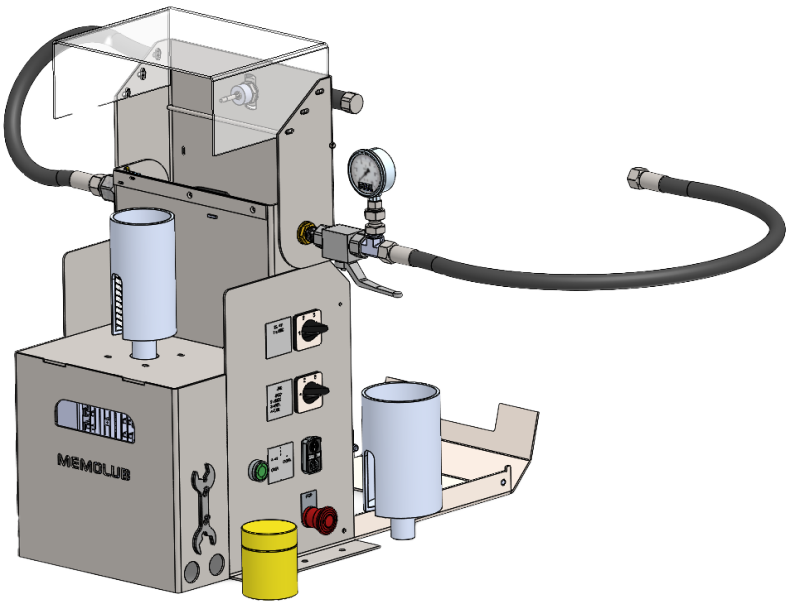


MEMOLUB VERTICAL FILLING MACHINE
USER MANUAL

MEMOLUB.COM

INTRODUCTION

The Memolub vertical filling machine (VFM) allows the filling of cylindrical cartridges with various lubricants. Compared to other existing systems, it has the following features:

- Semi-automatized: 1 pushbutton to run/stop a spinning and/or filling cycle.
- Versatile: can fill and/or spin oil or grease up to NLGI2 in memolub bellow-type cartridges (120cc, 240cc, 480cc), CNC-LUB bellow-type cartridges (700cc) and quickluber (30cc, 60cc, 120cc)
- Customizable: 4 different recipes with each 4 contents , having their individual spin and fill values
- Compact: Footprint of 36 x 41cm; very stable design due to motor ballasting
- Increased safety: cover with shield and lock, self-braking rotor.

PRECAUTIONS

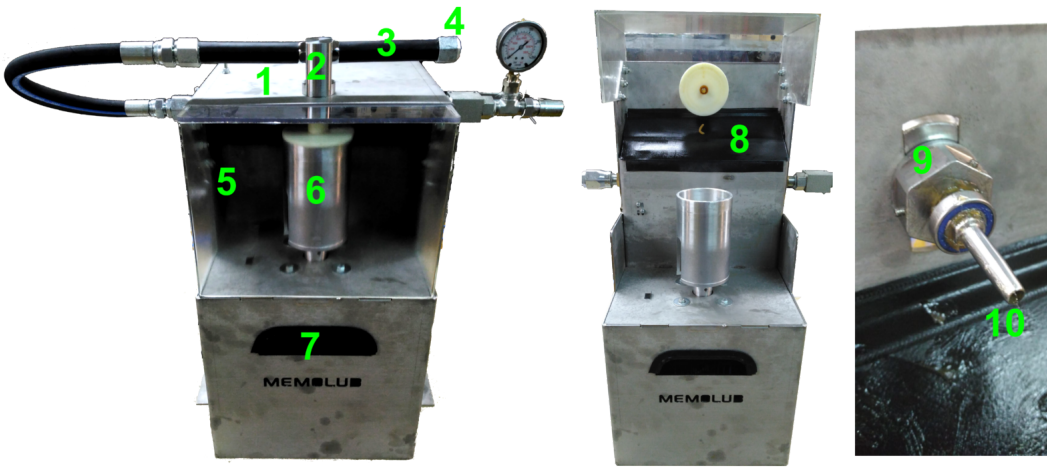
- Always use a lubricant pump matching the lubricant consistency/viscosity.
- Wear lubricant-resistant gloves.
- Make sure there is always a empty cartridge left in the rotor after operation
- Make sure there is no tool left on the motor platform
- A log book should be attached to the machine to record the dated operations.
- Check that the emergency pushbutton is unlatched

OVERVIEW

FRONT VIEW

This section concerns VFM V1.0

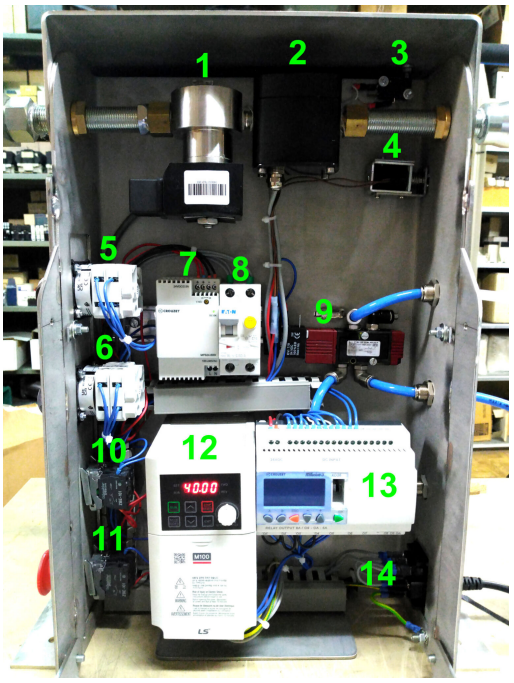
The main interface of the front side is the lid. Once unlocked (either automatically - after operation is complete - or manually - see left side view) the VFM lid can be opened by pulling on the handlebar. This allows the operator to access the machine rotor (cartridge replacement) or the filling head (nozzle position adjustment). When closing back the lid, the lock automatically engages.

COMPONENT	ILLUSTRATION
1.LID	
2.HEAD	
3.LID HANDLEBAR	
4.PURGE PLUG	
5.WINDOW	
6.ROTOR	
7.MACHINE HANDGRIP	
8.BIB	
9.NOZZLE HOLDER	
10.FILLING NOZZLE	

REAR VIEW

This section concerns VFM V1.0

The back side contains all the control equipments. You can access these by pulling the rear cover through the handgrip. To close it again, simply push it back in place.

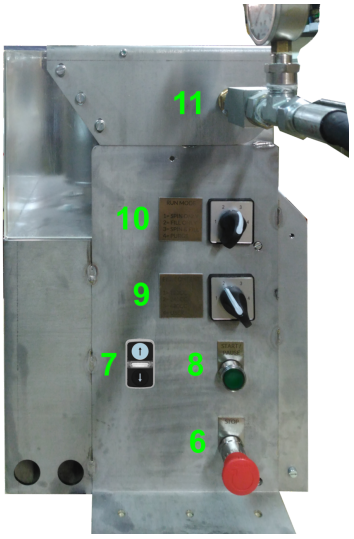
COMPONENT	ILLUSTRATION
1.GREASE VALVE	
2.GREASE METER	
3.LID SWITCH	
4.LID LOCK	
5.MODE ROTARY SWITCH SOCKET	
6.CONTENT ROTARY SWITCH SOCKET	
7.AC/DC CONVERTER	
8.CIRCUIT BREAKER	
9.AIR ELECTROVALVE	
10.GREENLIGHT PUSHBUTTON SOCKET	
11.EMERGENCY PUSHBUTTON SOCKET	
12.MOTOR CONTROLLER	
13.VFM CONTROLLER	
14.MAINS POWER SOCKET	

LEFT & RIGHT VIEW

This section concerns VFM V1.0

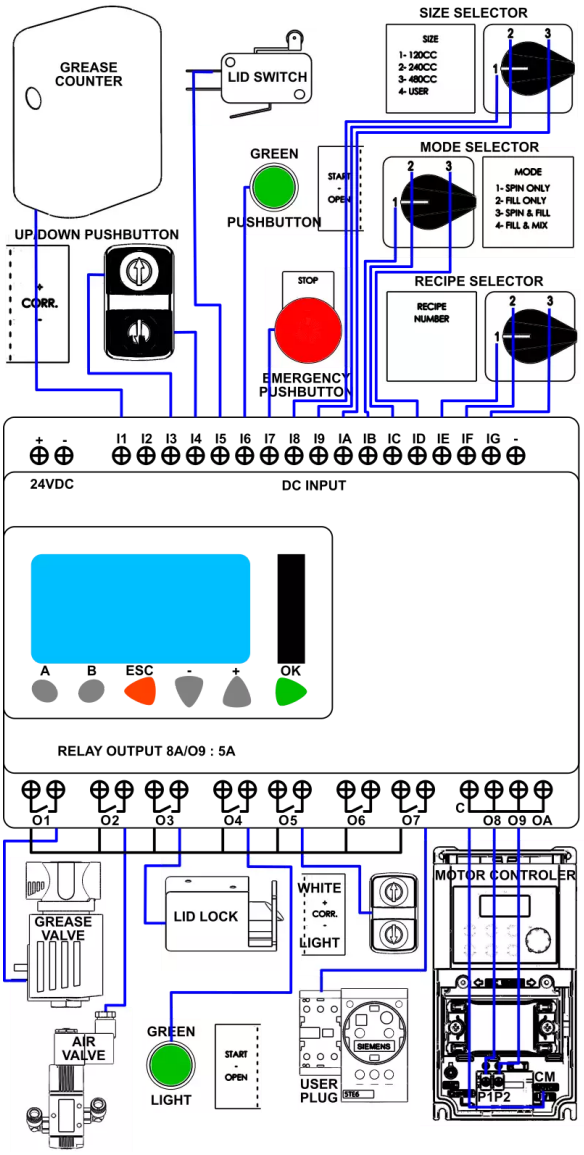
The left side of the VFM contains all the interfaces with external utilities: power supply, compressed air inlet and outlet. The air inlet is equipped with a pressure regulator. The selector switch allows to select which recipe is active. The related parameters are then called from the controller memory.

The right side bears the operational interface: selection of the run mode, the fill contect, then start/stop/pause button, dose correction, emergency pushbutton.

COMPONENTS	ILLUSTRATION
1. POWER SOCKET & SWITCH	 
2. AIR INLET	
3. AIR OUTLET	
4. RECIPE SELECTOR	
5. GREASE LINE OUTLET	
6. EMERGENCY PUSHBUTTON	
7. +/- DOSE PUSHBUTTON	
8. GREEN PUSHBUTTON	
9. CONTENT SELECTOR SWITCH	
10. RUN MODE SELECTOR SWITCH	
11. GREASE LINE INLET	

WIRING

This section details the wiring of the VFM controller input and output, so that they are inline with the firmware last version.



INSTRUCTIONS

OPERATING MODES

The VFM has 4 operating modes, selected through the "mode" rotary switch. The driving parameter is the spinning time for mode 1, filling quantity for modes 2 and 3, and both spinning time and filling quantity for mode 4.



MODE 1: SPIN ONLY

The "spin only" mode is used to remove air from pre-filled cartridges by centrifugating them over a predefined spinning time.



MODE 2: FILL ONLY

The "fill only" mode is used to fill cartridges with predefined quantities of lubricant when there is no need to degas the lubricant, for example in the case of oils.



MODE 3: SPIN & FILL

The "spin&fill" mode centrifugates cartridges while filling them with a predefined quantity.



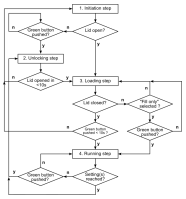
MODE 4: FILL & MIX

The "fill&mix" mode is used to mix two different lubricants together. In that case, the cartridge is prefilled with a lubricant A and rotates alternatively clock- and counterclock-wise while filling with a predefined quantity of lubricant B and for a pre-defined time.

OPERATING SEQUENCE

Although governed by different parameters, all the modes follow the same sequence:

1. Initiation step. If the lid is already opened the sequence jumps to step 3. If the lid is closed, the VFM waits for the user to unlock the cover: Please push shortly on the green pushbutton.
2. Unlocking step: The green button light blinks and the lid unlocks for 10s. Gently pull the lid handlebar to open after verifying the lock has unlatched*. If you don't open the lid within the 10s, the sequence then returns to step 1.
3. Loading step: The green button is blinking, the up/down button is alight and may be used to increment/decrement the active parameter (see "settings" section). (Re)place the cartridge to be processed in the rotor. Close the lid (optional for "fill only" mode), then push the green button within 10s. If you wait too long from the lid closure, the sequence will reinitialize to step 1.
4. Running step: The operation starts: the rotor is spun and/or the air-operated lubricant pump is activated, delivering grease into the cartridge. This operation stops once the mesured parameters reach the actual settings or if the green pushbutton is pressed. In both cases the sequence returns to step 2.



*If you try to open the lid too fast at step 2, the bolt has not enough time to unlock and the machine cannot be opened. Due to the clearance between latch and lid, the machine may however detect that the lid has been opened and closed, and wrongly assume that the loading step has been completed. You can assess this situation if the green button stops blinking after trying to open the lid unsuccessfully. In that case pushing the green button hereafter will activate step 4. Please wait 10s instead, so that the sequence reinitializes to step 1.

If the emergency pushbutton is activated/unlatched or any rotary switch turned, the sequence reinitializes to step 1.

"EXTRA RUN" FUNCTION

If the green and the "+" pushbutton are pushed simultaneously at step 2 or 3, the machine operates a so-called "extra run". For the spin mode, this means an short spinning time of 5s, and for the other mode an extra dose of 10cc. The particularity of this mode is that it can be run directly after normal operation, without opening the lid, if a visual check confirms the centrifugation/filling of the cartridge is not satisfactory.

SETTINGS

When running, the VFM operates according to the **actual setting** of the driving parameter, which is the sum of two parameters:

1. The **nominal value** of the driving parameter,
2. The **correction value** of the driving parameter.

The **driving parameter** considered by the machine for operating will be **spinning time** if the "spin only" mode is active, the **filling quantity** for modes 2 and 3, and both the spinning time and the filling quantity for mode 4. The operation (step 3) will then last until the **measured value(s)** of the driving parameter(s) reaches its/their **actual setting.**

Nominal, correction and measured values are displayed on the screen of the controller when pushing on the local "OK" button.

The **nominal value** is selected through the combination of "recipe" and "content" rotary switches . Therefore there are 16 nominal spinning times and 16 nominal filling quantities. The value of these parameters can be edited through the controller interface on the back side (see procedure below) and is stored permanently.

The **correction value** for spinning time can be modified in the "spin only" and "mix & fill" modes, while the correction for the filling quantity can be changed in the "fill only" or "spin&fill" modes. There are two different ways of adjusting the correction:

- During step 2 (cover opened), by incrementing/decrementing the correction value with the +/- pushbutton, when the lid is opened. Resetting the correction value is obtained by pushing "up" and "down" buttons together.

- During step 3 (during operation), by pushing the green button and keeping it pressed until operation is complete. Releasing the button will then stop the operation and update the correction accordingly. This function is very handful for a first "rough" setting when the operation completion can be assessed visually.

<u>The correction value is NOT permanent and resets to 0 in the following cases:</u>

- The machine is powered off
- The "recipe" rotary switch is turned , or
- The "content" rotary switch is turned.

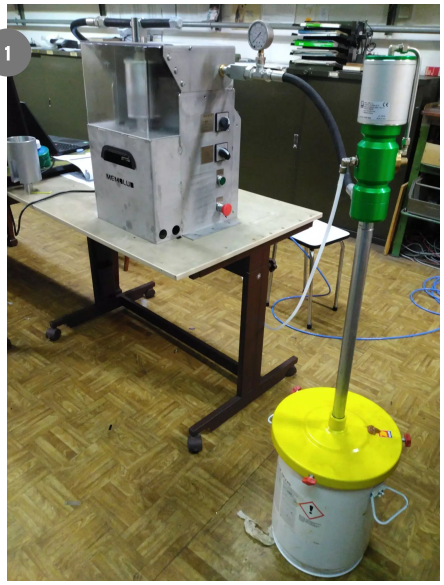
If the correction is meant to be definitive, the **nominal value** should be updated accordingly through the controller interface.

Please keep aware that the **actual setting** must always be considered relative to the incoming air pressure and the pneumatic pump type. Both should be recorded in the machine log book for each operation.

INSTALLATION

First installation

1



Place the VFM on a stable, flat surface, close to compressed air supply, electrical power supply and existing or future lubricant drum. If necessary, fasten the VFM on the table using the holes in the left/right feet

2 Plug the VFM power socket to the power supply, using the supplied power cord.

3



On the left side, connect the T8 VFM air inlet to the compressed air supply

4 Connect the T8 VFM air outlet to the grease pump air inlet

5 Connect the G1/2" pump outlet to the G1/2" VFM inlet, using the 1-meter long HP hose. If applicable, please choose the hose with the closest grease colour to the grease to be pumped.

6 Connect the G1/2" VFM line outlet to the to the G1/2" VFM head inlet, using the 0.5 meter long HP hose. If applicable, please choose the hose with the closest grease colour to the grease to be pumped.

Changing/installing a new lubricant container

The lubricant container can be either 200L drum, 50L pail or 20L bucket - corresponding weight according to density.

For grease-type lubricants, each container type should be equipped with its own dedicated follower plate and supporting cover.

Dedicated hoses should also be dedicated to each grease color. The present guide takes the general scenario where the previous grease is not the same color than the next one.

1 Using the supplied wrench, unscrew the G1/2" nut of the hose from the grease pump.

2 If the new grease is the same color than the new one, and the container size is identical, transfert the pump, centering cover and follower plate to the next grease container to be pumped

3 If the next grease has a different color than the previous, unscrew the remaining G1/2" nut of the 1m long hose (VFM side) then the two G1/2"nuts of the 0.5m long hose, and replace them with identical hoses containing grease of similar color to the next one.

4 If the grease colour significantly differs from the previous one, disconnect the long and short hoses. You can either clean them using a long rod, or replace them with hoses containing a grease of the same colour than the grease to be pumped.

5 Unscrew the plug on the right handlebar of the VFM head, and put an empty bottle instead

6



Switch the VFM on and choose the "fill only" mode on the right.

7



Open the cover while the green light pushbutton is blinking. If not, press it: the green light will blink and the cover will unlock for 10s.

8



Place a cartridge of suitable size in the hub and close the cover, making sure the injection nozzle enters the cartridge neck

9 Press the green light pushbutton while it is blinking. The pump should perform a filling cycle and grease should come out or the right side of the head handlebar.

10 long as the expelled lubricant is not free of bubbles and not uniform in colour, you can start filling cycles again.

11 the purge bottle gets full, you can abort the purging process by pressing the green pushbutton again. Go then back to step 9.

12 nce the purging is complete, screw back the G1/2" plug on the right side of the head handlebar.

Changing the cartridge rotor and/or placing adaptors

1 Switch off the unit

2 Using the maintenance key for unlocking, open the lid of the machine

3 Remove any potential cartridge left in the rotor

4 Unscrew the rotor screw with a 4mm allen ey. The simplest way is to engage the key in the screw head then turn the rotor counterclockwise.

5 Lift the rotor using a wood rod passing through the notch and knocking it upwards with a mallet. Do not pull the rotor.

6 ush the destination rotor on the motor shaft, making sure the shaft key is aligned with the rotor bore notch

7 Rescrew the rotor screw just proceeding opposite to step 4

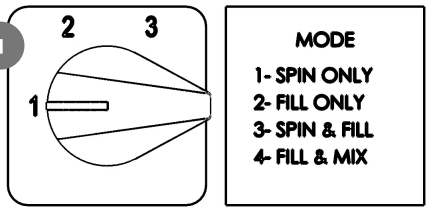
8 Depending on the rotor, you might need adaptors to use 480cc, 240cc or 120cc memolub cartridges. Pile them up to reach the right height.

9 Insert a cartridge in the rotor and check that the neck level is approximately a the top of the rotor. If not, screw/unscrew the filling nozzle using the supplied wrench.

Spinning a cartridge

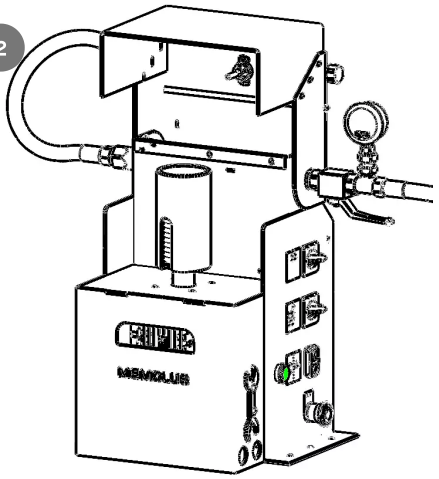
The present guide describes the manual steps specific to the "spin" mode, in order to degas cartridges prefilled with a lubricant. As this mode follows the general sequence explained in the "operating sequence" section, please refer to this section for detailed behavior.

1



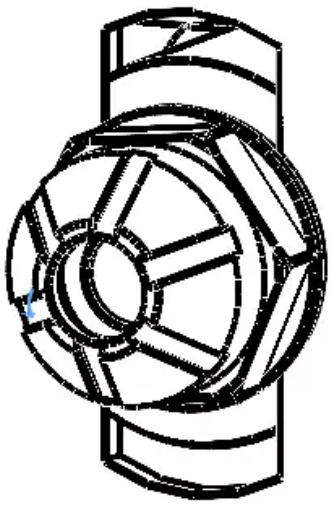
On the right side, select the "spin only" mode.

2



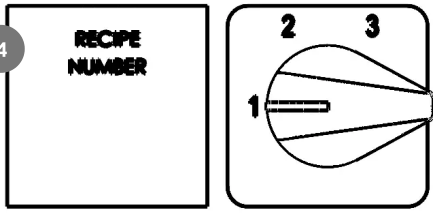
If the lid is closed, push the green button on the right side, then open the lid.

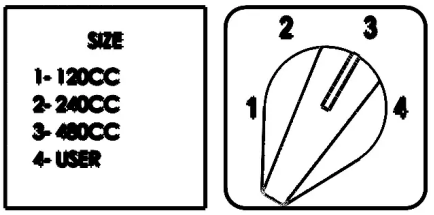
3



If present, remove the filling nozzle (see related instructions).

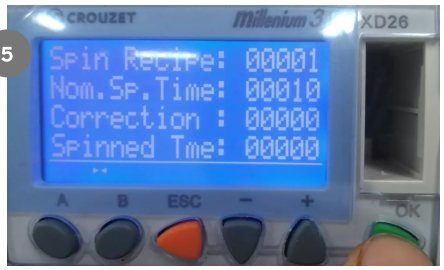
4





Select the desired recipe and content on the right side selectors.

5



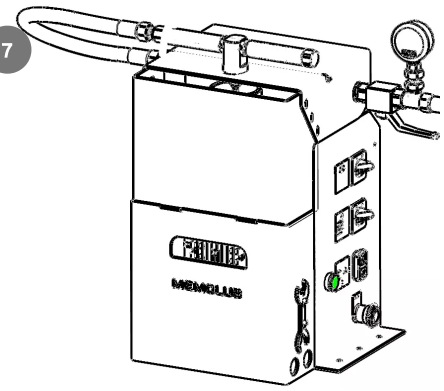
On the rear side, press OK on the VFM controller interface. Check the spinning time displayed on the VFM controller screen..

6



Insert the cartridge to be spinned in the rotor.

7



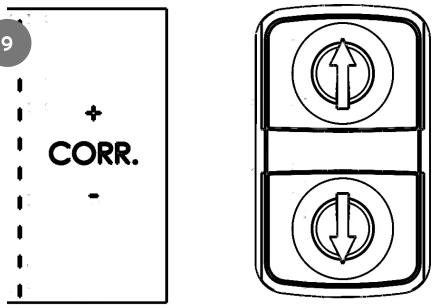
Close the lid and press the pushbutton within 10s.

8



Once the operation is complete, the lid unlocks for 10s. Open the lid and lift up the cartridge using the hub notch.

9



Check the spinning completion, you can adjust the time by using the +/- buttons. If everything is OK repeat the operation from step 6.

Calibrating the grease counter (filling content)

Each time the pump type and/or the air pressure are changed, the VFM grease meter should be recalibrated. The grease meter consists of oval gears which turn when the grease flows through. Each full turn of the gears will output a pulse. This pulse has to be related to the right amount of passed grease Qf so that measurement is consistent. Defining this relationship is the purpose of the guide below. Not calibrating the VFM will NOT affect the measuring precision, but the set/displayed filling setpoints may not be consistent with real contents. In case this calibration step takes place after some fill contents have been edited, these values have to be updated as well by multiplying them with the inverse coefficient used for updating Qf.

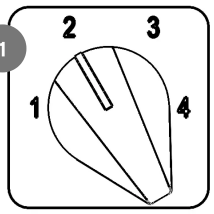
1. llowing above guides, install a container with a commonly used grease, having well known density
2. Weight an empty 240cc cartridge with a precision weightscale
3. lace the cartridge in the rotor, and using the ght combination of selectors, fill the cartridge with 240cc of grease (see next guide).
4. eight the cartridge, and calculate the actual grease volume Va by using empty cartridge weight and grease density.
5. n to the VFM controller screen, move to the "settings" section. Press enter.
6. e Qf value represent 100 times the amount of grease delivered during 1 pulse (in cc).
7. Update the Qf value with its current value (around 140) multiplied by 240/Va.

Filling (with or without spinning) a bellow-type cartridge

The present guide describes the manual steps specific to the "fill only" and "spin&fill" modes, in order to fill bellow-type cartridges with a predefined dose of lubricant, with or without simultaneous centrifugation. The "fill only" mode can also be used for purging the system after a change in the lubricant container. As these modes follow the general sequence explained in the "operating sequence" section, please refer to this section for detailed behavior.

For filling Quickluber lubricators, please refer to the related instructions.

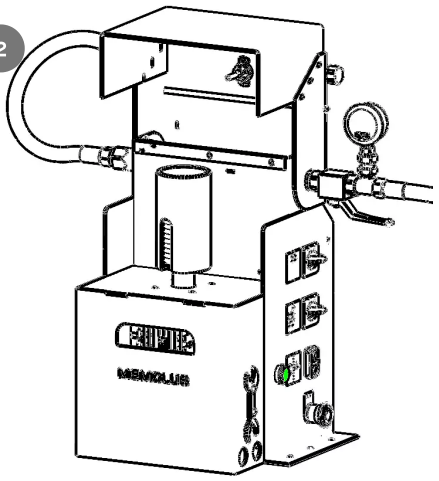
1





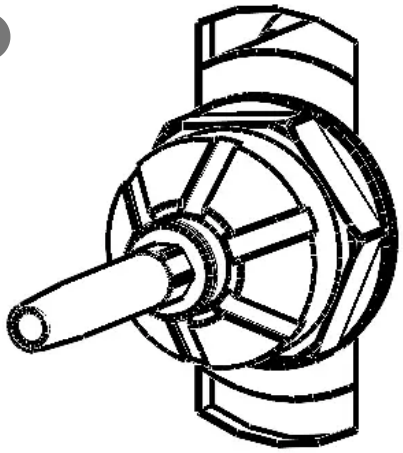
On the right side, select the "fill only" or the "spin & fill" mode.

2



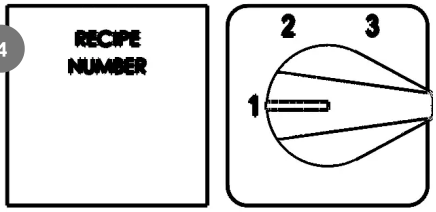
If the lid is closed, push the green button on the right side, then open the lid

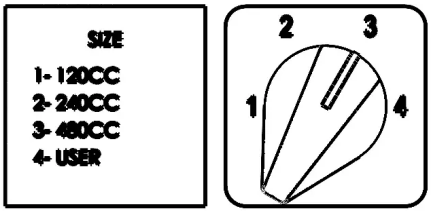
3



If not present, install the filling nozzle (see related instructions)

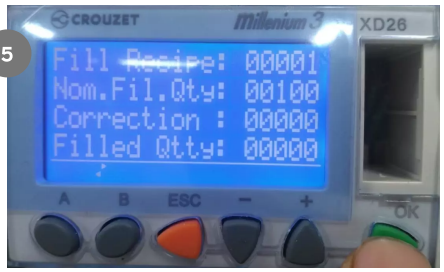
4





Select the desired recipe and content on the right side selectors.

5



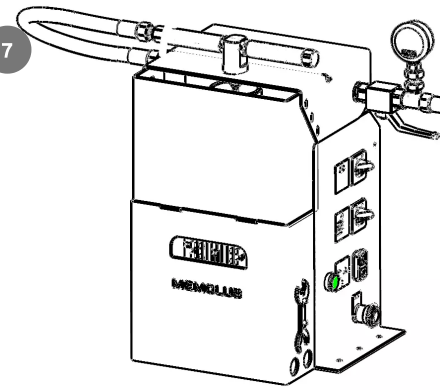
On the rear side, press "OK" on the controller interface. Check the displayed dose is correct.

6



Insert the cartridge to be filled in the rotor.

7



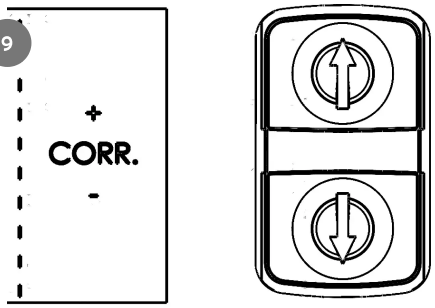
Close the lid and press the green pushbutton within 10s.

8



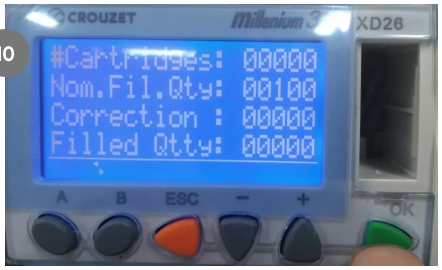
Once the operation completed, the lid unlocks for 10s. Open the lid and lift up the cartridge from the hub notch.

9



For the first fillings, check the filled dose with a weightscale. You can adjust it by using the +/- button. If everything is OK repeat the operation from step 6.

10



For the spin&fill mode, the number of filled cartridges during the session is displayed on the controller screen (the recipe number is omitted). This can be useful for production reports.

Mixing prefilled lubricant A with pre-defined dose of lubricant B in a bellow-type cartridge

The present guide describes the manual steps specific to the "fill&mix" mode, in order to produce cartridges mixing a prefilled lubricant A with a predefined dose of lubricant B. As this mode follows the general sequence explained in the "operating sequence" section, please refer to this section for detailed behavior.

Keep aware that for "fill&mix" mode:

Both filling dose and spinning time are active. The operation will then stop when both of them are reached.

The correction applies to time only. To modify the dose, switch to mode 2 or 3, adjust the quantity, then re-switch to mode 4

The principal issue of this operation is ensuring both good homogeneity and accuracy of the content. So the operator should comply with a defined filling speed, i.e. the ratio between content and time. This can be reached roughly by reducing the manual grease valve aperture, then fine tuning with the incoming air pressure. Please keep in mind that closing the manual grease valve with higher the upstream grease pressure, and that the automatic grease valve can only cut pressures below 40 bars.

The following guidelines assume the operator is already familiar with the spinning and filling operations.

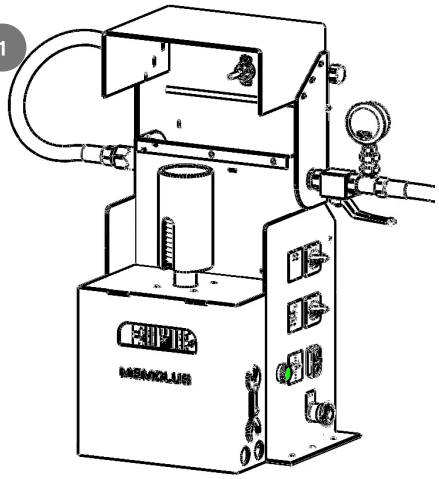
1. On the right side, select the "fill only" or the "spin & fill" mode.
2. If the lid is closed, push the green button on the right side, then open the lid
3. If not present, install the filling nozzle (see related instructions)
4. Select the desired recipe and content on the right side selectors.
5. Set the incoming air pressure to 40 divided by the pump ratio - for example, if the pump is 1:15, the pressure is set to 3 bars..
6. Close the manual grease inlet valve.
7. Pre-fill the cartridge with lubricant A, using a syringe (oils) or another filling machine.
8. Insert the cartridge to be filled and mixed in the VFM rotor.
9. Close the lid and press the pushbutton within 10s.
10. Check that the pressure on the grease manometer keeps below 40 bars. If not, adjust the incoming air pressure to comply with this limit.
11. Go behing the VFM to watch the controller display. Open progressively the manual grease valve to reach a speed below 10cc/sec,
12. Check the homogeneity of the content. You can improve it by decreasing the incoming air pressure. This may take several fill&mix runs.

13 Once the mixed content looks good, adjust the filling content by playing on the up/down buttons on mode 2 or 3, then going back to mode 4

14 If everything is OK, you can repeat from step 7, skipping steps 10 to 13.

Placing and aligning the filling nozzle

1



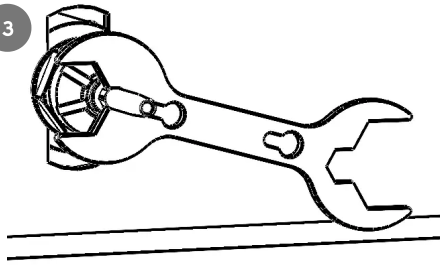
If the lid is closed, switch the VFM on, press the green button and open the lid.

2



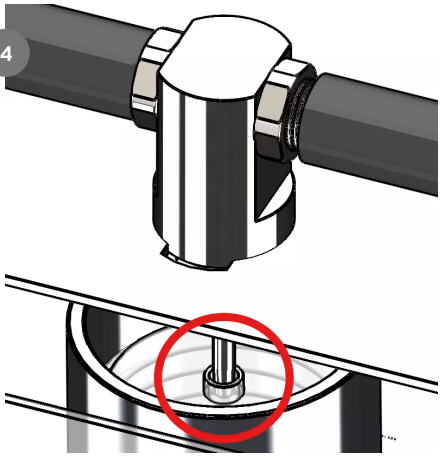
Insert a cartridge in the rotor, making sure the needed adaptors are already installed.

3



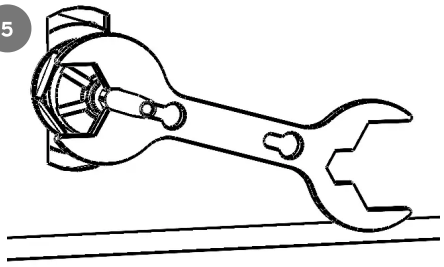
Using the supplied wrench (small notch), screw on the filling nozzle on the nozzle holder.

4



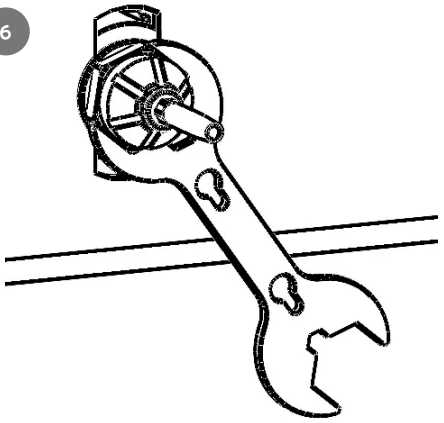
By folding the lid down without closing it, assess the position of the nozzle relative to the cartridge neck

5



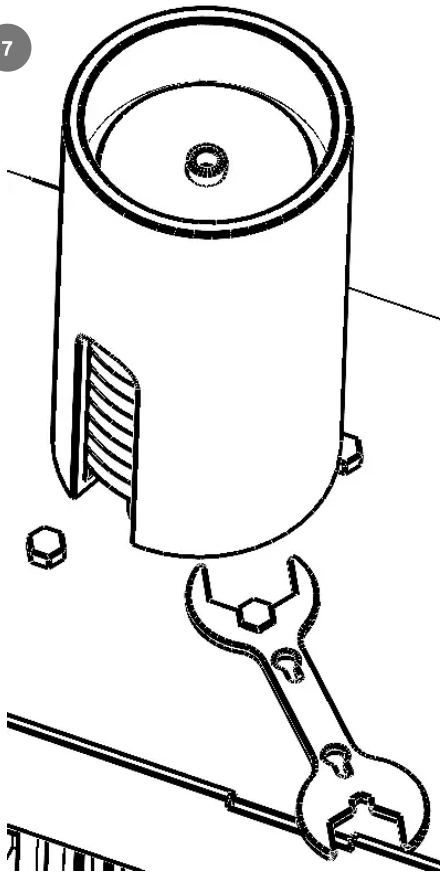
To adjust the nozzle height: Using the supplied wrench (small notch), (un)screw the nozzle so that it enters the cartridge neck by approx 5mm.

6



To center the nozzle in depth: Using the supplied wrench (large notch), slightly unscrew the nozzle support from the head, then move it closer or further along the runner. After checking step 4 screw tightly the nozzle holder on the head.

7



To center the nozzle laterally: using the supplied wrench, slightly unscrew the 4 motor screws, then move the rotor left and right. After checking step 4 screw tightly the socket screws.

Changing the rotor speed

The rotor speed is relative to the nominal speed Vn of the motor and the electrical grid frequency fg. Since the motor controller is a frequency converter, the resulting motor speed will be Vn/fg*fc, where fc is the driving frequency of the converter. Please refer to the frequency driver for more details.

1



Go to the VFM back side and localize the motor driver on the left

2



The current driving frequency is displayed on the motor controller screen. To edit the speed, press the "ENT" button below the controller screen

3



Using the "shift" key, select the digit you want to increment/decrement

4



Using the "v" or "^" keys, set the digit to the desired value.

5



Repeat step 4 and 5 until the correct speed is set, then validate with the "ENT" button

Changing the rotor deceleration (braking)

The deceleration parameter defines the time the rotor will take to fully stop. The minimal value is imposed by the rotor inertia, and therefore depends on the cartridge content: the higher the content, the higher this minimal stopping time. If you try a value below this minimum, the controller may not be able to stop the rotor, and will display a error code while the rotor will rotate freely.
The default value for the deceleration parameter is optimized for the heaviest cartridge (CNC-LUB- 700g) and therefore will work for all other lighter cartridges.

1



Go to the VFM back side and localize the motor driver on the left

2



Access the "deC" (deceleration) parameter by using the meter by using the "˅" or "^" keys

3



Press the "ENT" key to edit it

4



Using the "shift" key, select the digit you want to increment/decrement

5



Using the "˅" or "^" keys, set the digit to the desired value.

6



Repeat step 4 and 5 until the correct deceleration value is set, then validate with the "ENT" button

Uploading a new firmware in the controller

A programming cable is supplied with each VFM unit, making any update possible from a standard laptop equipped with Windows OS. Be aware that installing a new firmware will automatically overwrite the controller memory, deleting nominal and correction values of spinning time and filling quantity parameters, and replacing them with default values.

If you already changed some nominal values according to your own processes, we therefore recommend updating the default values in the firmware itself, using the M3 soft, so that the right parameters are pushed back in the controller memory during (re)installation.

You can skip steps 4 to 8 if you already installed the M3 soft and configured the USB millenium connection on your laptop.

1



Open the VFM lid, and make sure the emergency button is unlatched. Switch the machine on.

2



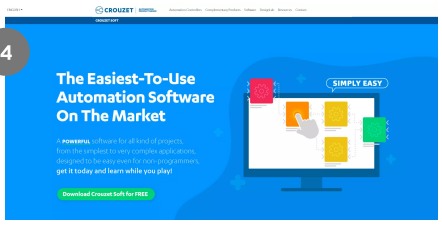
Connect one side of the CROUZET programming cable to your preferred USB port.

3



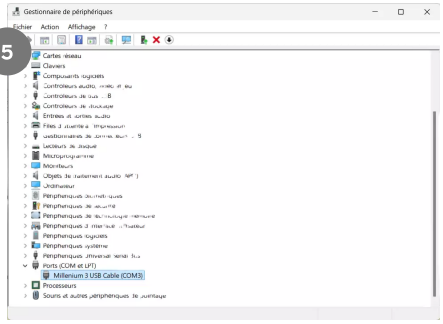
Connect the other side of the cable to the controller programming port

4



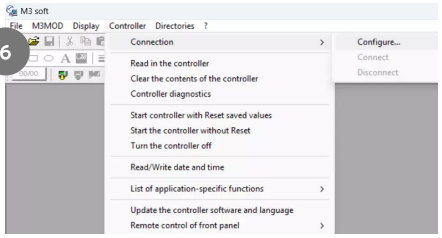
Download and install the M3 soft from https://www.crouzet.com/products/automation-controllers/software/crouzet-soft/. Don't forget installing the cable driver as well

5



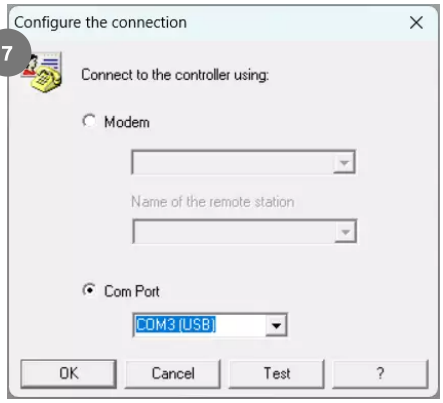
In the device manager, check that "Millenium 3 USB Cable (COM3) appears in the "Ports" tab.

6



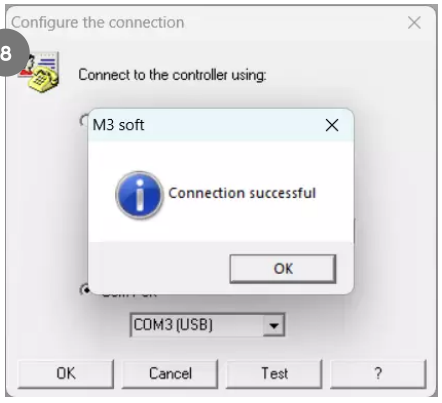
Open the M3 Soft. In the "Controller" tab, select "connection", then "configure".

7



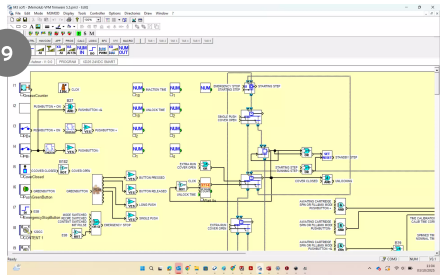
In the dialog box, click "Com Port", and select "COM3(USB)". Click then "Test"

8



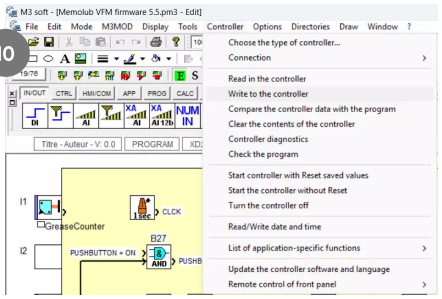
Check the good connection between PC and controller

9

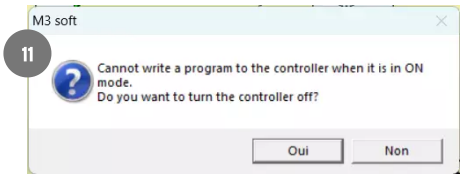


Open the firmware to be uploaded in the controller

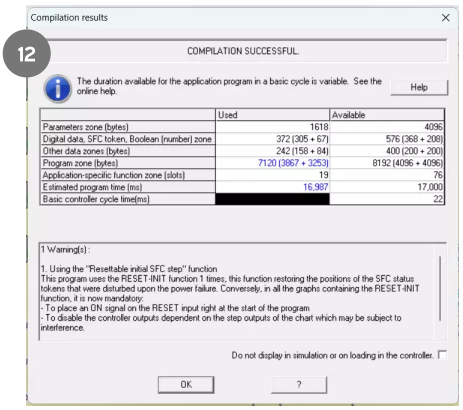
10



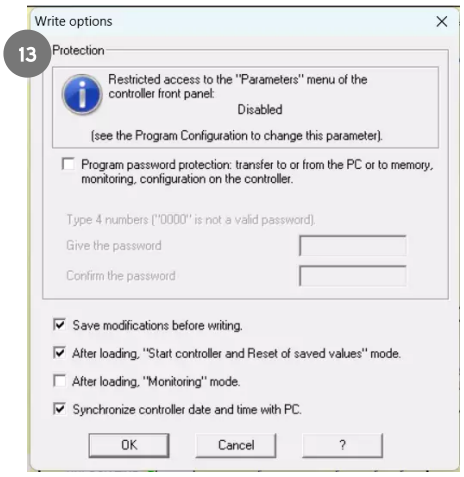
In the "controller" tab, click on "write to the controller"



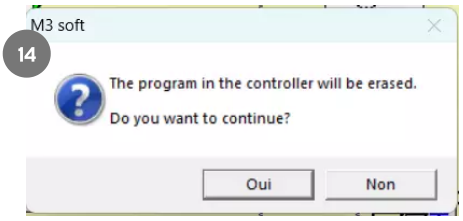
In the dialog box, confirm that you wan to switch off the controller before programming it



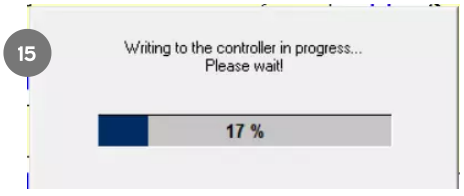
The compilation dialog box displays, confirming the program is correct in size and code. Click OK



In the "write options" dialog box, check the "After loading, start controller and reset of all values" option, along with other pre-checks. Click then OK.



Confirm that you want to erase the current memory



The firmware transfers from PC to controller



The program confirms the uploading is successful. Plug off the cable from the machine and from the PC. The VFM is ready to use.

Changing the nominal values of the driving parameters

Each combination of the "recipe" and "size/content" selectors defines an unique set of spinning time [s] and filling content [cc]. The spinning time is used for the "spin only" and "fill&mix" modes, while the filling content is used for the "fill only", "spin&fill, and "fill&mix" modes.

The present guide describes how to edit and modify the values of these parameters. Be aware that it relates to the latest firmware only, other version are NOT maintained. The latest firmware is available in the download section, at the end of this page and can be installed locally, following the above guide.

1



Go to the VFM back side and localize the VFM controller on the right.

2



From the "current parameters" view, press escape to display the "1.Home" section in the main menu.

3



With the "A" and "B" buttons, switch to "2.Recipe" menu.

4



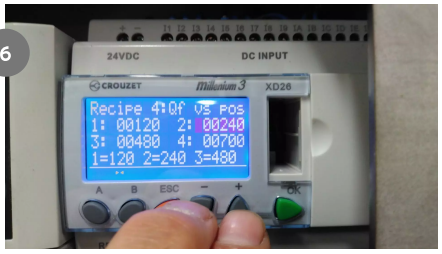
Press then "OK" and again "OK"

5



With the "A" and "B" buttons, scroll down the pages until you reach the recipe nb and parameters type (Ts/Qf) you want to edit.

6



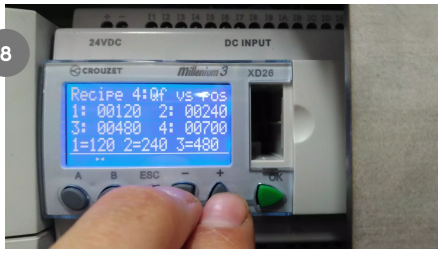
Within the page, use the +/- button to select the size value to edit.

7



Press then "OK" to edit the value.

8



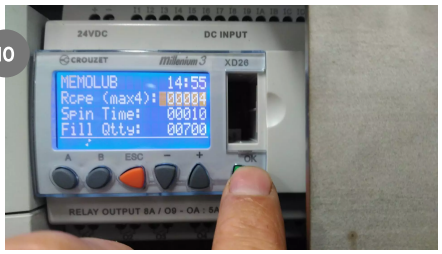
Press "+/-" to modify the value

9



Press "OK" to confirm, then "esc" to go back to the main menu

10

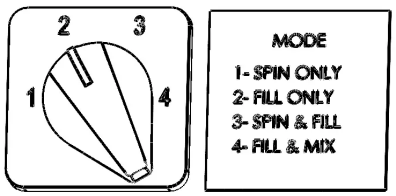


You can check the values by displaying them on the controller screen: press the "OK" in the "1.Home" section, then switch the recipe/size/mode selectors on the right positions.

Filling a Quickluber or pre-filling 6mm ID tubes

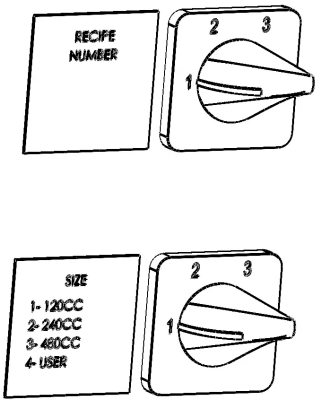
The "fill only" mode does not require the closure of the lid for operating. This particular feature can be used for filling tube of 6mm inner diameter. In the case of a rilsan-type tube of outer diameter 8mm, it can further be used to fill Quicklubers. Follow step 1 to 5 for prefilling 6mm ID tubes.

1



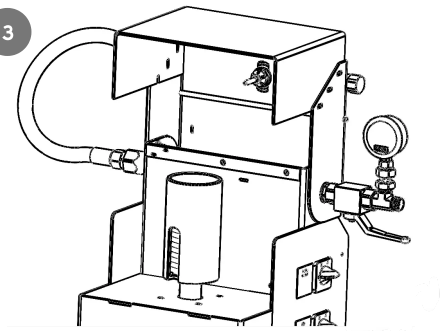
Rotate the mode selector on pos. 2 ("fill only") on the left side of the VFM.

2



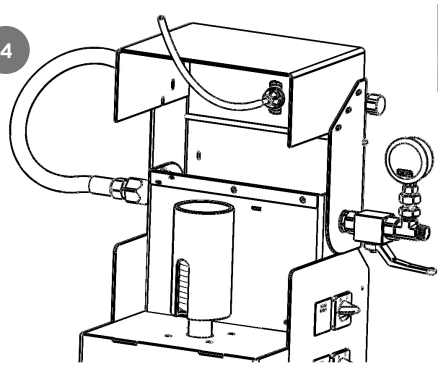
Put the "recipe" and "content" selectors on the desired settings, depending on the volume and lubricant type. Filling setpoint should be around 110cm³.

3



If the lid is closed, press the green button and open the lid

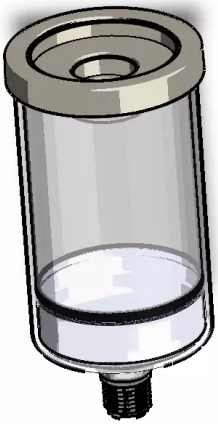
4



Cut a rilsan tube section of OD 8mm, ID 6mm, of about 30cm length. Insert firmly the tube on the VFM nozzle, taking care the natural curvature of the tube let it point upwards.

5 Shortly pre-fill the tube by pressing the green button, then aborting the operation by pressing it again once the tube is full.

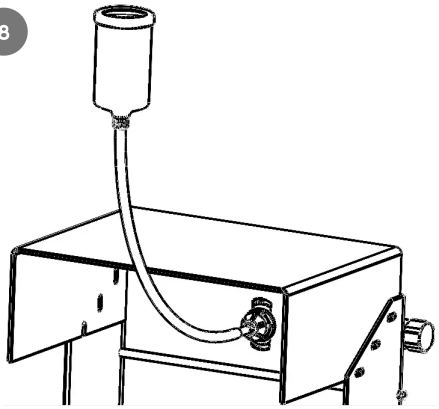
6



Make sure that the Quickluber piston is fully pushed against the outlet side

7 Spray a thin oil on the edge of the piston, so that pistons ribs get lubricated.

8

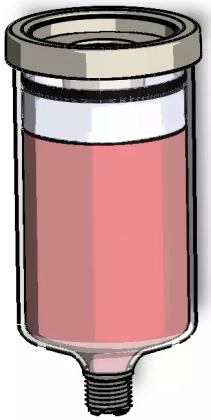


Insert the free end of the tube in the quickluber in vertical position, outlet pointing downwards.

9 Press the green button to start filling.

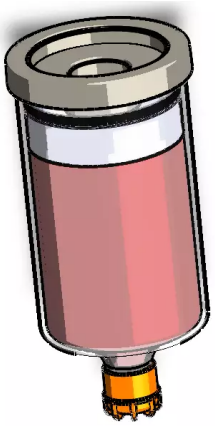
10 With a metal rod, hold firmly the piston against the outlet at the beginning of the filling, until the air bubble is chased out of the grease.

11



Check that the filled grease does not overlap the piston ribs, and that there is a 2-mm spacing left between the piston and the quickluber grey lid. If not, please adjust the dose by pressing the +/- button.

12

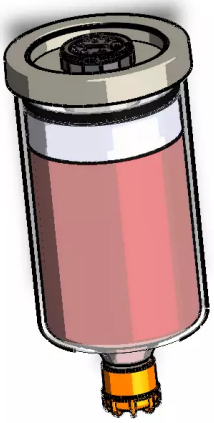


Remove the tube for the Quickluber outlet

13 rectly insert the tube into the next unit to fill (pre-lubricated, see 7).

14 Screw the green cap on the filled unit.

15



Using a torque wrench, screw the gas cell onto the grey lid. The Quickluber is now ready to use.

16 Start over from step 9

Calibrating and setting the dose

1 Switch the unit to "fill only" mode

2 Look at the current filling quantity on the filling controller

3 Run a fill cycle on a new cartridge (see related section)

4 With a precision scale, weight the filled cartridge

By cross-multiplication using point 2 and 4, calculate the right dose

FAQS

Why does the grease go out of the nozzle after the filling is completed ?

This indicates the presence of air bubbles in the downstream pipe. If the barrel is full, this may indicate that the purging step has been skipped. If the barrel is close to empty this may indicate poor grease suction. Shake the drum to compact the grease downwards, and/or add a follower plate. Adapt the quantity filled in the cartridge (next FAQ). If the problem remains and the barrel is still full, consider adding a one or two-posts RAM structure to push grease out of the barrel while sucking it in the same time.

Why is quantity in the cartridge not the same that the one displayed on the VFM screen ?

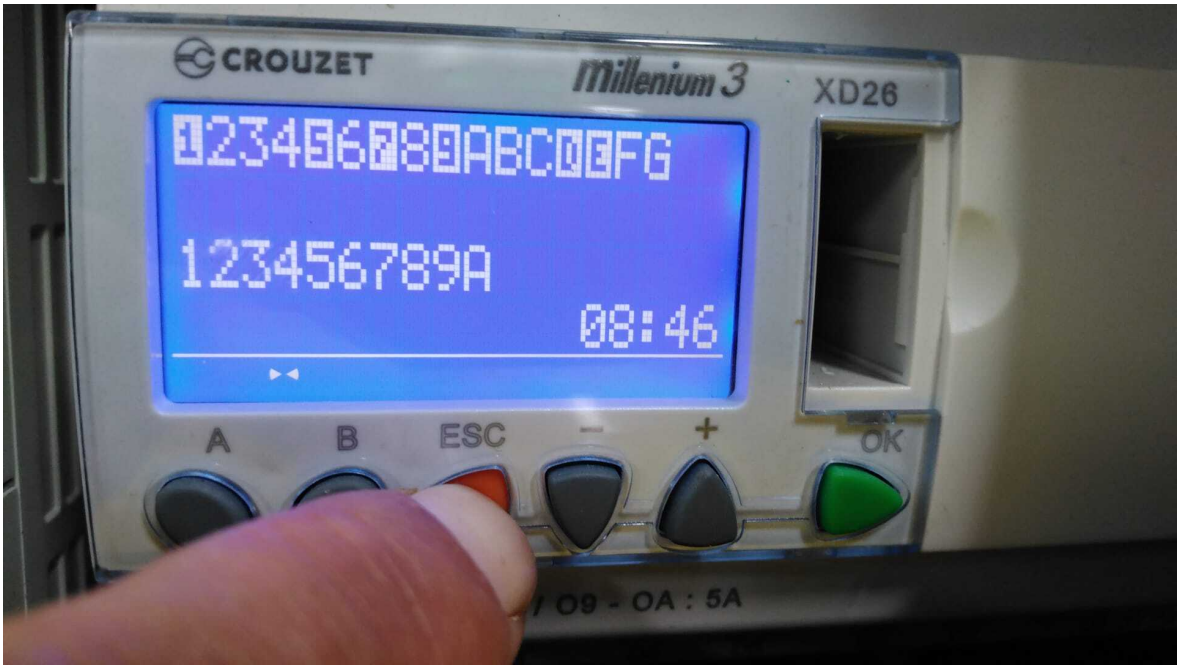
This can come from different issues.

The first is the presence of air bubbles in the lubricant. If you notice that during the filling the pump is speeding up and the filling time is extending, this might indicate that the pump is sucking out air. The measured quantity is not reliable any more. This often happens when a barrel is going empty. Please see the previous FAQ to solve pumping problems. From the cartridge point of view, you can then always add an extra dose of lubricant using a long push on the run button to match the required quantity.

Another explanation of this phenomenon is the unfitness between the pump and the grease. The pump is usually a pneumatic piston one, and is characterized by its pression ratio, which will give an idea of the maximum outlet pressure versus the inlet air pressure. For thick greases (NLGI 2 to 3) this ratio is high, usually around 1:50 or 1:60, but if you use these pumps for thinner greases or oils, the flow might be to high to be properly detected. You should go lower in pressure ratio, i.e. 1:15 for thin greases (NLGI 0 or less) or and even 1:5 for oils.

My VFM is switched on, the lid is open, but the green button is not blinking on the right side and nothing happens when it is pressed . What's wrong?

This indicates a wrong state of the controller inputs at startup. On the controller interface, press the green button "OK" to illuminate the screen, then keep the red "ESC" button pressed. The screen will display the states of the controller inputs (top line) and outputs (bottom line) :



Controller inputs and outputs at startup

A white box highlighting an input means the entry is high (24VDC), corresponding to activated switches and/or sensors on the machine. In particular the following inputs are critical and should be ON for the proper initiation of the operating sequence:

I5: Lid switch engaged

I7: Emergency stop button unlatched

If either I5 or I7 are not ON (white box), please follow the wiring and check for any possible disconnection, or malfunction of connected switches.