SPECIFICATION

Series	853D Series			853DA Series		
Model	853D 1A	853D 2A	853D 3A	853DA 1A	853DA+ 1A	853DA 2A
Main Unit Dimensions	L253*W186*H124mm ±5mm					
Operating Ambient Temperature	0℃~40℃/32℉~104℉					
Hot Air Rework Station						
Air Delivery	Brushless motor with smooth air delivery			Pump Motor		
Output Volume	≤120L/min			≤24L/min		
Temperature Range	100℃~480℃/212℉~896℉					
Display	LED					
Soldering Station						
Temperature Range	200℃~480℃/392℉~896℉					
Tip to ground resistance	<2 Ohms					
Power Supply						
Output Voltage	DC 0~15V ±10%					
Overcurrent Protection	1A	2A	3A	1A	1A	2A

I. APPLICATIONS

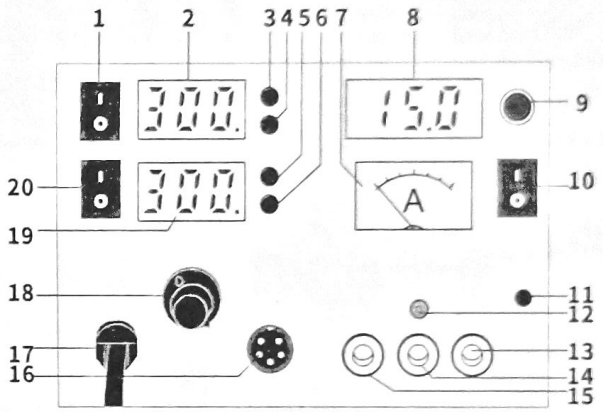
1. This unit is suitable for desoldering & soldering operations on a broad range of components. E.g., SOIC, CHIP, QFP, PLCC, BGA, SMD, and more. The unit is especially suited for desoldering operations on in-line sockets.

2. You can use this unit for heat shrinking, drying, paint removal, glue removal, defrosting, preheating, glue soldering, and more.

3. Suitable for applications on technology product development, education, electronics manufacturing lines, reparation of mobile phones and other communication equipment.

II. CONTROL PANEL

For the 853D Series or 853DA Series



1. Power Switch (Hot Air Rework Station)
2. Temperature Display (Hot Air Rework Station)
3. Temperature Increase Button (Hot Air Rework Station)
4. Temperature Decrease Button (Hot Air Rework Station)
5. Temperature Increase Button (Soldering Station)
6. Temperature Decrease Button (Soldering Station)
7. Current Meter
8. Voltage Display
9. Voltage Adjustment Knob
10. Power Switch (DC Power Supply)
11. Power Indicator
12. Output / Voltmeter Modes Switch
13. Voltmeter Terminal (+ Positive)
14. Output / Voltmeter Terminal (- Negative)
15. Output Terminal (+ Positive)
16. Receptacle (Soldering Iron)
17. Power Cord (Hot Air Gun)
18. Air Volume Adjustment Knob
19. Temperature Display (Soldering Station)
20. VPower Switch (Soldering Station)

III. COMPARE THE SERIES FUNCTIONS

Functions \ Series	853D	853DA
Manual/Automatic Hot Air Mode	YES	NO
°F/°C Temperature Display	YES	YES
Soldering Iron Sleep Mode	NO	NO
Hot Air Gun - Zero-Air Protection	YES	NO
Digital Temperature Calibration	YES	YES

IV. OPERATION

Hot Air Rework Station (Pump Motor Powered): Before the station can be transported, the pump motor MUST be secured with the locking bolt(installation hole located at the bottom of the station). Failure to install the locking bolt before transportation will result in serious consequences. REMOVE the locking bolt at the bottom of the station before use, failure to REMOVE the bolt will result in serious consequences.

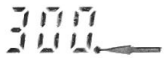
Energy-Saving Tip:
The station has integrated three key functions: a soldering station, a hot air rework station and a DC power supply. When a specific function is not in use, turn OFF the respective power switch for this function. When all the functions are turned OFF, the display will blink with '---', please turn OFF the master power switch and DISCONNECT the station's power cord from the electrical outlet.

Hot Air Rework Station

1. Set the station appropriately. Install the hot air gun holder onto the left side of the station, and place the hot air gun in its holder.

2. Install the required nozzle(Use of nozzles in larger diameters is recommended). Connect the station's power cord to an electrical outlet.

3. Turn ON the master power switch located at the rear of the station, then turn ON the hot air rework station's power switch. The hot air temperature display will show "---" to indicate the gun in standby mode. Press the increase (▲) or decrease (▼) button to set the desired temperature. Pick up the hot air gun, and it will enter standard operation mode, the hot air rework station's operation indicator light (the dot located at the bottom-right of the hot air temperature display) will turn ON.



Indicator for Real-Time Temperature Tracking & Temperature Compensation

The operation indicator light will stay ON constantly when the hot air gun is heating up, blink rapidly when the temperature is stabilized, and be turned OFF when the hot air gun is cooling. Adjust the air volume adjustment knob to set the desired air volume, and begin operation once the temperature has stabilized. Once the temperature is stabilized, such a status is clearly indicated with the rapidly flashing operation indicator. The precision PID program is tracking and compensating the hot air gun's temperature every millisecond, the hot air gun's temperature is now in stable, and precise thermostatic state.

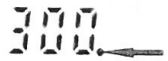
4. The hot air gun must be placed back in the holder when the operation is complete, and turn OFF the hot air power switch. The hot air gun's operation indicator will turn OFF and the hot air gun then enters cooling mode. When the hot air gun cools to below 100 °C/212°F, the hot air temperature display will turn OFF. If the station is not in use for an extended period, turn OFF the station's power switch and DISCONNECT the station's power cord.

CAUTION: When the hot air automatic/manual mode is set to manual, the hot air gun will begin heating as per normal when turned ON.

Soldering Station

1. Connect the soldering iron to the station, and place the iron into its holder.

2. Turn ON the station's master power switch located at the rear of the station, and then turn ON the soldering station's power switch. The soldering station's heating element will begin heating, and its operation indicator light (the dot located at the bottom-right corner of the soldering station display) will turn ON. The operation indicator light will stay constantly ON when the soldering iron is heating up, blink rapidly when the temperature stabilizes, and be turned OFF when the soldering iron is cooling. Begin your operation once the soldering station's indicator is blinking rapidly to indicate the temperature's stabilization.



Indicator for Real-Time Temperature Tracking & Temperature Compensation

3. When the operation is complete, use a damp sponge or metal wool ball to clean the soldering iron tip. Tin the tip with a new layer of solder, then put the soldering iron back to its holder and turn OFF the power switch. If the station is not in use for an extended period, DISCONNECT the power cord.

CAUTION: Upon the first use of the soldering iron tip, set the temperature to 250°C/482°F. When the iron is just hot enough to melt the solder, coat the tip with a layer of solder (the use of rosin core solder is recommended), then set the temperature to your desired value.

Power Supply

1. Put the output / voltmeter modes switch to the voltage output mode, and connect the leads to the positive and negative voltage output terminals. Adjust the power supply adjustment knob to set the desired voltage, then begin using. When the power supply's current exceeds the maximum allowed current (maximum allowed varies for 1A,2A,3A models), the station automatically turn ON its protection mode, and warn the user with beeping sound. When the output current is less than the maximum rated(allowed) current, the station will automatically return to its normal operating state quickly.

2. Put the output / voltmeter modes switch to the voltmeter mode, and connect the leads to the positive and negative voltmeter terminals to test the DC voltage of your test subject.

Hot Air Automatic / Manual Modes (For the 853D Series)

1. Turn ON the hot air rework station ONLY .

2. Press both the hot air rework station temperature increase, and the soldering station temperature decrease buttons for approximately 2 seconds. The display will show 'A1' to indicate the station in Automatic Mode. (A0 to indicate the station in Manual Mode)

3. Press the hot air rework station temperature increase button to select automatic mode, or press the hot air rework station temperature decrease button to select manual mode. Stop operation for 3 seconds, and the system will automatically exit the setting interface.

Digital Temperature Calibration

Temperature discrepancies may occur due to the change in the environment's temperature, or the replacement of the heating element and other components. You can correct the discrepancies with this function. The temperature calibration function can improve work efficiency and prolong the lifespan of the soldering iron.

1. When the hot air rework station's (or the soldering station's) temperature is stabilized, press and hold both the hot air rework station's (or the soldering station's) temperature increase and decrease buttons for approximately 2 seconds. The display will blink with 3 digit dots while showing the set temperature.

2. Press the hot air rework station's (or the soldering station's) temperature decrease or increase button to enter the measured temperature value.

3. Press and hold both the hot air rework station's (or the soldering station's) temperature increase and decrease buttons to confirm entry, and exit the calibration interface.

°F/°C Temperature Display

This function complies with different user preferences for users in different regions.

1. Turn ON the Hot Air Rework Station Power Switch ONLY.

2. Press and hold both the hot air rework station temperature increase and the soldering station temperature decrease buttons for approximately 2 seconds. The display will show 'A1' or 'A0'.

3. Press the soldering station temperature increase or temperature decrease button, and the display will show 'C'.

4. Press the hot air rework station temperature increase button to select Celsius (°C) display mode, or press the hot air rework station temperature decrease button to select Fahrenheit (°F) display mode. Stop operating for 4 seconds, and the system will automatically save the data and exit the setting interface.

Hot Air Zero-Air Protection

If the hot air gun stops putting out air abnormally during an operation, the system will cut the power to the heating element. This prevents damages to the hot air gun due to accumulated heat and further improves the safety factor of this product.

V. MAINTENANCE & PRECAUTIONS

Hot Air Rework Station

1. Keep the air outlet clear and free of blockages at all times.

2. The installation of the hot air nozzles MUST be carried out ONLY when the steel pipe and nozzle have cooled. Install the nozzle correctly, DO NOT install the nozzle with brute force, pull the edge of the nozzle with tweezers, or over-tighten the screws.

3. Select the appropriate nozzle based on your operation requirement (temperature may vary when you using nozzles in different diameters). When using nozzles smaller than the standard machine nozzles, you MUST use the maximum air volume with a relatively lower temperature setting. Complete this operation in the shortest possible duration to avoid damaging the hot air gun.

4. Keep a minimum distance of 2mm between the object and the hot air gun's air outlet.

5. DO NOT allow the hot air to come in direct contact with facial parts, and beware of the danger of burn injuries. Upon the first use, the hot air gun may emit white fumes, and the white fume will dissipate in a short while.

NOTE:
The station's hot air gun and soldering iron handles use high-strength stainless steel tubes. The station goes through 4 times or more testing, inspection, and calibration procedures before rolling off the assembly line. The steel tube may exhibit light bronze color as a result of our quality control efforts. It is normal to have a slightly bronzed steel tube when using a brand-new station, rest assured for regular usage.

Soldering Station

1. If a layer of oxidization forms on the surface of the soldering iron tip, a misconception can be created that the tip cannot heat up properly to melt the solder and do the tinning. However, the actual temperatures of both the heating element and tip are high. In such an instance, please do not increase the temperature value confusedly but use a metal wool ball to remove the oxidization following the steps below:

   A. Set the temperature to 300°C (572°F).
   B. Once the temperature stabilizes, gently rub the soldering iron tip inside the metal wool ball.
   C. When the oxidization is partially removed, continue applying solder onto the soldering iron tip while rubbing it until the tip is completely coated with solder. If the tip is too severely oxidized beyond cleaning, replace it with a new one.

2. DO NOT use metal files to remove the oxidization on the soldering iron tip. If the soldering iron tip deforms or rusts, replace the soldering iron tip with a new tip.

3. DO NOT apply excessive force on the soldering iron tip when soldering. Doing this will NOT IMPROVE the heat transfer but damage the soldering iron tip instead.

4. When placing the soldering iron back in the holder to idle after a high-temperature operation, adjust the temperature to 250°C (482°F) or below for idling. Failure to do so, and leaving the soldering iron tip to idle in a high-temperature setting will cause the accelerated aging of the heating element and shorten the lifespan of the heating element and soldering iron tip.

5. After every operation, clean the soldering iron tip, then tin the tip with a new layer of solder to prevent oxidization.

VI. TROUBLESHOOTING

1. "S-E" – This is an indication that the station's sensor module is faulty. You need to replace the heating element (the heating element and the sensor modules). Or, the soldering iron is not connected (Turn OFF the station, connect the soldering iron and turn ON the station).

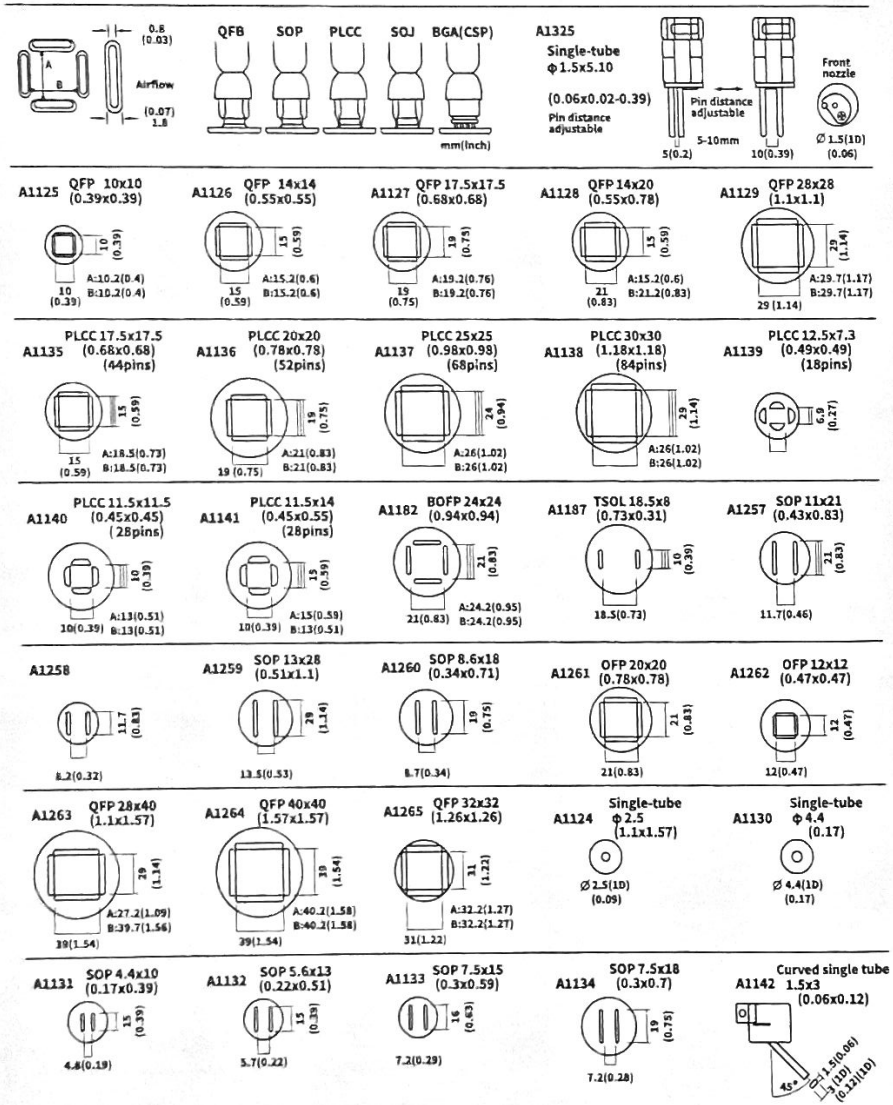
2. "F-1/F-2" – This is an indication that the station is in the "zero-air protection" mode, check the hot air gun's motor and the hot air gun's power circuitry.

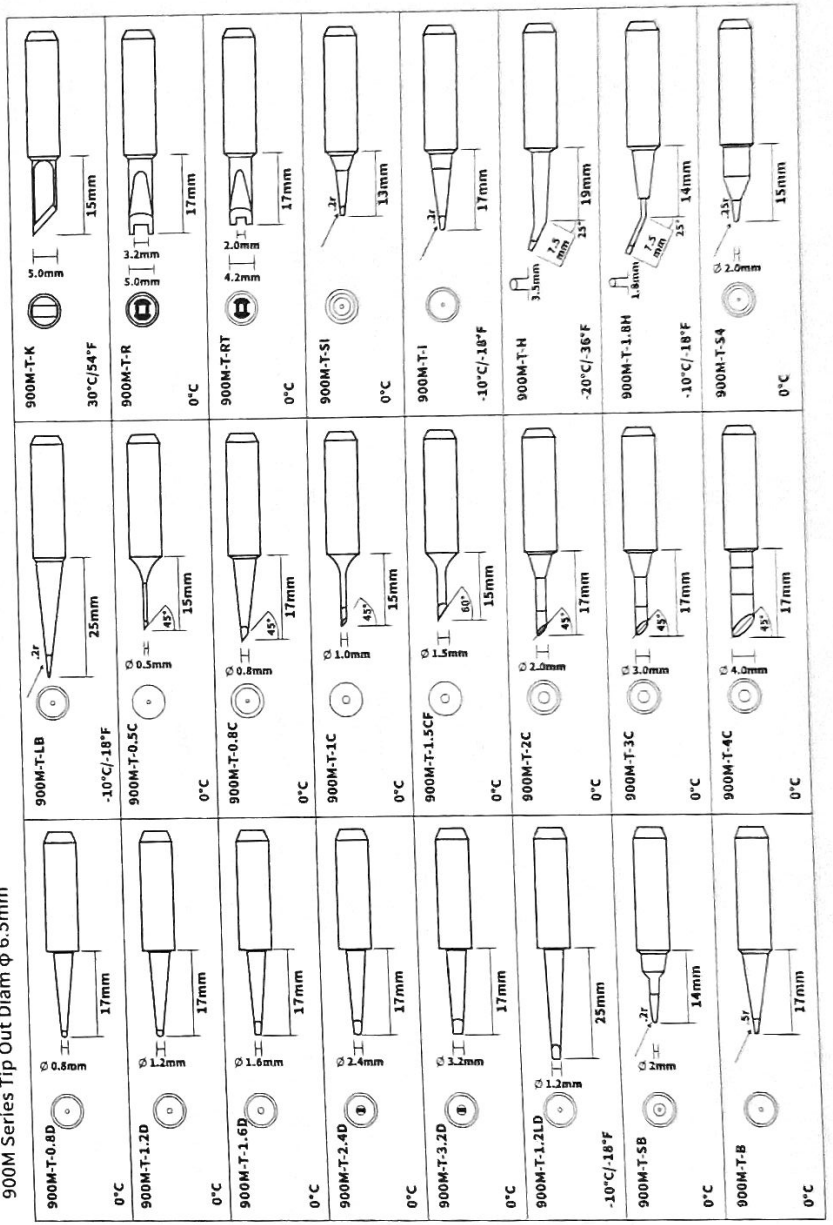
3. When replacing the heating element, take note of the original connecting order and colors of the wires which MUST NOT be connected incorrectly.

For reference: compatible parts

Nozzle style (specifications and sizes)

The nozzles sizes match with their corresponding IC sizes.



Tip style (specifications and sizes)

900M Series Tip Out Diam φ 6.5mm