



SUN ELECTRIC CORPORATION

Model: MGA-1400
Serial "B"
Unit Setup

Page: 1 of 3

Installation Instructions

**INSTALLATION MUST BE PERFORMED
BY
QUALIFIED SUN PERSONNEL ONLY**

INSTALLATION OVERVIEW: _____

These installation instructions detail the steps necessary to set up and calibrate an MGA-1400 Emissions Analyzer.

PARTS & ACCESSORIES LIST: _____

PART NUMBER	DESCRIPTION	QTY
MGA-1400-4-0	Final Assembly MGA-1400	1
0692-2348-01	Installation Instructions	1
0692-2025-01	Operator's Guide	1
0692-2040-01	QR Card	1
0301-0944-01	Filter Element, 75 Micron	1
0301-0945-01	Filter Element, 8 Micron	1
0403-1441-06	Screw 8-32x3/8	2
0528-0027-01	Printer Ribbon	1
0528-1062-01	Printer Paper	1
0669-0220	Hose, Plastic 1/4"	2'
0787-0035	Leak Check Cap	1
2161-0023	Exhaust Probe Hanger	2
3988-0255-01	Hose Assembly, Exhaust	1
5878-0015	Cable Ties	2
6001-0197-01	AC Power Cable	1
7009-1869-01	Probe Assembly, Exhaust	1

REQUIRED TOOLS: _____

- Complete Tool Kit
- Anti-Static Kit
- Adjustment Tool (0001-0033)
- Calibration Gas and Gas Regulator
- Flow Meter (7009-1731)

INSTALLATION INSTRUCTIONS: _____

1. Mount the unit on the top plate, if not already done. The long screw should be inserted in the left rear corner as viewed from the front of the Tester. This screw is the drawer stop.
2. Mount the Exhaust Probe Hangers (2161-0023) on the stand with the two screws (0403-1441-06).
3. Connect the Exhaust Probe Assembly (7009-1869-01) to the Exhaust Hose (3988-0255-01).
4. Connect the hose to the Inlet Port on the Primary Filter Assembly ensuring the connection is tight.
5. Connect the (1/4" x 2') Plastic Hose (0669-0220) to the Water Outlet Port on the Primary Filter Assembly; secure in place using Cable Ties (5878-0015).
6. Connect the AC Power Cable (6001-0197-01) to the Power/Filter/Switch Fuse Assembly on the rear panel.
7. Install the Printer Ribbon (0528-0027-01) and Printer Paper (0528-1062-01) into the printer.

INSTALLATION COMPLETE

CALIBRATION PROCEDURE: _____**REQUIRED EQUIPMENT:**

- Adjustment Tool 0001-0033
- Calibration Gas and Gas Regulator
- Flow Meter 7009-1731

Setting Flow Rate on Calibration Gas Bottle

The following set-up procedure should be used to set the flow rate for the gas bottle regulator used during calibration:

1. Attach the flow meter (7009-1731) to the outlet of the gas bottle.
2. Open the gas bottle valve and adjust the regulator assembly for a reading of 10 ± 1 CFM. Close the gas bottle valve and remove the flow meter.

ALTITUDE SETTING PROCEDURE: _____

3. At the end of the warm-up period repeatedly press **<FUNCTION>** until "CODE 0" is reached. If setting up an MGA-1400-4-0, go to Step 9.
4. Press **<↑>** until "CODE 2" is reached.
5. Press **<FUNCTION>**; the display will indicate "----". Enter the password that can be found on page iv of the MGA-1400 Service Manual. The display will indicate "SE 0". (Service Mode).

6. If setting up an MGA-1400-3-0, press <↑> until "SE 2" is displayed. Press <FUNCTION> to enter the Altitude entry mode.
7. Use <↑> and <↓> to select the correct altitude setting in METERS. 100 METERS = 328 FEET, 100 FEET = 30.5 METERS.
8. Press <FUNCTION> when the desired setting has been reached. This value is now stored in Memory. The display reverts back to "SE 2" or "SE 3."

SOFTWARE GAS CALIBRATION: _____

9. Press <↑> until "CODE 3" is reached.
10. Press <FUNCTION>; the display will indicate "----". Enter the password that can be found on page iv of the MGA-1400 Service Manual. The CO2 display should indicate "GC 0". (Gas Calibration mode).
11. Press <↑> to display "GC1" and press <FUNCTION>.
12. Press <↑> or <↓> until the Current CO Gas Tag Value is displayed. NOTE: Pressing <MODE> will alter which position is being changed; i.e. pressing it once will move to the 0.10 digit, repeat to alter the 1 position.
13. Press <FUNCTION> to advance to the CO2 reading and again enter Gas tag Value as in step 12.
14. Press <FUNCTION> to advance to the HC reading and again enter Gas Tag Value as in step 12.
15. Press <FUNCTION> to return to the "CG 1" prompt, then press <↑> to display "CG 2", and press <FUNCTION>.
16. An AUTO CAL will be performed, and "ON" or "OFF" will be displayed in all windows. If "OFF" is selected, the gas reading will be uncorrected. This should only be used for service diagnostics to determine what the bench is actually doing, as opposed to the results of software compensation. If this is the final calibration before leaving the machine, ensure all three displays read "ON."
Use <↓> and <FUNCTION> to set them all ON.
17. Press <FUNCTION> to Display "GAS", and flow gas at 14 SCFH into the O2 exhaust port for 1 Minute. Turn the Gas off and press <FUNCTION> to start Calibration. "CAL" will be displayed.
18. When the calibration is complete, the "ON" and "OFF" readings will be displayed from step 9.

LEAK CHECK: _____

19. "CG 2" will be displayed; press <↑> to display "CG 3" and <FUNCTION> to select it and "LC" should be displayed.
20. Plug the end of the Sample Probe with the leak check cap (0787-0035). In 20 Seconds, the Pump will shut off.
21. The pump should be off for 20 seconds and either "LEC" will be displayed or the tester will advance to "CG 3". If "LEC" is displayed, check for a leak.

SOFTWARE CALIBRATION COMPLETE

**INSERT THESE INSTALLATION INSTRUCTIONS IN THE BACK
OF THE APPROPRIATE SUN SERVICE MANUAL**