconds).
6 Maintenance

In order to achieve maximum cooling capacity keep the condenser of the cooling unit clean. Regularly once a week check this heat exchanger and if necessary clean it:
Clean fins of heat exchanger:
Remove dust by forcing it out in the opposite direction from which it entered. If compressed air is available, direct the air against the inside of the condenser.
Check oil level regularly and refill if necessary.
7 Outline drawing
8 Circuit Diagrams

8.1 Electrical diagram
8.2 Block diagram
9 Declaration of conformity

EINBAUERKLÄRUNG FÜR UNVOLLSTÄNDIGE MASCHINE
DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY
DÉCLARATION D’INCORPORATION DE QUASI-MACHINE

COMET AG
Herrengasse 10
CH-3175 Flamatt

Produkte: Kühler
Products: Cooler
Refroidisseur

Bezeichnung / Bestell-Nr.
Type / Reference no.
Type / No. de référence
XRC-3001-WA 10008640
XRC-3001-WW 10008641
XRC-4501-OA 10008642
XRC-4501-OW 10008643
XRC-1001-WA 20033773
XRCA-3001-WA 20033337
XRCA-5001-OA 20033338 / 20032910
XRCA-3012-WA 20048308
XRCA-3012-WW 20048309


We hereby declare that the partly completed machinery named above satisfies the relevant essential health and safety requirements set out in the Annex I of the Machinery Directive 2006/42/EC. The technical file according to the Annex VII part B is available.

Nous déclarons que la quasi-machine mentionnées ci-dessus satisfait aux exigences essentielles de santé et de sécurité pertinentes énoncées à l'annexe I de la directive machines 2006/42/CE. Le dossier technique conforme à l'annexe VII, section B est disponible.

Angewandte Normen
Standards applied
Normes appliquées
DIN EN ISO 12100-1 (2004-04)
DIN EN 60204-1 (2009-10)
DIN EN 349 (2006-09)

Datum: Dezember 2010
Date: December 2010
Date: Décembre 2010

Charles Flükiger
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