



2515 N.E. Riverside Way  
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**Pyrometer Installation Instruction  
For Models R602, R604, R605, R606, R607,  
R610, R611, R612, R624 Units  
Refer to Installation Diagram**

**A. Thermocouple Installation:**

The Thermocouple mounts into a ¼” pipe thread, or clamp style. If the exhaust manifold is already drilled and tapped, install the thermocouple at the location. If none is provided, make a ¾” hole in the exhaust pipe, not more than 6” below the exhaust manifold-to-exhaust-pipe connection and weld the R680 bushing into the exhaust pipe (note that the bushing should not be installed backwards – the thermocouple will only install into one side of the bushing).

**Dual Manifold:** Install one thermocouple into each exhaust manifold or exhaust pipe as above.

**B. Leadwire Installation:**

**Single Manifold:** The R660 leadwire assembly and the thermocouple are supplied with screw and ring terminals for assembly convenience. Connect the longer red leadwire to the red thermocouple wire and the shorter yellow wire to the yellow thermocouple wire with screws and nuts provided. Cover these connections with protective sleeves provided. Route the other end of the R660 leadwire assembly to the pyrometer, making sure that the leadwire is clear of obstructions that might cut or otherwise damage it. (If it should become necessary to replace any of the terminal ends – use crimp or clamp types only – NEVER solder terminals to the wires.)

**Dual Manifold with Single Gauge:** Run an R660 from each thermocouple to a DPDT switch. The switch will then toggle from one engine bank to the other on the same gauge.

**C. Pyrometer Installation:**

Pyrometers R605 and R607 require a 2 1/16 ” mounting hole; Pyrometer R602 requires a 2 ¾” mounting hole; Pyrometers R604, R606 and R624 require a 3” mounting hole. Remove dampening wire(s) across the meter terminals. Mount the pyrometer through the instrument panel or use mounting bracket at the desired position. Connect the light wires to the existing instrument light switch (12 VDC).

**Single Scale Pyrometers: R602, R604, R606, and R607:**

Connect the R660 leadwire to the pyrometer, making sure that the yellow leadwire is connected to the positive (+) terminal and the red leadwire is connected to the other



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**B. Leadwire Installation:**

**Single Manifold:** The R660 leadwire assembly and the thermocouple are supplied with screw and ring terminals for assembly convenience. Connect the longer red leadwire to the red thermocouple wire and the shorter yellow wire to the yellow thermocouple wire with screws and nuts provided. Cover these connections with protective sleeves provided. Route the other end of the R660 leadwire assembly to the pyrometer, making sure that the leadwire is clear of obstructions that might cut or otherwise damage it. (If it should become necessary to replace any of the terminal ends – use crimp or clamp types only – NEVER solder terminals to the wires.)

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Pyrometers R605 and R607 require a 2 1/16 ” mounting hole; Pyrometer R602 requires a 2 ¾” mounting hole; Pyrometers R604, R606 and R624 require a 3” mounting hole. Remove dampening wire(s) across the meter terminals. Mount the pyrometer through the instrument panel or use mounting bracket at the desired position. Connect the light wires to the existing instrument light switch (12 VDC).

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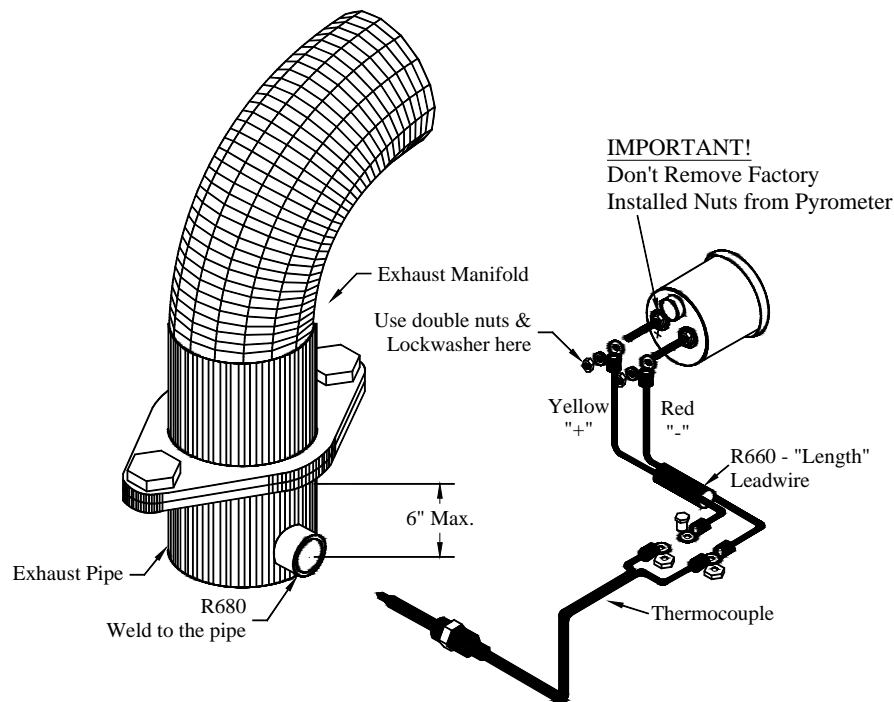
Connect the R660 leadwire to the pyrometer, making sure that the yellow leadwire is connected to the positive (+) terminal and the red leadwire is connected to the other

Terminal. (If the leadwires are connected backwards, the pyrometer will read backwards.) Use double nuts and lockwasher provided to attach the leadwire to each stud and tighten the gauge in the panel. *Do not loosen the nuts that are already on the pyrometer gauge terminal studs.* The pyrometer has been set to ambient (room) temperature at the factory and should not require further adjustment.

**Dual Scale Pyrometer R624.** Connect the R660 leadwires from the left exhaust pipe to the left meter and from the right exhaust pipe to the right meter, making sure that the yellow leadwires connect to the positive terminals.

**Notes:**

1. If the pyrometer light is too bright, substitute a 28V lamp (GE# 656).
2. If the pyrometer is slow or erratic, check the leadwires and thermocouple with an ohmmeter for continuity and check the leadwires for resistance (wire resistance is 0.23 ohms per foot per wire). Also, check for oil, grease, or looseness at the terminals. The connection must be clean and tight. Testers are available from ISSPRO to troubleshoot pyrometer systems.
3. The pyrometer is calibrated for use with 6 to 15 foot leadwires.
4. When properly installed, the accuracy of the system will be within 2% at 1200°F under average operating conditions.



Terminal. (If the leadwires are connected backwards, the pyrometer will read backwards.) Use double nuts and lockwasher provided to attach the leadwire to each stud and tighten the gauge in the panel. *Do not loosen the nuts that are already on the pyrometer gauge terminal studs.* The pyrometer has been set to ambient (room) temperature at the factory and should not require further adjustment.

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**Notes:**

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2. If the pyrometer is slow or erratic, check the leadwires and thermocouple with an ohmmeter for continuity and check the leadwires for resistance (wire resistance is 0.23 ohms per foot per wire). Also, check for oil, grease, or looseness at the terminals. The connection must be clean and tight. Testers are available from ISSPRO to troubleshoot pyrometer systems.
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