

Operator and Owner's Manual

EASY GREASE v.5



TABLE OF CONTENTS

| | |
|--|--------|
| GENERAL DESCRIPTION OF THE MACHINE | - 4 - |
| MANUAL DOSING MODE | - 4 - |
| AUTOMATIC DOSING MODE | - 4 - |
| INTENDED USE | - 4 - |
| ON DELIVERY OF THE EQUIPMENT..... | - 5 - |
| THE EQUIPMENT..... | - 6 - |
| SAFETY INFORMATION | - 7 - |
| SAFETY INSTRUCTIONS | - 7 - |
| PREPARATIONS | - 8 - |
| CHARGING THE BATTERY | - 8 - |
| CLEANING THE MACHINE | - 8 - |
| PREPARING THE MACHINE..... | - 9 - |
| DETACH THE DISPLAY..... | - 9 - |
| SETTINGS | - 10 - |
| GENERAL SETTINGS | - 11 - |
| SPECIAL SETTINGS | - 12 - |
| SET HOVE SMART LUBE | - 13 - |
| RUNNING THE MACHINE | - 15 - |
| AUTOMATIC DOSING | - 16 - |
| MANUAL DOSING | - 16 - |
| PAUSE/ABORT DOSING | - 17 - |
| SPEED CHANGING | - 17 - |
| EMPTY CARTRIDGE DETECTION | - 18 - |
| AFTER USE | - 18 - |
| FLUSHING THE PUMP | - 18 - |
| CLEANING AND MAINTENANCE | - 19 - |
| IN THE EVENT OF DAMAGE TO THE MACHINE..... | - 20 - |
| FIRMWARE UPDATE GUIDE | - 21 - |
| UPDATE THE DISPLAY CONTROLLER | - 22 - |

| | |
|------------------------------------|--------|
| TECHNICAL DATA | - 24 - |
| EU DECLARATION OF CONFORMITY | - 25 - |
| SUPPORT, SERVICE, AND REPAIR | - 26 - |

GENERAL DESCRIPTION OF THE MACHINE

HOVE Easy Grease v.5 is a 48 VDC semi-automatic lubrication pump for direct lubrication of bearings.

It can be powered from the detachable 100 - 240 VAC / 50 - 60 Hz Class II power supply unit or an optional 48 VDC / 6 Ah Li-ion battery unit.

This unique setup eliminates the machine's protective earth (PE) connection and thus the related risk of electric shock due to improper equipment earthing.

The optimal battery makes the pump independent of mains power and ideal for lubrication tasks in hard-to-reach places. The battery is designed to pump approx. 15 kg of grease before charging is required.

Easy Grease v.5 is controlled via the touch display included in the pump.

The display is detachable for convenience. You can connect it with an extension cord and use it as a remote control.

The machine can perform the lubrication task in two different ways:

MANUAL DOSING MODE

You start and stop the pump manually. The display counter shows the dosed amount of grease during pumping. When the pump has stopped, you can reset the display counter.

AUTOMATIC DOSING MODE

You preset the desired amount of grease and start the pump manually. The display counter shows the remaining amount of grease to be dosed during pumping. When the pump has dosed the preset amount of grease, it stops automatically and after a while the display counter resets to the preset amount of grease.

If necessary, you can stop and restart the pump manually during pumping.

INTENDED USE

You can use Easy Grease v.5 for lubrication of bearings in any type of equipment.

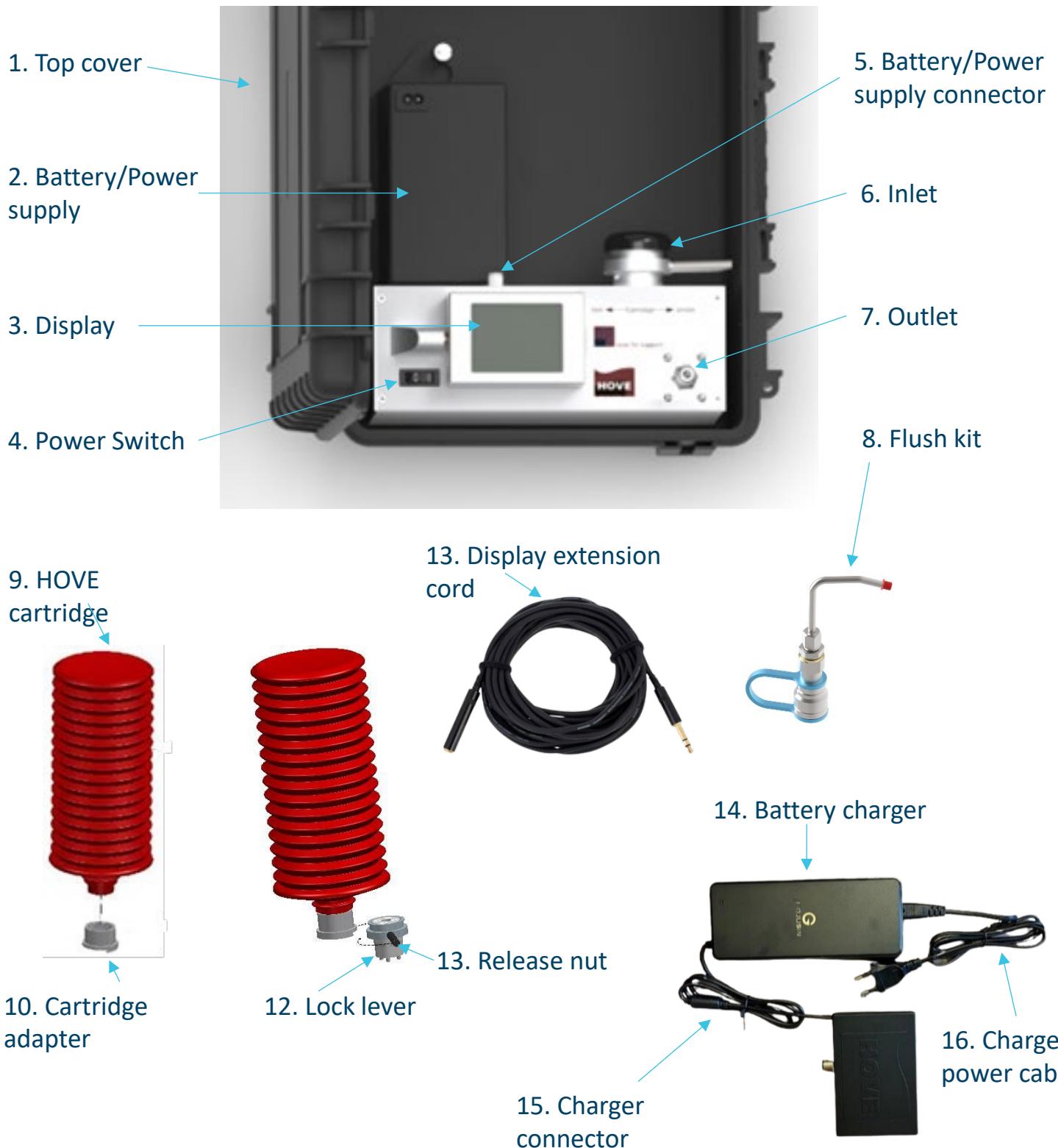
ON DELIVERY OF THE EQUIPMENT

- Immediately check the packaging and machine for shipping damage.
- Do not use the equipment if damaged. Contact HOVE A/S.
- Dispose of packaging material in accordance with local and applicable regulations
- Read the instructions in this manual carefully. It contains important information about the use and maintenance. Keep the instruction manual in a safe, accessible location for future reference.
- Flush the pump through with 300 grams of the desired type of grease before the first start. The machine's functions have been thoroughly checked at the factory. This has left small amounts of grease in the pump. The flush ensures that residual grease does not mix with the desired grease when the machine is used for lubrication applications and allows you to become familiar with the machine's functions. (see section **FLUSHING THE PUMP**).

THE PACKAGE INCLUDES:

- HOVE Easy Grease v.5 grease pump
- Flush kit
- Cartridge adapter
- Power supply
- Display extension cord
- Battery and charger (optional)
- Lubrication hose (optional)

THE EQUIPMENT



SAFETY INFORMATION

Before using the equipment, read the instructions in this manual carefully. It contains important information about the use and maintenance.

HOVE is not responsible if incorrect use causes injury or damage. Always keep the instruction manual in a safe, accessible location for future reference.

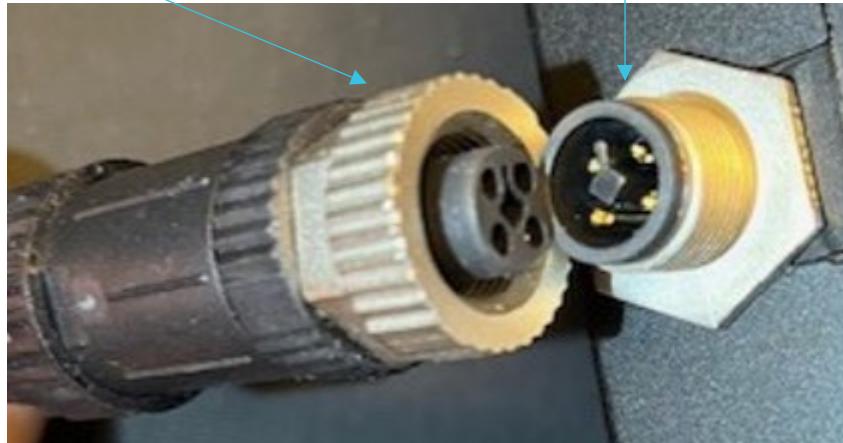
SAFETY INSTRUCTIONS

- Read and understand the instructions as written in this manual. Only qualified persons may operate this machine.
- Do not use Easy Grease v.5 for any purpose other than those described in "**INTENDED USE**".
- Never point the hose from the Easy Grease v.5 to people or animals.
- Follow the local legislation for working at height and for working with electrical and moving equipment.
- Follow all site recommendations.
- Always wear safety glasses and gloves when working with lubrication.
- Always use the built-in handle for carrying Easy Grease v.5.
- Always use approved lifting equipment when lifting Easy Grease v.5.
- Always use required Personal Protection Equipment (PPE) when using lifting devices.
- Only use HOVE A/S approved spare parts.
- Properly connect the battery to the charger or the power supply to the mains outlet.
- Do not short circuit the battery connector, charger connector, or power supply connector.
- Handle the battery with care:
 - Do not leave or charge the battery where the temperature may become higher than 50°C (120°F).
 - Do not short-circuit the battery.
 - Do not let the battery get wet.
 - Do not drop the battery, or in other ways apply impacts to the battery.

PREPARATIONS

CHARGING THE BATTERY (optional)

- Fully charge the **Battery** (2) before use
- Use only the supplied **Battery charger** (14)
- Connect the battery cable to the **Charger connecter** (15)
 - Beware of the position of the coding pin
 - Only turn the metal nut and **not the plastic housing**



- Connect the **Charger power cable** (16) to a 100-240VAC mains outlet
- The indicator LED of the battery charger lights red during the charging
- When it turns green, the battery is ready for use
- Turn off the mains supply or disconnect the power plug before disconnecting the battery cable from the Charger connector.

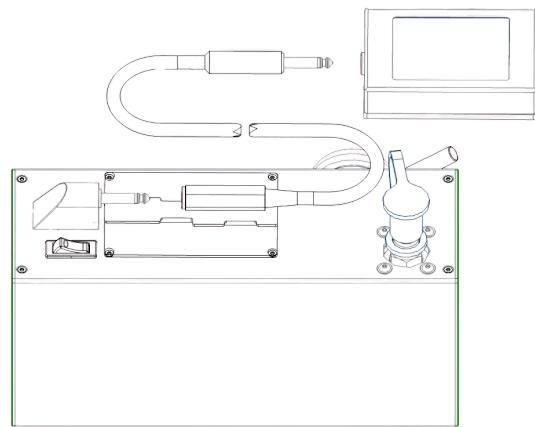
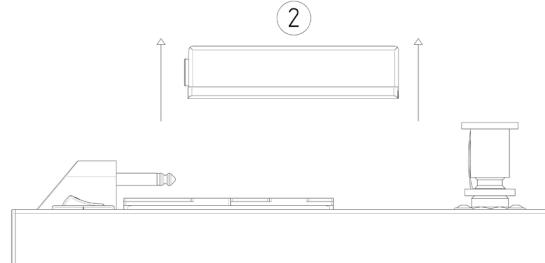
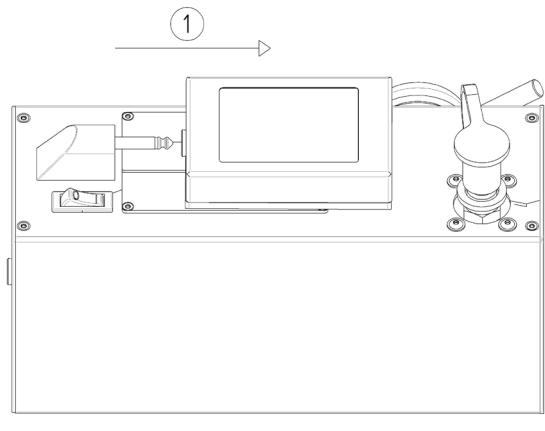
CLEANING THE MACHINE

- Clean the inside of Easy Grease v.5 with a lint-free rag to prevent any contamination of grease or pump
- Flush the pump through with 300 grams of the desired type of grease at change of grease type (see section **FLUSHING THE MACHINE**).

PREPARING THE MACHINE

- Open the **Top cover** (1)
- Switch off the machine by setting the **Power switch** (4) to position **0**
- Remove the **Cartridge adapter** (10) by turning the **Lock lever** (12) fully counterclockwise
- Screw the adapter onto a **HOVE cartridge** (9) with the desired type of grease and sufficient amount of grease
- Install the grease cartridge with adapter on the machine
- Lock the adapter by turning the Lock lever fully clockwise
- Switch on the machine by setting the power switch to position **1**
- The machine is ready when the START screen appears on the **Display** (3)

DETACH THE DISPLAY



Slide the Display

Gently slide the display to the right (indicated by arrow ①).

Lift the Display

Once detached, carefully lift the display upwards (indicated by arrow ②) to remove it from the unit.

Connect the display

Connect the display to the unit by using the extension cord. The screen is now ready to be used as a remote control.

SETTINGS

Before using Easy Grease v.5, change the settings if necessary:

- Select language on the START Screen
- Press **SETUP** on the SYSTEM screen
- Change the relevant settings

Press  to return to the previous display screen

Press  to return to the SYSTEM screen

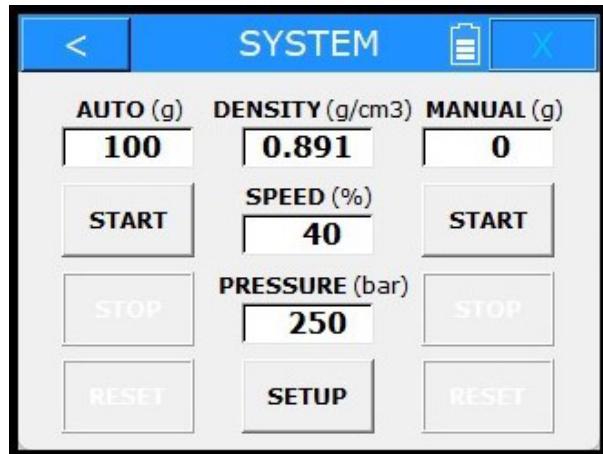
Press  or  to cancel input

Press  to set input



START SCREEN

Press the appropriate language.



SYSTEM SCREEN

Press **SETUP**.

| SETTINGS | | |
|-------------------|------------------------------|-----------------|
| AUTO (g) | DENSITY (g/cm ³) | Max SPEED (%) |
| 20 | 0.891 | 40 |
| SET | SET | SET |
| PRESS. REG. (0/1) | | Max PRESS (bar) |
| 0 | 250 | MODEL (#) |
| SET | SET | EGv5 |

SETTINGS SCREEN

Press **SET** under the appropriate field.

GENERAL SETTINGS

| AUTO GRAMS | | |
|------------|---|-------|
| 7 | 8 | 9 |
| 4 | 5 | 6 |
| 1 | 2 | 3 |
| 0 | C | ENTER |

AUTO GRAMS screen

Input the desired grams.

| DENSITY | | |
|---------|---|-------|
| 7 | 8 | 9 |
| 4 | 5 | 6 |
| 1 | 2 | 3 |
| 0 | C | ENTER |

DENSITY screen

Input the lubricant density (See the density on the grease label).

The decimal point is set automatically.

| Max. SPEED | | |
|------------|---|-------|
| 7 | 8 | 9 |
| 4 | 5 | 6 |
| 1 | 2 | 3 |
| 0 | C | ENTER |

Max. SPEED screen

Input the desired pump speed limit.

| Max. PRESSURE | | |
|---------------|---|-------|
| 7 | 8 | 9 |
| 4 | 5 | 6 |
| 1 | 2 | 3 |
| 0 | C | ENTER |

Max. PRESSURE screen

Input the desired pump pressure limit. The pump will switch off if this limit is exceeded.

| | | | | |
|---|-------------|---|-------------------|--------|
| < | PRESS. REG. | | | X |
| 7 | 8 | 9 | PRESS. REG. (0/1) | |
| 4 | 5 | 6 | 0 | Min. 0 |
| 1 | 2 | 3 | | Max. 1 |
| 0 | C | | ENTER | |

PRESSURE REGULATION screen

Input the desired setting.

0 = OFF

1 = ON

If the pump pressure is higher than the saved setting, the speed is automatically reduced to keep the pressure below the setting.

SPECIAL SETTINGS (PIN CODE PROTECTED)

| | | | | |
|---|-------|---|-----------|---------|
| < | MODEL | | | X |
| 7 | 8 | 9 | MODEL (#) | |
| 4 | 5 | 6 | 0 | Min. 0 |
| 1 | 2 | 3 | | Max. 28 |
| 0 | C | | ENTER | |

MODEL & PIN CODE screen

Input pin code for setting machine MODEL and other pin code protected settings.

| | | | | |
|---------|------------|----------------|--------|---|
| < | MODEL | | | X |
| CANCEL | | MODEL EGCv1 | ACCEPT | |
| EGCv1 | EGCv2_EGv1 | EGv4 | | |
| EGv4_V1 | ONEv1 | ONEv1_V1 | | |
| ONEv1_G | | EGv4_a | | |

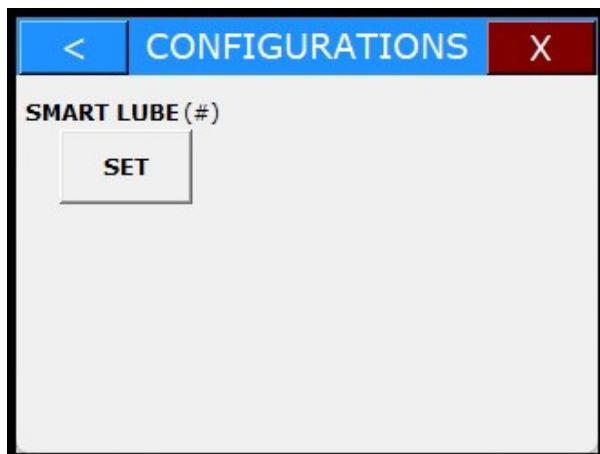
12321 MODEL screen

| | | | | |
|---------|------------|---------------------|--------|---|
| < | MODEL | | | X |
| CANCEL | | MODEL EGCv2 EGv5 | ACCEPT | |
| EGCv1 | EGCv2_EGv1 | EGv4 | | |
| EGv4_V1 | ONEv1 | ONEv1_V1 | | |
| ONEv1_G | | EGv4_a | | |

Press **ACCEPT** to keep the selected MODEL setting.
Otherwise, press **CANCEL** or another **MODEL**.

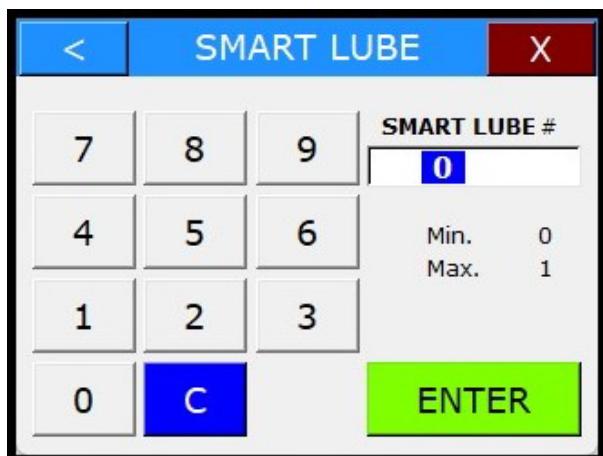
SET HOVE SMART LUBE (HSL)

Input 45654 to go to the CONFIGURATIONS screen.



45654 CONFIGURATIONS screen

Press **SET** under SMART LUBE (#) to go to the SMART LUBE screen.

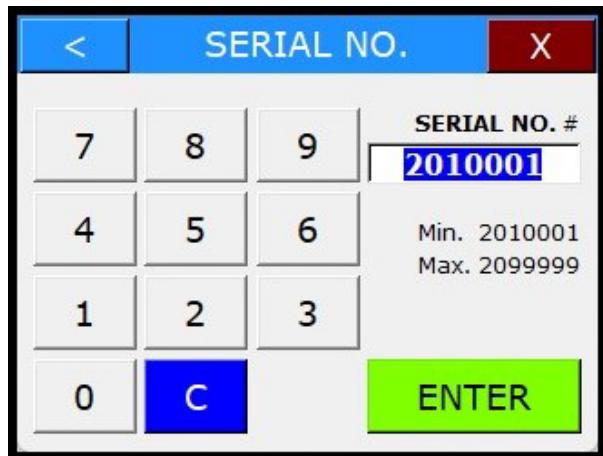


SMART LUBE screen

Input the desired setting.

0 = OFF

1 = ON



22222 SERIAL NO. screen

Input the machine's SERIAL NO.

99999 CALIBRATE TOUCH screen



Press the red cross at the screen until it moves to another position (use a pen or similar)



Repeat for all 5 positions, until the message "Calibration OK!" is shown at the screen

CALIBRATE FLOW METER

Preparations:

- Set the correct density of your preferred Grease Type
- Dispense 100g in the AUTOMATIC DOSING MODE
- Weigh the amount and note it
- Go to SETTINGS
- Press **SET** under the MODEL (#) field
- Input **11111** and press **ENTER** to go to the FM CALIBRATION screen.

11111 FM CALIBRATION screen

| | | |
|--|------------|---|
| FM CALIBRATION | | |
| WEIGHT (mg) | RES. (p/l) | X |
| 0 | 2324 | |
| SET | SET | |
| PULSES (p) TIME (ms) FL. RATE (ml/m) | | |
| 799 | 6189 | 0 |

Press **SET** under the WEIGHT (mg) field

| | | |
|-------|---|-------|
| GRAMS | | |
| 7 | 8 | 9 |
| 4 | 5 | 6 |
| 1 | 2 | 3 |
| 0 | C | ENTER |

WEIGHT (mg)
Min. 78000
Max. 122000

Input the noted weight in mg, e.g., 97g = 97000. Dispense 100g again and check that the weight is 100g +/- 3g; otherwise repeat the calibration steps max. 3 times.

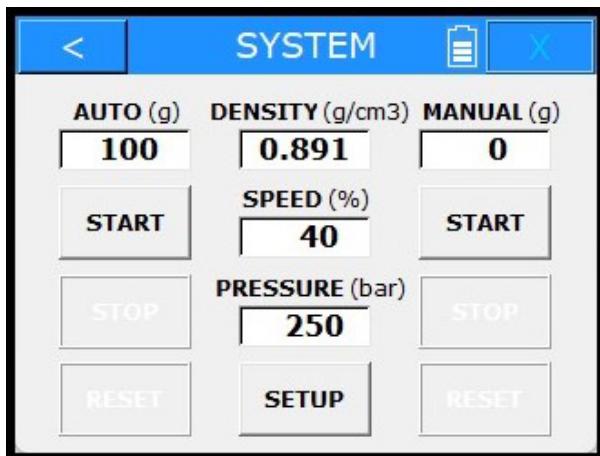
RUNNING THE MACHINE

Switch on the machine.



START screen

Press the appropriate language button.



SYSTEM screen

The machine is ready for AUTOMATIC DOSING or MANUAL DOSING.

Check that all SETTINGS are correct before proceeding!

Field colors

White Saved setting

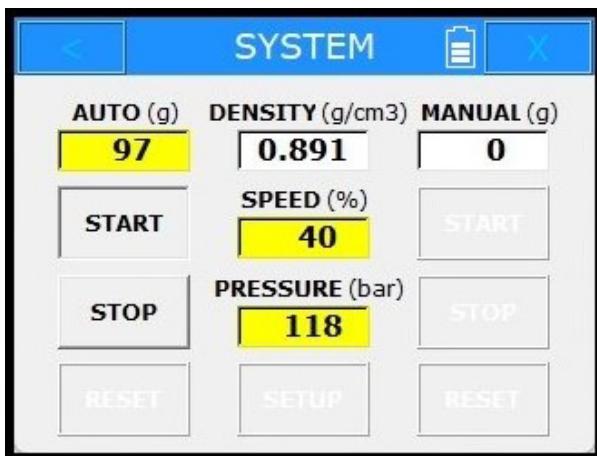
Yellow Active value

Red Warning

Green Information

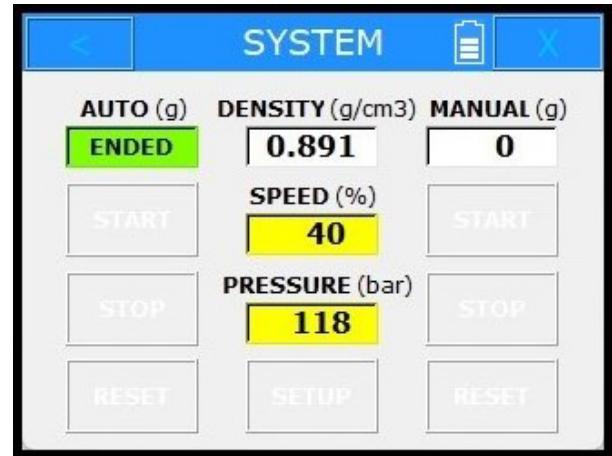
AUTOMATIC DOSING

- Change the AUTO (g) setting if required
- Connect the hose to the grease nipple
- Press **START** under the AUTO (g) field



The pump starts, and the **remaining** amount of grease to be dosed is counted down in the AUTO (g) field.

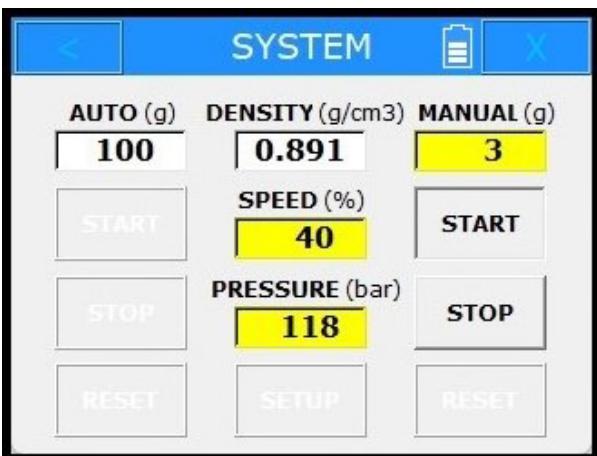
You can stop and restart the pump at any time if desired (see PAUSE/ABORT DOSING).



When the AUTO grease counter reaches zero, the pump stops, and the AUTO grease counter turns green, and flashes "ENDED". After a few seconds the AUTO grease counter changes to the set value and the machine is ready again.

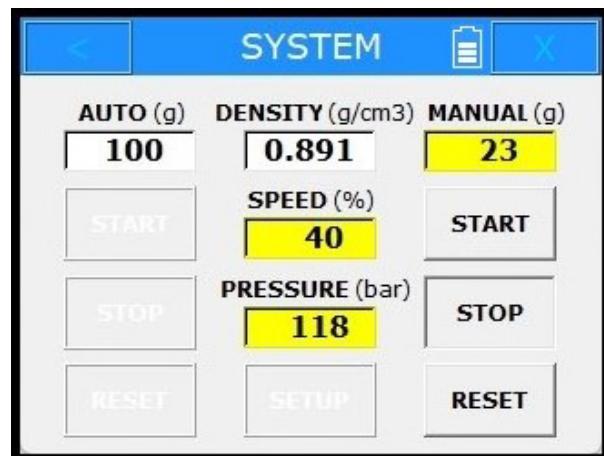
MANUAL DOSING

- Connect the hose to the grease nipple
- Press **START** under the MANUAL (g) field
- Note: It is advisable to decrease the speed in MANUAL mode, to prevent over-lubrication!



The pump starts, and the dosed amount of grease counts from zero and upwards in the MANUAL (g) field.

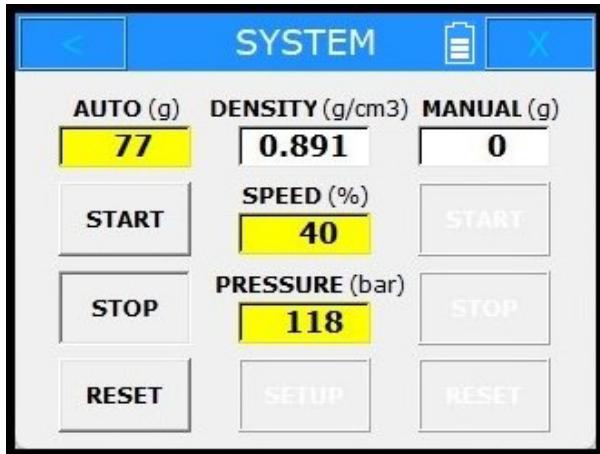
You can stop and restart the pump at any time if desired (see PAUSE/ABORT DOSING).



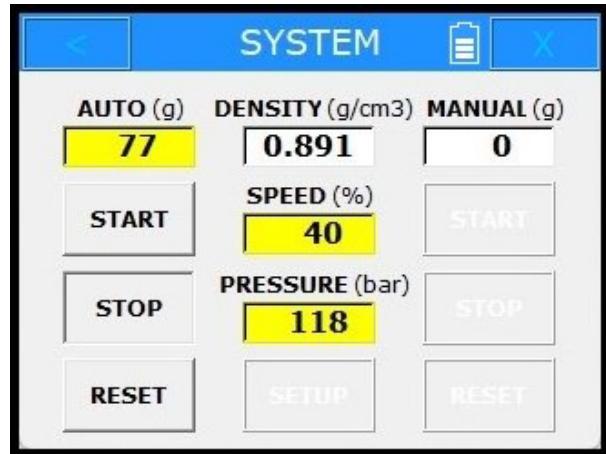
When the MANUAL grease counter reaches the desired amount, press **STOP** and then **RESET**.

PAUSE/ABORT DOSING

Press **STOP** to pause dosing



Press **START** to continue AUTOMATIC DOSING or press **RESET** to end it.



Press **START** to continue MANUAL DOSING or press **RESET** to end it.

SPEED CHANGING

When the pump is running you can change the pump speed by pressing the **SPEED (%)** field.



SPEED screen

Press the appropriate **SPEED**.

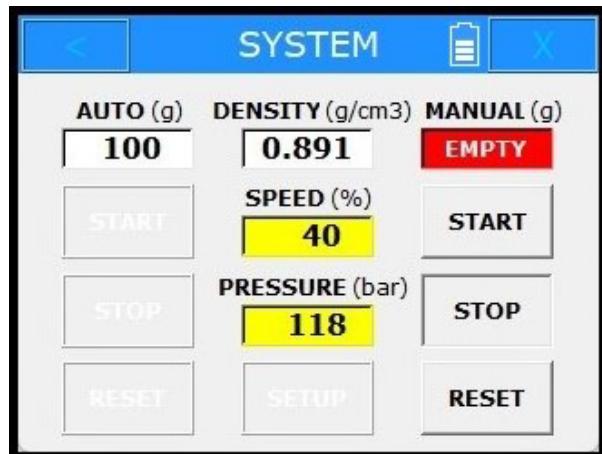
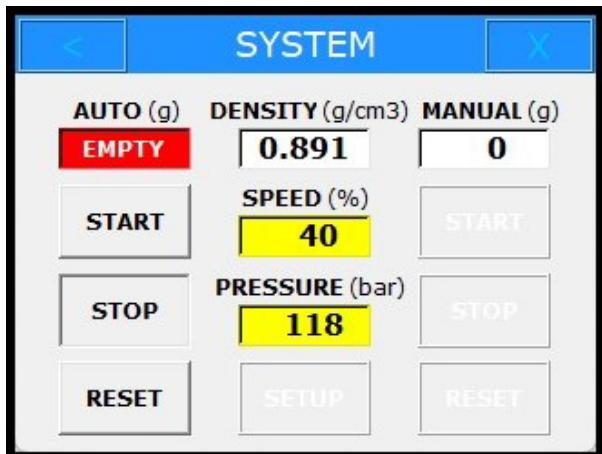


Press **ACCEPT** to keep the selected SPEED setting.

Otherwise, press **CANCEL** or another **SPEED**.

EMPTY CARTRIDGE DETECTION

If the built-in flow meter does not register the expected grease flow for a predetermined period of time, either during AUTOMATIC or MANUAL DOSING, the pump stops, and the grease counter turns red and flashes EMPTY. If the cartridge becomes empty before reaching the desired amount of grease, the display will show EMPTY. After replacing the cartridge with a new one and pressing START the system will continue counting up to the final target amount.



Press **START** to continue AUTOMATIC DOSING or press **RESET** to end it

Press **START** to continue MANUAL DOSING or press **RESET** to end it

AFTER USE

- Switch OFF the machine
- Clean the machine with a lint-free cloth to prevent any contamination of grease or pump
- Dispose of empty HOVE grease cartridges in an environmentally safe manner in accordance with applicable local regulations.

FLUSHING THE PUMP

Easy Grease v.5 must be flushed every time you use a different type of grease. This will flush the remaining grease out of the system and hose. Flushing prevents contamination from building up and mixing two types of grease.

- Connect the **Flush kit** (8) to the **Outlet** (7)
- Press the appropriate language button to go to the SYSTEM screen
- Press **START** under the **MANUAL (g)** field
 - The Easy Grease v.5 starts pumping grease
- Pay attention to the color change of the grease
- Press **STOP** to stop pumping grease when the color has changed to an even shade
- Disconnect the Flush kit.

CLEANING AND MAINTENANCE

Always clean the machine after use. Regular inspection and maintenance of the machine helps to ensure smooth operation.

Regularly check:

- the O-ring at the bottom of the adapter thread for wear and tear
- the O-ring at the cartridge locking mechanism for wear and tear
- the **Pressure Hose** for damages. If the outer surface is severely damaged, we recommend replacing the hose.

Once a year, check the flow meter:

- Check that the machine's density setting matches the grease you are using for control
- Pump 100g in AUTOMATIC DOSING mode and check that the weight 100g +/- 3%.
- If necessary, calibrate the flow meter and check the result. If the error remains more than +/- 3% after calibration, we recommend that you contact HOVE A/S.

IN THE EVENT OF DAMAGE TO THE MACHINE

WARNING

Unless agreed otherwise, only HOVE A/S may carry out repairs and alterations to the machine. Worn or defective parts must be replaced by original spare parts. Incorrect repairs or use of non-original spare parts can lead to serious damage to the machine and danger to the user.

If the machine is visibly damaged (cracks, holes, etc.) the machine must no longer be used, but must be repaired or discarded.

TROUBLESHOOTING

In most cases, the current issue can be resolved by following the troubleshooting guide below. Otherwise, please contact your nearest HOVE dealer or service center:

www.hove-as.com/contact

| Fault | Possible Causes | Remediation |
|---|--|---|
| Light in display but no images/text | Wrong firmware version in Display Controller or Machine Controller | Update again if the error occurred after firmware update |
| The touch screen does not respond | a) Program error b) Defective metal frame for the display c) Defective Display Module d) Defective Display Controller | a) Restart the machine by turning it off for 5 seconds and then turning it on again b) Check for visible dents in the metal frame and replace if necessary c) Replace Display Module and keep Display Controller d) Replace Display Controller and keep Display Module |
| The display shows "Calibration required" | The saved Machine Controller settings are lost due to memory error | Change the settings if necessary and then calibrate the flowmeter and touch screen |
| Grease/liquid runs irregularly/spouting out of the pump when pumping (there is air in the system) | a) Air leak at cartridge/adapter connections b) O-rings | a) Screw cartridge properly onto adapter b) Replace O-ring |
| The pump works, but does not pump grease | Air is stuck inside the pump | Follow the steps below: a) Remove the cartridge and check that the grease is pushed forward in the cartridge b) Install the Flush kit c) Set the speed to 100 % d) Start the pump and restart it if necessary and let it run until grease comes out in a steady stream without air bubbles e) If air still comes out, there may be a leak in the Inlet (6) |

FIRMWARE UPDATE GUIDE

USB KEY

Some USB Keys might not work for the firmware update.

Recommended USB Keys:

KINGSTON PART NUMBER: DTSE9H/8GB/16GB/32GB



KINGSTON PART NUMBER: DTSE9G2/8GB/16GB/32GB/64GB

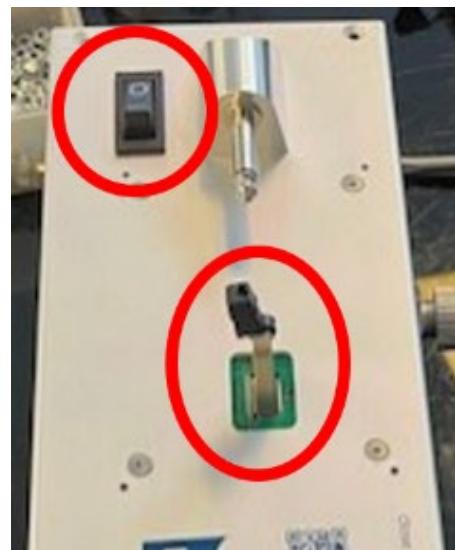


COPY FIRMWARE FILE TO THE USB KEY

- Insert the USB Key in a PC
- Delete any files at the USB Key
- Copy the "image.bin" file to the USB Key
- Use "**Safely Remove Hardware**" function in Windows (recommended), before pulling out the USB Key

UPDATE THE MACHINE CONTROLLER

- Detach the display and dismount the display bracket
- Switch off the machine
- Insert the USB key in the Machine Controller USB socket



- Switch on the machine
 - After about 3 seconds, the blue LED next to the USB socket will turn on
 - After about 8 seconds, the blue LED will turn off
- Switch off the machine
- Remove the USB key from the socket
- Remount the display bracket

Bracket for Display is mounted. Make sure that bracket is mounted as shown on picture, the widest slot must be in the end with the Hove logo.



- The Machine Controller firmware is now updated to the version of the “image.bin” file at the USB key
- *Note: The Machine Controller and the Display Controller **must** have the same firmware version!*

UPDATE THE DISPLAY CONTROLLER

- Switch off the machine and unscrew the display bracket (note how it is positioned)



- Insert the USB key in the Display Controller USB socket
- Connect the display to the machine by the extension cord



- Switch on the machine
 - After about 5 seconds, the blue LED next to the USB socket will turn on
 - After about 10 seconds, the blue LED will turn off
- Switch off the machine
- Remove the USB key from the socket
- Remount the display bracket (note how it is positioned)
- The Display Controller firmware is now updated to the version of the “image.bin” file at the USB key
- *Note: The Display Controller and the Machine Controller **must** have the same firmware version!*

TECHNICAL DATA

General

- Lubrication pump unit

Operation mode

- Manual dosing
- Automatic dosing
- HOVE Smart Lube (HSL)

Dimension

- Size: 470 x 365 x 190mm
- Weight: 8,5 kg (9 kg with optional battery)

Drive

- 48 V BLDC Motor

Display

- Color LCD Touch Screen Display 320 x 240 pixels

Remote Control

- The display is detachable for use as a wired remote control

Power supply

- 100 - 240 VAC / 50 - 60 Hz, Protection Class II
 - or
- 48 V battery option
 - Li-ion 48 V / 6 Ah
 - Up to 1-hour battery life at 100 % speed and up to 250 bar (free flow)
 - Charger

100 - 240 VAC / 50 - 60 Hz, Protection Class II

Power consumption

- Max. 300 W

Continuous output pressure

- Max. up to 250 bar (free flow)

Output volume

- Max. up to 510 ml/min (free flow)

Dosing repeatability

- +/- 1%

LpA Sound pressure level

- Max. 58 dB(A)

EU DECLARATION OF CONFORMITY

HOVE Easy Grease Easy Grease v.5 is in conformity with:

Directive 2014/30/EU - Electromagnetic Compatibility (EMC)

Directive 2006/42/EC - Machinery (MD)

Directive 2011/65/EU - Restriction of the use of certain hazardous substances (RoHS)

Directive 2014/68/EU - Pressure equipment (PED)

And the following harmonized standards and technical specifications have been applied:

EMC:

Emission: Product family standards EN 301 489-1 v2.1.1

Sub-standard: EN 301 489-3 v.2.1.1

Product family standard, Measurement, control and laboratory equipment
EN 61326-1:2013

Immunity: Product family standards EN 301 489-1 v2.1.1

Sub-standard: EN 301 489-3 v.2.1.1

Product family standard Measurement, control and laboratory equipment
EN 61326-1:2013

Electrical Safety:

EN 60204-1:2018 - Safety of machinery - Electrical equipment of machines - General requirements

EN 62133-2:2017 - Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications - Part 2: Lithium systems

CONTACT US

KEEP MOVING PARTS MOVING

Hove is the leading developer, producer, and supplier of advanced lubrication solutions for heavy machinery. Our in-house R&D department and production department have blazed the trail with innovative solutions for the wind industry, and our filling facility and service departments help numerous operations around the world stay up and running.

SUPPORT, SERVICE, AND REPAIR

HEADQUARTERS

HOVE Service Center

Herstedoestervej 7

2600 Glostrup

Denmark

Phone: +45 70 22 10 22

Email: repairs@hove-as.dk

Website: www.hove-as.dk

Other service centers are listed at <https://hove-as.com/contact/>

Dealer

HOVE A/S

Herstedoestervej

2600 Glostrup

Denmark

Phone: +45 70 22 10 22

Email: hove@hove-as.dk

Sales: sales@hove-as.dk

Website: www.hove-as.com

