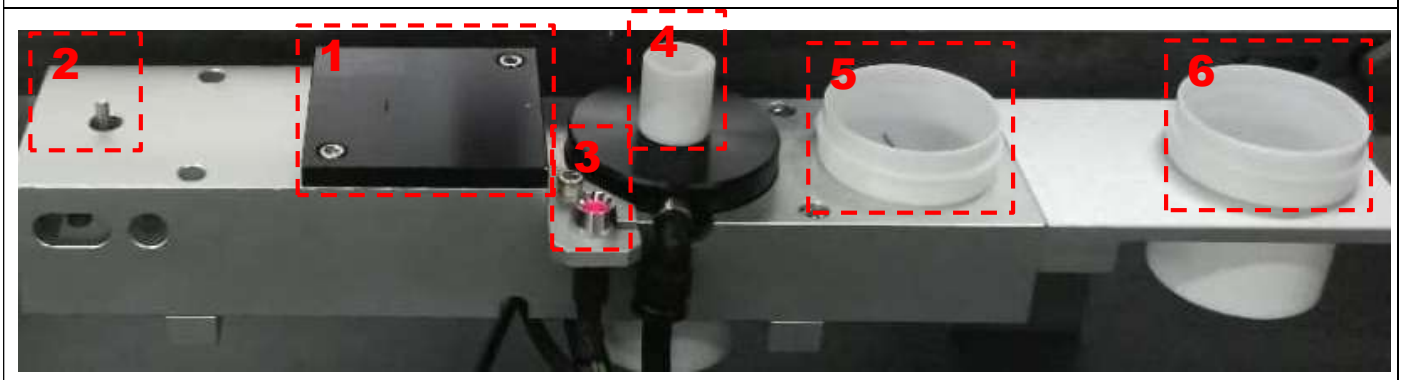
System Setting



Harware: 1.Calibration platform 2.Needle height calibration PIN 3.Needle height signal light 4.Vacuum suck cleaning needle 5.Left valve standby position plastic cup 6. Right valve standby position plastic cup

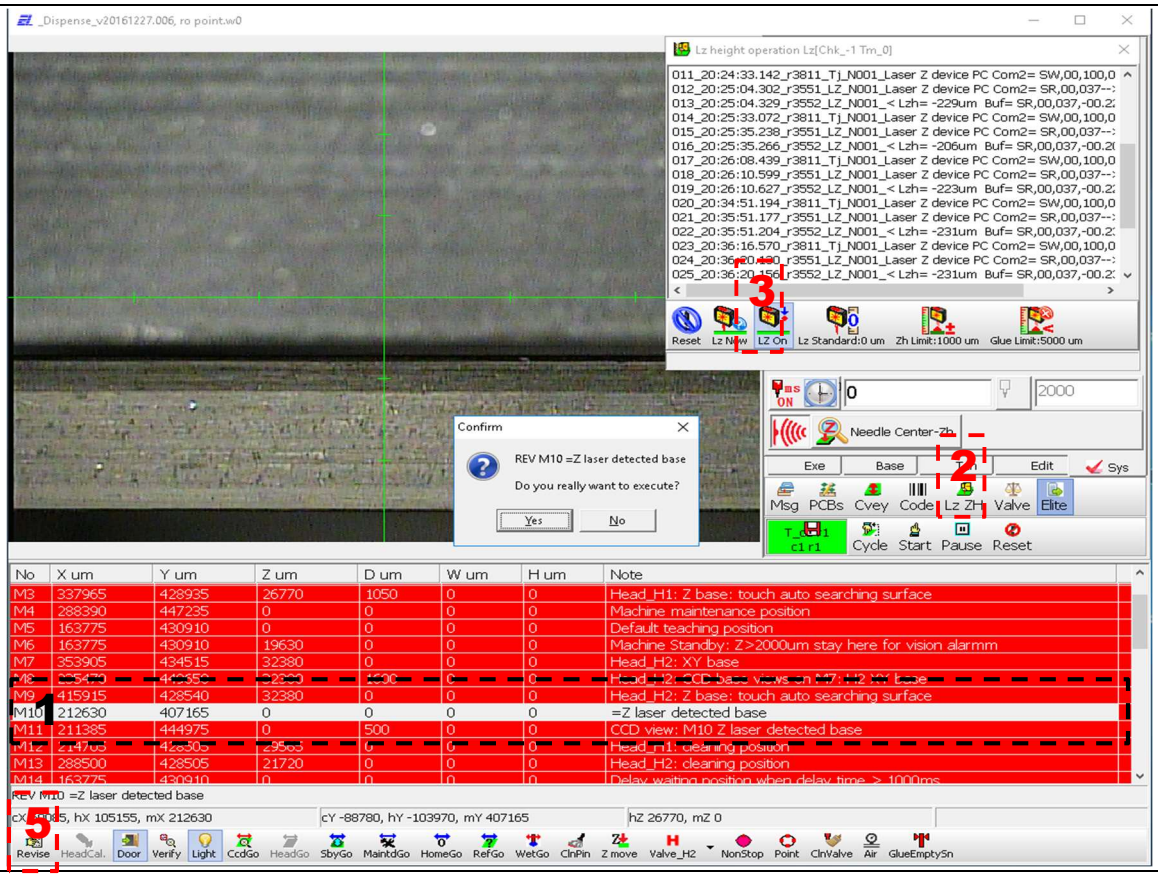
H1 is left valve calibration:M0，M1，M3，M12，M15

H2 is right valve calibration:M7，M8，M9，M13，M16

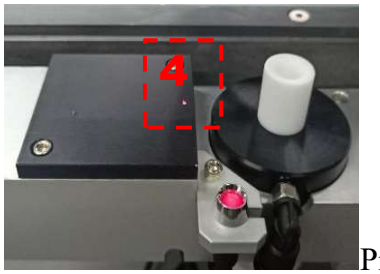
Common point calibration:M2，M4，M5，M6，M10，M11，M14

M10_Laser Z axis height detection base

When to use:Working position and actual position’s height detection point is different



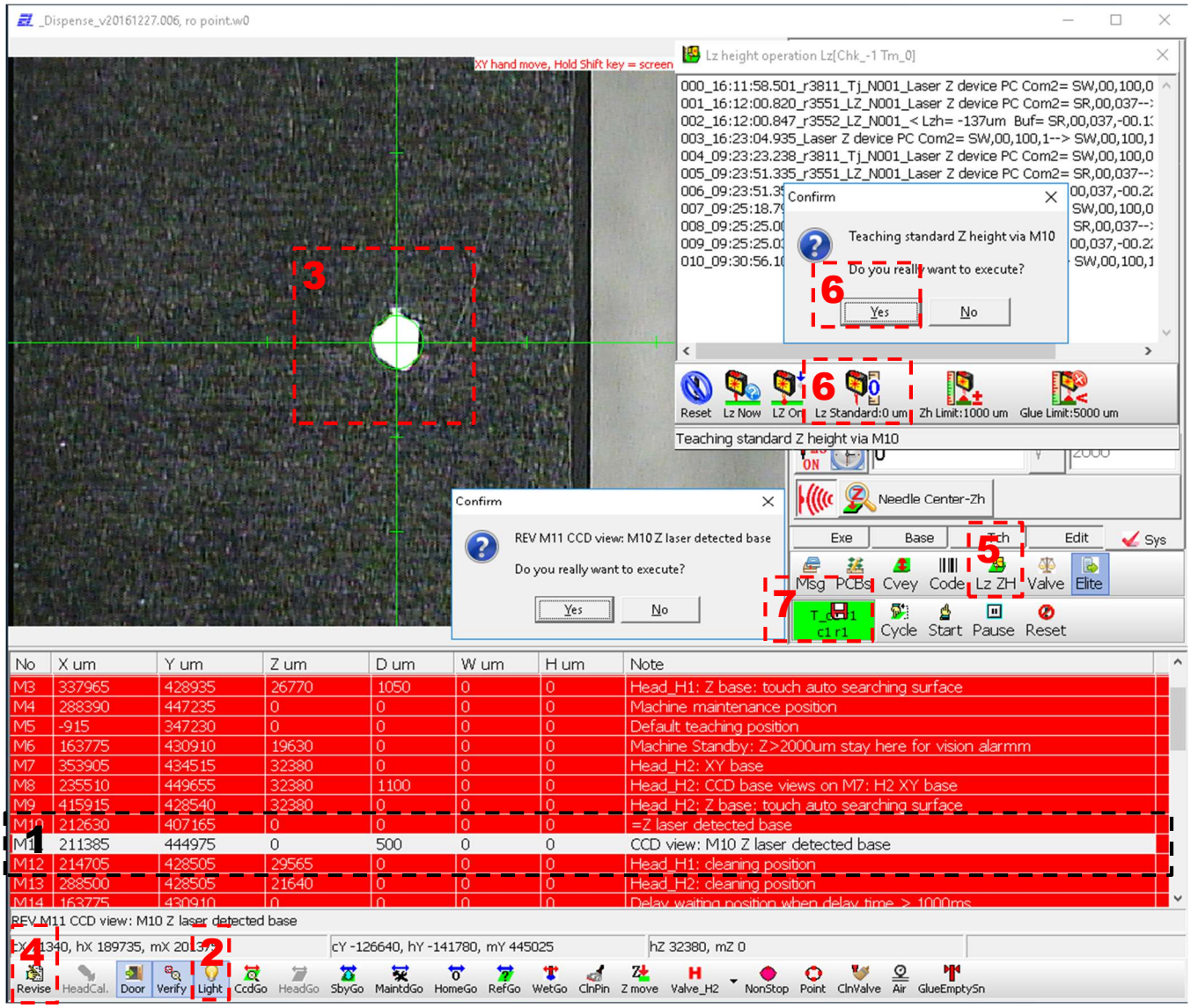
1. Select M10_Laser Z axis height detection base
2. Open laser height detection interface
3. Turn on laser bean
4. Move X.Y. axis, align with customed target as right Pic. 1
5. Revise coordinate



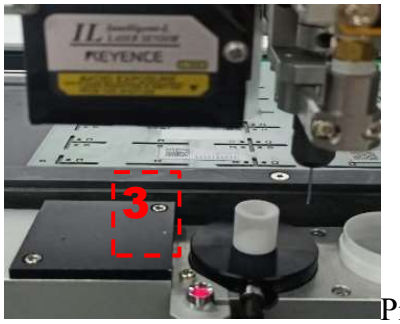
Pic. 1

M11_CCD alignment :M10 Laser Z axis height detection base

When to use: Working position and actual position height detection point is different, Base height detection and actual height is different



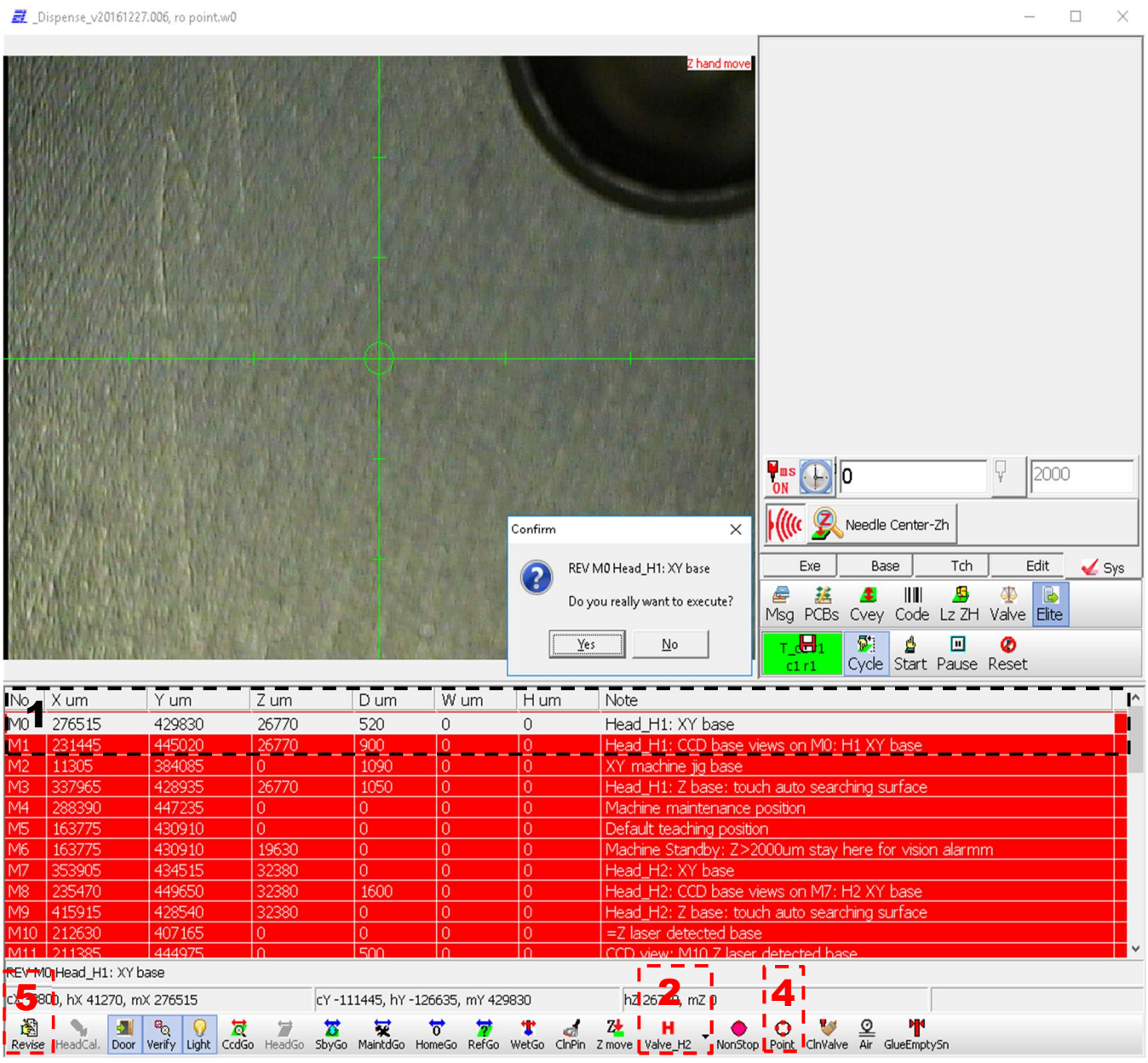
1. Select M11_CCD alignment:M10 Laser Z axis height detection base point
2. Turn on CCD light source
3. Move X.Y. axis, align with customed target as below Pic.1
4. Revise coordinate
5. Open Laser height detection interface
6. Perform height detection base height on M10 coordinate position and update M10 laser Z axis height detection value.
7. Red disk shows up, left key to save system file



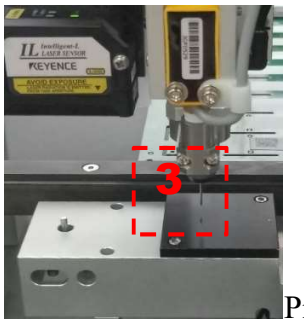
Pic. 1

H1 valve calibration:M0_Dispenser base

When to use: Working dispense X.Y direction is wrong has an offset, renew needle and each axis hardware



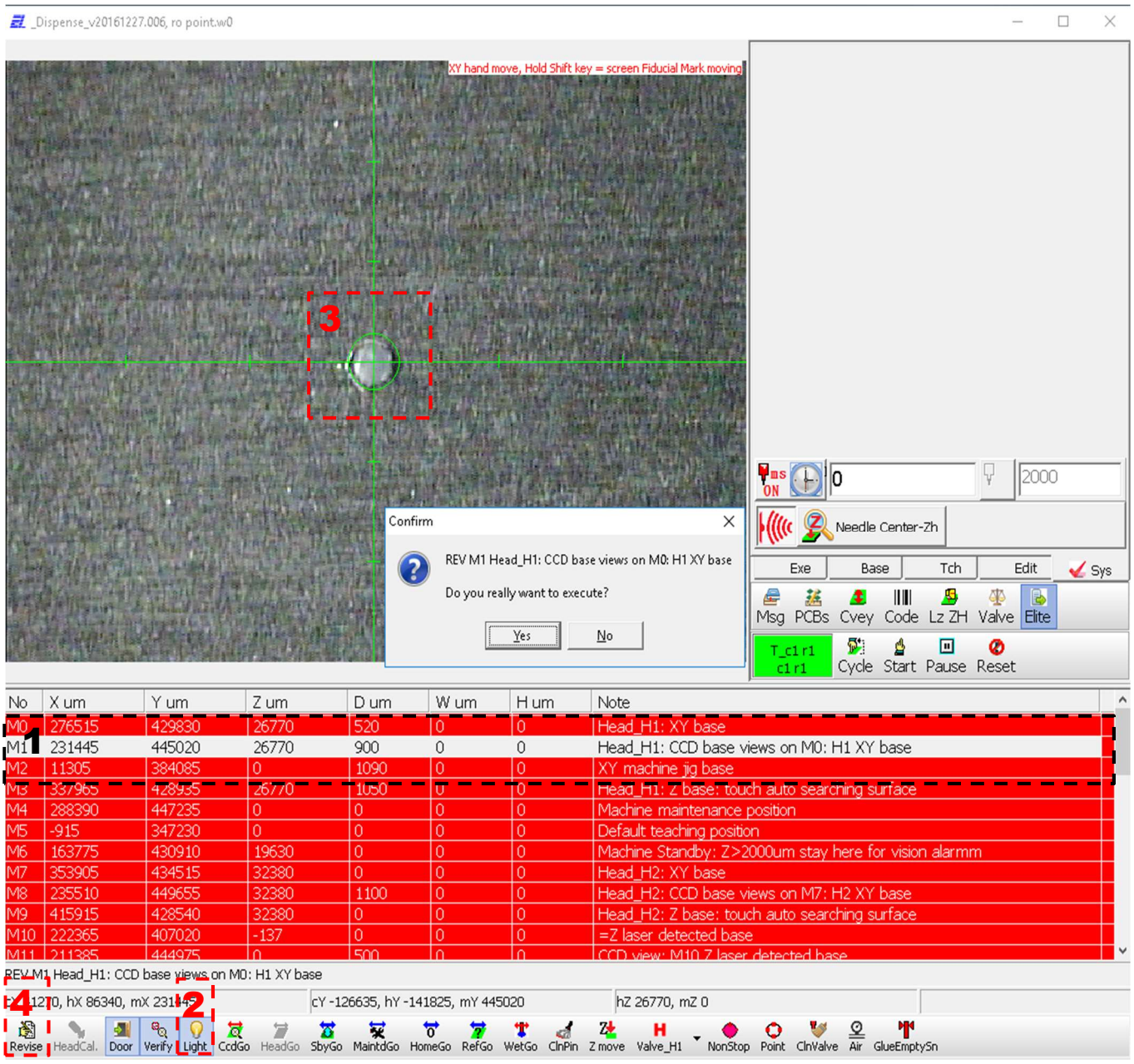
1. Select M0_Dispenser base
2. ▼, Select H1_valve
3. Move X.Y.Z as below Pic.1
4. Dispensing, dispense 1 drop as below Pic. 1
5. Revise coordinate



Pic. 1

H1 valve calibration:M1_CCD base align with M0 Dispenser base

When to use :Working dispense X.Y direction has offset, renew needle and each axis hardware

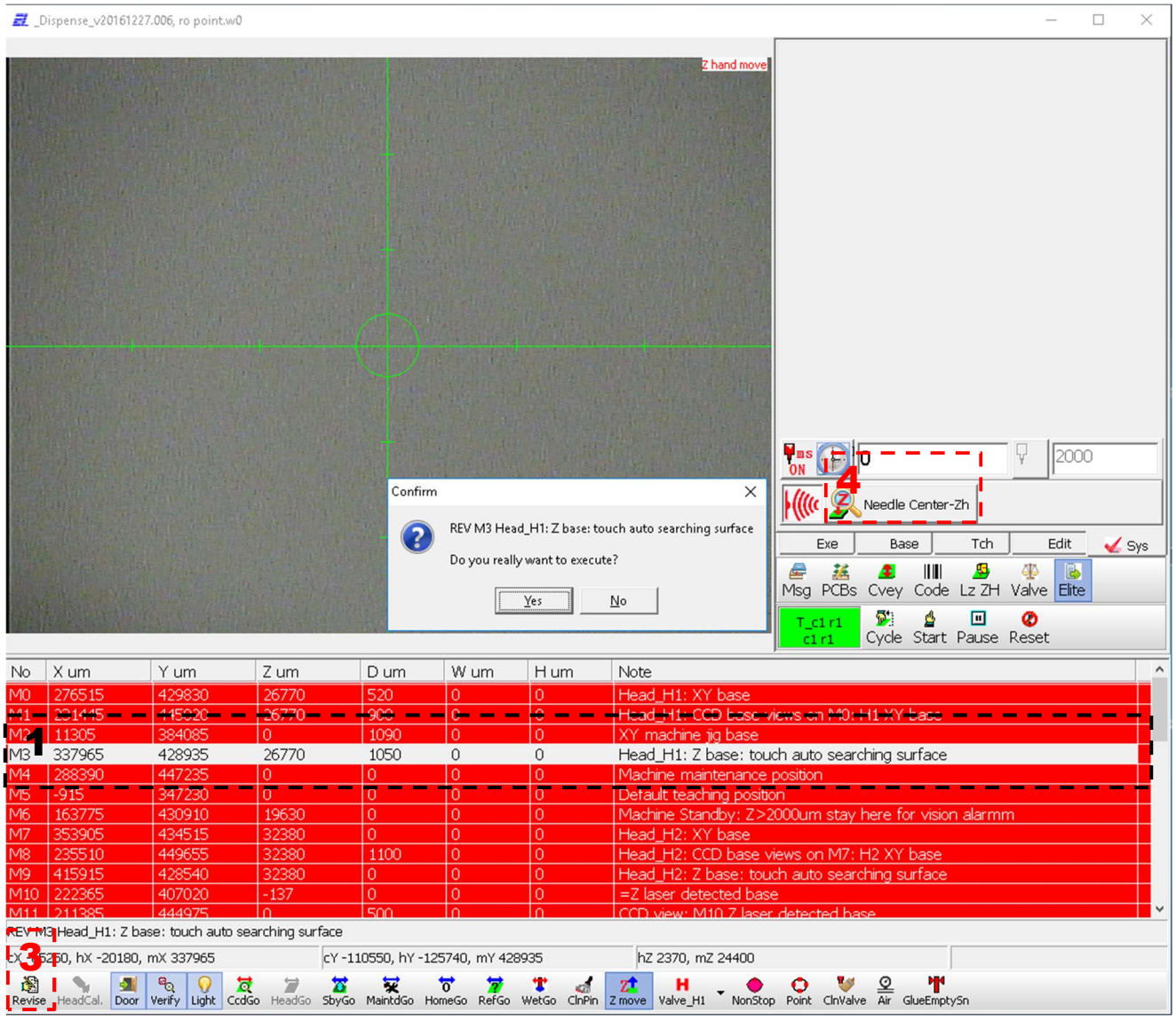


1. Select M1_CCD base align with M0:H1 dispenser base
2. Turn on CCD light source
3. Move X.Y axis, align with H1 dispenser glue output point as below Pic. 1
4. Revise coordinate

Pic. 1

H1 valve calibration :M3_Z axis base height: Touch auto searching surface

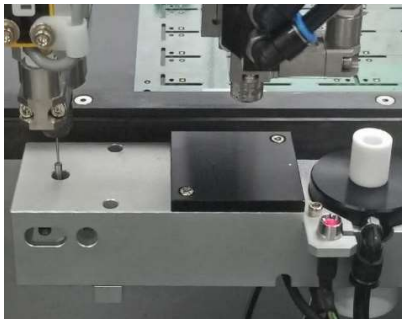
When to use :Working dispense Z height has an offset, renew needle and each axis hardware

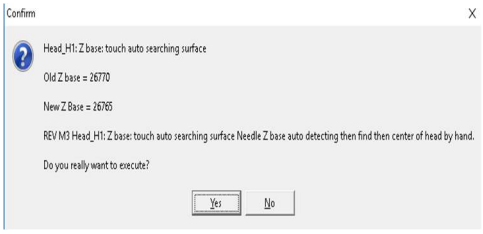


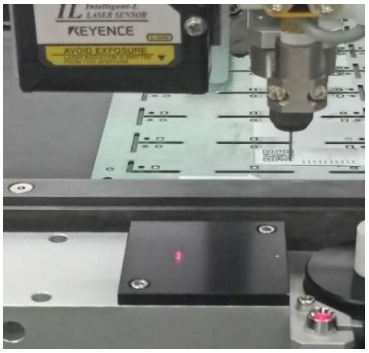
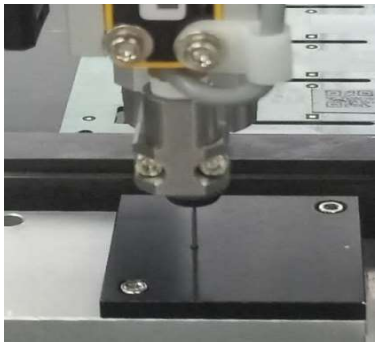
1. Select M3_Z axis base height :touch auto searching surfac
2. Move X.Y.Z axis, align needle with height detection PIN as right Pic.1
3. Revise coordinate

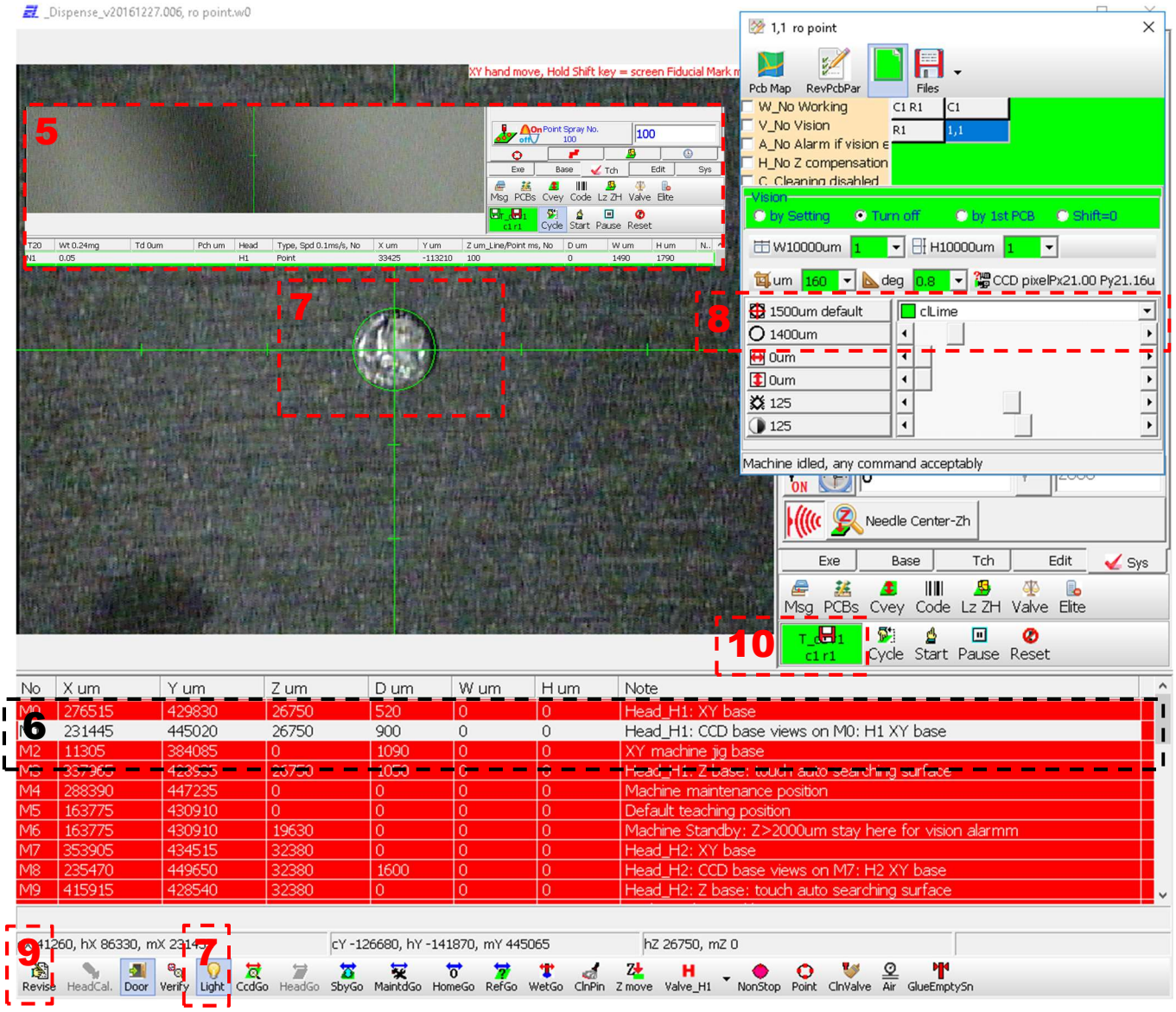
Pic. 1

4. Select needle height and center point and below auto calibration will show up





4-1 Left needle will perform down needle height detection light off according to M3 coordinate	4-2 Detection needle height, height detection light on	4-3 System conversion, Z axis needle base height, click YES update M3_Z axis height
		
4-4 Laser height detection, perform safety height detection to M0 coordinate to prevent foreign things in it	4-5 Left needle's X.Y will move to M0 coordinate, Z axis moves down to M3 new base height and perform single dispense	4-6 Dispense to calibration platform, can perform M1_CCD adjust to align with M0 dispenser base calibration



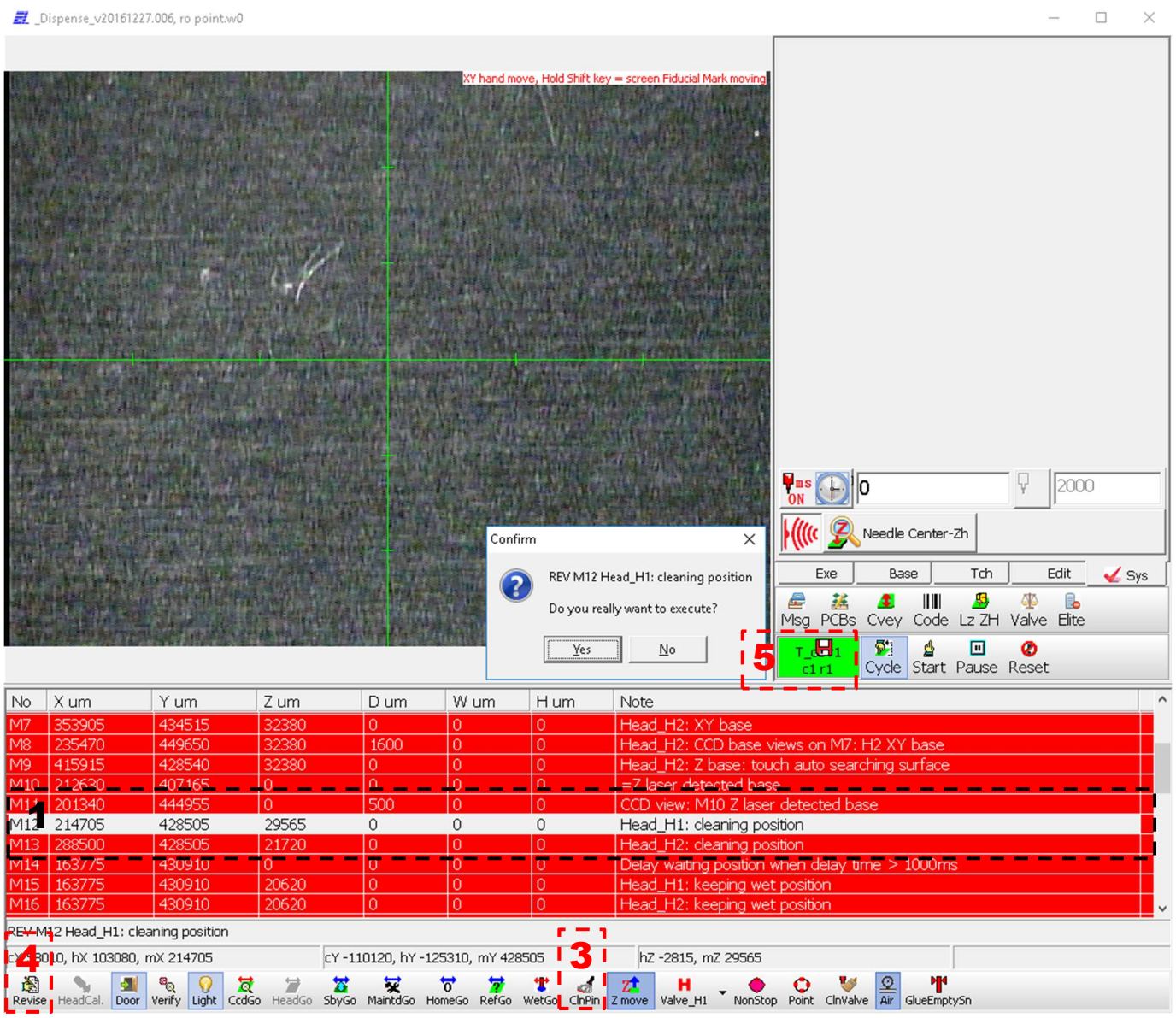
5. Dispense time will view first dispense timing int teach mode as base

6. Select M1_CCD base to align with M0 dispenser base

7. Turn on light source, move X.Y axis . CCD align 4-6 amount position
8. Adjust target size, adjust initial value to target size too
9. Revise coordinate
10. Red disk will show, left key to save system file

H1 valve calibration:M12_cleaning point setting

When to use : Renewing X.Y.Z axis hardware for example motor screw, cleaning position is wrong and therefore needs reset

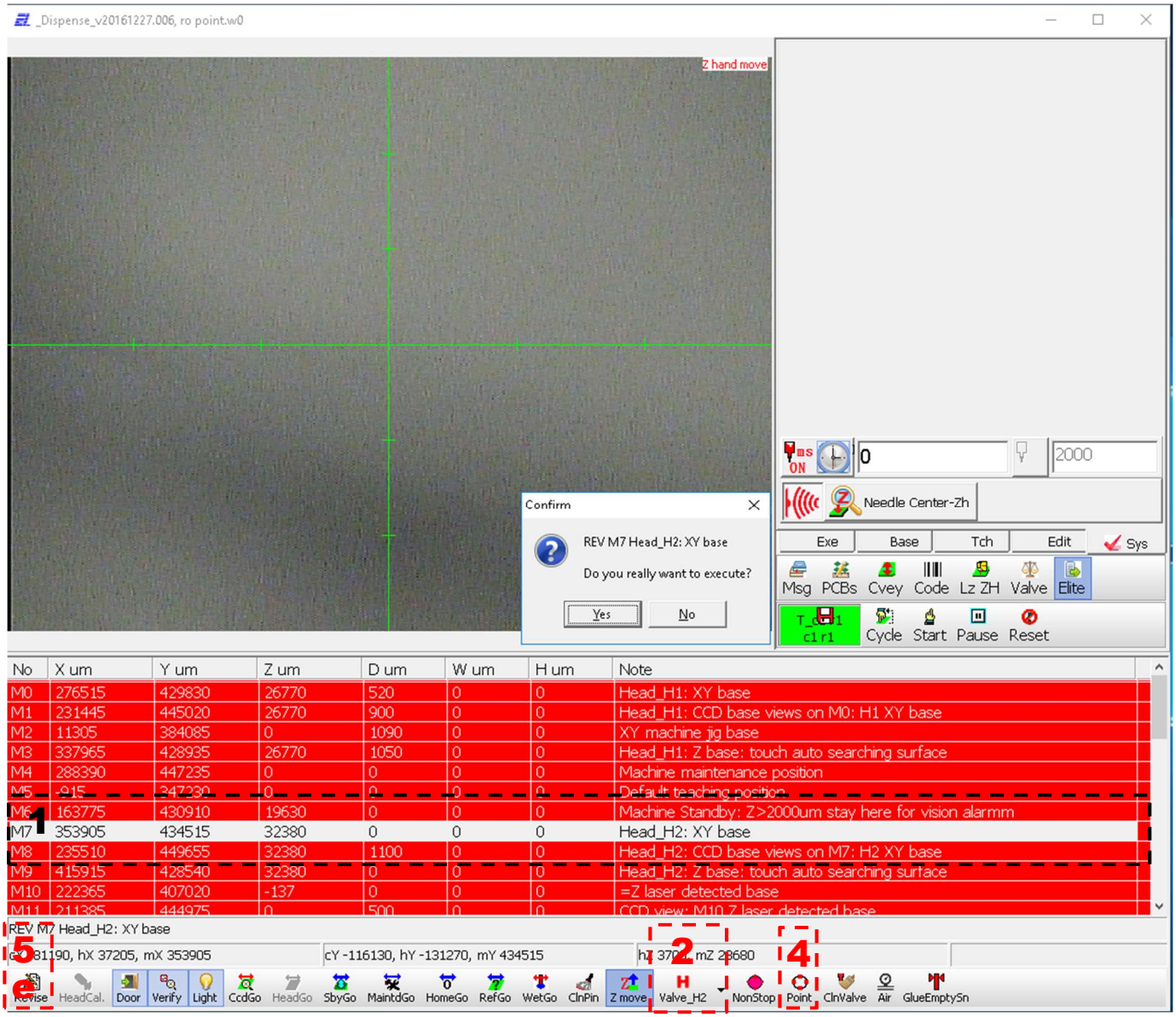


1. Select M12_H1 cleaning point setting
2. Move X.Y.Z axis, align needle with vacuum suck cleaning needle as below Pic. 1
3. Click Vacuum clean pin
4. Revise
5. Red disk will show, click left key to save system file

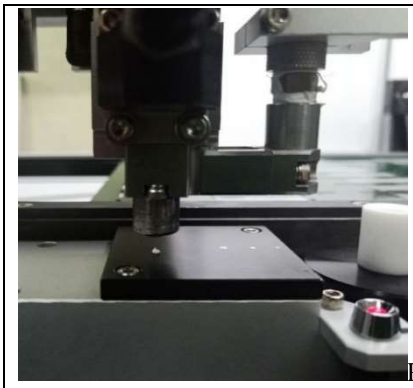
圖一

H2(spray valve)valve calibration:M7_Dispenser base

When to use : Working dispense X.Y direction has an offset, renew and each axis hardware

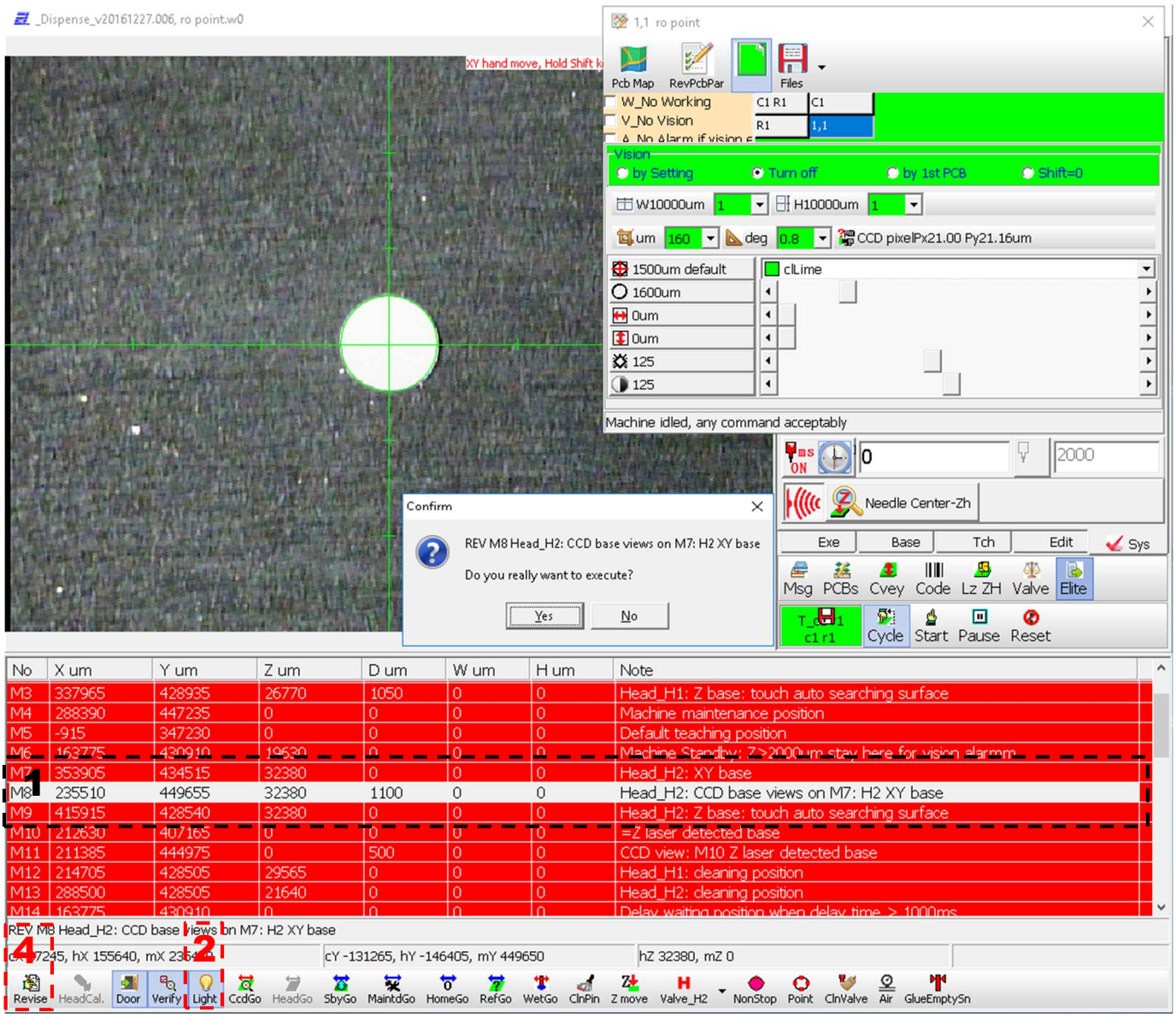


1. Select M7_Dispenser base
2. Select H2_valve
3. Move X.Y.Z axis as below Pic.1
4. Dispenser, Dispense one amount, showed at below Pic. 1
5. Revise coordinate

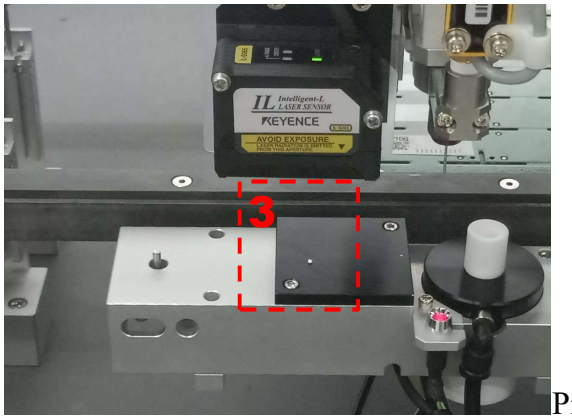

Pic. 1

H2(Spray valve)Valve calibration:M8_CCD base align with M7 dispenser point

When to use :Working dispense X.Y direction has an offset, renew needle and each axis hardware



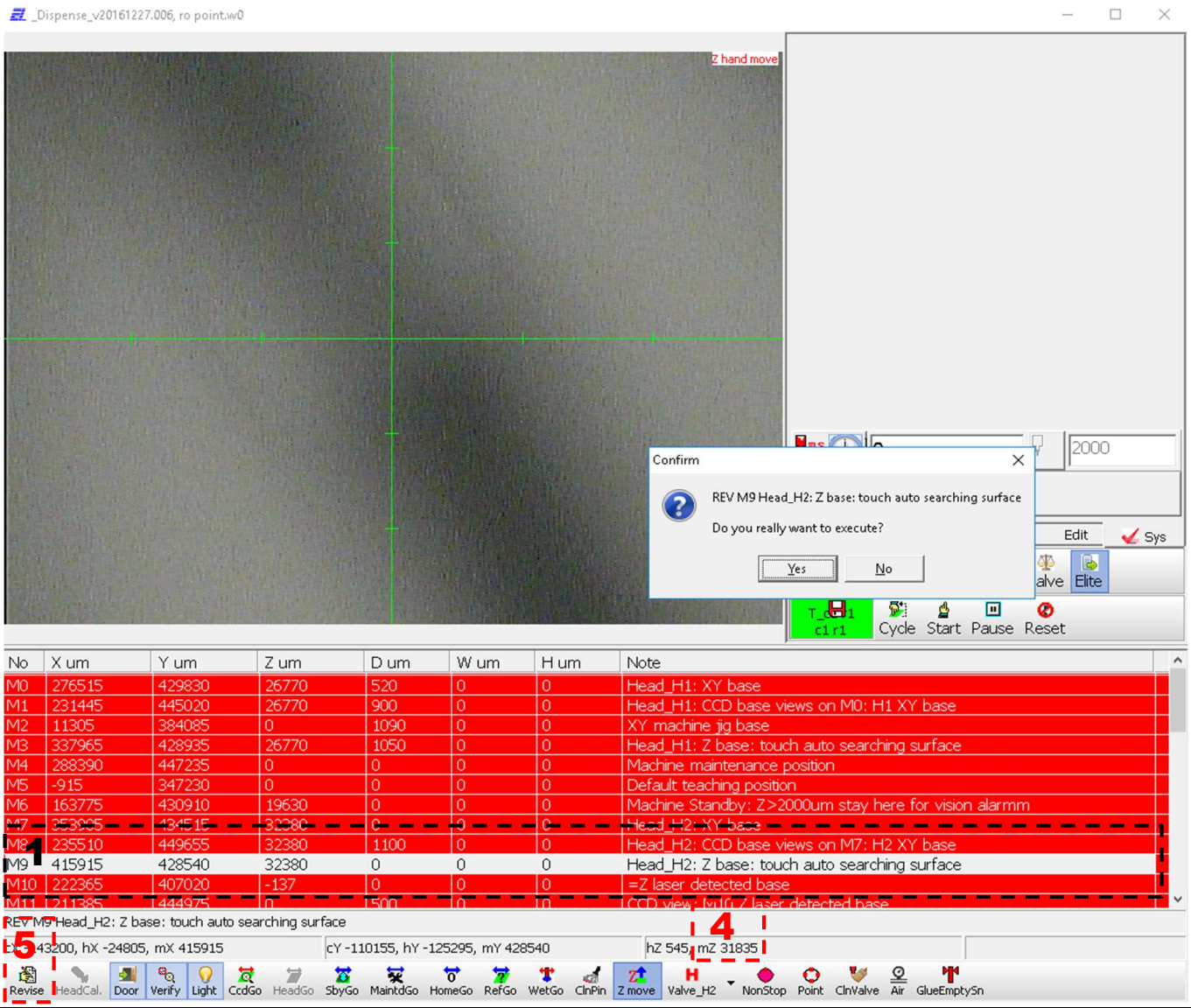
1. Select M8_CCD base align with M0:H1 dispenser base
2. Turn on CCD light source
3. Move X.Y axis and align H1 glue output point as below Pic. 1
4. Revise coordinate



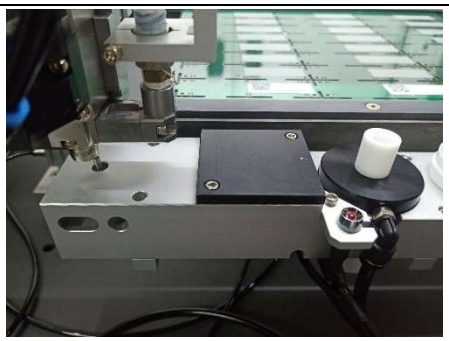
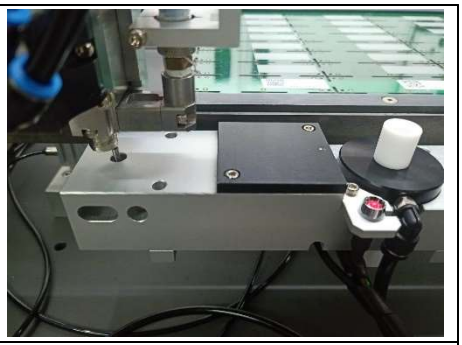
Pic. 1

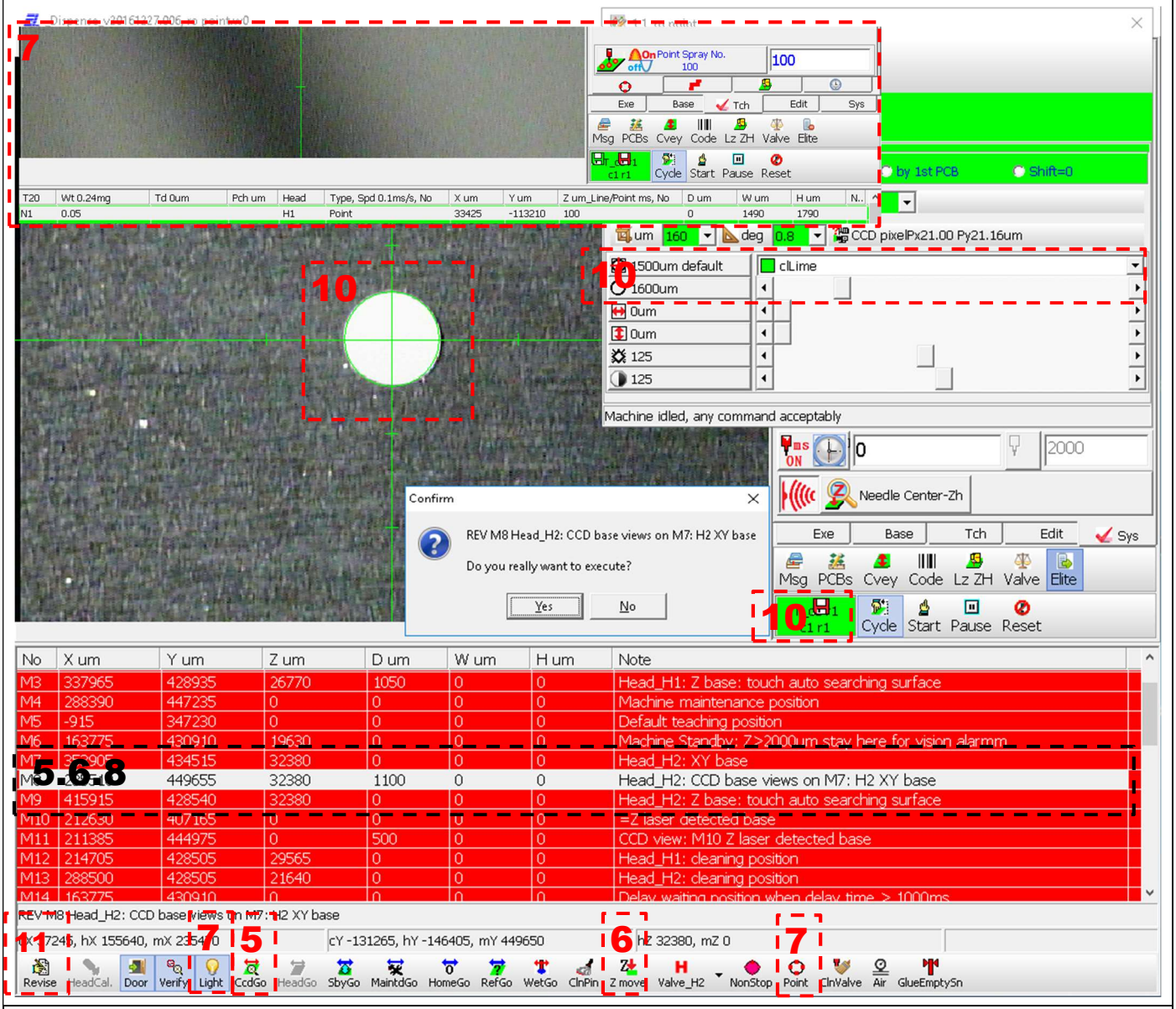
H2(Spray valve)Valve calibration:M9_Z axis base height:touch auto searching surface

When to use :Working dispense Z height has an offset, renew needle and each axis hardware. Specifies to valve calibration way



1. Select M9_Z axis base height :touch auto searching surface
2. Move X.Y.Z axis, align nut lead angle with height detection PIN as right Pic.1
3. Manually move needle until touches light off like Pic. 4.1, move up so that light is on as Pic. 4.2
4. Light On position is mZ31835um, move up 3000um= parameter is mZ28835um
5. Revise coordinate

		
Pic. 1	3-1 Right needle will perform down needle height detection light off according to M3 coordinate	3-2 Detect needle height, height detection light ON



5. Select M7_dispenser base, click CCD move to coordinate position

6. Select M9_Z axis base height, click Z axis move down

7. Click dispense(Dispense time will view the first dispense time in teach mode as base.)

8. Select M8_CCD base align with M7 dispenser base

9. Turn on light source, move X.Y axis, CCD align with glue amountposition

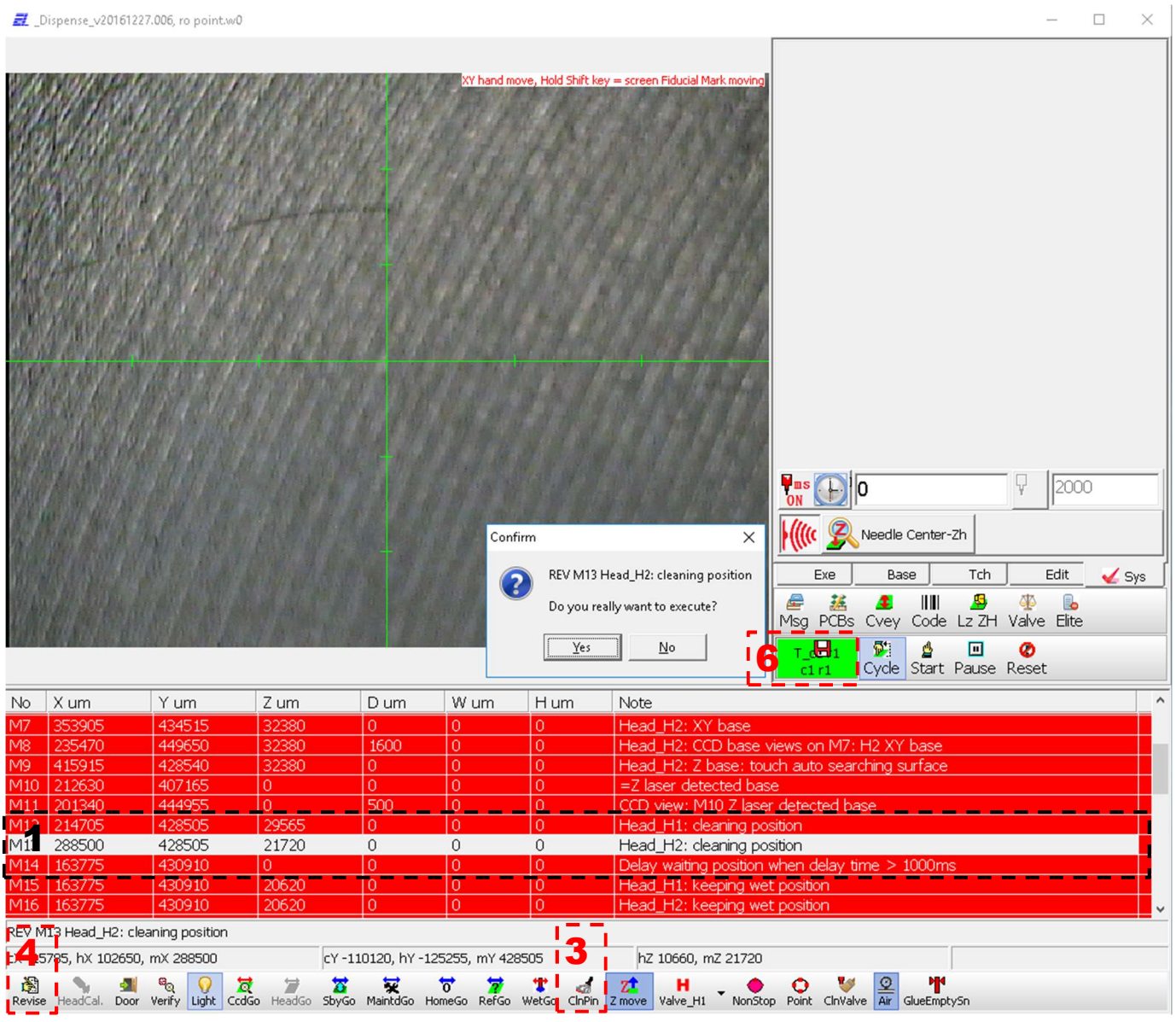
10. Adjust target size, adjust initial value to target size too.

11. Revise coordinate

12. Red disk will show, click left key of mouse to save system file

H2 Valve calibration:M13_cleaning point setting

When to use: Renew X.Y.Z axis hardware for example motor screw, Cleaning position is wrong which needs reset

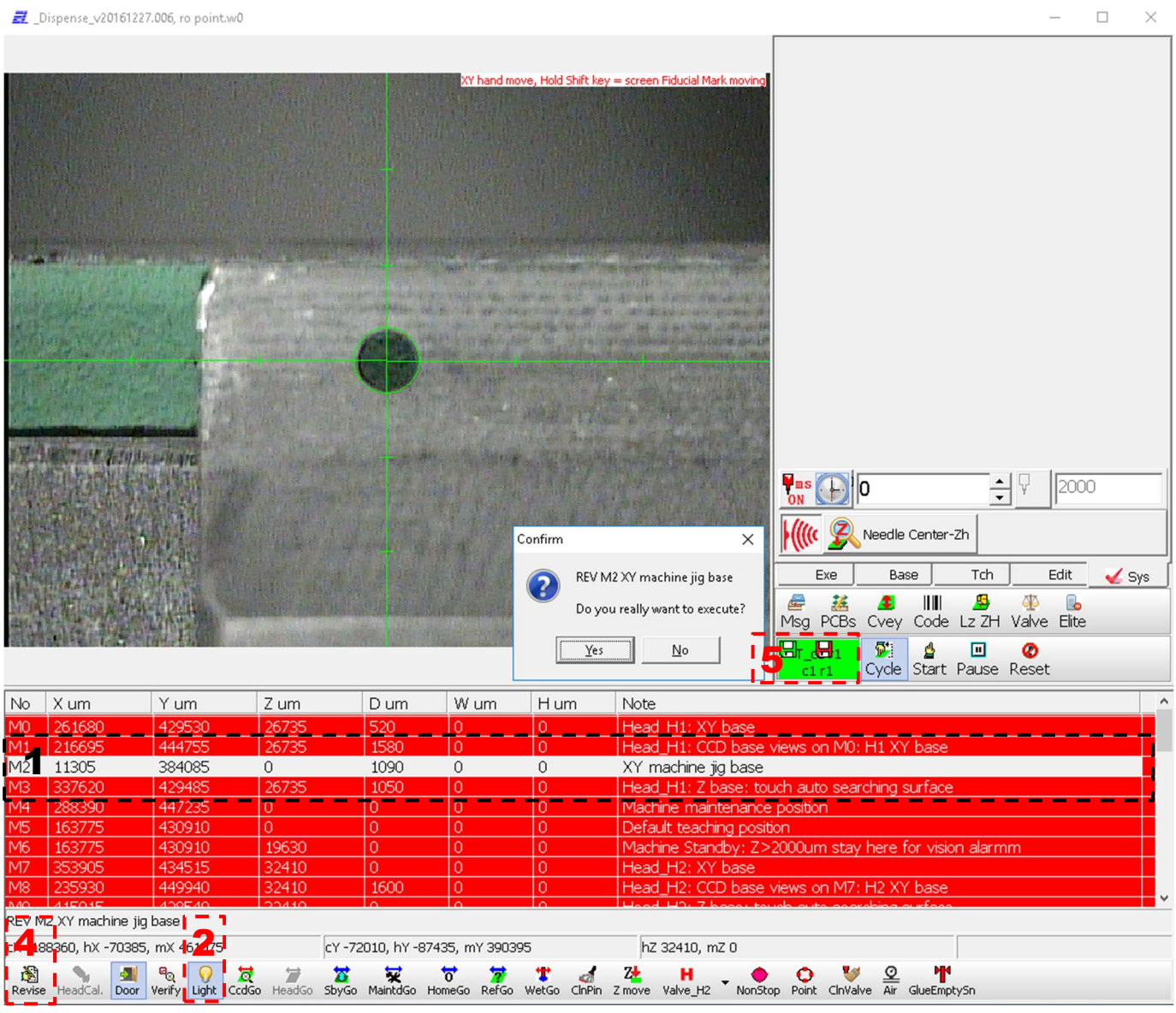


1. Select M13_H2 cleaning point setting
2. Move X.Y.Z axis, align needle with vacuum suck cleaning needle as below Pic. 1
3. Click Vacuum clean Pin
4. Revise
5. Red disk will show up, click right mouse to save system file.

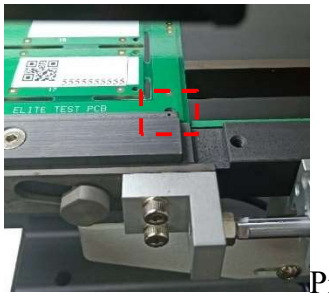
Pic. 1

M2_machine XY Jig CCD origin

When to use: Renew X.Y hardware for example motor screw and others, Working file base position move at fixed direction, Can use M2 coordinate to revise direction, and therefore can move all working files to correct position**Can only be use when all working filess moving is in fixed position ***



1. Select M2_machine XY Jig CCD origin
2. Turn on CCD light source
3. Move X.Y axis, align CCD with jig origin, like below Pic. 1
4. Revise
5. Red disk will show up, click left key of mouse to save system file



Pic. 1

M4_machine repair point

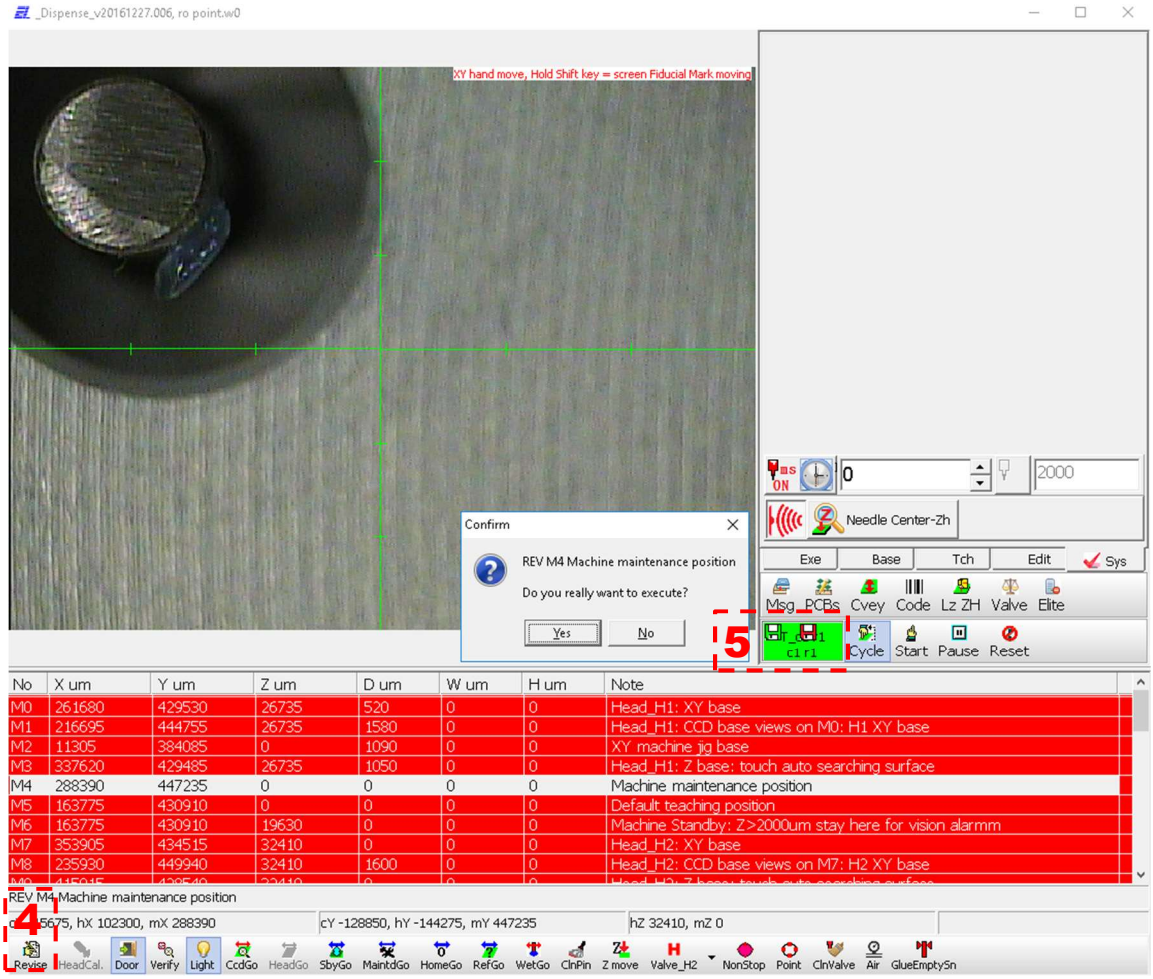
When to use: This position is set at a position that is easier to repair X.Y coordinate position

M6_Conveyor belt standby point:Z>2000um stay here for vision alarm

When to use: After finish every piece, wait at this coordinate for next piece, set it at plastic cup to prevent dropping while waiting

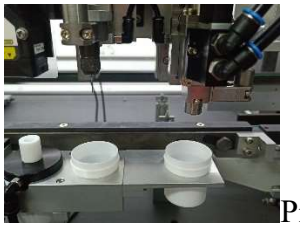
M14 delay point setting, delay time1000ms will wait at this point

When to use: Working point is written into delay point or move to this coordinate, delay point is used when glue output is slow and needs waiting or pre-heating time waiting



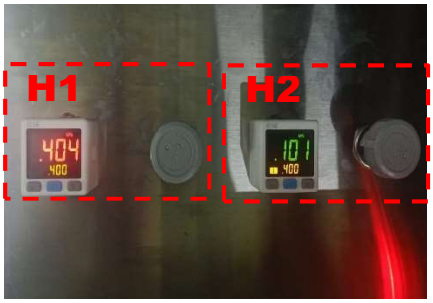
1. Select M4_machine repair point, X.Y axis move to ideal repair position as below Pic. 1
2. Select M6_conveyor belt standby point:Z>2000um stay here for vision alarm, move X.Y axis as below Pic. 2
3. Select M14 delay point setting, Delay time 1000ms will wait at this point. Move X.Y axis as below Pic. 2
4. Revise
5. Red disk will show up, click mouse left key to save system file.

Pic. 1


Pic. 2

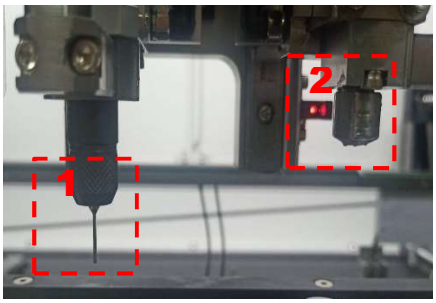
Glue pressure adjustment hardware

When to use: Impact glue output eamount



1. H1 is left valve watch, adjust knob
2. H2 is right valve watch , adjust knob

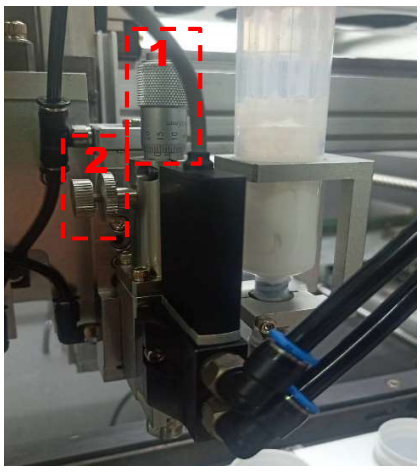
Watch no signal function, used to confirm glue pressure. The larger the value. The more the glue output



1. Plastic needle size, impacts glue output amount
2. Spray valve needle size, impacts glue output amount

Screw control box

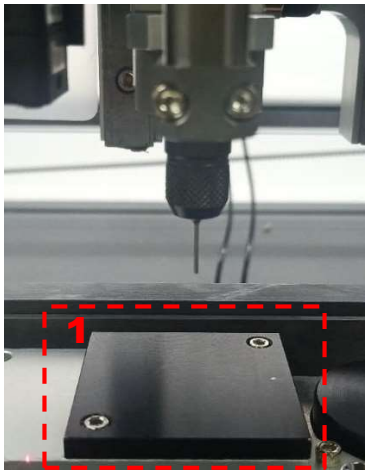
1. Screw vale rotating speed, voltage control
2. Adjust rotating speed
3. Manual screw valve rotate



1. Spray valve firing PIN height, if higher, more glue amount

(Suggested: Turn off all, two circles above as base)

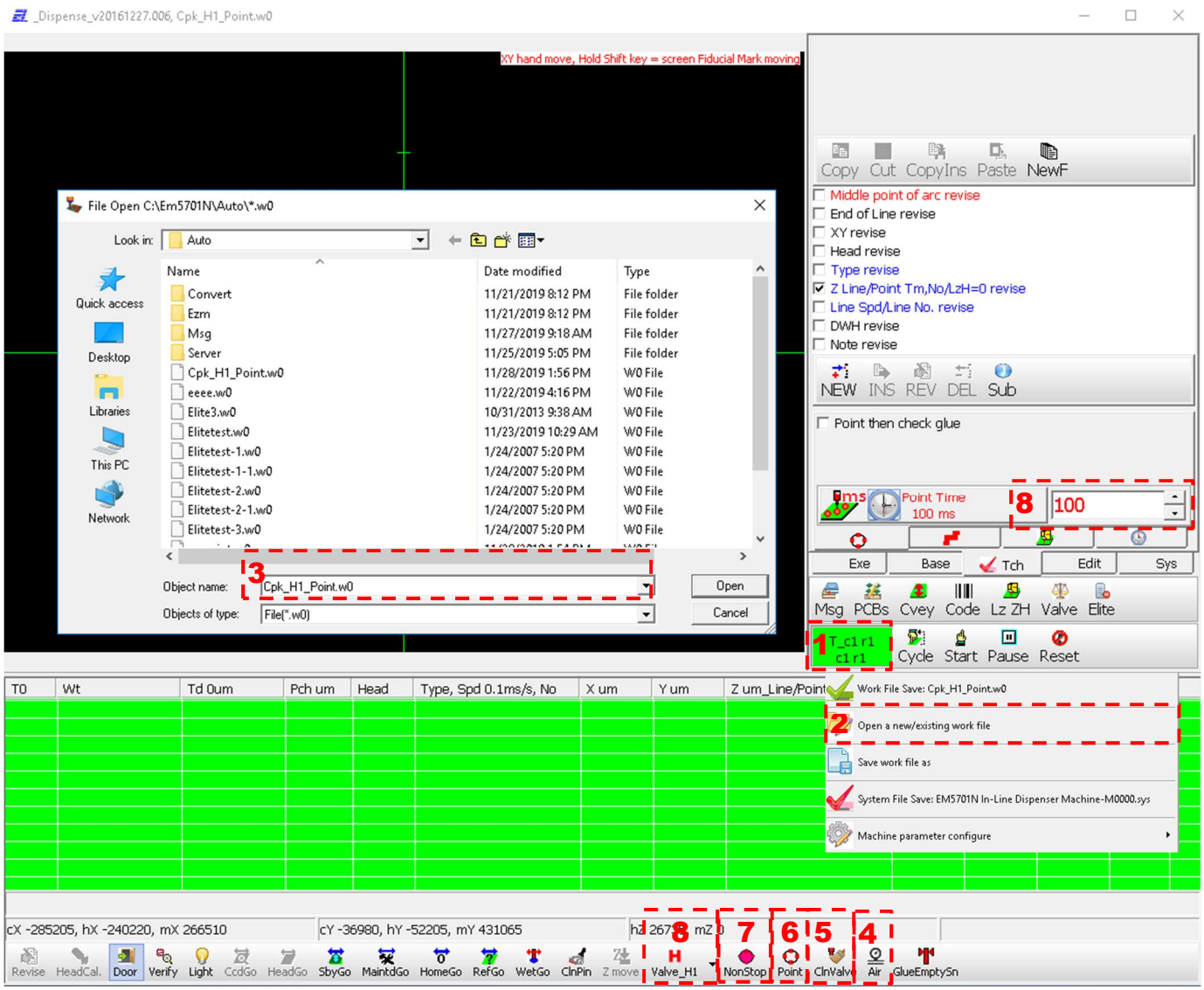
2. Fix scratch screw, lock it tight after adjusting to prevent machine vibration and screw falls off



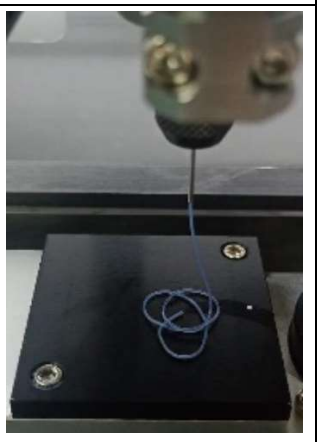
1. Glue testing platform

H1_Glue amount test

Step 1: Construct new program Cpk_H1_Point, check valve glue output



1. Right mouse key
2. Open New/Old working file
3. Construct testing point glue amount program
4. Provide glue pressure function button(No action for valve, used to adjust valve pressure)
5. Start valve on(glue pressure on action + Valve on action 作)
6. Single action dispense button(Single action on/off + glue pressure action + single action on/off valve action)
7. Continue glue output button(Continue on glue pressure action + Continue on/off valve action)
8. Left/Right valve switch
9. Set seconds(1000ms as 1 sec.) for single action glue output according to this column



(Continue glue output, cannot stop glue)

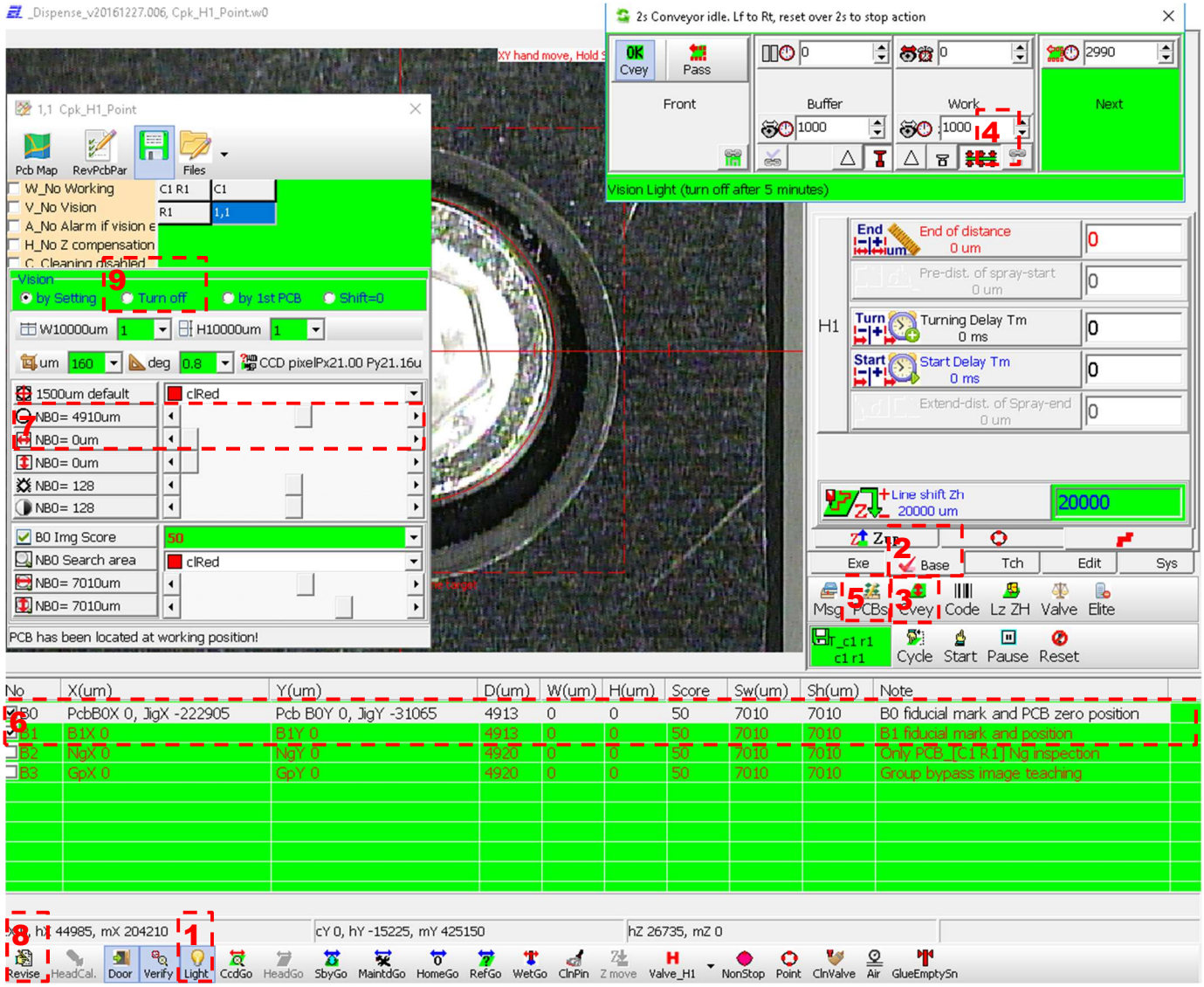
Adjust glue action procedure: Inside system needle height and center point cabrilation done, use needle and test that valve glue output is smooth, See Pic. 1

If glue output isn't smooth:1.Check whether hardwares are working properly 2.Check whether there is bubbles in glue tube

3.Check if valve is clogged 4. Check if needle is clogged

H1_Construct dispenser testing working file

Step 2:Construct base B0B1 coordinate

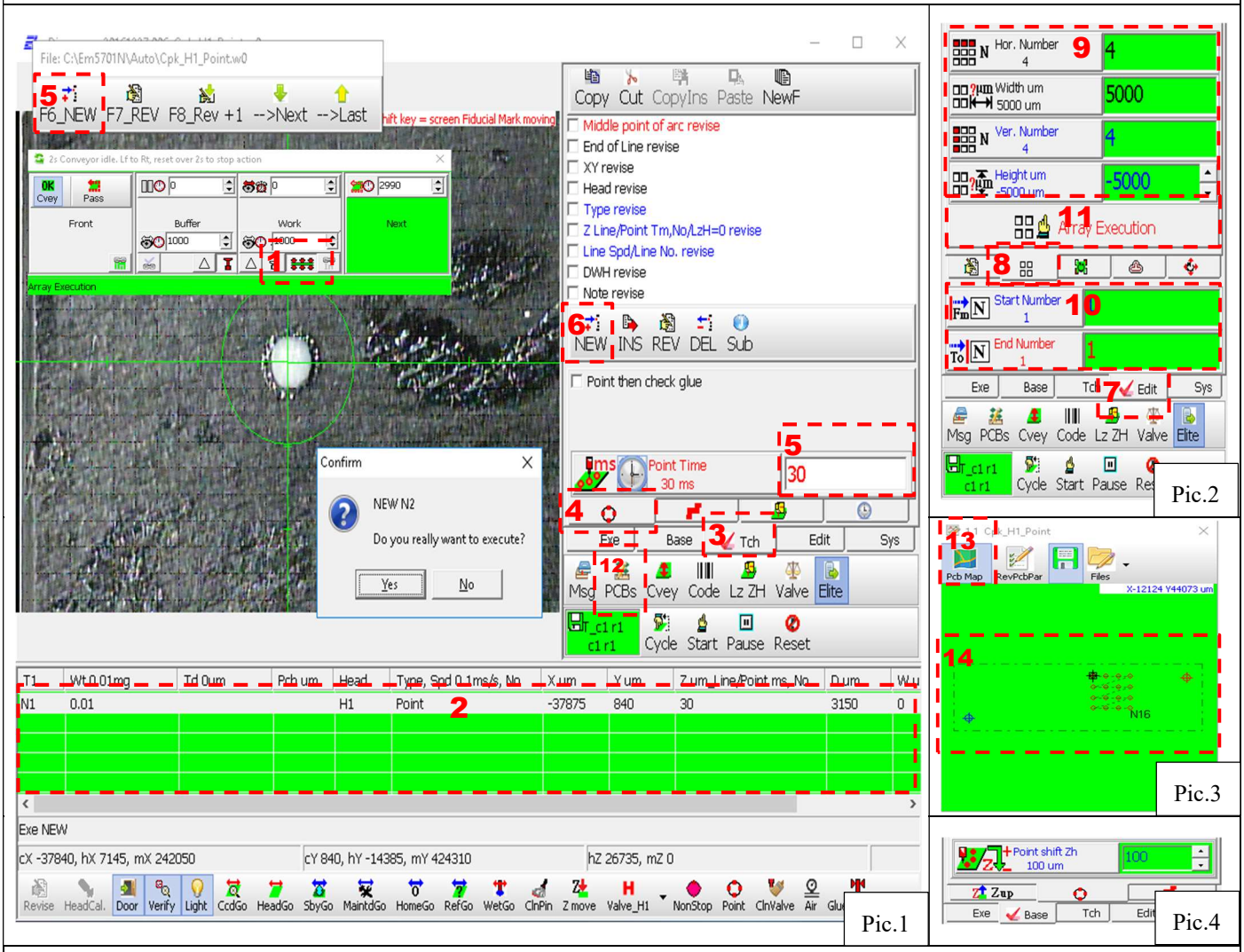


1. Select base
2. Turn on CCD light source
3. Open conveyor belt interface
4. Conveyor belt empty clamp
5. Open connected PCBs interface
6. CCD image move to Pic. 1 position, select B0 and B1
7. Cross size and target is the same
8. Revise
9. Close vision function

Pic. 1(Set B0 ‧ B1 ‧ After revising close vision functionm)

H1_Construct multi-dispense working point

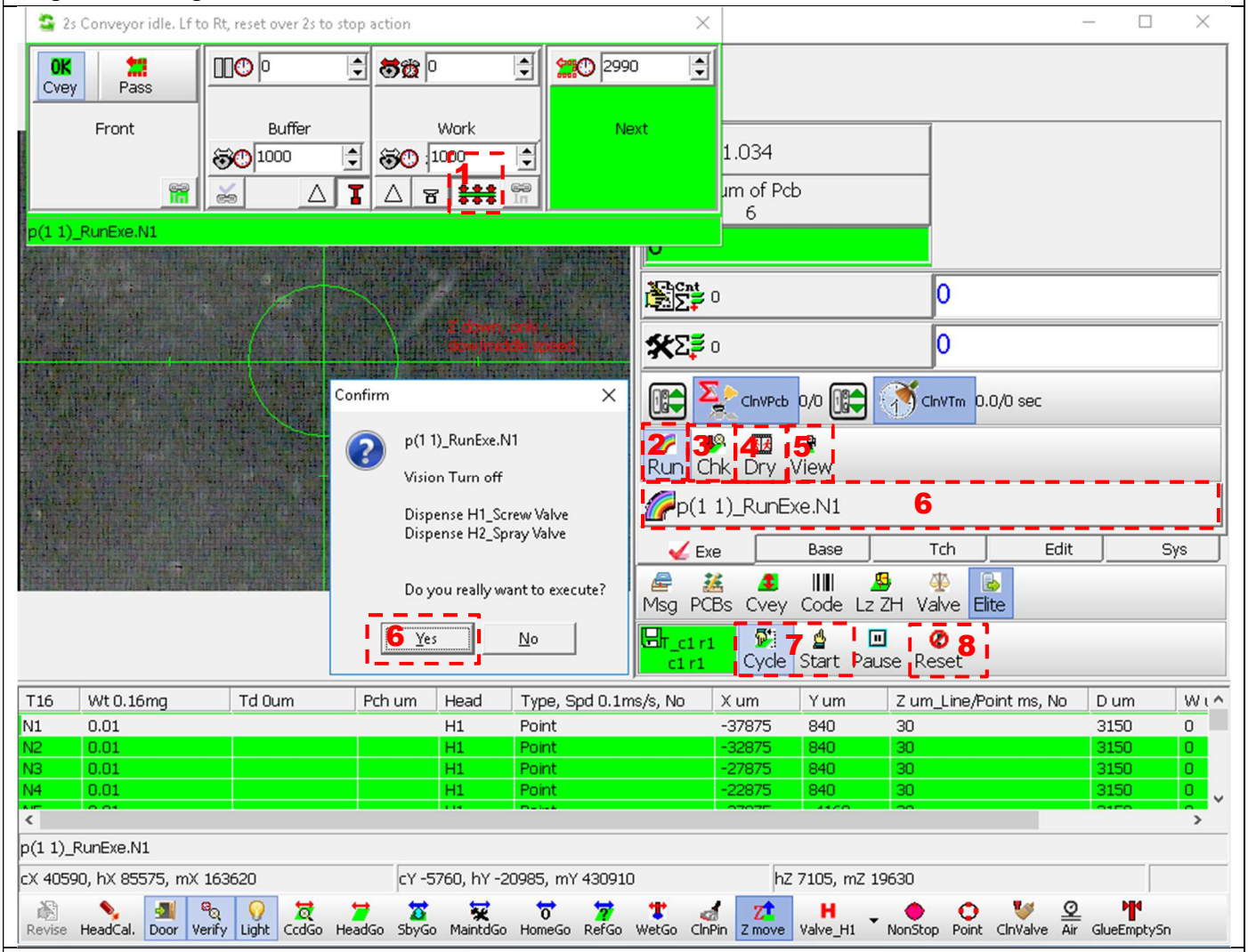
Step 3: Construct dispense point and array expand dispense working point



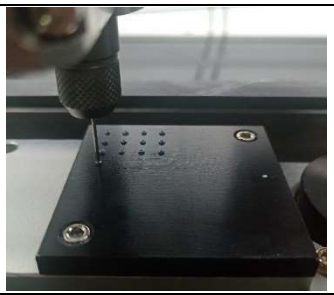
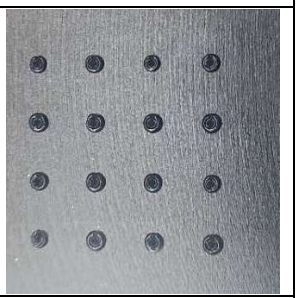
1. Conveyor belt empty clamp, Pic. 1
2. Working point column, Pic. 1
3. Select teach, Pic. 1
4. Select dispense, Pic. 1
5. Input single dispense, stop seconds(initial 30ms start testing glue), Pic. 1
6. CCD move to dispense platform's left up position, press F6 on keyboard or click new interface. Construct glue working point, Pic. 1
7. Select edit,. Pic. 2
8. Select array, Pic. 2
9. Input amount and distance, according to first dimension as position+value(can use this parameter), Pic. 2
10. Input starting point N1 working point, N1 end working point, Pic. 2
11. Expand array function button, Pic. 2
12. Select connecting PCBs, Pic. 3
13. Switch working diagram, Pic. 3
14. Blue dot is base B0, Red dot is B1, Black dot is current CCD position, Red dot is dispense workign point, Pic. 3
15. Select base, set dispense height(height will impact dispense residue amount), Pic. 4

H1_Auto dispense

Step 4:Auto dispense



1. Conveyor belt empty clamp
2. Auto (Actual feed in – clamp positioning – Dispense – Output)
3. Auto Check(Dispense – Vision Confimation – Confirm dispense position and amout)
4. Dry Run(Simulate actual route, No dispensing)
5. View(Vision simulation of actual route)
6. Run Button
7. Start cycle + Start(When in auto, perform next step when everytime Start is pressed)
8. Reset Button(Cancel auto mode)

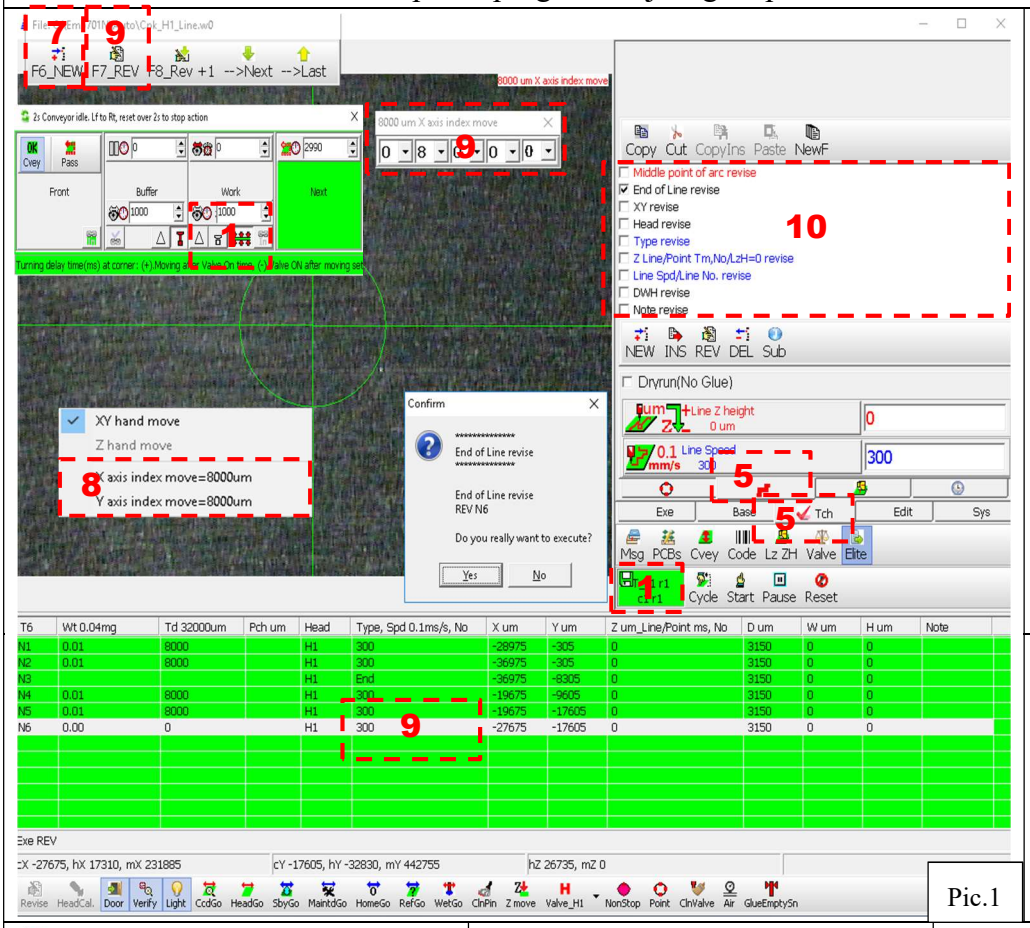
		
Dispensing	Dispense Front view	Dispense Top view

Can perform dispenseafter this glue amount test is successful. Then adjust glue amount according to actual product need

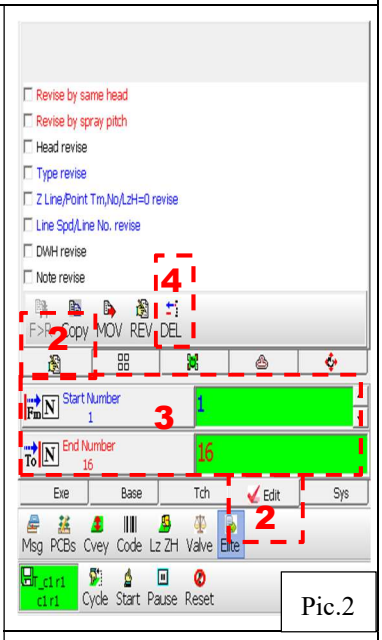
(Hardware can adjust glue output amount, Software can extend dispense time and height impact glue amount)

H1_Dispense Test

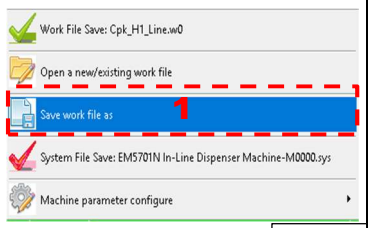
Save as new file, Construct dispense program, adjust glue parameter



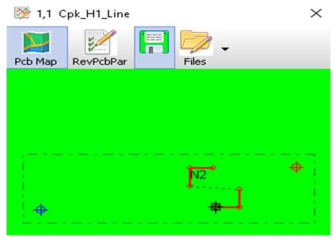
Pic.1



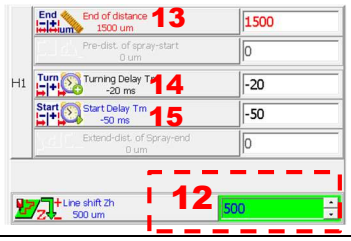
Pic.2



Pic.3



Pic.4



Pic.5

Dispense

1. Conveyor belt clamp, Pic. 1
2. Right mouse key to use save as new file function, Construct Cpk_H1_Line Pic.1 Pic.3
3. Select Edit Pic.2
4. Input Start 1 to most 16 working point Pic.2
5. Delete all workingn points Pic. 2
6. Select Teach, Dispense modePic. 1
7. Move to dispense platform left 9 position using CCD, initially write in L type, Presss keyboard F6 or New interface, construct dispense working point Pic.4
8. CCD inteface right mouse key, Can use X or Y axis fixed distance moving Pic.1
9. Input value um as unit, can move in fixed distance towards X or Y direction Pic. 1
10. Dispense end point needs to be revise to END, for example: Select N6, Click Revise end point, click revise, 300 revises to END, Pic.1
11. Red line is dispense route, Dotted line is add empty Run, Pic 4
12. Base Dispense height setting, the higher the value the more the glue amount. Initial set to 500. Pic.5
13. Dispense End distance, the shorter the negative value glue amount, the longer the positive value glue amount. Initial set

to 1500. Pic.5

14. Turn valve On delay, the shorter the negative value glue amount, the longer the positive value glue amount. Pic.5

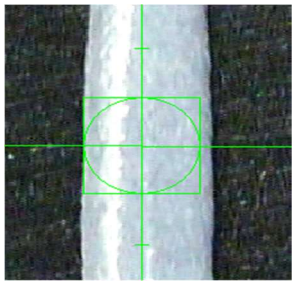
15. Start valve On delay, the longer the negative value glue amount, the shorter the positive value glue amount. Pic.5

Adjust dispense parameter

Target Size, Use needle size or dispense target setting as base

Below interface parameter is screw valve dispense, can be used at needle valve and air pressure valve

<table>
<tr>
<td>

Teach.
Dispense speed setting.
Right Pic. is performance under different dispense speed. The lower the speed is, the more the glue amount is</td>
<td> 
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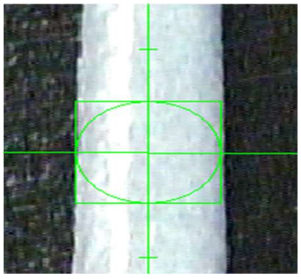
<td> 
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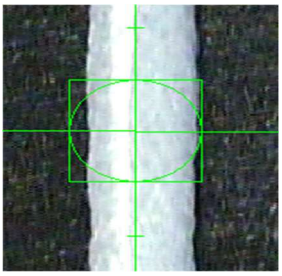
<td> 
Speed=140</td>
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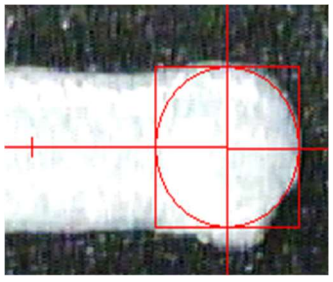
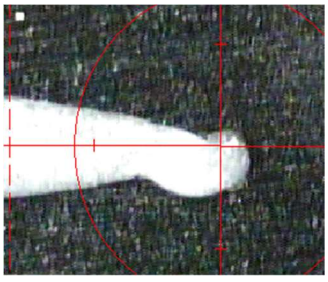
<td>

Base，
Start point valve On delay
Right Pic. is performance under different delay. The lower the delay is, the more the start point glue amount is</td>
<td> 
Delay=-50</td>
<td> 
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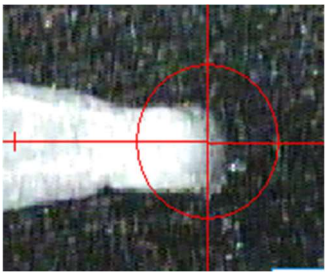
<td> 
Delay=50</td>
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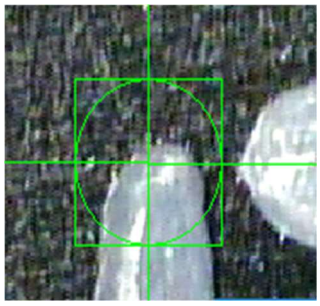
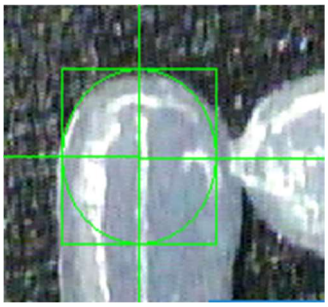
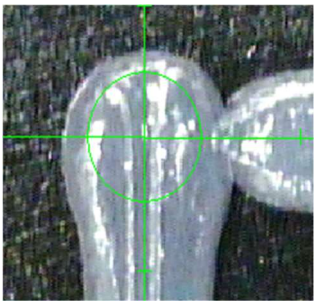
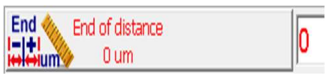
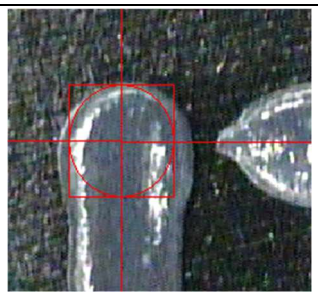
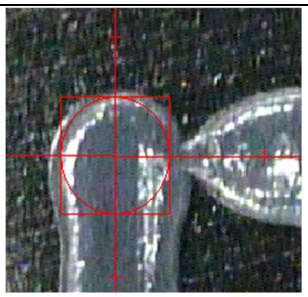
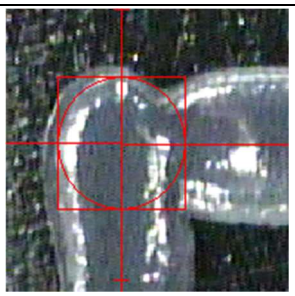
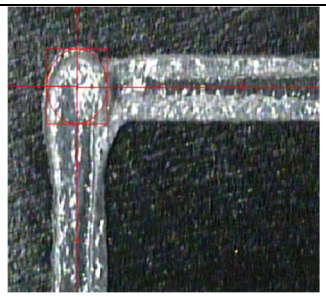
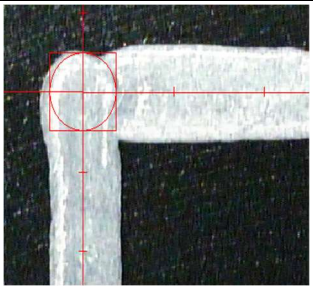
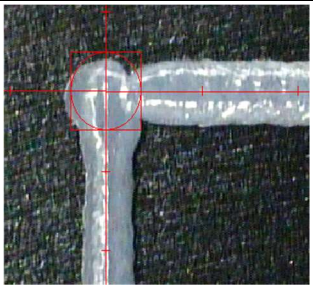
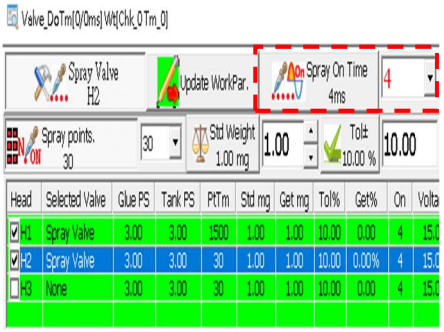
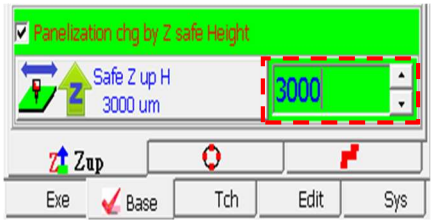
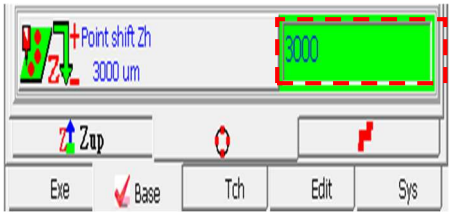
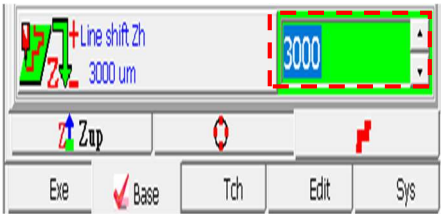
 Base Turn Valve On delay Right Pic. is performance under different delay. The lower the delay is, the more the turn anlge glue amount is	 100	 0	 -100
 Base Dispense End distance Right Pic. is different end glue distance. The larger the distance is, the more the end part glue amount is	 0	 500	 1500
 Base Dispense total z height Right Pic. is different add height. The more appropriate the distance is, the better the leftover glue amount is	 200	 500	 1000

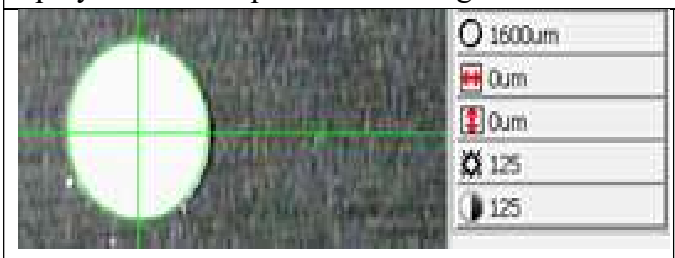
Performance is dispense on this screw hardware parameter

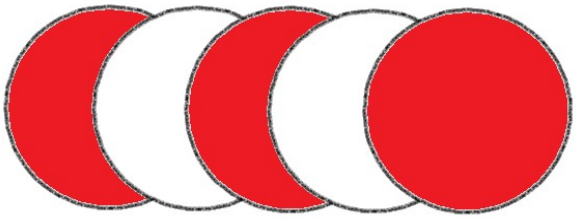
Screw rotate speed	Screw valve air pressure parameter	Screw valve dispense model

Adjust Spray valve hardware

		
Firing Pin rotates downward to the end, then turn back two circles as fixed base	Adjust spray valve glue pressure, will inpact glue amount	Spray valve On, set time to 4ms
專屬噴射閥軟體調整		
		
This interface function is empty run and move to next working point to add height Spray valve DryRun height base fixed to 3000um Click z axis height to perform connected PCB work (Aware: Pcb board components should be less than 3000um, Otherwise will collide with components.)	Z axis base height: touch auto search point, after height conformation, Spray valve dispense height set to fixed 3000um	Z axis base height: touch auto search point, after height conformation, Spray valve dispense height set to fixed 3000um

Spray valve basic parameter setting

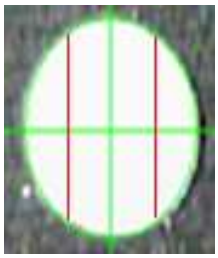


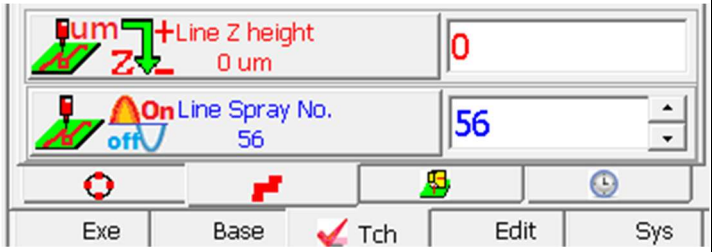


System: From dispense base point, Size of one particle dispensed is 1600un

Spray valve dispense is counted in particles

The dispense way is side by side and overlaps 1/3





Dispense material example 1600um

1600/3=533 is overlapping dispense distance

Dispense z depth doesn't need to set up low to 0

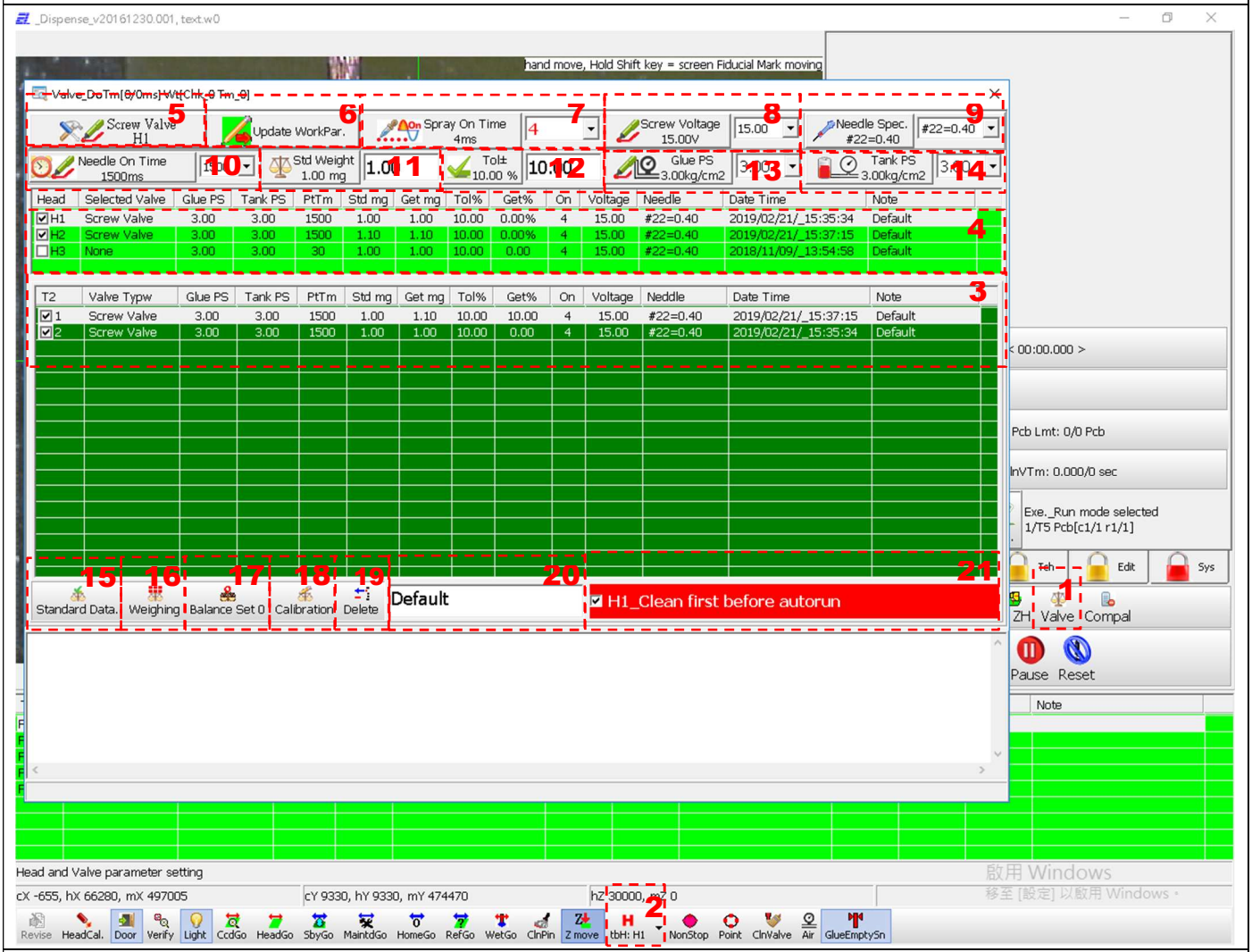
Counts spray frequency base according to work distance

T2	Wt 0.17mg	Td 30000um	Pch um	Head	Type, Spd 0.1ms/s, No	X um	Y um	Z um_Line/Point ms, No	D um	W
N1	0.17	30000 2	6000	H2	5 1	3125	-11025	0	1600	0
N2				H2	End	33125	-11025	0	1600	0

1. N1 is Start point for dispensing, N2 is End point of dispense (Shows in END)
2. Adding working point will automatically calculate N1 moving N2 distance 30000um

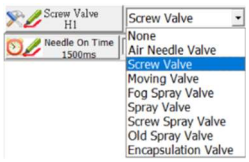
Calculation method: Dispense Spray frequency function 30000/533=56 is adjusted after dispense base frequency

EM5701N Glue weight



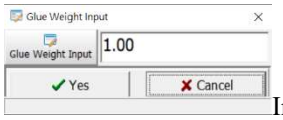
Button instructions:

1. Valve parameter interface
2. Valve H1: When currently using H1 valve teaching, ▾ can switch H, H2 valve setting
3. Glue weight backup parameter column
4. Use glue weight parameter for H1, H2 valve
5. Screw valve H1: Mouse right key connecting point down lock can set valve type, See below



6. Renew working parameter: Select glue weight backup parameters, Select valve H1, H2, renew parameter function button
7. Spray valve On time: For valve use, Set On time unit ms
8. Screw valve voltage: In actual, view screw rotating box as base, record screw rotating speed
9. Needle size: Record needle size
10. Valve On time: Glue output once time setting ms, used to calculate glue weight
11. Standard glue weight: Glue weight setting column, used to calculate glue weight
12. Error value: Glue weight error value setting %, minimum setting 0.01%~ maximum setting 40%
13. Valve pressure: Valve pressure value, glue output condition write into column, used for recording

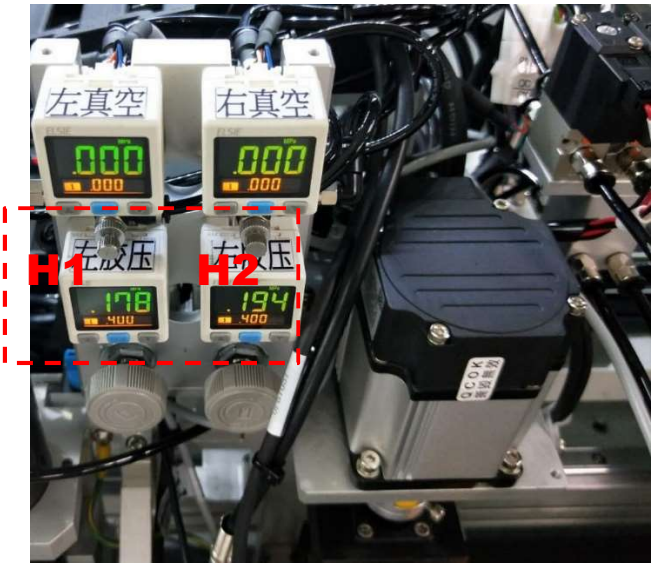
14. Tank pressure: Tank pressure value, glue output condition write into column, used for recording
15. Standard glue amount selection: Select glue weight parameter, select valve H1, H2, renew parameter function button
16. Perform standard weighing: Construct backup parameters, will input parameter according to 5-16 column value



Input weighed value

17. Balance homing: Install COM4 precise balance function, if not installed, Balance function button is inverse gray
18. Balance calibration: Precise balance homing, if not installed, Balance function button is inverse gray
19. Delete: delete backup information button
20. Remark: Can be used to record which type of machine is used。
21. Cleaning before auto dispensing: Click to open

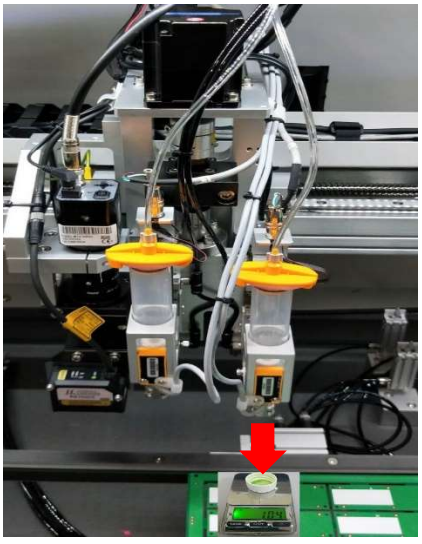
Hardware instructions



1.H1 valve, H2 valve pressure value

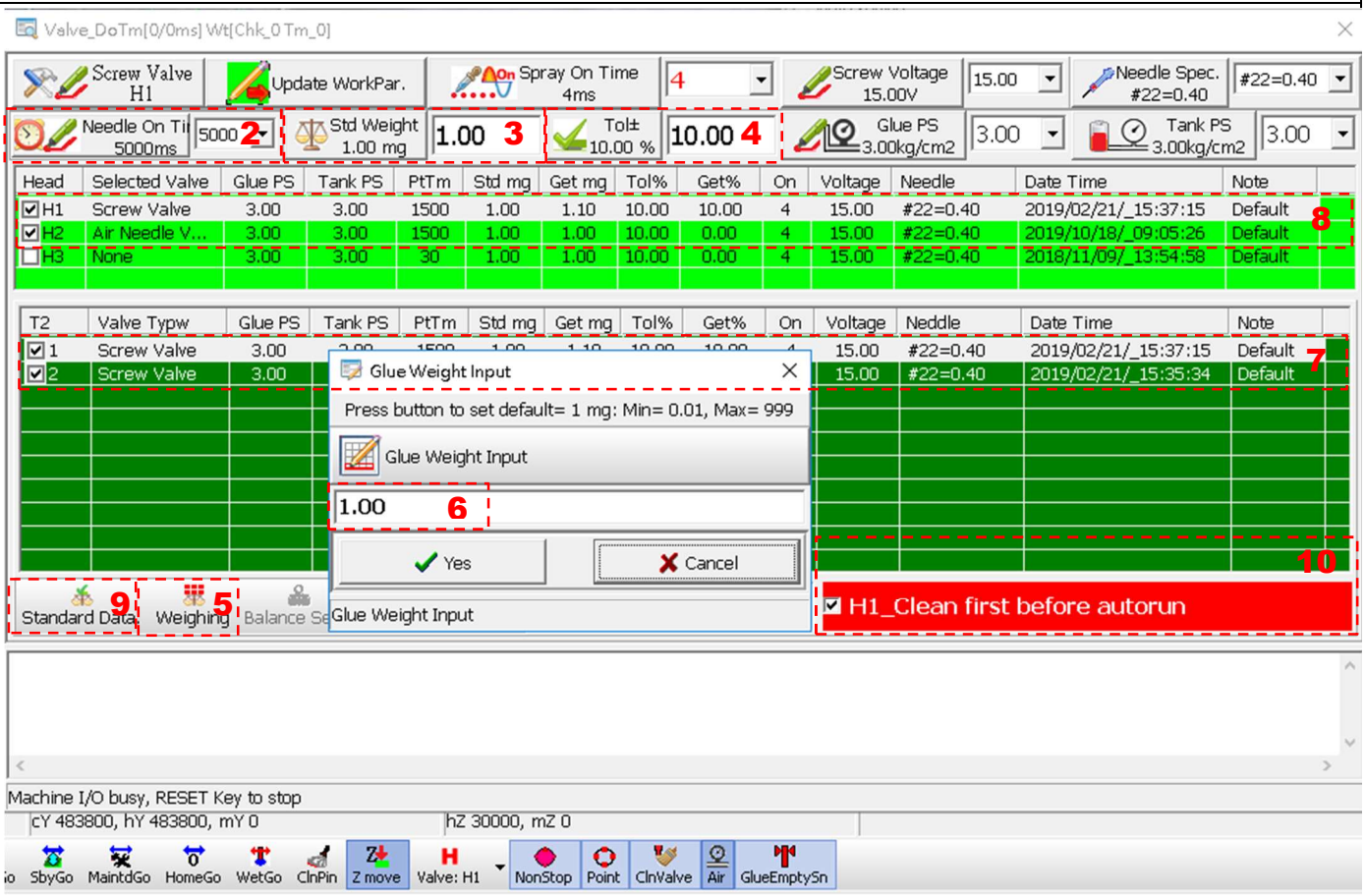
2.Precise Balance is modelled by above, use 0.000 as unit

3. Needle information



4. Feed out glue to balance

Glue weight software operation

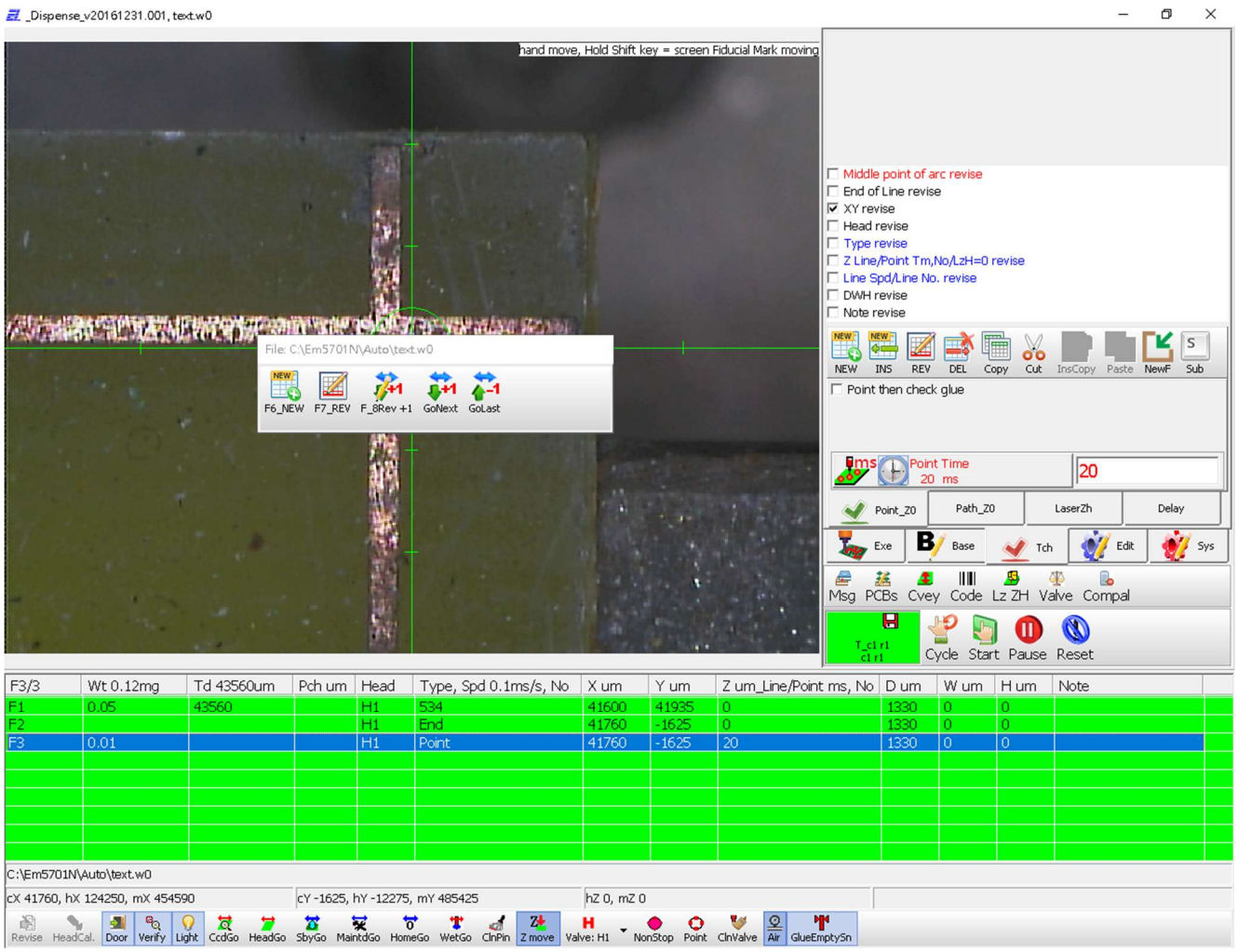


1. Place balance under valve first(Hardware 4) and record current container weight
2. Set valve glue output seconds ms
3. Set glue weight
4. Set error value, dispense second dispense amount and set dispense weight error tolerance rate (%)
5. Execute standard weighing: Original coordinate glue output, glue pressure setting(Hardware 1)will impact glue output amount, Set dispense time from step 2
6. Glue output's weight – No glue's weight = value, write into column
7. If passes test, will construct backup parameter (Below T3 constructs parameter NG, cannot use if not ticked)

T3	Valve Typw	Glue PS	Tank PS	PtTm	Std mg	Get mg	Tol%	Get%	On	Voltage	Neddle	Date Time	Note
1	Screw Valve	3.00	3.00	1500	1.00	1.10	10.00	10.00	4	15.00	#22=0.40	2019/02/21/_15:37:15	Default
2	Screw Valve	3.00	3.00	1500	1.00	1.00	10.00	0.00	4	15.00	#22=0.40	2019/02/21/_15:35:34	Default
3	Screw Valve	3.00	3.00	5000	1.00	0.70	10.00	-30.00	4	15.00	#22=0.40	2019/10/18_20:10:48	Default

8. Select H1 or H2 valve renew parameter
9. Select standard glue amount selection, insert parameter H1 or H2, glue amount calculation standard
10. Suggested tick: Clean leftover glue before Auto to prevent error

Working glue weight example(Glue weight setting should be after finished)



Dispense:

F3	0.01			H1	Point	41760	-1625	20	1330	0	0
	2							1			

1. Valve setting
2. The dot's glue weight is 0.01mg

Glueing

F3/3	Wt 0.12mg	Td 43560um	Pch um	Head	Type, Spd 0.1ms/s, No	X um	Y um	Z um_Line/Point ms, No	D um	W um	H um	Note
F1	0.05	43560		H1	534	41600	41935	0	1330	0	0	
F2				H1	End	41760	-1625	0	1330	0	0	
	3	2			1							

1. Glueing speed
2. Glueing distance
3. Glueing amount

Calculation: Glueing distance ÷ Glueing speed = Glueing amount

Screw Valve Cleaning and Maintenance

Pay Attention to Dispense head dispense (Please follow the below to guarantee a stable glue amount)

Not using it for 2 days in a row：

- Method 1：Dispense continuously for 15 seconds everyday
- Method 2：Switch glue box into maintenance oil, then press dispense button until the leftover glue are discharged. When wants to use it again, then switch the maintenance oil with glue box again and discharge the oil

Dispense Head dispensing maintenance：(Please follow the below to guarantee a stable glue amount)

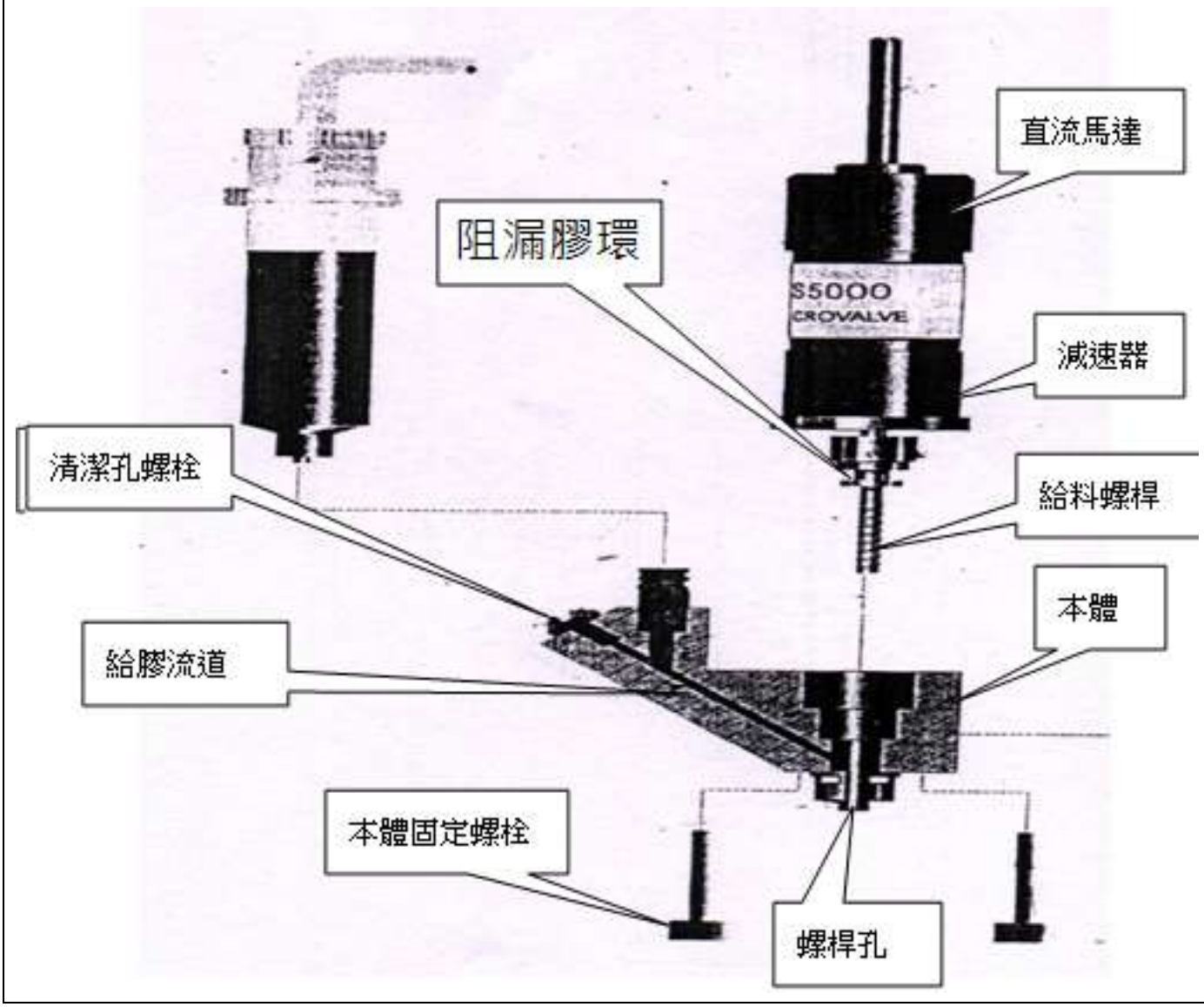
When to Maintain：

- Clean it every 2 weeks
- When dispense isn't smooth

Maintenance cleaning procedure(Refer to Dispense head TS-5000 structure image below)

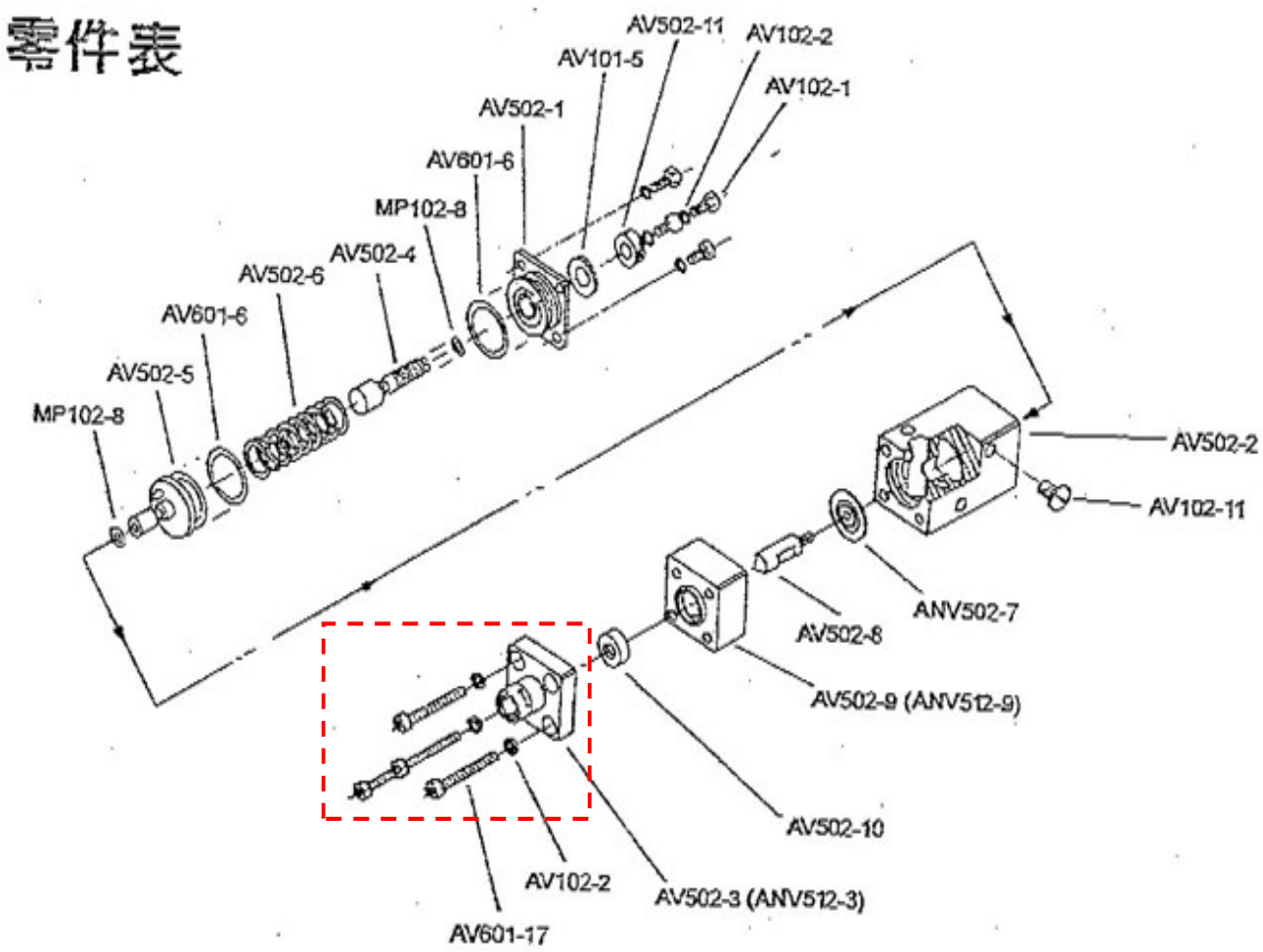
- After loosening machine fixed bolt, remove the servo motor slowly
- Loosen the cleaning bolt, clean it with Toluene using a brush

After cleaning, tighten the gleaning bolt, then insert the servo motor slowly, then tighten machine fixed bolt.



Change the Leak-Proofing ring every 3 months to prevent glue backwash and causing the valve to work improperly

Head valve ANV502(ANV512) cleaning and maintenance



When cleaning and maintaining, just remove the four “AV601-17” screws, then can clean and maintain the lower half. If the glue is solidified and cannot clean, soak it with Acetone, and clean it after it is softened. Do not soak any sealed rings with Acetone or it will destroy the sealed rings.

The Upper half doesn’t need maintenance in general.

Consumption and Backup Components

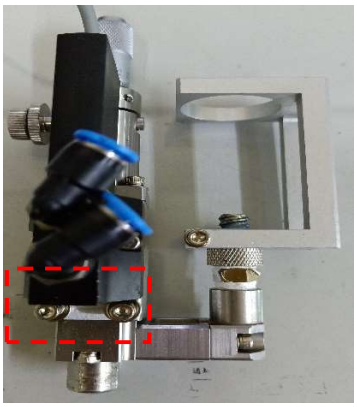
1. AV502-10 Valve base：Change it when glue keeps leaking from needle head

2. AVN502-7 diaphragm：Doesn’t break easily, change it only when glue is leaking out from the upper half

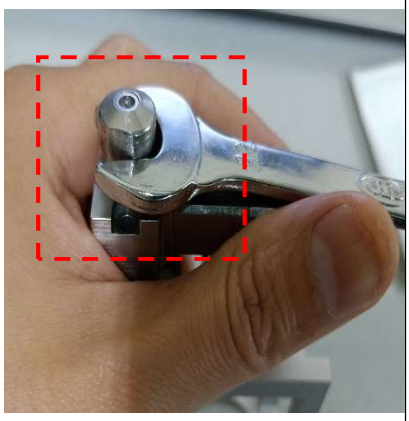
Spray valve cleaning and maintenance

Disassemble tools

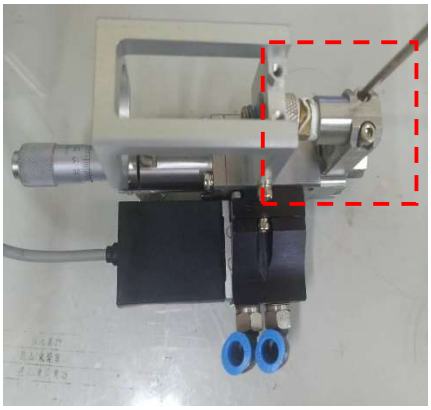
Consumption and Backup Materials



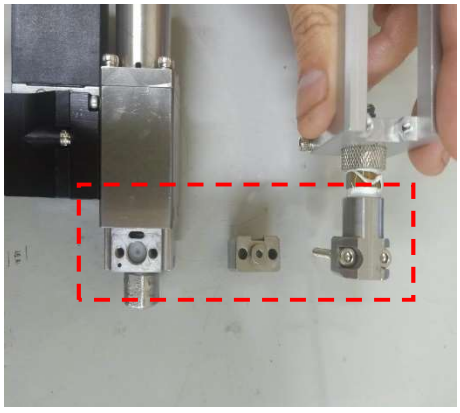
1. Remove spray valve for maintenance



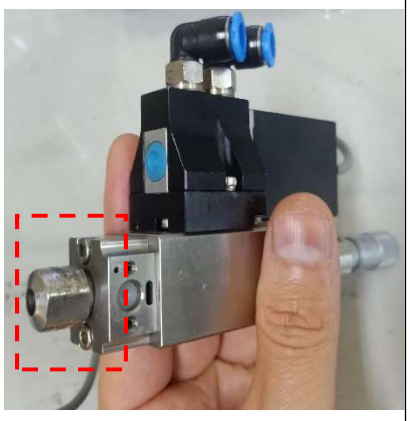
2. Loosen the nuts
(Can loosen nuts first on the machine instead of taking them down)



3. Remove glue guiding local component screw

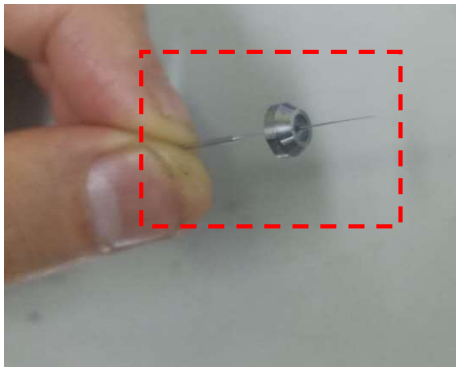
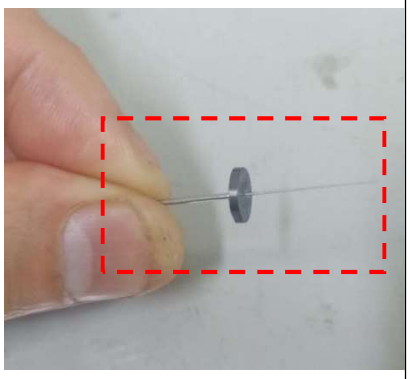
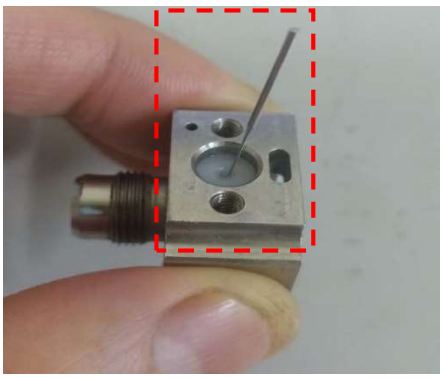
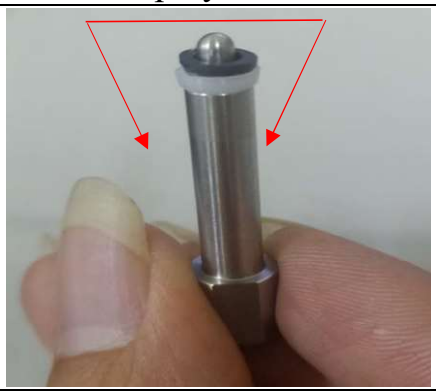


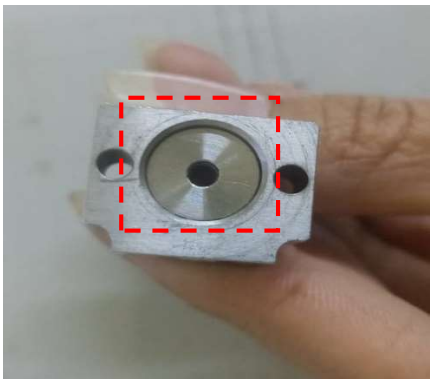
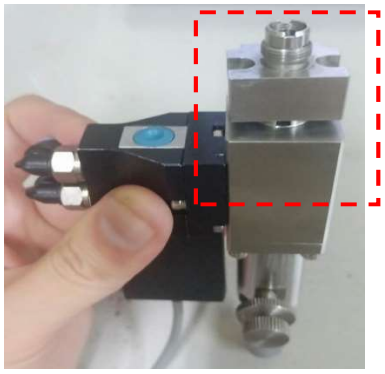
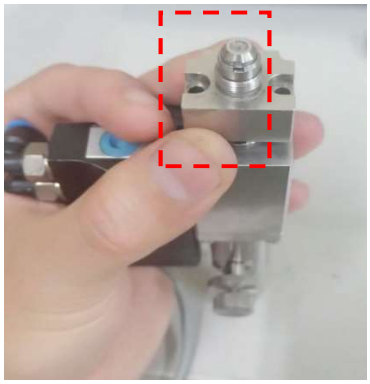
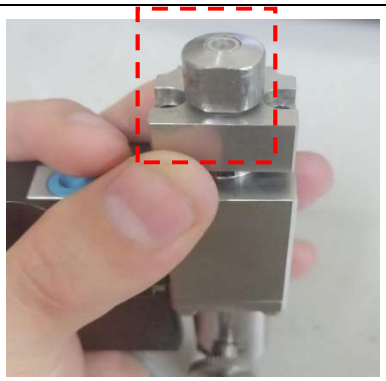
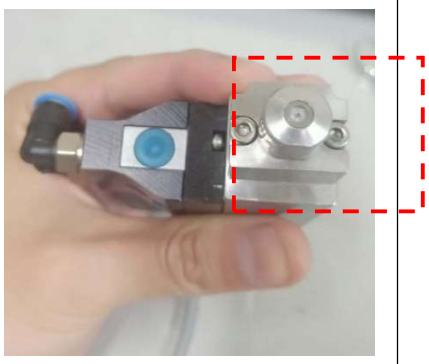
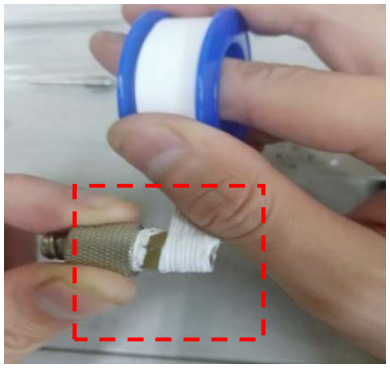
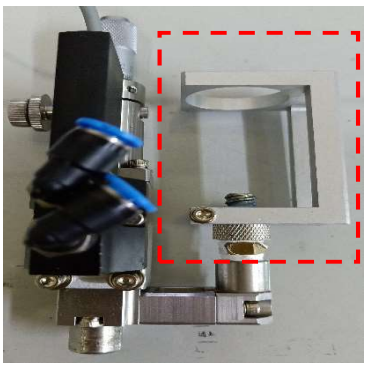
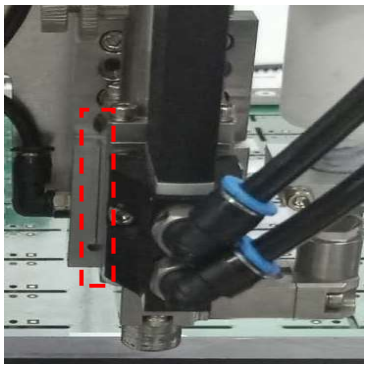
4. Glue guiding local component separation



5. Remove firing pin valve screw

6. Remove washer

7. Eight components that will have contact with the glue	8. Soak these eight components with Acetone. Soaking time according to each glue and clean them with dust-free wiper	9. Do not touch Acetone with sealed rings to prevent destroying it and causing leaking glue
		
10. Clean needle head	11. Clean the Impact plate	12. Clean the leftover glues in the Teflon
Build the Spray valve		
		
1. Place the white sealing ring on the bottom, the black one on the top. Be aware of the direction of the sealing rings	2. Put on the lid	3. Align the arc on the sealing ring

		
4. Push it to the end	5. Sealing ring is installed	6. Place the washer
		
7. Connect the needle head base with the firing pin	8. Install the impact plate	9. Install the needle head
		
10. Tighten the nuts	11. Tighten the screws	12. Wrap with sealing tape
		
13. Tighten the screws. Be careful the gap of glue leaking platform (Glue leaking platform prevents glue to get into the valve when sealing ring is broken)	14. Tighten the base that prevents swinging of glue tube	15. Spray valve must be tightened to the side and cannot have an offset or it will impact the glue output

Removing spray valve firing pin

When to use: In general no need to remove spray valve, just remove and maintain them if there is strange sounds or when glue output isn't smooth

1. Loosen machine screws

2. Upper half of machine

3. Lower half of the machine

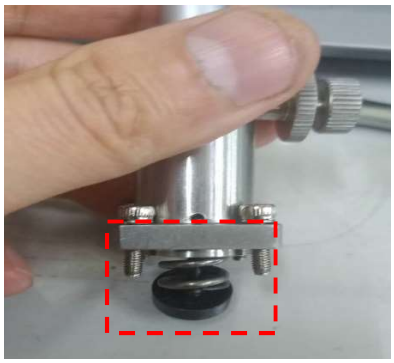
4. Clean the inside with alcohol and dust-free wiper

5. Sealing ring

6. Be aware of the direction when installing sealing ring

7. Wipe the firing pin with high speed maintenance oil

8. Install firing pin



9. Maintain the machine and confirm if spring and pushing board is broken

10. Tighten screws

11. Maintenance done

Plastic Needle head specifications

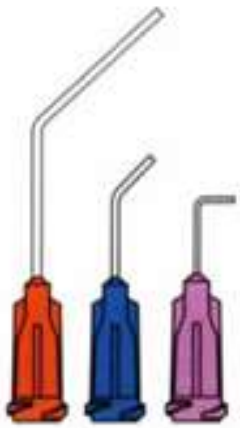
When to use: Choose needle size according to glue amount

TE 系列針頭

TE 系列由不銹鋼針管和雙螺旋聚丙烯(P.P.)針體組成。

高級型的點膠針頭無毛邊，而且有電鍍研磨的針管，以使膠水流動沒有阻礙和達到一致性。除此之外，供給針頭不含矽樹脂和氯化物。以 1000 單位大包裝量供應。

規號	1/4" (6.35mm)	1/2" (12.7mm)	1" (25.4mm)	1-1/2" (38.1mm)
14		TE714050-1000	TE714100-1000	TE714150-1000
15		TE715050-1000	TE715100-1000	TE715150-1000
18	TE718025-1000	TE718050-1000	TE718100-1000	TE718150-1000
20	TE720025-1000	TE720050-1000	TE720100-1000	TE720150-1000
21	TE721025-1000	TE721050-1000	TE721100-1000	TE721150-1000
22	TE722025-1000	TE722050-1000	TE722100-1000	TE722150-1000
23	TE723025-1000	TE723050-1000	TE723100-1000	TE723150-1000
25	TE725025-1000	TE725050-1000		
27	TE727025-1000	TE727050-1000		
30	TE730025-1000	TE730050-1000		
32	TE732025-1000			



TE 系列彎針頭

這些 TE 系列彎針頭精密彎曲成 45°和 90°，適用於難以到達位置的液體供給，以 50 單位包裝量供應。

規號	1/2"(12.7mm) 90°	1/2"(12.7mm) 45°	1-1/2"(38.1mm) 45°
14	TE714050B90PK	TE714050B45PK	TE714150B45PK
15	TE715050B90PK	TE715050B45PK	
18	TE718050B90PK	TE718050B45PK	TE718150B45PK
20	TE720050B90PK	TE720050B45PK	
21	TE721050B90PK	TE721050B45PK	TE721150B45PK
22	TE722050B90PK	TE722050B45PK	
23	TE723050B90PK	TE723050B45PK	
25	TE725050B90PK	TE725050B45PK	
27	TE727050B90PK	TE727050B45PK	
30	TE730050B90PK	TE730050B45PK	

顏色編碼和規號

用於 TE 系列和 TE 系列彎針頭

顏色	規號	I.D.(吋)	I.D.(毫米)
橄欖色	14	0.063	1.600
琥珀色	15	0.054	1.371
綠色	18	0.033	0.838
粉紅色	20	0.024	0.610
紫色	21	0.020	0.508
藍色	22	0.016	0.406
橘色	23	0.013	0.330
紅色	25	0.010	0.254
透明色	27	0.008	0.203
淡紫色	30	0.006	0.152
黃色	32	0.004	0.102