

MIFCO MD250 Pyrometer Troubleshooting

A meter without wires attached should show no reading.

A meter with batteries and with wires attached should show body temperature when holding your fingers to the end of the tip.

A meter with batteries installed and wires attached should show room temperature.

No reading

- dead batteries
- batteries installed incorrectly
- lead wires on wrong post (yellow should be +, red should be -)
- tip needs cleaning

Erratic readings

- check for pin hole in thermocouple
- loose terminal post
- tip needs cleaning
- meter has been dropped
- meter was turned on but not put into use soon enough
- check for broken stones (will cause the bare wires to touch the lance and short out)

FAIL reading

- Wire connection is loose at post

OPERATING INSTRUCTIONS MODEL MD-250 HAND HELD LANCE PYROMETER

The model MD-250 portable pyrometer uses an enclosed 12" thermocouple probe to sense the temperature of a variety of molten metals. It is rugged and portable which makes it an ideal tool for the foundry and the laboratory.

The Model MD-250 pyrometer consists of a solid state digital instrument, mounted within an aluminum housing. The thermocouple tip is connected to the movement through a lance tube through the back of the aluminum housing. The basic instrument accuracy is better than .5% of full scale.

I. ASSEMBLY OF THE PYROMETER

To prevent damage, the pyrometer has been shipped with the meter and handle grip in one carton, and the tip and lance within another.

Begin by removing the two screws holding the meter frame to the handle grip. Lay the meter portion aside. Next, loosen the set screw protruding down through the large hole drilled in the back of the handle grip and slide the lance tube up through the hole and tighten the set screw down against the tube. Now loosen the set screw on the end of the lance enough allowing the tip to be threaded up through the tube. Tighten the square head set screw down against the tip into the indentation in the upper portion. This will secure the tip.

Attaching the tip to the meter:

Locate the envelope containing 4 brass washers and 2 brass nuts. Place one brass washer down over the terminal post on the back of the meter. Place the o-ring end of the wire on next, noting that the yellow wire attaches to the + post and the red wire attaches to the - post. Place another washer on top of the o-ring. Tighten the assembly down with a brass nut. Repeat this procedure on the second terminal.

The meter is provided with two AAA batteries. One is already in position and the other is within the envelope. Snap the second battery in properly. Reattach the meter frame and handle grip with the two screws removed earlier.

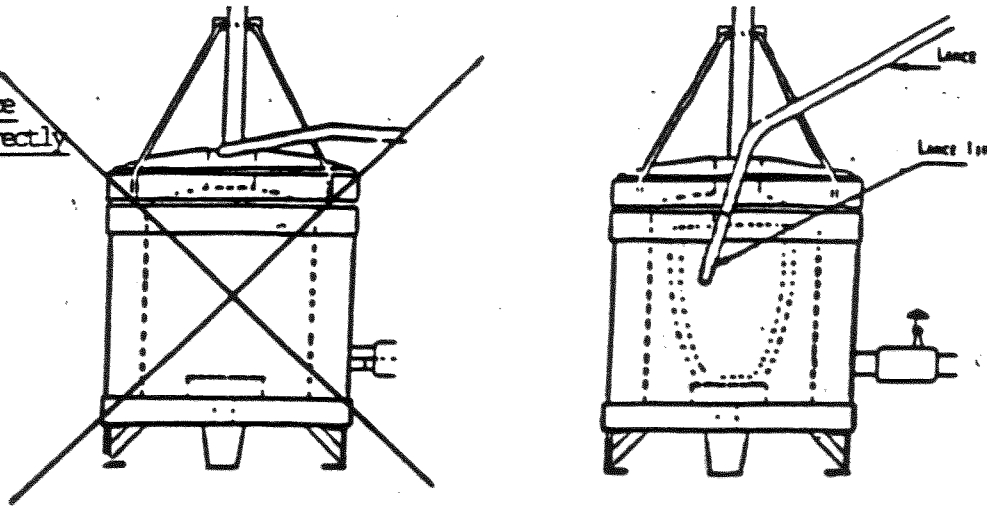
II. MAINTENANCE

For best results the instrument and tips should be kept as clean as possible, and stored in a safe and dry area. For best results clean the tip after each days use with a wire brush while it's still warm. We advise checking the accuracy of your meter at least once a year.

III. LANCE & TIP REPLACEMENT

First, loosen the two screws on the back of the handle grip, freeing the meter from the handle. Remove the nuts from terminal post, and pull the tip down and out of the lance. Install new tip by following the above steps.

Using the lance
pyrometer correctly

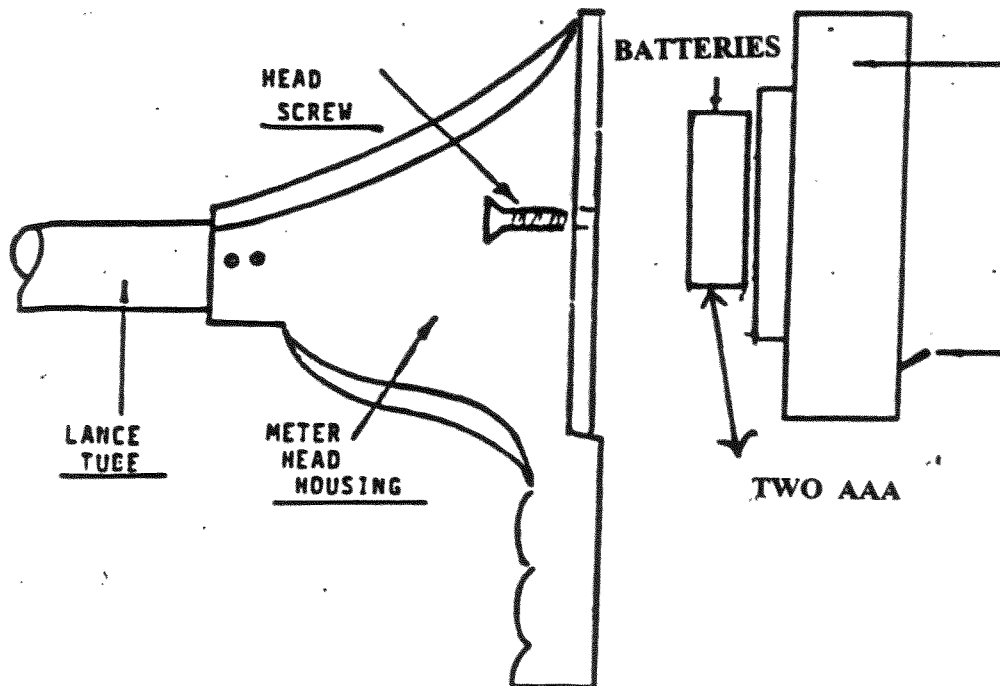


USING THE MD-250 LANCE PYROMETER CORRECTLY

The MD-250 pyrometer should be used only for temperatures 2350 degrees F, or less. Ferrous metals with higher temperatures will damage the inconel casing and melt the wires inside.

The temperature of the melt can be taken either down through the center of the lid while the furnace is running, or after the furnace has been shut down and the crucible removed from the chamber.

Prior to taking your reading, preheat the tip over the top of the exhaust port of the furnace. This will help to reach a quicker reading and prolong the life of the tip. Switch the meter on and place the tip down within the melt. You should get an accurate reading within a few seconds. **Do not place more than 2" of your tip down within the melt. Plunging to the bottom of the crucible will only melt your lance tube, causing you to have to order a replacement.** Refer to the diagram at the top of the page.



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OPERATING INSTRUCTIONS

MODEL MT-400 HAND HELD LANCE PYROMETER

The model MT-400 portable pyrometer uses an enclosed 8" thermocouple probe to sense the temperature of a variety of molten metals. It is rugged and portable which makes it an ideal tool for the foundry and the laboratory.

The Model MT-400 pyrometer consists of a temperature compensated instrument, mounted within an aluminum housing. The thermocouple tip is connected to the movement through a lance tube through the back of the aluminum housing. The basic instrument accuracy is better than 2% of full scale.

I. ASSEMBLY OF THE PYROMETER

To prevent damage, the pyrometer has been shipped with the meter and handle grip in one carton, and the tip and lance within another.

Begin by removing the two screws holding the meter frame to the handle grip. Lay the meter portion aside. Next, loosen the set screw protruding down through the large hole drilled in the back of the handle grip and slide the lance tube up through the hole and tighten the set screw down against the tube. Now loosen the set screw on the end of the lance enough to allow the tip to be threaded up through the tube. Tighten the square head set screw down against the tip into the indentation in the upper portion. This will secure the tip.

Attaching the tip to the meter:

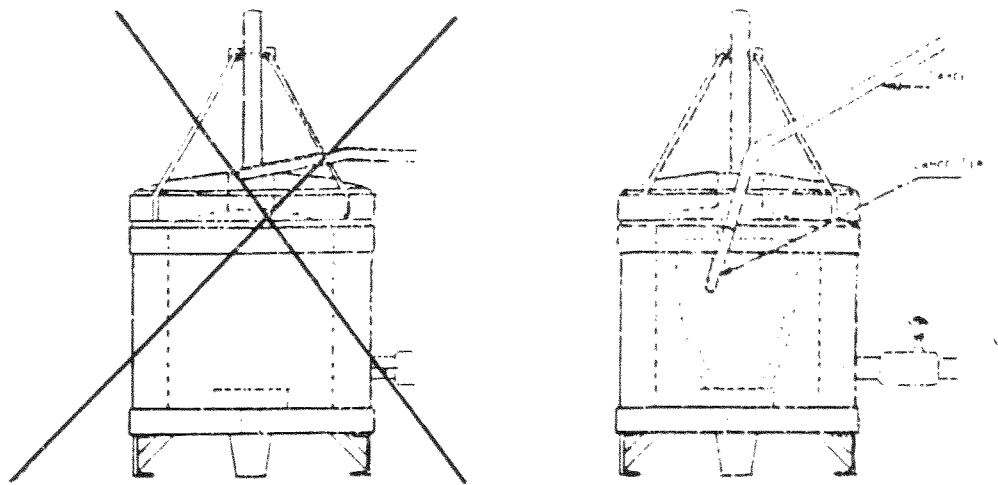
Locate the envelope containing 4 brass washers and 2 brass nuts. Place one brass washer down over the terminal post on the back of the meter. Place the fork end of the wire on next, note the yellow wire attaches to the + post and the red wire attaches to the - post. Place another washer on top of the fork, and tighten the assembly down with a brass nut. Repeat this procedure on the second terminal. Reattach the meter frame and handle grip with the two screws removed earlier.

II. MAINTENANCE

For best results the instrument and tips should be kept as clean as possible, and stored in a safe and dry area. For best results clean the tip after each days use with a wire brush while it's still warm. We advise checking the accuracy of your meter at least once a year.

III. LANCE & TIP REPLACEMENT

First, loosen the two screws on the back of the handle grip, freeing the meter from the handle. Remove the nuts from terminal post, and pull the tip down and out of the lance. Install new tip by following the above steps.

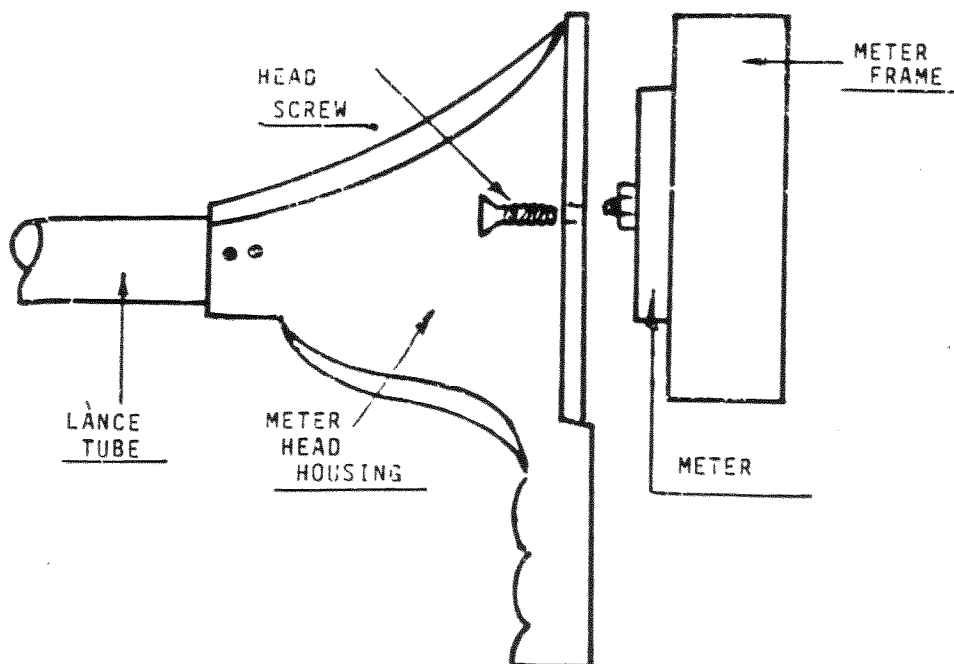


USING THE MT-400 PYROMETER CORRECTLY

The MT-400 Pyrometer should be used only for temperatures of 2350 degrees F, or less. Ferrous metals with higher temperatures will damage the inconel casing and melt the wires inside.

The temperature of the melt can be taken either down through the center of the lid while the furnace is running, or after the furnace has been shut down and the crucible removed from the chamber.

Prior to taking your reading, preheat the tip over the top of the exhaust port of the furnace. This will help to reach a quicker reading and prolong the life of the tip. Now place the tip down within the melt you should get an accurate reading within a few seconds. **Do not place more than 2" of your tip down within the melt. Plunging to the bottom of the crucible will only melt your lance tube, causing you to have to order a replacement.** Refer to the diagram at the top of the page.



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