

QX2 Convection Rework System

Convection Rework Made Easy

The QX2 Convection Rework System combines sophisticated process control and wide-ranging capabilities with a user-friendly, ergonomic design to speed and simplify the rework process. With its constant temperature and variable power, the QX2 Convection Rework System minimizes the risk of thermal damage, providing a safe environment for delicate components and substrates.

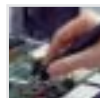
In comparison with other convection systems, the simplicity and power of this machine is clear. Simplified push-button controls and advanced automation reduce the need for extended operator training while greatly reducing the likelihood of human error. Older convection systems are difficult to operate and require extensive user training. This is not the case with the QX2 Convection Rework System. Even its initial set-up is a fast and easy process, requiring no special tools.

Please note: The QX2 Convection Rework System is shown below alongside a Metcal BVX-100 Fume Extraction System which is available separately.



Precise Nozzles Increase Flexibility

A wide range of focused convection nozzles is available for the QX2 Convection Rework System. These direct heat precisely where it is needed. With Metcal's quick-release system, these nozzles can be changed in seconds, for unsurpassed speed and flexibility.



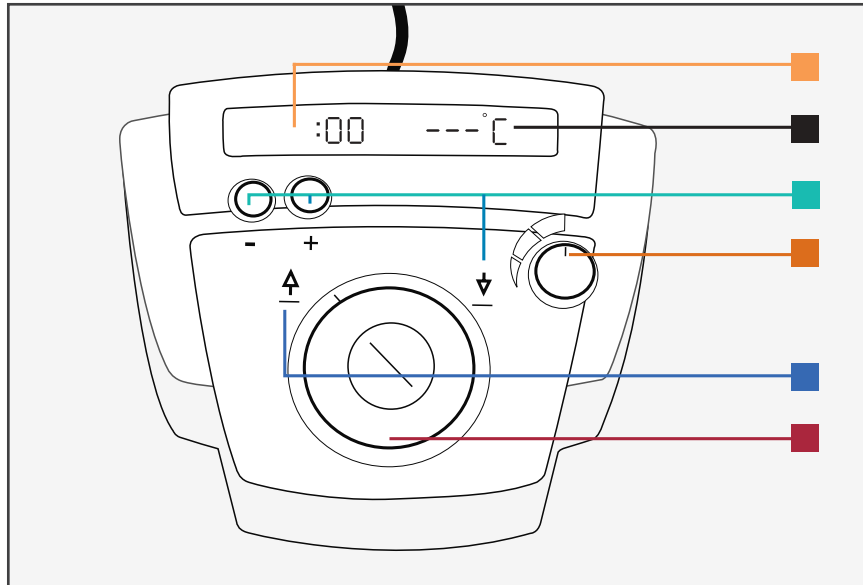
Streamlined Operation

The QX2 Convection Rework System's vacuum pick-up gently removes components after reflow. The time of each removal cycle is stored and displayed as a guide to help operators quickly establish a minimum time for component placement. The system then automatically turns off the heat to minimize the risk of thermal shock to adjacent components or to the PCB itself. An integrated under-board pre-heater is also available to prevent the warping of large boards during rework.

Operators can fine-tune the power by adjusting the airflow rate, but to minimize thermal stress, the system automatically sustains the heater exhaust temperature while maintaining a consistently low set point temperature. To accommodate any process change, including the use of new soldering alloys, the manufacturing engineer can easily reprogram this set temperature.

Advanced Process Control

The system's digital controller clearly displays critical parameters during operation while its automated functions reduce process variability. Its expanded level of process control provides superior quality of operation and final product, with less scrap and greater throughput.



Remote Controller Functions

- Timer:** By counting up during removal and down during attachment, the timer removes subjective guesswork from the rework process.

- Temperature Display:** Displays the temperature of the heater exhaust or the temperature measured by an auxiliary thermocouple in either °F or °C. The heater exhaust temperature is preset at 662°F (350°C) and may be reset by the process engineer to anywhere between 482°F (250°C) and 842°F (450°C) by entering an unlock code.

- Attach Mode:** This mode reflows a new component to the PCB. By adjusting the time stored in Remove mode with the + - keys, you can ensure an appropriate reflow time, which may be adjusted on the fly if desired.

- Airflow Selector:** The airflow selector determines the rate at which thermal energy is transferred to the component.

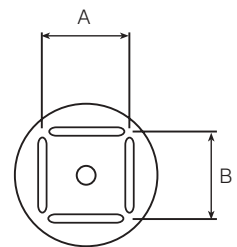
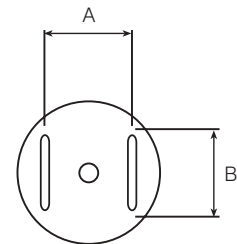
- Remove Mode:** This mode activates the vacuum pick-up, which applies a gentle upward force to the component. When component lift off is sensed, the heater is automatically turned off.

- Start/Stop Button:** Pressing the Start/Stop button initiates or ends the Remove or Attach cycle. In Remove mode, stopping the cycle also shuts off the vacuum, to release components after lift off.

QX2 Convection Rework Nozzles

Metcal has a comprehensive range of nozzles for the QX2 Convection Rework System. For non-standard components we offer a custom nozzle program. Please contact your local Metcal representative for more information about custom nozzles.

STANDARD NOZZLE RANGE



DIMENSIONS IN INCHES (mm)

Part No.	Component Types	A	B
NZ-D1113	Nozzle Dual	0.43 (11)	0.51 (13)
NZ-D1116	Nozzle Dual (for SOL 28)	0.43 (11)	0.63 (16)
NZ-D1420	Nozzle Dual	0.55 (14)	0.79 (20)
NZ-D2109	Nozzle Dual	0.35 (09)	0.83 (21)
NZ-D2113	Nozzle Dual	0.51 (13)	0.83 (21)
NZ-Q11	Nozzle Quad (for PLCC 20)	0.43 (11)	0.43 (11)
NZ-Q13	Nozzle Quad (for PLCC 28)	0.51 (13)	0.51 (13)
NZ-Q1415	Nozzle Quad	0.55 (14)	0.60 (15)
NZ-Q17	Nozzle Quad	0.67 (17)	0.67 (17)
NZ-Q18	Nozzle Quad (for QFP 80)	0.71 (18)	0.71 (18)
NZ-Q19	Nozzle Quad (for PLCC 44)	0.75 (19)	0.75 (19)
NZ-Q1925	Nozzle Quad (for QFP 100)	0.75 (19)	0.98 (25)
NZ-Q22	Nozzle Quad	0.87 (22)	0.87 (22)
NZ-Q23	Nozzle Quad	0.91 (23)	0.91 (23)
NZ-Q27	Nozzle Quad (for PLCC 68)	1.06 (27)	1.06 (27)
NZ-Q28	Nozzle Quad	1.10 (28)	1.10 (28)
NZ-Q32	Nozzle Quad (for PLCC 84, QFP 208)	1.26 (32)	1.26 (32)
NZ-Q33	Nozzle Quad (for QFP 120/128/144/160)	1.30 (33)	1.30 (33)
NZ-Q35	Nozzle Quad	1.38 (35)	1.38 (35)
NZ-Q38	Nozzle Quad	1.50 (38)	1.50 (38)
NZ-Q43	Nozzle Quad	1.70 (43)	1.70 (43)

Box Reflow Nozzles

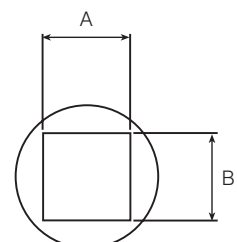
In addition to our broad range of standard nozzles, we also offer a range of box reflow nozzles designed for the removal of shielding cans, connectors and other square components.



BOX REFLOW NOZZLES

INTERNAL DIMENSIONS IN INCHES (mm)

Part No.	Component Types	A	B
NZ-B23	Nozzle Box	0.91 (23)	0.91 (23)
NZ-B27	Nozzle Box	1.06 (27)	1.06 (27)
NZ-B33	Nozzle Box	1.30 (33)	1.30 (33)
NZ-B35	Nozzle Box	1.38 (35)	1.38 (35)
NZ-B40	Nozzle Box	1.57 (40)	1.57 (40)
NZ-B44	Nozzle Box	1.73 (44)	1.73 (44)



QX2 Convection Rework System

TECHNICAL SPECIFICATIONS

	QX2-S-11	QX2-S-21
Input Voltage	90-132 VAC, 50/60 Hz	220-260 VAC, 50/60 Hz
Convection System		
Heater	550 W	550 W
Rated Current	5 Amps	2.5 Amps
Airflow	20-50 l/min	20-50 l/min
Source Temperature (Default Set Point)	662°F	350°C
Source Temperature Range	482°F - 842°F	250°C - 450°C
Pre-Heater		
Heater	950 W	950 W
Rated Current	8.5 Amps	4.5 Amps
Heating Surface	6" x 6"	152mm x 152mm
Board Temperature Range	194°F - 248°F	90°C - 120°C
Board Holder		
Minimum Board Size	2" x 2"	50mm x 50mm
Maximum Board Size	14" x 18"	360mm x 460mm
Weights		
Convection Rework System	18 lb	8.2 kg
Board Holder	5.5 lb	2.5 kg
Pre-Heater	6.4 lb	2.9 kg
Outer Dimensions (W x D x H)		
Convection Rework System (Operating)	11.5" x 20.5" x 14.2"	292mm x 521mm x 361mm
(Stored)	11.5" x 16.8" x 21.0"	292mm x 427mm x 533mm
Board Holder	20.5" x 15.0" x 5.0"	521mm x 381mm x 127mm
Pre-Heater	8.2" x 15.5" x 2.5"	208mm x 394mm x 64mm

FEATURES

Vacuum Operator	Self-contained Moveable controller with: <ul style="list-style-type: none"> • Start/Stop button • Airflow control • Time control • LCD display • Remove/attach control
Component Removal	Automatic component lift off and heater shut off
Component Attachment	Manual, timer controlled
Nozzle Attachment/Removal	Push on, quick-release
Other	Auxiliary thermocouple port for component temperature monitoring

SYSTEMS

QX2-S-11
115V Convection Rework System

QX2-SBH-11
115V Convection Rework System
with Board Holder

QX2-SBP-11
115V Convection Rework System
with Board Holder & Pre-Heater

QX2-S-21
230V Convection Rework System*

QX2-SBH-21
230V Convection Rework System
with Board Holder*

QX2-SBP-21
230V Convection Rework System
with Board Holder & Pre-Heater*

115V CONVECTION REWORK SYSTEM INCLUDES:

QX2-P-11	Power Supply, 115V
QX2-CT	QX2 Controller
AC-WT	Work Tray
AC-RP	Nozzle Removal Pad
AC-CC1	QX2 Controller Cable
AC-CC2	Pre-Heater Control Cable
AC-VC	Vacuum Cup Kit

230V CONVECTION REWORK SYSTEM INCLUDES:

QX2-P-21	Power Supply 230V*
QX2-CT	QX2 Controller
AC-WT	Work Tray
AC-RP	Nozzle Removal Pad
AC-CC1	QX2 Controller Cable
AC-CC2	Pre-Heater Control Cable
AC-VC	Vacuum Cup Kit

ACCESSORIES

AC-BH	Board Holder
AC-BP-11	Board Holder/Pre-Heater Kit 115V
AC-BP-21	Board Holder/Pre-Heater Kit 230V*
AC-PH-11	Pre-Heater 115V
AC-PH-21	Pre-Heater 230V*
AC-BS	Board Support

* 230V systems do not include power cords