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SHMIRAS SHABBOS

WARMING UP

Do's and Don'ts of Slow Cookers and Hot Plates on Shabbos



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Slow cookers and hot plates are the workhorses of many kosher kitchens as they enable the Sabbath-observant hostess to serve piping hot dishes to her family and guests to enhance the Shabbos *seuda*. In recognition of their importance in a Jewish home, it behooves us to review the halachos involving these appliances about which many users might not be aware.

This article will try to clarify the potential issues and how to address them in a practical way.

SLOW COOKERS

There are two basic types of electric slow cookers: an insert type (often referred to as a *Crockpot*®), in which a stoneware vessel sits inside a heated base; and a flatbed type, in which a metal pot sits atop a griddle base. Halachic issues involving their use include *hatmana*, *shehiya* and *chazara*. These will be explained below. (There are some more expensive models equipped with variable thermostats which make their usage on Shabbos more complicated; these are not addressed in this article.)

HATMANA - INSULATING FOOD ON A FIRE ON SHABBOS

Chazal forbade the wrapping of hot food on Shabbos to preserve its heat. They also forbade placing wrapped food on a heat source even before Shabbos – even if the

wrapping was also done before Shabbos – or if the wrapping itself adds heat to the food. This halacha is called *hatmana b'davar hamosif bevel*.¹

Rav Shlomo Zalman Auerbach *zt"l* is famous for his opinion that an insert-type slow cooker is by definition a situation of *hatmana b'davar hamosif bevel*, since the pot is completely inserted in a base which houses the heating coils.²

Other opinions disagree, based on a Rama who states that *hatmana* (wrapping) only occurs when the food is covered on all sides and the top.³ When the lid of the slow cooker isn't covered, according to most opinions it is not considered *hatmana*, and an insert-type slow cooker may be used on Shabbos.⁴

One who wishes to be stringent and follow the opinion of Rav Shlomo Zalman should place something (e.g., balled up sheets of aluminum foil) under the pot to slightly lift up the sides so that it is no longer completely submerged within the base. Using a slow cooker in this way will not be considered *hatmana* according to most opinions.⁵

SHEHIYA - LEAVING AN UNCOOKED FOOD ON A FIRE ON SHABBOS

The Mishna in *Shabbos* teaches us that one is forbidden to leave an uncooked item on the fire on Shabbos lest he might come to stoke the fire and hasten the cooking

1 שו"ע או"ח סי' רנ"ז סעי' א.
2 ספר ארחות שבת עמ' תקמ"ד.
3 שו"ע שם סי' רנג ס"ז א ומ"ב שם ס"ק מח.
4 עיי' שו"ת שבט הלוי ח"ט סי' נ"ב ושו"ת עמק התשובה ח"ד סי' י"א אות ב', וכן בספר אוצרות השבת עמ' תקי"ט.
5 קובץ תשובות למרחן ר' אלישיב זצ"ל ח"ג סי' מ"ג וספר אוצרות השבת עמ' תקי"ז.

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SHMIRAS SHABBOS

KEEPING YOUR COOL!

USING A REFRIGERATOR ON SHABBOS



RABBI CHANANYA JACOBSON
STAR-K KASHRUS ADMINISTRATOR

As electricity began to be used as an energy source in the late 1800s and early 1900s, *poskim* considered how to view electricity from a halachic perspective. The *posek hador*, Rav Chaim Ozer Grodzinski *zt"l*, ruled that electric incandescent lighting is considered fire and, to reinforce this *psak*, he himself would recite *Borei Meorei Haesh* on an unfrosted incandescent light bulb. While this *psak* rapidly gained universal acceptance,¹ it only covered incandescent light bulbs, which are very similar to fire in that they generate both light and heat. What about the many other applications of electric power which do not share these characteristics?

Electricity and Halacha

There are two basic approaches to this issue. The Chazon Ish writes that activating any electric device is *boneh* (building), since the completion of a circuit involves attaching two parts and bringing the electrical device "to life."²

Other *poskim*, especially Rav Shlomo Zalman Auerbach *zt"l*, argue that there is no *melacha d'Oraysa* inherent in turning an electrical device on and off;³ rather, we look at the result to determine if a *melacha d'Oraysa* occurred. For example, grinding food on Shabbos is the *melacha* of *tochein*. Turning on a food processor is not, unless there is food

1 *Achiezer* 3:60. See also *Beis Yitzchak* YD II:23 who rules that *lehadlik ner shel Shabbos* may also be said on incandescent light bulbs. These rulings do not apply to fluorescent and LED bulbs.
2 *O.C.* 50:9, see *Minchas Shlomo* 1:11.
3 *Minchas Shlomo* 1:9-11. There may be a rabbinic prohibition of *molid* (creating) in activating certain electric circuits.

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GOING UP: ALL ABOUT



RABBI MORDECHAI FRANKEL
DIRECTOR, STAR-K INSTITUTE OF HALACHA

Historians claim that two hundred and twenty-four slaves were needed to operate the pulleys of the elevator system in the Colosseum of Rome. Thankfully, technology has come a long way since then. Modern elevators run on electricity which has necessitated the development of a Sabbath Mode. In Sabbath Mode, an elevator cab moves continuously up and down the elevator shaft, stopping at every floor. However, as will be explained, not all Sabbath Modes are the same.

Physics 101: How Elevators Work

There are two basic types of elevators in common use today: *hydraulic* and *traction*.

▶ **Hydraulic-Type Elevators:** Hydraulics make use of the principle that liquid moved with low force over a large distance can be converted to movement with high force over a short distance. Take, for instance, a simple hydraulic jack (see Fig. 1). If the piston on the right has a surface area ten times that of the piston on the left, when force is applied to the left piston, it will move ten units for every one that the right piston moves. If a person pumps the left piston enough times, he will be able to slowly lift a load.



FIG. 1: HYDRAULIC JACK

A hydraulic elevator works the same way. Hydraulic fluid, which is stored in a tank, is pushed by an electronic pump to drive a piston, which in turn moves the elevator cab up an elevator shaft (see Fig. 2). To lower the cab, the elevator controller opens electronic valves to drain the hydraulic fluid back into the tank, lowering the piston and thereby the cab.

▶ **Traction-Type Elevators:** To understand this mechanism, think of a playground seesaw. When two children sit on opposite ends of a seesaw, the difference in weight is

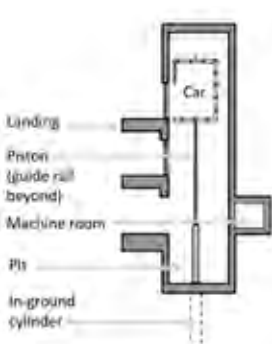


FIG 2: HYDRAULIC ELEVATOR

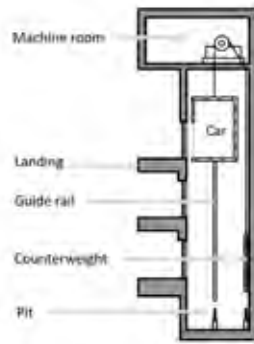


FIG 3: TRACTION ELEVATOR

minimal; a small push is sufficient to propel one child up and the other down. Similarly, the cab of a traction elevator is attached to steel cables which run up the elevator shaft and over a pivot, with a counterweight on the other side (see Fig. 3). The weight difference is minimal; an electric motor pulls the cables to move the cab up and down the shaft.

Using an Elevator on Shabbos

As with all electric machines, it is forbidden to initiate use of an elevator on Shabbos. One cannot push a button to call an elevator and one cannot press a button inside the elevator to select a floor.

An elevator in Sabbath Mode avoids these issues by stopping on every floor. The *Minchas Yitzchok* forbids even this, because the rider's additional weight causes the elevator motor to work harder and draw more current.¹ Rav Eliyohu Henkin *zt"l*, however, disagrees and allows the use of this type of elevator on Shabbos.² Rav Shlomo Zalman Auerbach *zt"l* is also lenient. He points out that any electrical change will only occur sometime after the rider enters the cab, once the elevator starts moving.³

Rav Levi Yitzchok Halperin *zt"l*, founder of The Institute for Science and Halacha in Yerushalayim, did extensive research and wrote a book on this topic titled *Maliyot Be'Shabbat*. Rav Halperin's conclusion is that one may use an automated elevator on Shabbos to ascend but not to descend. He argues that, during descent, the weight of the person in the elevator cab assists the motor. Thus, the person contributes to the function of the lights, brakes, door motor and other electric circuits which are activated.⁴

Rav Shlomo Zalman takes issue with Rabbi Halperin's thesis.⁵ He makes several arguments to support his position:

- There is no noticeable difference in the running of the elevator when a person enters the cab, and any change that he causes is therefore not halachically significant.
- Any potential change is merely caused by the weight of his body as he passively stands in the elevator, and not by any action of his.
- There is no immediate effect when he enters the elevator, and any change will only occur sometime later when the elevator starts moving.
- He alone cannot move the elevator at all, whereas the electricity can move the elevator without his help. As such, his assistance is not halachically significant.

It should be noted that there are *poskim* who feel that the use of an elevator is a "weekday activity" and that the sanctity of Shabbos precludes the use of all elevators.⁶ In a *teshuva*, Rav Shmuel Vosner *zt"l* writes that he personally is hesitant to be lenient in any circumstance, but he does not object if others are lenient and allows the use of a Shabbos elevator in extenuating circumstances.⁷

1 שו"ת מנחת יצחק ח"ג סי' ס.

2 שו"ת גבורת אליהו או"ח סי' קז.

3 שמירת שבת כהלכתה פרק כג הערה קלו (הערה קסד במהדורה החדשה).

4 הספר מעליות בשבת לר' הלפרין נמצא באתר אוצר החכמה. בסוף הספר יש שני מאמרים קצרים באנגלית:

"The Sabbath Elevator Question – A Technical Analysis of a Halakchic Problem" by D. R. Bannett

"Passenger Responsibility for Descent – A Halakchic Analysis" by Rabbi Yechiel Neumann

המאמר הראשון נמצא ג"כ באתר <https://nzautomacao.com.br/files/Ema%20new.pdf>

5 שמירת שבת כהלכתה שם הערה קמ (הערה קסו במהדורה החדשה).

6 עי' שו"ת חלקת יעקב או"ח סי' קמד.

7 יש קול קורא נגד ההשתמשות במעלית שבת עם החתימות של הגרי"ש אלישיב זצ"ל והגרי"ח קנייבסקי זצ"ל והגרי"ש ואזנר זצ"ל, נמצא באתר

<http://www.rabbibrand.022.co.il/BRPortal/br/P102.jsp?arc=36128>

שו"ת שבט הלוי ח"ו סי' לו.

SHABBOS ELEVATORS

A number of *poskim* allow the use of a Shabbos elevator for a *choleh*.⁸ STAR-K Rabbinical Administrator Rav Moshe Heinemann *sblit*"a *paskens* that a healthy and mobile person should avoid using a Shabbos elevator, but an elderly or infirm person may be lenient.

Modern-Day Elevators

Sabbath Mode elevators which stop at every floor eliminate the need to press buttons on Shabbos. There are, however, several other halachic concerns that must be addressed before using a modern-day elevator on Shabbos. Here are some of the key issues:

Door Edge Sensors

Elevators typically feature an infrared mechanism known as the *door edge sensor*, which detects when a person is blocking the doorway. This poses a concern on Shabbos, as merely walking through the doorway triggers the infrared mechanism and the various relays and LED indicators on the control panel (see Fig. 4).

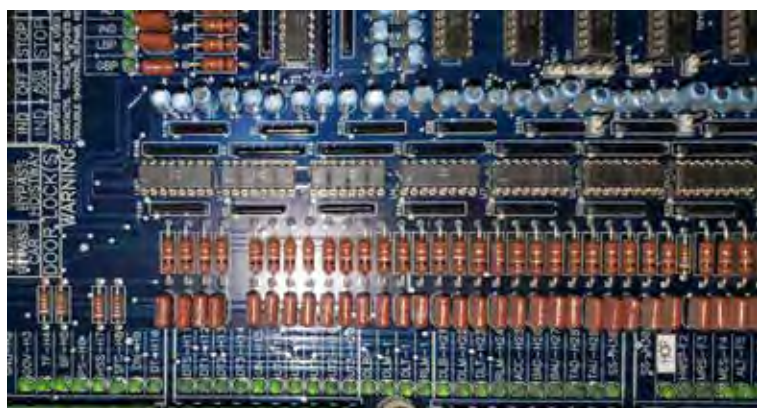


FIG 4: CONTROL PANEL

Relevel Sensors

Hydraulic elevators experience slight sinking and rising when passengers enter or exit, which is detected by encoders or magnetic tape readers/selectors. This detection prompts hydraulic pumps or valves to *relevel* the elevator, as well as to activate LED indicators and relays on the control panel.

Motor Speed Encoders

Some elevators are equipped with *encoders* that ensure motor speed compliance. These encoders monitor the motor speed to prevent it from exceeding specified limits. Movements within the cab – such as entering, exiting or shifting – will trigger new readings on the encoder, activating LED indicators on the control panel.

Floor Selector Encoders

Encoders also detect the elevator's position relative to the floor, allowing the elevator to slow down as it approaches the desired floor. Similar to motor speed encoders, the *floor selector encoders* detect movement within the cab which can trigger new readings; they, too, may activate LED indicators and relays on the control panel.

Load Weighing Devices

New regulatory requirements mandate the inclusion of load weighing devices in new and remodeled elevators to prevent overload situations. These devices continuously measure the weight of the elevator cab, with some systems having back-end displays – not visible to passengers. Even minor movements within the cab can result in fluctuations in the displayed weight readings (see Fig. 5).



FIG 5: WEIGHING SYSTEM DISPLAY

Automatic Deactivation of Sabbath Mode

In some cases, the Sabbath Mode does not run during the duration of Shabbos in order to minimize power consumption and the risk of motor burnout. In that event, Sabbath Mode is set to be operational according to a specific schedule. One who enters an elevator while Sabbath Mode is operational will have no halachically sanctioned way to exit should the Sabbath Mode deactivate.

Halachic Concerns and Solutions

Do visible changes to the elevator control panel, activation of LED indicators and electric relays pose a halachic concern on Shabbos?⁹ Rav Heinemann *paskens* that they do pose a halachic concern, and that all changes to the LED indicators, display, relays, and weight reading should be disabled if possible. It is also necessary to ensure that the door will not start to close and reopen when a passenger enters the elevator.¹⁰

To address these concerns, solutions for a halachically sound Sabbath Mode include:

- disabling the door sensor while the doors are open
- disabling level sensors while the doors are open
- disabling the weighing system display while the doors are open
- installing a visual and/or audible warning before the doors close to inform passengers not to enter or exit the cab at that time
- indicating that the Sabbath Mode is about to deactivate, allowing passengers to exit in time
- disabling LED lights and displays in the control room

Clearly, not all Sabbath Mode elevators are the same. While some elevators come with a Sabbath Mode that causes the elevator to stop at every floor, their Sabbath Mode may not address the various halachic problems cited above. ☆

Gramachip Technologies is a STAR-K certified company that offers a range of custom Sabbath Mode products. Gramachip Technologies adapts elevators by providing a Sabbath Mode that comprehensively addresses all the halachic issues associated with modern-day elevators. They collaborate closely with elevator companies and installers to ensure full technical compliance. For more information, they can be reached at 732-655-4206 or info@gramachip.com.

8 ע"י בספר פסקי תשובות סי' רמ"ח ס"ק ב במהדורה החדשה.
9 יש כמה סברות להקל, שהרוכב במעלית שבת אינו יודע מכלל זה והרי הוא מתעסק בעלמא, ואף שמתעסק בכל התורה אסור עכ"פ מדרבנן י"ל ששבת קיל טפי מפני שאין זה מלאכת מחשבת כמש"כ בשו"ת רע"א קמא סי' ח, ועוד שהרוכב אינו מעונין בכלל זה והרי הוא פסיק רישא דלא איכפת ליה באיסור דרבנן (וכ"כ בשו"ת יביע אומר חי"א סי' כד להתיר מעלית שבת מטעם זה), ועוד שאין בזה צורת מלאכה כמש"כ כע"ז בשו"ת שבט הלוי ח"ט סי' סט, מאידך גיסא, קי"ל שגם פסיק רישא באיסור דרבנן אסור כמש"כ השעה"צ סי' שלו ס"ק ב, וגם בעל הבית שהכין מעלית בביתו ניהא ליה שיפעל כראוי (ור' משה היינעמאן שליט"א אמר בשם הגר"ש אלישיב זצ"ל, שאף הגורות LED קטנות הנדלקות בחדר בקרה כדי שידע הטכנאי שהמעלית עובד כראוי, יש להם דין פסיק רישא דניהא ליה לבעל הבית, כיון שרוצה בהפעלתם כדי שידע הטכנאי אם יש איזה בעיה), ועוד שהרוכב יודע מזה כשהוא גורם לפתיחת הדלת מחדש וכדומה וניהא ליה בזה, ואכמ"ל.
10 שמעתי מר' משה היינעמאן שליט"א.

WARMING UP

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process.⁶ This concept applies to any food being cooked on any heat source, which includes a slow cooker.

The way to permit the above situation is to cover the heat source that is under the pot, thereby creating a *heker*, a distinctive difference which would stop a person from stoking the fire. If the heat source is covered with a blech, food may be left on a flame.⁷

Some contemporary opinions hold that covering a fire only works when the covering diminishes the heat at least slightly, but if there is no minimization of the heat through the blech, that will not satisfy the rabbinic necessity for it.⁸ In the case of a slow cooker, placing a blech (e.g., a sheet of aluminum foil) in the small space between the crock and the base not only does not diminish the heat, but may in fact increase it by insulating the pot, and thereby trapping the heat. Thus, according to this opinion, the use of a blech inside an insert slow cooker will not resolve the issue of *shehiya*.

Other opinions hold that the main function of a blech is to make a *heker*, and that doing so allows one to leave a pot on a fire even if it does not diminish the heat.⁹ According to this view, one could create a blech simply by placing foil between the pot and the base.

Another option to satisfy the need for a blech and to avoid the above dispute is by covering the knob on the front of the slow cooker. This *eitzah* is a matter of dispute by *poskim*: whether the *takana* (rabbinic law) to place a blech must be over the actual fire or over the spot where one would actually “stoke the coals” – which, in modern times, is the knob. This view – that it is sufficient to cover the knobs – is that of the Rosh Yeshiva, Rav Aharon Kotler *zt”l*.

According to his *talmid*, STAR-K Rabbinical Administrator Rav Moshe Heinemann *shlit”a*, one may follow Rav Aharon’s opinion, especially in the case of an insert-type slow cooker in which it is questionable if a regular blech works as explained above. Still, it is preferable, whenever feasible, to cover *both* the fire and the controls.

CHAZARA: RETURNING A COOKED FOOD TO A FIRE ON SHABBOS

Chazal forbade one who removes a pot from the fire to place it back on the fire (constituting an act of *chazara*), unless certain requirements are met. One of these is the necessity of a blech.

Even if one relies on the above ruling of Rav Aharon to satisfy the need for a blech, we must discuss if he intended to be lenient with

covering only the knob/control with regard to *shehiya* (as discussed above) or even to allow *chazara* (returning a pot to the fire on Shabbos).

A very brief explanation of this question is as follows. There are two reasons mentioned for the rabbinical prohibition of *chazara*:¹⁰

(1) *shema yechateh* (one may come to stoke) – maybe upon returning the food one may be enticed to stoke the fire to maintain a hot pot.

(2) *michzi k’mevashel* (one appears to be cooking) – the action of placing a pot on a normal fire appears like one is cooking on Shabbos. When the fire is covered, the fire is clearly different and placing food on a covered fire does not look like regular cooking.

Does covering the knob correct the second issue of *chazara*, which is that it appears to be cooking? Maybe it’s only corrected when the fire is altered slightly? Or is a fire whose controls are altered by being covered also not appear as cooking?

It is brought down that the Chazon Ish held that covering the knob only helps for leaving a pot (*shehiya*) but does not help for returning it (*chazara*).¹¹ In the *sefer Kovetz HaMishor*, however, it states clearly that Rav Aharon held that covering the knobs works for *chazara* as well, and this is the understanding of Rav Heinemann – that Rav Aharon intended to be lenient even for *chazara*.¹²

To conclude, one can rely on the ruling of Rav Aharon if necessary on this point as well – to allow *chazara* with just the knobs of the slow cooker covered – provided one adheres to all the other *halachos* of *chazara*: i.e., the food is fully cooked, the food is still warm, there was an intention to return, and one never let go of the vessel.¹³

HOT PLATES OR WARMING TRAYS

As with slow cookers, there are different types of electric hot plates and warming trays: a simple plug-in type with a single setting that cannot be adjusted versus others that offer variable temperature settings with adjustable temperature controls.

Although simpler than an insert-type slow cooker, a hot plate – popularly referred to as a “*plata*” – still raises halachic questions regarding *shehiya* and *chazara* on Shabbos.

SHEHIYA: IS A BLECH REQUIRED TO LEAVE UNCOOKED FOOD ON A HOT PLATE OVER SHABBOS

A warming tray that has adjustable temperature controls unquestionably needs a blech for the same reason cited above by an insert-type slow cooker: Chazal were worried that one might want to “stoke the flame” – that is, to adjust the temperature. For a one-setting hot plate, a blech would not be necessary for *shehiya*.

CHAZARA: CAN COOKED FOOD BE RETURNED TO A HOT PLATE ON SHABBOS

Rav Moshe Feinstein *zt”l* has a *teshuva* in which he writes that one may do *chazara* on a single-setting hot plate (or any heat surface) that is made specifically to keep food warm or to re-heat food without placing a blech. He also permits one to take a fully cooked, dry item directly from the fridge on Shabbos and place it on such a surface (i.e., without the need for a blech).¹⁴



6 משנה שבת דף לו ע"ב.
7 שם ובשו"ע שם סי' רנ"ג ס"א.
8 לשון המחבר שם סי' רנ"ג ס"א למעט חומם.
9 שמעתי מאבי מורי שליט"א.
10 עי' מ"ב סי' רנ"ג ס"ק ל"ז ובשער הציון אות ל"ז שם.
11 ספר מעשה איש ח"ז עמ' קמ"ב.
12 קובץ תורני המישור (על עניני שבת) עמ' כ"ד (לייקווד תשס"ח).
13 שו"ע סי' רנ"ג סעי' ב.
14 שו"ת אגרות משה או"ח ח"ד סי' ע"ד הל' בישול אות ל"ה.

Do's and Don'ts of Slow Cookers and Hot Plates on Shabbos



The rationale for this view is based on what was explained earlier regarding *chazara*, which has two reasons for its prohibition: *shema yechateh* and *michzi k'mevashel*; on such a surface there is no concern about "stoking the fire" because there is no control at all, and there is no concern about the appearance of cooking because, in general, people do not cook on a hot plate.

Contemporary *poskim* point out, however, that Rav Moshe's *teshuva* – which allows one to do *chazara* without a blech and even to put a cold item directly on a hot plate – only applies in the case of an appliance on which it is not possible to cook at all.¹⁵

Once cooking (i.e., heating to 120°) on this surface is a possibility – regardless of how long it may take – we don't differentiate between

this appliance and any others that enable one to cook. Whether a hot plate can or cannot be used for cooking will vary according to different appliance models, but the rule stays the same: if it is possible to cook on the surface (even if it would take a while), one can only return food to it if it has a blech, keeping in mind all the other rules of *chazara* cited above.

If cooking is not possible on this surface, then both opinions agree that Rav Moshe would allow *chazara* without a blech, and even to place a cold, dry and fully cooked item on it for the reasoning explained above. ☆

15 כן שמעתי מאבי מורי שליט"א והרב יעקב אפרים פארכהיימר שליט"א.

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KEEPING YOUR COOL: USING A REFRIGERATOR ON SHABBOS

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inside it. If the processor is already on, adding food to it is *tochein* – the chopping of the food determines the *melacha*, not the action of the electricity. Similarly, turning on an electric fan is not a *melacha d'Oraysa*, since there is no *melacha* involved in spinning fan blades or moving air.

Looking in the Fridge

With this principle in mind, Rav Shlomo Zalman analyzed the operation of a refrigerator. Refrigerators create a cold environment not by adding cold to the cabinet but by removing the heat from inside it.

The refrigerator cabinet (see Fig. 1) contains an *evaporator*, which is a low-pressure tube. A liquid refrigerant enters that tube through the *expansion valve* and quickly evaporates in the low-pressure environment, absorbing the heat around it. The warm gas then exits the cabinet and is then re-pressurized by the *compressor* and fed into a *condenser* – a higher-pressure tube outside the refrigerator – where it cools back down and condenses into a liquid before being fed once more into the evaporator.

Rav Shlomo Zalman pointed out that none of these activities (condensing, expanding, moving air and refrigerant) constitute a *melacha d'Oraysa*.

A second point of his analysis was that the effects of opening the door on the temperature control system of a refrigerator are generally neither immediate nor direct. Any effect is therefore a *grama*. This creates a situation of *gram melacha derabanan* which, he writes, is permitted *lechatchila*.⁴ Thus, according to Rav Shlomo Zalman, refrigerators may be opened on Shabbos as they are during the week.⁵ Although there are other opinions, the accepted minhag in America has been to follow this *psak*.⁶



FIG 1: REFRIGERATOR CABINET

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4 Rav Shlomo Zalman writes that this logic would permit an unwanted *melacha d'Oraysa* as well, since every *psik reisha dlo nicha lei* is only forbidden *d'rabanan*. This is why Rav Moshe Heinemann *shlit"א* rules that an oven may be opened only once on Shabbos, even if the oven is in Sabbath Mode: when the oven door is opened, the temperature inside drops rapidly, which causes the thermostat to light the flame. If you remove all the food, the subsequent activation of the flame is undesirable, as you have no use for the fire in an empty oven. If you leave the food inside, it is obviously beneficial to have the flame since it serves to keep the food warm.

5 Provided, of course, that the lights are deactivated.

6 See *Sefer Shmiras Shabbos K'hilchasa* (3rd ed., 10:12-14), who writes that one who wishes to avoid any questions should set his refrigerator on a timer and only open it when the device is off. Rav Heinemann points out that this does not actually avoid all questions: since opening the refrigerator will raise its temperature, this can cause the thermostat to activate the cooling cycle sooner once the timer turns the fridge back on. Granted, this, too, is only a *grama*, but we would still need the *psak* of Rav Shlomo Zalman.

KEEPING YOUR COOL: USING A REFRIGERATOR ON SHABBOS

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Addressing New Technologies

As technology advances, new questions have arisen as to whether the above discussion still applies or if the advanced technology renders the *psak* obsolete.

► **Thermostats** – In the 1960s, the refrigerators Rav Shlomo Zalman wrote about had a mercury ampule inside the thermostat that would open and close the circuit which controlled the cooling system. In 2024, that technology is obsolete and illegal. Instead, refrigerators use liquid-vapor switches,⁷ bimetallic strips,⁸ or solid-state “digital” thermistors.⁹ Does his logic still apply to these systems? Is it still a *gram d'rabanan*?

Liquid vapor and bimetallic strips are essentially similar to the thermostats discussed by Rav Shlomo Zalman, in that they physically control the switch as they react to the changing temperature, and any effect will remain a *grama*.¹⁰

► **Computer Tracking** – Solid state thermostats, on the other hand, take continuous readings of the temperature and use a microprocessor to compare that reading to the set temperature then control the cooling system based on that reading. Similarly, many refrigerators track the number of door openings and adjust the defrost cycles accordingly. Is this a problem on Shabbos?

Some are concerned that the fact that the computer tracks this information may violate the prohibition of *koseiv* (writing). As established above, however, electrical activity (which is how computers transmit and store information) in and of itself does not constitute a *melacha*. Since there is no visible display of that stored information, and *koseiv* by definition requires a visible result, there is no halachic issue with the computer tracking data on Shabbos.

If, however, the temperature in a refrigerator or oven were to be displayed, that would be a concern of *koseiv*, and indeed, all displays and icons that respond to appliance usage are deactivated in STAR-K Sabbath Mode.

► **Fans and Dampers** – Another aspect of modern refrigeration technology is the use of fans and dampers to control the temperature in the various compartments of refrigerator/freezers. These are controlled by electric motors, which are in turn controlled by the unit's computer. Every time the door is opened, the temperature rises, potentially activating these devices. Is this an issue on Shabbos?

Again, to answer this question we must look beyond the fact that there is electricity involved and analyze the *activity* being done to see if it is a *melacha*. Fans and dampers serve to control airflow, which is no more a *melacha d'Oraysa* than opening a window to cool off a room. Therefore, as discussed above, as long as they do not activate as an immediate result of opening the door, it is, at worst, a *grama* of a *d'rabanan*, and permitted on Shabbos. STAR-K Sabbath Mode specifications require a delay before any response to door activity, to ensure that it always remains a *grama*.

► **Door Alarms** – To ensure food safety, most manufacturers include door open alarms, which cause the refrigerator to beep, or even flash its lights, if the doors are left open or the temperature rises. Turning off an alarm or light is indeed forbidden on Shabbos, and one would be required to leave their refrigerator open for the rest of Shabbos. To avoid this problem, STAR-K Sabbath Mode either disables the alarms entirely or requires that they turn off after sounding to allow the user to close the door.

► **Motorized Door Assist** – To allow for a clean, modern look, some high-end refrigerators are designed to be mounted flush with the cabinetry, with no handles. Instead, they open with a motorized door assist, which is activated by a touch sensor. In STAR-K Sabbath mode, the sensor and the motor are disabled so that the door can be opened manually.

► **Smart Refrigerators** – Smart refrigerators have a host of capabilities, using advanced touchscreen controls and phone apps to change settings, alert about door openings or alarms, send live videos of the inside of the refrigerator, or even create customized shopping lists. Displaying any of this information on a fridge or phone screen is *koseiv* (writing) *m'drabanan*, and strictly forbidden on Shabbos. STAR-K Sabbath Mode disables all reactive displays and cameras in the refrigerator, ensures that the phone apps are not alerted.¹¹ STAR-K also requires that all certified appliances be usable without a smartphone.

► **Active Defrost Systems** – The most serious concern in modern refrigerators is active defrost systems. Frost-free refrigerators use a heated electric coil to defrost the evaporator coils. To conserve energy, this heating element is only activated after a certain number of door openings or compressor activation time. Since the insides of these coils glow red, this is a serious concern of the *melacha d'Oraysa* of *maavir* (creating a fire). STAR-K Sabbath Mode puts the defrost heating element on a clock-based timer, so as not to be affected in any way by the door openings.

New Sabbath Mode

As mentioned above, Rav Shlomo Zalman allows the compressor to be activated by a thermostat on Shabbos. To cater to the needs of users who would like to avoid affecting their appliance in any way, STAR-K certifies certain models as “New Sabbath Mode.” Ovens and refrigerators with this designation do not use thermostatic controls at all, relying instead on preprogrammed on/off cycles to control the unit's temperature. ☆

7 Essentially, a bulb filled with a fluid that expands and contracts as temperature changes. As the temperature changes, the fluid expands or contracts, the pressure of which closes and opens the electrical switch that starts the cooling system.

8 Bimetallic thermostats use a strip composed of two metals that expand and contract at different rates. One metal is very sensitive to temperature changes, and the other is not. Changes in temperature cause the strip to warp towards or away from the switch controlling the cooling system, closing and opening the circuit.

9 Thermistors (a portmanteau of *thermal* and *resistor*) are semiconductors that become more or less electrically conductive/resistant as the temperature changes, which allow for continuous, precise readings.

10 The only difference is whether it is the mercury in the ampule or the strip which completes the circuit.

11 In practice, most manufacturers disable the communication between the refrigerator and the app entirely. Ironically, this means that you can enter Sabbath Mode through the app – but not exit it!

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STAR-K Rabbinic Administrator
Rav Moshe Heinemann *shlit"a*
at the Adirei HaTorah event on
June 23, 2024, at the Wells Fargo
Center in Philadelphia.



(L to R): Rav Moshe Heinemann, Rav Sholom Kamenetsky, Rav Yerucham Olshin,
Rav Yisroel Neuman, Rav Moshe Hillel Hirsch, Rav Malkiel Kotler and Rav Yitzchok
Sorotzkin, *shlit"a*.



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