






Oil Grazer M3

USER MANUAL
INCLUDING SPARE PARTS LISTS



READ THIS MANUAL BEFORE USING THE MACHINE

Hebemann
Handelsstraat 36 b
7482GW Haaksbergen
The Netherlands

 +31 (0)53 – 303 12 70
 info@hebemann.com
 www.hebemann.com

Copyright ©:

All rights reserved. No part of this publication may be duplicated, stored in an automated retrieval system, or published in any form or by any means, be it electronic, mechanical, photocopying, photography, recording or otherwise, without the prior written permission of Hebemann.

Changes:

This publication is based on the most recent information available at the time of publication. Because Hebemann pursues a policy of continuous product improvement, this publication may be changed without prior notice.

Liability:

This publication has been prepared with the greatest possible care. Nevertheless, it may not be entirely accurate. Hebemann accepts no liability for any errors in this publication or the possible consequences thereof.

Hebemann is a registered trademark of Modulen & Engineering Menzing B.V. based in Haaksbergen

Introduction

Dear customer, Congratulations on choosing a Hebemann Oil Grazer M3. Thanks to this quality machine from Hebemann, you can look forward to years of low maintenance skimming.

The ergonomic design and simple operation ensure that you can work safely and efficiently.

For your safety it is important that the machine is operated and maintained correctly. Read this manual before using the machine. Follow the instructions to avoid injury and property damage. Do not hesitate to contact Hebemann if you have questions.

EC declaration of conformity (only valid for Europe)

Manufacturer: Hebemann
Address: Handelsstraat 36b
Postal code: 7482 GW

We hereby declare that the machine indicated below, in its design and construction and in the version that we market, conforms to the fundamental safety and health requirements of the relevant EU directives. Any modification to the machine made without consulting us voids this declaration.

Product identification:

Description of the product: Skimmer
Type or model: Oil Grazer M3
Serial number: Pxxxxxx - xxx

Applicable EU directives

2006/42/EC, concerning the safety of machinery
2014/35/EU, concerning low-voltage electrical safety
2014/30/EU, concerning electromagnetic compatibility

Applied harmonized standards

EN 60204-1, concerning the safety of machinery – electrical equipment of machines

EN-ISO 12100:2010, concerning the safety of machinery – general principles for design – risk assessment and risk reduction

Haaksbergen, November 2017



E. Jansen
Director
Hebemann

TABLE OF CONTENTS

| | | |
|----|-------------------------------|----|
| 1 | INTRODUCTION | 6 |
| 2 | SAFETY | 8 |
| 3 | GENERAL DESCRIPTION | 10 |
| 4 | COMMISSIONING | 11 |
| 5 | OPERATION | 12 |
| 6 | MAINTENANCE | 17 |
| 7 | TROUBLESHOOTING | 21 |
| 8 | ENVIRONMENT | 22 |
| 9 | TECHNICAL SPECIFICATIONS..... | 23 |
| 10 | SPARE PARTS | 24 |
| 11 | ELECTRICAL DIAGRAM..... | 29 |

1 INTRODUCTION

Intended use

The Hebemann Oil Grazer may only be used to separate oil and coolant. Read this manual carefully before you use the machine. Prevent uncontrolled movement of the machine during transport.

Intended audience

Only adequately trained persons who have read and understood this manual may operate and maintain the Hebemann Oil Grazer M3.

About this manual

This manual describes the operation and maintenance of the Hebemann Oil Grazer M3.

Supplied documentation

The following documentation is supplied with the skimmer:

- Quick Guide to Oil Grazer M3
- The manual and spare parts lists can be found by scanning the QR code on the control panel.
- The user manual and spare parts lists are available from the Hebemann website. A printed copy will be sent to you on request.

Availability

The user manual must always be present, in hardcopy or digital form, in the vicinity of the skimmer. You can view the manual via the QR code on the control panel. A printed copy will be sent to you on request.

Left, right, front and rear

The designations 'left', 'right', 'front', and 'rear' are to be interpreted from the perspective of a person in the operating position, facing the control panel.

Customer service

If you have any questions about the Hebemann Oil Grazer that are not answered in this user manual, please do not hesitate to contact Hebemann. For other instructions you can naturally always consult our website www.hebemann.com.

Warranty

You are, of course, entitled to warranty coverage if a defect develops despite correct operation and completion of the prescribed maintenance. The warranty does not cover the following:

| | |
|--|---|
| <ul style="list-style-type: none">• Normal wear• Ignoring instructions on the skimmer• Ignoring instructions in this manual• Inadequate maintenance | <ul style="list-style-type: none">• The use of non-OEM parts• Abnormal external influences• A modification not authorized by Hebemann |
|--|---|

Hebemann honours the warranty conditions laid down in the METAALUNIE terms and conditions. A summary of the Hebemann general terms and conditions is available online on our website.

Machine identification

Fill in the identification data for the machine.

These data can be found on the type plate. Also fill in the delivery date:

| | | | |
|--|---------------|---|-----------|
|  | |  | |
| Type | Oil Grazer M3 | Voltage | 230/50 Hz |
| Serial nr. | | Max. Current | 0.5 A |
| Year | 2017 | Weight | 65 Kg |
| | | Max. Power | 0.1 kW |
| Handelsstraat 36b, 7482 GW Haaksbergen, Holland www.hebemann.com | | | |

| | | |
|-----------------------------|---|--|
| Serial number (s/n) | : | |
| Year of manufacture (date): | | |
| Delivery date | : | |

2 SAFETY

Introduction

Read this manual before using the machine. Follow the instructions to avoid injury and property damage. Do not hesitate to contact Hebemann if you have questions.

REMAIN ALERT! YOUR SAFETY AND THE SAFETY OF OTHERS DEPEND ON IT!

Symbols in this manual

The following symbols are used in this manual:



WARNING

Indicates a hazardous situation. If not avoided, it may result in severe bodily injury or death.

ATTENTION






Indicates a hazardous situation. If not avoided, it may result in property damage.



This symbol indicates additional information and tips. This symbol is not used to indicate a hazardous situation.

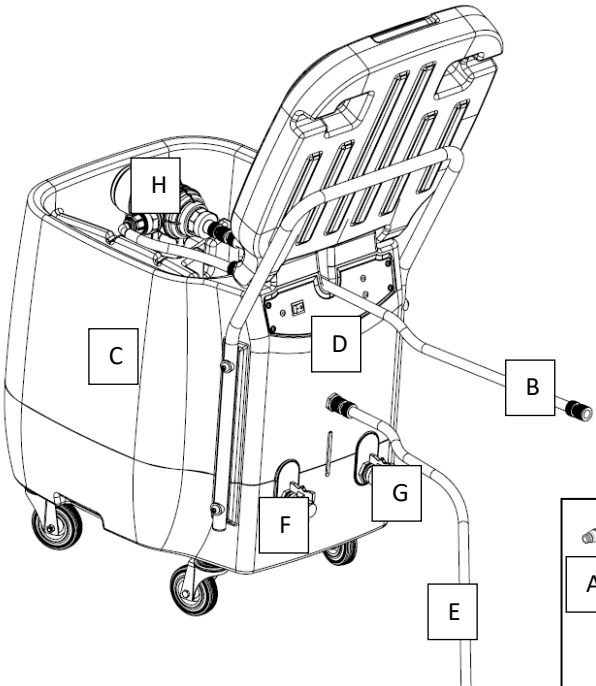
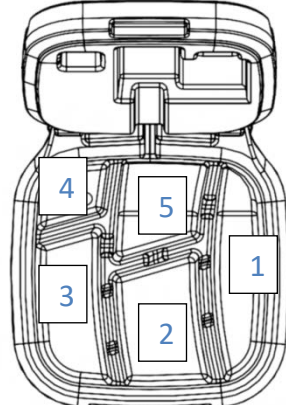
Safety warnings (stickers)

Various symbols can be found on the skimmer, the purpose of which is to alert you to a potentially hazardous situation, remind you to use personal protective equipment or refer you to a prescribed operation explained in this manual.

| | |
|--|---|
|  | Refers to the manual The sticker is located on the control panel. |
|  | Hebemann directs the user to wear safety goggles. The sticker is located on the control panel. |
|  | Hebemann directs the user to wear protective gloves. The sticker is located on the control panel. |
|  | Hebemann warns the user of dangerous electrical voltage. Sticker is located on the control box. |
|  | Hebemann warns the user of rotating parts. Sticker is located on the gearbox between the motor and the pump. |

3 GENERAL DESCRIPTION

This Hebemann Oil Grazer M3 separates the upper layer of oil from liquid. An emulsion of oil and liquid is drawn in via the pick-up system [A] (see figure below). The emulsion is pumped via a pre-filter to compartment [1]. The pre-filter protects the pump against coarse/solid particles. Because oil is lighter than the liquid, the oil moves to the surface. The liquid flows through the passage on the underside of the compartment to compartment [2]. In this compartment a smaller amount of oil will be mixed with the liquid. The remaining drops of oil move to the surface, and the cleaner liquid flows to compartment [3]. Here the last drops of oil are separated from the liquid by gravity. Clean liquid flows to compartment [4], where the liquid is pumped back to the reservoir of, for example, your CNC milling machine. As soon as a layer of oil has been formed on the compartments [1 to 3], it will flow to the oil reservoir indicated with [5]. When this reservoir is full the machine will shut down and the reservoir can be emptied by opening the drain valve [F]. The machine can also be completely drained of liquid by opening the drain valve [G].

| Machine identification | | Compartments | |
|--|----------------------------------|--|-------------------|
|  | |  | |
| A | Pick-up system | 1 | Compartment 1 |
| B | Supply hose | 2 | Compartment 2 |
| C | Housing | 3 | Compartment 3 |
| D | Control panel | 4 | Clean compartment |
| E | Return hose | 5 | Oil reservoir |
| F | Oil drain | | |
| G | Drain for the other compartments | | |
| H | Filter | | |

4 COMMISSIONING

Introduction

Check the Hebemann Oil Grazer M3 for possible transport damage at the time of delivery. Report transport damage to the carrier and your supplier immediately.

Safety



- Only plug the machine into earthed wall sockets.
- Protect the mains lead against damage and prevent short-circuit.
- Put the Oil Grazer out of service when defects of any kind have occurred.
- Never climb on the machine.

Storage of the machine for longer than one week

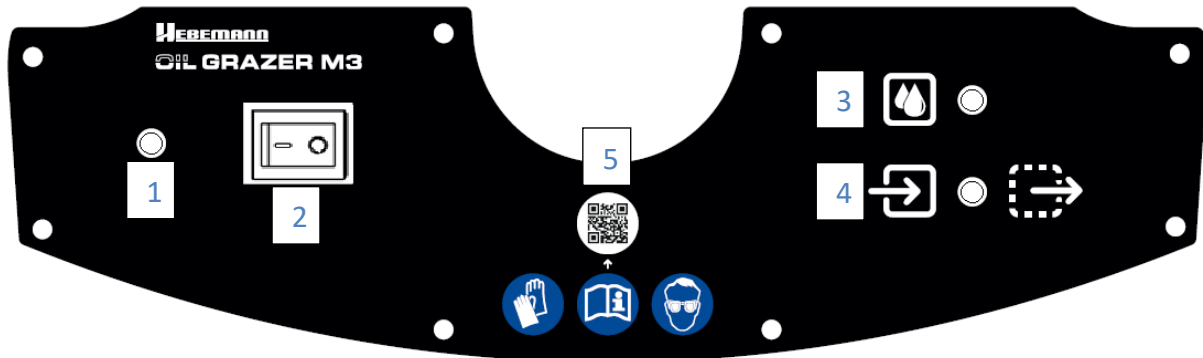
Hebemann recommends cleaning the machine completely every six months and/or prior to storage of more than one week to prevent bacterial growth. Clean the machine thoroughly with bio-degreaser. Dispose of oil filters and used oil in accordance with national regulations.

5 OPERATION

Introduction

This chapter provides information about operating the Oil Grazer M3.

Explanation of control panel

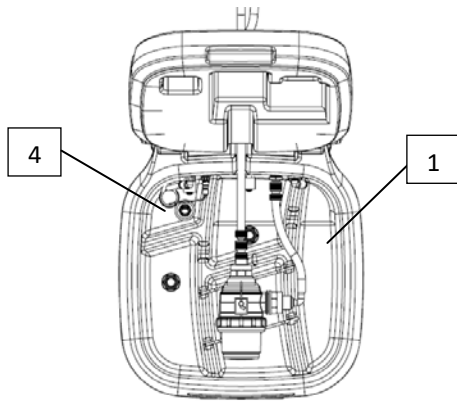


| | | |
|---|------------------------|---|
| 1 | Indicator lamp – green | Lit during the skimming cycle. Every five minutes the skimmer will draw more liquid for ten seconds to flush the pump clean and suck in residual contamination around the pick-up system and in the pipes. To maintain the dwell time, the machine then rests for 20 seconds. Caution: the green LED remains on during the 20-second rest period. |
| 2 | Rocker switch | System on or off |
| 3 | Indicator lamp – red | Lit when the oil reservoir is full |
| 4 | Indicator lamp – red | LED continuously on Lit continuously when a fault occurs between the pick-up system and the pump. Check the following points: <ul style="list-style-type: none"> • Pick-up system is correctly positioned • Filter is full LED flashes Begins flashing as soon as one of the following problems occurs: <ul style="list-style-type: none"> • Level switch in clean compartment gets stuck • The Hebemann Oil Grazer M3 does not draw in any liquid |
| 5 | QR code | Quick link to this manual |

Step-by-step operation of the machine

Preparing for use

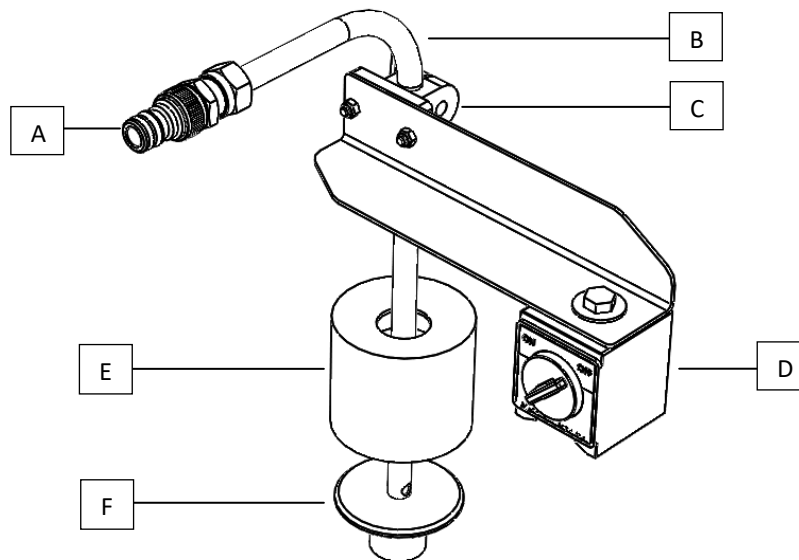
1. Fill an empty Oil Grazer M3 with clean coolant before use. Fill compartment 1 until compartment 4 is half full.



2. Always check that the machine is filled with coolant before switching on the skimmer.

If the skimmer is not filled with coolant, the oil flows directly to the clean compartment during the skimming process, causing undesirable contamination of the system.

Placing pick-up system

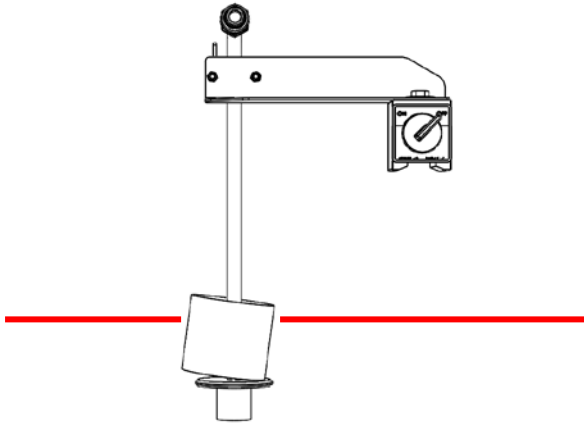


- A. Quick coupling
- B. Suction pipe
- C. Clamp
- D. Magnetic base
- E. Float
- F. Float guide

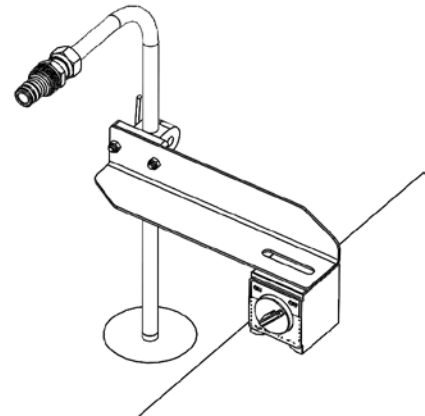
3. Top up the liquid level in the coolant reservoir to be skimmed, if necessary.

4. Place the magnetic base on a horizontal part of the coolant reservoir and set the switch to "ON". The magnetic base fastens in place.

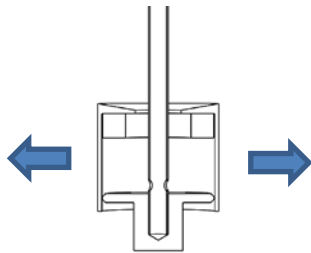
5. Lift the float [E] slightly until it is on the float guide [F]. Adjust the height of the suction pipe until the liquid level is about 1 centimetre below the top of the float.



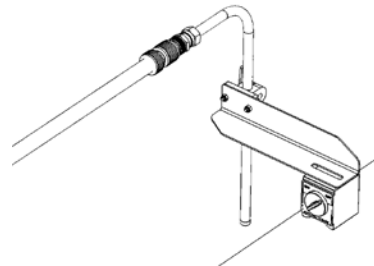
6. Now let the suction pipe fall over the fixed part. The pick-up system is correctly positioned.



7. Check that the float is held in position by the fixed part. This check can easily be done by moving the float back and forth slightly. If the float [E] is not retained by the float guide [F], the suction pipe [B] is set too low.



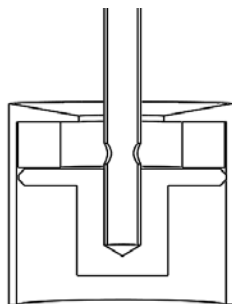
8. Connect the suction pipe of the Oil Grazer M3 to the pick-up system using the quick coupling [A].



An incorrectly placed pick-up system can be recognized by:

Suction pipe placed too high:

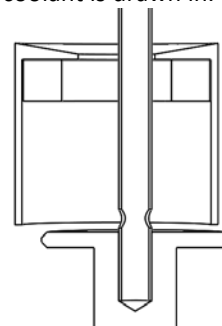
The skimmer draws in air and little or no oil/coolant. Lots of bubbles are visible in compartment 1.



Solution:
Position the suction pipe [B] lower

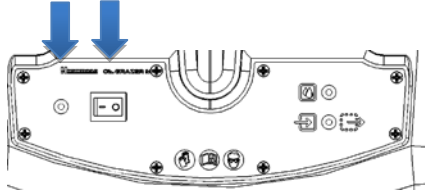
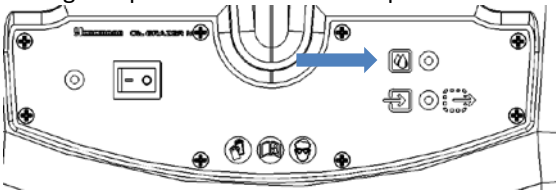
Suction pipe placed too low:

The float [E] of the pick-up system does not go down. The float [F] floats above the suction pipe so that only clean coolant is drawn in.



Solution:
Position the suction pipe [B] higher

Operating the Oil Grazer M3

| | |
|--|--|
| <p>9. Place the return hose at the coolant reservoir of the machine to be skimmed so the liquid flows back into the coolant reservoir. Do not place the return hose in the coolant, and ensure that it remains above the liquid level. Do not place the return hose too close to the pick-up system.</p> | <p>10. Check that the pick-up system is properly connected.</p> |
| <p>11. Insert the plug of the machine into an earthed wall socket.</p> <p>Caution: Check that the machine is full before switching it on. Otherwise go back to step 1.</p> <p>Check that the rocker switch is off (O) before inserting the plug into the wall socket.</p> | <p>12. Switch the rocker switch on the control panel to the on (I) position. The green lamp to the left of the rocker switch lights up and the Oil Grazer M3 starts the skimming cycle.</p>  |
| <p>13. Switch the rocker switch off as soon as the coolant reservoir to be skimmed is clean.</p> | <p>14. Disconnect the supply hose from the pick-up system or take the pick-up system with you to the next coolant reservoir to be skimmed.</p> <p>The supply and return hoses can be placed in the opening of the lid. When doing so, make sure that the coupling does not hang in the liquid in the compartments.</p> |
| <h3>Oil reservoir full</h3> | |
| <p>15. The skimmer automatically stops pumping. The upper LED on the right side of the control panel lights up as soon as the oil compartment is full.</p>  | <p>16. Set the rocker switch off.</p> |
| <p>17. Drain the oil via the left ball valve [F] and close it immediately after draining to prevent leaks.</p> <p>Dispose of all oil in accordance with national regulations.</p> | <p>18. Set the rocker switch on again. The Oil Grazer M3 resumes its skimming cycle.</p> |

ATTENTION

Never switch an empty machine on. Otherwise the contaminated liquid will spread throughout the machine.



After draining liquid, immediately close the ball valve. Leaked oil can cause a slippery floor, resulting in possible injury. Hebemann is not responsible for leaked oil caused by an open ball valve.

6 MAINTENANCE

Introduction

The chapter provides information about maintaining the machine. Extra support for the replacement of parts is provided on the Hebemann website. Contact Hebemann for maintenance that is not covered in this manual or on the website. Have repair work carried out only by skilled and trained personnel. Hebemann has developed the machine in such a way that components can be easily replaced by means of quick couplings and/or connectors.

Safe maintenance



- Only replace parts with genuine Hebemann parts.
- Wear close-fitting overalls, safety goggles, gloves and safety shoes.
- Use appropriate tools of the correct size.
- Ensure that no one can activate the machine during maintenance and repairs. Unplug the mains lead from the wall socket.

Daily maintenance

- Check the cables and hoses for damage.
- Check for leaks.
- Check the oil level. Top up the oil if necessary. This requires removal of the frame from the base plate. Follow the provided instructions.

Electrical system



Disconnect the mains lead from the wall socket immediately in the event of a fault or failure or when electrical parts are damaged.

Always have electric faults and failures resolved by a certified electrician. Failure to do so may lead to LIFE THREATENING situations.



Excessive oil consumption or a sudden drop in oil level indicates an internal or external leak. Stop the pump immediately and contact your technical department.



Contact your technical service department for replacement of the oil and/or diaphragms.

Replacing diaphragms

Replacement of the diaphragms is described in a manual that is available for download from the Hebemann website.



Excessive oil consumption or a sudden drop in oil level indicates a ruptured diaphragm. Stop the pump immediately. Milky white discolouration of the oil indicates a ruptured membrane (water in the oil). Stop the pump immediately and replace the diaphragms.

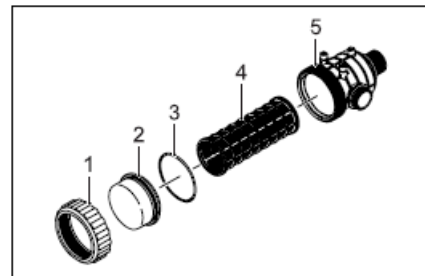


Contact your technical service department for replacement of the oil and/or diaphragms.

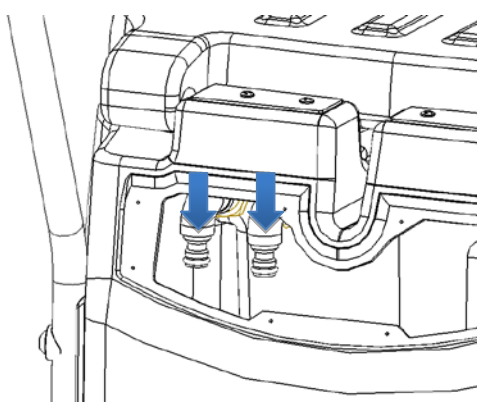
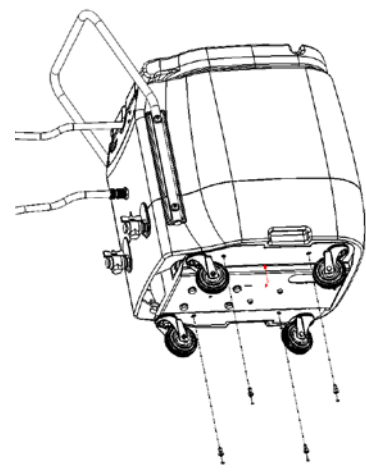
Suction filter

Clean the filter element monthly or as soon as the second indicator lamp on the control panel lights continuously:

1. Remove the gland nut [1].
2. Remove the cover [2].
3. Remove the O-ring [3].
4. Remove and clean the filter element [4].
5. Check the mesh of the filter element for defects [4].
6. Clean the filter housing [5], cover [2] and nut [1].
7. Replace the filter element if necessary.
8. Put the parts back in the filter housing.
9. Put the filter back in the Hebemann Oil Grazer M3.



Removing the housing from the bottom frame

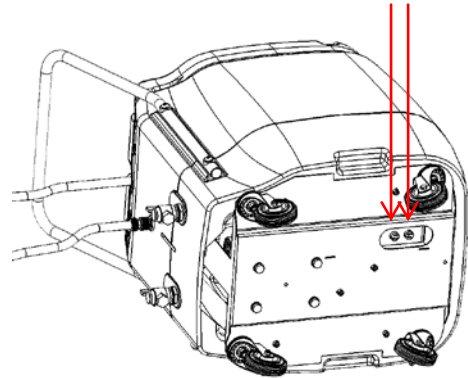
| | |
|--|---|
| <p>1. Remove the plug from the wall socket.</p> | <p>2. Drain the liquid via the two ball valves.</p> <p>Caution: Dispose of used oil in accordance with national regulations.</p> |
| <p>3. Remove the control panel, and unplug the control panel connector.</p> <p>Caution: The control panel is connected to the control box on the base plate. The connector of the control panel must be disconnected in order to remove the housing from the base plate.</p> | <p>4. Disconnect the two quick couplings on the left side.</p>  |
| <p>5. Remove the four screws shown below.</p>  | <p>6. Carefully lift the housing off the bottom frame.</p> |

Fuse replacement

Two fuses are fitted in the HebeMann Oil Grazer M3: one for the 230 volt circuit, and one for the 12 volt circuit. The fuses are located on the underside of the machine and can be replaced without removing the housing.

Fuse closest to the control panel = 230 volts / 0.5 A
(slow blow)

Fuse farthest from the control panel = 12 volts / 0.5 A
(slow blow)



Disconnect the mains lead from the wall socket before replacing the fuse.

Always have electric faults and failures resolved by a certified electrician. Failure to do so may lead to LIFE THREATENING situations.



7 TROUBLESHOOTING

Introduction

Consult the table to resolve problems. Contact your technical department or Hebemann if you are unable to resolve the problem.

Caution: Remove the plug from the wall socket before replacing components!

| Problem | Possible cause | Solution |
|---|---|--|
| Oil Grazer M3 does not work Green lamp not lit | • Mains lead not plugged in | • Insert the plug in the wall socket |
| | • Control switch is off | • Turn the control switch on |
| | • Mains lead defective | • Replace mains lead |
| | • Cables/wires damaged or loose | • Replace or fasten cables/wires |
| | • Fuse is defective | • Replace fuse |
| | • Control switch is defective | • Replace control panel |
| | | |
| Oil Grazer M3 does not work Green indicator is lit | • Oil reservoir is full. LED for oil reservoir is lit. | • Dispose of oil |
| | • Level switch for oil reservoir is sticking or defective | • Clean or replace level switch |
| | | |
| Pick-up system does not go down | • Pick-up system not fitted or incorrectly placed | • Place the pick-up system according to the instructions in this manual |
| | • Oil is milky, diaphragm ruptured | • Replace membranes and oil |
| | • System draws in air | • Place the pick-up system according to the instructions in this manual • Check hoses and couplings |
| | • Filter is full | • Clean filter |
| | | |
| Bottom indicator LED lit | • Pick-up system not fitted or incorrectly placed | • Place the pick-up system according to the instructions |
| | • Hoses are not connected (or not correctly) | • Connect hoses correctly |
| | • Filter is full | • Clean filter |
| | • Valves in pump or hoses blocked | • Clean valves or hoses |
| | • Motor does not run | • Check cable connection • Replace motor • Replace control box |
| | • Oil is milky, diaphragm ruptured | • Replace membranes and oil |
| | | |
| Bottom indicator LED flashing | • Level switch in the clean compartment keeps sticking | • Check level switch • Replace level switch |
| | • Return pump is defective | • Replace return pump • Return hose is not at the coolant reservoir to be skimmed |

8 ENVIRONMENT

Introduction

During use and maintenance of the skimmer the environment must be protected as much as possible.

Measures to protect the environment

- Operate and maintain your skimmer in accordance with the instructions in this manual.
- Dispose of oil filters and used oil in accordance with national regulations.
- Dispose of the defective parts in accordance with national regulations.

Service life

With normal use and proper maintenance the skimmer will have a very long service life. When the skimmer is disposed of after many years, this must be done in a safe and environmentally responsible manner. Many of the materials used can be recycled.

9 TECHNICAL SPECIFICATIONS

Dimensions and weights

| | | |
|-------------------------|----|----|
| Length | cm | 79 |
| Width | cm | 60 |
| Height | cm | 98 |
| Weight (without liquid) | kg | 65 |

Technical data

| | | |
|------------------------|-------|----------------------|
| Operating voltage | V | 230 (1 Ph / 50 Hz) |
| Motor power rating | W | 60 |
| Total rated load | kW | 0.1 |
| Overcurrent protection | A | 0.5 |
| Noise level | dB | <70 |
| Ambient temperature | °C | +5 to +40 |
| Pump volume flow | l/min | 2.2 (boost 5.8) |
| Filter | Mesh | 50 (+/- 297 microns) |
| Oil reservoir | L | 5.3 |

10 SPARE PARTS

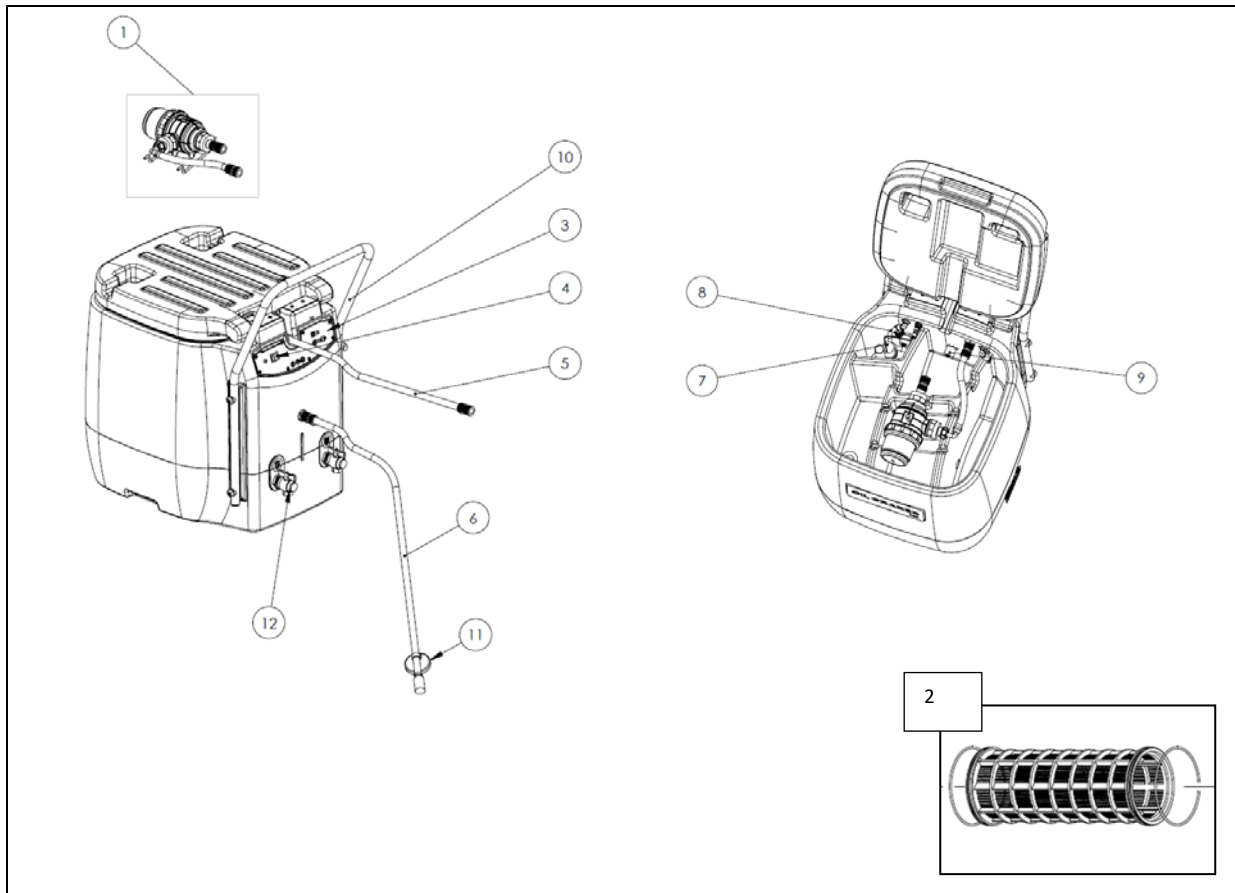
Original spare parts

Use original Hebemann parts. These machine-specific parts can be ordered via www.hebemann.com. Genuine Hebemann parts are specifically designed for this skimmer. The use of non-OEM parts can have a negative impact on the operation of the skimmer and make it unsafe. Hebemann accepts no liability for damage or injury resulting from the use of non-OEM parts.

TABLE OF CONTENTS

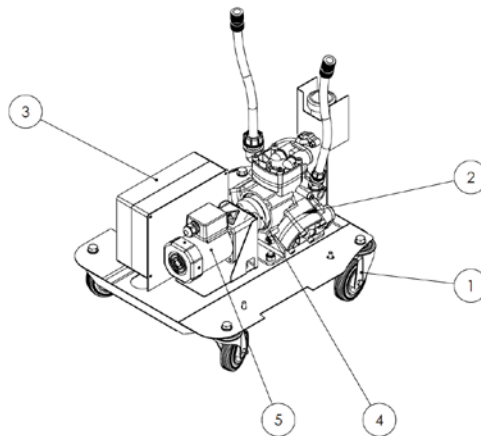
| | |
|----------------------------|----|
| HOUSING | 25 |
| BASE PLATE | 26 |
| CONTROL BOX | 26 |
| PICK-UP SYSTEMS | 27 |
| PUMP MAINTENANCE SET | 28 |

HOUSING



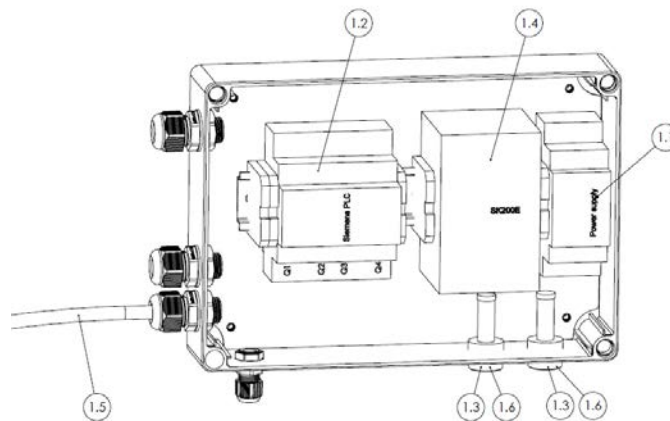
| Pos. | Hebemmann part number | Description |
|------|-----------------------|---|
| 1 | 112510AS002 | Filter set complete – Filter including couplings and hose |
| 2 | 112510SP001 | Mesh set |
| 3 | 112510AS401 | Control panel including cable and connector |
| 4 | 112510BP410 | Rocker switch |
| 5 | 112510SP002 | Suction hose including couplings |
| 6 | 112510SP003 | Return hose including coupling |
| 7 | 112510SP004 | Return pump including hose and connector |
| 8 | 112510SP005 | Hose set for return pump |
| 9 | 112510SP006 | Level switch |
| 10 | 112510SP007 | Bracket including fasteners |
| 11 | 112510AS531 | Magnetic base, complete, up to return hose |
| 12 | 112510BP060 | Ball valve, 90°, ¾" |

BASE PLATE



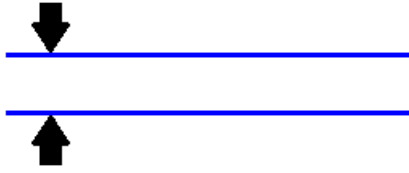
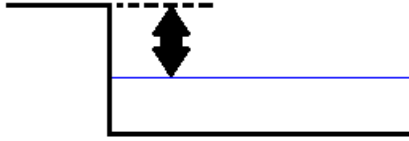
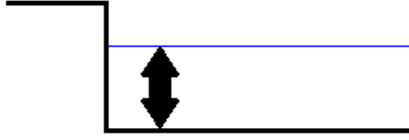
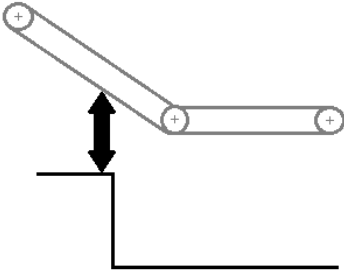
| | | |
|---|-------------|---|
| 1 | 112510SP008 | Wheel including fasteners (each) |
| 2 | 112510SP009 | Pump including hoses, couplings and fasteners |
| 3 | 112510AS400 | Control box, complete |
| 4 | 112510SP010 | Coupling, drive to pump, including fasteners |
| 5 | 112510SP011 | Drive, including fasteners |


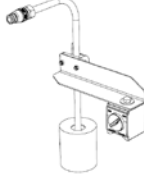


CONTROL BOX



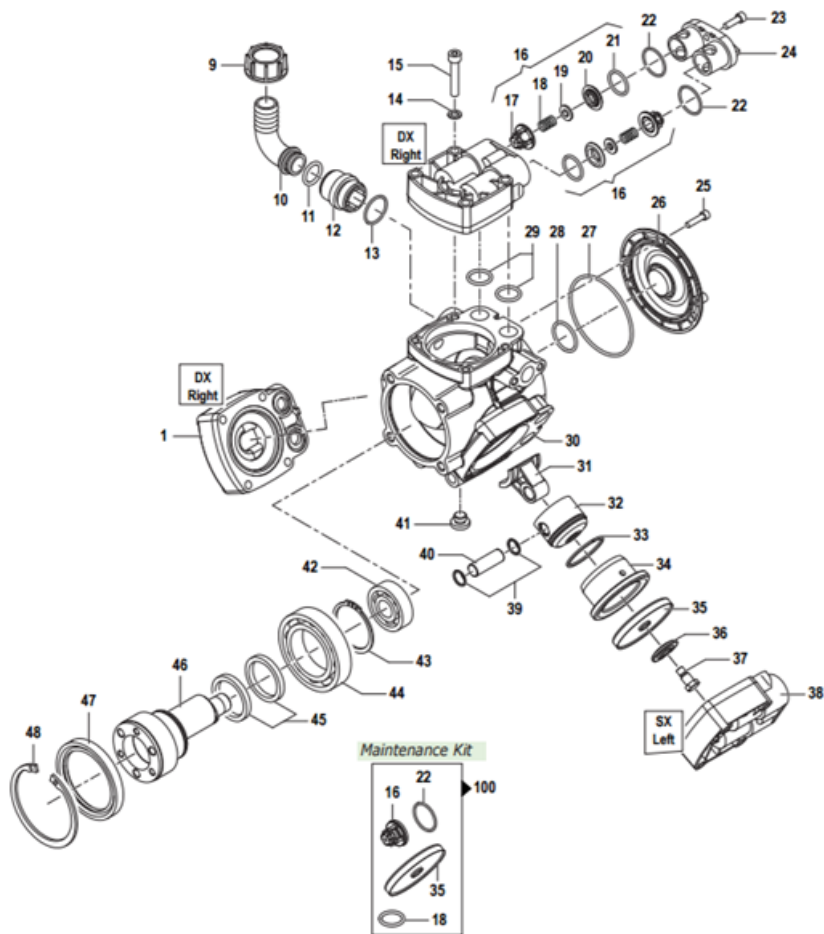
| Pos. | Hebemann part number | Description |
|------|----------------------|-------------------------------|
| 1 | 112510AS400 | Control box, complete |
| 1.1 | 112510BP401 | Power supply 15W |
| 1.2 | 112510SP402 | Siemens PLC (programmed) |
| 1.3 | 112510SP403 | Fuse (10 pieces) |
| 1.4 | 112510SP404 | Speed controller (programmed) |
| 1.5 | 112510SP012 | Mains lead and plug |
| 1.6 | 112510BP418 | Fuse holder |

PICK-UP SYSTEMS

| | |
|---|---|
| <ul style="list-style-type: none"> Maximum level difference in the coolant reservoir |  |
| <ul style="list-style-type: none"> Maximum distance from the lowest liquid level to the top of the reservoir |  |
| <ul style="list-style-type: none"> Minimum liquid level |  |
| <ul style="list-style-type: none"> Minimum required height above the reservoir |  |

| | 112510AS540 | 112510AS550 | 112510AS551 | 112510AS560 |
|---|---|---|---|---|
| |  |  |  |  |
| Maximum level difference in the coolant reservoir | 38 | 58 | 58 | 125 |
| Maximum distance from the lowest liquid level to the top of the reservoir | 140 | 140 | 290 | 280 |
| Minimum liquid level | 70 | 90 | 90 | 175 |
| Minimum required height above the reservoir | 260 | 230 | 330 | 300 |

PUMP MAINTENANCE SET



| Pos. | Hebemann part number | Description |
|------|----------------------|--|
| 100 | 112510SP013 | Pump maintenance set: Diaphragm 3x O-rings Assembly, pos. 16 (6x) <ul style="list-style-type: none"> • Valve cage • Spring • Valve • Valve seat • O-ring |

11 ELECTRICAL DIAGRAM

