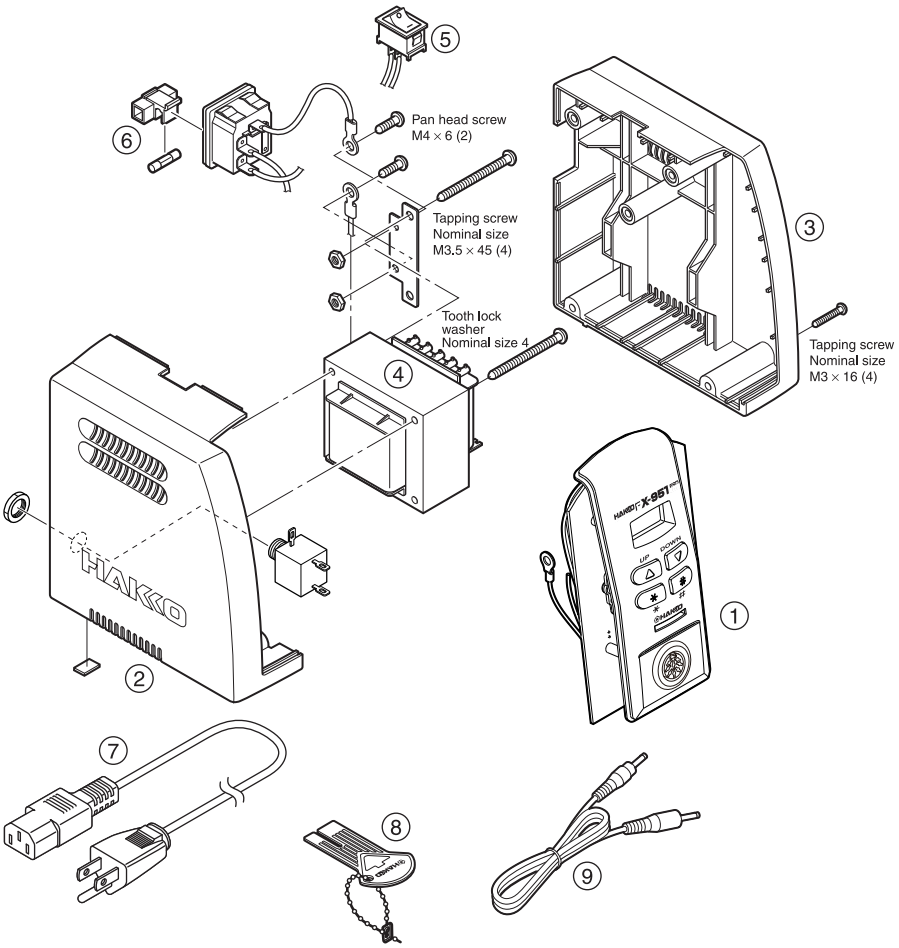
HAKKO

HAKKO FX-951
SOLDERING STATION

High-output, temperature controlled soldering station

Maintenance & Checking

1. PARTS LIST



● **HAKKO FX-951 Station**

Item No.	Part No.	Part Name	Specifications
①	B3732	Front panel assy.	
②	B3255	Case/Left	With rubber feet
③	B2978	Case/Right	With rubber feet
④	B2979	Transformer	100V
	B2983	Transformer	110V
	B2836	Transformer	120V
	B2984	Transformer	220V
	B2985	Transformer	230V
	B3067	Transformer	240V
⑤	B2852	Power switch	
⑥	B2403	Fuse/250V-2A	100-110V
	B3011	Fuse/250V-2A	120V
	B2987	Fuse/250V-1A	220-240V

Item No.	Part No.	Part Name	Specifications
⑦	B2419	Power cord, 3-wire cord & American plug	120V USA
	B2421	Power cord, 3-wire cord but no plug	
	B2422	Power cord, 3-wire cord & BS plug	India
	B2424	Power cord, 3-wire cord & European plug	220V KTL 230V CE
	B2425	Power cord, 3-wire cord & BS plug	230V CE
	B2436	Power cord, 3-wire cord & Chinese plug	China
	B2426	Power cord, 3-wire cord & Australian plug	
	B3508	Power cord, 3-wire cord & American plug	
	B3550	Power cord, 3-wire cord & SI plug	
	B3616	Power cord, 3-wire cord & BR plug	
⑧	B2972	Control card	
⑨	B3253	Connecting cable	

HAKKO

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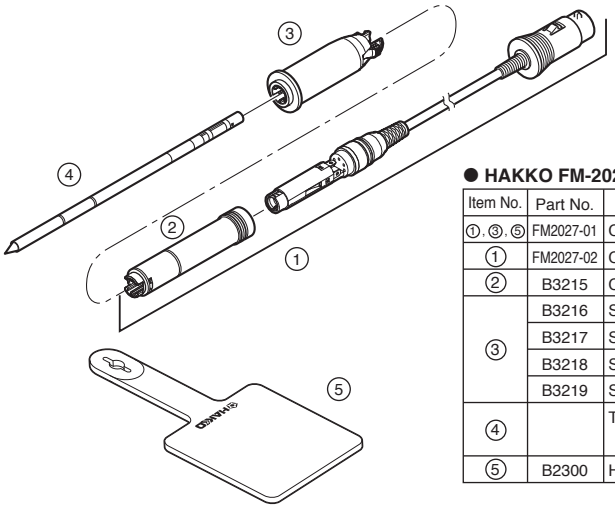
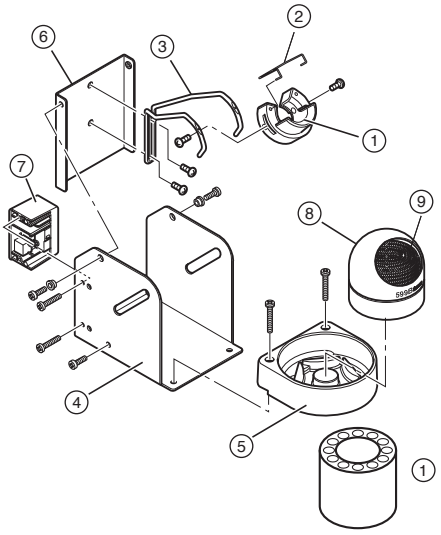


● **HAKKO FM-2027**

Item No.	Part No.	Part Name	Specifications
①, ③, ⑤	FM2027-01	Conversion kit	③ is yellow
①	FM2027-02	Connector assembly	
②	B3215	Connector cover	
③	B3216	Sleeve assembly	Yellow
	B3217	Sleeve assembly	Orange
	B3218	Sleeve assembly	Blue
	B3219	Sleeve assembly	Green
④		Tip	See back page: 'TIP STYLES'
⑤	B2300	Heat resistant pad	



● **Iron Holder**

Item No.	Part No.	Part Name	Specifications
①–⑨	FH200-01	Iron holder	With 599B

● **Iron Holder Parts**

Item No.	Part No.	Part Name	Specifications
①	B3001	Iron receptacle	With screws
②	B2791	Tip fixing spring	
③	B3248	Holder for iron receptacle	
④	B3251	Iron holder base	With rubber feet
⑤	B3249	Cleaner base	With rubber feet
⑥	B3250	Stay	
⑦	B3252	Switch case assembly	
⑧	599B-02	Tip cleaner	
⑨	599-029	Cleaning wire	

● **Tip tray**

Item No.	Part No.	Part Name	Specifications
①	B2756	Tip tray	

2. PARAMETER SETTINGS

The HAKKO FX-951 comes from the factory with the following values preset.

Temperature scale	Fahrenheit
Power save	0 min.
Low temperature alarm setting	300°F
Resetting the supervisor or operator control setting	4 0
Setting temperature	750°F
Buzzer setting (C-E sound, S-E sound)	ON
Buzzer setting (Set temperature alert)	ON

The HAKKO FX-951 has the following six parameters:

1) °C or °F temperature display selection
2) Power save
3) Low temperature alarm setting
4) Resetting the supervisor/operator control setting
5) Buzzer setting (C-E sound, S-E sound)
6) Buzzer setting (Set temperature alert)

Once the station enters parameter mode, set the parameters in the order shown below. After all the parameters have been set, normal operation will be resumed.

● **Entering the parameter**

1 °C or °F temperature display

1. Turn power OFF.
2. Insert the control card into the card slot in the front of the unit.
3. Press and hold down the ▲ and ▼ buttons simultaneously, and then turn power ON.
4. Hold ▲ and ▼ buttons down until the display shows [1C] (Celsius) or [1F] (Fahrenheit). When either the display shows either [1C] or [1F] the station is in parameter input mode.

● Pressing either the ▲ and ▼ button will cause the display to alternate between [1C] or [1F].
● When the desired scale is displayed, select by pressing the ✱ button. The system will automatically sequence to power save mode.

2 Power save setting

Set the time from the placement of the soldering iron on the iron holder to the activation of the sleep function.

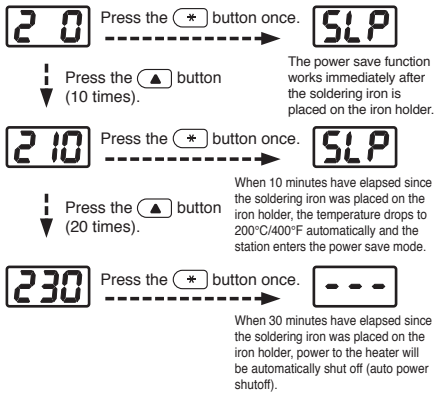
NOTE:
When not using the power save function, do not connect the iron holder and the soldering station with the connecting cable.

Power save example:

2 0 Sleep (immediately after the soldering iron is placed on the iron holder)
210 Sleep (10 minutes after the soldering iron is placed on the iron holder)
230 Auto-power shutoff (30 minutes after the soldering iron is placed on the iron holder)

NOTE:
The power save time can be set in steps of one minute (30 minutes max.)

When the station enters the parameter input mode, the procedure is as follows.



- When the sleep function is activated, the temperature of the tip begins to drop.
- When the display shows SLP, pressing any button the power will be turned on again.

NOTE:
The sleep function does not work in case the setting temperature is less than 300°C/570°F.

- When the auto-power shutoff function is activated and power to the heater is shut off, the buzzer sounds three times.
- When the display shows - - -, and to begin soldering, cycle the power switch OFF, then ON.

3 Resetting the low temperature alarm tolerance setting

The unique function alerts the operator when the sensed temperature drops below a set limit. Should this occur, an error message will be displayed, and the buzzer will sound continuously. When the temperature returns within the allowable range, the buzzer will stop.

Range of allowable low temperature alarm tolerance
for °C: 30 - 150°C
for °F: 50 - 300°F

1. When the station enters low-temperature alarm tolerance setting mode, the hundreds digit begins flashing. Enter and store the value in the same manner as described in "Changing the temperature setting."
2. If you enter a value exceeding the allowable range shown to the left, you will be brought back to entering a value in the hundreds digit. If this occurs, reenter a correct value.
3. Once the value is stored, the system will automatically sequence to resetting the supervisor/operator control setting mode.

Example:
When the setting temperature is 350°C and the low temperature alarm tolerance is 100°C, buzzer will sound when the tip temperature will drop over 250°C.

4. Resetting the supervisor/operator control setteing

To change the supervisor/operator control settings, the procedure is as follows.

- The display will show 4 0 or 4 1 when this mode is entered.

4 0 : No offset value can be entered without inserting the card.
4 1 : An offset value can be entered without inserting the card.

Pressing the ▲ or ▼ button will change 4 0 and 4 1.
When the desired setting is displayed, select by pressing * button.

5. Buzzer setting (C-E sound, S-E sound)

- In the buzzer sound setteing mode, which sets whether to sound the buzzer when a sensor error or soldering iron error occurs, S 0 or S 1 is displayed.

S 0 : The buzzer does not sound.
S 1 : The buzzer sound

Select ▲ or ▼ and press the * button.

6. Buzzer setting (Set temperature alert)

- In the buzzer sound setteing mode, which sets whether to sound the buzzer when a sensor error or soldering iron error occurs, 6 0 or 6 1 is displayed.

6 0 : The buzzer does not sound.
6 1 : The buzzer sound

Select ▲ or ▼ and press the * button.
The system will exit the parameter setting mode and begin heater control.
It is now ready for normal operation.

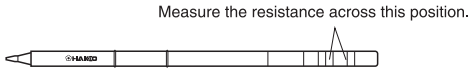
3. CHECKING PROCEDURE

⚠ WARNING

Unless otherwise directed, carry out these procedures with the power switch OFF and the power UNPLUGGED.

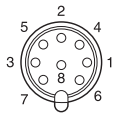
● **Check for a broken heater or sensor**

1. Check for a broken heater or sensor



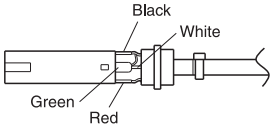
Verify the electrical integrity of the heater and sensor. Measure the resistance of the heater and sensor while at room temperature (15 to 25°C.; 59 to 77°F.). It should be 8Ω ±10%. If the resistance exceeds these limits, replace the tip.

● **Check the grounding line**



1. Unplug the connection cord from the station.
2. Measure the resistance value between Pin 2 and the tip.
3. If the value exceeds 2Ω (at room temperature), perform the tip maintenance described on section 2, maintenance for the tip. If the value still does not decrease, check the connection cord for breakage.

● **Checking the connection cord for breakage**

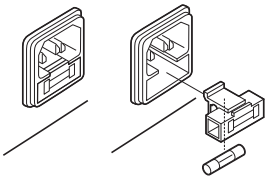


1. Remove the soldering tip and the sleeve assembly.
2. Turn the front piece of the HAKKO FM-2027 counterclockwise and remove the cover.
3. Measure the resistance values between the connector and the lead wires at the socket as follows:

   Pin 1 – Red Pin 2 – Green
   Pin 3 – Black Pin 5 – White

   If any value exceeds 0Ω or is ∞, replace the HAKKO FM-2027

● **Replacing the fuse**



1. Unplug the power cord from the power receptacle.
2. Remove the fuse holder.
3. Replace the fuse.
4. Put the fuse holder back in place.

4. ERROR MESSAGES

● **Sensor Error**

When there is the possibility that a failure has occurred in the sensor or heater (including the sensor circuit), S-E is displayed and the power is shut down.

⚠ CAUTION
The sensor error also occurs if the tip is not inserted properly.

● **Low-temperature alarm tolerance error**

If the sensor temperature falls below the difference between the current temperature setting and the low-temperature alarm tolerance, H-E is displayed and the warning buzzer sounds. When the tip temperature rises to a value within the set tolerance, the buzzer will stop sounding.

EXAMPLE:
Assume that the temperature setting is 400°C/750°F and the tolerance 50°C/100°F. If the temperature continues to decrease and finally falls below the value indicated below while the heating element is on, the displayed value starts blinking to indicate that the tip temperature has dropped.

EXAMPLE:

350°C (400°C – 50°C)
Set temperature — Low-temperature alarm tolerance
OR
650°F (750°F – 100°F)
Set temperature — Low-temperature alarm tolerance

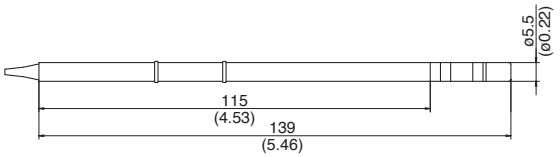
● **Heater terminal short-circuit error**

HSE will flash, and the buzzer will sound continuously, when the tip is inserted wrong way round, an incompatible tip is inserted, or a foreign object has found its way into the connector.

● **Soldering iron error**

C-E will be displayed if the connector cord is not attached to the station OR the wrong soldering iron is connected.

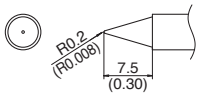
5. TIP STYLES



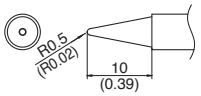
Unit: mm (in.)

SHAPE B

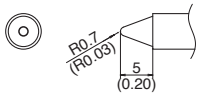
T15-B SHAPE-B



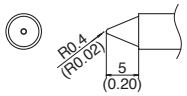
T15-B2 SHAPE-0.5B



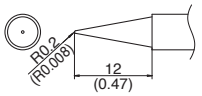
T15-B3 SHAPE-0.7B



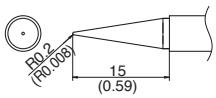
T15-B4 SHAPE-0.4B



T15-BL SHAPE-BL

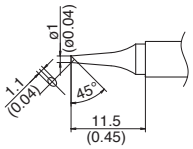


T15-BLL SHAPE-BL LONG

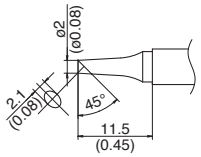


SHAPE BC
SHAPE C

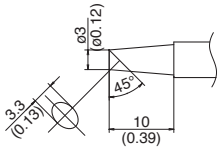
T15-BC1 SHAPE-1BC
T15-BCF1*



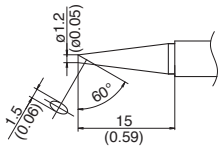
T15-BC2 SHAPE-2BC
T15-BCF2*



T15-BC3 SHAPE-3BC
T15-BCF3*



T15-BC12 SHAPE-1.2BC



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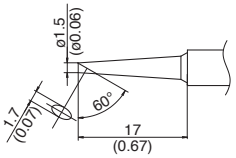
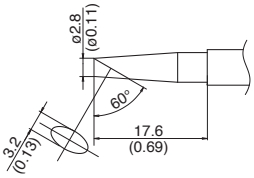
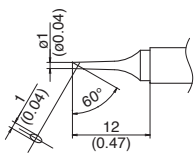


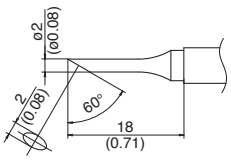
T15-BC28 SHAPE-2.8BC



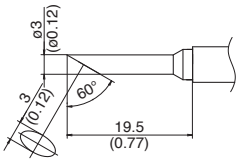
T15-C1 SHAPE-1C



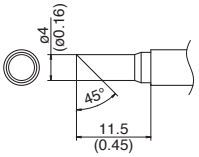
T15-CF2* SHAPE-2C



T15-CF3* SHAPE-3C

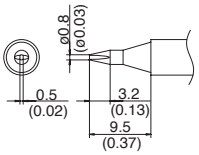


T15-C4 SHAPE-4C
T15-CF4*

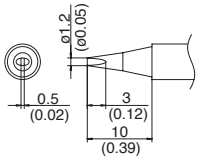


SHAPE D

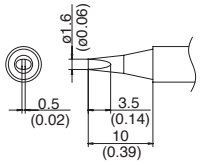
T15-D08 SHAPE-0.8D



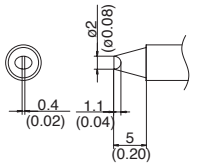
T15-D12 SHAPE-1.2D



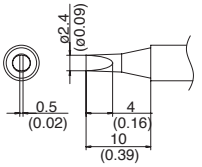
T15-D16 SHAPE-1.6D



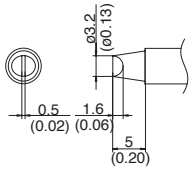
T15-D2 SHAPE-2D



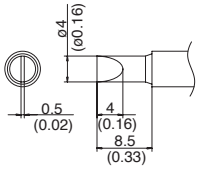
T15-D24 SHAPE-2.4D



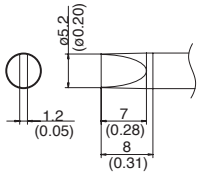
T15-D32 SHAPE-3.2D



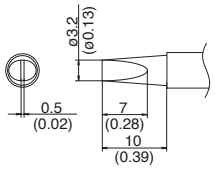
T15-D4 SHAPE-4D



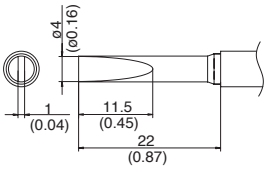
T15-D52 SHAPE-5.2D



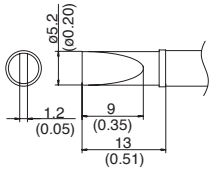
T15-DL32 SHAPE-3.2D LONG



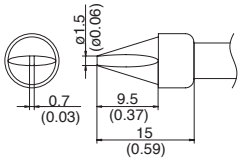
T15-DL4 SHAPE-4D LONG



T15-DL52 SHAPE-5.2D LONG

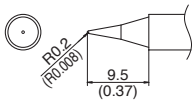


T15-XD15 SHAPE-1.5XD

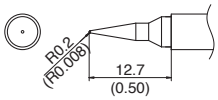


SHAPE I

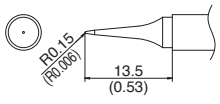
T15-I SHAPE-I



T15-IL SHAPE-IL

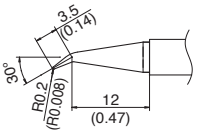


T15-ILS SHAPE-ILS

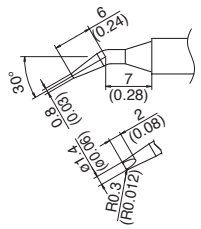


SHAPE J

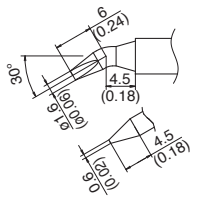
T15-J02 SHAPE-0.2J



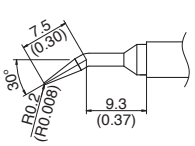
T15-JD14 SHAPE-1.4JD



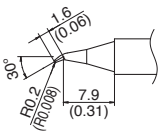
T15-JD16 SHAPE-1.6JD



T15-JL02 SHAPE-0.2JL



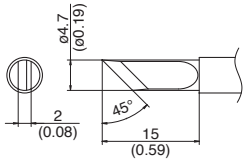
T15-JS02 SHAPE-0.2JS



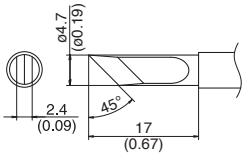
5. TIP STYLES

SHAPE K

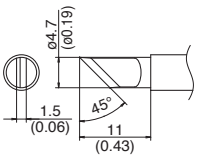
T15-K SHAPE-K



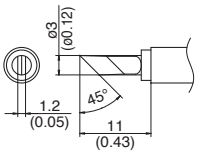
T15-KF SHAPE-KF



T15-KL SHAPE-KL

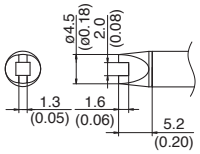


T15-KU SHAPE-KU

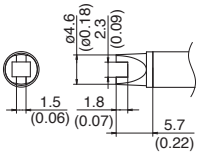


SHAPE R

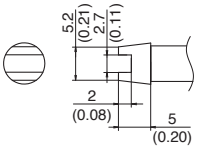
T15-R20 SHAPE-2.0R



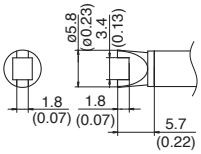
T15-R23 SHAPE-2.3R



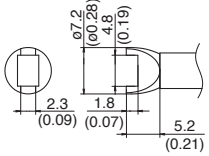
T15-R27 SHAPE-2.7R



T15-R34 SHAPE-3.4R

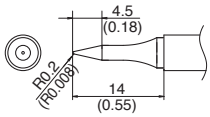


T15-R48 SHAPE-4.8R

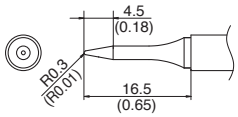


SHAPE SB

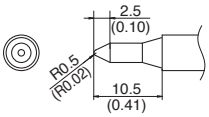
T15-SB02 SHAPE-0.2SB



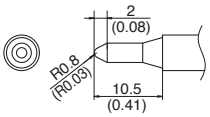
T15-SB03 SHAPE-0.3SB



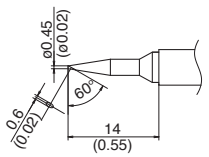
T15-SB05 SHAPE-0.5SB



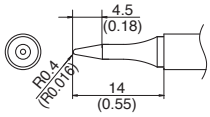
T15-SB08 SHAPE-0.8SB



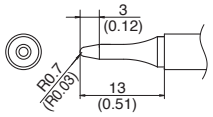
T15-SBC04 SHAPE-0.4SBC



T15-SBS04 SHAPE-0.4SBS

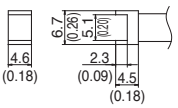


T15-SBS07 SHAPE-0.7SBS

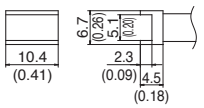


TUNNEL

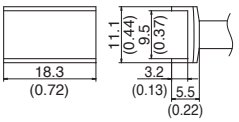
T15-1001** TUNNEL 5.1 x 4.6



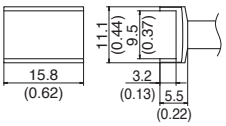
T15-1002** TUNNEL 5.1 x 10.4



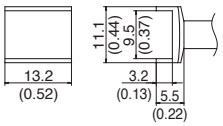
T15-1003** TUNNEL 9.5 x 18.3



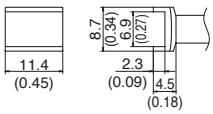
T15-1004** TUNNEL 9.5 x 15.8



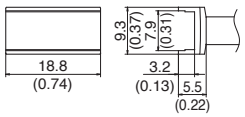
T15-1005** TUNNEL 9.5 x 13.2



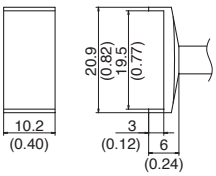
T15-1006** TUNNEL 6.9 x 11.4



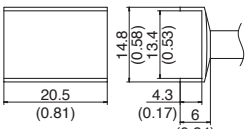
T15-1007** TUNNEL 7.9 x 18.8



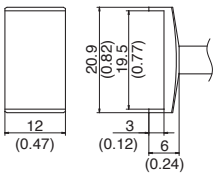
T15-1008** TUNNEL 19.5 x 10.2



T15-1009** TUNNEL 13.4 x 20.5

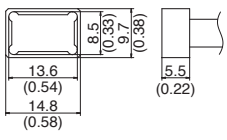


T15-1010** TUNNEL 19.5 x 12

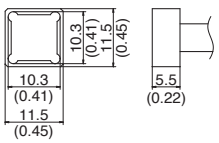


QUAD

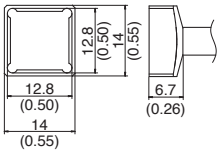
T15-1201** QUAD 13.6 x 8.5



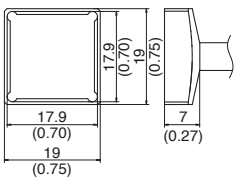
T15-1202** QUAD 10.3 x 10.3



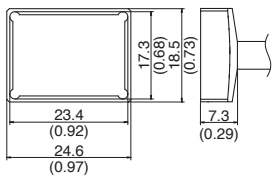
T15-1203** QUAD 12.8 x 12.8



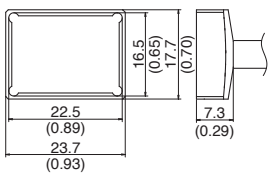
T15-1204** QUAD 17.9 x 17.9



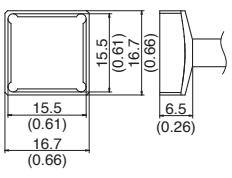
T15-1205** QUAD 23.4 x 17.3



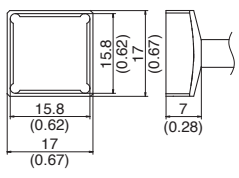
T15-1206** QUAD 22.5 x 16.5



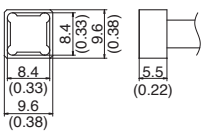
T15-1207** QUAD 15.5 x 15.5



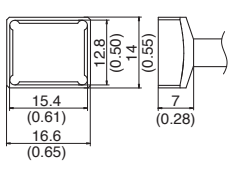
T15-1208** QUAD 15.8 x 15.8



T15-1209** QUAD 8.4 x 8.4

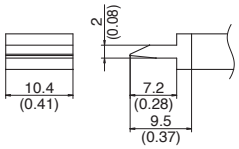


T15-1210** QUAD 15.4 x 12.8

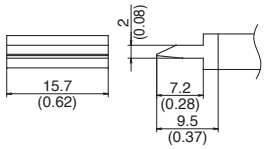


SPATULA

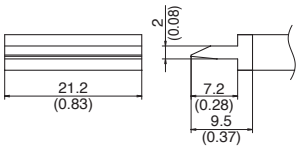
T15-1401** SPATULA 10.4



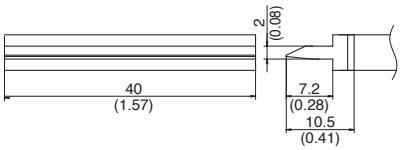
T15-1402** SPATULA 15.7



T15-1403** SPATULA 21.2



T15-1406** SPATULA 40



SPECIAL APPLICATIONS TYPE

T15-1603** SHAPE-1.8MM LONG REACH CHISEL

T15-1605** SHAPE-LONG REACH BENT CHISEL

T15-BCM2 SHAPE-2BC
Bevel with indent**

T15-BCM3 SHAPE-3BC
Bevel with indent**

* Tinned on the soldering surface only.

** The iron tips marked with double asterisks (**) have a temperature accuracy of ±25°C (±45°F), when used with the default offset. Others have a temperature accuracy of ±15°C (±27°F), when used with the default offset.