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Find the *Jonard / OK Industries FCT-2228* at our website: *Click HERE*

User Manual

FCR-2000 Series

FORCED CONVECTION REWORK SYSTEM

P/N 17335S
REV. A
12/95

4 Executive Plaza, Yonkers, New York 10701 USA
Phone (914) 969-6800
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OK Industries

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FCR-2202 SERIES
FORCED CONVECTION REWORK SYSTEM

CAUTIONS

This equipment is for industrial / laboratory use.
Indoor use only.
Altitude up to 2000 meters.
Maximum RH of 80% up to 31 C decreasing to 50% RH at 40 C.
Pollution degree 2 in accordance with IEC644.
Installation category II.
Temperature range 5 C to 40 C.
The user must be aware that if the equipment is used in a manner not specified by the manufacturer, safety may be impaired.
If required,Replace the fuse in the main unit with correct type: **T4A 250V**
If a fused mains plug is to be used, ensure the fuse is of the high breaking capacity type and has a value of no more than: **13A 250V.**
Any mains plug that requires removal or replacement must be destroyed by removal of any fuse and fuse carrier and disposed of immediately, as a plug with bared wires is hazardous if engaged in a live socket.
If the supply cord is damaged, or servicing is required, this work must be carried our by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.

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FCR-2000 SPECIFICATIONS

SPECIFICATIONS	FCR-2201, FCR-2101, FCR-2251	FCR-2202, FCR-2102, FCR-2252
Input Voltage	115VAC, 50/60 Hz	230VAC, 50/60 Hz
Heater	Resistive, 300 W @ 28VAC	Resistive, 300 W @ 28VAC
Heater Control	Closed-Loop Thermo-couple sensor feedback.	Closed-Loop Thermo-couple sensor feedback.
Air Source	High efficiency diaphragm pump* **Except FCR-2250 model which requires Shop Air Input*	High efficiency diaphragm pump* **Except FCR-2250 model which requires Shop Air Input*
Air Flow	Variable, 3-20 l/min** ***FCR-2250 series has a variable air flow which is controled by the input air pressure (PSI). 70-90 PSI. 90 PSI max (6.2 bar)*	Variable, 3-20 l/min** ***FCR-2250 series has a variable air flow which is controled by the input air pressure (PSI). 70-90 PSI. 90 PSI max (6.2 bar)*
Temperature	390°F to 932°F (200°C to 500°C)	390°F to 932°F (200°C to 500°C)
Operating Modes:	Manual- FCR-2100/2200/2250 continuous or on demand (via footswitch) hot air flow Auto remove- FCR-2200/2250 sequenced for hot air, vacuum, and hot air "on", vacuum release. Auto place- FCR-2200/2250 sequenced for vacuum pick-up, vacuum release, hot air flow, hot air "off".	Manual- FCR-2100/2200 /2250 continuous or on demand (via footswitch) hot air flow on demand via footswitch (2200/2250 only) Auto remove- FCR-2200/2250 sequenced for hot air, vacuum, and hot air "on", vacuum release. Auto place- FCR-2200/2250 sequenced for vacuum pick-up, vacuum release, hot air flow, hot air "off".
Hot Air Timer	FCR-2200/2250 0-180 seconds, utilized with Auto-Place and Auto-Remove Modes.	FCR-2200/2250 0-180 seconds, utilized with Auto-Place and Auto-Remove Modes.

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I. INTRODUCTION

This instruction Manual explains the correct use of your new FCR-2000 Series Forced Convection Rework System. Please read it carefully before using the equipment.

II. UNPACKING AND ASSEMBLY

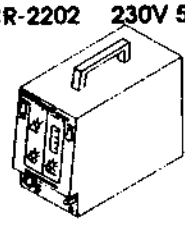
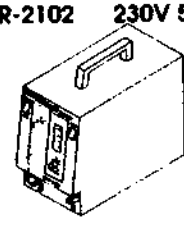
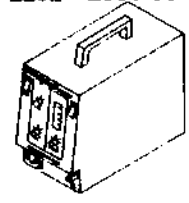
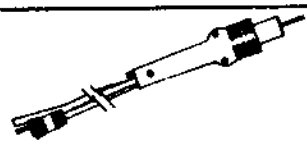
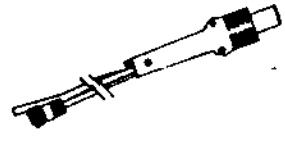
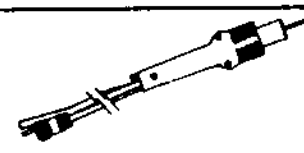
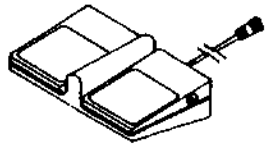
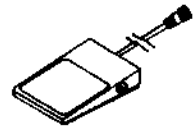
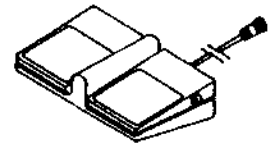
Carefully remove all items from the packaging and place them on a suitable work bench equipped with AC power.

IMPORTANT: **Remove the transport screw under the FCR-2000 base unit before operating the system; before turning on main power switch make sure all function switches are "OFF".**

NOTE: **FCR-2250 Series DO NOT have a transport screw.**

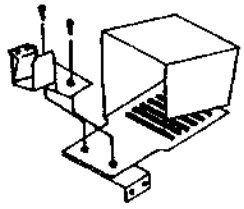
SYSTEM INCLUDES...

Please refer to the following figures to ensure that your system has arrived complete.

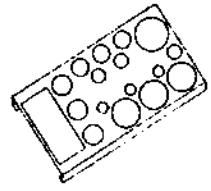
SYSTEM	FCR-2201 115V 50-60Hz FCR-2202 230V 50-60Hz	FCR-2101 115V 50-60Hz FCR-2102 230V 50-60HZ	FCR-2251 115V 50-60Hz FCR-2252 230V 50-60HZ
BASE	 FCR-2200 Base	 FCR-2100 Base	 FCR-2250 Base
HANDPIECE	 FCT-2228	 FCT-2128	 FCT-2228
FOOT SWITCH	 FS-22	 FS-21	 FS-22



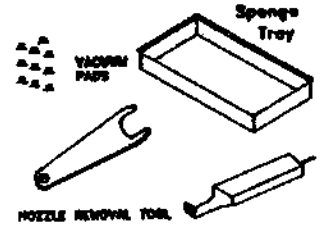
Nozzle N-D25
2.5mm Round



FCT Holder
18131S



Nozzle Holder
17867S

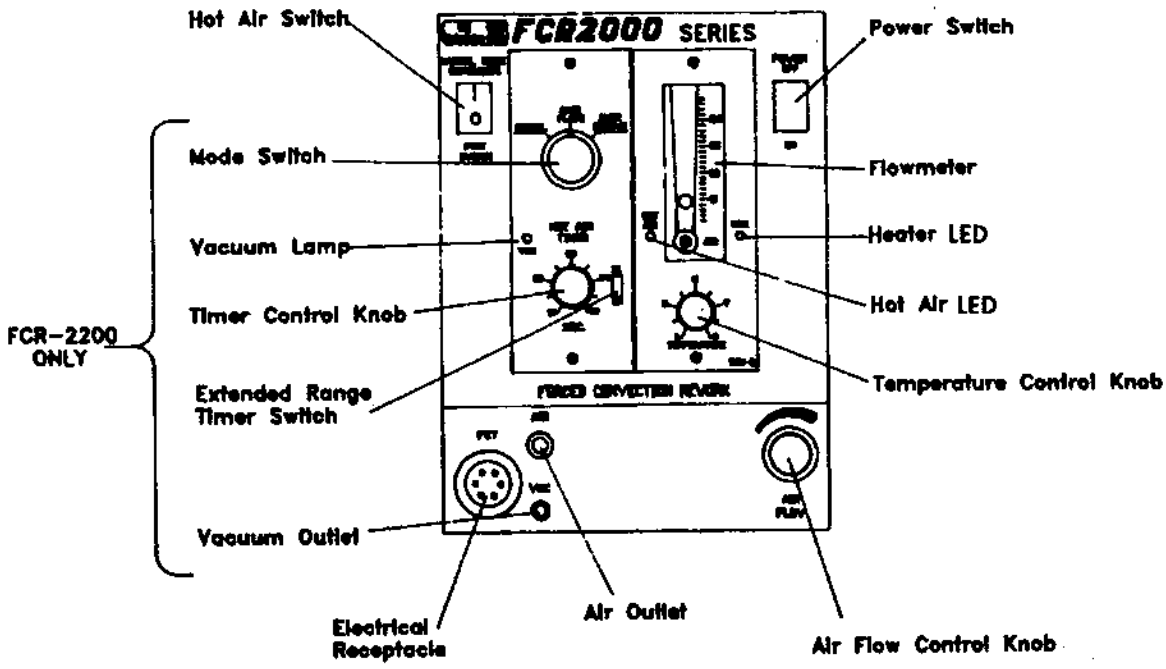


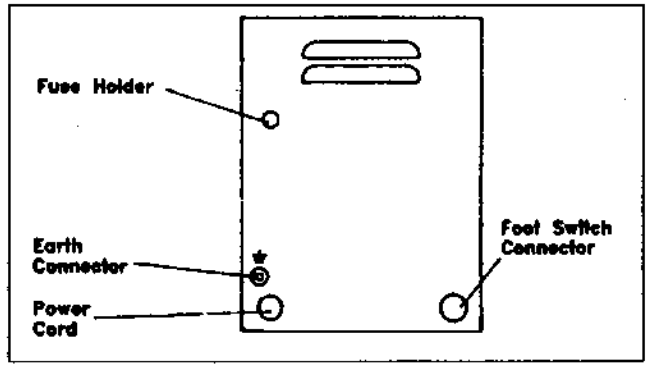
FCT Accessory Kit
18495S

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III. ASSEMBLY/OPERATION

FIGURE 1





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FCR-2250 MODEL
FCR AIR/NITROGEN REFLOW MACHINE

The FCR-2250 series has been designed for use with shop air or a nitrogen supply, facilitating accurate flow of focused convection heating on all SMT components, and accommodating inert flow requirements in the case of no-clean fluxes and solders.

FEATURES INCLUDE:

1) Small housing conserves work space.
2) Inert reflow capability for no-clean processing.
3) Accurate flow for small and large SMT components (internal air/nitrogen control valves).
4) Dual air input at rear of unit for:
   a) Vacuum @ 70-90 PSI (5-6.4 bar) maximum.
   b) Airflow @ 70-90 PSI (5-6.4 bar) maximum.
5) Internal 90 PSI (3.3 bar) safety regulator valve fitting to air flow section, as more than 70 PSI (5 bar) is not required to deliver maximum air flow rate on gauge at front of machine.

Note: DO NOT alter the internal regulator to more than 90 PSI (6.4 bar)

CONNECTIONS:

At the rear of the FCR-2250 unit, two air inputs are fitted as follows:

1) The top fitting is for vacuum pick-up. It requires 70 PSI (5 bar) minimum. If very heavy components cannot be picked up, the vacuum can be increased by raising the input on vacuum to 90 PSI (6.4 bar) maximum.
2) Bottom fitting air/nitrogen input max = 90 PSI (6.4 bar), optimum = 70-90 PSI (5–6.4 bar). As internal regulator valve is rated at 90 PSI (6.4 bar) to safeguard machine parts. Use regulator and water trap to regulate air pressure to 90 PSI (6.4 bar).

WARNING!

DO NOT USE THE CONSTANT MODE WITHOUT THE AIR SUPPLY OR NITROGEN FLOWING THROUGH REFLOW HEAD.

DO NOT USE A LUBRICATED AIR SUPPLY.

USE 5 MICRON FILTERED AIR SUPPLY.

All other operations are the same as FCR-2200.

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1. Using the supplied screws, mount the FCT-Handpiece holder to the left or right side of the FCR-2200 base unit.

2. Place the FCT handpiece into the holder. Connect the handpiece to the front panel connector. Attach the large hose to the "air"connector. FCR-2200/2250 users connect the smaller hose to the "vac" connector.

3. Connect the footswitch to the connector on the rear of the FCR-2000 base unit.

4. Connect the AC power to a suitable AC power outlet.

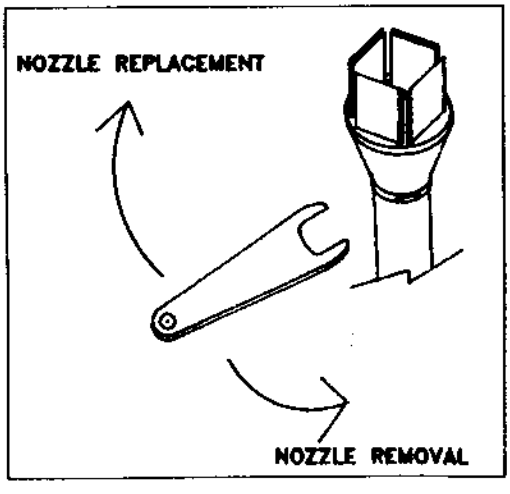
Please note: These drawings and directions cover all FCR-2000 series. Please skip the procedures marked with an "*" when using the FCR-2100.

5a. Verify operation of the FCR-2100 as follows:
   i) Switch on the power and observe illumination of the "HTR" indicator.
   ii) Activate the hot air flow by depressing the foot switch or by switching the Continuous/ Footswitch selector to Continuous.

5b. Verify operation of the FCR-2200/2250 as follows;
   i) Switch on the power switch and observe illumination of the "HTR" indicator.
   ii) Select the "Manual" mode on the LCM-1 module.
   iii) Activate the hot air flow by depressing the left foot switch or by switching the Continuous/Footswitch selector to Continuous.
   iv) Activate the vacuum by depressing the right foot switch.

6. Nozzle and vacuum pad removal.

NOZZLE INSTALLATION/REMOVAL
FIGURE 3



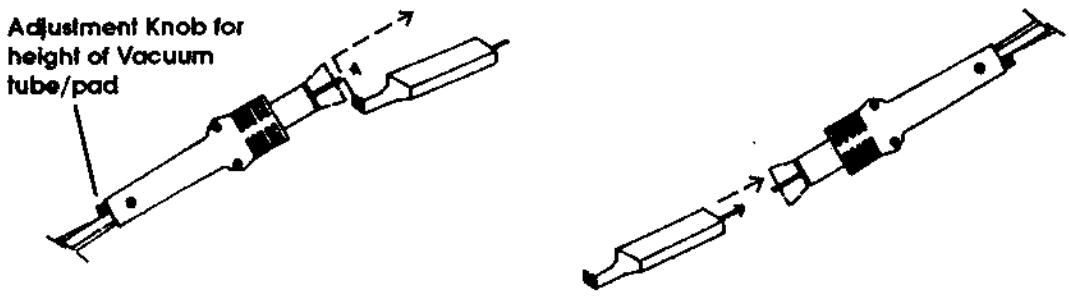
*6a. Using the forked end of the pad removal tool gently pull the vacuum pad off the vacuum tube (Figure 4A).

6b. Slide the nozzle removal wrench onto the flats of the nozzle. Rotate in a counter-clockwise direction. For operator safety the nozzle will stay attached to the wrench, until the operator slides the wrench from the nozzle flats (Figure 3).

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7. Nozzle and vacuum pad installation.

FIGURE 4A **FIGURE 4B**



VACUUM PAD REMOVAL **VACUUM PAD REPLACEMENT**

Vacuum Pad Installation/Removal (FCR-2200/2250)

7a) Select the proper nozzle to match the component you need to reflow.

7b) Install the nozzle onto the FCR tool by rotating it in a clockwise direction.

*7c) Install the vacuum pad using the vacuum Installation/Removal tool as follows:

i) Slide the vacuum pad onto the pin end of the vacuum pad Installation/ Removal tool (Figure 4B).

ii) While holding the vacuum tube adjuster flush with the FCT handpiece, push the pin of the vacuum pad Installation/ Removal tool into the vacuum tube. Keep pushing until you feel the tool stop.

iii) Remove the vacuum pad tool and the vacuum pad will have transferred itself onto the vacuum tube.

FCR-2100 Operation

Set Air Flow and Temperature
Note: see charts page 13-15 for setting guidelines

↓

Place the nozzle over the component

↓

Activate Hot Air either by switching to "continuous" or by depressing and holding the footswitch

↓

Observe component reflow

↓

Remove the component while removing the nozzle

↓

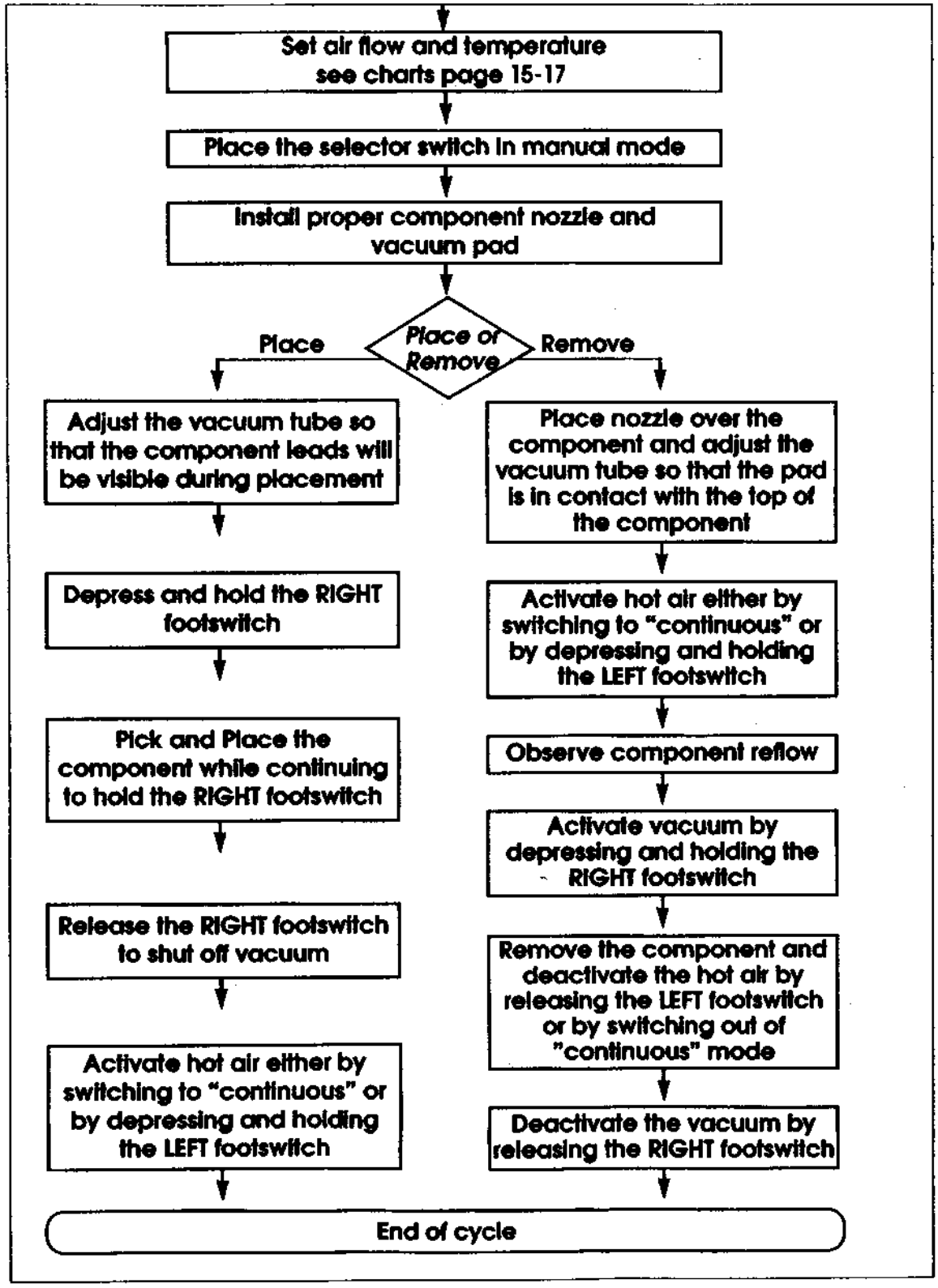
Deactivate hot air by releasing the footswitch or by switching out of "continuous" mode

↓

End of cycle

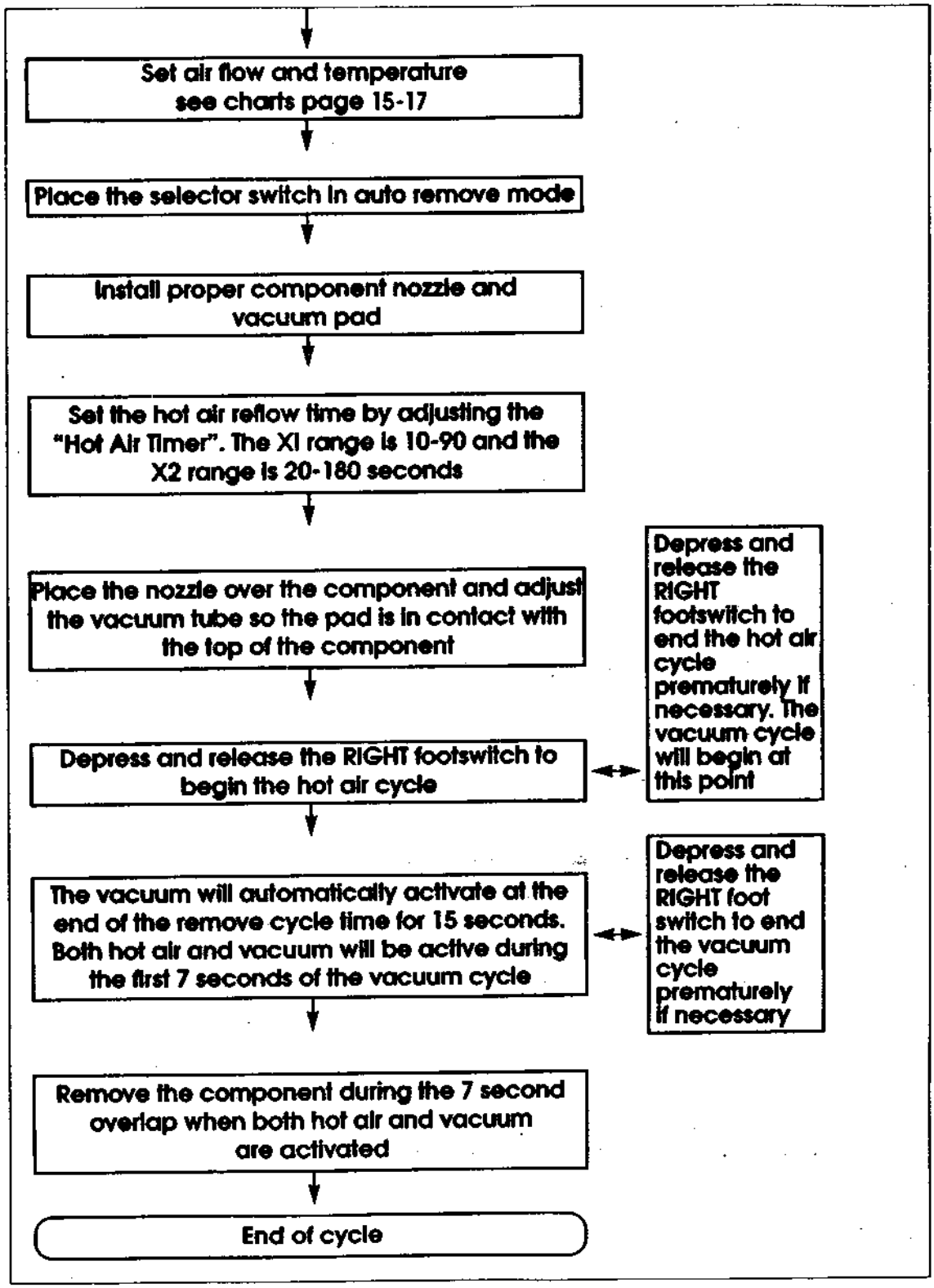
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FCR-2200/2250 Manual Mode Operation



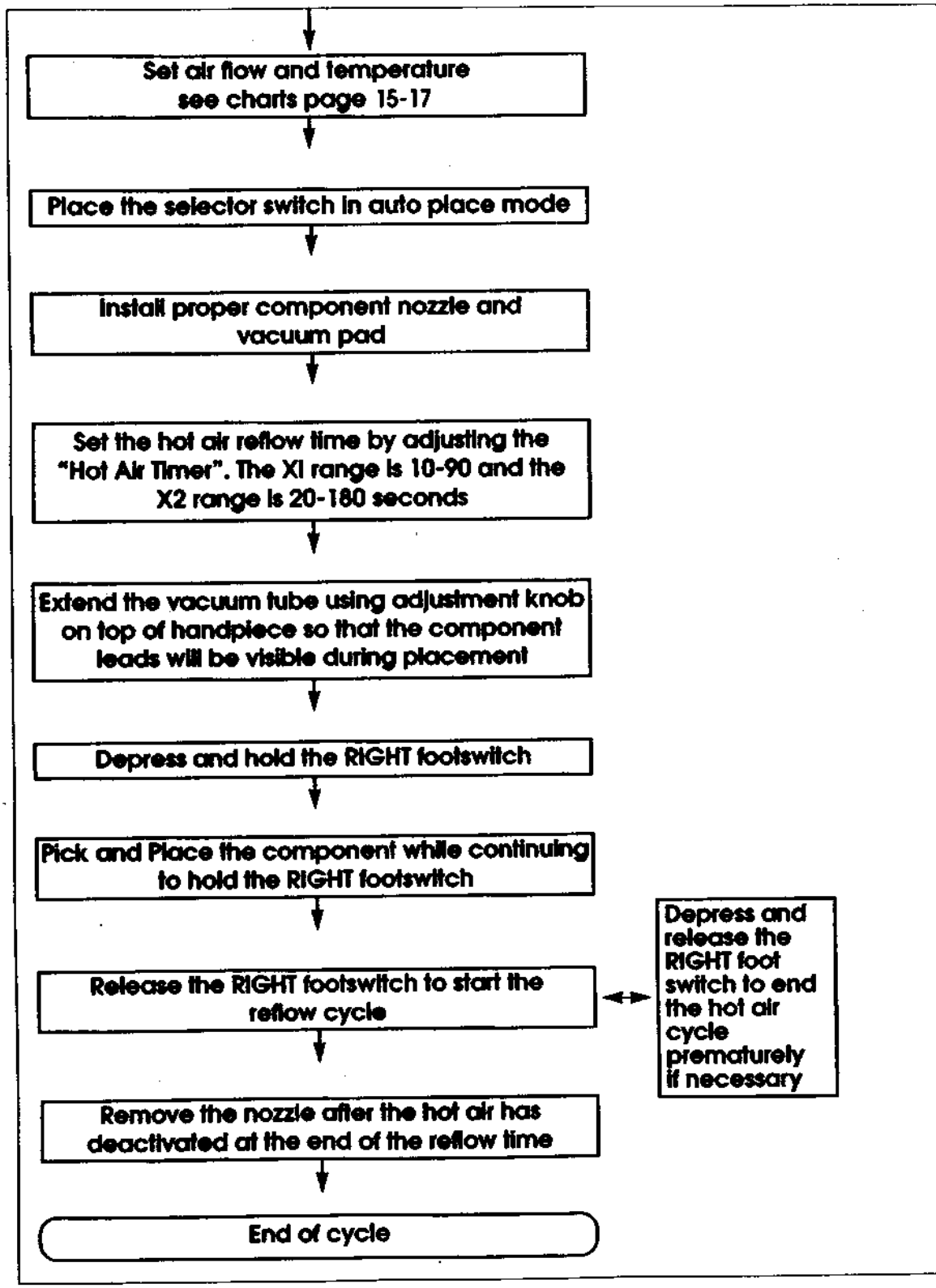
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FCR-2200/2250 Auto Remove Mode Operation



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FCR-2200/2250 Auto Place Operation



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OPTLONAL TOOL STAND / BOARD HOLDER

SMW-1100 SERIES / RBH-B SERIES

If you purchased the optional rework tool stand, or rework board holder, unpack as follows:

REWORK TOOL STAND (SMW-1100 SERIES)

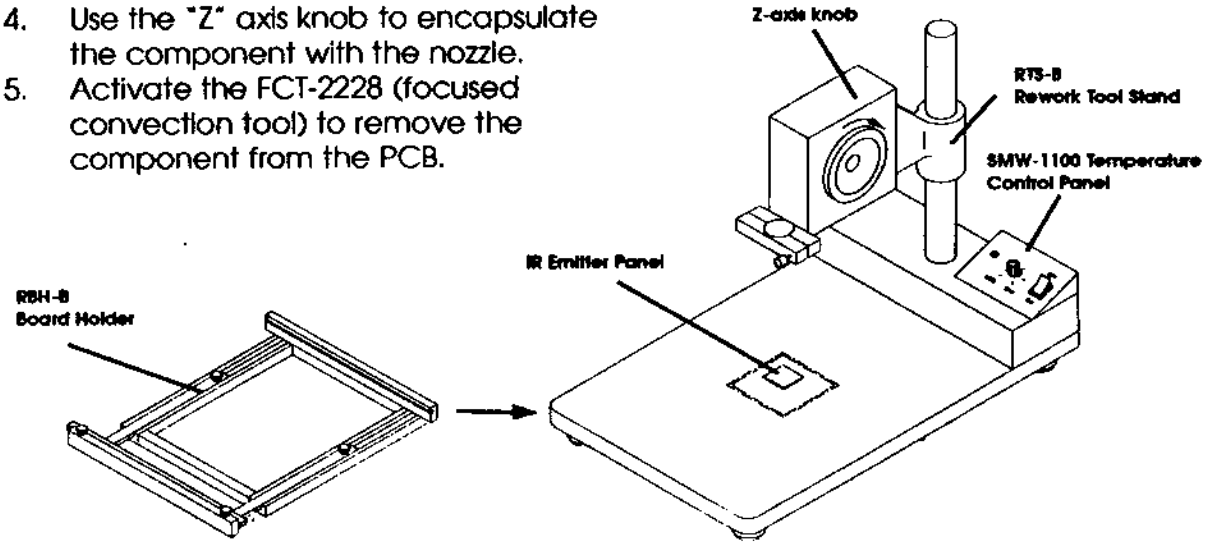
1. Remove the base assembly from the box and mount the four feet with the supplied hardware.
2. Mount the tool stand post.
3. Slide the tool holder onto the tool post.
4. You may now attach the FCR handpiece using a hinged tool clamp.
5. Connect to a correct AC outlet and set to desired temperature.
6. Load PCB into RBH-B, and slide RBH-B over I.R. PRE-HEATER to pre-heat desired board and component area. (Pre-Heat time and temperature depends on PCB configuration.)

REWORK BOARD HOLDER (RBH-B SERIES)

1. Remove the adjustable board holder from the box and place set on the base of the tool stand.

OPERATION: .

1. Position the FCR handpiece in the tool stand and verify the "Z" axis movement. You may adjust the stop on the tool stand post to ensure the nozzle will reach the component area to be reflowed.
2. Mount the PCB in the rework board holder.
3. Utilize the friction of the RBH to the base for the fine alignment.
4. Use the "Z" axis knob to encapsulate the component with the nozzle.
5. Activate the FCT-2228 (focused convection tool) to remove the component from the PCB.



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OPTIONAL TOOL STAND / BOARD HOLDER

RTS-A / RBH-A

If you purchased the optional rework tool stand, or rework board holder, unpack as follows:

REWORK TOOL STAND (RTS-A)

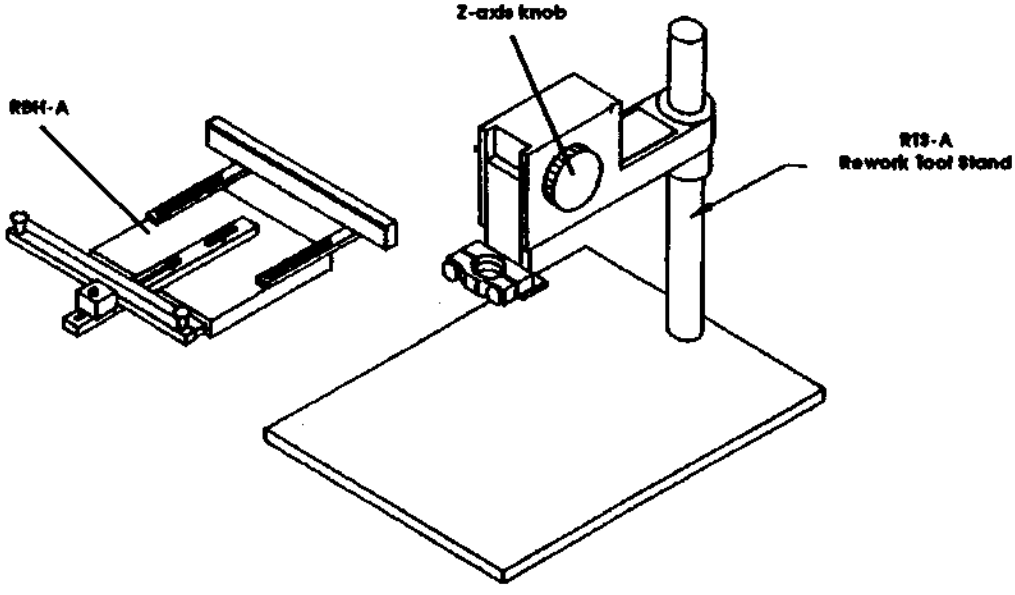
1. Remove the base assembly from the box and mount the four feet with the supplied hardware.
2. Mount the tool stand post.
3. Slide the tool holder onto the tool post.
4. You may now attach the FCR handpiece using hinged tool clamp.

REWORK BOARD HOLDER (RBH-A)

1. Remove the adjustable board holder from the box and place or set on the base of the tool stand.

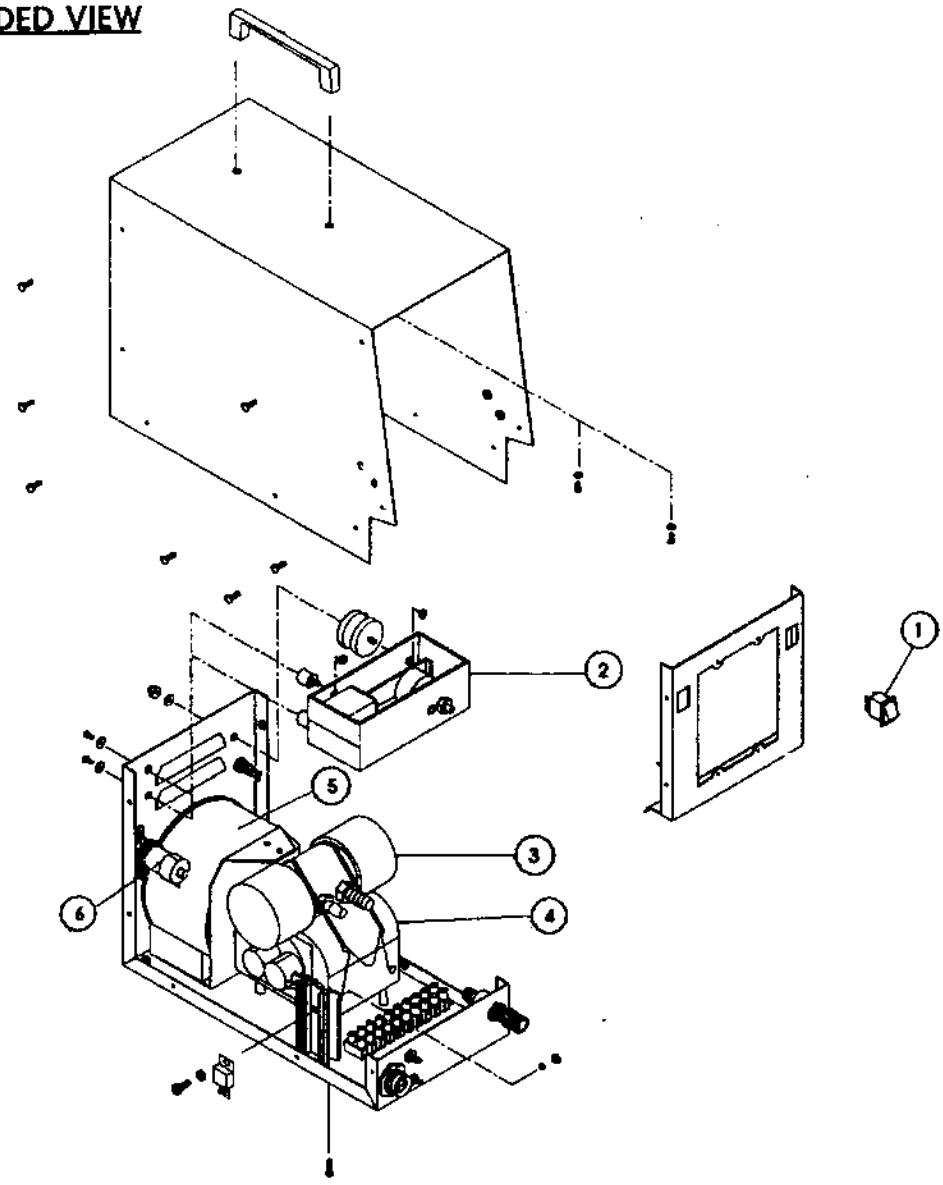
OPERATION:

1. Position the FCR handpiece in the tool stand and verify the "Z" axis movement. You may adjust the stop on the tool stand post to ensure the nozzle will reach the component area to be reflowed.
2. Mount the PCB in the rework board holder (RBH-A).
3. Utilize the friction of the RBH to the base for fine alignment.
4. Use the "Z" axis knob of the RTS-A to encapsulate the component with the nozzle.
5. Activate the Focused Convection Tool to remove the component from the PCB.



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FCR-2000 EXPLODED VIEW

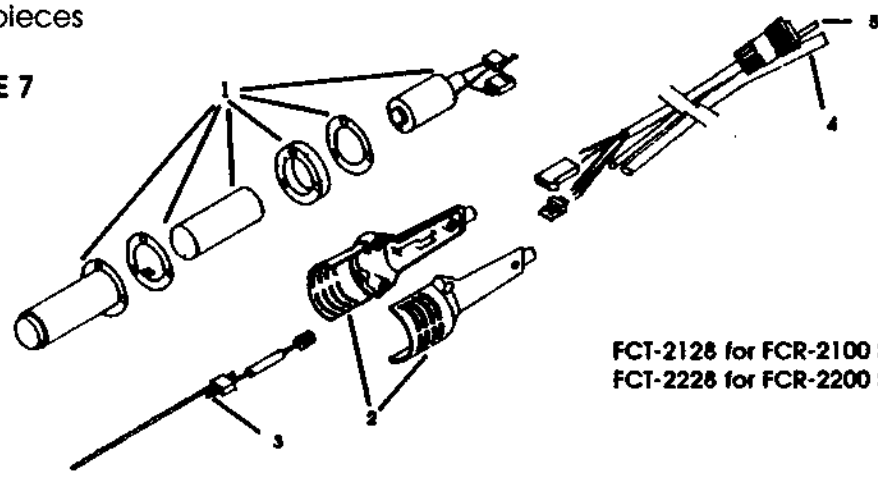


Item	Part No.	Description
1a	48301S	115V Switch
1b	16211S	230V Switch
2a	17969S	28VAC Vacuum Pump (115V)
2b	18961S	28VAC Vacuum Pump (230V)
3	17414S	FCR Buffer
4a	17448S	FCR Air Pump 115V
4b	17449S	FCR Air Pump 230V
5a	17474S	Transformer 115V
5b	17473S	Transformer 230V
6	17451S	3-Way Valve
7	17145S	In-Line Filter (Not Shown)
8a	17786S	115V Wire Harness (Not Shown)
8b	19164S	230V Wire Harness (Not Shown)

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FCT EXPLODED VIEWS
Handpieces

FIGURE 7



FCT-2128 for FCR-2100 Series
FCT-2228 for FCR-2200 Series

The FCT-2228 handpiece is factory sealed to prevent air leakage through the handpiece housing. Spare parts are available; however, any non-OK factory repairs will invalidate the warranty. Please consult OK service department before attempting any handplece repairs.

Spare Parts

Item	Part No.	Description
1	19870S	Heater Assembly, complete
2	17255S	Housing Assembly, complete
3	17205S	Vacuum Adjust Assembly, complete
4	16414S	Air Hose
5	17596S	Vacuum Hose

IV. APPLICATION NOTES

1. Temperature controlled forced air heating provides an efficient and gradual method that is widely recommended for reworking surface mount components. In developing a well controlled process the operator must consider that the components mass, substrate and solder will influence the rate of heating.

   Air flow, temperature setting and heat-source- to -component distance are variables which affect the results of heating. To establish a repeatable process the operator should initially work with the FCR's Manual Mode to determine the proper setting (air flow, temperature, distance and time). Thereafter, the Auto Place and Auto Remove Modes can be used with repeatable results.

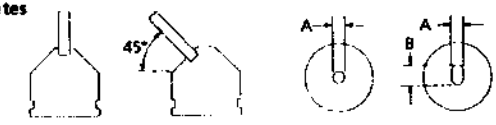
2. Temperature setting and airflow setting are two controllable variables that will vary the output temperature at the nozzle. It should be noted that increases or decreases in the airflow setting will have a much more dramatic effect on the output temperature compared with similar increases or decreases in temperature setting.

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V. SPARE PARTS

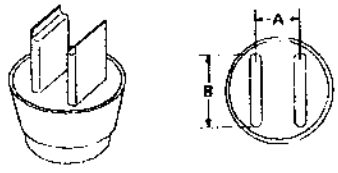
TIPS & ACCESSORIES - FOCUSED CONVECTION REWORK SYSTEM NOZZLES FOR FCT-2228 AND FCT-2128

Discretes



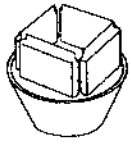
Part No.	Suggested Package	A in (mm)	B in (mm)
N-D25	Discretes	.100 (2.54)	-
N-D25A	Discretes	.100 (2.54)	-
N-D4515	Discretes	.059 (1.50)	.177 (4.50)
N-D4515A	Discretes	.059 (1.50)	.177 (4.50)

SO Packages

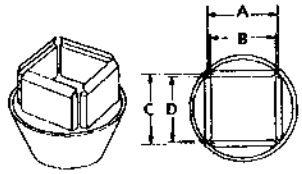


Part No.	Suggested Package	A in (mm)	B in (mm)
N-S8	SOIC 8	.267 (6.78)	.210 (5.33)
N-S16	SOIC 14, 16	.267 (6.78)	.400 (10.16)
N-SL16	SOL 14, 16	.416 (10.57)	.425 (10.80)
N-SL20	SOL 20, 20J	.416 (10.57)	.525 (13.34)
N-SL24	SOL 24, 24J	.416 (10.57)	.625 (15.88)
N-SL28	SOL 28	.416 (10.57)	.725 (18.42)
N-SOJ32	SOJ 32	.530 (13.5)	.812 (20.6)
N-SOJ40	SOJ 40	.530 (13.5)	1.00 (25.4)

PLCC Packages



Part No. PLCC Socket Nozzle
N-PS20
N-PS28
N-PS32
N-PS44
N-PS52
N-PS68
N-PS84

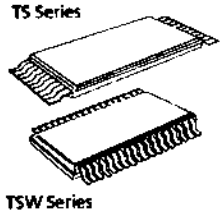


Part No. PLCC Comp.	Suggested Package	A in (mm)	B in (mm)	C in (mm)	D in (mm)
N-P20	PLCC-20	.469 (11.91)	.300 (7.62)	.469 (11.91)	.300 (7.62)
N-P28	PLCC-28	.569 (14.45)	.400 (10.16)	.569 (14.45)	.400 (10.16)
N-P32	PLCC 32	.664 (16.87)	.500 (12.70)	.564 (14.33)	.400 (10.16)
N-P44	PLCC-44	.769 (19.53)	.600 (15.24)	.769 (19.53)	.600 (15.24)
N-P52	PLCC-52	.870 (22.10)	.700 (17.78)	.870 (22.10)	.700 (17.78)
N-P68	PLCC-68	1.071 (27.20)	.900 (22.86)	1.071 (27.20)	.900 (22.86)
N-P84	PLCC-84	1.276 (32.41)	1.100 (27.94)	1.276 (32.41)	1.100 (27.94)

TSOP Packages



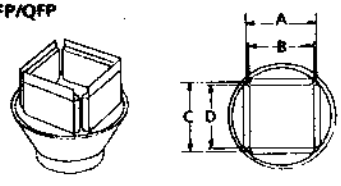
TS Series



TSW Series

Part No.	Suggested Package	A in (mm)	B in (mm)
N-TS24	20-24 PIN TSOP	.668 (16.97)	.280 (7.11)
N-TS32	28-32 PIN TSOP	.824 (20.93)	.360 (9.15)
N-TS40	40 PIN TSOP	.824 (20.93)	.425 (10.79)
N-TS48	48 PIN TSOP	.824 (20.93)	.525 (13.34)
N-TS56	56 PIN TSOP	.824 (20.93)	.625 (15.88)
N-TSW24	20-24 PIN TSOP	.400 (10.16)	.725 (18.42)
N-TSW44	24-28/40-44 TSOP	.500 (12.70)	.780 (19.80)
N-TSW32	32 PIN TSOP	.500 (12.70)	.880 (22.36)

BQFP/QFP



Part No.	Suggested Package	A in (mm)	B in (mm)	C in (mm)	D in (mm)
N-Q10	QFP-44	.526 (13.36)	.400 (10.16)	.526 (13.36)	.400 (10.16)
N-Q14	QFP-52,80	.682 (17.32)	.550 (13.97)	.682 (17.32)	.550 (13.97)
N-Q1420	QFP-64,80,100	.920 (23.37)	.790 (20.07)	.712 (18.08)	.550 (13.97)
N-Q28	QFP-120,128,144,160	1.230 (31.24)	1.100 (27.94)	1.230 (31.24)	1.100 (27.94)
N-BQ23	BQFP-100	.880 (22.35)	.650 (16.51)	.880 (22.35)	.650 (16.51)
N-BQ28	BQFP-132	1.086 (27.58)	.850 (21.59)	1.086 (27.58)	.850 (21.59)
N-BQ38	BQFP-196	1.486 (37.74)	1.240 (31.50)	1.486 (37.74)	1.240 (31.50)
N-Q2626	QFP-208	1.030 (26.3)	1.170 (29.8)	1.030 (26.3)	1.170 (29.8)
NQ4040	QFP-304	1.568 (40.0)	1.718 (43.8)	1.568 (40.0)	1.718 (43.8)

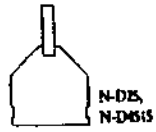
FCT Nozzle Kits FCR/MTR Series

Part No.	Description
NK-SOD 8	SOIC nozzle kit includes: N-D25A, N-D4515A, N-S8, N-S16, N-SL16, N-SL20, N-SL24, N-SL28
NK-PLCC 7	PLCC nozzle kit includes: N-P20, N-P28, N-P32, N-P44, N-P52, N-P68, N-P84
NK-QFP 7	QFP nozzle kit includes: N-Q10, N-Q14, N-Q1420, N-Q28, N-BQ23, N-BQ28, N-BQ38
NK-EZ 12	Mixed nozzle kit includes: N-D25A, N-P20, N-P28, N-P44, N-P52, N-P68, N-P84, N-Q1420, N-S8, N-S16, N-SL24, N-BQ23
	CALL OK INDUSTRIES FOR CUSTOM NOZZLES

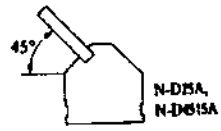
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Nozzles

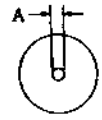
Discretes



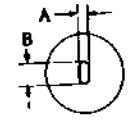
Straight



Angled



Round

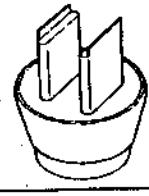


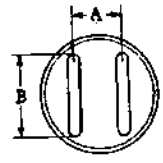
Oval

		A		B		Recommended Initial Settings	
Part No.	Package	In.	(mm)	In.	(mm)	Temperature	Air Flow
N-D25	Discretes	.100	(2.54)	–	–	1-3	2-5
N-D25A	Discretes	.100	(2.54)	–	–	1-3	2-5
N-D4515	Discretes	.059	(1.50)	.177	(4.50)	1-3	2-5
N-D4515A	Discretes	.059	(1.50)	.177	(4.50)	1-3	2-5

Please Note: For above listed discrete nozzles, do not exceed a temperature setting of 4 or an airflow of more than 5LPM.

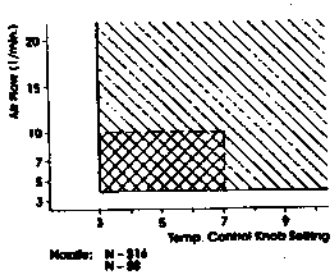
SO Packages

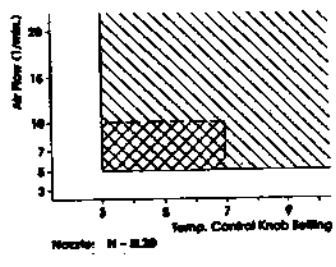


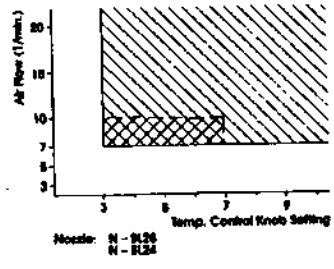


		A		B		Recommended Initial Setting	
Part No.	Package	In.	(mm)	In.	(mm)	Temperature	Air Flow
N-S8	SOIC 8	.267	(6.78)	.210	(5.33)	3 - 7	4 - 10
N-S16	SOIC 14, 16	.267	(6.78)	.400	(10.16)	3 - 7	4 - 10
N-SL16	SOL 14, 16	.416	(10.57)	.425	(10.80)	3 - 7	4 - 10
N-SL20	SOIC 20, 20J	.416	(10.57)	.525	(13.34)	3 - 7	4 - 10
N-SL24	SOIC 24, 24J	.416	(10.57)	.625	(15.88)	3 - 7	4 - 10
N-SL28	SOL 28	.416	(10.57)	.725	(18.42)	3 - 7	4 - 10

Air Flow/Temperature Reference Charts







Recommended settings (air flow vs. temp. setting)


Recommended Settings

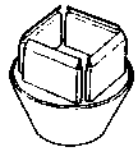

Settings for Heavy Boards
Note: Air Temp. May Exceed 800 F.

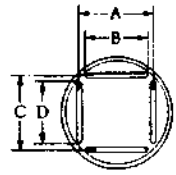
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VI.

Nozzles

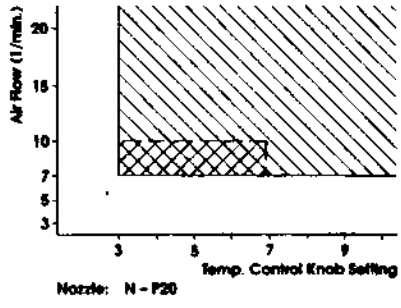
PLCC

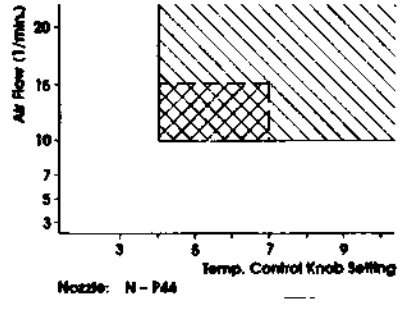


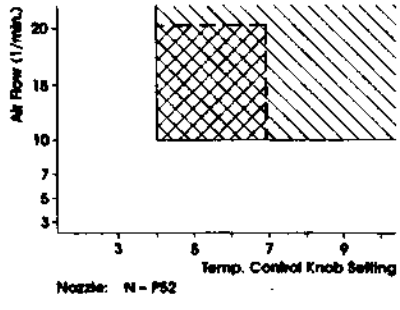


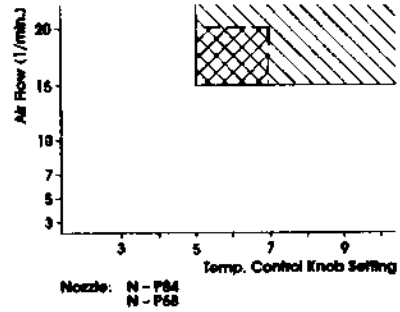
Part No.	Package	A in.	A (mm)	B in.	B (mm)	C in.	C (mm)	D in.	D (mm)	Recommended Initial Settings Temp.	Recommended Initial Settings Air Flow
N-P20	PLCC-20	.469	(11.91)	.300	(7.62)	.469	(11.91)	.300	(7.62)	3 - 7	7 - 10
N-P28	PLCC-28	.569	(14.45)	.400	(10.16)	.569	(14.45)	.400	(10.16)	3 - 7	7 - 10
N-P32	PLCC-32	.664	(16.87)	.500	(10.80)	.564	(14.33)	.400	(10.16)	4 - 7	10 - 20
N-P44	PLCC-44	.769	(19.53)	.600	(13.34)	.769	(19.53)	.600	(15.24)	4 - 7	10 -15
N-P52	PLCC-52	.870	(22.10)	.700	(15.00)	.870	(22.10)	.700	(17.70)	4 - 7	10 -20
N-P68	PLCC-68	1.071	(27.20)	.900	(22.86)	1.071	(27.20)	.900	(22.86)	5 - 7	15 - 20
N-P84	PLCC-84	1.276	(32.41)	1.100	(27.94)	1.276	(32.41)	1.100	(27.94)	5 - 7	15 - 20

Air Flow/Temperature Reference Charts









Recommended settings (air flow vs. temp. setting)

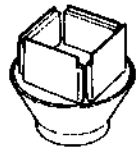

Recommended Settings

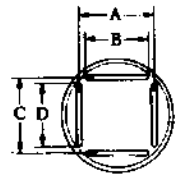

Settings for Heavy Boards
Note: Air Temp. May Exceed 800 F.

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Nozzles

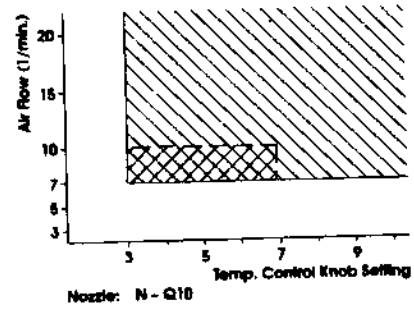
BQFP/QFP

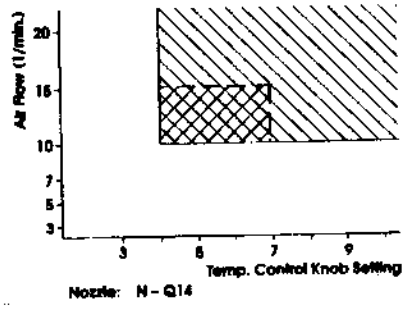


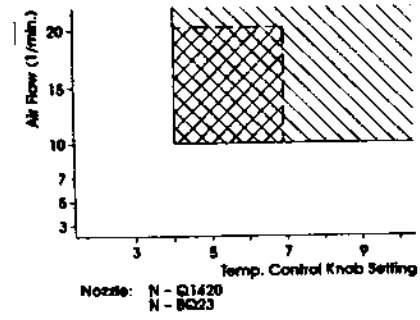


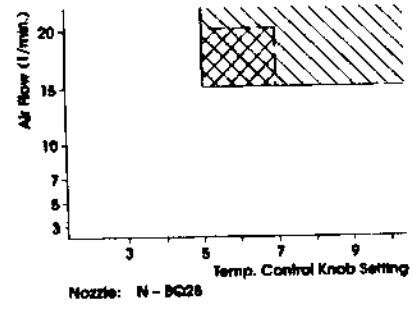
Part No.	Suggested Package	A in	A (mm)	B in	B (mm)	C in	C (mm)	D in	D (mm)	Recommended Initial Settings Temp	Air Flow
N-Q10	QFP-44	.526	(13.36)	.400	(10.16)	.526	(13.36)	.400	(10.16)	4-7	10-15
N-Q14	QFP-52,80	.682	(17.32)	.550	(13.97)	.682	(17.32)	.550	(13.97)	4-7	10-15
N-Q1420	QFP-64,80,100	.920	(23.37)	.790	(20.07)	.712	(18.08)	.550	(13.97)	4-7	10-20
N-Q28	QFP-120,128,144,160	1.230	(31.24)	1.100	(27.94)	1.230	(31.24)	1.100	(27.94)	4-7	10-20
N-BQ23	BQFP-100	.880	(22.35)	.650	(16.51)	.880	(22.35)	.650	(16.51)	4-7	10-20
N-BQ28	BQFP-132	1.086	(27.58)	.850	(21.59)	1.086	(27.58)	.850	(21.59)	4-7	10-20
N-BQ38	BQFP-196	1.486	(37.74)	1.240	(31.50)	1.486	(37.74)	1.240	(31.50)	4-7	10-20
N-Q2626	QFP-208	1.030	(26.3)	1.170	(29.8)	1.030	(26.3)	1.170	(29.8)	5-7	15-20
NQ4040	QFP-304	1.568	(40.0)	1.718	(43.8)	1.568	(40.0)	1.718	(43.8)	5-7	15-20

Air Flow/Temperature Reference Charts









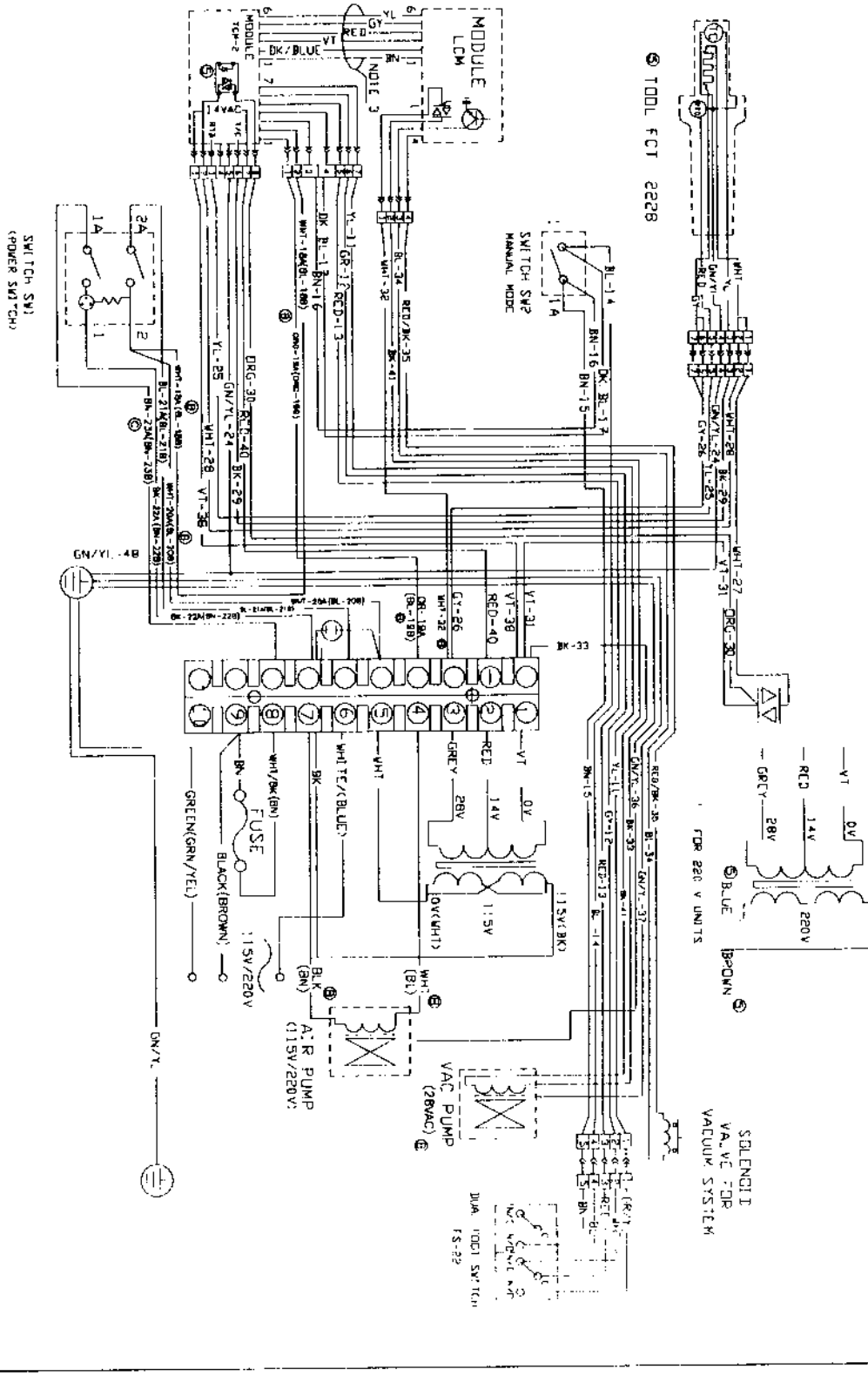
Recommended settings (air flow vs, temp. setting)

Recommened Settings

Settings for Heavy Boards
Note: Air Temp. May Exceed 800 F.

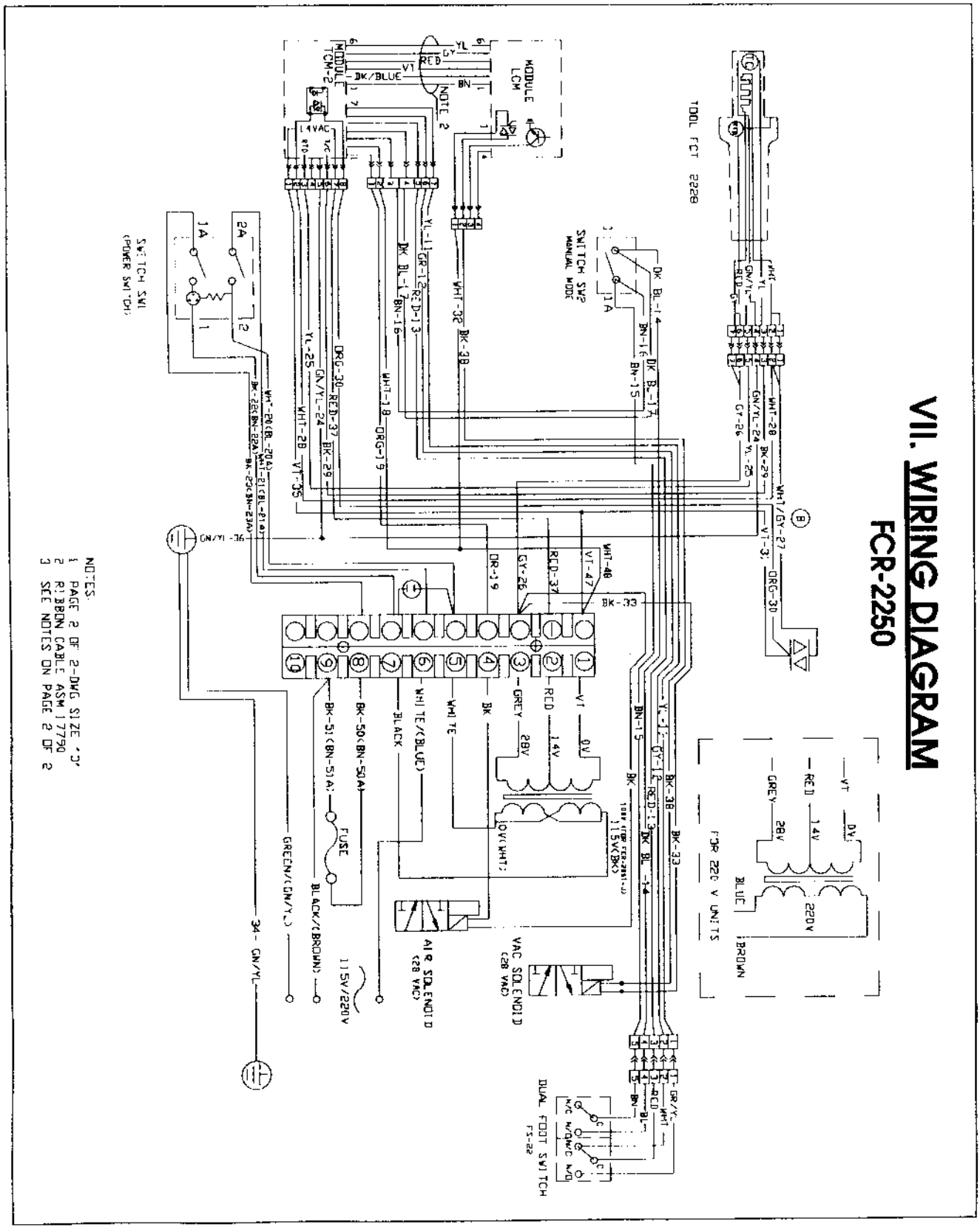
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VII. WIRING DIAGRAM
FCR-2200/2100



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VII. WIRING DIAGRAM
FCR-2250



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VIII. WARRANTY AND SERVICE

WARRANTY POLICY

The FCR-2000 series Forced Convection Rework Systems are under warranty for 12 months from the purchase date for all parts and labor excluding nozzles. FCT vacuum tubes and heating elements.

Heating elements are under warranty for 90 days from date of purchase.

SERVICE DEPARTMENT

OK Industries offers immediate Hot Line service. Please call:

914-969-6800
FAX 914-969-6650
ASK FOR THE SERVICE DEPARTMENT

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