



SUN ELECTRIC

Model: MGA-9000C TX  
UNIT SETUP

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# Installation Instructions

**INSTALLATION MUST BE PERFORMED  
BY  
QUALIFIED SNAP-ON/SUN PERSONNEL ONLY**

## INSTALLATION OVERVIEW:

The MGA-9000 is shipped as a fully assembled unit, with the exception of the parts and accessories.

## PARTS & ACCESSORIES LIST:

<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>QTY</u>
0124-0105-01	Hook, 4"	1	0693-1421	Op's Manual Binder	1
0131-0024	Regulators	2	0718-0103	Cable Clamp	1
0144-0010-01	Rubber Strap	1	0758-0200-01	Caps, Protective	2
0271-0062-01	Low Scale Gas	**	1374-0110-01	Black Plastic Plug	6
0271-0066-01	Mid Scale Gas	**	3988-0230-01	Exhaust Hose, Long	1
0301-0944-01	Filter, 75 Micron	4	3988-0231-01	Exhaust Hose, Short	1
0301-0945-01	Filter, 8 Micron	4	5878-0015	Cable Tie	1
0400-0020	Flat Washer	2	5878-0902	Cable Mount	1
0403-1411-08	Screws, 8-32x1/2"	2	6004-0262-05	Trigger Lead, Short	1
0424-0804-01	Velcro Loop 3"	1	6004-0462	Volt/Ohm Lead	1
0424-0804-02	Velcro Hook 3"	1	6004-0566-01	Tach Lead (Blue)	1
0528-0995	Printer Ribbon	2	6004-0606-01	Modem Cable	1
0528-1011-02	Computer Paper	1 pkg	6004-0614-01	Cable, RPM Antenna	1
0552-0072-01	1.44 Floppy	1	6005-0181-01	Quad 4/Nissan Adapter	1
0552-0104-01	DOS 6.22 Package	1	6005-0184-01	BMW Adapter	1
0552-0990-01	Keyboard, 101 Key	1	6005-0184-02	Acura Adapter	1
0552-0993-01	Keyboard Cover	1	7009-1700	Leak Check Adapter Kit	1
0616-0003	Keps Nuts	1	7009-1869	Exhaust Probe Assy.	2
0647-0069	Brass Fitting	2	7009-1929	Trigger Pickup	1
0671-0233	Wire Tie	2	7009-2035-01	ID Tag, Low Scale	1
0682-0808-01	Label, Service Call	1	7009-2035-02	ID Tag, Mid Scale	1
0682-1041-01	Keyboard Label	1	7009-2037-01	Antenna, Figure 8 (RPM)	1
0692-1765-01	Quick Reference Guide	1	7009-2058-01	Storage Bracket Assy.	1
0692-1928-01	Product Registration	1	7009-2223-01	Nissan 300ZX Adapter	1
0692-2291-01	Product Warranty Card	1	7049-0004-01	O2 Sensor	1
0692-2414-01	Installation Instructions	1	8200-0100-01	Tubing	1
0693-1417-01	Smog Banner	1	ZMGA9000CTX	Operator's Manual	1

\*\* Both Gas Bottles will be supplied locally; they will not be shipped with the unit.

**REQUIRED TOOLS:**

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- Complete Tool Kit
- Low Scale Cal Gas
- Service Keys (Supplied by Technical Support)
- Service Box
- Mid Scale Cal Gas
- Flow Gauge (7009-1731)

**INSTALLATION INSTRUCTIONS:**

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1. Cut the Straps, and remove the top of the carton, top packing and carton sides.
2. Slide the MGA-9000 and carton base off of the pallet, and split the corners of the base carton.
3. Lean the MGA-9000 so that one half of the foam base can be removed.
4. Lean the MGA-9000 so the other half of the foam base can be removed.
5. Open the Computer Drawer and ensure the boards are seated properly in each backplane. Visually inspect all connectors, making sure they are all properly seated.

**NOTE:** *Connector P720 is normally not connected and is used for the PC Floppy Option.*

6. Remove the keyboard (0552-0990-01) from its box and plug the connector into the keyboard jack on the front of the tester. Attach the keyboard label (0682-1041-01) to the keyboard.
7. Remove connector P424 from the System Interface Board.
8. Using the Service Box, plug P424 into J424 on the System Interface Board.
9. Remove P412 from the Systems Storage Board and plug the Service Box in its place. Then reconnect P412 from the hard drive into the T-Connector on the Service Box. Hang the Service Box on the side of the computer drawer.

**NOTE:** **When connecting the Service Box, be sure to use proper orientation on the ribbon cables. The red marked side of the cable normally goes towards the front of the tester.**



10. Check for proper AC and GROUND connections before turning the unit on.
11. Remove all tape from the lower printer and remove the carriage cover to gain access to the print head. Ensure that the printer ribbon cartridge is installed properly and remove the plastic stop that secures the print head.
12. Place the two extra printer ribbons (0528-0995) into the printer drawer, to store for later use.
13. Plug the tester into an A/C outlet. Push in the Circuit Breaker Switch on the rear of the computer drawer to turn on unit.
14. Affix the Service Call Label (0682-0808-01) to the rear panel of the analyzer.
15. Place the Operate/Standby switch into the "Operate" position.

16. Load Software using the Service Box. On new units this procedure is completely automatic and needs no operator assistance. If a menu appears select #4, "Convert TAS to Another Type".

**NOTE:**        *Formatting Hard Drive May Take Some Time.*

17. Verify that the accessories listed on the first page are all present on the bottom shelf of the MGA-9000.
18. Place the four extra primary (0301-0944-01) and secondary (0301-0945-01) filters in the storage compartment in the rear of the analyzer.
19. Attach protective skin (0552-0993-01) to keyboard; secure by peeling off backing, exposing adhesive.
20. In order to mount velcro turn keyboard upside down. Peel off backing on hook side of Velcro (0424-0804-02) and attach to keyboard. Attach mating soft side Velcro (0424-0804-01). Remove backing, exposing adhesive and place keyboard in its proper position and press firmly.
21. Load a package of printer paper (0528-1011-02) or VIR forms (if the customer can supply them to you) into the lower printer.
22. Repeat the last step for the Upper Printer.
23. Insert the 6 black plastic plugs (1374-0110-01) into the six holes, just above casters, on the base of the tester.
24. Mount the 4" round hook (0124-0105-01) to the bottom shelf in the rear of the tester by screwing it to the weld nut located there. This is used to attach the rubber strap (0144-0010-01) and secure the gas bottles to the shelf.
25. Modem Option: Place the clamp (0718-0103) around the Modem Cable (6004-0606-01). Mount clamp with hanger screw. Position screw so if disconnected from unit it will not hang closer than 18" from the floor. (See Service Bulletin #663)
26. Connect the Tach Lead (6004-0566), Volt/Ohm Lead (6004-0462), Leak Check Adapter (7009-1700), Drain hose for Aspirator (8200-0100-01), and Exhaust Hose (3988-0230-01) to their respective connections.
27. Attach the Short Trigger Lead Adapter (6004-0262-05) to the blue Tach Lead, installed in the previous step. Attach the Trigger Pickup (7009-1929) to the end of the Short Trigger Lead Adapter.
28. Attach the Antenna RPM Cable (6004-0614-01) to the rear panel connector labeled "Antenna".
29. Attach the Figure 8 Antenna Pickup, (7009-2037-01) to the Antenna RPM Cable installed previously.
30. Cut the Drain Hose to length so that it will not reach the Exhaust Port outlet.
31. Using a Cable Mount (5878-0902) and Cable Tie (5878-0015) secure the aspirator hose to the side of the analyzer in a manner such that it will not spray water all over when aspirating from the primary filter bowl.
32. Attach the Exhaust probes (7009-1869) to the two Exhaust Hoses (3988-0230-01 and 3988-0231-01), and place the short hose in the storage shelf in the rear, along with all the Tach Pickups, Anti-Dilution Probe, Filters, Printer Ribbon, and DOS 6.22 Package.
33. Attach the regulators (0131-0024) to the two gas bottles (0271-0062-01 and 0271-0066-01), and attach the two brass fittings (0647-0069) to the regulators.
34. Attach the hoses with labels to the proper tanks. (7009-2035-01 = Low Cal Port 1, 7009-2035-02 = Mid Cal Port 2)
35. At this time, the software should be loaded as indicated on the Screen. Power the MGA-9000 down using the Circuit Breaker/Switch on the back panel and remove the Service Box.
36. Reconnect cables that were disconnected in steps 7 through 9 (P424 and P412). Press the Circuit Breaker/Switch to power up the MGA-9000. The MGA will perform systems test and boot to the main menu. From the main menu enter the Service Access Code to proceed to the Service Menu.

37. Install new O<sub>2</sub> cell (7049-0004-01) into the MGA-9000 Emissions drawer, in the O<sub>2</sub> Block. Attach harness to the top of the O<sub>2</sub> cell.
38. From the Service Menu, select "Manual Calibration". Select "Cal Port 1" and press ↵ .
39. With the IR Pump "ON", connect the Flow Meter from the exhaust port and record the flow rate.
40. Press ↵ , select "Cal Port 2", and press ↵ . Record the flow rate again.
41. Disconnect the Flow Meter from the exhaust port and connect it to the Low Scale Bottle. Turn the gas on and adjust the Regulator to match the flow of Cal Port 1, as recorded in step 36. Turn off the gas and disconnect the Flow Meter.
42. Disconnect the Flow Meter from the Low Scale bottle and connect it to the Mid Gas Tank. Turn the gas on and adjust the Regulator to match the flow of Cal Port 2, as recorded in step 36. Turn off the gas and disconnect the Flow Meter.
43. Place the gas bottles in the bottom of the cabinet and secure them with the Rubber Strap. Connect the Low Scale Gas Hose to Cal Port 1, and Mid Gas Hose to Cal Port 2.
44. From the Service Menu, Select "Set Time and Date". Follow the prompts on this page to enter the correct time and date, including Daylight Savings Time or Standard Time.
45. Install a new data disk, using the 1.44Meg. Floppy Disk (0552-0072-01).
46. Place the Operator's Manual (ZMGA9000CTX), and Quick Reference Guide (0692-1765-01) in the Operator's Manual Binder (0693-1421), and ensure the operator is handed this documentation.
47. Have the customer fill out the Product Registration (0692-1928-01) and Product Warranty Card (0692-2291-01), and send it in.
48. Ask if the customer would like the Smog Banner (0693-1417-01) hung.

**NOTE: All parameters other than State Parameters should be cleared.**

**INSTALLATION COMPLETE**