SUN ELECTRIC CORPORATION

Model: **MEA-1400 UNIT SET UP**



# *Field Installation Instructions*

INSTALLATION MUST BE PERFORMED BY QUALIFIED SUN SERVICE PERSONNEL ONLY

## INSTALLATION OVERVIEW:

These installation instructions detail the steps necessary to **set** up the MEA-1400 . These installation instructions also include a check out procedure to insure the functionality the MEA-1400 Engine Analyzer.

## PARTS LIST:

| Description | Part Number | Quantity |
|---|---|---|
| Final Assembly MEA-1400 | **MGA-1400** | 1 |
| Installation Instructions | 0692-2077-01 | 1 |
| Operator's Guide | 0692-2042-01 | 1 |
| QR Card | 0692-2041-01 | 1 |
| Option List | 0692-1932-01 | 1 |
| Accessory Kit * | 7091-0195-01 | 1 |
| * Trigger Pick-up Assembly | 0507-0006 | 1 |
| * Pattern Pick-up | 1747-0101 | **1** |
| * Cable | 6004-0262-03 | **1** |
| * Lead Assembly | 6004-0332-01 | **1** |
| * Test Lead | 6004-0462 | **1** |
| * Universal Harness | 6005-0161-01 | **1** |
| * Timing Light | 7009-1704-01 | **1** |
| * AC Power Cable | 6001-0197-01 | **1** |
| * Cable Clamp **(A.C.)** | 0718-0106 | **1** |
| * Hanger | 2161-0023 | 5 |
| * Screw 8-32x3/8 | 0403-1441-06 | 5 |

## REQUIRED TOOLS:

Complete Sun Issued Tool Kit

## INSTALLATION PROCEDURE:

**USE STANDARD ANTI-STATIC PRECAUTIONS WHILE PERFORMING THIS PROCEDURE**

1. Mount the Hangers (2161-0023) on the rear of the MEA-1400 using the five Screws (0403-1441-06) provided.

2. Attach all the leads and harnesses to the rear of the unit.

3. If there are any kits that need to be installed, install them at this time.

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* Installation **Complete** *
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**CALIBRATION PROCEDURE:**

1. Turn on MEA-1400 and let it proceed through self test.

2. Connect the tester leads **to** the IS-100A as follows:
   A. Place the red trigger pickup around the IS-100A trigger loop.
   B. Connect the blue secondary pattern lead to the calibrated secondary output of the IS-100A.
   C. Connect the Black ground lead to the **+13V** ground terminal.
   D. Connect the Pinpoint leads to the red and black battery posts **(13V)** on the IS-100A.

3. Set IS-100A as follows:
   8 cylinder
   1200 RPM
   +80 **Amps**
   Spark Line Slope to "OFF" position
   Ripple to the "OFF" position
   Delta KV to the "OFF" position
   Ignition **to** the "ON" position

**4.** Turn the IS-100A to the ON position.

5. After the tester self test is complete, set the tester up as follows:
   A. Gasoline Internal Combustion Engine
   B. Enter 8 cylinders
   C. Enter 4 **cycle**
   D. Enter 0.0 timing offset

6. If the Amps/Vacuum option is installed connect the green amp clamp around the current loop on the IS-100A.

7. Press **<NEXT MODE>** such that the tester is now in **Measurement Mode** M. Displays should read as follows:

| **ORANGE** | **YELLOW** | RED |
|---|---|---|
| **13.0V ±0.5V** | OHZ | **80.0A ±0.5A *** |

***NOTE:** *This reading will only be shown **if** the unit has the Amps/Vacuum option.*

8. Remove the Pinpoint leads from the **+13V** terminals.

9. If the **Coil(+)** option is installed attach the Yellow **Coil(+)** boot to the **+13V** terminal.

10. Attach the Primary Blue lead and Red Battery lead to the red **+13V** terminal.

12. Press **<NEXT MODE>** such that the tester is now in **Measurement Mode 1**. Displays should read as follows:

| ORANGE | YELLOW | RED |
|---|---|---|
| 13.0V ±0.5V * | 13.0V ±0.5V | 13.0V ±0.5V |

***NOTE:** *This reading will only be shown if the unit has the Coil(+) option.*

13. Remove the **Coil(+)** lead, and the Primary lead from the **+13V** terminal.

14. Press **<NEXT MODE>** such that the tester is now in **Measurement Mode 2**. Displays should read as follows:

| ORANGE | YELLOW | RED |
|---|---|---|
| 1200 Rpm | 13.0V ±0.5V | 80.0A ±0.5A * |

***NOTE:** *This reading will only be shown if the unit has the Amps/Vacuum option.*

15. The analog scope should display an 8 cylinder secondary waveform.

16. If the Amps/Vacuum option is installed then use the **Mityvac** to pull a vacuum of 20″. If vacuum is displayed in inches then the red display should read 20″. If vacuum is displayed in mbar then the red display should read 666 mbar.

17. Attach the Blue Primary Lead to the Negative side of the coil.

18. Press **<NEXT MODE>** such that the tester is now in **Measurement Mode 3**. Displays should read as follows:

| ORANGE | YELLOW | RED |
|---|---|---|
| 1200 Rpm | 22.5° | 20" or 666mbar* |

***NOTE:** *This reading will only be shown if the unit has the Amps/Vacuum option.*

**NOTE:** *Pressing the Yellow Data select button will toggle between percent and degree dwell.*

19. Press the Yellow **<DATA SELECT>** button. The Yellow display should now read 50% *0.5%.

20. Press the **<PATTERN TYPE>** button **until "Primary"** is selected. An 8 cylinder primary waveform should be displayed on the analog scope.

21. Disconnect the primary lead from the negative **side** of the coil.

**NOTE:** *Make sure the timing light advance knob is fully counterclockwise, and that the timing light is turned on.*

22. Press **<NEXT MODE> such** that the tester is now in **Measurement** Mode 4. Displays should read as follows:

| ORANGE | YELLOW | RED |
|---|---|---|
| 1200 Rpm | **0.0°** | 20″ or 666mbar* |

***NOTE:** *This reading will only be shown if the unit has the Amps/Vacuum option.*

23. Slowly turn the timing light advance knob clockwise. The readings on the Yellow display should slowly advance. With the timing light advance knob fully clockwise the reading on the screen should be 60° **±5.0°**

24. If the unit has the Magnetic Timing option then insert the Magnetic probe in the IS-100A **MAG.** Probe hole. The Yellow display should read 40 Deg, **±5.0** Deg.

25. Press **<NEXT MODE>** such that the tester is now in **Measurement Mode 5.** Displays should read as follows:

| ORANGE | YELLOW | RED |
|---|---|---|
| **1200 Rpm** | **0.0 Rpm** | **0** |

26. If the unit has an Oil Temperature option installed then press the Orange Data select button. The approximate ambient temperature should be displayed on the Orange Display for approximately five seconds.

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*** CHECKOUT COMPLETE ***
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