	<b>Technical Instruction</b> <b>PO-TI-001</b>	Doc.-No.: TI-44216-59300
		Revision: 3
		Date: 16.03.2023
		Status: released
		Page: 1 of 32

<b>Title</b>	Glue Dispenser Manual
<b>Purpose</b>	Defines the general use and maintenance to follow

## 0. General

This Technical Instruction is applicable to all staff working in the H55 Production Organisation.

This TI addresses the use and maintenance of the glue dispenser.

Standard techniques and best practices are addressed in additional TI's that must be observed and applied as well.

### Table of Contents

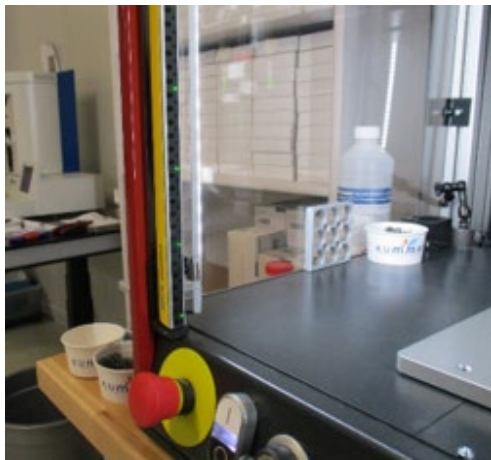
0.	General.....	1
1.	How to start the gluing machine .....	2
2.	Program selection and launch .....	4
3.	Daily glue dispensing control practice .....	6
4.	Stop the system .....	9
5.	Software management .....	10
6.	Glue preparation.....	11
7.	Tooling preparation .....	14
8.	Install the glue syringes on the machine .....	17
9.	Move the glue dispenser manually.....	20
10.	Deep cleaning process .....	21
11.	Annex .....	30
12.	Administration .....	31

1. How to start the gluing machine

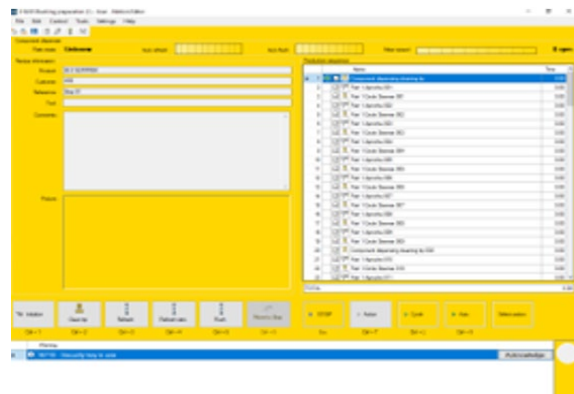
- 1.1 Press the mains button with the symbol « I », then the machine lights up.  
Check that there are no obstacles or debris in the working area.



**WARNING:** When the machine moves the axes or pistons, be careful not to put your hands through the light barrier, this will stop the machine and it will have to be reset.

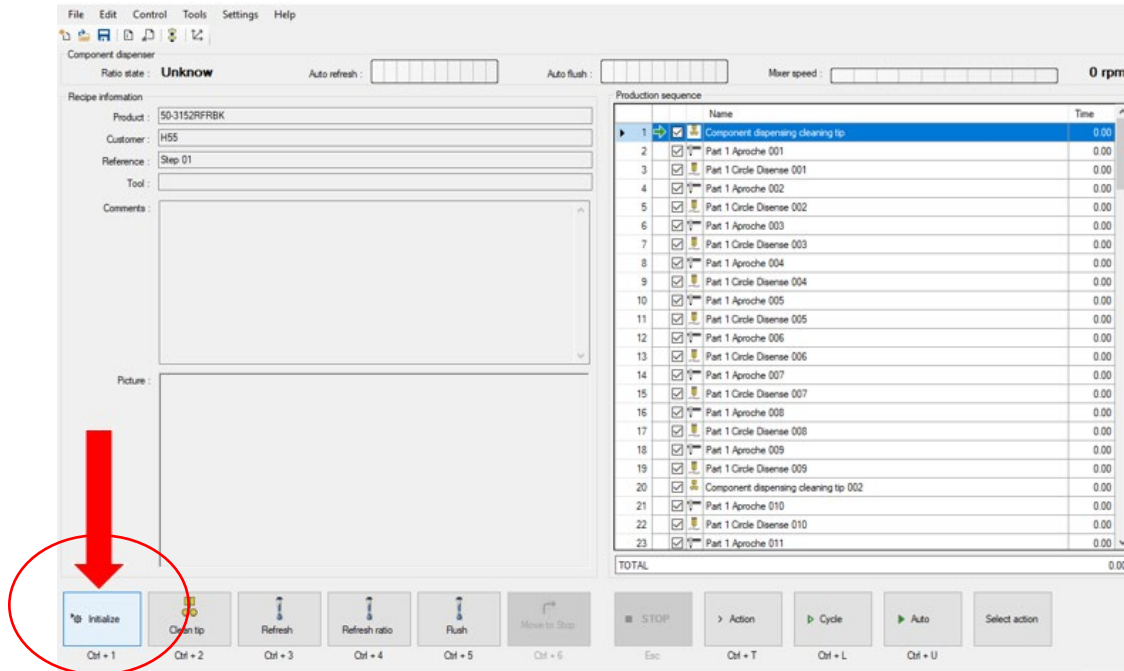


**NOTE:** When you want to adjust or test programs, turn the key to the right so that you can work without the light barrier. The main screen will turn yellow (see picture below).



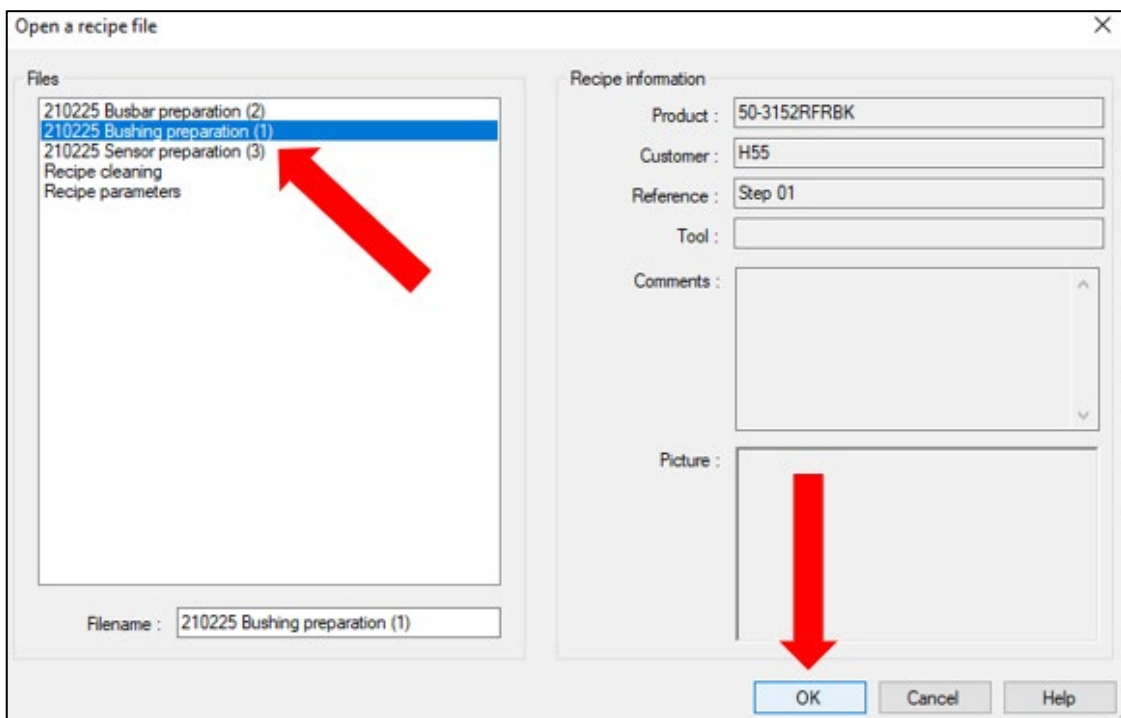
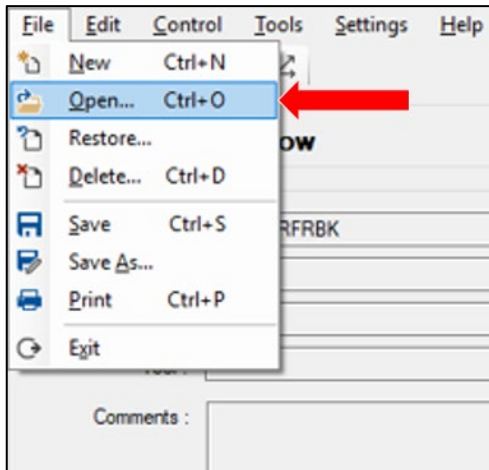
1.2 The first thing to do after turning on the machine is to initialize it, this makes the axes move to take the references in X, Y, Z.

We do that simply by using this button on the screen or pressing CTRL-1.






















## 2. Program selection and launch

2.1 Go to "File" → "Open..." (or press CTRL-O) and select the desired program. Click ok.



2.2 After selecting the program, we can see the following screen:

Production sequence					
			Name		Time
▶ 1	→	<input checked="" type="checkbox"/>	Component dispensing cleaning tip		0.00
2		<input checked="" type="checkbox"/>	Part 1 Aproche 001		0.00
3		<input checked="" type="checkbox"/>	Component dispensing trajectory		0.00
4		<input checked="" type="checkbox"/>	Part 1 Aproche 002		0.00
5		<input checked="" type="checkbox"/>	Component dispensing trajectory 002		0.00
6		<input checked="" type="checkbox"/>	Part 1 Aproche 003		0.00
7		<input checked="" type="checkbox"/>	Component dispensing trajectory 003		0.00
8		<input checked="" type="checkbox"/>	Part 1 Aproche 004		0.00
9		<input checked="" type="checkbox"/>	Component dispensing trajectory 004		0.00
10		<input checked="" type="checkbox"/>	Part 1 Aproche 005		0.00
11		<input checked="" type="checkbox"/>	Component dispensing trajectory 005		0.00
12		<input checked="" type="checkbox"/>	Part 1 Aproche 006		0.00
13		<input checked="" type="checkbox"/>	Component dispensing trajectory 006		0.00
14		<input checked="" type="checkbox"/>	Part 1 Aproche 007		0.00
15		<input checked="" type="checkbox"/>	Component dispensing trajectory 007		0.00
16		<input checked="" type="checkbox"/>	Part 1 Aproche 008		0.00
17		<input checked="" type="checkbox"/>	Component dispensing trajectory 008		0.00
18		<input checked="" type="checkbox"/>	Part 1 Aproche 009		0.00
19		<input checked="" type="checkbox"/>	Component dispensing trajectory 009		0.00
<b>TOTAL</b>					<b>0.00</b>

### 3. Daily glue dispensing control practice

#### 3.1 Beginning of day:

3.1.1 Start the machine as described in chapter 1.

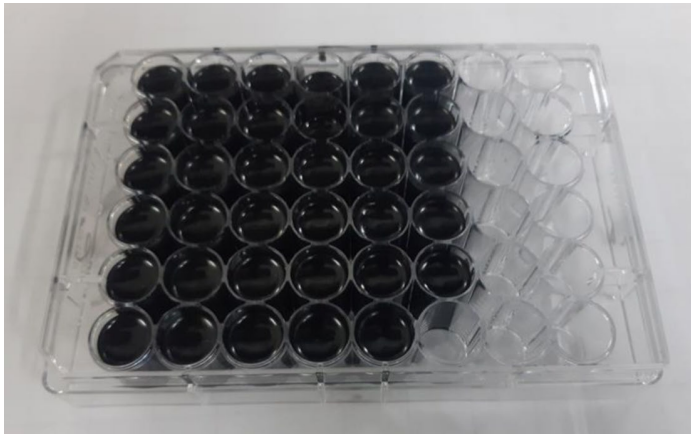
3.1.2 With the mixing chamber not assembled, clean the dispensing systems by flushing resin and hardener, respectively.

3.1.3 Perform weight measurement by parts only i.a.w. paper documents at Work Center.

In case a weight is out of the limits, re-do dispensing and weighing. If still out of limit, call the Production Manager or Quality Manager.

3.1.4 Connect the mixing chamber, flush glue, and then perform weight measurement of mixed glue i.a.w. paper documents at Work Center and tray 102377 (see picture below).

In case the weight is out of the limit, re-do dispensing and weighing. If still out of limit, call the Production Manager or Quality Manager.



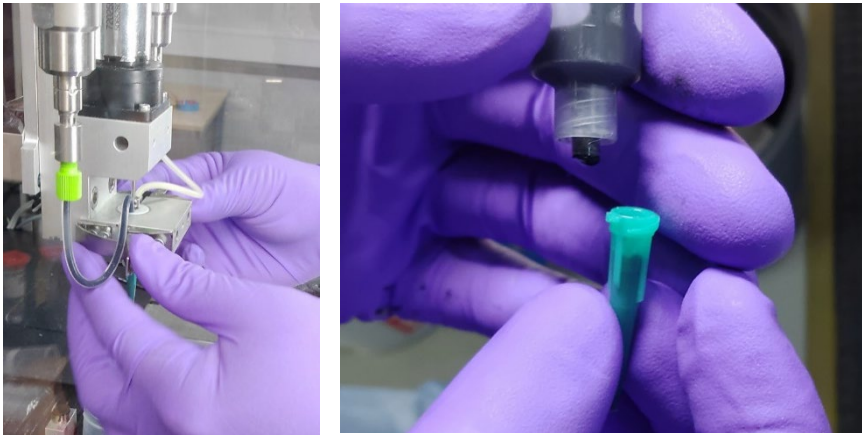


### 3.2 End of day:

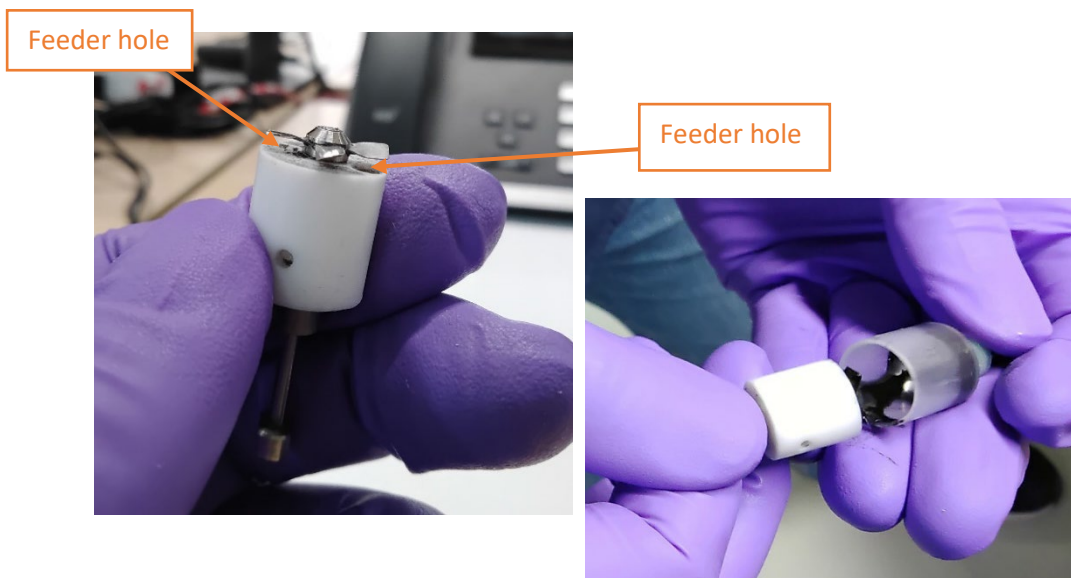
3.2.1 Perform weight follow-up of mixed glue analog to § 3.1.4 above.

3.2.2 Perform separate parts (epoxy and hardener) weight follow-up as explained in § 3.1.3 including disconnection of tubes.

3.2.3 Remove mixing chamber from machine by unlatching the mixing chamber holder. Discard the precision tip.



3.2.4 Remove the impeller portion from the mixing chamber and then use a pipe cleaner to clean the chamber through the feeder holes and under the impeller blades.



3.2.5 Soak the impeller portion of the unit in IPA and ensure there are no glue residues.



3.2.6 Wipe down any residual glue in and around the machine, including pistons, fixing plate, jigs, scale etc.

3.2.7 Shut down the machine by pressing the mains button as shown in § 4 below.



#### 4. Stop the system

To switch off the machine simply press this button with the symbol « 0 »



## 5. Software management

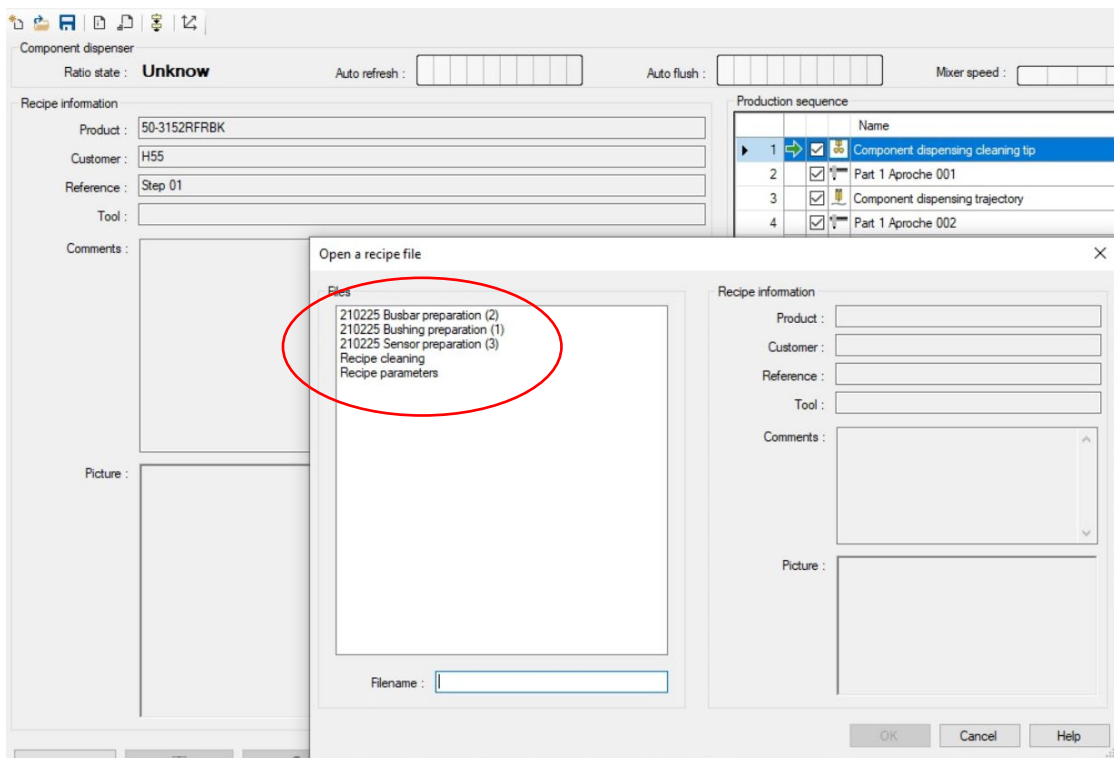
### 5.1 Program reference

The reference of the programs should be as short and as clear as possible.

The reference must start with date of release with following format: "YYMMDD"

### 5.2 Program selection

Only the applicable programs must be available for selection by operator.



### 5.3 Records

All programs must have a backup on H55 server.

### 5.4 Update

At each program update the chapters 5.1, 5.2 and 5.3 must be respected.

## 6. Glue preparation

6.1 On the machine we use a two-component glue P/N 50-3152 FR that we receive in pots.

Component **A**: Polyamide (yellow) / Component **B**: Epoxy resin (black)



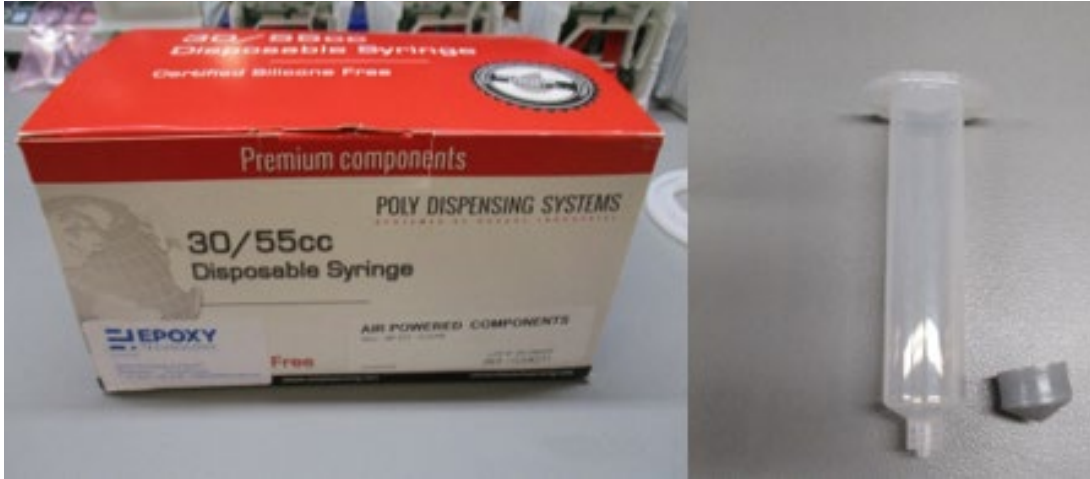
6.2 Each glue component is filled into plastic bottles (see image below as example).

6.2.1 Before the first opening, place each pot on the roller overnight. Set the speed between 10 to 15 t/min for adequate sediment distribution.



6.2.2 Bottles must be identified with corresponding Lot Number(s) and must remain on the roller at all time.

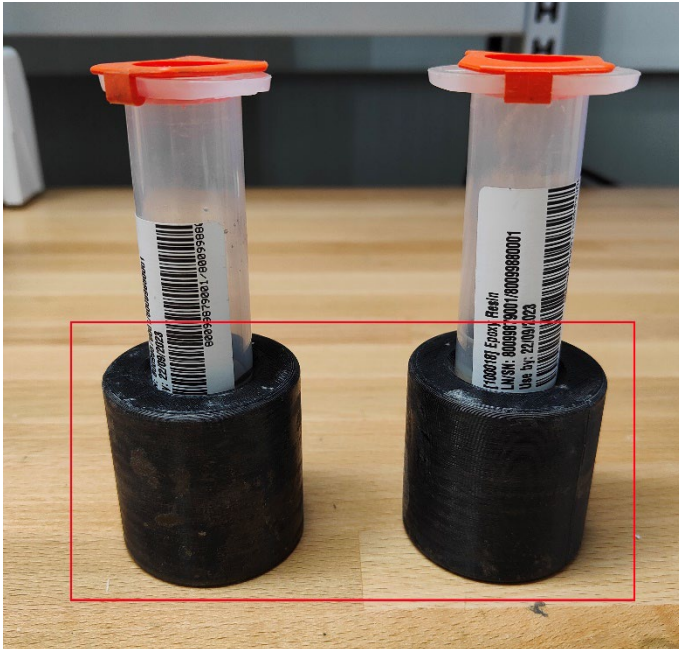
- 6.3 Before use on the dispenser, each glue component is filled into a disposable syringe. We use these models (article number 100016).



- 6.3.1 Label each filled syringe with the Lot Number(s) of the resin and hardener used.  
**CAUTION:** Don't fill higher than 2 cm from the top edge of the syringe.



- 6.4 When we do not use the filled syringes, we insert them into 3D printed sockets (see photo below) and place them on the roller machine to rotate them continuously, with speed setting between 10 to 15 t/min.



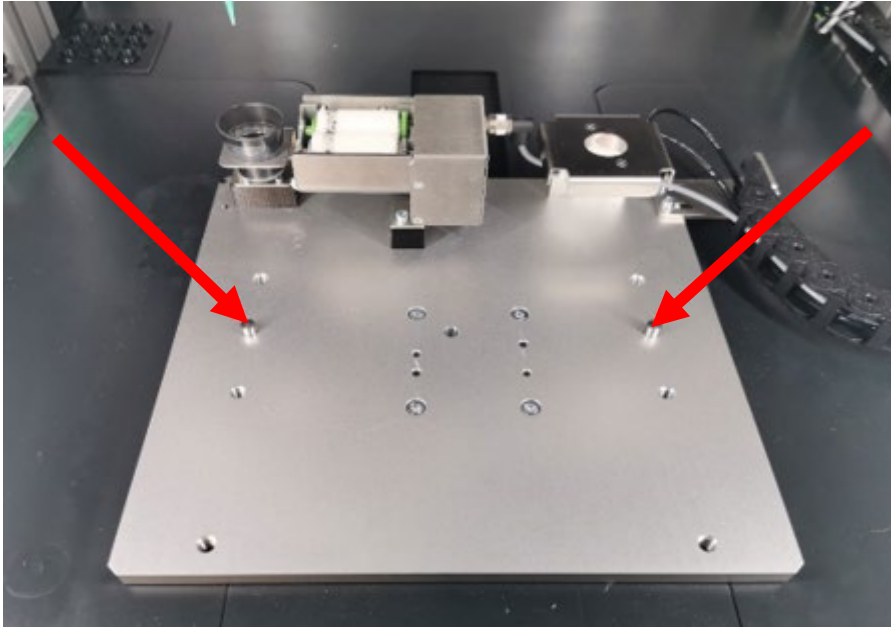
**NOTE:** The filled plastic bottles and syringes must always be in rotation on the roller machine if not used on glue dispenser.



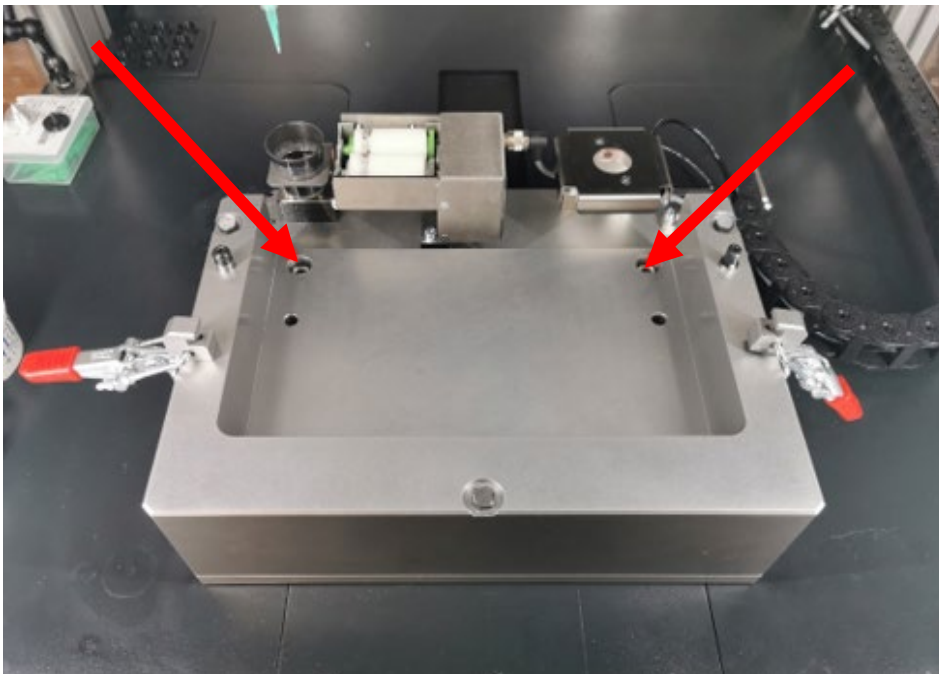


## 7. Tooling preparation

7.1 On the gluing machine, there is a fixing plate where we install the position plate (103103.059) for the first operation; it has two pins for correct alignment.

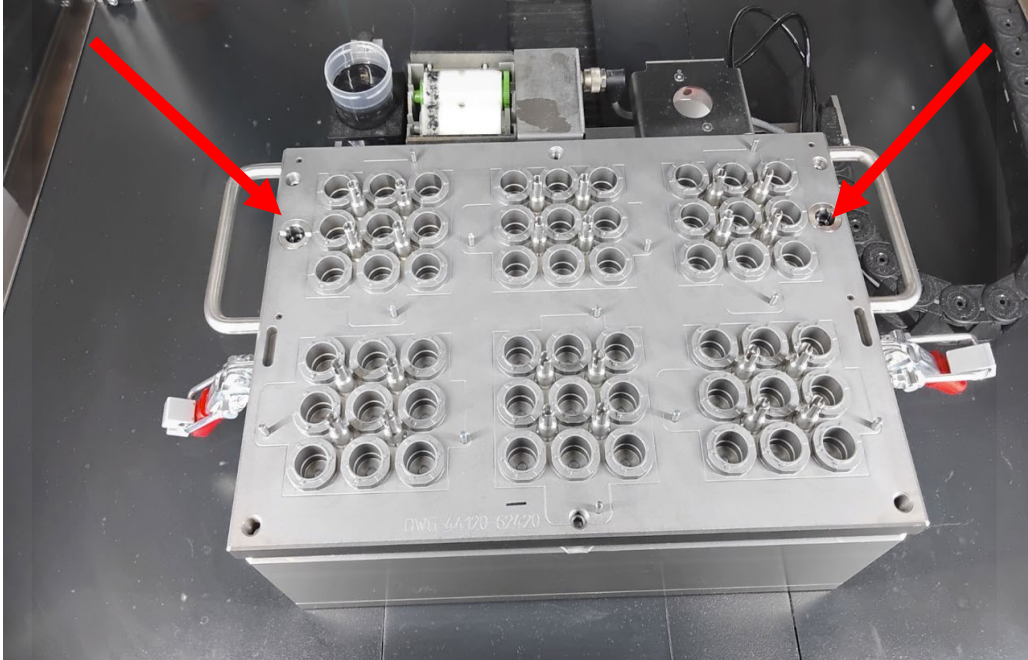


7.2 We mount the position plate (103103.055) with 2 screws M8x25mm.



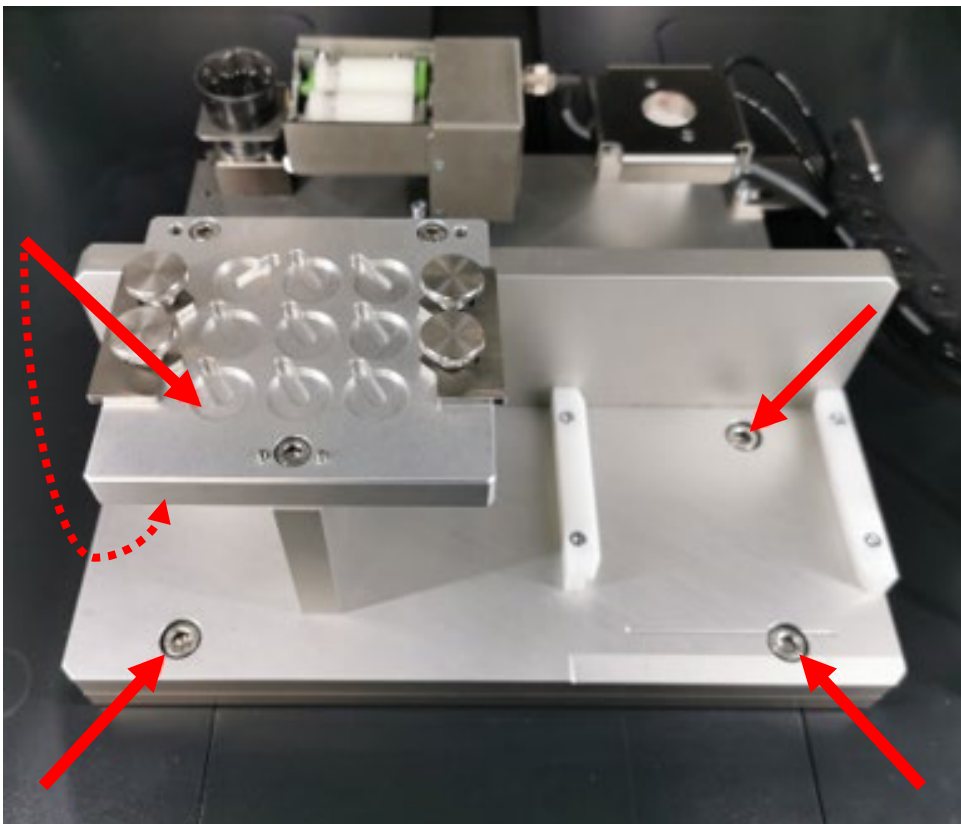
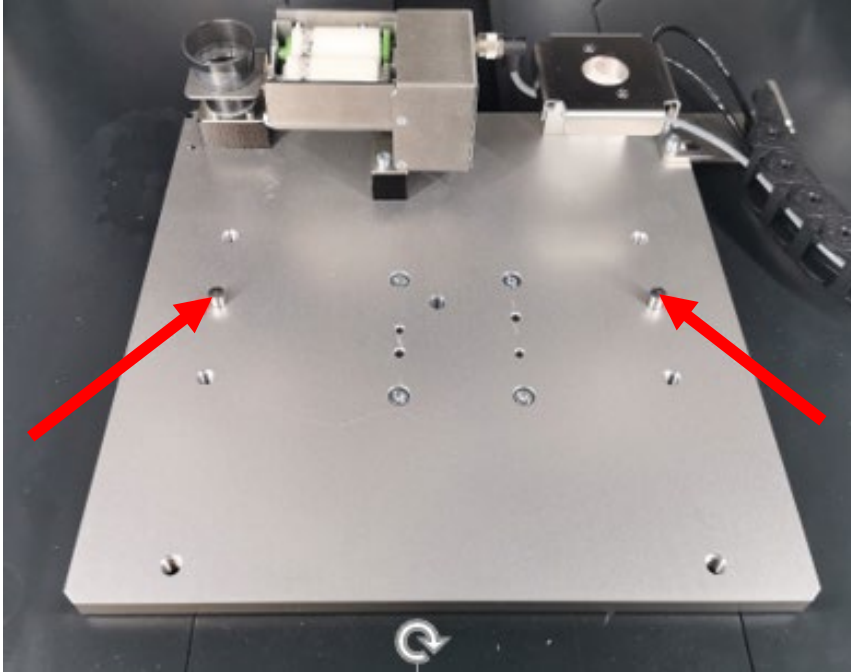


- 7.3 We use 2 different plates for the bushings:  
One for the positive busbars (103103.058), one for the negative busbars (103103.047).  
They have 2 pin holes for centering.



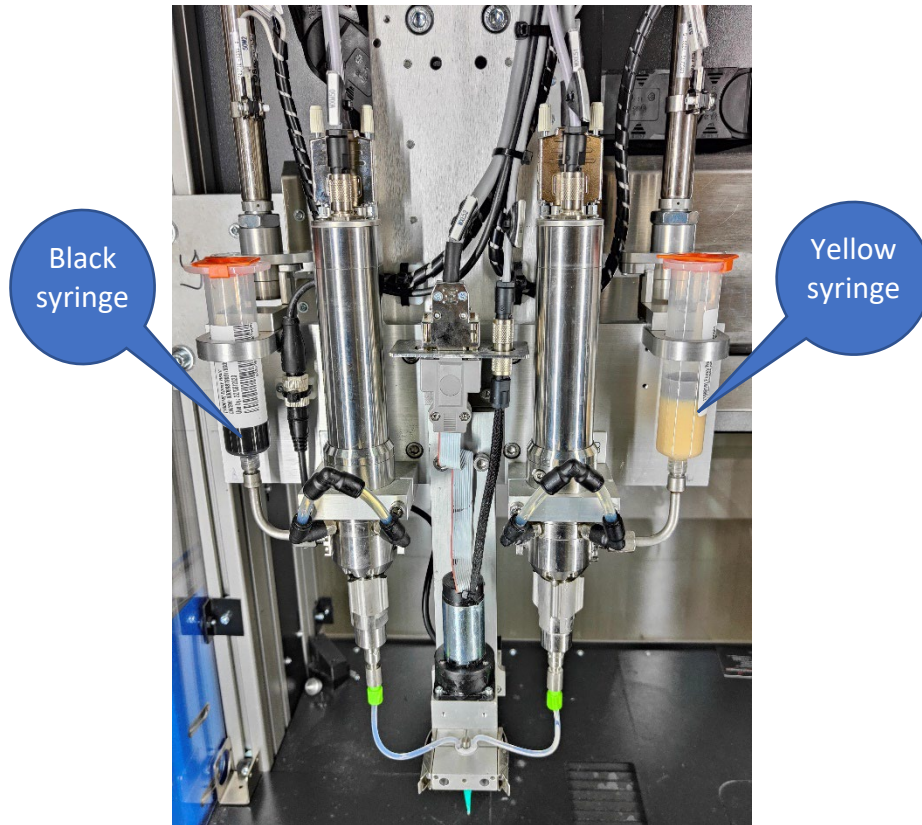
7.4 Here is the tooling for the second operation (103103.080).

There are 2 pins for centering and 4 screws M8x15.



## 8. Install the glue syringes on the machine

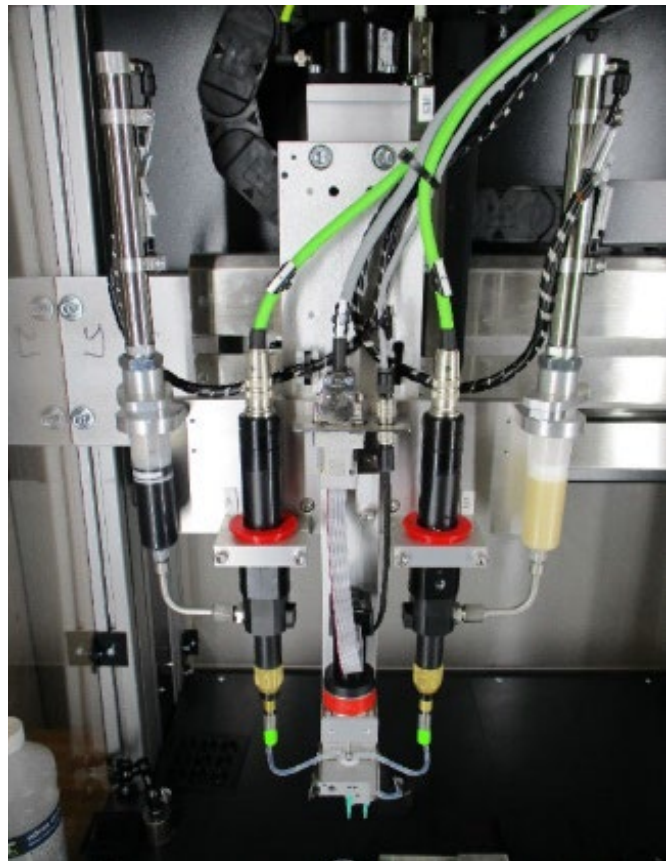
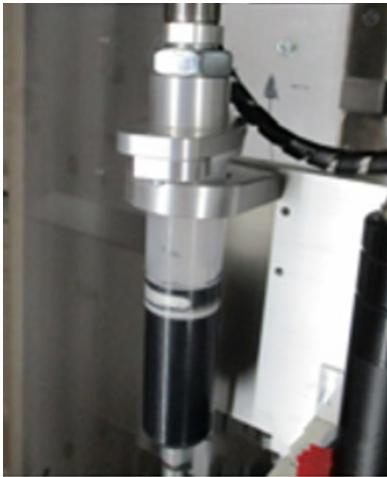
8.1 Remove the caps of the syringes and install them on the machine, respecting the sides.





## 8.2 Place and secure the pistons in position:

Ready for use:



Ready for use →

## 8.3 Activate the pistons in menu using F1-F2.

## 8.4 Install a new nozzle each day.

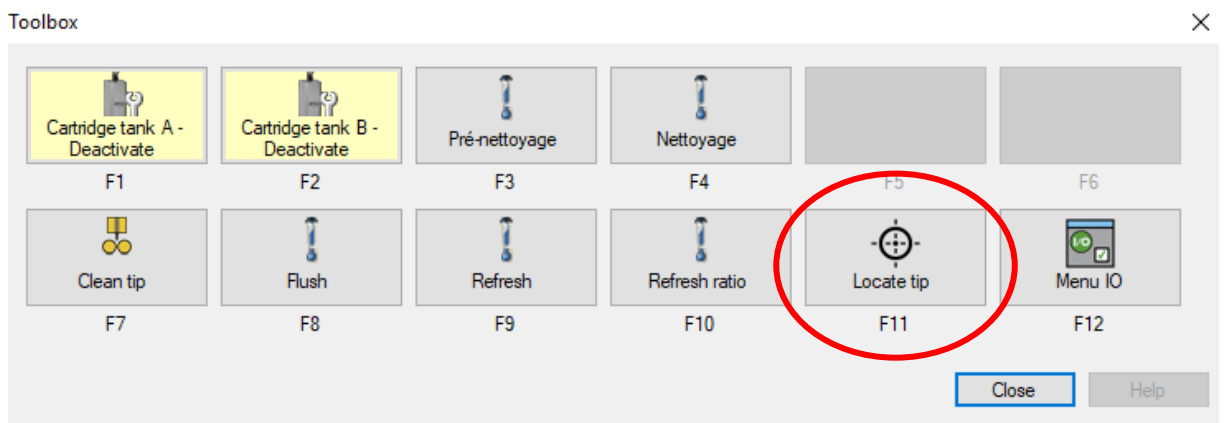
8.5 Before starting, take the position of the nozzle.

We do it every time we change the nozzle.

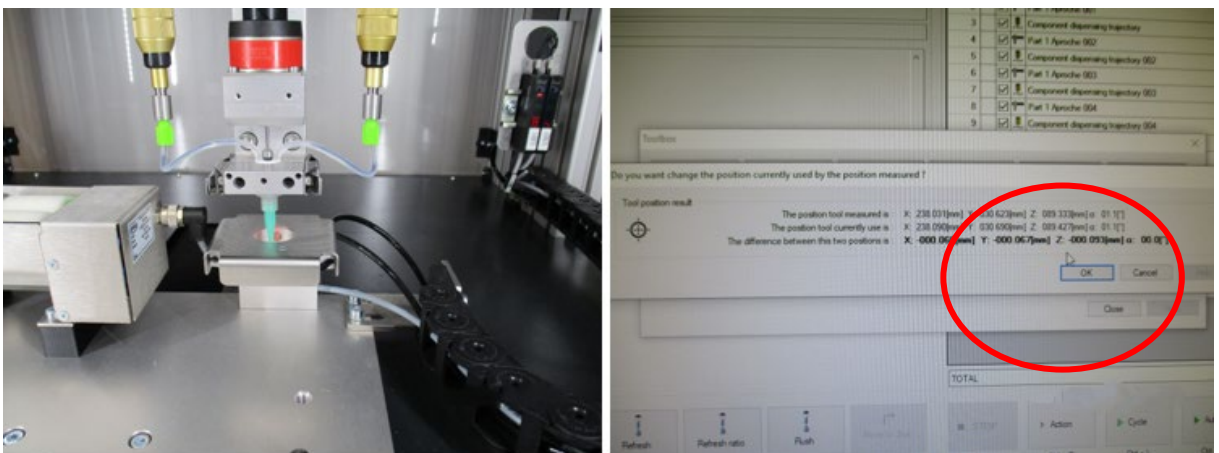
**WARNING:** Before taking the reference of the nozzle make sure that there is no installation in the way, because there is a risk of collision



8.6 Open the menu using the CTRL-B command and press the « Locate tip » button (F11).

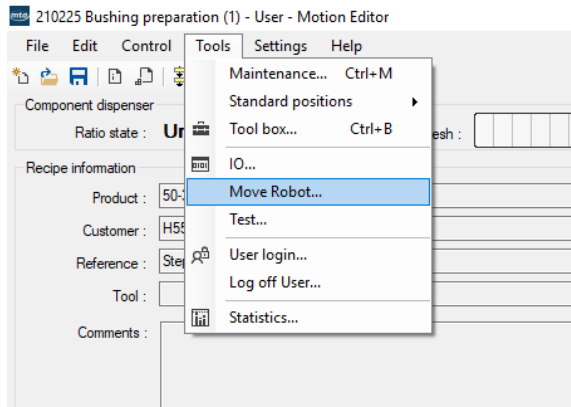


8.7 Do this procedure twice then click ok.

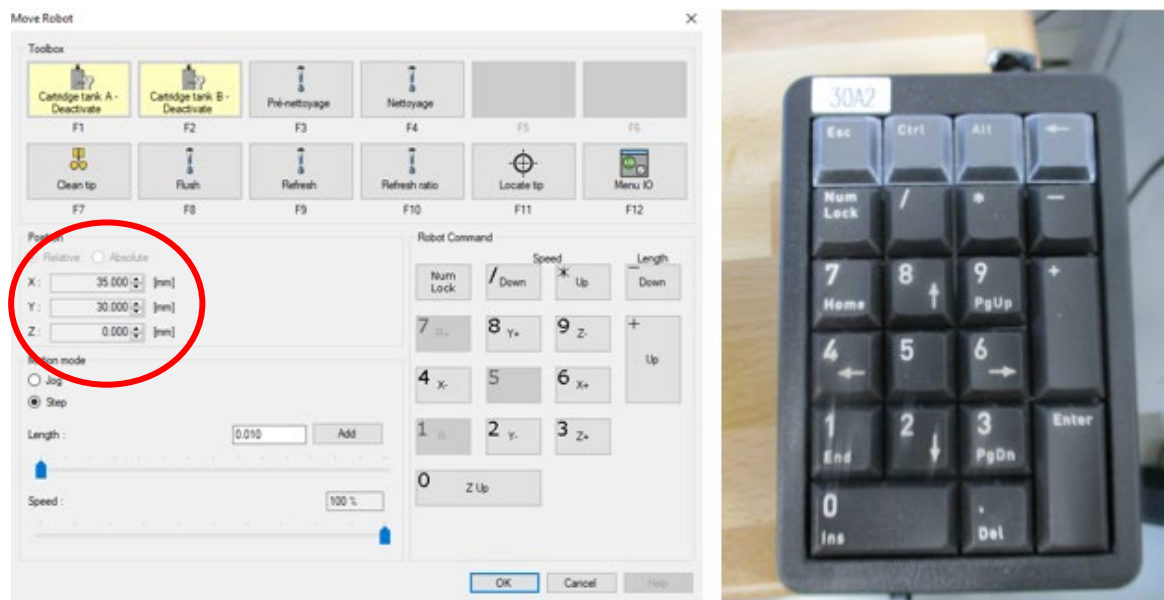


## 9. Moving the glue dispenser manually

### 9.1.1 Go to the « Tools » tab and select the « Move Robot » icon.



### 9.1.2 A new page opens with the commands X, Y, Z to move the glue dispenser.



### 9.1.3 Use the + and - keys on the numeric keyboard to change the increments 0,01 / 0,1 / 1 / 10 / 100 mm.

Use the 2 and 8 keys for moving in Y axis.

Use the 4 and 6 keys for moving in X axis.

Use the 9 and 3 keys for moving in Z axis.



## 10. Deep cleaning process

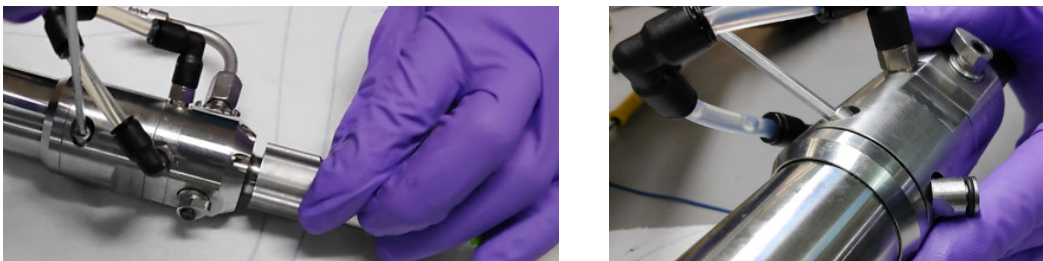
**NOTE:** Keep track of parts. There are small screws and O rings that can easily be misplaced. Iso Prop Alcohol (IPA) is the cleaning agent to use. Do not interchange used parts from the cylinders. Do not mix resin and epoxy to prevent as cross-contamination while cleaning, disassembly, and reassembly.

### 10.1 Disassembly and cleaning

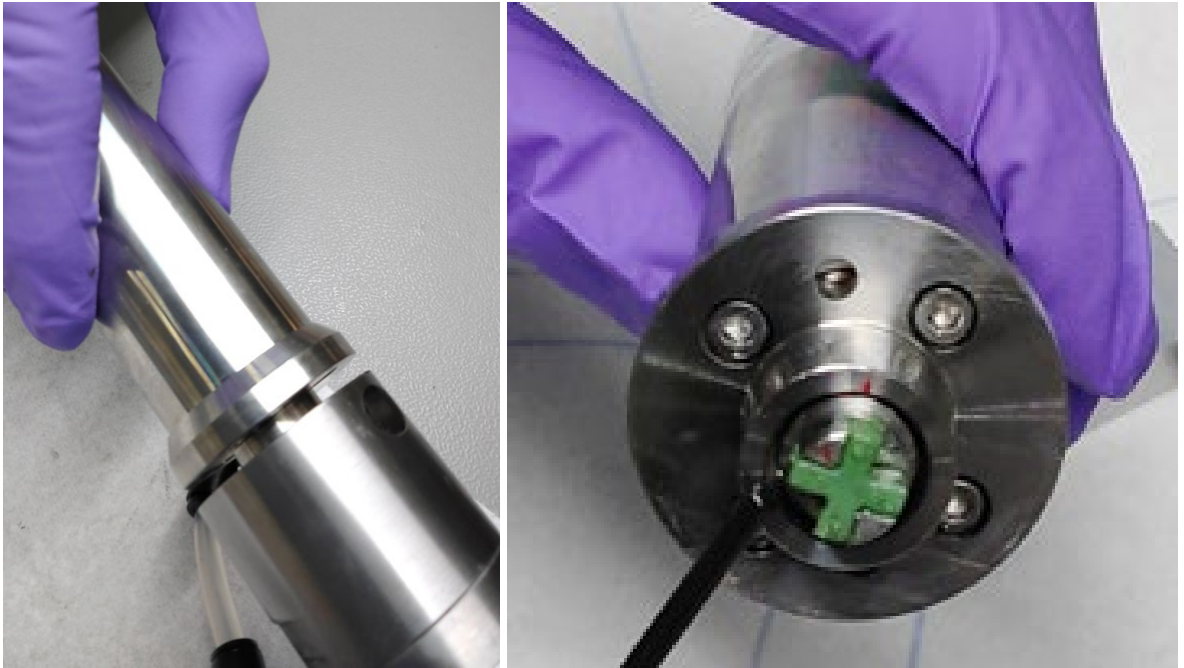
10.1.1 Ensure power is off on Gluing machine. From there disconnect harness from both cylinders (green circles) one at a time. Unscrew bracket from support for disassembly on bench.



10.1.2 Place cylinder on bench as seen below. Take caution as there will be glue that can spill onto unprotected surfaces. Unscrew nut at the head of cylinder.



10.1.3 Carefully separate motor from cylinder head. There is a green tab between the two parts.



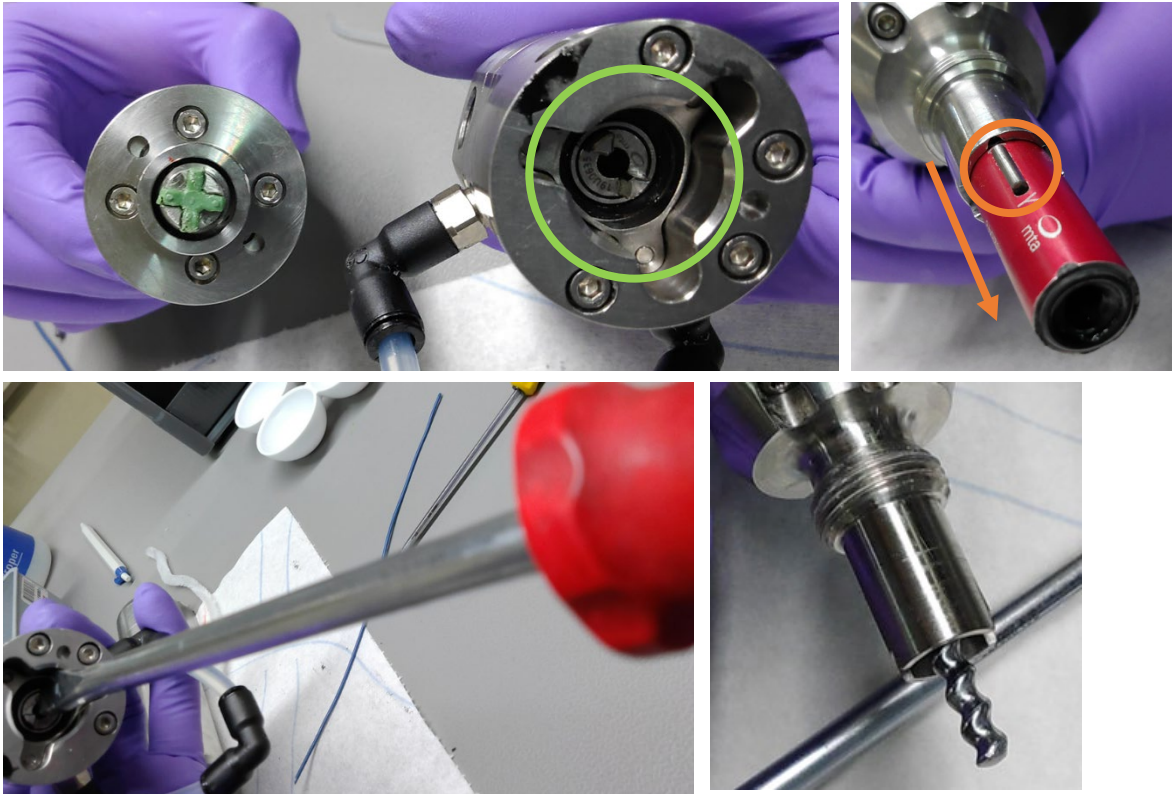
10.1.4 Unscrew the bottom cylinder part and the hose with the green part on the middle on picture below.



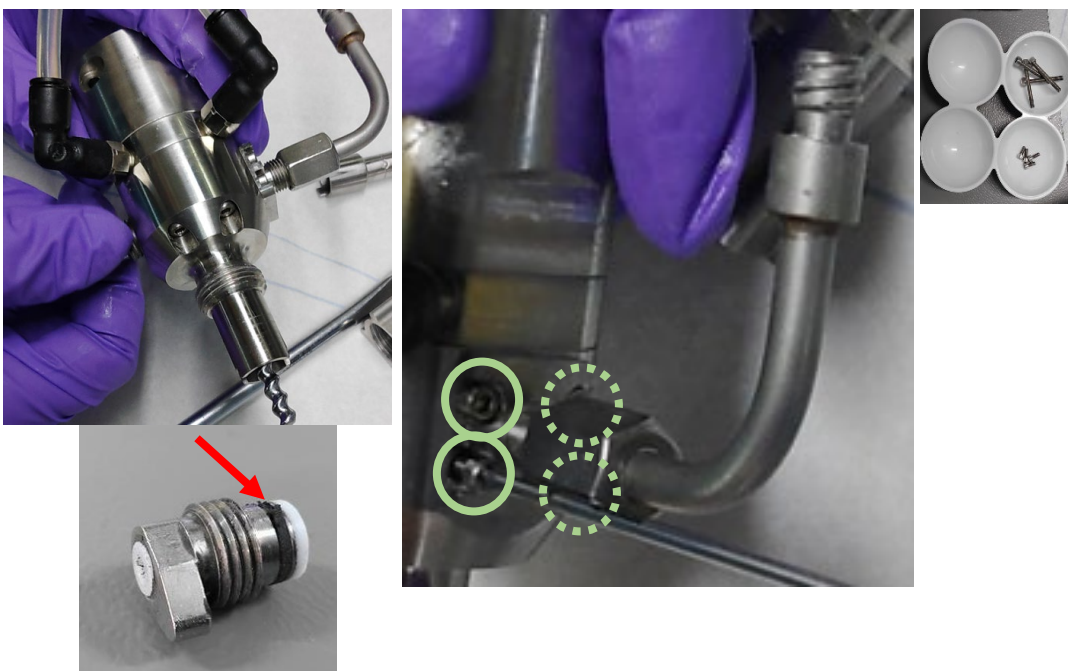


10.1.5 Remove the red stator from the infinite screw. This can be done by unscrewing the bottom cylinder part (green circle below).

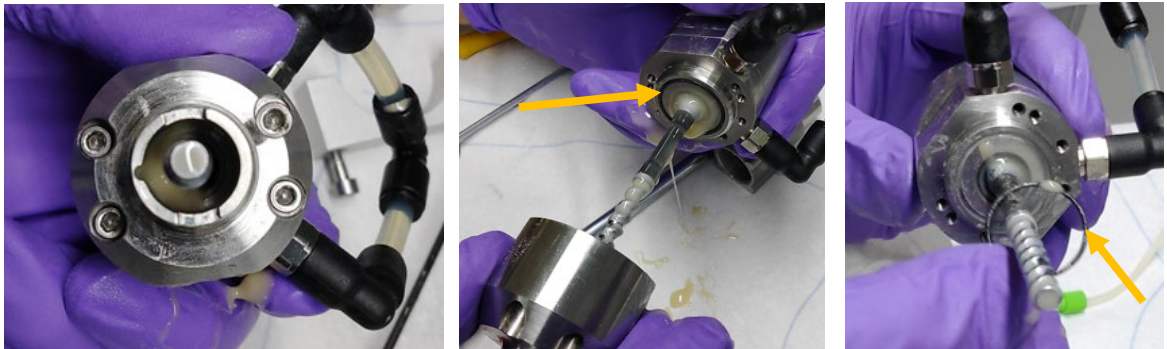
NOTE: Pay attention to the pin (orange circle ) it is easily lost.



10.1.6 Unscrew the plug from the bottom cylinder (picture below). Check for wear on O ring, and change if needed (red arrow). Remove elbow by unscrewing the screws (green circles).

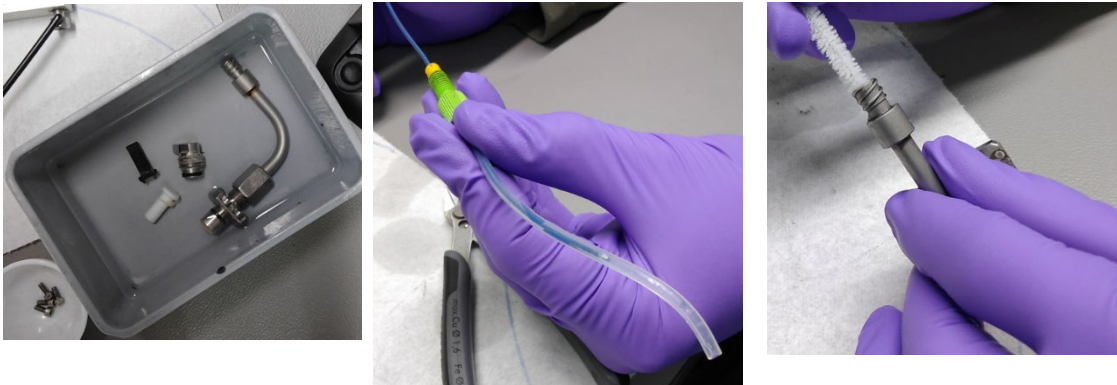


10.1.7 Unscrew the 4 screws shown in the image below, there will be a lot of glue coming out when taking apart. Take out the O ring and clean it (orange arrow).

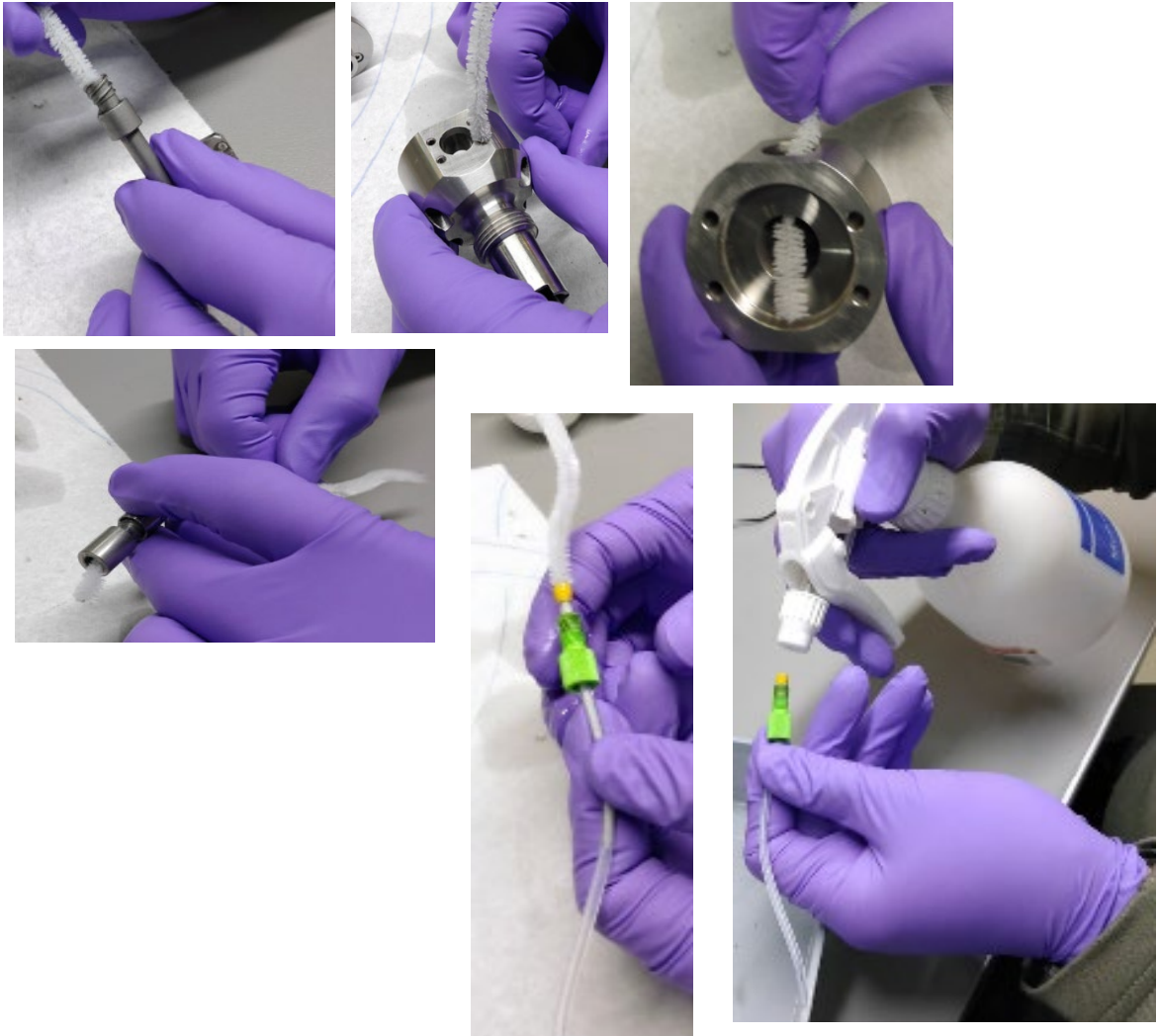


10.1.8 Put all the parts taken in an isopropyl bath.

10.1.9 Clean the parts (see picture below) with cure pipe



10.1.10 Clean all the parts including stator (not shown below) using the cure pipe, Q tips, and paper towel (avoid particles pollution).

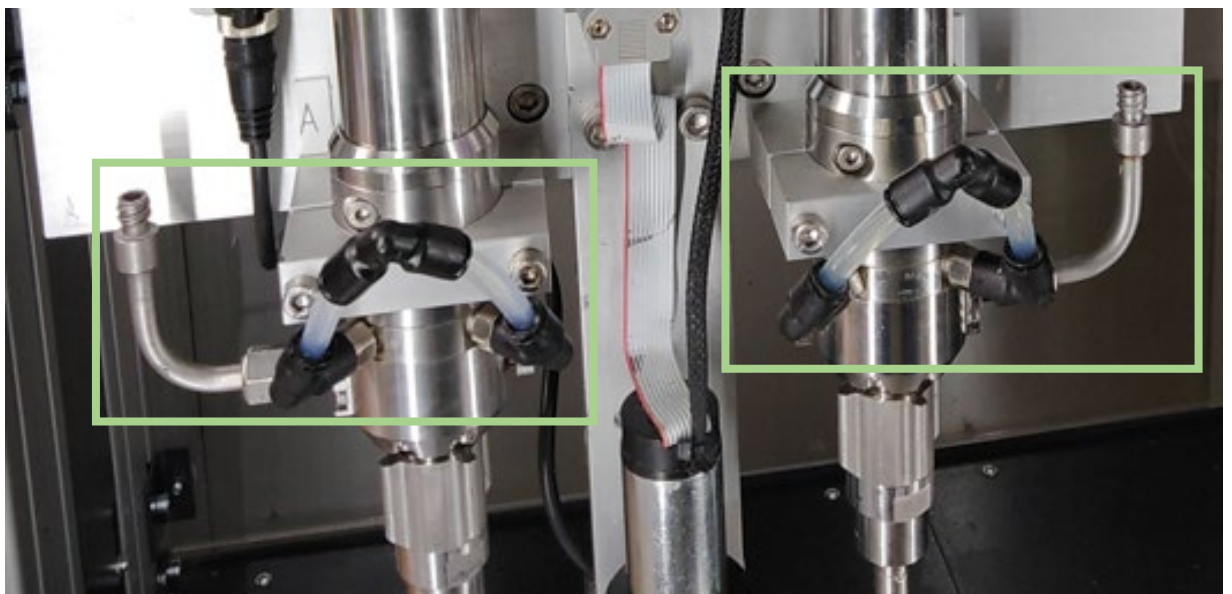
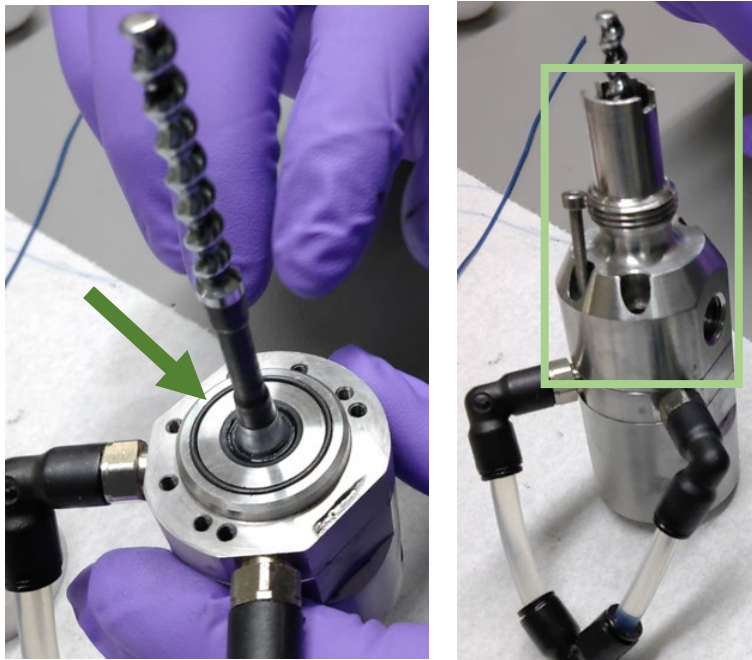




## 10.2 Reassembly

10.2.1 Make sure you have the O ring in place before reassembling the two parts. Observe the left and right side orientation of the elbow tubes and inner side drain plug.

10.2.2 Put back in the 4 screws, hand tight.

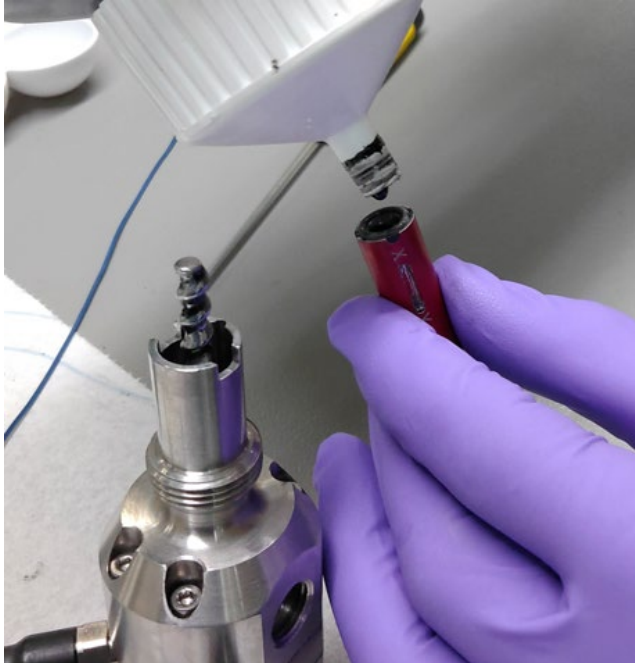




10.2.3 When putting back the red stator add a bit of glue (or hardener depending on the side) and screw the stator back in the infinite screw.

NOTE: Make sure the "Y" is positioned down (green circle).

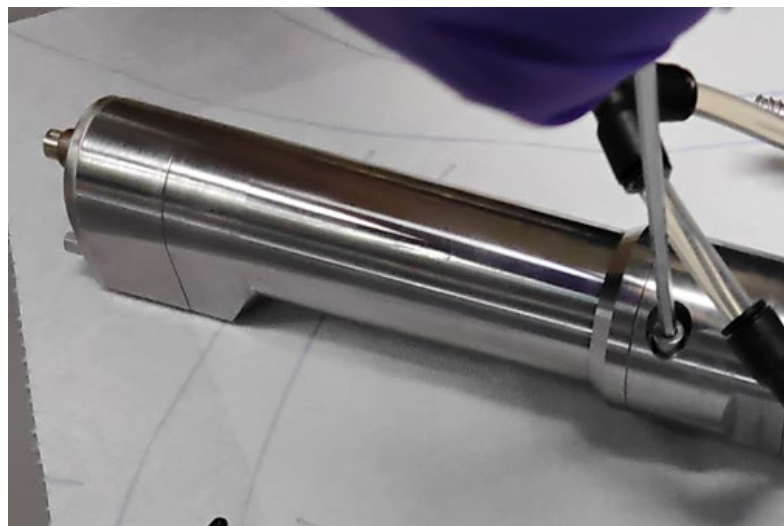
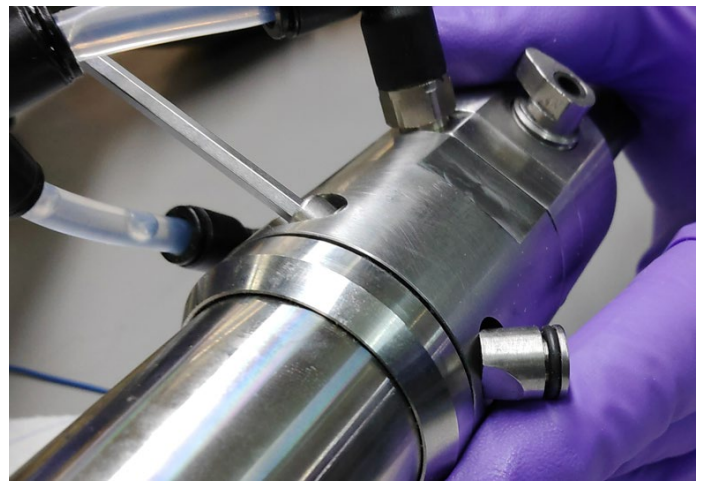
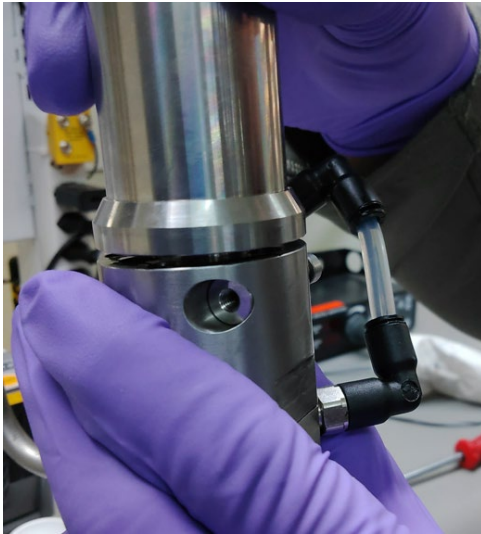
10.2.4 Also align the pin into the groove (orange arrow).



10.2.5 Screw the bottom cylinder back in, make sure to align correctly the two parts (orange rectangle). A small gap is normal so that the red stator is visible.



10.2.6 Assemble back the bottom part and the cylinder together on a flat surface, make sure there is no gap between the two parts while screwing.



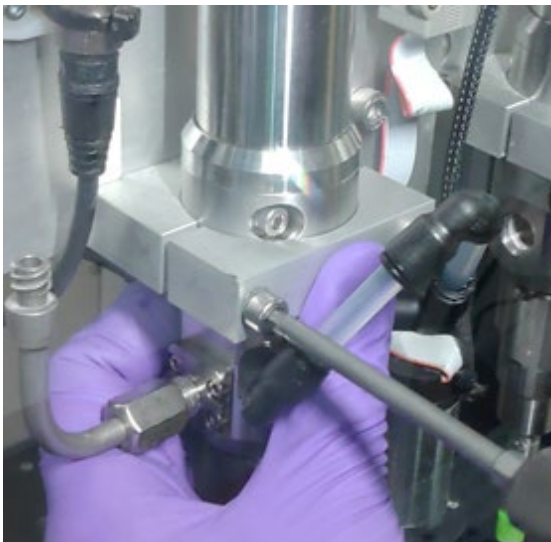
10.2.7 Put back the elbow with the 4 little screws and the drain plug back by hand



10.2.8 All the assembly is done you can then put back the fresh assembled parts back into the machine.

10.2.9 Make sure the that the elbow is aligned before tightening the bracket.

10.2.10 At the end connect every connector back to the motor.



10.2.11 Well Done !!

## 11. Annex

Unitechnologies user manual available at work station (explanations and list of materials).







Technical Instruction  
PO-TI-001

Doc.-No.: TI-44216-59300  
Revision: 3  
Date: 16.03.2023  
Status: released  
Page: 31 of 32

## 12. Administration

### 12.1 Responsibilities

12.1.1 This Technical Instruction is edited and issued by the Production Manager.

12.1.2 He monitors that sufficient information is available to the users for correct operation and maintenance.

12.1.3 He is also responsible to brief the concerned personnel accordingly and in due course.

12.1.4 Quality Manager will involve the DO as required for process approval.

12.1.5 All Technical Instructions will be stored and published on company server architecture.

### 12.2 Amendments

12.2.1 In cases where parts of this Instruction cannot be applied as required, e.g. due to ambiguity, contradiction to other Procedures or to the applicable regulations, the Production Manager and the Quality Manager will find a mutually agreed solution that is conform to the requirements. In cases where such resolution cannot be found, they will involve the Head of PO for arbitration and final decision.

12.2.2 Any amendment or revision to this Instruction will be published as soon as possible and will take immediate effect. All staff will be informed in a training session (initial) or by e-mail and self-study (recurrent), and as appropriate for the impact of the amendment.

As an exception to this clause, any batch of parts or equipment where production process has already started will be continued under the previous revision, unless both Production Manager and Quality Manager mutually agree to apply the new revision.

### 12.3 Referenced Documents

Ref.	Document Ref.	Revision	Title
REF-[1]	POH-44151-44200	latest	H55 Production Organisation Handbook


Table 1: Referenced Documents

## 12.4 Revision Status

Rev.	Reason for Revision	Affected pages	Name	Date
1	Initial Issue	All	YLI	17.03.2021
2	General update as response to audit findings Added inspection of glue recorder Added filled material L/N label on syringes Added jigs identification numbers Added rolling machine speed cursor limitations. Added labelling of syringes Clarified positioning of syringes on rolling machine	all Para 3.5 Para 5.3 All Para 5.4 Para 6.3 Para 8.2.2	YLI	23.06.2022
3	General wording Introduced new daily follow-up practice by weight Added intermediate container Removed manual stirring and updated syringe filling Replaced roller Corrected plates references Precised piston activation Removed maintenance chapter Moved and updated mixing chamber cleaning chapter  Moved moving glue dispenser manually chapter  Added deep cleaning process	All Para 3 Para 6.2 Para 6.3 Para 6.4 Para 7.3 Para 8.3 Old para 9 Old para 9.2.7 to para 3 Old para 9.3 to para 9 Para 10	YLI	16-MAR-23

Table 2: Revision Status

## 12.5 Approvals

<b>Prepared by:</b> Yves Linder Production Manager	<b>Date</b> 17-MAR-23	<b>Signature</b> 
<b>Approved by:</b> Bernd Heinrich Head of Production Organization	<b>Date</b>	<b>Signature</b>