Self-Feeder Soldering Station DSF76D-IW

Operation Manual

Thank you for purchasing the Self-Feeder Lead Free Soldering Station. Please read this manual before operating the unit. Store this manual in a safe, easily accessible place for future reference.

TABLE

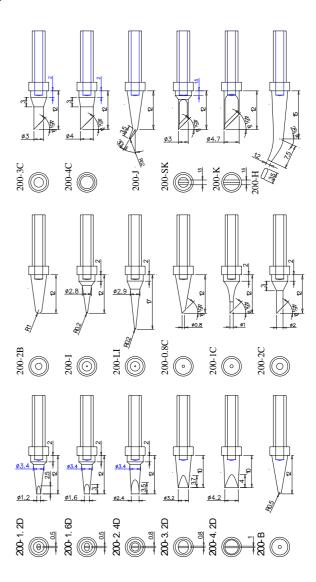
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1. SAFETY INSTRUCTION

ACAUTION

- Appliance shall only be used with rated voltage and frequency. (Refer to the nameplate back of the unit)
- Don't use or stop the use if the appliance is damaged, especially the supply cord.
- Please avoid an abuse of the equipment, and use the appliance only in the described manner.
- The appliance is used in the room.
- Before replacing tip or storing the unit, turn the power off and allow the tip to cool to room temperature due to the burned danger.
- Don't touch the metallic parts near the Tip.
- Don't use the unit for applications other than soldering.
- Don't rap the soldering iron against the work bench to shake off residual solder, or otherwise subject the iron to severe shocks.
- Don't wet the appliance and don't disconnect the appliance with wet hands and without to force the supply cord.
- The soldering process will produce smoke, so make sure the area is well ventilated.
- While using the unit, don't do anything that may cause bodily harm or physical damage.
- The unit is equipped with a 3-wires grounding plug and must be plugged into a 3-terminal grounded socket. Don't modify plug or use an ungrounded power socket.
- Children don't realize the risks of electrical appliance. Therefore use or keep the appliance only under supervision of adults and out of the reach from children.

13.TIPS



12. Replaceable Part

No.	Parts Name	Specification	Instruction
1	Pedal Switch		
2	Tips	Refer to the last part "TIPS"	
3	Heating Element (90W)		
4	Soldering Iron (90W)		
5	Feeder Tube Assembly (0.46m)	Ø0.6mm, ø0.8mm,	Choice as the diameter of the feeder wire
6	Feeder Tube Assembly (0.8m)	Ø0.6mm, ø0.8mm,	Choice as the diameter of the feeder wire
7	Feeder Tube (0.46m)	Ø0.6mm, ø0.8mm,	Choice as the diameter of the feeder wire
8	Feeder Tube (0.8m)	Ø0.6mm, ø0.8mm,	Choice as the diameter of the feeder wire
9	Guide Tube (Using on the top of Tip)	Ø0.6mm, ø0.8mm,	Choice as the diameter of the feeder wire
10	Guide Tube (Using on the bottom of Tip)	Ø0.6mm, ø0.8mm,	Choice as the diameter of the feeder wire
11	Auxiliary driven gear	Ø0.3mm-ø0.4mm Ø0.6mm-ø0.8mm Ø1.0mm-ø1.2mm	Choice as the diameter of the feeder wire
12	Cutting blade	Ø0.3mm-ø0.4mm Ø0.6mm-ø0.8mm Ø1.0mm-ø1.2mm	Choice as the diameter of the feeder wire
13	Feeding nozzle	Ø0.5mm-ø0.6mm Ø0.8mm Ø1.0mm-ø1.2mm	Choice as the diameter of the feeder wire

2. Summary

The unit is automatic self-feeder lead free soldering system. Digital display and adjusting with button, furthermore, design with automatic sleep and digital calibration function, easy and prompt to use. Adopt step motor, feeding precise and the precision is controlled optionally. Feeding speed and time, returning are all adjustable and steady, reach to perfect soldering effect and high efficiency. One hand operate and easy to solder. With the optimized combination, it works only with Soldering Iron without Soldering Station. The Soldering Iron adopts high frequency heating, rapid heat and recovery speed to realize lead free solder.

Besides, the unit can automatically drill holes on solder wire and feed it with easy operation. During the solder feeding, the cutting blade drills holes with even distance on the solder wire to release the flux through these holes while soldering. This will help prevent the flux splashing and solder balls resulted from 'Solder explosion' to protect sensitive components from being polluted.

3. Specification

Power	90W
Input voltage	220VAC
Range of temperature	200°C ~ 480°C
Temperature Stability	+3°C
Tip to Ground Potential	c 2mV
Tip to Ground Resistance	630
Motor	Step Motor
Feeding Speed	About 2.7mm/s, 27mm/s (26%, 260%s)
Feeding Length	0~150mm
Feeding Interval Time	0~2.7s
Returning Time	0 ~ 0.00(About 0. 25mm speed: 2609/c)
Feeding Mode	Auto (1~9) / Manual (0)

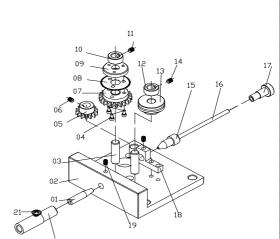
Dia. of solder wire	05 06 08 10 12 14 16 (mm)
Weight of solder wire usable	<1Va (Pall)
Optional fittings	Tip: Choice as the soldering point
	Cutting blade: Choice as the diameter of the feeder wire
	Adjusting ring of the solder wire: Choice as the diameter of the feeder wire
	Feeder Tube: Choice as the diameter of the feeder wire
	Guide Tube: Choice as the diameter of the feeder wire

NOTE: Please fix on Solder Wire diameter when purchasing the unit, in order to match Feeder Tube Assembly and Solder Wire ring exactly.

4. Features

- 1. Automatic feeding of solder wire and easy to operate.
- 2. Drill holes with even distance on solder wire automatically, prevent solder wire from spattering during soldering.
- 3. Can be used for drilling holes on solder wire only.
- 4. Feeding speed is stepless adjustable, suitable for different occasions.
- 5. Automatic self-feeder and match a variety of soldering stations and soldering irons.
- 6. Auto and manual controlled feeding optional. One hand operates the device, which is easy to operate.
- 7. Feeding speed, length and interval time are adjustable, further more it is designed with returning function to reduce solder wire consumption.
- 8. Both of Pedal switch and Manual switch can be choice.
- 9. ESD safe by design, it can protect sensitive components from being damaged by the static.

- **4.** Disassemble the assembly of the driven gear (07) and the auxiliary driven gear (13). They must be taken down at the same time. Hold the two gear components simultaneously and move them out slowly along the axis.
- **5. Replace the cutting blade (08).** Loosen the three inner-hexagon fixing screws (04) from the driven gear with a spanner. Take down the fixing plate (09) of the cutting blade and the blade in turn. Then install the suitable blade.
- **6. Assemble the driven gear components (07).** Assemble it in the reserve order of the disassembly.
- 7. Install the assembly of the driven gear (07) and the auxiliary driven gear (13). Mount them on the axis simultaneously. Aim the blade of the driven gear at the notch of the auxiliary driven gear, and aim the teeth of the driven gear at the notch of the drive gear, then mount them on the axis smoothly. Screw the locking screws of the driven gear and the auxiliary driven gear in turn.
- 8. Install the Feeder Tube Assembly.



21	locking screw	1
20	Positioning tube of the positioning gate	1
19	M3X4 locking screw	1
18	feeding tube holder	1
17	inserting gate	1
16	guiding pipe	1
15	feeding nozzle	1
14	locking screw	1
13	auxiliary driven gear	1
12	locknut	1
11	locking screw	1
10	locknut	1
09	fixing plate of the cutting blade	1
08	cutting blade	1
07	driven gear	1
06	locking screw	1
05	driver gear	1
04	inner-hexagon screw	3
03	axis	2
02	feed unit cover plate	1
01	positioning gate	1
NO.	NAME	

3. Replace the fuse and then put the fusehalder back in place.



11.3 Change the Cutting Blade

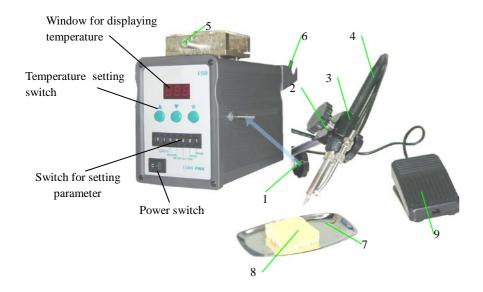
Different sizes of solder wire require different blades. So replace the suitable blade before replacing the solder wire. Refer to the following steps to disassemble and assemble the parts. Also you can select the unit according to your solder diameter.

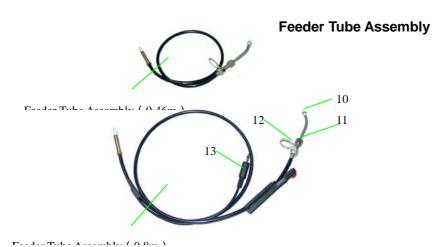
1. When changing the soldering wire or cutting blade and the specification is the same as the last time, the **inserting gate** (17), **guiding pipe** (16) and **feeding nozzle** (15) of solder wire are incorporate. Do not move or disassemble them when replace the solder wire or cutting blade.

- 2. When changing different specification soldering wire or cutting blade, the **feeding nozzle** (15) needs be befitting with the solder wire. The change method is as followings:
 - (1) Remove out the as the **inserting gate** (17)& **guiding pipe** (16) towards the back of the unit, namely soldering wire incoming position.
 - (2) Loosen the locking screw of the **feeding nozzle** (15) and remove out it and then change the suitable **feeding nozzle** (15).
- 3. Remove the positioning gate (01) backwards. Loosen the locking screw(19) of the positioning gate with a ϕ 1.5mm spanner first, then move it along the way of feeding to avoid touching the auxiliary driven gear and the blade. There're notches on both sides of the positioning gate, make sure the moving speed is slow to protect the blade.
- 4. Remove both the locknuts (12) of the driven gear (07) and the auxiliary driven gear (13). Loosen the locking screw of the locknuts with a ϕ 1.5mm spanner, then take the locknuts down.

5. Product Picture and Parts Name

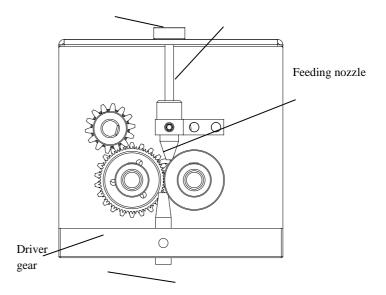
MAIN UNIT

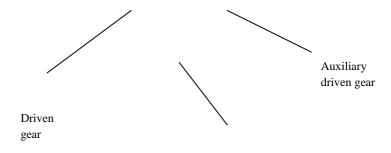




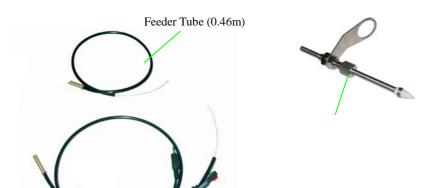
Inserting gate

Page 4 Guiding pipe

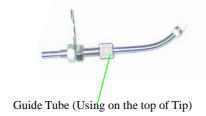




Positioning gate



Guide Tube (Using on the bottom of Tip)



2. Disassemble the handle.

- 1) Turn the nut (1) counterclockwise and temperature (2), and the tip (3).
- 2) Turn the nipple (4) counterclockwise and remove it from the iron.
- 3) Pull both the heating element (10) and the cord assembly (11) out of the handle (7). (Toward the tip of the iron).
- 4) Do not use metal tools such as pliers to remove tip or tip enclosure from-the handle.
- 3. Measure when the heating element is at room temperature.

		1	
a.	Between pins 4&5 (Heating Element)	Under	$4\Omega(\text{Normal})$
b.	Between pins 1&2 (Sensor)	Under	10Ω(Normal)
C.	Between pins 3& Tip	Under	2Ω

1) Resistance value of heating element(White)

under 1Ω .

2) Resistance value of sensor and Green under 1002

If the resistance value is not normal, replace the heating element (Refer to the instructions included with the replacement part.)

4. After replacing the heating element

- 1) Measure the resistance value between 1 pins 4 & 1 or 2. 2 pins 5 & 1 or
 - 2. ③Pins 6 & 1 or 2. ④pins 6 & 4 or 5.
- 2) If it is not ∞ , the heating element and sensor are touching. This will damage the P.W.B.

11. Change the Part

11.1 Change the tip

Choices suitable tip and then install it on the handle.

A Caution: change the tip after it has cooled down.

11.2 Change the fuse

- 1. Unplug the power cord from the power receptacle.
- 2. Remove the broken fuse and then remove the fuse holder.
 - 2) If the value of 'c' is over the above value, remove the oxidization film by Page 18 lightly rubbing with sand-paper or steel wool the points as shown.



Item No	Part Name	Description
1	Nut	
2	Tip Enclosure	
3	Soldering Tip	Refer to the Last Page
4	Nip	
5	Cord Board	
6	Handle Cover	
7	20H Handle	
8	Terminal Board	
9	Clasp	
10	Heater Combination	
11	Vibrator	
12	6 Pins Plug (metal)	
13	Spring	
1.4	Heating Element 90W	
14	Heating Element 60W	
15	Sensor Element	

Parts name

MAIN	MAIN UNIT				
No.	Part Name	Description			
1&2	Nut	Handle Bracket Assembly			
3	Handle clamping element	Handle Bracket Assembly			
4	Lead free soldering iron handle assembly				
5	Position tube of the position gate				
6	Solder Wire holder	Install Solder Wire Axis			
7	Metal plate				
8	Cleaning sponge				

9	Pedal Switch	
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Feeder Tube Assembly:			
No.	Part Name	Description	
10	Guide Tube		
11	Locking Screw		
12	Connector		
13	Plug		

6. Installation

Before installation, please check the parts and make sure whether the power supply voltage accords with the nameplate.

1. Install Handle Bracket assembly to the unit

Screw off the Nut ① of the unit, install bracket assembly on the screw and screw down the Nut.

2. Install Feeder tube assembly

There are two types of feeder tube assembly optional: Length of 0.46m (Short Tube) and Length of 0.8m (Long Tube). Installation and operation have a little difference.

Installation of Short Tube:

Screw off the black nipple of handle regently, and install the handle into the connector and screw on the black nipple again. Unscrew the fixing screw of feeder tube head on the top cover of unit, insert feeder tube head and then tighten the screw.

Installation of Long Tube:

Screw off the black nipple of handle assembly, and install the handle into the connector and screw on the black nipple again. Unscrew the fixing screw of feeder tube head on the top cover of unit, insert feeder tube head $\mathfrak D$ and then tighten the screw. Finally, insert plug $\mathfrak B$ into socket behind the unit.

3. Install pedal switch

Put the plug of Pedal switch into pin-2 socket behind the unit.

4. Install Solder wire

- a. Pull the solder wire axis across the framework of solder wire and place it to the solder wire holder 9 back of unit. Make the notch on each side of solder wire axis lock into solder wire holder.
- b. Pull the solder wire head and insert it into wire guide tube behind the top, push Handspike 5 to widen the gap between two running gear wheels, so it can cross the feeder tube easily.
- c. Set the Mode Switch as 0, insert power plug and turn on Power Switch. Make the feeder tube as straight as possibly, step on Pedal Switch or press down the red Touch Switch until the solder wire is sent out.

5. Install Soldering Iron

Screw off Nut2 on the bracket assembly and remove Handle clamping element ③. Place soldering iron in the other Handle clamping element and install the previous one (Make the Handle in the middle of them), and then screw on Nut2. Connect plug of soldering iron handle to pins 6 receptacle in front of unit and tighten it.

9. Calibrating the Iron Temperature $\Pr_{\text{Page }7}$

The Soldering Iron should be recalibrated after changing the iron or replacing the heating element or tip.

Method of recalibrating temperature: Use the thermometer to calibrate.

- 1. Set the unit's temperature to a certain value.
- 2. When the temperature stabilizes, measure the tip's temperature with thermometer and write down the reading.
- 3. Press "*" button not loose and press the "▲"and "▼" buttons simultaneously.

- the soldering station enters into calibration mode.
- 4. At the moment, the 100's digit of LED display temperature is flashing. Press the "▲" and "▼" buttons to select the value and press the " * " button to select the digit. Press "*" button after inputting the reading. Here, the calibration operation has been finished.
- 5. When inputting calibration temperature, if the value of calibration temperature is error and the station have protection function after input the calibration temperature and press * button, the 100's digit of display temperature will flash.
- 6. If the temperature still has deflection, you can repeat calibration in accordance with above steps.
 - 1) We recommend using the 191/192 thermometer for measuring the tip temperature.
 - 2) If the unit is locked by password, it will not be able to calibrate and you must input the right password.

10. Check and change the heater element

- 1. Disconnect the plug and measure the resistance value between the connecting plug pins as follows.
 - 1) If the values of 'a' and 'b' are outside the above value, replace the heating element (sensor) and/or cord assembly. Refer to the followings:

WORKING MODES TABLE

WORKING MODE	HANDLE MODE	Page 16 TEMPERATUE RANGE	AVAILABLE FOR HIGH FREQUENCY MAIN UNIT	SLEEPING
1	High frequency soldering iron	200°C-420°C	90W Station	Yes

2	High frequency special very large type of soldering tip	200°C~420°C	60 , 90W Station	Yes
3	High frequency tweezers stripper iron	50°C~600°C	90W Station	Yes
5	High frequency soldering iron	50°C~420°C	90W Station	Yes
7	High frequency soldering iron	200°C~480°C	90W Station	Yes
1.	High frequency soldering iron	200°C~420°C	90W Station	No
2.	High frequency tweezers or using special very large type of soldering tip	200°C~420°C	60 , 90W Station	No
3.	High frequency tweezers stripper	50°C~600°C	90W Station	No
5.	High frequency soldering iron	50°C~420°C	90W Station	No
7.	High frequency soldering iron	200°C~480°C	90W Station	No

6. Adjust the position of Guide tube and Soldering tip

Turn the Connector to change combinations of Guide tube and Soldering tip. Unscrew Locking Screw 4 of Guide tube and turn around Guide tube 3 can also change combination location of Guide tube and soldering tip.

7. Adjust direction of soldering iron

When adjust direction, first unscrew the Nut of corresponding direction, and then adjust. Unscrew the Nut at the bottom end of Bracket assembly and turn around or rotate Bracket assembly can all adjust direction of Soldering Iron. Finally, tighten Nut after adjusting.

Unscrew two Nuts① and ② on top end of Bracket simultaneously and turn around Handle clamping element can also adjust direction of Soldering Iron.

$\triangle NOTE$:

Please be careful not to break heating element when screw off black nipple to install connector.

- If step on Pedal Switch or press down the red Touch Switch, the solder wire cannot be sent out automatically, it needs to adjust feeding pressure—Pressure adjusting screw ②. Refer to parameter setting.
- The Feeder tube can't be bended overly avoiding the solder wire block.
- When turn on the power Switch, the soldering Iron begin to heat up (Temperature lamp is light). In order not to be scalded, please be careful when installing.
- Make sure the power voltage in accord with working voltage of unit.

7. Operation

ACAUTION: Make sure the voltage of power supply is accordance with the voltage indicated on the nameplate behind. And make sure the specification of the solder wire match the blade. For example: the 0.6mm blade can only be used to cut the φ0.6mm solder wire. Please refer to "6. Parts Assembly and Disassembly" when replacing blade.

1. Set the feeding parameters as the "8. Set parameters".

1) Manual: (The Mode switch is set as 0)

Turn on power switch. LED displays the temperature. Step on Pedal Switch or press the red Touch Switch, and the unit works. Feeding Length and Feeding Interval and Feeding Mode are all useless when the Feeding Mode is set as manual.

2) AUTO:

Turn on Power Switch. LED displays the temperature. The unit will work according to setting parameters when stepping on pedal switch or pressing Touch Switch once. All functions are useful

2. **Sleeping:** If sleeping and working mode are selected, and the soldering iron is not used for 20 minutes, the power to the heating element will be decreased, and the display shows . This state is sleeping mode. When the station is in sleeping mode, the tip temperature will decrease to 200°C (if the set temperature is more than or equal to 200°C) or 50°C (if the set temperature is less than 200°C) and remain the temperature until resuming the station.

3. Resume from sleeping:

- 1) Turn off the power switch OFF, then ON.
- 2) Click any button not including power key.
- 3) Take up the iron-handpiece.
- 4. **Auto turn off:** If the soldering station is not resumed more than 40 minutes after it comes to sleep, the power supply will be shut off automatically, and the display window will not show anything.
- 5. After turn off automatically, it needs to turn on the power button again. After

that, the unit can come into the work state.

8. Set Parameters

8.1 Feeder Parameter Setting

1. Feeding Length setting

Input Previously Password

4. Press the "*" button, the display shows of three digit, the "*" button, the display shows of three digit, press"*" button.

The input password is error

5. If the display window shows the present setting temperature, two seconds later, the station is in normal work state. This indicates the password of input is error, and the temperature setting can't be done.

The password of input is correct

6. If the display window shows . , this indicates the password of input is correct. After displaying about 4 seconds, the station comes into normal work state, and the setting temperature will be admitted.

8.4 Set Work Mode

The work mode is set as 7.

1. If the display window shows ☐ , press and hold the "▲"and"▼"buttons simultaneously, and then the display shows "X".

This indicates the unit comes into working mode setting state, and pressing "A" or

"▼"button will change displayed value as shown below:

2. After selecting the working mode, press"*" down. The working mode is stored into the internal memory.

Please refer to the "Working Mode Table" for the meaning of the digit displayed.

Note: "X" represents the original working mode digit.

8.2.2 Set temperature on-line

In the work, if it is necessary to set temperature quickly and the heat elements cannot be cut off, the way may be selected.

Temperature rising: press "*" knob directly. If so, the setting temperature will

raise 1°C and the display window will display the set temperature. When loose

the "A" knob, the display window will delay the set temperature about 2 seconds.

If within 2 seconds of time, press the "▲" knob again, the setting temperature will

raise 1°C again. If press the "A" knob and not loose at least 1 second, the setting

temperature will rise rapidly. Till the needed temperature reaches, then loose the

"▲" knob.

Temperature dropping: press "▼" knob directly. If so, the setting temperature

will drop 1°C and the display window will display the set temperature. When loose the "▼" knob, the display window will relay the set temperature about 2 seconds. If within 2 seconds , press the "▼" knob again, the setting temperature will drop 1°C again. If press the "▼"knob and not loose at least 1 second, the setting temperature will drop rapidly. Till the needed temperature reaches, then loose the "▼" knob.

8.3 Set Password

The initial password in station's memory is "000". The setting temperature is admitted in this state. If need to restrict the setting temperature, the password must be changed

Enter into setting the password

- Turn off the power switch. Press and hold the "▲" and "▼ buttons simultaneously, then turn on the power switch.
- 2. Continue holding down the "▲"and"▼"button until the display shows □□.
- 3. When the display shows , the station is in parameter-input mode.

Feeding Length is designed with angle design. Namely, with angle what the motor turned denotes Feeding Length. Presspage button on the digital switch and the match digit will increase by one step. Similarly, press "-" button, and the match

digit will decrease by one step.

Feeding Length is designed with three digits. 001 to 999 denotes feeding length is 0.15mm to 150mm. The resolution is 0.15mm, namely, each digit denotes 0.15mm (1.8 degree). The setting method is the same as feeding speed.

Example: When the digit is set as 001, the angle is 1.8 degree and the Speed Length is 0.15mm. When the digit is set as 002, the angle is 3.6 degree and the Speed Length is 0.3mm. When the digit is set as 999, the Speed Length is longest with 150mm, and the angle is 1798.2 degree.

Press the Length Switch to set the suitable digit in accordance with working demand. The range is about 0.15mm to 150mm.

2. Returning Time setting (RETURN)

Returning Time is designed with one digit. 0 to 9 denotes 0 to 0.9s. The return length is about 0 to 25mm. (0 to 0.9s). Press Returning Switch to set the match digit in accordance with working demand.(NOTE: when return, the soldering speed cannot be adjusted.)

Example: When the digit is set as 1, the returning time is 0.1 second and the returning length is 2.8mm. The digit is set as 2, the returning time is 0.2 second and the returning length is 5.6mm. When the digit is set as 9, the returning time is 0.9 second and the returning length is 25mm.

3. Feeding Interval Time setting (INTERVAL TIME)

Feeding Interval Time means the interval time between every feeding when the automatic feeding over two times. Feeding Interval Time is designed with one digit. 0 to 9 denotes the interval time is 0s to 2.7s. The resolution is 0.3s, namely, each digit denotes 0.3s. The setting method is the same as Feeding Speed.

Example: When the digit is set as 1, the interval time is 0.3s. When it is set as 2, the interval is 0.6s. When it is set as 9, the time is longest with 2.7s.

Press the Interval Time Switch to choose the digit. The range is from 0 to 2.7 s.

4. Feeding Speed setting (SPEED)

Feeding speed is designed with one digit. $0\sim9$ denotes the feeding speed is about 2.7m/s ~27 m/s.

Example: When the digit is set as 0, the speed is slowest with 2.7mm/s. When it is set as 1, the speed is 5.4mm/s. When it is set as 9, the speed is fastest about 27mm/s.

5. Feeding Mode setting (MODE)

Press the Feeding Mode Switch to choose suitable digit.

Feeding Mode is designed with one digit and the setting method is the same as above. The digital match function as follow:

0: Manual Feeding 1: Auto Feeding once

2: Auto Feeding twice
4: Auto Feeding four times
6: Auto Feeding six times
7: Auto Feeding seven times

8: Auto Feeding eight times 9: Auto Feeding nine times

After each feeding, it has returning.

8.2 Set Temperature

△CAUTION: Make sure the temperature of the station can be adjusted (password is OK or the password is initial). While setting the temperature normally, the heating element is off.

8.2.1 Set Temperature Normally

Example: 400°C to 350°C

1.



1. Push the "*" Pagetohl and Hold it down for at least one second. The left-most digit (the 100's digit) in the display will flash. This indicates that the station is in temperature setting mode and that the 100's digit can be adjusted.

2.



2. Select the desired value for 100's digit. Using the"▲"or"▼"button will change displayed value as follows.

Press the "*" button when the desired value is displayed. This will cause the middle digit (the 10's

3 .



3. Select the desired value for the 10's digit.

Using the "▲"or"▼"button will change displayed value as shown below.

Press the "*" button. The right (the 1's digit) will then begin flashing to indicate that the 1's digit can

4 .



4. Select the desired value for the 1's digit.

Using the "▲"or"▼"button will change displayed value as shown above about the 10's digit.

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