Installation Instructions

for the

Manifold Electronic Control System

MSA-2M
MSA-2S

Rinnai

NOTE:

- A maximum of 5 hot water units can be manifolded together using 1 MSA-2A controller pack and 3 MSA-2S controller packs.
- For use with Rinnai REU-V2632WC / REU-V2632FFUC (Commerical Use Only)

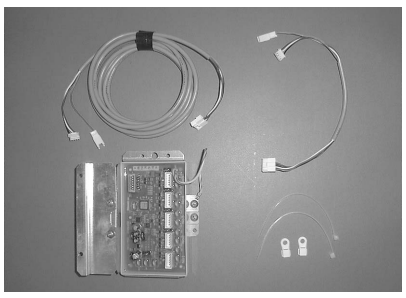
BU195-1847

Manifold Electronic Control System Components

MSA-2M - Pack A
Manifold Electronic Control System
(For wiring Units 1 and 2)

MSA-2M Parts List

Part	Qty
Master Communication PCB	1
Communication Cable A (450mm)	1
Communication Cable B (3000mm)	1
Cable tie bracket	2
Cable tie	2
Instruction sheet	1

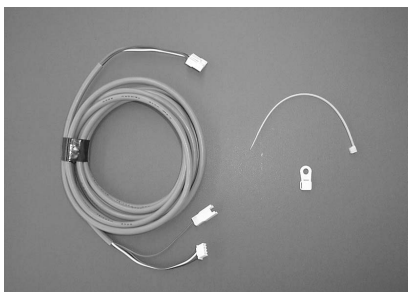


MSA-2S - Pack B
Manifold Electronic Control System
(For wiring Units 3, 4, and 5)

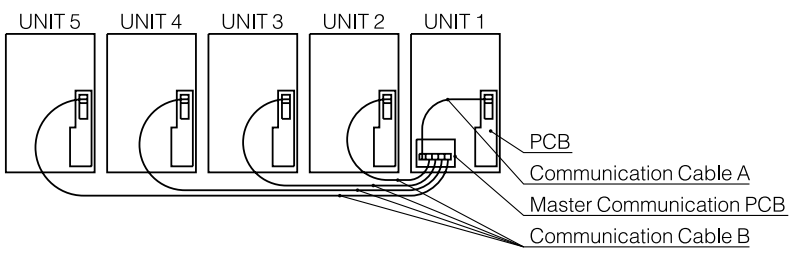
MSA-2S Parts List

Part	Qty
Communication Cable B (3000mm)	1
Cable tie bracket	1
Cable tie	1

Note: 1 MSA-2S is required for each water heater – Units 3, 4, & 5



TYPICAL INSTALLATION



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

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

Installation Procedure Unit 1

1) Remove (2) screws from sheet metal bracket on top of Master Communication PCB.

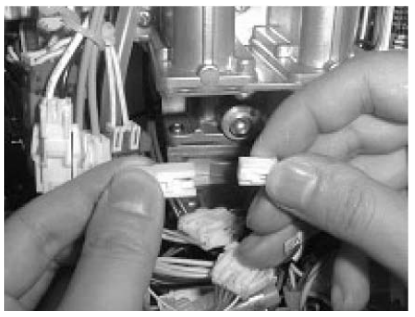
2) Remove and discard sheet metal bracket leaving Master Communication PCB.

3) Remove the screw from the sheet metal reinforcement plate located at the bottom of the water heater cabinet, and then use it to secure the Master Communication PCB to the water heater cabinet.

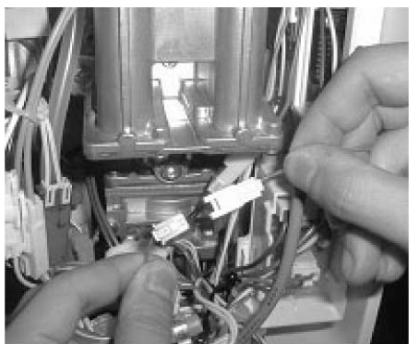
4) Connect the 5 pin connector from Communication Cable A (450mm cable) to socket No. 1 on Master Communication PCB.

5) Connect the 4 pin connector from Communication Cable A to the 4 pin socket located at the top of the water heater's PCB.

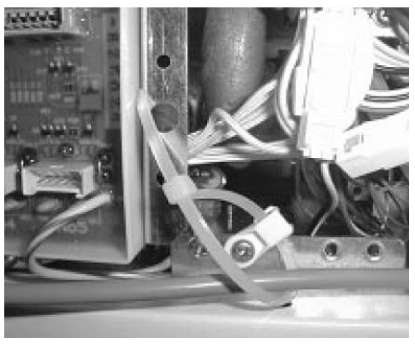
6) Remove the protective cap from the 2 pin connector marked "MS" (located in the middle of the water heater wiring harness).



7) Connect the 2 pin connector from Communication Cable A into the 2 pin connector marked "MS".

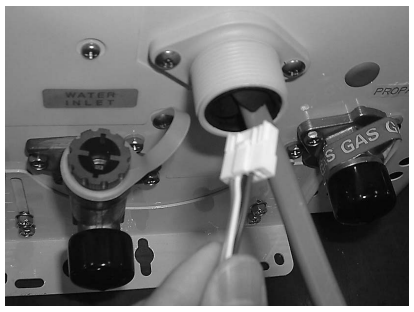


8) Attach the cable tie bracket to the bottom of the water heater cabinet using the existing screw. Loosely secure the cable tie through the bracket and around the communication cable. DO NOT TIGHTEN THE CABLE TIE AT THIS TIME – the communication cables from the other water heaters must be secured by this cable tie.



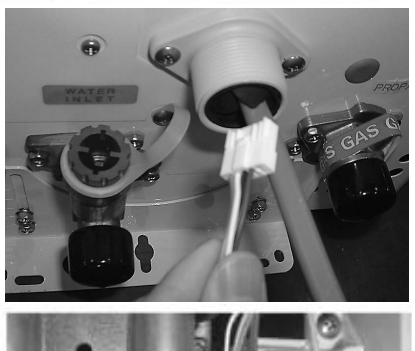
Installation Procedure Units 2, 3, 4, and 5

9) Run the 5 pin connector of Communication Cable B (3000mm cable) up through the threaded cable entry in the bottom of Unit 1's cabinet.



10) Route the 5 pin connector of Communication Cable B through the cable tie, installed in step 8, and plug it into socket 2 on Master Communication PCB.

11) Run the other end of Communication Cable B (end with 4 pin connector and 2 pin connector) up through the threaded cable entry in the bottom of Unit 2's cabinet.



12) Connect the 4 pin connector from Communication Cable B to the 4 pin socket located at the top of the water heater Unit 2's PCB.

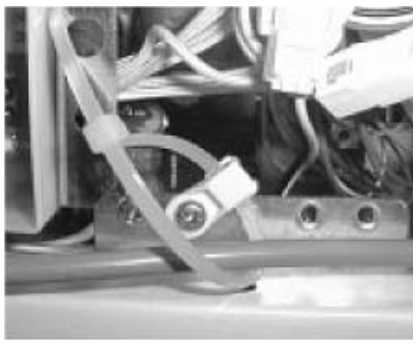
13) Remove the protective cap from the 2 pin connector marked "MS" (located in the middle of the water heater Unit 2's wiring harness).

14) Connect the 2 pin connector from Communication Cable B into the 2 pin connector marked "MS".

15) Attach the cable tie bracket to the bottom of the water heater cabinet using the existing screw. Pull all of the excess cable up into Unit 2's cabinet, and then secure it tightly to the bracket using the cable tie.

16) Repeat steps 9 to 15 for Units 3, 4, and 5, as applicable.

Note: Communication Cable B for Unit 3 plugs into socket 3, Unit 4 plugs into socket 4, and Unit 5 plugs into socket 5.



17) After making all of the connections to the Master Communication PCB, securely tighten the cable tie in Unit 1.

18) Place the front cover panels back on each of the water heaters using (4) screws.

19) Restore power to the water heaters.

System Operation

- The MSA-2M 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 10 L/min 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 10 second 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.

Remote Temperature Controller Installations

Up to 4 Remote Temperature Controllers can be connected to Unit 1 (Water Heater with the Master Communication PCB installed). Main Controller, Bathroom Controller and Secondary Bathroom Controller (MC-91) will provide temperature control to all units. (Refer to Installation Instructions).
Temperature adjustments made on these Temperature Controllers will be communicated to each Water Heater resulting in accurate temperature control of each unit. All of these Remote Temperature Controllers will provide maintenance codes for Unit 1.

One additional Remote Temperature Controller (MC-91) can be installed on each of Units 2, 3, 4 and 5, to provide maintenance codes for each of these Units, respectively. These Remote Temperature Controllers will not provide temperature control to the units. Only those Remote Temperature Controllers connected to Unit 1 will provide temperature control to the manifold system.

One Remote Temperature Controllers can be installed on each of the Units 1, 2, 3, 4, and 5, to provide maintenance codes for each of these units, respectively. The controller connected to Unit 1 will provide temperature control to all of the units in the manifold system.

Note: When temperature Controllers are used with flow and return systems, they cannot be used to adjust temperature, while water is flowing through the water heaters.

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