Instructions for use
Everest® engine 4140

Always be on the safe side.
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1 User notes

1.1 User guidelines

Requirement
Read these instructions before the initial startup to prevent misuse and damage.

1.1.1 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>UI</td>
<td>User instructions</td>
</tr>
<tr>
<td>SI</td>
<td>Setup instructions</td>
</tr>
<tr>
<td>STI</td>
<td>Service Technician’s instructions</td>
</tr>
<tr>
<td>SFC</td>
<td>Safety checks</td>
</tr>
<tr>
<td>IEC</td>
<td>International Electrotechnical Commission</td>
</tr>
</tbody>
</table>

1.1.2 Symbols used

- !: See Safety/Hazard Warning Symbol chapter
- i: Important information for users and Service Technicians

1.1.3 Service

Service hotline:
+49 7531 56-2100
Service.Everest@kavo.com
User hotline:
+49 7531 56-2200
Please indicate the product serial number or version number.
Additional information can be obtained at: www.kavo.com

Only technicians trained or subcontracted by KaVo may perform the service and maintenance.
To keep this unit ready for use and in top condition, follow the service recommendations in the chapter Maintenance.
1.2 Warranty terms and conditions

Within the framework of applicable KaVo delivery and payment conditions, KaVo guarantees proper function, freedom from flaws in material and manufacturing for a period of 12 months from the date of purchase demonstrated by the purchaser. In case of justified complaints, KaVo will honor its warranty with a free replacement or repair.

The warranty does not cover defects and their consequences that arose or may have arisen due to natural wear, improper handling, cleaning or maintenance, non-compliance with operating, maintenance or connection instructions, corrosion, contaminated media supply or chemical or electrical influences deemed abnormal or impermissible in accordance with factory specifications.

The warranty does not usually cover lamps, light conductors made of glass and glass fibers, glassware, rubber parts and the colourfastness of plastic parts.

The warranty expires when defects or their consequences can arise from manipulations or changes to the product. Warranty claims can only be asserted when they are immediately reported to KaVo in writing.

This notification must be accompanied by a copy of the invoice or delivery note on which the manufacturing number is clearly visible. In addition to the guaranty, the statutory warranty claims of the purchaser also apply with a warranty period of 12 months.
1.3 Transport and storage

1.3.1 Packaging ordinance of August 28, 1998

Note
Only applicable for the Federal Republic of Germany.

KaVo transport packaging must be disposed of and recycled by local disposal service providers and recycling companies in accordance with Dual System requirements.
For more information about disposal and recycling, and an up-to-date list of local disposal service providers and recycling companies, please visit the following Internet sites:
http://www.umweltdatenbank.de
http://www.quality.de
KaVo will bring KaVo transport packaging returned by the customer at the customer's own cost to the appropriate recycling companies without reimbursement.

1.3.2 Transportation damage

In Germany

If external damage to the packaging is visible upon delivery, follow the procedure below:
1. The recipient must record the loss or damage in the notice of delivery. The recipient and employee of the transportation firm must sign the notice of delivery.
2. Leave the product and packaging unchanged.
3. Do not use the product.
4. Report damage to the shipping company.
5. Report damage to KaVo.
6. A damaged product cannot be returned before talking with KaVo.
7. Send the signed notice of delivery to KaVo.

If the product is damaged and there is no discernable damage to the packaging upon delivery, proceed as follows:
1. Report damage immediately or at least 7 days after the delivery to the delivery company.
2. Report damage to KaVo.
3. Leave the product and packaging unchanged.
4. Do not use a damaged product.

Note
If the recipient does not follow one of the above instructions, the damage will be held to have occurred after the delivery (according to ADSp. Art. 28).
Outside of Germany

**Note**
KaVo is not liable for damage arising from transportation. Immediately inspect the delivery after receipt!

If external damage to the packaging is visible upon delivery, follow the procedure below:
1. The recipient must record the loss or damage in the notice of delivery. The recipient and employee of the transportation firm must sign the notice of delivery. The recipient can only assert damages against the transportation company based on these records.
2. Leave the product and packaging unchanged.
3. Do not use the product.

If the product is damaged and there is no discernable damage to the packaging upon delivery, proceed as follows:
1. Report the damage immediately or at least 7 days after the delivery to the delivery company.
2. Leave the product and packaging unchanged.
3. Do not use a damaged product.

**Note**
If the recipient does not follow one of the above instructions, the damage will be held to have occurred after the delivery (according to CMR law, section 5, Art. 30).

### 1.3.3 Storage

The symbols printed on the outside are for transportation and storage, and have the following meaning:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Keep upright in transit with arrow pointing upwards." /></td>
<td>Keep upright in transit with arrow pointing upwards.</td>
</tr>
<tr>
<td><img src="image" alt="Handle with care" /></td>
<td>Handle with care</td>
</tr>
<tr>
<td><img src="image" alt="Keep dry" /></td>
<td>Keep dry</td>
</tr>
<tr>
<td><img src="image" alt="Stacking limitation: No additional load on the cartons!" /></td>
<td>Stacking limitation: No additional load on the cartons!</td>
</tr>
<tr>
<td><img src="image" alt="Temperature limitations." /></td>
<td>Temperature limitations.</td>
</tr>
</tbody>
</table>
1.4 Equipment Supplied and Packaging

1.4.1 Scope of the Everest engine delivery

KaVo Everest engine 4140

① Milling/grinding unit
② Software and operating instructions
③ Flat monitor with connecting cable, keyboard and mouse
④ Cooling lubricant drain hose
⑤ Cooling lubricant unit
⑥ Connecting lines X4, X8
⑦ Network cable RJ 45 (cross-over), 10 m
⑧ Gripping yokes and tension rings
⑨ Maintenance unit incl. pressure regulator for compressed air and compressed air connection
⑩ Power cables (3)
⑪ Power supply
⑫ Control PC
⑬ ID reader

Positioning aids for test object (1 size, 4x, Mat. no. 1.002.1762)
Allen key

<table>
<thead>
<tr>
<th>Wrench size</th>
<th>Mat. no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5 mm</td>
<td>1.005.0600</td>
</tr>
<tr>
<td>5 mm</td>
<td>1.004.1568</td>
</tr>
<tr>
<td>6 mm</td>
<td>1.001.7574</td>
</tr>
</tbody>
</table>

1.4.2 Packaging

Packaged unit 1: Milling/grinding unit

- Length: 1,040 mm
- Width: 890 mm
- Height: 1,432 mm
- Weight: Approx. 305 kg gross and approx. 280 kg net

Packing piece 2 Industrial PC with keyboard, mouse, monitor and power supply

- Length: 1,200 mm
- Width: 820 mm
- Height: 760 mm
- Weight: Approx. 92 kg gross

Packaged unit 3: Coolant/lubricant tank

- Length: 1,200 mm
- Width: 820 mm
- Height: 960 mm
- Weight: Approx. 45 kg gross

Packaged unit 4: Housing

- Length: 1,200 mm
- Width: 800 mm
- Height: 1,300 mm
- Weight: Approx. 42 kg gross
1.5 Important instructions

Prior to initial use, the user must read through the Instructions for Use so as to avoid any incorrect operation or any other damage. Instructions for Use and Assembly / Technicians’ Instructions may only be copied and passed on with the prior consent of KaVo.

All of the technical information provided and features described for the device covered in these operating instructions were correct at the time of going to print. It is possible that the product may be modified or improved on the basis of new technical developments. This does not result in an entitlement to retrospective upgrading or retrofitting of existing devices.

KaVo assumes no responsibility for damage occurring due to:
- external influences (poor media quality or poor installation)
- the use of incorrect information
- inappropriate use of the product,
- repairs carried out improperly.

Only technicians who have received training in the relevant courses run by KaVo are authorised to carry out repairs and maintenance. Authorisation will cease to apply if any third-party modifications are executed. KaVo recommends that only original consumables or spares be used for operation or repair of its product.
1.6 Proper use

KaVo Everest engine is a milling/grinding machine for the production of crown and bridge substructures. It is not intended for any other purpose or wider application.
1.7 Functional principle

By using a total of five simultaneously-controlled axes, releasing and retightening the workpiece during operation is not necessary. The tool holder, designed as a double spindle, mills or grinds on the B axis over the envelope, the gripping yoke turns around the A-axis by 180°.

The five axes and their positions:
- Spatial axis X (horizontal)
- Spatial axis Y (orthogonal)
- Spatial axis Z (vertical)
- Rotational axis A (gripping yoke)
- Rotational axis B (double spindle)
2 Safety

2.1 Description of safety instructions

2.1.1 Warning symbol

Warning symbol

2.1.2 Structure

The introduction describes the type and source of the hazard.
This section describes the potential consequences of non-observance.
▶ The optional step contains necessary measures for avoiding hazards.

2.1.3 Description of hazardous steps

Safety instructions with three hazard levels are used in this document for avoiding personal and property damage.

CAUTION indicates a hazardous situation that can lead to property damage or minor to moderate injury.

WARNING indicates a hazardous situation that can lead to serious injury or death.

DANGER indicates a maximum hazardous situation that can directly cause serious injury or death.
2 Safety | 2.2 Intended purpose

2.2 Intended purpose

Note
Any waste which is generated must be recycled or disposed of in a manner which is safe both for people and for the environment. This must be done in strict compliance with all applicable national regulations. Questions on proper disposal of the KaVo product can be answered by KaVo Everest-Hotline.

2.2.1 General

"Proper use" also includes compliance with all of the information in the operating instructions and ensuring that all inspection and servicing work is performed as scheduled.

The user must ensure that the device works properly and is in a satisfactory condition before each use.

During use, national legal regulations must be observed, in particular:
- the applicable health and safety regulations.
- the applicable accident prevention regulations.

Note
The product must be cleaned and serviced according to instructions if it is not to be used for a long period.

Observe the corresponding country-specific regulations when finally shutting down a KaVo product. Please direct all questions regarding the proper disposal of KaVo products to the nearest KaVo branch.

2.2.2 Product-specific

Note
To ensure trouble-free system operation, pay close attention to the User instructions or manual of the control PC supplied. Do not install any additional software on the control PC of the KaVo Everest engine. Do not change system settings on the control PC of the KaVo Everest engine. (Exceptions are: date, time, time zone and country settings.) When operating the KaVo Everest engine, follow the regulations on accident prevention and safety data sheets. Only operate the KaVo Everest engine with casing in place. Repairs and maintenance work on the appliance must be carried out by KaVo-trained Service Technicians only. Only those appliances (PC’s etc.) which are in compliance with the following standards may be connected to the KaVo Everest engine: DIN/EN/IEC 60950, UL 60950 or CAN/CSA-C22.2 NO. 60950-00 as applicable for data processing appliances.
Residual risks

The KaVo Everest engine has been constructed in accordance with the state of the art, and the generally recognised safety regulations. Nevertheless, it is still possible for risks to the body and life of the user or to third parties or for adverse effects to be caused to the machine or to other assets during use. The KaVo Everest engine must be used solely for its proper application and only in perfect condition in terms of technical safety. Any faults which may compromise safety must be eliminated without delay.
3 Product description

3.1 KaVo Everest engine

Milling/grinding unit

PC Monitor and Keyboard
3 Product description | 3.1 KaVo Everest engine

Power pack with power switch ① to turn off the power supply.

3.1.1 Equipment safety symbol definitions.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>Consult user instructions</td>
</tr>
<tr>
<td>O</td>
<td>Power supply - OFF</td>
</tr>
<tr>
<td>▼</td>
<td>Laser warning plate</td>
</tr>
</tbody>
</table>

Note on laser outlet

Safety instruction plate showing wavelength and laser class information
Where to affix laser-related warning plates and display laser beam emission.

① Laser warning sign
② Safety warning sign with information about the wavelength and the laser class
③ Laser beam outlet opening
④ Notice of the laser beam outlet opening

3.1.2 Type plate and power rating plate

The type plates containing the information shown below are located on the outer right-hand side of the inner housing and next to the rubber connector of the power supply:

<table>
<thead>
<tr>
<th>Type</th>
<th>Type number</th>
</tr>
</thead>
<tbody>
<tr>
<td>REF</td>
<td>Material number</td>
</tr>
<tr>
<td>SN</td>
<td>Serial number</td>
</tr>
</tbody>
</table>
3 Product description | 3.1 KaVo Everest engine

Instructions for use Everest® engine 4140

Date of manufacture

Follow instructions for use!

Information on disposal

CSA US mark

VDE mark

GS mark

CE mark

Milling/grinding unit type plate

Power supply type plate

Kaltenbach & Voigt GmbH
Bismarkring 39
D-88400 Biberach/Riss

Type 4140
REF XXXXXXX
SN- XXXXXXX

Made in Germany
P = 6 bar

Complies with 21CFR and 1040.10

100V/120V/230V
50/60Hz 900W
T10H/250V

Kaltenbach & Voigt GmbH
Bismarkring 39
D-88400 Biberach/Riss

REF 10031815

Made in Germany
3.1 KaVo Everest engine

Type plate of the 100 V cooling lubricant unit

Type plate of the 120 V cooling lubricant unit

Type plate of the 230 V cooling lubricant unit
3.2 Milling/grinding unit

1. Door
2. Control panel
3. Chip drawer
4. Double spindle
5. Gripping yoke
6. Clamping screws
3.3 Control panel

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| ![Tool indicator T1 (rough working)](image) | Tool indicator T1 (rough working)  
Tool indicator T2 (smoothing) |
| ![Coolant/lubricant function key](image) | Coolant/lubricant function key |
| ![Stop function key](image) | Stop function key |
| ![Start function key](image) | Start function key |
| ![Initial state function key](image) | Initial state function key |
| ![Extractor unit function key](image) | Extractor unit function key |
3.3.1 Function of the controls

**Tool indicators T1/T2**

Indicate which tool of the double spindle is in operation at the time.

**Note**
Tool selection is controlled automatically by the system and is not affected by pressing the control panel.

**Coolant/lubricant function key**

Lights up if the coolant/lubricant discharge is in operation.

**Note**
Coolant/lubricant discharge is done automatically. Pressing the function key **Coolant/Lubricant Discharge** is reserved for the Service Technician.

**Stop function key**

Interrupts the manufacturing process.
Stops the movements of the milling/grinding unit.
Lights up if the manufacturing process is not running.

**Start function key**

Starts the manufacturing process.
Continues the manufacturing process after an interruption.
Lights up during the manufacturing process.

**Initial state function key**

The milling/grinding unit runs in the initial state, if at first the function key **Stop** has been pressed.
Extractor unit function key

Extractor unit function key

Lights up if the extractor unit is active.

Note
The extractor unit is activated automatically. Pressing the function key **Extractor Unit** is reserved for the Service Technician.
## 3.4 Milling and grinding tools

The following tools are available for processing workpieces:

<table>
<thead>
<tr>
<th>Figure</th>
<th>Tool</th>
<th>Rough machining (T 1) / finishing (T 2)</th>
<th>Diameter in mm</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Milling pin 3" /></td>
<td>Milling pin 3</td>
<td>Milling tool for rough machining</td>
<td></td>
<td>Rough machining (T 1)</td>
</tr>
<tr>
<td><img src="image" alt="Milling pin 1" /></td>
<td>Milling pin 1</td>
<td>Milling tool for fine machining</td>
<td></td>
<td>Finishing (T 2)</td>
</tr>
<tr>
<td><img src="image" alt="Milling pin ZS 3" /></td>
<td>Milling pin ZS 3</td>
<td>Milling tool for rough machining</td>
<td></td>
<td>Rough machining (T 1)</td>
</tr>
<tr>
<td><img src="image" alt="Milling pin ZS 1" /></td>
<td>Milling pin ZS 1</td>
<td>Milling tool for fine machining</td>
<td></td>
<td>Finishing (T 2)</td>
</tr>
<tr>
<td><img src="image" alt="Grinding Pin G 3" /></td>
<td>Grinding Pin G 3</td>
<td>Grinding tool for rough machining</td>
<td></td>
<td>Rough machining (T 1)</td>
</tr>
<tr>
<td><img src="image" alt="Grinding Pin G 1" /></td>
<td>Grinding Pin G 1</td>
<td>Grinding tool for fine machining</td>
<td></td>
<td>Finishing (T 2)</td>
</tr>
<tr>
<td><img src="image" alt="Grinding Pin ZH 4" /></td>
<td>Grinding Pin ZH 4</td>
<td>Grinding tool for rough machining</td>
<td></td>
<td>Rough machining (T 1)</td>
</tr>
<tr>
<td><img src="image" alt="Grinding Pin ZH 2" /></td>
<td>Grinding Pin ZH 2</td>
<td>Grinding tool for rough machining</td>
<td></td>
<td>Rough machining (T 1)</td>
</tr>
<tr>
<td><img src="image" alt="Grinding Pin ZH 1" /></td>
<td>Grinding Pin ZH 1</td>
<td>Grinding tool for fine machining</td>
<td></td>
<td>Finishing (T 2)</td>
</tr>
<tr>
<td><img src="image" alt="Milling pin ZS 1, long" /></td>
<td>Milling pin ZS 1, long</td>
<td>Milling tool for fine machining</td>
<td></td>
<td>Finishing (T 2)</td>
</tr>
<tr>
<td><img src="image" alt="Milling Pin ZS" /></td>
<td>Milling Pin ZS</td>
<td>Milling tool for rough machining</td>
<td></td>
<td>Rough machining (T 1)</td>
</tr>
</tbody>
</table>
### 3.5 Gripping yokes

<table>
<thead>
<tr>
<th>Figure</th>
<th>Gripping yoke</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gripping yoke for individual restoration</td>
</tr>
<tr>
<td></td>
<td>Gripping yoke for bridge restoration</td>
</tr>
<tr>
<td></td>
<td>Gripping yoke (not included in delivery)</td>
</tr>
<tr>
<td></td>
<td>Gripping yoke (not included in delivery)</td>
</tr>
<tr>
<td></td>
<td>Gripping yoke for round blanks (not included in delivery)</td>
</tr>
<tr>
<td></td>
<td>Tension rings ZS 100 x 16/25 (not included in delivery)</td>
</tr>
<tr>
<td></td>
<td>Tension rings ZS 100 x 20 (not included in delivery)</td>
</tr>
</tbody>
</table>
3.6 Software

The program window consists of the following components:

1. Menu bar
2. Tool bar
3. Task view
4. Status view
5. Message view
6. Tool view
7. CAM process status indicator
8. Gripping yoke selection field
9. Workpiece position indicator
10. Progress bar

The production process is controlled with the aid of the program Everest engine Control.

3.6.1 Menu bar

The menu bar contains the menus: Task, Machine, Extras, Help.
Task menu

Controlling the manufacturing process.

Machine menu

Selection of the program for changing tool and gripping yoke and for cleaning the work room. Menu item Diagnosis is reserved for the Service Technician.

Help menu

Under menu item Info: version information.

3.6.2 Tool bar

By clicking on the symbols in the tool bar, the individual menu items can be selected directly:

Update symbol

Loads the current task data into the task view.

Manufacture symbol

Starts the manufacturing process.
3 Product description | 3.6 Software

**Autostart symbol**

By clicking on the autostart symbol you can enter with what delay you want the engine to start the manufacturing process. Door must be closed.

**Cancel symbol**

Cancels the manufacturing process.

**End symbol**

Exiting the program. Only use this button to exit the Everest Base Camp Control!

**Tool change symbol**

See also: 5.5 Change tool, Page 69

**Gripping yoke change symbol**

See also: 5.6 Change gripping yoke, Page 71

**Cleaning symbol**

Clicking on the "cleaning" symbol prepares the engine for cleaning the working areas.

### 3.6.3 Task view

In the Job window you can switch between viewing the new order and orders which have already been processed.
The jobs are displayed together with the job number, surname/first name of the patient, circular blank designation, tooth number and type of work.

A new menu opens up when you right-click on a job in the Job window. With the aid of this menu you can duplicate a job, move it to the "Already processed jobs" folder or delete it.

In the "already processed tasks" menu there are all tasks which have already been processed.

### 3.6.4 Status view

Displays the current operating status of the milling/grinding unit and the relevant time.
3.6.5 Message view

Displays error messages.

3.6.6 Tool window

The tool view shows the tools needed for the selected task.

3.6.7 Progress bar

The progress bar shows the progress of the manufacturing process being run.

3.6.8 Gripping yoke selection field

Displays the currently selected gripping yoke.

Note
The gripping yoke for round blanks is only visible after activation.

3.6.9 Workpiece position indicator

According to the gripping yoke selected, the relevant workpiece position indicator appears:

Workpiece position indicator for gripping yoke individual supply.
Workpiece position indicator for gripping yoke bridging supply.

Workpiece space display for gripping yoke/circular blank

- Workpiece positions assignment indicator:
  - white = empty
  - blue = occupied
- Selected process indicator (cavity/occlusion).
- Indicates the assigned tasks with task number and last name of the patient.
3.7 Round blank management

**Note**
Round blank management is not included in the standard delivery and can only be used after activation.

3.7.1 Position work selection field

The work can be rotated in the "Position work" selection field.

A selected object can be rotated using the arrow keys or with the key combinations "ALT" and "-" or "Alt" and "+".
3.7 Round blank management

Alternatively, the object can also be rotated by left-clicking it with the mouse and then slowly dragging the mouse to the left or right.

To move an object or a pin which has been set, click on the object with the right mouse button.

If an object cannot be moved, the block can be cancelled by pressing the SHIFT key and right-clicking on the object at the same time.

### 3.7.2 Define bars selection field

The production status of the bars is defined in the "Define bars" selection field.

<table>
<thead>
<tr>
<th>Option field</th>
<th>Production status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activate (blue)</td>
<td>The bar is produced in the normal way.</td>
</tr>
<tr>
<td>Reduce (brown)</td>
<td>The cross-section of the bar is reduced at the end of the milling process depending on the material.</td>
</tr>
<tr>
<td>Cut (green)</td>
<td>The bar is cut at the end of the milling process.</td>
</tr>
<tr>
<td>Delete (red)</td>
<td>The bar proposed by the system is deleted.</td>
</tr>
</tbody>
</table>

In order to select the status you will first need to activate the required option field and then centrally click on the bar.

**Note**

You must not delete all of the bars. More information can be found in the processing instructions for the relevant material.

### 3.7.3 Set pins selection field

Pins can be set on the work in the "Set pins" selection field. "Set pins" should only be used for ZS blanks, for indication refer to the ZS processing instructions.

A pin is created via the "+ set new pin" key. This can then be carefully positioned on the work.

The "- delete existing pin" key can be used to select and delete a superfluous pin.

To move a pin, right-click it with the mouse.
3.7.4 Overview of assigned jobs

Double-click on a piece of work in the Job window to activate it and then position it.

3.7.5 Finish positioning selection field

With the aid of the "OK" button you can hide the circular blanks management window, and by pressing the "Remove job" button you can delete the selected job.

3.7.6 Circular blank information window

The relevant circular blank appears in the information window together with the corresponding material and lot no.

3.7.7 Gripping yokes position button

You can change from space 1 to space 2 with the "Gripping yoke" position button.
3.7.8 Circular blanks work area

The grey area corresponds to the work area of the circular blank. The work must be fully positioned within the grey area.

Once the work has been produced the grey area changes colour. No work can be assigned to white areas in the work area.

3.7.9 Status bar

The currently activated part of the work appears in the status bar.
3.8 Operational faults

**Note**
The unit may only be repaired and serviced by technicians trained by KaVo.

**See also:** 1.5 Important instructions, Page 9

![Error message](image)

A list of possible faults, causes and their removal is entered into the Everest Engine Control program. In the event of an operational fault, an appropriate message identifying the fault appears automatically, giving information on its cause and indicating how the fault is to be removed.
3.9 Technical specifications and requirements

3.9.1 Everest engine - overall (operating conditions)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating mode</td>
<td>Continuous mode</td>
</tr>
<tr>
<td>Power rating</td>
<td>max. 900 W</td>
</tr>
<tr>
<td>Protection class</td>
<td>1</td>
</tr>
<tr>
<td>Contamination level</td>
<td>2</td>
</tr>
<tr>
<td>Overvoltage category</td>
<td>II</td>
</tr>
<tr>
<td>Place of use</td>
<td>Use in interiors</td>
</tr>
<tr>
<td>Max. height above NN</td>
<td>2,000 m</td>
</tr>
<tr>
<td>Temperature range</td>
<td>15 °C to 40°C</td>
</tr>
<tr>
<td>Max. relative air humidity</td>
<td>of 80% for temperatures up to 31°C, linearly decreasing up to 50% relative air humidity at 40°C</td>
</tr>
<tr>
<td>Voltage fluctuations</td>
<td>No greater than ± 10% of rated voltage</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>Rated voltages</td>
<td>100 / 120 / 230 V</td>
</tr>
<tr>
<td>Noise level</td>
<td>&lt; 80 dB(A)</td>
</tr>
<tr>
<td>Laser</td>
<td>Class 1 laser</td>
</tr>
</tbody>
</table>

3.9.2 Milling/grinding unit dimensions:

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>880 mm</td>
</tr>
<tr>
<td>Front foot gap</td>
<td>560 mm</td>
</tr>
<tr>
<td>Rear foot gap</td>
<td>480 mm</td>
</tr>
<tr>
<td>Depth (without handle)</td>
<td>760 mm</td>
</tr>
<tr>
<td>Depth (without door)</td>
<td>710 mm</td>
</tr>
<tr>
<td>Complete depth</td>
<td>835 mm</td>
</tr>
<tr>
<td>Foot distance</td>
<td>350 mm</td>
</tr>
<tr>
<td>Height</td>
<td>1,170 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 280 kg</td>
</tr>
</tbody>
</table>

3.9.3 Dimensions of engine control unit incl. PC

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>560 mm</td>
</tr>
<tr>
<td>Depth (incl. PC)</td>
<td>550 mm</td>
</tr>
<tr>
<td>Height (incl. PC)</td>
<td>550 mm</td>
</tr>
<tr>
<td>Weight (incl. PC)</td>
<td>Approx. 47 kg</td>
</tr>
</tbody>
</table>
3.9.4 Power supply unit fuses

Mains fuses (1)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated current</td>
<td>10 A</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>250 V</td>
</tr>
<tr>
<td>Trigger characteristics</td>
<td>T</td>
</tr>
<tr>
<td>Breaking capacity</td>
<td>H</td>
</tr>
</tbody>
</table>

24 V fuse (3)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated current</td>
<td>3.15 A</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>250 V</td>
</tr>
<tr>
<td>Trigger characteristics</td>
<td>T</td>
</tr>
<tr>
<td>Breaking capacity</td>
<td>L</td>
</tr>
</tbody>
</table>

130 V fuse (4)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated current</td>
<td>6.3 A</td>
</tr>
<tr>
<td>Rated voltage</td>
<td>250 V</td>
</tr>
<tr>
<td>Trigger characteristics</td>
<td>T</td>
</tr>
<tr>
<td>Breaking capacity</td>
<td>H</td>
</tr>
</tbody>
</table>

3.9.5 Cooling lubricant unit

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>600 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>510 mm</td>
</tr>
</tbody>
</table>
3.9 Technical specifications and requirements

### 3.9.6 Compressed air

Compressed air connection: DN10 rapid 6 bar (+/- 0.5 bar) action coupling

Compressed air consumption: max. 60 NL/h

**Note**
Ensure that the cross-section of the supply lines is big enough.

**Compressed air requirements (in accordance with ISO 8573-1:2001 (E))**:

<table>
<thead>
<tr>
<th>Contamination by solid particles</th>
<th>Particle size $d$</th>
<th>maximum number</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Class 1)</td>
<td>$0.1 &lt; d \leq 0.5 \mu m$</td>
<td>$100/m^3$</td>
</tr>
<tr>
<td></td>
<td>$0.5 &lt; d \leq 1.0 \mu m$</td>
<td>$1/m^3$</td>
</tr>
<tr>
<td></td>
<td>$1.0 &lt; d \leq 5.0 \mu m$</td>
<td>$0$</td>
</tr>
</tbody>
</table>
4 Start-up

Note
The Kavo Everest engine Base Camp may only be started up by engineers trained by Kavo.
If the KaVo Everest engine has been transported and delivered at very low temperatures (below 0°C), malfunctions can occur if it is operated immediately. Wait at least two days before start-up.
When unpacking and setting up, proceed with extreme caution in order to prevent accidental damage to the device.

Note
Die KaVo Everest Engine muss so aufgestellt werden, dass die Betätigung des Netztrennschalters jederzeit problemlos möglich ist.

4.1 Location

The above arrangement is recommended:

1. Milling/grinding unit
2. ID reader
3. PC monitor, keyboard and mouse
4. Cooling lubricant unit
5. Power supply
6. Control PC
Damage or injury from improper setup or the wrong location. When setting up the device and choosing a location, a series of factors must be observed to prevent damage and injury:

- Only use the provided device to transport the milling/grinding unit due to its weight.
- Only trained personnel may move the milling/grinding unit.
- Since the milling and grinding unit is so heavy, make sure that the table or row of cabinets is sufficiently stable and large enough (weight bearing capacity over 300 kg).
- Make sure that the unit is set up on a perfectly level surface.
- The KaVo Everest engine Base Camp must be set up so that the mains disconnection switch can be activated without difficulty at any time.
4.2 Drive

Note
When running mains current circuits and EDP circuits, the relevant regulations must be complied with!
When connecting up appliances, proceed with the greatest care and attention so as to avoid any damage to cables and plug-fit connections.

4.2.1 Connecting up the system

- Connect the components of the KaVo Everest engine in accordance with the connection diagram.
4 Start-up | 4.2 Drive

Power supply unit

(X) X-Axis Stepper Motor Power Supply
(Y) Y-Axis Stepper Motor Power Supply
(Z) Z-Axis Stepper Motor Power Supply
(A) A-Axis Stepper Motor Power Supply
(B) B-Axis Stepper Motor Power Supply
(x1) Control cable to milling-grinding unit

(4) Stepper motor control to PC (B axis)
(8) Stepper motor control to PC (X, Y, Z, A axis)
(1) Mains input
(2) Coolant/lubricant pump power supply
(3) Spindle motor power supply

(37P)
PC

① ID reader input

② Network

⑥ PLC interface to the milling/grinding unit (50P)

⑧ Stepping motor actuation (B-axis)

⑨ Stepping motor actuation (X, Y, Z, A-axis)
4.2.2 Milling/grinding unit connection

① Power supply to the stepping motors
② Mains cable for the aerosol extraction
③ PLC interface to the PC
④ Aerosol extraction hose
⑤ Control cable to the power supply
⑥ Cooling lubricant drain hose
4.2.3 Compressed air connection

**Damage as a result of incorrect fitting**
Damage may occur if it is not fitted correctly
▶ Fit the maintenance unit of the compressed air line vertically.

▶ Connect compressed air line ① to supply available in the building.
**See also:** "Technical data" in the instructions for use

▶ Set air pressure on the manometer of the maintenance unit ② to 5.5 bar.
4.2.4 Coolant/lubricant unit connection

- Connect the cooling lubricant drain hose.
- In the cooling lubricant container, mix 1 part cooling lubricant concentrate (Mat. No. 1.001.6002) with 24 parts clean tap water (an entire filling corresponds to 48 l water and 2 l concentrate).
- Perform a test with a KaVo Everest base test and KaVo Everest combination test.
- Fit the cooling lubricant cover.
- Connect the cooling lubricant supply hose.
4.2.5 Electrical connection

**Note**
Observe country-specific regulations with reference to building installation. Ensure that the rated voltage and rated frequency of the milling/grinding unit are the same as the rated voltage and the rated frequency of the building installation. Ensure that the rated voltage and rated frequency of the coolant/lubricant pump are the same as the rated voltage and rated frequency of the building installation. The mains plug is to be used as a mains disconnection device.

- Insert mains plug into mains socket of the building installation, provided so that it is easily reached, and installed in accordance with the regulations.
- Check whether the rated voltage and rated frequency correspond to the details on the type plate and the voltage pre-selection. Adjust the settings as required.

**Note**
Use coolant/lubricant pump with the correct rated voltage and rated frequency:
- 100 V 50 Hz
- 120 V 60 Hz
- 230 V 50 Hz

4.2.6 Voltage adjustment

- Disconnect the power entry module ① from the power supply and pull out the fuse drawer ③ from the power entry module.
- Remove the fuse holder ② from the fuse drawer and turn it so that the required voltage value appears in the inspection window.
4.2.7 EDP network connection

- If only one KaVo Everest engine is to be connected without a network to KaVo Everest, attach RJ 45 (cross-over) network cable to the NET port on the rear of the control PC.

See also: 4.2.1 Connecting up the system, Page 43

Data transfer options:
① Everest
② Everest Base Camp
4.3 Set up device

<table>
<thead>
<tr>
<th>Danger from the great weight of the milling/grinding unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damage to persons and property</td>
</tr>
<tr>
<td>▶ Ensure the the table is large enough and sufficiently stable (weight bearing capacity of 300 kg)!</td>
</tr>
<tr>
<td>▶ Ensure that the table is level by using a spirit level.</td>
</tr>
</tbody>
</table>

▶ Place the milling and grinding unit on the table with the provided means of transport (lifting straps and hoisting crane). Make sure that the lifting straps do not damage the electronics or the Z motor.
▶ Remove the transport brace (Y guide).
▶ Ensure that the milling and grinding unit is level by using a spirit level. All four feet of the machine must lie on the table and be fixed.
5 Operation

**Damage as a Result of Incorrect Operation**
Damage may occur due to incorrect operation and by working with the casing not in place.
- When operating the KaVo Everest engine, follow the regulations on accident prevention and safety data sheets.
- Only operate the KaVo Everest engine with casing in place.

To operate the KaVo Everest engine, do the following:
- Insert workpieces
- Start **KaVo Everest engine**.
- Assign tasks to workpiece positions
- Manufacture workpieces

5.1 Insert workpieces

**Requirement**
Prepare workpieces according to the processing instruction.

- Open the door of the milling/grinding unit.
- Loosen the setscrews ② in the mounting spaces with the torque wrench ① (WAF 2.5 mm).

**Note**
Use the provided Allen key.

**Damage may be caused by using the wrong tool**
Everest engine processes various workpieces on a gripping yoke with the same tool.
- During the procedure, the gripping yoke is only ever fitted with those workpieces which are to be processed with the same tool.

- Insert workpieces into the workpiece positions of the gripping yoke.
- Tighten threaded rods to the seats.
- Close the door of the milling/grinding unit.
5 Operation | 5.1 Insert workpieces
5.2 Start KaVo Everest engine

**Note**
Start the KaVo Everest engine in the exact sequence described here.

- Switch on power supply unit.
- Switch on control PC and monitor and wait until the hourglass symbol disappears from the Windows desktop.
- Double click on the KaVo logo.

The Everest Engine Control Program is started. The message "execute reference run" appears in the status view.

- Press the Start function key on the control panel (alternatively: Press the Initial State function key).

The following message appears in the status view: **Machine active**. The milling/grinding unit makes a reference run and then remains in its initial state. The following message appears in the status view: **Machine in initial state**.
5.3 Tasks are assigned to workpiece positions

Note
Each task must be assigned individually to a workpiece position.

- Click on the update symbol.
  (alternatively: key combination [Alt]+[A])

The tasks transferred from the KaVo Everest Scan appear in the task view.

- Ensure that the selected gripping yoke goes with the type of work.
  The relevant workpiece position indicator appears.

See also: 3.5 Gripping yokes, Page 26

- If the wrong gripping yoke is set, change the setting.

- Flag the task you want in the task view.

5.3.1 CAM Module

Note
The procedure changes depending on the material selected.
All materials apart from zirconium soft

- Define the blank with the aid of the ID reader. To do this, hold the ID reader centrally over the Everest chip and read in the current status of the circular blanks. Once the circular blanks have been read in successfully, the data for the blank (including material, size, shrinkage factor and lot number) are acquired.

- Everest Engine automatically calculates the size of the blank.

- Select the blank and document the LOT.

- Close the dialogue box by clicking OK.
Soft zirconium

**Note**
As soft zirconium shrinks when sintering, the blank needed is initially calculated with a standard value of 21%.

- Assign the task to a workpiece position.
- Define the blank with the aid of the ID reader. To do this, hold the ID reader centrally over the Everest chip and read in the current status of the circular blanks. Once the circular blanks have been read in successfully, the data for the blank (including material, size, shrinkage factor and lot number) are acquired.
- Everest Engine automatically calculates the size of the blank.
5 Operation | 5.3 Tasks are assigned to workpiece positions

- Define the blank with the aid of the ID reader. To do this, hold the ID reader centrally over the Everest chip and read in the current status of the circular blanks. Once the circular blanks have been read in successfully, the data for the blank (including material, size, shrinkage factor and lot number) are acquired.

- Close the dialog by selecting calculate.

Note
If you want to manufacture only the cavity or only the occlusion, uncheck the checkbox adjacent to the workpiece position you do not require. Otherwise, the milling/grinding unit automatically manufactures cavity and occlusion.
5.4 Producing workpieces

The KaVo Everest engine, at the start of each manufacturing process, automatically checks whether the tools are placed in the correct holder (T1 or T2). If a tool is in the wrong holder, an error message appears prompting you to replace the tool.

**Note**
Using an incorrect tool can damage the workpiece, the gripping yoke and the milling/grinding unit.

▶ Change tool as required.

*See also:* 5.5 Change tool, Page 69

▶ Click on the **Manufacture** symbol in the program window.

The following message appears in the status view: **NC Program loaded into the machine** and a request to check the correct selection of tool and blank appears.

▶ Check correct selection of tool and blank.

**Note**
Before machining the ZS material, all Everest labels have to be removed.
Press the **Start** function key on the control panel.

The milling/grinding unit manufactures the cavities in all occupied workpiece positions. The following message appears in the status view: **Machine active**.

At the end of the manufacturing process, the milling/grinding unit goes back to its initial state. The gripping yoke is tilted forwards. The following message appears in the status view: **Feed stop active**.

The following message appears on the control monitor: **Cleaning Cycle**.

Open the door of the milling/grinding unit.

---

**CAUTION**

Risk of injury from the use of compressed air

Injuries can occur when using compressed air, if the necessary protective equipment is not used.

Wear safety goggles.
5 Operation | 5.4 Producing workpieces

**Damage to the Spindle**
The spindle may be damaged by the improper use of compressed air.
- Only ever direct compressed air onto the workpieces, and never to the spindle.

- Using compressed air, clean the workpiece to rid it of any milling dust, chips and coolant.
- Close the door of the milling/grinding unit.
- Press the Start function key on the control panel.

The following message appears in the status view: **Machine active**. The gripping yoke turns in a horizontal position, so that the cavities are on top. Once again, the following message appears in the status view: **Feed stop active**.

The message **Embedding Cycle** appears.

- Open the door of the milling/grinding unit.

**Note**
Do not remove the gripping yoke for embedding the workpiece.

- Embed the workpieces according the processing instruction.
- Close the door of the milling/grinding unit.
- Press the Start function key on the control panel.

The following message appears in the status view: **Machine active**. The milling/grinding unit manufactures the occlusions in all occupied workpiece positions. At the end of the manufacturing process, the milling/grinding unit goes back to its initial state. The following message appears in the status view: **Manufacturing completed**.

- Open the door of the milling/grinding unit.
5 Operation | 5.4 Producing workpieces

- Undo the threaded rods on the workpiece positions.
- Remove workpieces.
- Remove dental work according to processing instruction.

5.4.1 Manufacturing round blanks

Inserting circular blanks

**Note**
During a single process step, only equip the gripping yoke with circular blanks that can be processed with the same tools.

**Note**
An O-ring must be permanently inserted in the circular blank gripping yoke. If the O-ring fails or becomes damaged, replace it with a new one.

- Open the door of the milling/grinding unit.
- Release tenterhook ② at the mounting spaces with a 5 mm Allen key ① and turn it to the open position.

- Insert circular blank ② into the circular blank gripping yoke ③. In the case of a ZS circular blank also insert the matching tension ring ①.
5.4 Producing workpieces

▶ At the mounting spaces, turn the tenterhook over the circular blank or relevant tension ring and tighten evenly.

▶ Close the door of the milling/grinding unit.

Assigning jobs to the workpiece spaces

Note
This procedure is identical for all materials.

Note
Each job must be separately assigned to a circular blank space.

▶ Click on the Update icon. (Alternatively: use the key combination [Alt]+[A])
  The jobs transmitted by the KaVo Everest scan Base Camp appear in the jobs overview.
▶ Select the required job in the jobs overview.
CAM module

Assign a circular blank space to the job. The "Define blank" window opens.

Define the blank with the aid of the ID reader. To do this, hold the ID reader centrally over the Everest chip and read in the current status of the circular blanks. Once the circular blanks have been read in successfully, the data for the blank (including material, size, shrinkage factor and lot number) are acquired.
The "Circular blanks management" window opens.

By clicking on the work with the right mouse button you can move the work and then position it correctly as required.

A job must be activated before you can make any changes to it. You can tell that a job has been activated by the blue border around the work.

▶ Left-click with the mouse on the grey border of the work to activate the work. The border around the work changes colour from grey to blue.

▶ After activating the job, change the work as required using the options "Position work", "Define bars" and "Set pins".

▶ Click on "OK" to hide the "Circular blanks management" window.

**Producing workpieces**

The **KaVo Everest engine Base Camp** automatically checks at the start of every production process whether the tools are inserted in the correct holder (T1 or T2). If a tool is inserted incorrectly then a corresponding error message is displayed together with a request to replace the tool.

**Note**

Using an incorrect tool can damage the workpiece, the gripping yoke and the milling/grinding unit.

**CAUTION**

**Risk of injury from the use of compressed air**

Injuries can occur when using compressed air, if the necessary protective equipment is not used.

▶ Wear safety goggles.
5 Operation | 5.4 Producing workpieces

---

**Damage to the Spindle**

The spindle may be damaged by the improper use of compressed air.

- Only ever direct compressed air onto the workpieces, and never to the spindle.

- Change tool as required.

  **See also:** 5.5 Change tool, Page 69

- Assign jobs to the circular blanks.

  **See also:** 5.4.1 Assigning jobs to the workpiece spaces, Page 63

- Click on the **Manufacture** symbol in the program window.

- Using the ID reader, save the jobs to circular blanks.

The following message appears in the status view: **NC Program loaded into the machine** and a request to check the correct selection of tool and blank appears.
Press the **Start** function key on the control panel.

The milling/grinding unit produces one piece of work after another. The status window shows the message **Machine active**.

When producing the circular blanks, the gripping yoke automatically switches over after producing the cavity and then mills the occlusion. At the end of the production process the milling/grinding unit returns to its basic position. The status window shows the message "Production finished".

Open the door of the milling/grinding unit.

Finish off the circular blank with the ID reader in order to save the current status.

Loosen the tenterhooks at the circular blanks.

Take out the circular blank.
Cut off the dental restoration according to the processing instructions.
5.5 Change tool

Note
A suitable torque wrench (2.5 mm) for changing tools is included with the unit.

- In the program Everest Engine Control, in the menu Machine, select menu item Tool Change (alternatively: key combination [Alt] + [W]).
- Press the Start function key on the control panel.

The double spindle runs in the centre and remains in a horizontal position so that the tool can be changed.
An appropriate message appears on the monitor.

- Undo the stud bolt ① at the tool mounting using the torque wrench (2.5 mm) ④, but without fully removing it.

- Remove old tool.
- Select a new tool according to the details in the tool table.

See also: 3.4 Milling and grinding tools, Page 25
**Damage to the Tool by Improper Handling**

If the tool is not covered with a film of oil and if moisture gets into the tool seat, this can cause damage to the tool.

- When using the tool, ensure that the tool is covered with a thin film of oil and that no moisture gets into the tool seat.

---

**Note**

For longer breaks in operation (one week or more), the tool must be removed from the tool seat.

- Insert new tool ⑥ into the tool seat so that the clamping surface ⑦ points forwards - keep inserting until it reaches the stop position.

See also: 5.5 Change tool, Fig.: , Page 69

- Gently press the tool ② into the tool mounting and screw in the stud bolt ① at the same time.

The tool is in the correct position if, after gently tightening the screw, it can only be moved within the two inside recess grooves.

- Tighten the stud bolt ① using the torque wrench ④ until an acoustic signal sounds.
- Close the door of the milling/grinding unit.

- Function key **Start** on the control panel.

The double spindle moves to its basic position.
5.6 Change gripping yoke

To change the gripping yoke, you need to change the following procedure:

- In the Everest Engine Control program, in menu Machine, select menu item Change Gripping Yoke.
- Flag the desired gripping yoke in the gripping yoke selection box.
- Press the Start function key on the control panel.

The gripping yoke tilts so that it can be changed easily. An appropriate message appears on the screen.

- Open the door of the milling/grinding unit.
- Unfasten gripping yoke on both sides with Allen key (size 6 mm).
- Pull out gripping yoke.

- Insert new gripping yoke, push in until it reaches the stop position and fasten with the screws at either side.

Note
Before each gripping yoke change, ensure that the workpiece positions, bearing and guide for the gripping yoke are clean and covered with a thin film of oil.

- Close the door of the milling/grinding unit.
5 Operation | 5.6 Change gripping yoke

▶ Press the **Start** function key on the control panel.

The milling/grinding unit makes a reference run and then remains in its initial state. It is now ready to be used again.
6 Maintenance

6.1 Cleaning and care

Note
Do not use any solvent, such as nitro, peroxide, sanitary cleaner, alcohol cleaner and grease cleaner.

6.1.1 Daily

▶ Before each use, ensure that the gripping yoke inserts and the workpiece positions of the gripping yoke are clean and covered with a thin film of oil.
▶ Empty and clean chip drawer.
▶ Check the level of the coolant/lubricant on the coolant/lubricant unit. The level of the coolant/lubricant must be between min. and max.
▶ Top up coolant/lubricant as needed. 
See also: 4.2 Drive, Page 43

6.1.2 Weekly

▶ Vacuum out the interior of the milling/grinding unit at least once a week (more often during intensive use) or clean with a paintbrush.
▶ Have the interior of the milling/grinding unit automatically cleaned at least once a week (more often during intensive use). To do this select menu item Clean working area on the Machine menu and press the Start function key on the control panel.
See also: Chapter 3.6 Software

▶ Wipe the exterior casing and the viewing window with a dry, lint-free cloth or remove any dirt with a damp cloth and clean or soapy water.
▶ Check the pH-value and concentration of the coolant/lubricant, and adjust as needed. 
See also: KaVo Everest combination test instructions
KaVo Everest base test instructions
Using a candle filter (optional accessory)

Installing the candle filter

- Connect the candle filter inlet ② to the cooling lubricant supply hose.
  See also: 4.2.4 Coolant/lubricant unit connection, Page 48
- Connect the candle filter outlet ① to the cooling lubricant unit.

Cleaning the candle filter

Note
The nylon straining elements can be reused after cleaning.

- With the machine turned off, unscrew the sump from the candle filter.
- Clean the nylon straining elements under running water.
- Screw the sump and nylon straining element correctly together with the candle filter.
6.1.3 Quarterly

Replacement of the setscrews of the double spindle

- Replace the setscrews (Mat. no. 1.004.6876) used to fasten the milling bodies.

Replacement of the filter of the cooling lubricant unit

- Undo the four casing screws.
- Remove the casing.
- Remove old filter.
- Insert a new filter (Mat. no. 1.002.0534).
6.1 Cleaning and care

- Place on casing.

- Push the casing in the direction of the arrow while tightening the four screws.
Replacement of cooling lubricant and the filter sack

Note
After around 3 months (depending on the level of use) the cooling lubricant and the filter sack should be replaced and properly disposed of. The waste code is indicated on the canister of the cooling lubricant.

Instructions for use Everest® engine 4140
6 Maintenance | 6.1 Cleaning and care

Cooling lubricant container with filter sack

1 Cable tie
2 Curved drain connection part
3 Filter sack

- Remove the cooling lubricant connections.

See also: 4.2.4 Coolant/lubricant unit connection, Page 48

- Undo the screws and remove the cooling lubricant cover.
- Discard the filter sack and the cooling lubricant solution (the waste code is indicated on the canister of the cooling lubricant).
- Insert a new filter sack. Take care to ensure that the curved drain connection part is correctly positioned and that the filter sack lies without any kinks in the container.
- Secure the filter sack with a cable tie.
- Mix the cooling lubricant.

See also: 4.2.4 Coolant/lubricant unit connection, Page 48

- Fit and tighten the cooling lubricant cover.
> Reattach the cooling lubricant connections.

**See also:** 4.2.4 Coolant/lubricant unit connection, Page 48

**Note**
After replacing the cooling lubricant, make sure that the corrugated hose does not have any loops.
Make sure that there is a slight downward gradient in the aerosol extraction hose.

**Change the setscrews in the clamping bridges**

> Replace the setscrews (**Mat. no. 1.001.5891**) double clamping bridge, quadruple clamping bridge for holding the inserts.

> Replace the setscrews (**Mat. no. 1.001.5891**) 10-hole clamping bridge, 6+2 clamping bridge for holding the inserts.
7 Declaration of conformity

EG-Konformitätserklärung
EC-Conformity Statement

DE

Wlr., Kaltenbach & Voigt GmbH
Bismarckring 39
D-88400 Biberach

erklären, dass die von uns ab dem 2007-06 hergestellten Produkte

Everest® engine Typ 4140
Everest® engine Base Camp Typ 4140

auf die sich diese Erklärung bezieht, übereinstimmen mit den Grundlegenden Anforderungen gemäß den Bestimmungen der Richtlinie

2006/95/EC Niederspannungs-Richtlinie
99/368/EWG EMV-Richtlinie

Zur Beurteilung des Erzeugnisses wurden folgende Normen oder normativen Dokumente angewandt:

EN 51010-1:2001 Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte
EN 51000-6-2:2001 Elektromagnetische Verträglichkeit (EMV) - Teil 6-2: Fachgrundnormen - Störfestigkeit für Industriebereiche
EN 61000-6-3:2001 Elektromagnetische Verträglichkeit (EMV) - Teil 6-3: Fachgrundnormen - Fachgrundnorm Störaussendung - Wohnbereich, Geschäfts- und Gewerb bereiche sowie Kleinbetriebe

GB

We, Kaltenbach & Voigt GmbH
Bismarckring 39
D-88400 Biberach

declare that the products

Everest® engine Typ 4140
Everest® engine Base Camp Typ 4140

manufactured by us from 2007-06 onwards to which this statement refers, conform to the essential requirements according to the provisions of directive

2006/95/EC EC Low Voltage Directive
89/336/EEC EMC Directive

The following standards or normative documents were applied to evaluate the product:

EN 61010-1:2001 Safety requirements for electrical equipment for measurement, control, and laboratory use
EN 61000-6-2:2001 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 61000-6-3:2001 Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments

Biberach, 2007-06-13

Christoph Gösenleitner
Geschäftsführer
Managing Director

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7 Declaration of conformity