

Middleby Cooking Systems Group



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Middleby Marshall® Service Bulletin

SUBJECT

Auto-tune procedure for current Digital Temperature Controller for Middleby Marshall ovens, P/N 36939

GENERAL

“Auto-tuning” is a new service procedure for Middleby Marshall ovens equipped with BOTH the modulating gas valve system, AND the current Digital Temperature Controller (P/N 36939). The controller is shown in the illustration at the right. At this time, this includes the following gas oven models:

- PS360EWB
- PS536
- PS555
- PS570 (units produced after 3/00 ONLY)

The procedure monitors the difference between the customer’s specific set point temperature and the actual temperature measured inside the oven’s baking chamber. The Controller’s output to the modulating valve is then customized to maintain the set point temperature as accurately as possible.

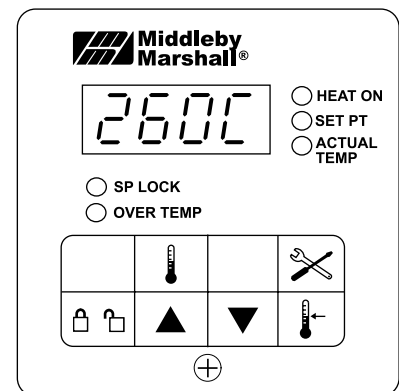
Auto-tuning is performed at the factory for new-production ovens. There is therefore no need to perform the procedure during oven installation or startup. However, any time one of the affected oven models has its Digital Temperature Controller replaced in the field, the procedure should be performed. In addition, if one of these ovens is having problems maintaining its set point temperature, you should perform the auto-tuning procedure. This can be particularly helpful for PS536 ovens that cannot maintain set point.

PROCEDURE

The auto-tuning procedure can only be performed AFTER the oven has thoroughly preheated and is operating at its set point temperature.

The procedure is accessed through the service mode of the Digital Temperature Controller. Refer to the flow chart on the back of this Bulletin.

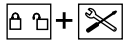
After the procedure begins, it will run for about 5 minutes. The Controller automatically exits the service mode and returns to normal operation when the auto-tuning is complete.



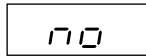
Current Digital Temperature Controller, P/N 36939. Ovens with a modulating valve system AND this Controller can use the auto-tune procedure.

Digital Temperature Controller Service Instructions (9/01)

Enter Service Mode



Set Point Lock



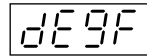
- SP LOCK
- OVER TEMP

△ or ▽ to select

YES set point locked

no set point unlocked

Display Fahrenheit or Celsius Temperature

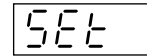


△ or ▽ to select

dE9F Fahrenheit

dE9C Celsius

Display Set Point or Actual Temperature



△ or ▽ to select

SEt
● HEAT ON
● SET PT
○ ACTUAL TEMP

set point shown

Act
● HEAT ON
○ SET PT
● ACTUAL TEMP

actual temp shown

High Ambient Reading



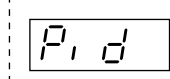
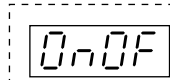
Records highest ambient temperature of controller. 68°F/20°C is the original reading.

Bias Setting



THE BIAS SETTING IS NOT TO BE ADJUSTED UNDER ANY CIRCUMSTANCES without prior authorization from the Middleby Service department.

Set to On/Off or PID Operating Mode



🔒 + 🌡 to unlock

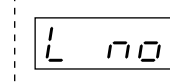
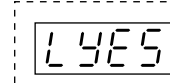
△ or ▽ to select

OnOff on/off mode

P, d PID mode (ovens with modulating gas valve)

If On/Off Mode is selected, pressing the Service Key returns the controller to "Set Point Lock."

Skip Auto-Tune



🔒 + 🌡 to unlock

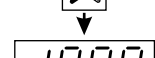
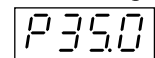
△ or ▽ to select

LYES Skip auto-tune

L no Enter auto-tune mode

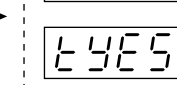
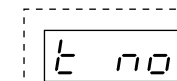
If Yes is selected, pressing the Service Key returns the controller to "Set Point Lock."

Review Auto-Tune Settings



Settings for P, I and D are generated by the last auto-tuning. These values cannot be manually changed.

Run New Auto-Tune



🔒 + 🌡 to unlock

△ or ▽ to select

t no Skip auto-tuning

LYES Run new auto-tune
IMPORTANT: Oven MUST be at set point temperature!

If No is selected, pressing the Service Key returns the controller to "Set Point Lock."

Auto-tune is running. Display will flash between "run" and normal operating view (set point or actual) until auto-tune is complete.

