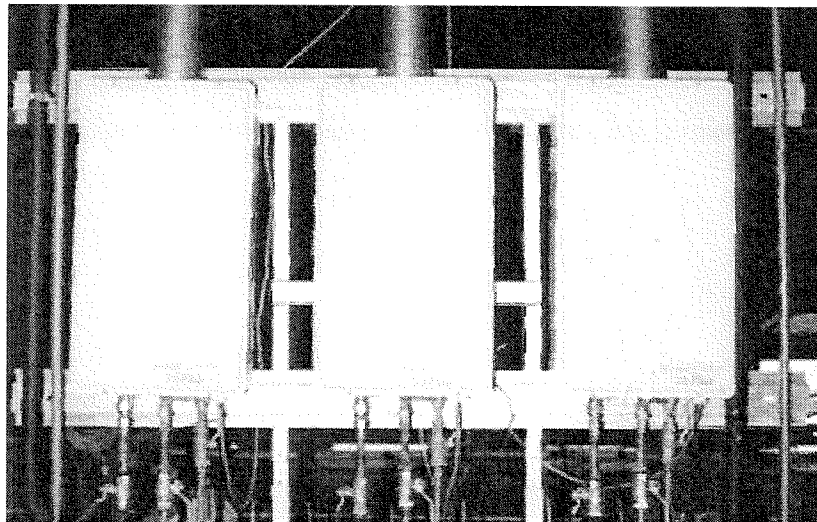


Installation Instructions  
for the  
**Manifold Electronic  
Control System**

MSA-M

MSA-S

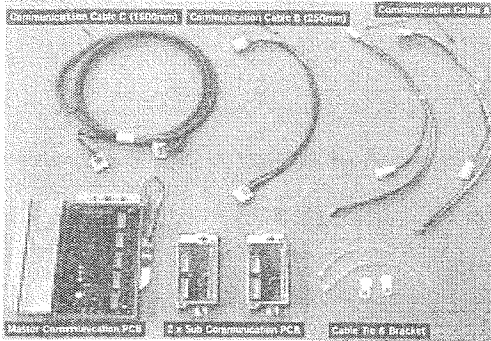
**Rinnai** Continuum 2402



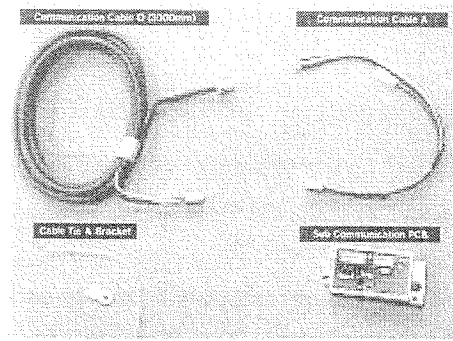
Note:

- A maximum of 5 Continuum units can be manifolded together using 1 MSA-M controller.
- For use with Rinnai Continuum 2402.

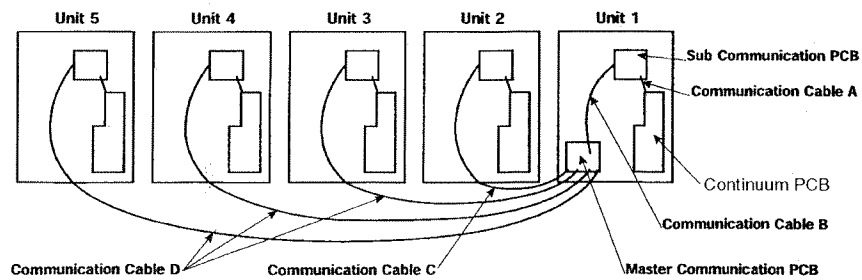
## Manifold Electronic Control System Pack A Parts List - Units 1 and 2 (MSA-M)



## Manifold Electronic Control System Pack B Parts List - Units 3, 4, and 5 (MSA-S)



### TYPICAL INSTALLATION

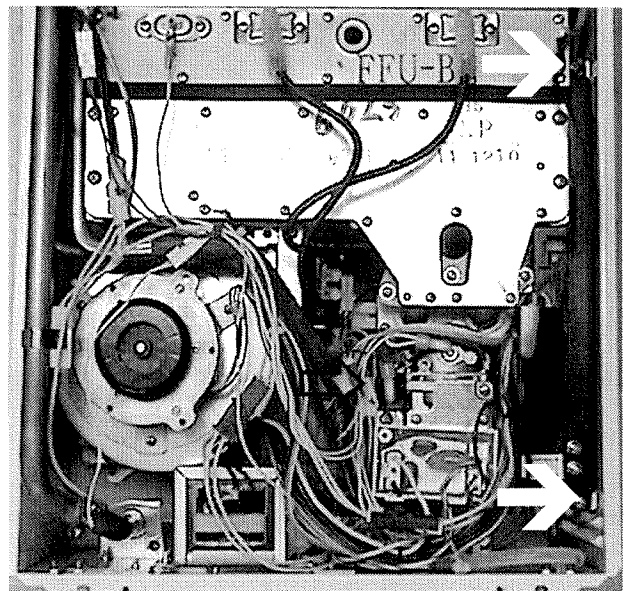


**Note:** The front cover panels of each Continuum 2402 water heater must be removed prior to completing the following installation procedures.

**Warning:** Disconnect all Continuum 2402 water heaters from their power source before carrying out the following installation procedures.

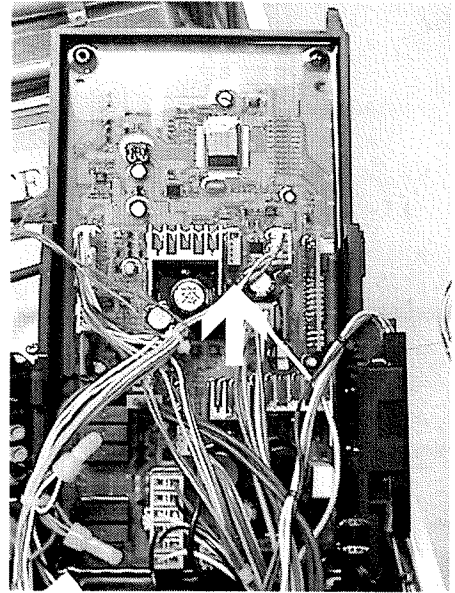
### Installation Procedure Unit 1 (Master)

- 1) Remove two PCB mounting screws and carefully remove PCB from unit.

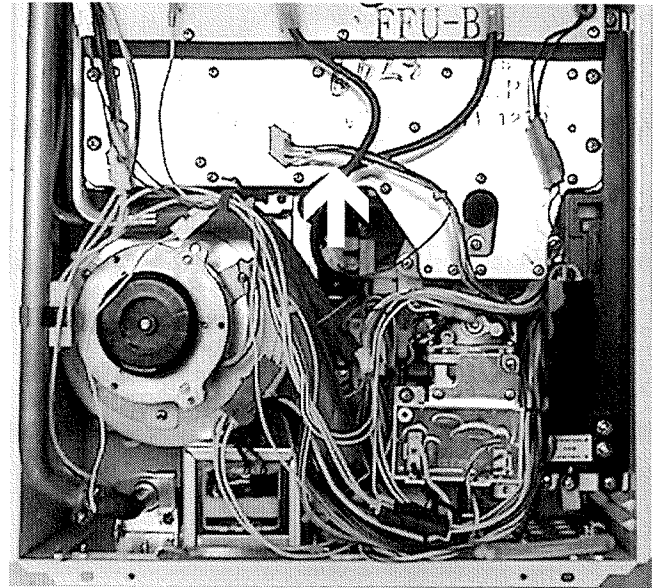


2) Locate empty socket on Continuum PCB (shown in diagram).

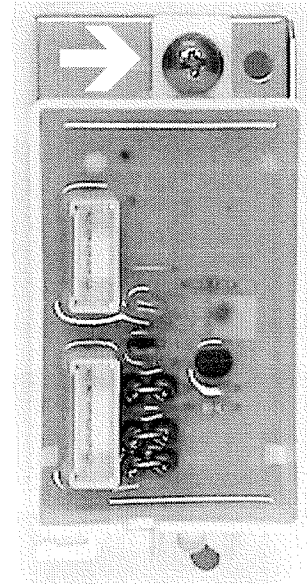
3) Connect Communication Cable A (5 wire) plug into empty socket on Continuum PCB (not shown in diagram).



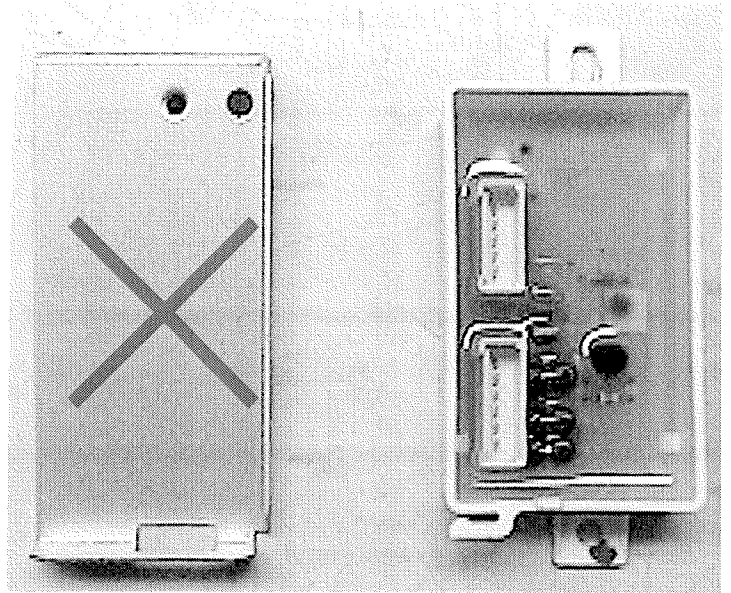
4) Carefully slide Continuum PCB back into position and secure with 2 screws. **Make sure Communication Cable A is accessible as shown.**



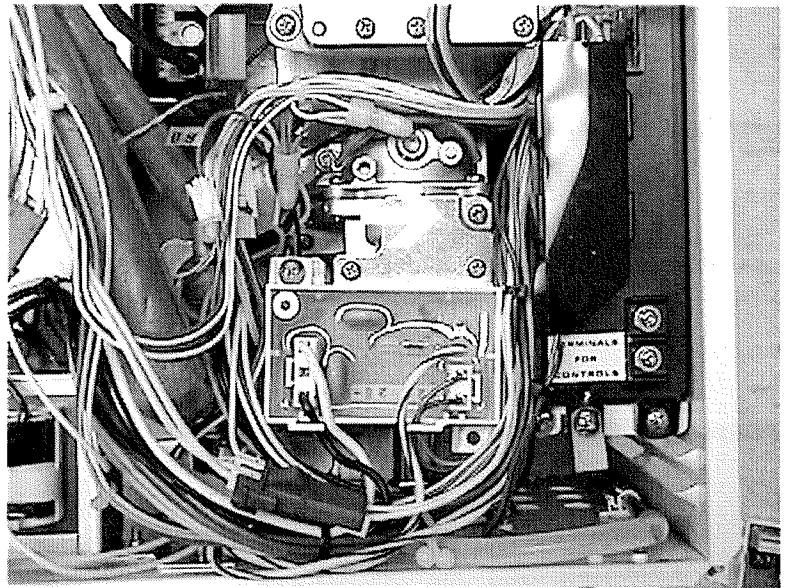
5) Remove screw from Sub Communication PCB.



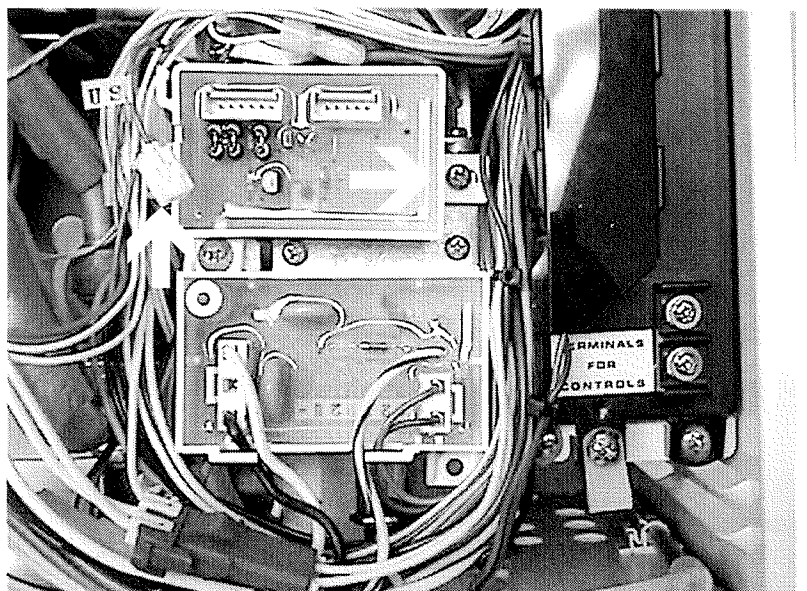
- 6) Discard bracket and screw.



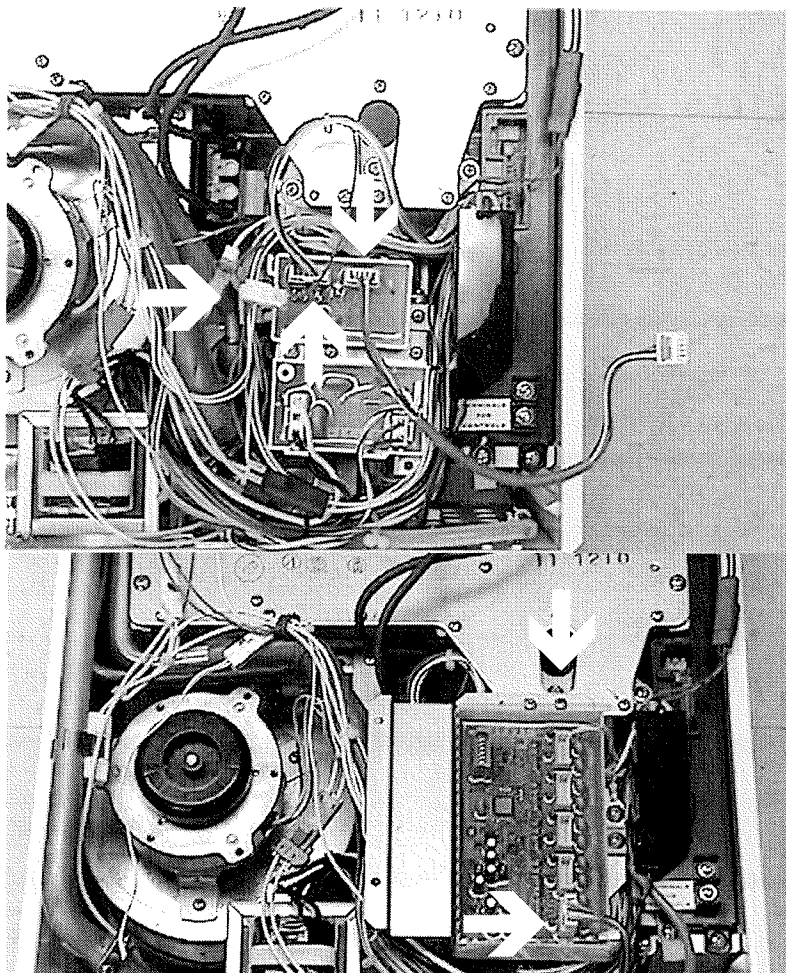
- 7) Remove mounting screw for Sub Communication PCB as shown in diagram.



- 8) Mount Sub Communication PCB as shown in diagram. **Make sure that the connector marked "US" (located in the middle of the Continuum wiring loom) is accessible as shown in the diagram.**



- 9) Connect Communication Cable A (6 pin) plug into 6 pin socket on Sub Communication PCB.
- 10) Connect Communication Cable A (2 pin) plug into 2 pin connector marked "US" (located in the middle of the Continuum wiring loom).
- 11) Connect Communication Cable B (4 wire) plug into 5 pin socket on Sub Communication PCB. **Route Communication Cable B to the right of the unit as shown in the diagram.**
- 12) Remove 1 screw from the lower right hand side of burner assembly as shown in diagram.
- 13) Using screw from above, attach Master Communication PCB to burner assembly.
- 14) Connect other end of Communication Cable B (5 pin) plug into 5 pin socket # 1 on Master Communication PCB.



### End of Installation Procedure for Unit 1(Master)

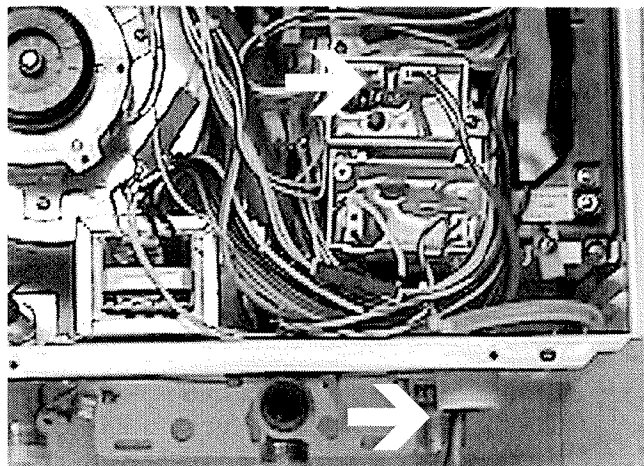
### Installation Procedure for Unit 2, 3, 4, and 5 (Slave Units)

**Note:** The front cover panels of all Continuum 2402 Units should already be removed. If they are not, they must be removed prior to completing the following installation procedures.

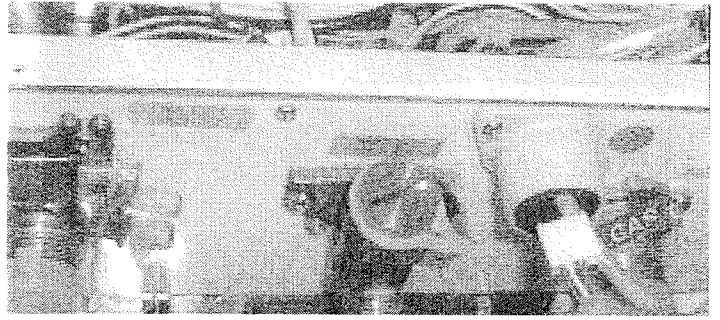
**Warning:** Disconnect all Continuum 2402 water heaters from their power source before carrying out the following installation procedures.

The following installation procedures must be completed for each Continuum slave unit.

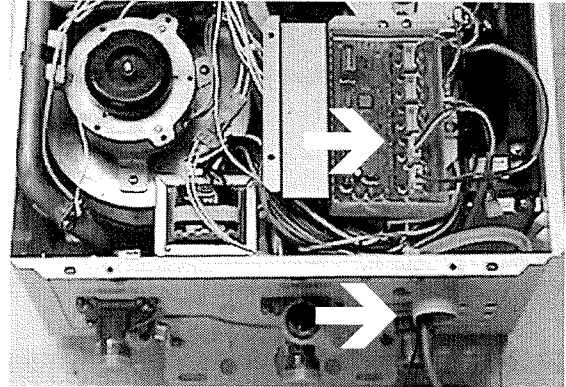
- 1) Follow steps 1 through 10 of the procedure for Unit 1 (Master) to install Sub Communication PCB on Units 2, 3, 4, and 5 (as appropriate).
- 2) Connect the one end of Communication Cable C (5 pin) plug into 5 pin socket on Sub Communication PCB as shown.



- 3) Run Communication Cable C neatly behind pipework and feed end through cable entry in the bottom panel of Continuum Unit 1 as shown.

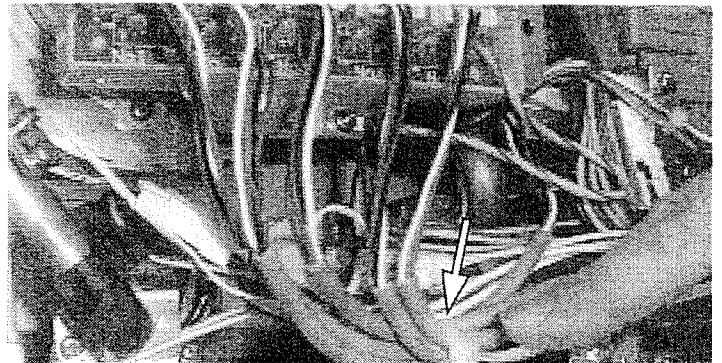


- 4) Connect end of Communication Cable C to socket No. 2, 3, 4, or 5 on the Master Communication PCB as shown. (Use socket No. 2 for Slave Unit No. 2, Socket No. 3 for Slave Unit No. 3, etc.)



**COMPLETE SLAVE UNIT INSTALLATION STEPS 1-4 FOR EACH CONTINUUM SLAVE UNIT BEFORE GOING ON TO STEP 5.**

- 5) Secure Communication Cables in Continuum Unit 1 with cable tie as shown.
- 6) Pull excess cable back into Continuum Units 2, 3, 4, and 5 (as appropriate) and secure with the cable tie.
- 7) Secure the front cover panels of all Continuum 2402 Units with (4) screws and then restore power to the units.



**End of Installation Procedure for Unit 2(Slave)**

## System Operation

- The MSA-M Master Communication PCB has five connection points to enable up to 5 manifolded units to be used together.
- There is an indicator light at each connection point to show that a unit is connected.
- The indicator light shows the current system settings. A continuous light above a connection point shows that this unit is ready and will be one of the first units activated depending on the flow demand.
- A flashing light at intervals of 1.5 seconds above a connection point indicates that this unit is on standby and will activate when and if required.
- The control panel randomly selects 3 units at the ready stage and 2 on standby. The system rotates the ready and standby units after 10 operations.
- The Master Communication PCB calculates the current water flow demand. Flow demands over 2.6 gpm will activate all three ready units for a period of 10 seconds. At this time adjustments are made in relation to flow demand.
- At maximum flow Unit 4 will activate after the initial 10second period, for a period of 10 seconds after which time Unit 5 will activate.
- Gas valve modulation of each unit is performed equally via the Master Communication PCB so that no unit is working harder than the next unit. This calculation is performed in relation to water flow.

## Dipswitch Settings

Dipswitch settings on unit 1 with the Master Communication PCB determine the output temperature of all units irrespective of the individual unit dipswitch settings. For further information on dipswitch settings contact the Rinnai Helpline.

## Temperature Control Panels

Up to 3 Temperature Control Panels can be connected to the manifolded system. Kitchen controller, Bathroom controller and Bathroom sub-controller (MC-45, BC-45 and BSC-45) will provide temperature control to all units.

The control panels must be connected to Unit 1 with the Master Communication PCB installed. Temperature adjustments made on the Temperature Control Panels will be communicated to each Continuum resulting in accurate temperature control of each unit.

**Note: Temperature Control Panels cannot be used with supply and return systems.**