GISS 2000
Operating Manual
# GISS 2000 Operating Manual

## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>3</td>
</tr>
<tr>
<td>Symbols and pictographs</td>
<td>3</td>
</tr>
<tr>
<td>1.) Safety</td>
<td>4</td>
</tr>
<tr>
<td>1.1 Danger potential of the equipment</td>
<td>4</td>
</tr>
<tr>
<td>1.2 Safety notes</td>
<td>4</td>
</tr>
<tr>
<td>1.3 Correct application</td>
<td>5</td>
</tr>
<tr>
<td>1.4 Work area requirements</td>
<td>5</td>
</tr>
<tr>
<td>1.5 Authorised operators</td>
<td>6</td>
</tr>
<tr>
<td>2.) Shipping and packaging</td>
<td>6</td>
</tr>
<tr>
<td>2.1 Delivery</td>
<td>6</td>
</tr>
<tr>
<td>2.2 Unpacking</td>
<td>6</td>
</tr>
<tr>
<td>3.) Description of equipment</td>
<td>7</td>
</tr>
<tr>
<td>3.1 Functional description</td>
<td>7</td>
</tr>
<tr>
<td>3.2 Types</td>
<td>7</td>
</tr>
<tr>
<td>3.3 Dynamic output regulator</td>
<td>8</td>
</tr>
<tr>
<td>3.4 Key pad and display</td>
<td>8</td>
</tr>
<tr>
<td>3.5 System summary</td>
<td>9</td>
</tr>
<tr>
<td>4.) Commissioning and operation</td>
<td>10</td>
</tr>
<tr>
<td>4.1 Electrical connection</td>
<td>10</td>
</tr>
<tr>
<td>4.1.1 GISS 2000</td>
<td>10</td>
</tr>
<tr>
<td>4.1.2 SPEED-COOLER</td>
<td>11</td>
</tr>
<tr>
<td>4.2 Installation and assembly</td>
<td>12</td>
</tr>
<tr>
<td>4.2.1 GISS 2000</td>
<td>12</td>
</tr>
<tr>
<td>4.2.2 SPEED-COOLER (optional)</td>
<td>14</td>
</tr>
<tr>
<td>4.2.3 Inserting the adaptors</td>
<td>15</td>
</tr>
<tr>
<td>4.2.4 Speed Cooler Manager</td>
<td>16</td>
</tr>
<tr>
<td>4.3 Switching-on the equipment</td>
<td>17</td>
</tr>
<tr>
<td>4.4 Menu guide</td>
<td>17</td>
</tr>
<tr>
<td>4.4.1 Shrink fit menu</td>
<td>19</td>
</tr>
<tr>
<td>4.4.2 Setting the heating time</td>
<td>20</td>
</tr>
<tr>
<td>4.4.3 Setting the language</td>
<td>21</td>
</tr>
<tr>
<td>4.4.4 Setting the dimensional system</td>
<td>22</td>
</tr>
<tr>
<td>4.4.5 Selecting the operating type</td>
<td>22</td>
</tr>
<tr>
<td>4.4.6 Retrieving company settings</td>
<td>23</td>
</tr>
<tr>
<td>4.5 Operating process</td>
<td>25</td>
</tr>
<tr>
<td>4.5.1 Suitable shrink fit chucks</td>
<td>25</td>
</tr>
<tr>
<td>4.5.2 Preparing the shrink fit chucks and tools</td>
<td>25</td>
</tr>
<tr>
<td>4.5.3 Heating the shrink fit chuck</td>
<td>26</td>
</tr>
<tr>
<td>4.5.4 Cooling the shrink fit chuck</td>
<td>29</td>
</tr>
<tr>
<td>4.6 Switching-off the equipment</td>
<td>30</td>
</tr>
<tr>
<td>4.7 GISS 2000 Trouble-shooting</td>
<td>31</td>
</tr>
<tr>
<td>4.7.1 Error messages</td>
<td>31</td>
</tr>
<tr>
<td>4.7.2 Other malfunctions</td>
<td>31</td>
</tr>
<tr>
<td>4.8 SPEED-COOLER Troubleshooting</td>
<td>33</td>
</tr>
<tr>
<td>4.8.1 Venting the cooling system</td>
<td>34</td>
</tr>
<tr>
<td>4.8.2 Water pump not running</td>
<td>34</td>
</tr>
<tr>
<td>4.8.3 Condensation on dissipator</td>
<td>35</td>
</tr>
<tr>
<td>4.9 Important notes regarding the shrink fitting process</td>
<td>35</td>
</tr>
<tr>
<td>5.) Cleaning</td>
<td>36</td>
</tr>
<tr>
<td>5.1 Speed Cooler</td>
<td>36</td>
</tr>
<tr>
<td>5.2 GISS 2000 shrink fit system</td>
<td>36</td>
</tr>
<tr>
<td>6.) Maintenance and repairs</td>
<td>37</td>
</tr>
<tr>
<td>6.1 Maintenance</td>
<td>37</td>
</tr>
<tr>
<td>6.2 Replacing the GISS 2000 fine-wire fuse</td>
<td>37</td>
</tr>
<tr>
<td>7.) Technical data</td>
<td>38</td>
</tr>
<tr>
<td>8.) Replacement parts</td>
<td>39</td>
</tr>
</tbody>
</table>
Introduction

With the purchase of GISS 2000 you have acquired an innovative and easy to operate system for changing tools in shrink fit chucks.

Please read this operating manual carefully and observe the safety notices prior to commissioning the system in order to ensure longevity and above all safe operation of GISS 2000.

All personnel entrusted with operating the GISS 2000 shrink fit system must also be familiar with and observe this operating manual prior to the initial operation.

Keep this operating manual readily available in order to ensure access to the information at all times.

It is not permitted to photocopy, save on a computer system or forward extracts of this operating manual without prior consent of Gühring oHG.

Gühring oHG reserves the right to undertake technical and visual changes at any time without specific notification in the interest of further development. All dimensions, notes and specifications in this operating manual are not covered by the warranty. Legal claims based on the operating manual can subsequently not be exercised.

Gühring oHG Conditions of Sale and Terms of Payment apply.

Symbols and pictographs

Warning signs
General warnings of risk of danger to human life or property are demonstrated with the following symbols:

Warning of risk of danger through electric current or electric shock respectively:

Warning of a specific danger. Pictograph with a rectangular border, standing on a corner:

Mandatory signs
Mandatory signs are round, light pictograph on dark background:
1.) Safety

1.1 Danger

The GISS 2000 shrink fit system has been manufactured in accordance with the latest technologies and safety regulations. Function and safety tests have been carried out. However, the system can be a source of danger if not operated by trained or at least instructed personnel. The same applies to inappropriate or incorrect use of the GISS 2000 system.

If this operating manual is not observed there is the risk of the following

- electric shock,
- health hazards,
- damage to the equipment.

1.2 Safety notes

- The GISS 2000 shrink fit system and the SPEED COOLER (cooling unit) must only be operated with the correct mains supply voltage. It is paramount to check the specification plate.

- The mains plug must only be plugged into a socket with an earthing contact! The protective capacity must not be eliminated by the use of an un-earthed extension lead. Disconnection of the earthing wire inside or outside of the equipment is dangerous and prohibited.

- The equipment must only be operated if in perfect condition. If one of the units is damaged, the system must no longer be used.

- Due to the process, the shrink fit chuck becomes very hot in localised areas. There is an acute danger of burning if these areas are touched. The equipment has been designed so the hot shrink fit chuck does not need to be removed, thus, it should always be left in the holder until it has cooled down.

- Always wear protective gloves when handling the shrink fit chucks and the tools. The gloves protect against cuts from the sharp edges of the tools. In addition, they provide protection against burns from the hot areas of the shrink fit chucks.

- The shrink fit system operates using a high frequency. Subsequently, a person with a heart pace maker must not operate the equipment. During the operation of the shrink fit system such persons must also observe a minimum safety distance of 1 metre to the equipment.

- Under no circumstances must metal objects come into the sphere of the induction spindle. They would heat up intensively when the shrink fit system is operated. This applies especially to jewellery, i.e. a ring on a finger or a chain, as there is an acute danger of burning

- The shrink fit system must not be operated without an inductor limit stop collar. A missing or incorrect inductor limit stop collar can result in scatter fields exiting the spindle area. If the aforementioned is not observed, it may cause a risk to the operator and damage to the equipment or tools respectively.
• The equipment must be disconnected from the mains supply prior to any cleaning, maintenance or repair work being carried out. The same applies if the equipment is not used for prolonged periods.

• During cleaning, liquid must not be allowed to enter inside the housing. Protect the system against moisture. Risk of electric shock.

• Position the power supply cables in such a way as to prevent anybody tripping over or getting caught up in them.

• Repairs to the GISS 2000 shrink fit system must only be carried out by qualified personnel. Electrical work on the equipment must only be carried out by a qualified electrician. The opening of the housing by unauthorised personnel is prohibited.

Attention! Dangerous residual voltage may be present in the housing up to 5 minutes after turning off the equipment.

• No disassembly of safety devices. The disassembly, by-passing or closing down of safety devices is prohibited.

1.3 Correct application

The GISS 2000 shrink fit system has been designed and developed especially for the tool change in shrink fit chucks. The system is suitable for shrink fitting HSS tools with a shank-Ø from 6 to 32 mm and carbide tools with a shank-Ø from 3 to 32 mm.

With the aid of a chuck adapter system all standard taper size shrink fit chucks can be applied. In addition, the coolant body adapter system enables the cooling of chucks with any outer contour.

The system is only intended for industrial applications.

Gühring oHG cannot accept liability for applications not described in this operating manual. Equally, such actions forfeit any claims made under warranty.

1.4 Work place requirements

Keep the workplace tidy and clean. Untidiness at the workplace increases the danger of an accident.

The equipment must be positioned on a sufficiently rigid and level substructure. During operation it must not be exposed to impact or be tilted.

The system must be protected against moisture and contamination.
1.5 Authorised operators

The GISS 2000 shrink fit system must only be operated by authorised and trained personnel.

The operator is responsible for third parties in the work place.

The owner must
- instruct the operator regarding his tasks,
- make the operating manual available to the operator
- ensure that the operator has read and understood the manual.

2.) Shipping and packaging

2.1 Delivery

The GISS 2000 shrink fit system is despatched suitably packaged to ensure that, under regular shipping conditions, it reaches its point of destination undamaged.

Note:
The carrier is liable for any damage that occurs during transportation. If damage to the packaging is visible and there is reason to believe that the contents are damaged, immediately contact the carrier regarding the claim for damages.

Transportation and storage should be performed under normal conditions, i.e. at temperatures between +5°C and +70°C and a relative humidity of maximum 80%.

Attention!
The system may be permanently damaged if stored or transported under prohibited conditions. It is possible that the damage is not visible externally. In this case, the manufacturer does not accept the warranty and the liability for consequential damages.

2.2 Unpacking

Remove all packaging and take out the system including the accessories.

Ensure that all the components of the GISS 2000 shrink fit system are included in accordance with the delivery note and the accompanying documents and are undamaged.

Compare the data on the type plates to that on the delivery note and your order documents.

If you do not require the packaging for further use, i.e. for the return of the system for repairs, please dispose of it in an environmentally friendly way.
3. Description of equipment

3.1 Function principle

The GISS 2000 shrink fit system’s function principle is an induction spindle, also called an inductor. The inductor is a current-carrying spindle that produces a magnetic alternating field. When a ferrous metal object is inside the spindle it is heated up.

The frequency of the alternating field is set so the metal object, in this case a shrink fit chuck, only heats up near the surface. The generation of heat in the shrink fit chuck is continued by GISS 2000 until it is possible to manually remove or insert the tool, the time required is approximately 5 seconds.

This is achieved before the tool itself becomes hot. At this point, heat has only generated on the surface of the shrink fit chuck, as there has been insufficient time for the heat to penetrate. This way, only a relatively small amount of energy is supplied or consumed respectively. It is, therefore, possible to keep the subsequent cooling phase very short.

Cooling is achieved via water-cooling. The cooling power is provided by the SPEED-COOLER. The cooling water permanently circulates through the cooling body. The hot shrink fit chuck remains in its holder and is rotated into the cooling position via the turntable. The water-cooled cooling body is then positioned over it. The cooling power is transferred by direct contact with the shrink fit chuck. After a short time the shrink fit chuck can be touched again.

The GISS 2000 shrink fit system is designed to carry out a continuous tool change (thanks to the simple adapter system all standard shrink fit chucks can be used).

The GISS 2000 shrink fit system’s design and operation allow a very quick tool change to be carried out. Subsequently, the shrink fit chucks have a long tool life as they only become hot in localised areas and, in addition, further contact is only necessary after they have cooled down again.

Therefore, a simple and safe operation is ensured.

3.2 Versions

GISS 2000 Eco

GISS 2000 Eco is the cost-efficient entry level version into shrink fitting. This version already incorporates the powerful electronics and the easy software for carbide and high speed steel tools up to Ø 32 mm. It includes a shrink fitting station but not a cooling unit.

GISS 2000 Eco Plus

The GISS 2000 Eco Plus shrink fit system also includes a cooling unit and cooling body to enable a fast cooling down of the shrink fit chucks.

The GISS 2000 Eco version can be up-graded to the GISS 2000 Eco Plus version using a special upgrade kit.

GISS 2000 Comfort

The GISS 2000 Comfort is the fully equipped version for an efficient operation. In addition to a cooling facility, this version also includes a turn table with three shrink fitting stations.
This makes a continuous operation possible without interruption. The GISS 2000 Eco Plus system can be up-graded to the comfort version using an up-grade kit.

**GISS 2000 Comfort Plus (special)**

The GISS 2000 Comfort Plus is the universal solution for the shrink fitting of tools. Its special electronics offers twice the performance in comparison to the other models. With an additional inductor, it is possible to shrink fit for insertion and withdrawal carbide and high speed steel tools up to Ø 50 mm. A cooling unit and a turntable with three shrink fit stations are part of the standard equipment. It is not possible to up-grade the standard versions to the Comfort Plus model.

### 3.3 Dynamic output control

Depending on the local power supply, the voltage in the network may be subjected to heavy fluctuations. This also has an effect on the heating capacity of the GISS 2000 shrink fit system. With a reduced voltage supply, the heating capacity may not be sufficient to heat-up the holders quickly. If the voltage increases, there is the danger of the holders over-heating.

The GISS 2000 shrink fit system solves this problem with dynamic output control. The heating capacity is determined and controlled during the entire shrink fit process.

The intermediate circuit voltage is displayed during the shrink fit process, it should not fall by more than 35 Volts prior to the shrink fit process.

This ensures that optimal results are achieved under all operating conditions.

### 3.4 Keypanel and display

- **a** Enter / confirm key
- **b** Plus key
  - for increasing the tool-Ø
- **c** Minus key
  - for reducing the tool-Ø
- **d** Inductor start key
- **e** LCD display
- **f** ESC-key
3.5 System summary

1. Mains switch
   SPEED-COOLER
2. Coolant hose return
3. Coolant hose
4. Inductor plug-in connection
   Ø 3 - 32 mm
5. Mains switch GISS 2000
6. Inductor linear unit
7. Handle with brake
8. Inductor start key
9. Inductor energy supply hose
10. Drawspring
11. Equipment-on indicator lamp
12. Cooling bodies
12a. Cooling bodies with interchange lock
13. Inductor
14. Shrink fit chuck adapter
15. Turntable
16. Tool depository
17. Keypanel and display
18. Trolley (option)
19. Fine-wire fuse for electronic control
20. Plug-type connector for inductor Ø 40 - 50 mm optional
21. Cooling body Ø 40 - 50 mm optional
22. Plug-type connector for SPEED-COOLER control line optional
4.) Commissioning and operation

In the following, the required procedures are described in the correct sequence for commissioning the GISS 2000 shrink fit system. Operating the system is relatively simple. However, you should familiarise yourself with the equipment prior to working with it.

⚠️ Incorrect operation can be dangerous for the operator and damage the equipment, in particular there is the danger of the shrink fit chuck overheating.

4.1 Electrical connection

If the GISS 2000 shrink fit system or the SPEED-COOLER have not been supplied with the correct plug, a suitable plug must be fitted.

⚠️ Important: The above must be carried out by a qualified electrician.

4.1.1 GISS 2000

The electrical connection is 4-pole. Connect the 3-phases and earth. The connection to earth is compulsory to comply with electrical safety regulations. Neutral is not connected. The rotary field of the 3 phases does not need to be observed.

Please ensure:

- The electrical connection (socket-outlet) with the customer must have a connected earthing contact.
- If the plug is replaced, the earth is connected to the green/yellow wire.
- The power supply must correspond with the data on the type plate.
- Depending on the distance to the main distribution, the conductor cross-section of the customer’s electrical connection should be chosen generously. Furthermore, no additional equipment should be connected to this supply line. If the above is not observed, the voltage level may drop too much during the shrink fit process resulting in the necessary shrink fitting output not being achieved.

Customer fuse protection:

GISS 2000 Eco, Eco Plus, Comfort: 3 x 16 Ampere
GISS 2000 Comfort Plus (special): 3 x 32 Ampere
• If connected via a transformer, it must be checked that there is a continuous earth connection from the equipment plug to the voltage connection on-site with the customer.

Attention! Under no circumstances must the system be operated with a higher rating fuse protection.

4.1.2 SPEED-COOLER

The voltage connection must be 3-pole. Live, neutral and earth must be connected. The connection to earth is compulsory to comply with electrical safety regulations.

Please ensure:
• The power supply must correspond with the data on the specification plate.
• The electrical connection (socket-outlet) with the customer must have a connected earthing contact.
• When using adapterplugs extreme care should be taken to ensure that the earthing contact is continuous to the socket. Often with adapters the earthing is not continuous.
• If the plug is replaced, the earth is connected to the green/yellow wire.
• Customer fuse protection: 10 Ampere
• If connected via a transformer, it must be ensured there is a continuous earth connection from the equipment plug to the voltage connection on-site with the customer.
4.2 Location and assembly

The GISS 2000 system and the SPEED-COOLER must be positioned on sufficiently rigid level ground.

During operation the equipment must not be positioned at an angle, be tilted or exposed to impact and vibration.

4.2.1 GISS 2000

Space required:

Distance to the wall:
GISS 2000 Eco \( L = 0 \)
GISS 2000 Eco Plus \( L = 150 \)
GISS 2000 Comfort \( L = 150 \)

Optimal table height for all versions: \( H \approx 800 \text{ mm} \)

GISS 2000 is to a large extent pre-assembled. It is only necessary to fit and align the linear unit (6) onto the housing with the screws provided.

Important: For safety reasons an electrically conductive contact must exist between the linear unit and the housing. Therefore, the linear unit must be fitted very carefully.

- Unscrew the four screws (22).

GISS 2000 Economic and Economic Plus (without turntable):

The supplied contact springs (24) must be inserted between the base plate and the housing. The springs are situated under the retaining plate (25), that is screwed to the housing. The retaining plate (25) serves only for protection of the contact springs (24) during transportation and can be removed.

GISS 2000 Comfort and Comfort Plus (with turntable):

The four tooth lock washers (23) must be inserted between the screwhead and the base plate.

- Position the linear unit (6) together with the base plate.
- Screw-in the screws (22) and tighten lightly
• Mount the inductor (13) into the holder of the linear guide. Ensure the locking bolt (19) is engaged.

• Position a shrink fit adapter (14) onto the turntable (15).

• Insert a suitable shrink fit chuck (21) into the adapter (14).

• Insert the limit stop washer (20) corresponding with the diameter of the selected shrink fit chuck into the inductor (13).

• Align the linear unit (6) so the inductor (13) is centred over the chuck (21). Tighten the four screws (22).

• Connect the inductor plug (4) to the housing.

Only applies to GISS 2000 Komfort Plus: The two inductors have different plugs, eliminating a mix-up of the plugs. The plug-type connectors on the GISS 2000 Profi Plus are arranged so only one of the connectors can be opened. This prevents both inductors being connected at the same time.
4.2.2 SPEED-COOLER (option)

Space required:

Important!
The SPEED-COOLER uses ambient air to cool the water in the cooling circuit. It must be ensured that there is sufficient free space for the air to circulate (see top view). Otherwise the cooling output will be insufficient.

- Position the SPEED-COOLER on a sufficiently rigid and level substructure alongside or below the GISS 2000 system.
- Fill the SPEED-COOLER with a mixture of tap water and anti-freeze (e.g. commercial automotive anti-freeze).
  Mixture ratio water : anti-freeze = 2 : 1
  Generally, new systems are already filled with anti-freeze. All that is then required is to add tap water to the cooler. The system is filled via the screw-type cap situated on the upper side. The cooling spiral in the water reservoir must be completely covered.
- Bleeding the SPEED-COOLER:
  Connect the nipple with the hose piece (1) (supplied) to the flow pipe (3) of the SPEED-COOLER. Do not turn the SPEED COOLER on. The pump could be damaged if run dry. After a short time water will run out of the pipe. Remove the nipple with the hose.
- Bleeding the cooling circuit:
  Connect one of the GISS 2000 system’s two circulation hoses of to the flow pipe (3) of the SPEED-COOLER. Connection is via quick release couplings. The circulation hoses are interchangeable (the direction of circulation in the cooling bodies (12) is not important).
  Connect the mains cable of the SPEED-COOLER. Ensure the supply voltage corresponds with that on the type plate of the SPEED-COOLER.
  GISS 2000 Comfort Plus only:
  Connect the control line of the SPEED-COOLER to the connector (22) of the GISS 2000 system. Turn-on the GISS 2000 system at the mains switch (5).
  Turn-on the SPEED-COOLER. Water is now pumped into the cooling system forcing the air to vent from the hoses and the cooling bodies.
Wait until water exits the open hose, then connect the hose to the return (2) of the SPEED-COOLER.

Switch-off the SPEED-COOLER.
GISS 2000 Comfort Plus: Turn-off the GISS 2000 system at the mains switch (5). The mains switch of the SPEED-COOLER remains on. The SPEED-COOLER is automatically turned on and off by the GISS 2000 system.

Top up the SPEED-COOLER with tap water (drinking water). The cooling spiral in the water reservoir must be completely covered.

Note: To ensure perfect functioning of the re-cooling plant, the fins of the air-cooled condensator must be kept clean. Particularly if the ambient air is of a high oil and dust content, the fins of the condenser can become excessively soiled. Regular cleaning is necessary, as described in chapter 5. A trolley is available as an option which is optimally suited for positioning and setting-up the two systems (see system summary).

4.2.3 Inserting the adapters

The adapter system consists of shrink fit chuck adapter (14) and the inductor limit stop washer (20). The purpose of the inductor limit stop washer (20) is the correct positioning of the inductor above the shrink fit chuck (21). Furthermore, the limit stop washer controls the magnetic alternating field (20), preventing the tool from heating up and providing an upwards shield for the alternating field.

The correct adapter system must be used for each shrink fit chuck size.

Not observing the above can lead to dangerous situations for the operator and to equipment or tool damage. The application of an incorrect inductor limit stop washer (20) can result in stray fields exiting the spindle area. The shrink fit system must not be operated without an inductor limit stop washer (20).

Sectional limit stop washers (optional) can be applied for tools possessing a larger cutting edge diameter than the shank diameter (i.e. T-slot drills).

Shrink fit chuck adapters (14)

The shrink fit chuck adapters (14) are marked with the holder taper size.

- Insert the correct shrink fit chuck adapter (14) into the turntable (15) from above.
**Inductor limit stop washer (20)**

The inductor limit stop washer (20) is inserted manually (without tool key). The inductor limit stop washer (20) is designed with a bajonet fitting.

- Select the correct inductor limit stop washer (20) for the respective tool.
- Insert the inductor limit stop washer (20) into the inductor from above. The red dot on the inductor limit stop washer (20) must be aligned with the red dot on the inductor housing.
- Insert index finger and middle finger into the recesses of the inductor limit stop washer (20) and rotate clockwise until it engages. A spring element snaps into a notch of the inductor limit stop washer (20).

The shrink fit system is now prepared and ready for the tool change of a specific shrink fit chuck.

**4.2.4 Speed-Cooler Manager**

The cooling manager (Guhring no.: 4759 code 1,000) automatically switches the SPEED-COOLER on and off. This prevents forgetting to switch-on the cooler or the cooler running constantly, protecting the cooler and minimising maintenance costs. See separate assembly instructions.
4.3 Turning-on the equipment

Connect to the mains supply. Ensure that the mains voltage corresponds with that on the specification plate. If yes, plug-in the mains plug.

- Connect the mains cable of the SPEED-COOLER. Mains supply fuse protection: 10 Ampere.
- Connect the mains cable of the GISS 2000 system. Mains supply fuse protection:
  - GISS 2000 Eco, Eco Plus, Comfort: 3 x 16 A
  - GISS 2000 Comfort Plus (special): 3 x 32 A

Attention! Under no circumstances must the systems be operated with a fuse protection of a higher rating.

- Turn-on the SPEED-COOLER at the mains switch (1). The circulation pump will start operating. The SPEED-COOLER does not require a warming-up period. Immediately after switching-on the SPEED-COOLER you can begin with the first tool change.
- Turn-on the GISS 2000 system at the mains switch (5).
- When applying the Speed Cooler Manager, the Speed Cooler is switched-on when the induction spindle is activated.

Attention! The electronics of the GISS 2000 Comfort Plus system must be cooled by the SPEED-COOLER to prevent over-heating. A temperature controller will otherwise turn-off the system after a short time and only release the system again after a cooling down period. Therefore, GISS 2000 Profi Plus must only be operated when the SPEED-COOLER is turned-on.

4.4 Menu guide

After switching-on, you enter the shrink fit menu. Here, you can select the type and the size of the shrink fit chuck and start the shrink fit process. Different setting possibilities are available in sub-menus.

- + - keys - simultaneously - branch into sub-menu
- key to previous menu point
- key to next menu point
- key select menu point
- key return to overriding menu, without saving
- key confirm and save
Overall menu

Shrink Fit Menu
Display
Shrink Fit Cucks

- key
Select previous chuck from list

- key
Select next chuck from list

+ - key simultaneously
Select next group from list

- key
Display shrink fit parameters

- key
Shrink fit process with data display

+ - keys simultaneously
Start key or I key

Heating time

+ / - key
Modify heating time

Language

+ / - key
Select language

System of measurement

+ / - key
Select system of measurement

Operating type

+ / - key
Select operating type

Manufacturer's settings

- key
Return to manufacturer's settings
4.4.1 Shrink fit menu

The display always shows the currently set shrink fit chuck.

- – key to previous chuck
- + key to next chuck
- + – keys to next chuck type simultaneously

- press and hold £ key displays shrink fit parameters

- START key or I starting the shrink fit process

* only for special spindle with adjustment possibility
4.4.2 Setting the heating time

**Display of heating time for set chuck**

- **Set value**
  - `-/+` key to previous / next chuck
  - `+/-` key simultaneously to next chuck type
  - `key` set value is marked by a flashing *. Value may now be changed.

**Standard**

- Ø 10 - 12
- Heating time 0 - 60: 4.5 s

* Marker flashing time can be modified for range specified.

**Displaying max. heating time of current chuck**

- **Type of shrink fit chuck**
  - Standard Ø 10 - 12
  - Heating time 0 - 60: 4.5 s

- **Setting range**
  - `-/+` key to previous / next chuck

- **Size of shrink fit chuck**
  - Standard Ø 10 - 12
  - Heating time 0 - 60: 4.5 s

- **ESC key**
  - Return to shrink fit menu

- **ESC key**
  - Select previous / next chuck from list

- **ESC key**
  - Select next group from list

- **ESC key**
  - Back w/o saving

- **ESC key**
  - Back w/o saving

- **ESC key**
  - Save and back
4.4.3 Setting the language

- or + key  changing the value
- key  save and return
ESC key  return without saving
I key  return to shrink fit menu

Display of set language

- / + key  to next/previous language
- key  saves the language displayed and return
ESC key  return without saving
I key  return to shrink fit menu
### 4.4.4 Setting the system of measurement

**Displaying the set system of measurement**

- **+ / - key** change system of measurement: mm / Inch
- **[ ] key** saving the system of measurement displayed and return
- **ESC key** return without saving
- **I key** return to shrink fit menu

### 4.4.5 Selecting the operating type

**Read-out history via USB interface**

- **+ / - key**

**Load program via USB interface**

- **ESC key**

**Operating type readout history**

- **ESC key**

**Operating type load program**

- **ESC key**

**Operating type**

- **ESC key**

**Return to shrink fit menu**

**Return**
Displaying the set operating type

In the operating type “History read-out” data from previous shrink fit processes can be read on PC via the USB interface. The data can be evaluated by the manufacturer to diagnose malfunctions.

In the operating type “load program” it is possible to load new software via the USB interface.

• – / + key change operating type
• ☐ key execute the displayed operating type
• ESC key return without executing
• I key return to shrink fit menu

4.4.6 Restoring the manufacturer’s settings

This function enables returning the shrink fit parameters to the original manufacturer’s settings. Previously set parameters are lost.
Manufacturer’s settings
yes / no: No

- key  return without restoring parameters
- ESC key  return without restoring parameters
- I key  return to shrink fit menu
- – / + key  change between yes / no

Manufacturer’s settings
yes / no: No

- key  restoring parameters and return
4.5 Operating sequence

Always wear gloves when handling shrink fit chucks and tools. The cutting edges of the tools are very sharp and can cause cuts to the skin. Furthermore, gloves also protect against burning should you accidentally make contact with a hot shrink fit chuck.

We recommend gloves made of Kevlar, Guhring no. 4750 1,000. They are breathable and wear-resistant against the sharp tools. Kevlar does not melt and offers a good protection against burning.

4.5.1 Suitable shrink fit chucks

The GISS 2000 system is primarily designed for shrink fit chucks with an outer contour to DIN 69882 – 8. In addition, there is a large selection of shrink fit chucks and extensions that can also be applied with the GISS 2000 system.

For chucks with different dimensions please contact Guhring.

Under no circumstances must the chuck (21) make contact with the internal wall of the inductor (13). Subsequently, there is a maximum permissible chuck size (see fig.).

Inductor for Ø 3-32: max. Ø 44

\[ S_{\text{min}} = 3 \text{ mm} \]

Inductor for Ø 40-50 (only Comfort Plus): max. Ø 80

\[ S_{\text{min}} = 7 \text{ mm} \]

4.5.2 Preparing shrink fit chuck and tool

Please ensure that

- the shrink fit chucks and tools are dry, free of grease and dry. Special brass brushes and cleaning mandrels (Guhring no. 4918 for Ø 6 to 40) are available for cleaning the shrink fit chucks.
- the milling cutter possesses a shank tolerance h6 or closer.
- the shank is not rough and uneven. Scratches, burrs or even improper laser markings can make the shrink fitting for withdrawal process more difficult.

Do not use easily flammable cleaning agents, there is a fire risk during the shrink fitting process.

- Remove any residual swarf and soluble oil if necessary and dry the shrink fit chuck. Any coolant residue could burn into the holder during the shrink fitting process!

Note: In order to prevent corrosion, shrink fit chucks should be lightly oiled when stored.
4.5.3 Heating up the shrink fit chuck

- Only GISS 2000 Comfort Plus:
  Select and fit the inductor
  For shrink fit chucks from Ø 32 S (re-inforced) to Ø 50 S the large inductor is required. The inductor (13) is inserted in the holder of the linear guide (see also chapter “Location and assembly”) and connected to the housing using the plug-in connector (20). The large inductor is operated at higher output figures than the smaller inductor. Therefore, there are two different plug-in type connectors (4, 20) located in the housing of the GISS 2000 Profi Plus system. They are arranged so one inductor only can be connected at any one time in order to prevent a mix-up or the application of two inductors.

- Select the size of the shrink fit chuck.
  Different shrink fit chucks possess different internal and external diameters. According to the size of the chuck, the GISS 2000 system operates with adapted performance values. In order to simplify finding the most suitable setting, the different types of shrink fit chuck are subdivided into groups.

  Press the + and – keys simultaneously to move from one group to the next.

Example 1:
Shrink fitting a shrink fit extension for insertion (external-Ø 25, internal-Ø 10) in a standard shrink fit chuck
Group: Standard
Size: Ø 25 - 32
Spindle position*: #8
Example 2:
Shrink fitting a milling cutter with shank-Ø 10 for
insertion in a shrink fit extension with external-Ø
25, internal-Ø 10):
Group: Extension
Size: ØA 25, ØI 8-12
Spindle position*: #3
*Only for special spindle with adjustment possibility

**Important:** S-chucks with an increased external diameter for heavy machining operations in combination with HSS milling cutters can only be shrink fitted with type “2002” spindles. The spindles are marked accordingly on the top surface.

Ensure that the turntable (15) is engaged. The inductor (13) must be in raised position.

- Insert the shrink fit chuck (21) into the shrink fit chuck adapter (14) below the inductor (13).

- Release the brake of the inductor slide by pulling the handle (7) and pull the inductor (13) over the shrink fit chuck.

The inductor limit stop washer (20) makes contact with the top surface of the shrink fit chuck (21).

The chuck (21) length must be sufficient for the limit stop washer (20) with the correct diameter to rest on the chuck. The inductor (13) must not touch the chuck.

Clamping the tool:

- Hold the tool (22) in the right hand up to the bore of the chuck.

- Press the start key (8) or key (d) respectively until the tool can be inserted. The process takes approximately 5 seconds.

Unclamping the tool:

- Hold the tool (22) firmly in the right hand and pull lightly upwards.

- Press the start key (8) or key (d) respectively until the tool can be withdrawn. The process takes approximately 5 seconds.

For as long as the the start key (8) or (d) respectively are pressed, the equipment-on indicator lamp (11) remains on. However, the maximum period of inductor activity is limited due to safety reasons. The following is displayed during the shrink fit process:
In the event of a malfunction, an error message is displayed.

- Release the brake of the inductor slide by pulling the handle (7) and immediately lift the inductor (13) off the shrink fit chuck.

**Important: Do not press the start key (8) or (d) respectively for longer than necessary. The system allows the running of only one maximum shrink fitting cycle. A further shrink fitting process is then possible after approximately 5 seconds.**

The process is simple and quick. If it is not possible to clamp or unclamp the tool there is a malfunction.

Immediately after the shrink fit process is finished, the inductor must be lifted off the hot shrink fit chuck. Otherwise the inductor can overheat inside and sustain damage.

Please check the following:
- Is the diameter setting correct?
- Is the correct limit stop washer inserted?
- Is the bore of the holder contaminated?
- Is the shank-Ø of the tool to tolerance h6?
- Is the shank of the tool undamaged?
- Is the output of the power supply sufficient?
Small cable cross-sections or the use of extension leads can lead to a drop in voltage during the heating-up process. This can be checked the following way:

Press the key

The following is displayed:

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Parameters</th>
<th>Max. heating time</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.0 kHz</td>
<td>4.5 s</td>
<td></td>
</tr>
<tr>
<td>545 E</td>
<td>450 r</td>
<td></td>
</tr>
<tr>
<td>525 V</td>
<td>23 °C</td>
<td></td>
</tr>
</tbody>
</table>

Vergleichen Sie die Spannung im Leerlauf mit der Spannung, die während des Heizens angezeigt wird. Compare the voltage under no-load operation with the voltage displayed during the heating process. If the voltage should drop by more than 35 V, the power supply must be improved.

Before a new attempt, the chuck must have cooled down completely.

If an operator error is not evident, have the system checked.

The shrink fit chuck becomes very hot in localised areas. There is a danger of burning if these areas are touched. The hot shrink fit chuck does not need to be removed. Always leave it in the holder until it has cooled down.

- Rotate the turntable (15) clockwise by one notch.

4.5.4 Cooling the shrink fit chuck

With the aid of the cooling bodies the hot shrink fit chucks are cooled down very quickly. Pre-requisite is a good contact between the cooling body and the chuck (surface contact). Modern shrink fit chucks have a standardised external contour, subsequently all current shrink fit chucks can be cooled with the 5 different cooling bodies available. The cooling bodies are marked with the bore diameters of the standard shrink fit chucks.

However, there are shrink fit chucks that are not manufactured in accordance with the standard. This applies to, for example, older production chucks and also shrink fit extensions. In order to be able to also cool these chucks quickly and economically, there is an adapter system available. The cooling bodies in the sizes 14–16 and 25–32 are equipped with an interlocking system. Adapters with any internal contour can be inserted into these cooling bodies.

Adapter blanks are available from your supplier.
The blanks are finished externally and only require adapting to the internal form of the respective shrink fit chuck.

**Note:** During the cooling period the adapters can become jammed in the shrink fit chuck. Therefore, the adapters must have a complete slit on at least one side

- Position the correct cooling body (12) on the just applied shrink fit chuck (if necessary, first insert the adapter into the cooling body). The diameter of the bore of the holder is marked on the cooling body.

  When applying chucks for heavy machining operations, always use a cooling body the next size up.

  An adapter (23) is required for shrink fit extensions

**Attention!** The cooling body (12) must only be inserted when the SPEED-COOLER is switched-on. Otherwise the cooling body (12) can overheat and leak.

The cooling process requires between 20 to 150 seconds. During this time the next clamping procedure can be carried out. This enables a continuous operation.

- Withdraw the cooling body (12).
- Remove the cool shrink fit chuck

### 4.6 Switching off the equipment

If the equipment is used on a daily basis:

- Turn off both systems at the mains switch after finishing work.
- If required, clean the shrink fit chuck (see chapter 5).

If the equipment is to be shut down for a prolonged period:

- Turn off both systems at the mains switch.
- Pull out both mains plugs.
- Clean the shrink fit system (see chapter 5).
- Top up the water reservoir of the SPEED-COOLER. The cooling spiral in the reservoir must be covered completely.
4.7 GISS 2000 Troubleshooting

4.7.1 Error messages

<table>
<thead>
<tr>
<th>Error messages</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorrect diameter</td>
<td>Incorrect selection of shrink fit chuck on display panel</td>
<td>• Select correct setting</td>
</tr>
<tr>
<td>Spindle too hot</td>
<td>Temperature in spindle too hot</td>
<td>• Allow spindle to cool down for approx. 10 minutes</td>
</tr>
<tr>
<td>Spindle missing</td>
<td>No spindle connected</td>
<td>• Connect spindle</td>
</tr>
<tr>
<td></td>
<td>Plug of spindle defect</td>
<td>• Return spindle and base unit to manufacturer for repair</td>
</tr>
<tr>
<td></td>
<td>Spindle defective</td>
<td>• Replace spindle</td>
</tr>
<tr>
<td>Temperature inside housing too high</td>
<td>Temperature inside housing too high</td>
<td>• Allow equipment to cool down</td>
</tr>
<tr>
<td></td>
<td>Equipment defective</td>
<td>• Return base unit to manufacturer for repair</td>
</tr>
<tr>
<td>Mains voltage too low</td>
<td>Mains voltage too low</td>
<td>• Mains voltage must be between 380 V and 500 V</td>
</tr>
<tr>
<td>Mains voltage too high</td>
<td>Mains voltage too high</td>
<td>• Mains voltage must be between 380 V and 500 V</td>
</tr>
<tr>
<td>Mains problem</td>
<td>Mains voltage drops too much during the shrink fit process</td>
<td>• If extension lead is used, connect equipment directly to socket or use cable with larger cross-section</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Connect equipment to socket with higher voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lay cable from the main distribution directly to the shrink fit system</td>
</tr>
<tr>
<td></td>
<td>1 phase missing in mains supply</td>
<td>• Check system fuses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Electrician to check if all 3 phases are there and are connected correctly (socket and plug of machine)</td>
</tr>
<tr>
<td></td>
<td>Equipment defective</td>
<td>• Return base unit to manufacturer for repair</td>
</tr>
<tr>
<td>Power element defect</td>
<td>Equipment defective</td>
<td>• Return base unit to manufacturer for repair</td>
</tr>
</tbody>
</table>

4.7.2 Other malfunctions

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No display or only black bars after turning-on the equipment</td>
<td>Mains voltage below 350 V</td>
<td>• Connect equipment to a socket with a higher voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Use a voltage transformer</td>
</tr>
<tr>
<td>1 phase missing in mains supply</td>
<td></td>
<td>• Check system fuses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Electrician to check if all 3 phases are there and are connected correctly (socket and plug of machine)</td>
</tr>
<tr>
<td>Display defective</td>
<td></td>
<td>• Return base unit to manufacturer for repair</td>
</tr>
<tr>
<td>Problem</td>
<td>Cause</td>
<td>Remedy</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Shrink fitting process stops after a short time (approx. 0.5 seconds)</td>
<td>Very big voltage drop in the current supply</td>
<td>• If using an extension cable: Connect the system directly to socket or use cable with a larger cross section.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Connect system to a socket with higher voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lay cable from the main distribution directly to the shrink fit system</td>
</tr>
<tr>
<td>It is not possible to shrink fit the tool or extension for withdrawal</td>
<td>1 phase missing in mains supply</td>
<td>• Check system fuses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Electrician to check if all 3 phases are there and are connected correctly (socket and plug of machine)</td>
</tr>
<tr>
<td></td>
<td>Equipment defective</td>
<td>• Return base unit to manufacturer for repair</td>
</tr>
<tr>
<td>General notes</td>
<td></td>
<td>• Do not attempt to drive the tool from the chuck by force. This can cause damage to the bore and the shank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Do not anneal the holders</td>
</tr>
<tr>
<td>Shank-Ø is too large</td>
<td></td>
<td>• Only apply tools with shank tolerance h6</td>
</tr>
<tr>
<td>Tool shank is contaminated or damaged (burr, scratches, indentations)</td>
<td></td>
<td>• Clean tool shank prior to shrink fitting for insertion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Only use undamaged tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Remove any rough areas (hone)</td>
</tr>
<tr>
<td>Incorrect system parameter settings</td>
<td></td>
<td>• Select correct setting in display</td>
</tr>
<tr>
<td>Holder not cooled down completely</td>
<td></td>
<td>• Always allow the holder to cool down completely prior to re-heating</td>
</tr>
<tr>
<td>Holder overheated (annealed)</td>
<td></td>
<td>• Shrink fitting for withdrawal not possible. Return chuck with tool to the manufacturer for repair if possible</td>
</tr>
<tr>
<td>Mains voltage too low</td>
<td></td>
<td>• Connect system to a socket with higher voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Use a voltage transformer</td>
</tr>
<tr>
<td>Current supply unstable. Displayed voltage drops below 495 V during</td>
<td></td>
<td>• If using an extension lead:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Connect the system directly to socket or use cable with a larger cross section.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Connect equipment to a socket with a higher voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lay cable from the main distribution directly to the shrink fit system</td>
</tr>
<tr>
<td>1 phase missing in mains supply</td>
<td></td>
<td>• Check system fuses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Electrician to check if all 3 phases are there and are connected correctly (socket and plug of machine)</td>
</tr>
<tr>
<td>Bore of shrink fit chuck is contaminated</td>
<td></td>
<td>• Clean bore with brush</td>
</tr>
<tr>
<td>Clamping force of chuckk is insufficient</td>
<td>Shank-Ø is too small</td>
<td>• Only apply tools with shank tolerance h6</td>
</tr>
<tr>
<td></td>
<td>Bore of chuck too large</td>
<td>• Apply other shrink fit chuck</td>
</tr>
<tr>
<td></td>
<td>Wall of the chuck too thin</td>
<td>• Use re-inforced version (S-chuck)</td>
</tr>
</tbody>
</table>
## 4.8 SPEED-COOLER Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>No cooling or cooling performance insufficient</td>
<td>System and cooler not bled</td>
<td>• Bleed (see below)</td>
</tr>
<tr>
<td></td>
<td>No or insufficient water in the reservoir</td>
<td>• Top-up water and anti-freeze mixture, until cooling spirals are well covered</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixture ratio: water : anti-freeze = 2 : 1</td>
</tr>
<tr>
<td></td>
<td>Water pump and driving motor stuck</td>
<td>• Turn the impeller with a screwdriver to release the motor (see below)</td>
</tr>
<tr>
<td></td>
<td>Water pump defective (e.g. run dry for too long)</td>
<td>• Return equipment to the manufacturer for repair</td>
</tr>
<tr>
<td></td>
<td>Water reservoir or cooling spirals frozen</td>
<td>• De-frost and top-up with water and anti-freeze mixture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixture ratio: water : anti-freeze = 2 : 1</td>
</tr>
<tr>
<td>Insufficient rate of flow in the water circuit</td>
<td></td>
<td>• Check rate of flow:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disconnect the water return line</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Switch-on cooler</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Min. rate of flow 2 l/min</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If necessary, remove any kinks in hoses.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If no improvement:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Return cooling system to the manufacturer for inspection</td>
</tr>
<tr>
<td>Incorrect mains supply</td>
<td></td>
<td>• Check voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>see specification plate</td>
</tr>
<tr>
<td>Heat exchanger contaminated</td>
<td></td>
<td>• Clean the cooling fins with compressed air</td>
</tr>
<tr>
<td>Air circulation of the SPEED-COOLER restricted</td>
<td></td>
<td>• Observe unrestricted (see notes regarding location)</td>
</tr>
<tr>
<td>Compressor has become too hot, triggered temperature protection</td>
<td></td>
<td>• Switch-off cooler, wait 15 minutes and then reactivate temperature protection switch. If the temperature protection switch is triggered again, the compressor is defective. Return cooler for repair.</td>
</tr>
<tr>
<td>Ambient temperature too high, compressor defective</td>
<td></td>
<td>• Replace coolant body (exchange)</td>
</tr>
<tr>
<td>Leaking cooling body</td>
<td>Coolant body placed on hot chuck with cooling system turned off → melting seal</td>
<td>• Replace coolant body (exchange)</td>
</tr>
<tr>
<td>Water reservoir leaking</td>
<td>Compression connection has become loose</td>
<td>• Tighten</td>
</tr>
<tr>
<td></td>
<td>Soldering joint broken</td>
<td>• Return equipment to the manufacturer for repair</td>
</tr>
<tr>
<td>Condensation on coolant bodies</td>
<td>Water temperature set too low</td>
<td>• Adjust cooling performance (see below)</td>
</tr>
<tr>
<td></td>
<td>Thermostat defective (does not switch off)</td>
<td>• Return equipment to the manufacturer for repair</td>
</tr>
<tr>
<td></td>
<td>No or insufficient water in reservoir</td>
<td>• Top-up water and anti-freeze mixture, until cooling spirals are well covered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mixture ratio: water: anti-freeze = 2 : 1</td>
</tr>
</tbody>
</table>
4.8.1 Bleeding the cooling system

- Bleeding the SPEED-COOLER:
  Connect the bleed nipple with the length of hose (1) (supplied) to the flow connection (3) of the SPEED-COOLER. Do not turn the SPEED-COOLER on. The pump could be damaged if run dry. After a short time water will run from the hose. Remove the nipple with the length of hose.

- Bleeding the cooling circuit:
  Connect one of the two circulation hoses of the GISS 2000 system to the flow connection (3) of the SPEED-COOLER. Connection is via quick release couplings. The circulation hoses are interchangeable (the direction of circulation in the cooling bodies is not important).

  Turn on the SPEED-COOLER. Water is now pumped into the cooling system, bleeding the hoses and the cooling bodies.

  Wait until water exits the open hose.

  Connect the hose to the return (2) of the SPEED-COOLER.

  Turn off the SPEED-COOLER.

  Top-up the SPEED-COOLER with tap water. The cooling spiral must be completely covered.

4.8.2 Water pump doesn’t start

- Turn off the SPEED-COOLER

- Move (turn) the ventilation wheel (3) with a screwdriver through the housing (1) and the protective cover of the motor (2).

- Remove the screw driver

- Start the cooling system

- Check if the pump is running

  If the pump is not running: Electrical defect
4.8.3 Condensation on cooling bodies

The cooling output is set too high.

- Unplug the mains plug
- Remove the cover (1)
- Take the cover off the switch box (2)
- Turn the temperature control anticlockwise in 15° increments until there is no more condensation on the cooling bodies.
- Close the switch box (2)
- Refit the cover (1)

4.9 Important notes regarding the shrink fit process

1. It must be ensured the shrink fit chuck is correctly centered in relation to the spindle and does not make contact with the spindle housing following the heating process. If it comes into contact it will damage the plastic spindle housing. Therefore, it is also important the holder carrier (spider) corresponds with the tool holder interface and the turntable is engaged.

2. Following the shrink fitting process for insertion/withdrawal the spindle must be removed immediately from the shrink fit chuck to prevent the radiant heat from heating up the spindle.

3. If a tool cannot be shrink fitted for withdrawal within the set time, under no circumstances should it be attempted to heat it up for a second time immediately afterwards. This would allow the shrink fit chuck to heat up to an unacceptable 500° or more and lead to permanent damage. In this case, the shrink fit chuck must be allowed to cool down completely before retrying the shrink fit process for withdrawal again.

4. If it is not possible to shrink fit a tool for withdrawal, the following may be the cause:

- Shrink fit system parameter settings not optimal
- Tool shank is too large (not h6 tolerance)
- Tool shank is damaged (burr, pressure marks on the Weldon flat)
- Shrink fit chuck form not suitable (wall thickness too large)
- Shrink fit chuck is heavily contaminated (oil)
- Incorrect selection of limit stop washer
- Incorrect fit of the limit stop washer face

5. Any residual coolant (especially inside) should be removed prior to shrink fitting for withdrawal. Otherwise the coolant vaporizes and can cause an explosive ejection of the tool.

6. The system operates with a high electric voltage. Therefore, for reasons of safety, the system should be kept clean at all times. Regularly remove any coolant, swarf and tools shrink fitted for removal.
5.) Cleaning

5.1 Speed Cooler

To ensure the perfect functioning of the recooling plant it is paramount to keep the fins of the aircooled condenser clean.

If the ambient air is of a high oil content:

Ambient air of a high oil content combined with dust will result in an increased contamination of the condensor fins.

The following should be observed:

A thorough cleaning can not be achieved by simply brushing the outside whilst the fan is running. It is paramount to apply an oil-soluble agent such as petroleum ether or similar for a thorough cleaning. For this purpose we recommend the use of a spray gun to penetrate deep inside the condensor. The functional items installed in the lower part must be well covered for the cleaning agent with the impurities to be able to drain off or be removed respectively without damaging the surrounding components. Cleaning should be carried out at regular intervals, depending on the degree of contamination due to the location of the Speed Cooler.

5.2 GISS 2000 shrink fit system

The GISS 2000 shrink fit system should be cleaned on a regular basis.

- Turn-off the system at the mains switch.
- Unplug the mains plug.
- Clean the surface of the equipment with a damp, fluffless cloth.

During cleaning, liquid must not be allowed to enter inside the housing. Protect the equipment against moisture, risk of electric shock.

Do not use strong cleaning agents.

Inductor

The inside of the inductor should be cleaned as required. Evaporating soluble oil or similar can lead to contamination.

To a large extent this type of contamination can be prevented. As specified, only insert clean and dry shrink fit chucks in the GISS 2000 system.

Linear unit

If contaminated, the linear unit must be cleaned to maintain its functionality and smooth running. The guide rods should be lubricated with a drop of resin-free oil and the felt on the sledge should be impregnated respectively.
6.) Maintenance and repairs

Repairs to the GISS 2000 shrink fit system and the SPEED-COOLER must only be carried out by qualified personnel. Electrical repairs to the system must only be carried out by a qualified electrician. The opening of the housing by unauthorised personnel is prohibited.

⚠️ Attention! Dangerous residual voltage may be present in the housing up to 5 minutes after turning off the equipment.

We recommend the equipment be returned to the manufacturer in the event of repairs becoming necessary. This ensures the repair work is carried out professionally, of benefit for a safe operation and longevity of the systems.

6.1 Maintenance

The GISS 2000 shrink fit system and the SPEED-COOLER are to a large extent maintenance-free.

SPEED-COOLER water level

Check the water level of the SPEED-COOLER at regular intervals. If necessary, top-up with clean tap water. The cooling spiral in the reservoir must be completely covered.

6.2 Replacing the fine-wire fuse of the GISS 2000 system

The fine-wire fuse of the electronic control is situated next to the mains connection on the left side.

- Switch-off the system at the mains switch and pull out the mains plug.
- Unscrew and remove the fuse.
- Replace with a new fuse with the description T50 mA — 500 V 6.3 x 32.

⚠️ Attention! Only use a fuse suitable for 500 Volt.

- Screw in the fuse and reconnect the mains supply.

Should the fuse fail again it indicates a system defect. The equipment should then be checked by a qualified electrician.

⚠️ Important! The fuse is a safety device for the equipment and the operator and under no circumstances must be by-passed.
7.) Technical data

GISS 2000 shrink fit system:
Mains supply (in accordance with the data on the type plate):
Nominal voltage...........................................................3 x 400 - 480 V ~
min. actual operating voltage.............................................3 x 360 V ~
max. actual operating voltage.............................................3 x 500 V ~
Frequency .................................................................50 - 60 Hz
Power consumption Standard .......................................11 kVA
    Comfort Plus (special) ............................................20 kVA
Mains supply fuse protection Standard .....................3 x 16 A
    Comfort Plus (special) ............................................3 x 32 A
Fine-wire fuse for control electronics.............................T50 mA — 500 V 6,3 x 32 slo-blo
Clamping, un-clamping time ........................................approx. 5 seconds
Dimensions...............................................................approx. 500 x 670 x 700 mm
Weight.................................................................approx. 45 kg
Alternating magnetic fields in the working area............< 100 µT

High performance SPEED-COOLER:
Mains supply (in accordance with the data on the type plate):
Nominal voltage...........................................................230 V ~
Frequency .................................................................50 - 60 Hz
Power consumption.....................................................1 kVA
Mains supply fuse protection .....................................10 A
Water circulation:
Tap water/anti-freeze mixture
Mixture ratio...............................................................2 : 1
Quantity .................................................................approx. 5 l
Cooling down time .....................................................20 to 150 seconds
Dimensions...............................................................approx. 565 x 440 x 335 mm
Weight.................................................................ca. 45 kg

Overall dimensions incl. trolley.................................600 x 1000 x 1530 mm
Overall weight incl. trolley ..........................................ca. 100 kg

Permitted ambient temperature:
Storage and shipping .................................................+5° to +70° C
Operating .................................................................+10° to +40° C
8.) Replacement parts
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Guhring no. + code no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Induction spindle from Ø 3-32</td>
<td>4743 32,000</td>
</tr>
<tr>
<td>2</td>
<td>Induction spindle from Ø 40-50 (only Comfort Plus)</td>
<td>on request</td>
</tr>
<tr>
<td>3</td>
<td>Scale lamp E10</td>
<td>on request</td>
</tr>
<tr>
<td>5</td>
<td>Limit stop washer Ø 3-5</td>
<td>4769 5,000</td>
</tr>
<tr>
<td>6</td>
<td>Limit stop washer Ø 6-12</td>
<td>4769 12,000</td>
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<td>7</td>
<td>Limit stop washer Ø 14-16</td>
<td>4769 16,000</td>
</tr>
<tr>
<td>8</td>
<td>Limit stop washer Ø 18-20</td>
<td>4769 20,000</td>
</tr>
<tr>
<td>9</td>
<td>Limit stop washer Ø 25-32</td>
<td>4769 32,000</td>
</tr>
<tr>
<td>10</td>
<td>Guide unit</td>
<td>on request</td>
</tr>
<tr>
<td>11</td>
<td>Cheese head screw</td>
<td>DIN 912 M 6x14</td>
</tr>
<tr>
<td>13</td>
<td>Handle</td>
<td>on request</td>
</tr>
<tr>
<td>15</td>
<td>Pressure spring</td>
<td>on request</td>
</tr>
<tr>
<td>17</td>
<td>Straight pin</td>
<td>DIN 7979 D D6x26</td>
</tr>
<tr>
<td>18</td>
<td>Straight pin</td>
<td>DIN 6325 3m6x24</td>
</tr>
<tr>
<td>19</td>
<td>Set screw</td>
<td>DIN 913 M6x10</td>
</tr>
<tr>
<td>20</td>
<td>Cap screw</td>
<td>Guhring std. 7380 M5x8</td>
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<tr>
<td>22</td>
<td>Base plate for turn table version</td>
<td>on request</td>
</tr>
<tr>
<td>23</td>
<td>Base plate for single holder</td>
<td>on request</td>
</tr>
<tr>
<td>24</td>
<td>Turn table</td>
<td>on request</td>
</tr>
<tr>
<td>25</td>
<td>Holder</td>
<td>on request</td>
</tr>
<tr>
<td>26</td>
<td>Fastening set for turn table</td>
<td>on request</td>
</tr>
<tr>
<td>27</td>
<td>Milling cutter rest</td>
<td>4746 1,000</td>
</tr>
<tr>
<td>28</td>
<td>Back panel with cover</td>
<td>on request</td>
</tr>
<tr>
<td>29</td>
<td>Back panel without cooling</td>
<td>on request</td>
</tr>
<tr>
<td>30</td>
<td>Roller set short (complete)</td>
<td>on request</td>
</tr>
<tr>
<td>31</td>
<td>Roller set long (complete)</td>
<td>on request</td>
</tr>
<tr>
<td>32</td>
<td>Hook</td>
<td>on request</td>
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<tr>
<td>33</td>
<td>Wall mounting for water distributor (standard)</td>
<td>on request</td>
</tr>
<tr>
<td>34</td>
<td>Strip terminal for water distributor (standard)</td>
<td>on request</td>
</tr>
<tr>
<td>35</td>
<td>Elbow joint</td>
<td>GCK-1/4-PK6-KU no. 6270</td>
</tr>
<tr>
<td>36</td>
<td>Sleeve</td>
<td>QM-1/4-1/4 no. 2255</td>
</tr>
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<td>37</td>
<td>1 holder carrier SK 30</td>
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<td>38</td>
<td>1 holder carrier SK 40</td>
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<td>1 holder carrier SK 45</td>
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<td>1 holder carrier SK 50</td>
<td>4744 50,000</td>
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<td>4745 32,000</td>
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</tr>
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<td>46</td>
<td>1 holder carrier HSK 80</td>
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</tr>
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<td>47</td>
<td>1 holder carrier HSK 100</td>
<td>4745 100,000</td>
</tr>
<tr>
<td>48</td>
<td>Plate for SK + HSK (25-80)</td>
<td>on request</td>
</tr>
<tr>
<td>49</td>
<td>Plate for 1xHSK 100 2xSK</td>
<td>on request</td>
</tr>
<tr>
<td>50</td>
<td>Plate for 2xHSK 100 1xSK</td>
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</tr>
<tr>
<td>51</td>
<td>Plate for 3. HSK 100</td>
<td>on request</td>
</tr>
<tr>
<td>52</td>
<td>2 fine-wire fuses</td>
<td>T 50mA 500 V 6.3 x 32</td>
</tr>
<tr>
<td>53</td>
<td>Eye</td>
<td>on request</td>
</tr>
<tr>
<td>54</td>
<td>Screw connection</td>
<td>11.0414 / 1 / 1/8”</td>
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<tr>
<td>55</td>
<td>Holder for cooling body Ø 40-50 (only Comfort Plus)</td>
<td>on request</td>
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<td>No.</td>
<td>Description</td>
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<tr>
<td>56</td>
<td>Wall mounting for water distributor (only Comfort Plus)</td>
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<tr>
<td>57</td>
<td>Strip terminal for water distributor (only Comfort Plus)</td>
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</tr>
<tr>
<td>58</td>
<td>Set of water hoses, 2 x 2.45 m, spiral bound</td>
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<tr>
<td>59</td>
<td>Limit stop washer Ø 40 - 50 (only Comfort Plus)</td>
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</tr>
<tr>
<td>70</td>
<td>Locking set</td>
<td>on request</td>
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<tr>
<td>71</td>
<td>Cooling body complete Ø 6–8</td>
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</tr>
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<td>72</td>
<td>Cooling body complete Ø 10–12</td>
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</tr>
<tr>
<td>73</td>
<td>Cooling body complete Ø 14–16 interlocking</td>
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<td>74</td>
<td>Cooling body complete Ø 18–20</td>
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<td>75</td>
<td>Cooling body complete Ø 25–32 interlocking</td>
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</tr>
<tr>
<td>76</td>
<td>Cooling adapter for extension no. 1</td>
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<td>77</td>
<td>Cooling adapter for extension no. 2</td>
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<td>78</td>
<td>Cooling adapter blank for cooling body Ø14–16</td>
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<td>Cooling adapter blank for cooling body Ø25–32</td>
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<td>80</td>
<td>Cooling body complete Ø 40 - 50</td>
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<td>Limit stop washer Ø 3 - 5, geteilt</td>
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<tr>
<td>82</td>
<td>Limit stop washer Ø 6 - 12, split</td>
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<td>Limit stop washer Ø 18 - 20, split</td>
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<td>85</td>
<td>Limit stop washer Ø 25 - 32, split</td>
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<td>86</td>
<td>Cooling adapter for extension no. 0</td>
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Konformitätserklärung / Declaration of conformity / Déclaration de conformité / Dichiarazione di conformità / Declaración de conformidad

Wir erklären hiermit, daß unsere Produkte

Schrumpfgerät GISS 2000 und Kühlheit Speed Cooler
den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen nach den
Maschinenrichtlinie 98/37/EG
Niederspannungsrichtlinie 73/23/EG
EMV-Richtlinie 89/336/EWG

sowie u.a. DIN EN 292-1, DIN EN 292-2, DIN EN 418, DIN EN 1050, DIN EN 60204 entsprechen.
Diese Erklärung gilt nur für die von uns in Verkehr gebrachte Ausführung und nur bei bestimmungsgemäßer Benutzung.

We herewith declare that our products

Shrink fit equipment GISS 2000 and cooling unit Speed Cooler

conform to applicable basic safety and health requirements as specified in

Machine regulation 98/37/EG
Low voltage regulation 73/23/EG
EMC Regulation 89/336/EWG

and furthermore they are in conformance with DIN EN 292-1, DIN EN 292-2, DIN EN 418, DIN EN 1050, DIN EN 60204.
This declaration is only applicable to the version put into circulation and if used in line with the intended purpose.

Nous confirmons que nos produits

Equipement de frettage GISS 2000 et unité de refroidissement Speed Cooler

sont conformes aux exigences de sécurité et santé selon

Régularisation des machines 98/37/EG
Régularisation basse tension 73/23/EG

Régularisation pour la compatibilité électromotrice 89/336/EWG
et de plus qu’ils sont conformes aux DIN EN 292-1, DIN EN 292-2, DIN EN 418, DIN EN 1050, DIN EN 60204.
Cette déclaration est seulement applicable à la version mise en circulation et s’il équipement est utilisé comme prévu.

Con la presente si dichiara che i nostri prodotti

calettatrice GISS 2000 ed unità di raffreddamento Speed Cooler

sono conformi ai requisiti generali di sicurezza e di tutela della salute,
secondo la direttiva sulle macchine 98/37/CE
a direttiva sulla bassa tensione 73/23/CE,
la direttiva sulla compatibilità elettromagnetica 89/336/CEE,
nonché secondo la norma DIN EN 292-1, DIN EN 292-2, DIN EN 418, DIN EN 1050, DIN EN 60204.
Questa dichiarazione è valida solo per la versione da noi commercializzata e solo in caso di uso appropriato.

Por medio de la presente, declaramos que nuestros productos:

aparato contractor GISS 2000 y unidad refrigeradora Speed Cooler

cumplen las exigencias básicas pertinentes de seguridad y de salud según la
directriz sobre maquinaria 98/37/CEE,
directriz de baja tensión 73/23/CEE
directriz de compatibilidad electromagnética 89/336/CEE

así como entre otras la DIN EN 292-1, DIN EN 292-2, DIN EN 418, DIN EN 1050, DIN EN 60204.
Esta declaración sólo es válida para el modelo puesto en circulación por nosotros y sólo con un uso adecuado.
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