

**HOVE**




# Manual

## HOVE EASY GREASE

### ver.4

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- |   |   |
|---|---|
| a. Case   | h. Remote Control   |
| b. Lid  | i. Support Pins for Cartridge   |
| c. Grease Cartridge Adapter                               | j. Indicator LED for Ground Failure Detection<br>(only on models with Ground Failure Detection) |
| d. Lock Lever (only on models with low viscosity adapter) | k. Flush Valve  |
| e. Hove Grease Cartridge                                  | l. Flush Pipe   |
| f. Hose Connection  | m. Speed Adjustment Knob  |
| g. Control Panel  | n. Machine Controller USB Socket  |

# GENERAL DESCRIPTION OF THE MACHINE

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Hove Easy Grease ver. 4 is a semi-automatic lubrication pump intended for direct lubrication of bearings. The small size and low weight make the machine the best choice for lubrication tasks in places with ladders and stairs.

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

## MANUAL DOSING MODE

You start and stop the pump manually. The display shows the dosed amount of grease during the pumping process.

## AUTOMATIC DOSING MODE

You preset the wanted amount of grease. The display shows the remaining amount of grease during the pumping process. If needed, you can start and stop the pump manually. When the pump has dosed the preset amount of grease, the pump will automatically stop.

## INTENDED USE

You can use the machine for lubrication of bearings in any industry. Only use the machine for this purpose.

# SAFETY RULES

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- Only persons who have read and understood the operating instructions may operate the machine.
- Never use the machine to other purposes than described above under "Intended use".
- Never use Hove Easy Grease for direct feeding of grease/lubricants to a closed bearing, as the bearing might be damaged by the building-up of pressure inside.
- Never point the hose from the machine at people or animals.
- Always wear safety glasses and gloves when working with lubrication.
- Always use the built-in handle for carrying the machine. Always use approved lifting equipment for lifting the machine to great heights. Always use required personal safety equipment when using lifting devices in connection with high level lifting.
- Only use the original power cord supplied from Hove A/S. The mains plug of the power cord must have a safety earth connection, and you must connect it to a safety earth connected mains outlet.
- If the machine is equipped with the Hove ground failure detection feature, the high voltage components of the machine will be switched off until a safety earth connection is detected. The PE wire in the power cord must be connected to safety earth. Other safety earth connections are not detected!
  - Indicator for LED for Ground Failure Detection:
    - RED: Safety Earth Connection missing
    - GREEN: Safety Earth Connection detected

# ON DELIVERY OF THE MACHINE

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- Immediately check the packaging and machine for shipping damage. Do not use the machine if damaged. Contact Hove A/S.
- Dispose of packaging material according to applicable regulations.
- Read the instruction manual carefully. It contains important information about the use and maintenance. Keep the instruction manual for future reference.

# WHEN USING THE MACHINE FOR THE FIRST TIME

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## CLEANING THE MACHINE

- Clean the Hove Easy Grease to prevent any contamination of grease or pump.
- As described under “Assembly”, flush the pump through with 300 grams of the desired type of grease before initial start. The machine's functions have been thoroughly checked at the factory. This may be the cause of small remaining quantities of grease in the machine. The flushing ensures the removal of any remaining grease and it gives the opportunity to test the machine's functions before using it for lubrication applications.

## ASSEMBLY

- Open the lid (B).
  - On models with cartridge turn on coupling:
    - Dismantle the dust cap by turning the lock lever (D) fully counterclockwise
  - On models with cartridge push on coupling:
    - Pull off the dust cap
- Screw the adapter (C) onto a full Hove Grease Cartridge (E) with the desired type of grease. Be sure to screw the adapter sufficiently firm, so the join is airtight.
  - Make sure the grease is fully advanced in the adaptor
- Mount the four support pins(I) for the cartridge.
- Install the grease cartridge with adapter on the machine.
  - On models with cartridge turn on coupling:
    - Lock the adapter by turning the lock lever fully clockwise.
  - On models with cartridge push on coupling:
    - Push on the cartridge
- Position Flush valve (K) to “Flush”
- Plug the power cord in the machine’s power socket and plug it into the mains outlet supply.
- The machine is ready when the MAIN screen appears at control panel (G).
- Start the pump in manual dosing mode and pump out 300 grams of grease to flush the pump.
- Stop the pump after flushing.
- Position Flush Valve to “Pump”
- Lubricate

# DAILY USE

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- Observe the safety and operating instructions on the machine and the used lubricants.
- Always flush the pump with the new type of grease in the event of a changing the grease type.
- If you use the same hose for all types of grease, make sure to flush the hose before use.

## AFTER USE

- Unplug the power cord from the mains outlet supply and disconnect it from the machine.
- Clean the Hove Easy Grease to prevent any contamination of grease or pump.
- Demount and dispose of empty Hove grease cartridges in an environmentally safe manner according to current regulations of the country where the machine is used.
- Dismount the four support pins for the grease cartridge.
- Close the Hove Easy Grease. Make sure that the lid is closed correctly.

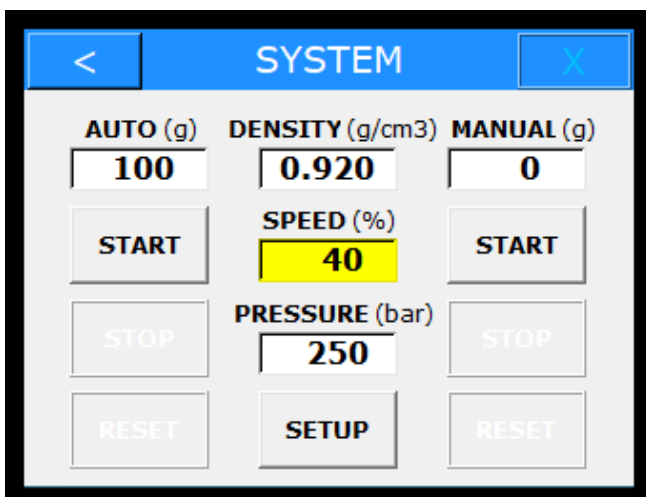
# OPERATING THE MACHINE

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## CONTROL PANEL



The MAIN screen appears in the display a few seconds after switching on the Hove Easy Grease. Select the required language by pressing the corresponding button on the screen.



By selecting a language, the main screen will shift to the SYSTEM screen

- The SPEED field shows the potentiometer setting if this is lower than the MAX. SPEED setting. Otherwise, the SPEED field turns white and shows the MAX. SPEED setting.



## GENERAL BUTTONS



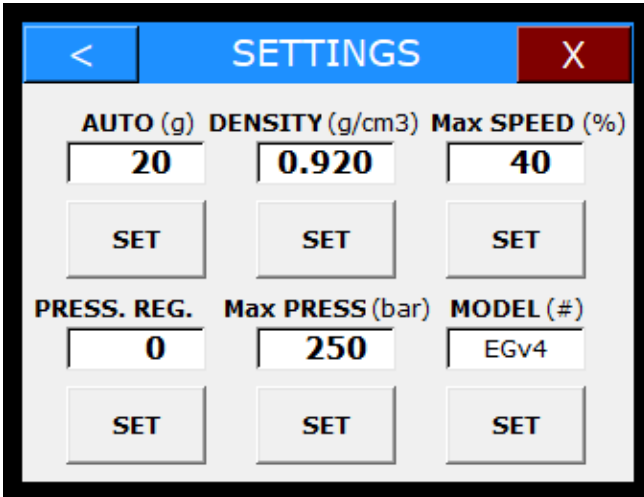
Returns to the previous display screen.



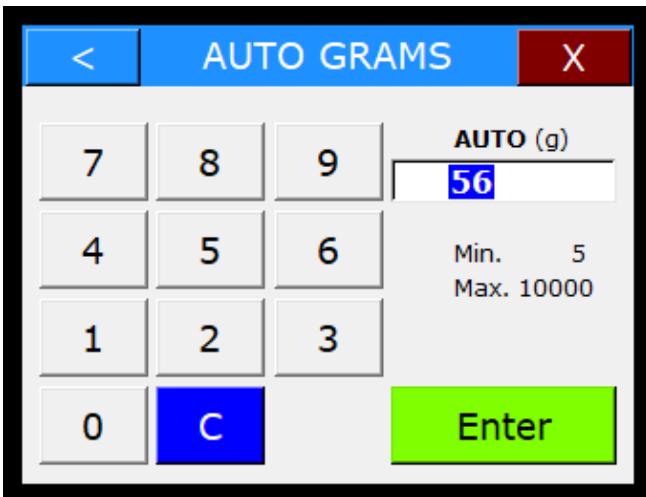
Returns to the SYSTEM screen.

## CHANGE SETTINGS

Press the SETUP button for entering the SETTINGS screen.




## SET AUTO GRAMS



Enter the required grease dose.  
The entered value must be within the  
“Min.” and “Max.” limits. Otherwise, the  
setting will not be altered.

Press  to cancel the entered value

Press  to confirm the entered value

## SET DENSITY

The screenshot shows a control panel for setting density. At the top, there is a blue header with a back arrow, the text "DENSITY", and a red "X" button. Below the header is a numeric keypad with buttons for digits 0-9, a blue "C" button, and a green "Enter" button. The display area shows "DENSITY (g/cm3)" with a value of "0." and a range from "Min. 0.800" to "Max. 1.200".

Enter the density of the grease.

The decimal point is set automatically after the first digit.

## SET MAX SPEED

The screenshot shows a control panel for setting maximum speed. At the top, there is a blue header with a back arrow, the text "MAX SPEED", and a red "X" button. Below the header is a numeric keypad with buttons for digits 0-9, a blue "C" button, and a green "ENTER" button. The display area shows "Max SPEED (%)" with a value of "60" and a range from "Min. 10" to "Max. 100".

Enter the pump speed limit (% of max).

- The potentiometer setting will be limited to this value

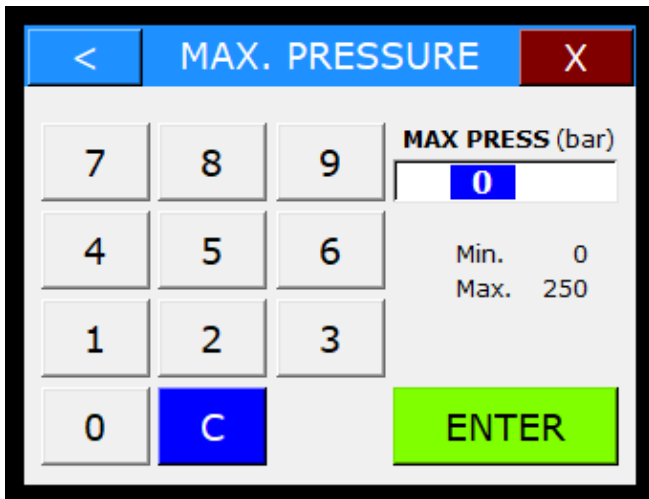
## SET PRESSURE REGULATION

The screenshot shows a control panel for setting pressure regulation. At the top, there is a blue header with a back arrow, the text "PRESS. REG.", and a red "X" button. Below the header is a numeric keypad with buttons for digits 0-9, a blue "C" button, and a green "ENTER" button. The display area shows "PRESS. REG. (0/1)" with a value of "0" and a range from "Min. 0" to "Max. 1".

Enter the Pressure Regulation setting.

- "0" = Pressure regulation off
- "1" = Pressure regulation on

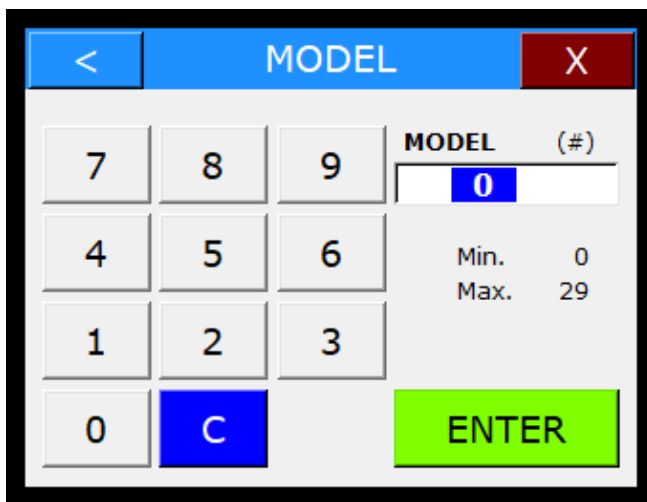
## SET MAX PRESSURE



Enter the Pressure limit.

- The pump will stop if this limit is exceeded. Decrease the potentiometer setting and press START to continue, or press STOP to abort.
- If PRESSURE REGULATION is set, the pump speed be reduced if this limit is exceeded. If this cannot reduce the pressure sufficiently, the pump will stop and restart a few times, and if this doesn't solve the situation, the pump will stop. Check if the outlet or a hose is blocked and press START to continue, or press STOP to abort.

## SET MODEL #



This function is pin code protected to avoid unintended alterations. Entering an invalid pin code will have no effect.

- Pin codes:

11111: Calibrate Flow Meter

12321: Set Model

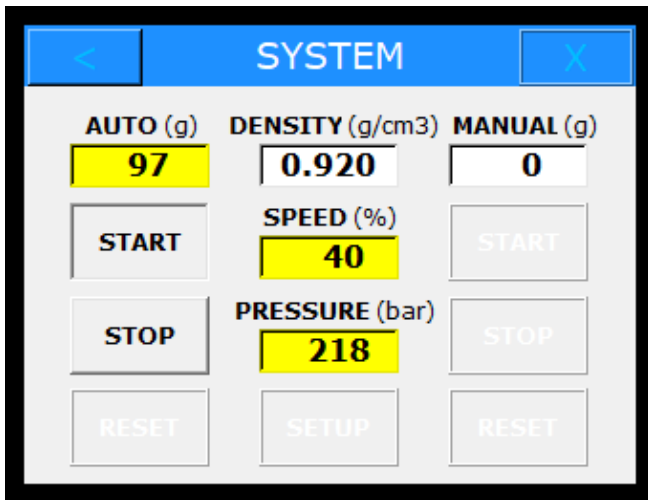
22222: Set Machine Type and Serial no. for Hove Smart Lube

45654: Set Hove Smart Lube

99999: Calibrate Touch Screen

# RUNNING THE MACHINE

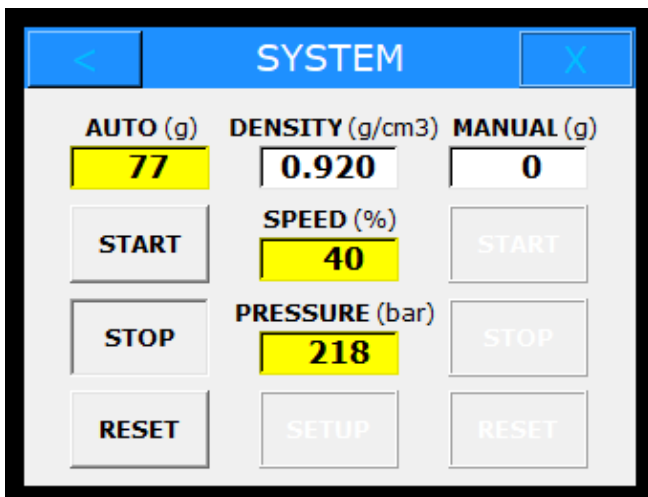
## START OF AUTOMATIC DOSING



Press the AUTO START button

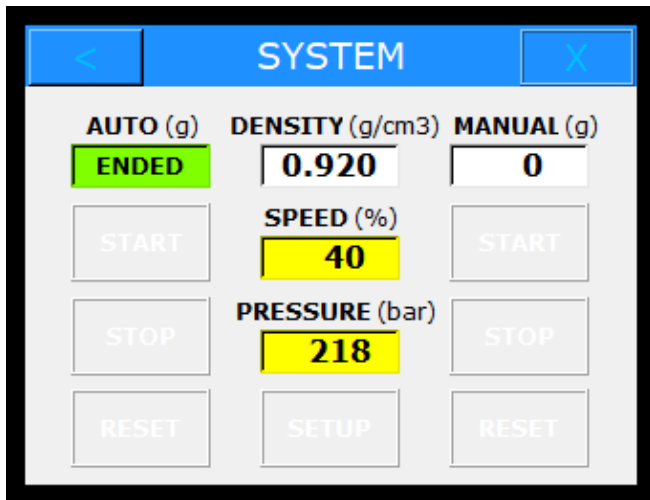
- The **remaining** amount of grease is shown in "AUTO (g)".
- The pump starts and the active fields turn yellow.
- The SPEED field shows the potentiometer setting if this is lower than the MAX. SPEED setting. Otherwise, the SPEED field turns white and shows the MAX. SPEED setting.
- If PRESSURE REGULATION is set, the SPEED field shows the actual speed.

## PAUSING/ABORTING

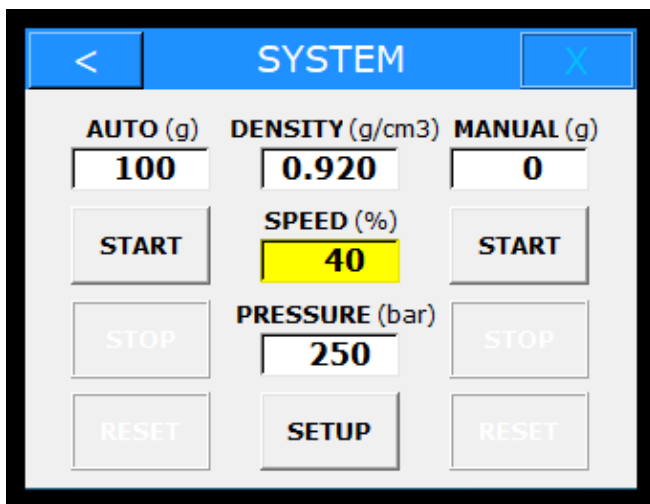


If desired, you can pause the pump during the automatic dosing by pressing the AUTO STOP button.

- Pressing the AUTO START button again will make the pump start and continue from where it left off.
- Pressing the AUTO RESET button will abort the current dosing and reset the "AUTO (g)" counter.

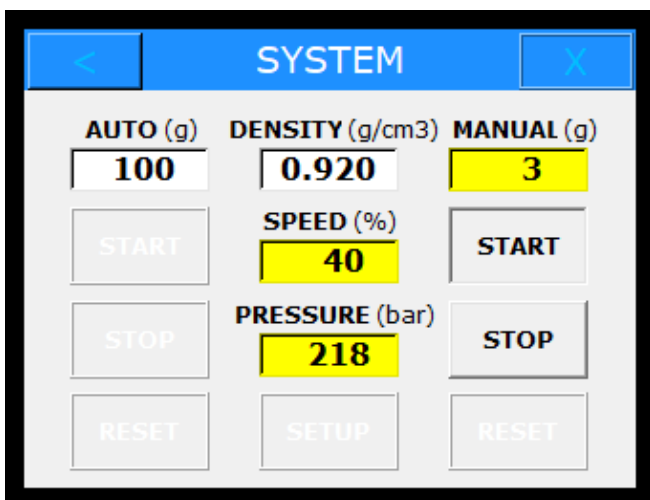


- When the AUTO grease counter reaches zero, the pump stops, and the AUTO grease counter turns green, and flashes “ENDED”.



- After a few seconds the AUTO grease counter changes to the set value and the machine is ready again.

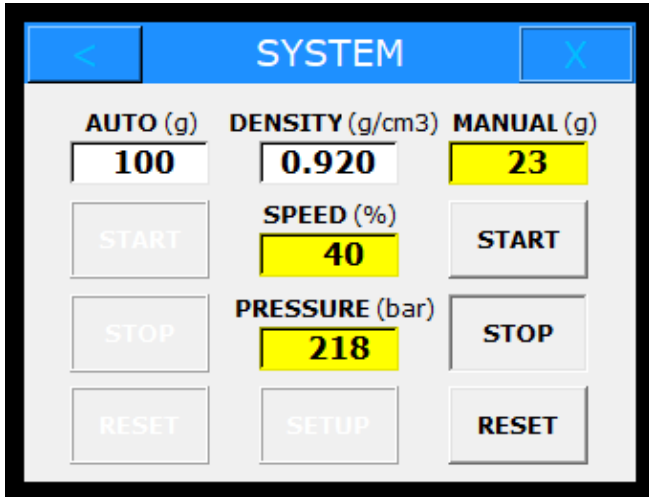
## START OF MANUAL DOSING



Press the MANUAL START button.

- The dosed amount of grease counts from zero and upwards in the “MANUAL (g)” field.
- The pump starts and the active fields turn yellow.
- The SPEED field shows the potentiometer setting if this is lower than the MAX. SPEED setting. Otherwise, the SPEED field turns white and shows the MAX. SPEED setting.
- If PRESSURE REGULATION is set, the SPEED field shows the actual speed.

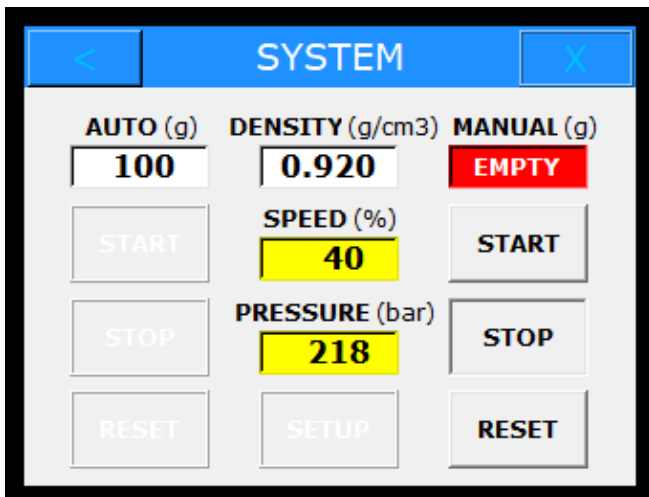
## PAUSING/ABORTING



When the MANUAL grease counter reaches the required amount or if you want to pause the pumping, press the MANUAL STOP button.

- Pressing the MANUAL START button again will make the pump start and continue from where it left off.
- Pressing the MANUAL RESET button will abort the current dosing and reset the "MANUAL (g)" counter.

## EMPTY DETECTION



If the built-in flowmeter does not register the expected grease flow for a predetermined amount of time, either during manual or automatic dosing, the pump stops, and the grease counter turns red and flashes "EMPTY".

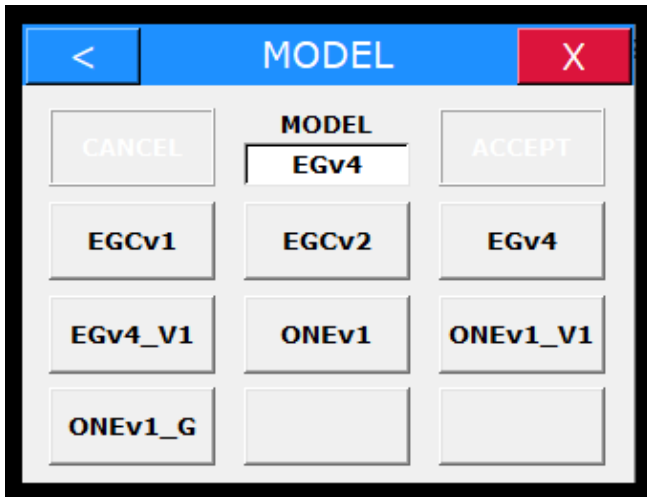
- Pressing the AUTO/MANUAL START button will start the pump again.
- Pressing the AUTO/MANUAL RESET button will abort the dosing.

# PIN CODE PROTECTED FUNCTIONS

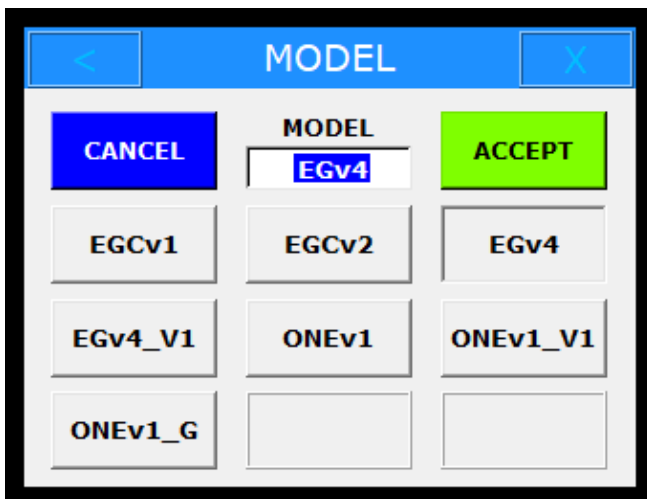
## 12321: SET MODEL

### PROCEDURE

- Switch on the pump
- Press your preferred Language Button
- Press "SETUP"
- Press the "SET" Button under the "MODEL (#)" field



- Press the Button which corresponds to wanted Machine Model, e.g., "EGv4"



- Press the Button which corresponds to wanted Machine Model, e.g., "EGv4"
- Press "ACCEPT"

## 11111: CALIBRATE FLOW METER

### PROCEDURE

- Switch on the pump
- Press your preferred Language Button
- Set the correct density of your preferred Grease Type
- Set "AUTO (g)" to 100
- Deliver the 100 grams by pressing "START" (AUTO)
- Weight the amount and note it
- Press "SETUP"
- Press the "SET" Button under the "MODEL (#)" field
- Input "11111" and press "ENTER"

The screenshot shows the 'FM CALIBRATION' screen with a blue header bar containing a back arrow, the title 'FM CALIBRATION', and a red 'X' button. The screen displays five data fields with their respective units and 'SET' buttons below them:

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

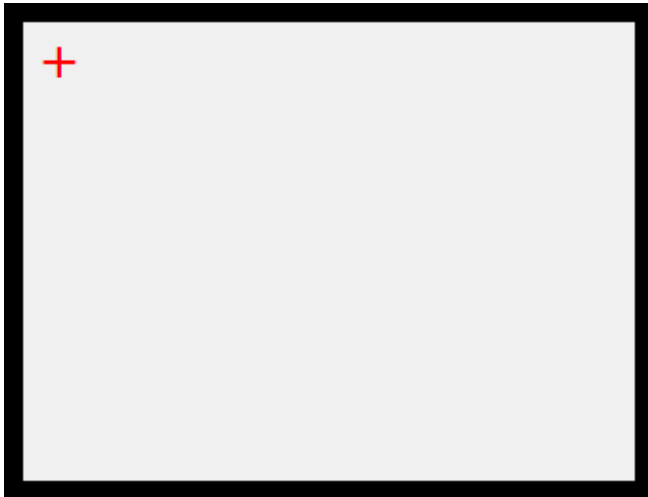
- Press the "SET" Button under the "WEIGHT (mg)" field
- Input the noted weight in milligrams, e.g., 100g = 100000 and press "ENTER"
- Press "X" in the upper right corner of the screen
- Deliver 100 grams again and check that the weight is 100 +/- 3 g; otherwise repeat the calibration steps max. 3 times



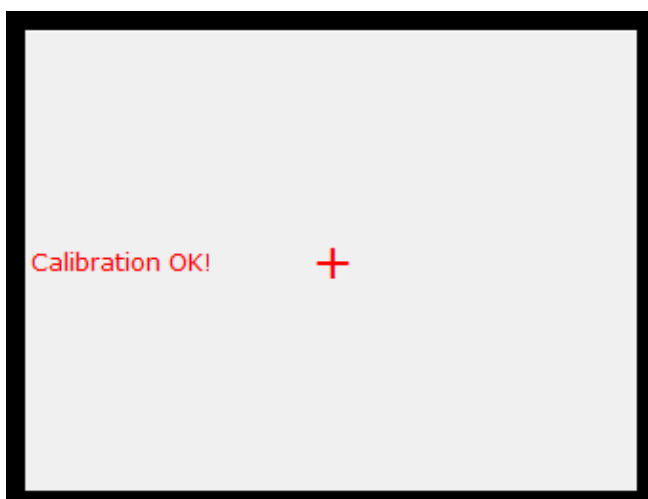
## 99999: CALIBRATE TOUCH SCREEN

### PROCEDURE

- Switch on the pump
- Press your preferred Language Button
- Press "SETUP"
- Press the "SET" Button under the "MODEL (#)" field
- Input "99999" and press "ENTER"



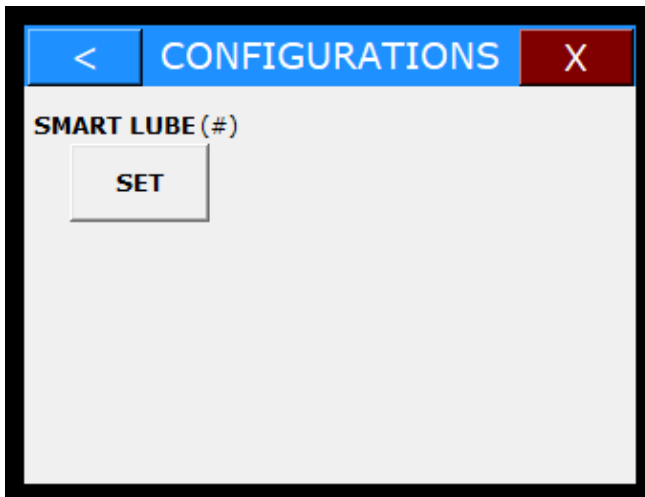
- Touch the red cross at the screen until it moves to another position (use a pen or similar)
- Repeat for all 5 positions – until the message "Calibration OK!" is shown at the screen



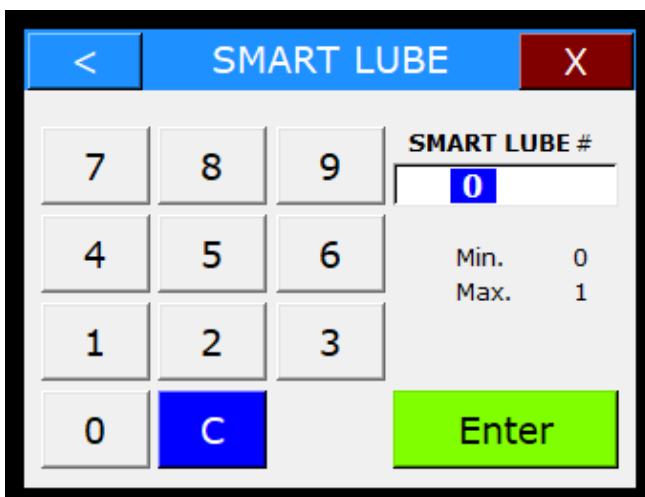
## 45654: SET HOVE SMART LUBE

### PROCEDURE

- Switch on the pump
- Press your preferred Language Button
- Press "SETUP"
- Press the "SET" Button under the "MODEL (#)" field
- Input "45654" and press "ENTER"



- Press the "SET" Button under the "SMART LUBE (#)" field



- Press “1” and “ENTER” for setting Smart Lube ON, or press “0” and “ENTER” for setting Smart Lube OFF
- After a short time, the MAIN screen appears in the display
- It shows the Machine Type setting, the Serial No. setting, and the MAC address of the built-in Bluetooth Module



## 22222: SET MACHINE TYPE AND SERIAL NO. FOR HOVE SMART LUBE

### PROCEDURE

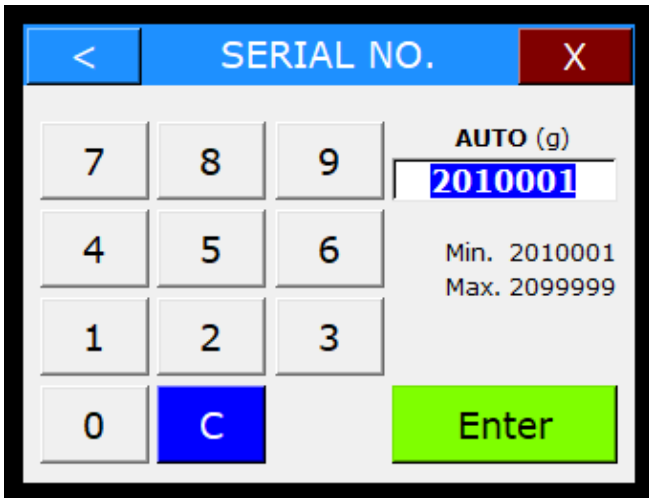
- Switch on the pump
- Press your preferred Language Button
- Press "SETUP"
- Press the "SET" Button under the "MODEL (#)" field
- Input "22222" and press "ENTER"

The screenshot shows a menu titled "MACHINE TYPE". At the top, there is a blue bar with a left arrow, the text "MACHINE TYPE", and a red "X" button. Below this, there is a grid of buttons. The first row contains "CANCEL", "MACH. TYPE" (with "Free" selected in a white box), and "ACCEPT". The second row contains "EGCv1", "EGv4", and "ONEv1". The bottom two rows consist of empty rectangular boxes.

- Press the Button which corresponds to wanted Machine Type, e.g., "EGv4"

This screenshot is identical to the previous one, but with "EGv4" selected in the "MACH. TYPE" field. The "CANCEL" button is now blue, and the "ACCEPT" button is green.

- Press “ACCEPT”
- Input Serial No. of the machine and press “ENTER”



- After a short time, the MAIN screen appears in the display
- If Smart Lube is ON, the display shows the Machine Type setting, the Serial No. setting, and the MAC address of the built-in Bluetooth Module

# FIRMWARE UPDATE GUIDE

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## 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



## PROCEDURE

- 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
- Switch off the machine
- Gain access to the USB input of the Machine Controller by removing the protection Lid (N) by means of a coin
- Insert the USB Key in the Machine Controller USB Socket (N)
- 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 Protection Lid
- The firmware is now updated to the version of the “image.bin” file at the USB Key

# REMOTE CONTROL

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## DISPLAY

When the machine is ready for use, the Remote-Control Display shows the power supply voltage by means of one to four bars



During operation of the machine, the Remote-Control Display shows the status of the corresponding dosing counter.



## PUSH BUTTONS



The black button starts/stops the pump at automatic dosing.



The green button starts/stops the pump at manual dosing.



The red button resets the dosing counters.

## AUTOMATIC DOSING



Press the black button to start automatic dosing.

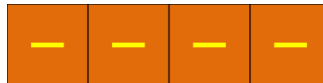
The display shows **a u t o** briefly, and the pump starts.

During pumping out the remaining amount of grease counts down to zero at the display.

When the counter reaches zero, the pump stops and the display flashes



After some seconds, the display shows



and the machine is ready again.

### PAUSING / ABORTING

If desired, you can pause the pump during the automatic dosing by pressing any button.

You can restart the pump by pressing the black button or abort the automatic dosing by pressing the red button for 2 seconds.

## MANUAL DOSING



Press the green button to start manual dosing.

The display shows **m a n** briefly, and the pump starts.

During pumping out the dosed amount of grease counts from zero and upwards at the display.

### PAUSING/ABORTING

When the counter reaches the required amount, or if you want to pause the pumping, press any button.

You can restart the pump by pressing the green button or abort the manual dosing by pressing the red button for 2 seconds.



# CLEANING AND MAINTENANCE

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Regular inspection and maintenance of the machine helps to ensure smooth operation.

Always clean the Hove Easy Grease after use. Regularly check the O-ring at the bottom of the adapter thread for wear and tear. Regularly check the O-ring at the cartridge locking mechanism for wear and tear. Regularly check pressure hose for damages. If the outer surface is severely damaged, we recommend replacing the hose.

Once a year, check the pump as to correct measuring (check that the density factor is set correctly in the display for the lubricant used for control). Pump a certain amount and check the weight. If the weight is not correct, we recommend that you contact Hove A/S to have the flow meter checked.

## IN THE EVENT OF DAMAGE TO THE MACHINE

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### **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 should no longer be used, but must be repaired or discarded.

### **WHAT TO DO IF AN ERROR OCCURS?**

You can often remedy errors to the machine without submission for repair. The following table shows the possible causes of errors and tips to remedy them.

## TROUBLESHOOTING GUIDE

Fault	Possible Causes	Remediation
No light in Control Panel and Remote Control displays	a) Machine automatically switched off because of error. b) Ground Failure Detection (only for models with Ground Failure Detection) does not detect a proper ground connection.	a) Unplug the mains power supply for 5 seconds and then plug it in again. b) Unplug the mains power supply and reconnect it to a different power outlet with a working ground connection.
Control Panel does not respond to touching	a) Unknown error	a) Restart the machine by unplugging the mains power supply for 5 seconds and then plugging it in again.
Grease /liquid runs irregularly/spouting out of the pump when pumping (there is air in the system)	a) Air leak at cartridge/adaptor connections b) O-rings	a) Screw cartridge properly onto adaptor b) Replace O-ring
Pump is working but is not pumping grease	a) Air is stuck inside the pump	a) Follow the steps below: <ul style="list-style-type: none"> <li>• Stop the pump</li> <li>• Remove the grease cartridge</li> <li>• Turn the Flush Valve(K) to flush position</li> <li>• Make a deep funnel in the grease inlet with e.g. a cable tie</li> <li>• Prime the inlet with oil to let air escape from the pump</li> <li>• Set the speed adjustment knob(M) to 10% and start/stop the pump quick and repeatedly while priming it with oil</li> <li>• Stop pump, fill inlet up with oil</li> <li>• Check that the grease is fully advanced in the cartridge adaptor and put on the cartridge</li> <li>• Set the speed adjustment knob to 100% and flush until pure grease comes out of the flush pipe(L)</li> <li>• Stop the pump and turn the flush valve to pump position</li> </ul>

# DISPOSAL

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This machine is in accordance with Directives 2011/65/EU - Restriction of the use of certain hazardous substances (RoHS), and 2003/108/CE on the disposal of waste from such equipment (WEEE).

When the machine is to be disposed, it must be collected separately from other waste according to applicable regulations.

## TECHNICAL DATA

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### General

- Pump unit

### Dimension

- Size: 365 x 300 x 170 mm
- Weight: 9 kg

### Power supply

- 110-115 VAC / 50Hz-60Hz
- or
- 200-240 VAC / 50-60HZ

### Maximum Continuous Output Pressure

- 250 bar
- 3625 psi

### Output Flow

- 30-600 ml/min, depending on lubricant
- 1-21 oz/min, depending on lubricant

### Operation

- Semi-automatic

### Controller

- Hove Electronic Controller

### Repeatability

- + / - 1 %

### LpA Sound Pressure Level

- 58 dB(A)

### Power Consumption

- Max. 450 W

### Canisters

- 1.5, 3, and 5 kg

# EU DECLARATION OF CONFORMITY

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**Hove Easy Grease ver. 4 is in conformity with:**

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

Directive 2014/35/EU - Low voltage (LVD)

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:

EN 55011:2016 - Industrial, scientific, and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement

EN 61800-3:2004/A1 2012 - Adjustable speed electrical power drive systems. EMC requirements and specific test methods

Electrical Safety:

EN 61800-5-1:2007 - Adjustable speed electrical power drive systems. Safety requirements - Electrical, thermal and energy

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

EN 60990:2016 - Methods of measurement of touch current and protective conductor current

# IN-SERVICE INSPECTION & TESTING OF ELECTRICAL EQUIPMENT

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## ACCEPTANCE LIMITS:

### Earth Continuity Test

- Protective conductor resistance RPE must be  $\leq 0,3 \Omega$  at 5 m power cord

### Insulation Resistance Test

- Insulation resistance RISO must be  $\geq 2 \text{ M}\Omega$  at  $\leq 500 \text{ VDC}$  test voltage

### Protective Conductor Current Test

- Protective conductor current must be measured when the pump is switched on and running (direct measurement)
- The measurement must be performed with the mains plug polarized in both directions
- Protective conductor current IPE must be  $\leq 3,5 \text{ mA RMS}$

### Touch Current Test

- Touch current must be measured when the pump is switched on and running (direct measurement)
- The measurement must be performed with the mains plug polarized in both directions
- Touch current ITOUCH must be  $\leq 0,5 \text{ mA RMS}$

## Technology with Ingenuity

Hove A/S is a Danish-owned company that was founded in 2000 and has grown significantly since. Hove A/S has its own production and development departments. We sell and develop:

- Specially designed pumps
- Dosing units
- Fittings
- Flow distribution systems

# SUPPORT, SERVICE, AND REPAIR

HEAD QUARTER

Hove Service Center

Herstedoestervej 7

2600 Glostrup

Denmark

Phone: +45 61 71 22 83

Whatsapp: +45 61 71 22 83

Email: [repairs@hove-as.dk](mailto:repairs@hove-as.dk)

Website: [www.hove-as.dk](http://www.hove-as.dk)

Other service centers are listed at [ww.hove-as.dk](http://ww.hove-as.dk)

Dealer

### Hove A/S

Herstedoestervej 7

DK-2600 Glostrup

Denmark

Phone: +45 70 22 10 22

Fax.: -45 70 22 10 82

E-mail: [hove@hove-as.dk](mailto:hove@hove-as.dk)

Web: [www.hove-as.dk](http://www.hove-as.dk)

