

NEW DEVELOPMENTS IN THE KITCHEN

Rabbi Eli Gersten
Rabbinic Coordinator



As technology advances, kitchen appliances have become more and more complex, often presenting special challenges for Shabbat observers. Simple remedies that worked well in the past, such as removing light bulbs from refrigerators and taping up door switches, may no longer be sufficiently adequate. With today's available technologies, appliances have a lot more going on behind the scenes, and only an expert can really understand the ins and outs of these appliances and gadgets. Recently, the OU sat down with two such experts, father and son Messrs. Meir and Tzvi Herman (both of whom service major appliances in the tristate area), to help us understand and keep abreast of the latest developments and how they pertain to kashrut and kashering. The following are based on the positions of the OU's poskim.

CONCEPTS

Havara (Kindling)

On Shabbat it is forbidden to kindle or increase a fire or a glowing element. On yom tov it is permitted to increase a fire or glowing element, but one is not permitted to kindle a new fire.

Kibui (Extinguishing)

On Shabbat or yom tov it is forbidden to extinguish or decrease a fire or shut off a glowing element. On yom tov one may decrease a fire for the sake of cooking.

Gerama (Indirect Causation)

Prohibited activities, when done indirectly, can be a mitigating factor and under certain circumstance may be permitted (i.e., one may enter one's home on Shabbat even though by opening the door cold air will activate the thermostat turning on the heater).

Electricity

It is generally accepted that one may not turn on, off or adjust electric appliances on Shabbat. On yom tov one may increase or decrease an electrical flow for the sake of cooking.

Computer Chips

Computer chips are widely used behind the scenes in today's appliances to perform functions. Actions that will be detected by computer sensors that will not result in any forbidden act are permitted. To directly program a computer device may entail the violation of muktze.

APPLIANCES

Ovens

Today's ovens are made to be more energy efficient. One of the methods for conserving energy is that newer ovens' programming does not allow the burners to turn on when the door is open. In addition, burners will turn off completely if the door is left open for an extended period of time. The exact duration will differ from one model to the next (test your oven to see how long it takes for the burners to turn off when the oven door is opened, i.e. 60, 90 seconds. Some ovens have been noted to turn off after as little as 2 seconds. Please note that it may be difficult to determine when electric oven elements are on or off). These functions are not disabled even if the oven has a functioning "Shabbos Mode." What this means for Shabbat and yom tov is that the oven door may not be opened when the fire is off, since opening the door in effect turns off the oven, and closing the door in effect turns the oven back on. However, when the fire is on, one may open the door, provided that they remove the food quickly before the fire shuts off.

Stovetops

The knobs on the newer electric stovetops are hooked up to a computer. Adjusting the knob on yom tov does not just allow more electricity to flow (like in the

older style rheostat knobs), but rather it reprograms the computer to increase the temperature, so this is not permitted. Induction stovetops may not be used on yom tov. Heat is created when the pot is placed on the stove, which is not permitted on yom tov.

Refrigerators

Lights, bells and whistles: Today's refrigerators can have all types of electronic readouts that illuminate when the door is opened. For those that have a "Shabbos mode," the lights and readouts are disabled, but other functions will continue as normal. Refrigerators are being built with either mechanical or magnetic switches. Mechanical switches can be taped up before Shabbat. Placing magnets in the appropriate location can deactivate some magnetic switches; magnetic switches on the outside of the refrigerator are preferable, since they can be attached on Shabbat (if one forgot to do so before) prior to opening the door.

Thermostats: Newer refrigerators no longer use mercury thermostats, but instead utilize resistors to measure the flow of electricity between two points. The electrical flow varies depending on temperature. Each time a refrigerator door is opened causes a change in resistance, which is recorded by the



computer. However, the compressor will only turn on once the temperature dips below a set point.

Electronic dampers: Newer refrigerators make use of motorized dampers (air valves) to control the flow of cold air from the freezer into the refrigerator. If the refrigerator door is opened and warm air is allowed in, the damper will open wider to allow more cold air to flow.


Defrost heaters: Probably the most sensitive issue regarding using refrigerators on Shabbat and yom tov relates to the defrost heater, which is found in every frost-free refrigerator. The defrost heater is a glowing filament, which is halachically considered a fire, that melts the ice that accumulates on the cooling coils. Obviously, one is not permitted to turn on this heater on Shabbat or yom tov, yet opening the door of the refrigerator can indirectly affect when the heater turns on, and in some cases might even be the direct cause.

Refrigerators utilize various defrost detection methods:

Frost Sensor: The newest technology relies on sensors to detect ice buildup and then turns on the defrost heater to melt the ice. Opening the fridge or freezer does not directly trigger the sensor, but it allows in moist air. When the door is closed and the moist air condenses and freezes on the coils, it causes ice buildup.

Adaptive Defrost Control: With this type of system, a computer monitors all usage of the refrigerator and adjusts the frequency and duration of the defrost cycle accordingly. Opening the refrigerator at any point will cause the motor to run longer and thus cause the heater to turn on sooner.

Counters: Some refrigerators have counting devices in the doors. It notes how many times the door is opened and affects how often the defrost turns on. Deactivating the switch may mitigate the halachic concerns, but can result in damage to the refrigerator if left for a three-day yom tov period. Ice can quickly build up and the refrigerator will think that it was not being used.



Cumulative Run Timers: The simplest method relies on timers that will turn on the defrost heater after a set amount of running time. For example, after 8 hours of compressor runtime, the heater will turn on. Opening the refrigerator at any point will cause the motor to run longer and thus cause the heater to turn on sooner. However, there is reason to consider this a gerama, since the timer is moving on its own.

Compressors: Some newer technology refrigerators use linear compressors, which run all the time (they never turn off). Only the speed of the compressor will vary depending on the temperature. Any change in temperature will cause a change in the speed of the compressor. Even simply opening the door for one second will cause the compressor to pump faster.


Water/Ice Dispensers: One may not use water spouts or ice dispensers on Shabbat and yom tov. Even when the water spout appears to be a simple mechanical spout, they are often hooked up to electrically operated pumps and valves.

Ice Makers: Traditional ice makers that generate ice and fill a bucket work automatically and only shut off once the bucket is

filled. If one empties the bucket prior to Shabbat or yom tov, and one is certain that it has not filled on the day, one may take ice from the bucket on Shabbat and Yom tov.

One can avoid all of the above mentioned issues by using a specially designed plug-in timer such as one developed by Zman Technologies (www.zmantechologies.com), which is recommended by the OU, that toggles a refrigerator on and off, thus enabling one to use their refrigerator when the power is off without any halachic issues.

Dishwashers



Although dishwashers cannot be operated on Shabbat and yom tov, many people prefer to store dirty dishes in the dishwashers to get them out of the way. Many of the newer models have light-up displays that illuminate when the door is opened. Those wishing to use dishwashers for storage on Shabbat and yom tov should be aware to avoid these when purchasing dishwashers.

Vent hoods

Newer vent hoods will turn on automatically if heat builds up under the hood. One should be careful on yom tov not to cook in a manner that will cause them to turn on.

IN SUMMATION

Appliance:	Issue:	Resolution:
Ovens	The burner might not ignite when the door is opened and might turn off if the door is left open too long.	Never open the door when the fire is off. When fire is on, only open door for short intervals.
Stovetops	Knobs on an electric stove-top may activate a computer response.	Don't adjust knobs on yom tov. Don't use an induction cooktop on yom tov.
Refrigerators	Lights can turn on when door is opened.	Remove bulb and or deactivate the door switch.
Dishwashers	Lights can turn on when door is opened.	Purchase dishwashers that don't light up when door is opened.
Vent hoods	May turn on automatically when it senses heat.	Be careful not to cause the vent to turn on when cooking on yom tov.

We would like to thank Mr. Meir Herman and his son, Tzvi, for sharing their knowledge with us. Questions about specific appliances can be directed to them by calling their appliance store at 718.313.0158.