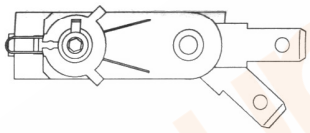
# Old Thermostat Removal and New Thermostat Installation

SERVER

**Thermostat Replacement Kits**

**Stock No. 55034**

This kit replaces thermostat 81034



*This gives instructions for thermostat replacement for the* **BS** and **BSA** units **BUTTER SERVER** and **BUTTER SERVER AUTOMATIC** units **SERIES 81 TO PRESENT.**

1. TURN UNIT OFF AND UNPLUG CORD. Allow unit to fully cool before proceeding to the next step.
2. REMOVE THE PLASTIC DOME, PUMP, AND STAINLESS STEEL BOWL FROM THE UNIT.
3. REMOVE THE TWO SCREWS at the top of the operator's panel.
4. REMOVE THE PICTURE ASSEMBLY. Turn the unit around so the picture side is facing you. Turn the two black 1/4 turn fasteners at the bottom of the picture, 1/4 turn counterclockwise, then pull out and down on the bottom of the picture assembly to remove it.
5. REMOVE THE TWO SCREWS AT THE TOP of the exposed light panel.
6. TIP THE ENTIRE UNIT ONTO THE RIGHT OR LEFT SIDE. Grasp the mask and tilt it toward the operator's side of the unit.
7. REMOVE THE RUBBER FEET AND ANY SCREWS SECURING THE BASE TO THE UNIT. Remove the base from the unit.
8. DISCONNECT THE TWO WIRES FROM THE HEATING ELEMENT.
9. REMOVE THERMOSTAT KNOB. (Pointer type knobs have a setscrew.)
10. REMOVE THE INSULATION FROM AROUND THE INNER VESSEL.
11. SLIDE THE INNER VESSEL TOWARDS THE PICTURE SIDE OF THE UNIT until the thermostat shaft clears the front panel.
12. CUT THE WIRE TIE, IF THERE IS ONE, to further access wiring and thermostat.
    - DISCONNECT THERMAL CUTOUT LEAD from angled terminal on thermostat.
    - DISCONNECT HEATING ELEMENT LEAD from straight terminal on thermostat.
13. REMOVE THE INNER VESSEL FROM THE UNIT.
14. REMOVE HARDWARE SECURING THERMOSTAT TO THE BRACKET and remove the defective/old thermostat.
15. WITH THE INNER VESSEL IN AN UPSIDE-DOWN POSITION, install the new thermostat on the bracket so the angled terminal is upward. Secure the thermostat with the mounting hardware.
    - Make sure there is a lockwasher under the nut.
    - Tighten the nut to 18 in.lbs (2.03 N·m) torque.
16. CONNECT LEAD FROM THE HEATING ELEMENT TO THE STRAIGHT TERMINAL ON THERMOSTAT. Connect thermal cutout lead to angled terminal on thermostat.
17. INSTALL THE INNER VESSEL IN THE SHROUD. Reassemble the unit, reversing the disassembly procedures in steps 2 through 11.
18. INSTALL KNOB by aligning knob groove with spline on new thermostat shaft, then push knob onto shaft. (Tighten the knob setscrew if used.)
19. PLUG UNIT INTO POWER SOURCE.
20. **CALIBRATE UNIT per calibration instructions on the following page.**

*This gives instructions for thermostat replacement the* **04400 DS DUAL SERVER Series 81 to present.**

1. TURN UNIT OFF AND UNPLUG CORD. Allow unit to fully cool before proceeding to the next step.
2. REMOVE THERMOSTAT KNOB. (Pointer type knobs have a setscrew.)
3. REMOVE THE FOUR SCREWS securing the bottom wrapper at the light body assembly and the butter platform assembly.

   Pull the bottom wrapper toward you and remove it from the unit.
4. REMOVE THE INSULATION FROM THE BOTTOM OF THE BUTTER PLATFORM.
5. REMOVE THE TWO HEX NUTS SECURING THE THERMOSTAT BRACKET TO THE PLATFORM.

   Tilt the bracket as needed to clear the studs so the thermostat shaft can be withdrawn from the panel.
6. CUT THE WIRE TIE, IF THERE IS ONE, TO FURTHER ACCESS WIRING AND THERMOSTAT.

   DISCONNECT THERMAL CUTOUT LEAD from angled terminal on thermostat.

   DISCONNECT HEATING ELEMENT LEAD from straight terminal on thermostat.

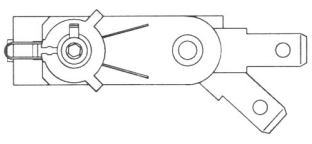
   Remove hardware securing thermostat to the bracket and remove the defective/old thermostat.
7. POSITION NEW THERMOSTAT ON BRACKET AND SECURE WITH ATTACHING HARDWARE.

   Make sure lockwasher is under nut. Tighten nut to 18 in. lbs. (2.03 Nm) torque.
8. CONNECT LEAD FROM THE HEATING ELEMENT TO THE STRAIGHT TERMINAL ON THERMOSTAT.

   Connect thermal cutout lead to angled terminal on thermostat.
9. START THE THERMOSTAT SHAFT INTO THE PANEL OPENING. Secure the wiring with a wire tie.
10. PLACE THE ALUMINUM STANDOFF TUBE OVER THE STUD not used to mount the heating element and position the thermostat bracket on the studs.
    - Install the lockwashers and start the nuts onto the studs.
    - Do not tighten the nuts yet.
11. ROTATE THE HEATING ELEMENT as needed to center the element terminals in the rectangular opening in the thermostat bracket.

    Make sure that the dimple in the thermostat bracket seats in the hole in the heating element, then tighten the bracket mounting nuts.
12. POSITION THE INSULATION BLOCK ON THE THERMOSTAT BRACKET.
13. INSTALL THE BOTTOM WRAPPER and secure it with four screws.
14. INSTALL KNOB by aligning knob groove with spline on new thermostat shaft, then push knob onto shaft (Tighten the knob setscrew if used.)
15. PLUG UNIT INTO POWER SOURCE.
16. **CALIBRATE UNIT per calibration instructions on the following page.**

Thermostat Shaft



Thermal Cutout Lead connects to Angled Terminal

Heating Element Lead connects to Straight Terminal

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# Calibration of New Thermostat

Factory-installed thermostats are sealed after calibration. **Do not attempt to calibrate a factory-installed thermostat.**

## Tools Needed For Calibration Procedure

- **Hexagonal Wrench or Allen Wrench (1.5 mm)-included in Kit #55034**
- **Stem Type Dial Thermometer to measure temperatures from 90° to 170°F (32.2°-76.7°C)-not included in thermostat kit**
- **Cover with hole in it to contain heat within unit and to hold the Dial Thermometer-not included in thermostat kit**

## Calibration Procedure
**(Must Follow Thermostat Installation)**

1. Turn knob to setting of: 135°F (57.2°C)
2. CAREFULLY REMOVE KNOB with straight pull to avoid turning thermostat shaft.
3. Place cover (with hole in it) over bowl and insert thermometer through cover opening.
4. Turn unit on and allow unit to heat up to a MINIMUM OF: 145°F (62.8°C) This **"HEAT UP TO"** temperature is considered a minimum temperature because exceeding this temperature will not affect the final calibration.
   - **If the temperature does not reach the minimum "HEAT UP TO" temperature, hold the thermostat shaft with one hand and rotate the calibration screw 1/2 turn counterclockwise, using the supplied wrench.**
   - **Continue to repeat the 1/2 turn of the calibration screw, until the temperature reaches the minimum.**
5. When the temperature reaches the minimum **"HEAT UP TO"** temperature, turn calibration screw two full turns clockwise.
6. Allow appliance to cool to: 135°F (57.2°C)

   If unit does not cool to the above **"COOL TO"** temperature, turn calibration screw two additional full turns clockwise.
7. WHEN THE TEMPERATURE REACHES THE "COOL TO" TEMPERATURE, turn calibration screw counterclockwise until a soft audible click is heard.
8. Repeat steps 4 THROUGH 7 until the following steady temperatures are reached in the water: 142°F (61.1°C) to 152°F (66.7°C)
9. SECURE THE CALIBRATION SCREW by placing suitable thread-locking material, such as loctite, in the shaft center.
10. ALIGN KNOB ONTO THERMOSTAT SHAFT and press knob onto shaft.
11. Re-check setting and return unit to service.

**Clockwise rotation** of the calibration screw **LOWERS** operating temperature.

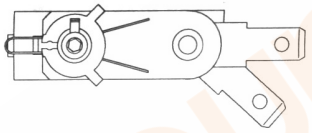
**Counterclockwise rotation** of the screw **RAISES** the operating temperature.

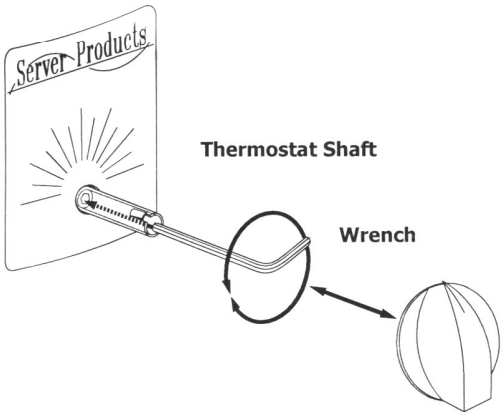
**Rotation of the knob or the thermostat shaft** does just the **OPPOSITE.**

**Thermostat Replacement Kits**

**Stock No. 55034**

This kit replaces thermostat 81034






- Turn calibration screw, using wrench, counterclockwise for steps 4 and 7.
- Turn calibration screw, using wrench, clockwise for steps 5 and 6.

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# Thermostat Replacement Kit
## Stock No. 55034
**This kit includes thermostat 81034**

This sheet gives instruction for:

- **FS, FSP, FS-4 Units Series 81 to Present**
- **FS-2 Units Series 89 to Present**

## Old Thermostat Removal

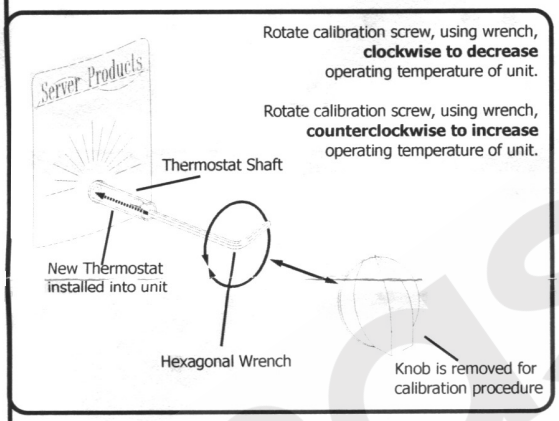
1. TURN UNIT OFF AND UNPLUG CORD.
   - Allow unit to fully cool if unit has been in operation.
2. EMPTY ANY CONTENTS AND/OR WATER FROM VESSEL(S).
   - Remove all accessories from unit.
3. REMOVE THERMOSTAT KNOB GUARD, IF INCLUDED WITH UNIT.
   - Remove the two screws securing knob guard to underside of unit.
4. REMOVE THERMOSTAT KNOB.
   - Pointer type knobs have a setscrew that will need to be unscrewed.
5. DISASSEMBLE SHROUD FROM WATER VESSEL ENOUGH TO ACCESS WIRING.
   - Place unit on its side and unscrew shroud from vessel.
   - Slowly pull vessel away from shroud by tilting shroud until thermostat shaft clears hole in shroud.
6. CUT WIRE TIES OR DISCONNECT GREEN GROUND LEAD, IF NECESSARY TO FURTHER ACCESS INTERNAL WIRING.
7. DISCONNECT LEADS TO THERMOSTAT.
   - Thermostat can be best accessed when vessel is set upside down on a work surface.
8. REMOVE SCREW(S), NUT(S), AND WASHER(S) SECURING THERMOSTAT TO THERMOSTAT BRACKET.
   - You may need to save the screw(s), nut(s), and washer(s) for new thermostat installation.
9. REMOVE OLD THERMOSTAT AND DISCARD.

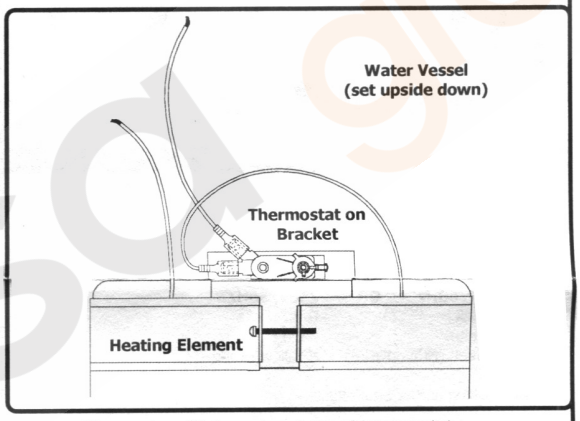
## New Thermostat Installation

1. SET WATER VESSEL UPSIDE DOWN ON WORK SURFACE.
2. POSITION NEW THERMOSTAT, WITH ANGLED TERMINAL POINTING UPWARD, ONTO THERMOSTAT BRACKET.
3. SECURE THERMOSTAT TO THERMOSTAT BRACKET.
   - Use screws, nuts, and lockwasher which were saved during old thermostat removal.
   - Make sure lockwasher is under nut. Tighten nut to 18 in. lbs. (2.03 Nm) torque.
4. CONNECT LEADS TO THERMOSTAT. See **Wiring Diagram** on opposite page.
5. CONNECT GREEN GROUND LEAD, IF DISCONNECTED PREVIOUSLY.
6. BEGIN TO INSTALL VESSEL BACK INTO SHROUD.
   - Align thermostat shaft into hole provided in shroud.
7. GATHER ALL WIRES WITH WIRE TIES TO PREVENT WIRES FROM TOUCHING VESSEL OR HEATING ELEMENT AFTER COMPLETE ASSEMBLY.
8. SECURE VESSEL TO SHROUD BY RE-INSTALLING SCREWS.
9. INSTALL THERMOSTAT KNOB ONTO THERMOSTAT SHAFT.
   - Align knob onto spline on shaft and push knob onto shaft.
10. SET UNIT UPRIGHT ONTO ITS FEET AND PLUG UNIT INTO POWER SOURCE.
11. CALIBRATE THERMOSTAT PER CALIBRATION INSTRUCTIONS. See **Calibration Procedure** below.

**Kit Includes:**

| Part No. | Qty. | Description |
|---|---|---|
| 10001 | 1 | Wrench, Hexagonal, 1.5mm |
| 81034 | 1 | Thermostat |




**Factory-installed thermostats are sealed after calibration with Loctite or similar bonding material.**

**Do not attempt to calibrate a factory-installed thermostat.**

## Tools Needed For Calibration Procedure

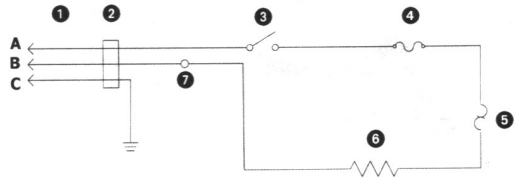
- **Hexagonal Wrench or Allen Wrench (1.5 mm)**
  -included in thermostat replacement kit.
- **Stem type Dial Thermometer**
  -to measure water temperature of 90°-170°F (32.2°-76.7°C)
  -not included in thermostat replacement kit.
- **Cover to contain heat within unit**
  -needs to have small hole in it to hold dial thermometer
  -not included in thermostat replacement kit.

## Calibration Procedure

1. FILL VESSEL AT LEAST 1/2 FULL OF WATER.
2. PLACE A COVER OVER VESSEL AND INSERT DIAL THERMOMETER THROUGH HOLE IN COVER SO THAT IT CAN READ THE WATER TEMPERATURE.
3. TURN KNOB TO SETTING OF:
   **100°F (37.8°C)** for units which have a knob range of 50°F to 150°F
   **150°F (65.6°C)** for FS-4 units and units which have a knob range of 100°F to 200°F.
4. CAREFULLY REMOVE KNOB WITH A STRAIGHT PULL TO AVOID TURNING THERMOSTAT SHAFT.
5. TURN UNIT ON AND ALLOW TO HEAT UP TO A MINIMUM OF:
   **110°F (43.3°C)** for units which have a knob range of 50°F to 150°F
   **160°F (71.1°C)** for units which have a knob range of 100°F to 200°F
   **170°F (76.7°C)** for FS-4 units.
   - These are minimum temperatures because exceeding these temperatures will not affect the final calibration. These are the lowest temperatures that the thermostat needs to "open" at, which is equal to turning heating element "off".
   - It might take as long as 45 minutes to reach the minimum temperature needed.
   - If temperature does not reach the minimum needed- hold thermostat shaft with one hand and rotate calibration screw, inside shaft, 1/4 turn counterclockwise, using hexagonal wrench. This will "close" thermostat and increase temperature of heating element.
   - If temperature still does not reach the minimum needed- repeat 1/4 turn of calibration screw, until temperature reaches the minimum needed.
6. WHEN UNIT REACHES THE MINIMUM TEMPERATURE NEEDED, ROTATE CALIBRATION SCREW TWO FULL TURNS CLOCKWISE TO COOL UNIT TO:
   **100°F (37.8°C)** for units which have a knob range of 50°F to 150°F
   **150°F (65.6°C)** for units which have a knob range of 100°F to 200°F
   **160°F (71.1°C)** for FS-4 units.
   - This will "open" thermostat completely, which is equal to turning heating element "off" to decrease temperature of heating element.
   - If unit does not cool to the needed temperature- rotate calibration screw two additional full turns clockwise.
7. WHEN TEMPERATURE COOLS TO THE NEED TEMPERATURE, ROTATE CALIBRATION SCREW COUNTERCLOCKWISE **UNTIL A SOFT AUDIBLE CLICK IS HEARD.**
   - Or rotate calibration screw two full turns counterclockwise to "close" thermostat completely, which is equal to turning heating element "on".
   - Unit will now start and continue to heat up until another audible click is heard. This second click indicates that heating has stopped and unit is now working properly.
8. CHECK CALIBRATION SETTING.
   - Turn unit off and then turn unit back on again.
   - After unit has been on for about 45 minutes, and unit can hold a stable temperature around:
     **97°F (36.1°C) to 107°F (41.6°C)**
     for units which have a knob range of 50°F to 150°F
     **147°F (63.8°C) to 157°F (69.4°C)**
     for units which have a knob range of 100°F to 200°F
     **157°F (69.4°C) to 167°F (75°C)**
     for FS-4 units.
     then return unit to service
   - Otherwise, repeat entire calibration procedure.
9. SECURE CALIBRATION SCREW BY PLACING SUITABLE THREAD-LOCKING MATERIAL, SUCH AS LOCTITE, IN SHAFT CENTER.
10. INSTALL THERMOSTAT KNOB ONTO THERMOSTAT SHAFT BY ALIGNING KNOB ONTO SPLINE ON SHAFT AND PUSHING KNOB ONTO SHAFT.
    - If unit includes knob guard, install knob guard also.

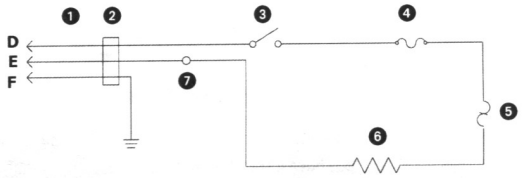
## FS, FSP (SERIES 89A, 89J, 93D, 96G) FS-4 (SERIES 89A, 89J)

**120V/60Hz**



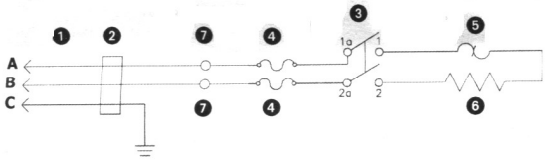

## FS, FSP (SERIES 89A, 89J, 93D) FS-4 (SERIES 89A, 89J)

**230V/50Hz**

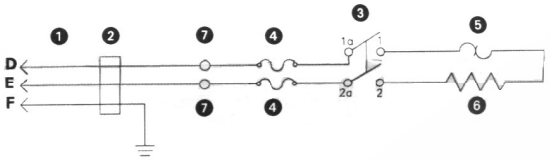



## FS, FSP, FS-4 (SERIES 97L) FS-2 (SERIES 97L, 99J)

**120V/60Hz**

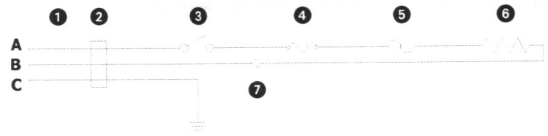



**230V/50Hz**

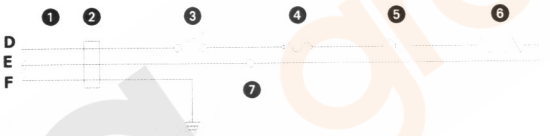



## FS-2 (SERIES 89A, 89K)

**120V/60Hz**

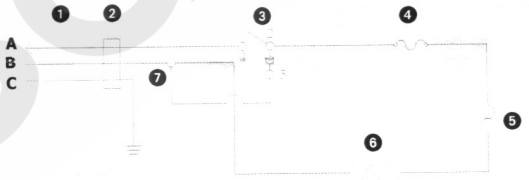



**230V/50Hz**




## FS/BASKIN ROBBINS (SERIES 98D)

**120V/60Hz**




## Wiring Diagrams

1. Cord Assembly

| 120V/60Hz | OR | 230V/50Hz |
|---|---|---|
| **A** Black | | **D** Brown |
| **B** White | | **E** Blue |
| **C** Green (Ground Wire) | | **F** Yellow/Green |

2. Bushing and/or Strain Relief
3. Snap-In Rocker Switch
4. Thermal Cut-Out
5. Thermostat
6. Heating Element
7. Wire Nut