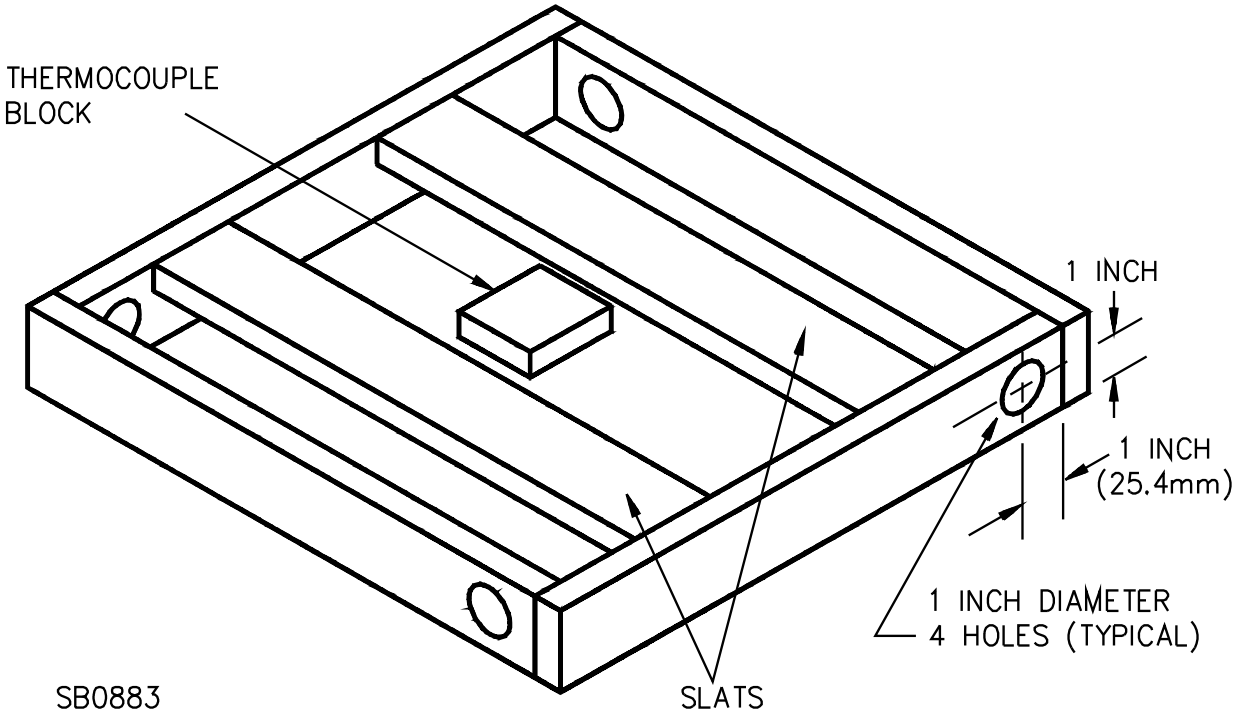
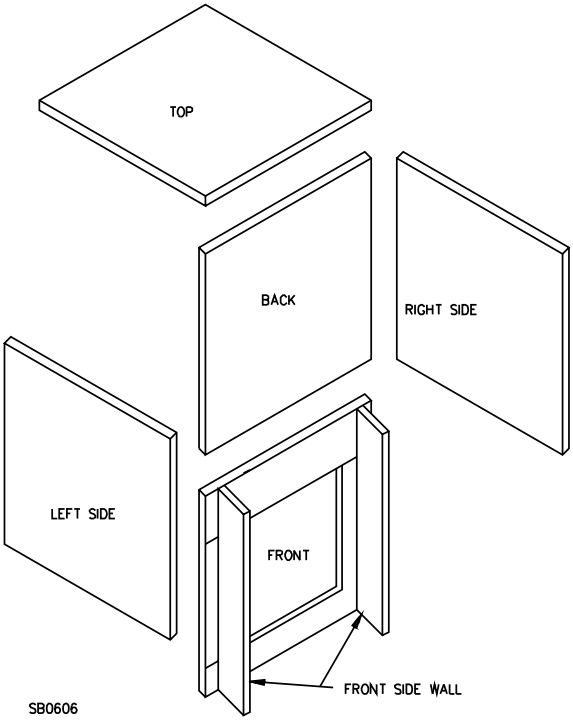
Figure 59.5
Base for wall-mounted oven test



59.5.2.3 The panels for enclosing the oven are to be as illustrated in Figure 59.6. The dimensions of the panels are to be as determined by the overall outer dimensions of the oven, in accordance with 59.5.2.1. The opening in the front panel is to be no larger than necessary to permit the oven to be inserted. The width of the top member of the front panel is to be 12 in (305 mm), and the width of the other members is to be 6 in (152 mm). The front side-wall panels are to be no less than 12 in wide and are to extend the full height of the overall front panel and are to be located as close as possible to the trim of the oven; except that, if the oven door covers the trim, the front side-wall panels are to be located 1/4 in (6.4 mm) from the edge of the door.

Figure 59.6
Enclosure panels for wall-mounted oven test



59.5.2.4 An oven with a door that is hinged on the side is to be tested with only one front side-wall panel located at the hinged side of the door.

59.5.2.5 An oven with a door that is hinged at the bottom is first to be tested with both front side-wall panels in place. If temperatures exceeding those specified in Table 59.1 are recorded, the test may be repeated with one front side-wall panel in place followed, if necessary, by a test with the other panel in place. The temperatures shall not exceed those specified in Table 59.1 in at least one of the tests.

59.5.2.6 If the manufacturer wishes an oven to be investigated for operation installed adjacent to an identical oven – side by side – or one above the other, the setup for the test is to be as follows. Each of the two ovens is to be enclosed in the manner described in 59.5.2.1 – 59.5.2.5, except as noted in this paragraph, and the front of each oven is to be in the same vertical plane as that of the other. For operation side by side, the two assemblies are to rest on a common horizontal surface, and for operation one above the other, one assembly is to be set on top of the other. In either case, the separation between the two assemblies is to be no larger than that necessary to accommodate the trims, except that the separation may be larger than the trims will permit if the oven is marked in accordance with 82.12. If the minimum separation is employed for ovens mounted one above the other, the height of the base – see 59.5.2.2 – for mounting the uppermost oven may be increased from the specified value if necessary to accommodate the trim. If the minimum separation is employed for ovens mounted side by side, the width of each of the two adjacent front panels may be less than the 6-in (152-mm) value specified in 59.5.2.3, as may be necessary to bring the two trims into contact with each other. After the assemblies have been mounted as described above, any open space at the top, back, or sides is to be closed with plywood.

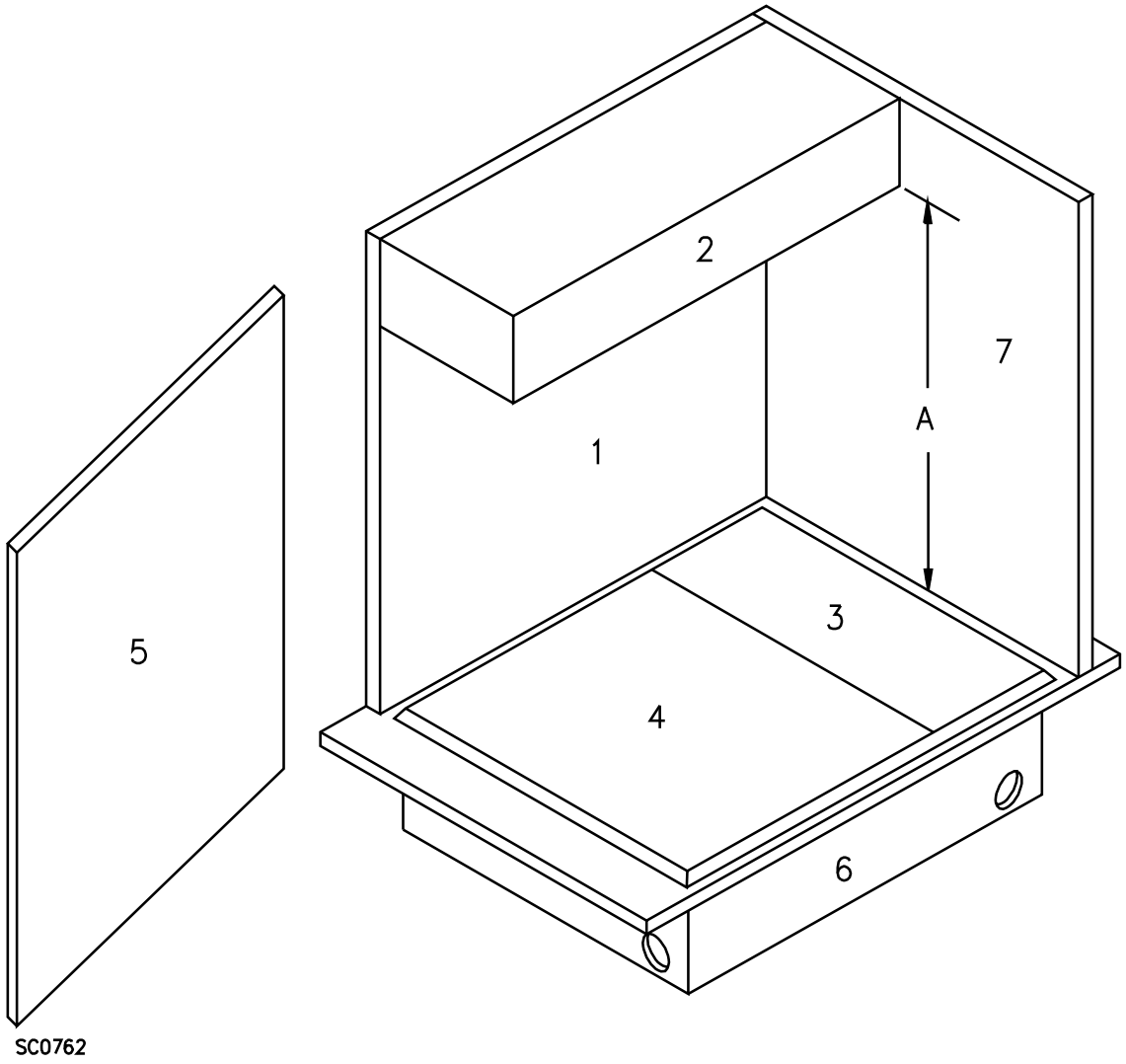
59.5.2.7 The block on which the thermocouple is mounted and the method of securing the thermocouple, are to be as illustrated in Figure 59.1.

59.5.3 Counter-mounted cooking units

59.5.3.1 A counter-mounted cooking unit is to be mounted as illustrated in Figure 59.7. The base on which the unit is to be supported is to rest on a bench or a table. The sides of the supporting base are to be brought as close to the sides of the cooking unit as its construction permits. The panels above the cooking surface are to be placed as close to the elements as permitted by the trim with which the unit is equipped. If a unit is to be installed adjacent to another unit, they are to be mounted for the test as close together as their construction will permit. The block on which the thermocouple is mounted is to be supported against the bottom of the unit at the hottest area. A top cabinet as described in 59.4.2.4 is to be installed 30 in (762 mm) above the horizontal cooking surface.

Exception: If in an intended installation configuration, the width (left-to-right dimension) of a counter-mounted cooking unit is less than 16 in, the distance between the side walls above the cooking surface shall be maintained as specified by the manufacturer and shall be no more than 16 in (406.4 mm). The unit is to be oriented so that a minimum of two walls above the cooking surface are placed as close to the elements as permitted by the trim. The unit shall be marked in accordance with 83.11 and the installation instructions shall indicate the minimum required clearances to adjacent surfaces.

Figure 59.7
Test enclosure for counter-mounted cooking unit



1. Building back wall

2. Top building cabinet

3. Control panel

4. Cooking surface

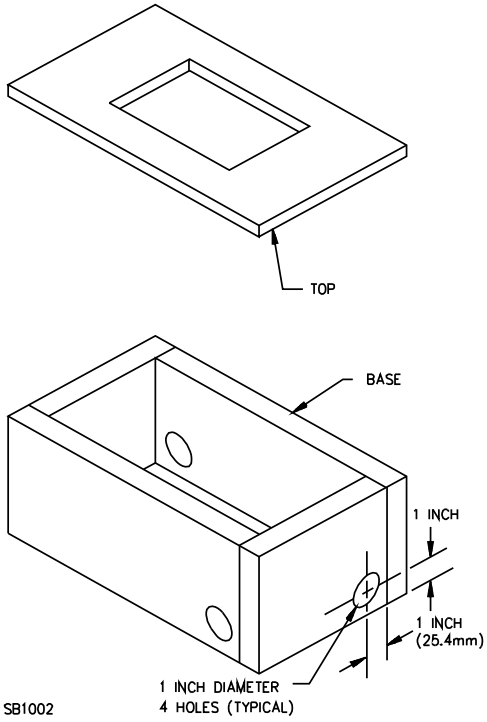
5. Building side wall

6. Base

7. Building side wall

59.5.3.2 The base mentioned in 59.5.3.1 is to be constructed as illustrated in Figure 59.8. The sides of the base are to be boards 3/4 in (19.1 mm) thick, and are to have such length as is necessary to enclose the unit in accordance with 59.5.3.1. The width of the boards – the height of the base – is to be equal to the depth of the enclosure of the counter-mounted cooking unit plus 2 in (51 mm). If the manufacturer's instructions require that ventilating accessories accompanying the range be installed for additional ventilation, the additional ventilation is to be provided in the base of the test enclosure. The top panel is to be of nominal 3/8-in (9.5-mm) plywood, and the opening in this panel is not to be larger than is necessary to permit insertion of the unit with the trim as tight against the top panel as configuration will permit. The size of the top panel is to be in accordance with the position of the above-surface panel.

Figure 59.8
Enclosure for counter-mounted cooking unit test

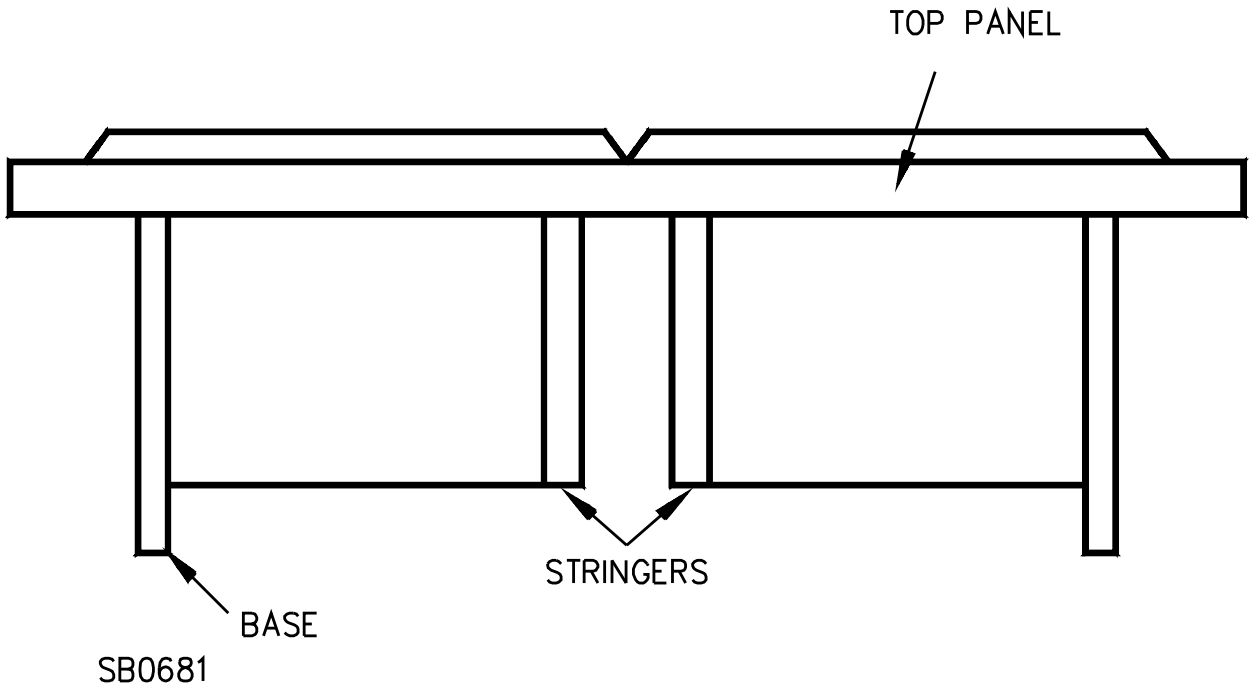


59.5.3.3 The simulated side and back walls illustrated in Figure 59.7 are to extend at least to the front edge of the cooking surface and are to be mounted as close to the units as the trim will permit.

59.5.3.4 If two counter-mounted cooking units are to be tested for installation adjacent to each other, they are to be mounted as illustrated in Figure 59.9. The units are to be placed as close together as the trim will permit. The stringers are to be of 3/8-in (9.5-mm) nominal plywood, and one or both stringers is to be omitted if space is inadequate.

Exception: The spacing between units may be larger than the trim will permit if the unit is marked in accordance with 82.16.

Figure 59.9
Method of mounting two counter-mounted cooking units



59.5.3.5 A counter-mounted cooking unit intended for installation directly above a wall-mounted oven is to be tested while assembled in that manner. See 83.6.

59.6 Small metal object heating test – induction cooktop surface units

59.6.1 Induction cooktop surface units shall be constructed so that the induction coil can only be operated when a vessel is placed on the cooking zone. The appliance shall be operated at rated voltage with the controls adjusted to their highest setting. An iron bar, 5/64 in (2 mm) thick having dimensions approximately 4 in (100 mm) x ¾ in (20 mm), is to be placed in the most unfavorable position on each cooking zone, tested one at a time. The temperature rise of the bar shall not exceed 35 °C (95 °F).

59.7 Thermal aging

59.7.1 General

59.7.1.1 A polymeric material shall be resistant to thermal degradation at the maximum temperature to which it is exposed during normal use of the appliance.

59.7.2 Thermal aging test

59.7.2.1 Three specimens of a polymeric part shall be tested as specified in 59.7.2.2. As a result of the test, a part shall comply with the following:

a) Spacings shall not be reduced to less than those specified in Table 26.1,

b) Current-carrying parts or internal wiring shall not be exposed, as determined in accordance with Accessibility of Uninsulated Live Parts, Film-Coated Wire, and Moving Parts, Section 6.2 and Internal Wiring, Section 10,

c) A condition shall not be produced that could increase the risk of fire, electric shock, or injury to persons (see 6.2), and

d) A part exposed to liquids shall not crack or leak.

59.7.2.2 The specimens shall be placed in an air-circulating oven for 1,000 h at the temperature specified in Table 59.3. The parts shall be removed from the oven, cooled to room temperature, and examined to determine compliance with the requirements in 59.7.2.1.

Table 59.3
Temperatures for oven conditioning

Maximum operating temperature of polymeric enclosure part, °C	Oven temperature,	
	°C	°F
> 50 ≤ 75	85	(185)
> 75 ≤ 85	95	(203)
> 85 ≤ 95	105	(221)

59.7.2.3 A polymeric part shall be considered to comply with the requirements in 59.7.1.1 if the material has a temperature index, based on historical data or a long-term thermal aging program that indicates its acceptability for use at the temperature involved.

59.7.2.4 A polymeric part shall be considered to comply with the requirements in 59.7.1.1 if the maximum temperature to which the material is exposed during normal use of the appliance does not exceed 50°C (122 °F).

60 Flare-Up Test

60.1 A grill provided as part of an appliance shall comply with the requirements in 60.2 if:

a) The heat source is below the cooking surface; and

b) The average temperature at any point of the heat source exceeds 260°C (500°F) or the maximum temperature at any point of the heat source exceeds 300°C (572°F).

In addition, the grill shall comply with the requirements in 18.5. See 60.5.

60.2 There shall be no glowing or flaming of combustible material, either wood or cheesecloth, in proximity to the appliance as installed when the appliance is operated under the conditions described in 60.3 – 60.5. In addition, there shall be no visible damage to the insulation of wire or components.

60.3 The appliance is to be installed as described in 59.4.1.1 – 59.5.3.5, as applicable, and the surfaces of the test enclosure above, to each side of, and behind the appliance are to be covered with two layers of cheesecloth secured as tightly as practicable to the enclosure surface. The cheesecloth on the side and back walls of the test enclosure is to extend below the horizontal top cooking surface of the appliance. The cheesecloth is to be as described in 54.1.

60.4 After the appliance has been subjected to maximum normal heating for 10 min, the cooking surface above the active heating element area is to be covered uniformly with 3-in (76.2-mm) diameter, 1-in (25.4-mm) thick patties of ground beef. The adjacent edges of the patties are to be touching as the cooking begins. The ground beef is to consist of a mixture of 50 percent each by weight of lean beef and suet that have been ground together twice. For this test, lean beef is considered to be beef with all fat cut away from the edges and from the interior of the cut. The patties are to be broiled on one side until they appear to be half-cooked and then turned over once. The patties are then to be cooked until substantially all fat has been rendered. Melted fat is to be allowed to accumulate in the normal manner except that any instructions for adding water or similar material to the fat receptacle are to be disregarded.

60.5 For a range with an integral cooling or exhaust system, the test described in 60.2 – 60.4 is to be conducted:

a) With the cooling or exhaust system both on and off, if the grill can be operated with or without the air system or if the absence of the air stream would not be apparent to the user; or

b) With the cooling or exhaust system on, if the grill can be operated only with the air system operating and the absence of the air stream would be apparent to the user.

60A Abnormal Operation – Coil Surface Unit Cooking Oil Ignition Test

60A.1 Each coil surface unit provided as part of an appliance shall comply with 60A.3 or 60A.13 if it has a nominal rating of 350 W or greater.

60A.2 When an appliance is equipped with multiple coil surface units of equivalent construction (including control system) and wattage, only one of those units need be subjected to this test. When applicable, the subjected unit should be that nearest the front of the appliance.

60A.3 A coil surface unit shall not cause ignition of cooking oil when tested as described in 60A.4 – 60A.12 or alternatively meet the temperature requirements of 60A.13.

60A.4 The appliance shall be tested at voltage specified in 56.4.

60A.5 The cast iron pan specified in Table 60A.1 and Figure 60A.1 shall be placed on the center of the coil cooktop element. For purposes of selecting pan size, the heating element size shall be determined by the maximum heated diameter as shown in Figure 60A.2. A detailed specification for the reference pans can be found in AHAM ER-1:2017 clause 5.7.5.

Figure 60A.1
Pan dimensions
(bottom curvature exaggerated for clarity)

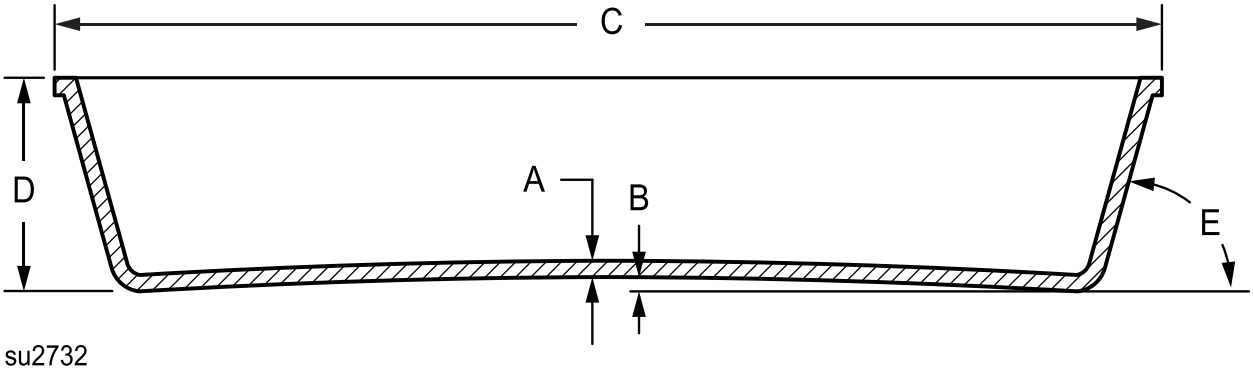


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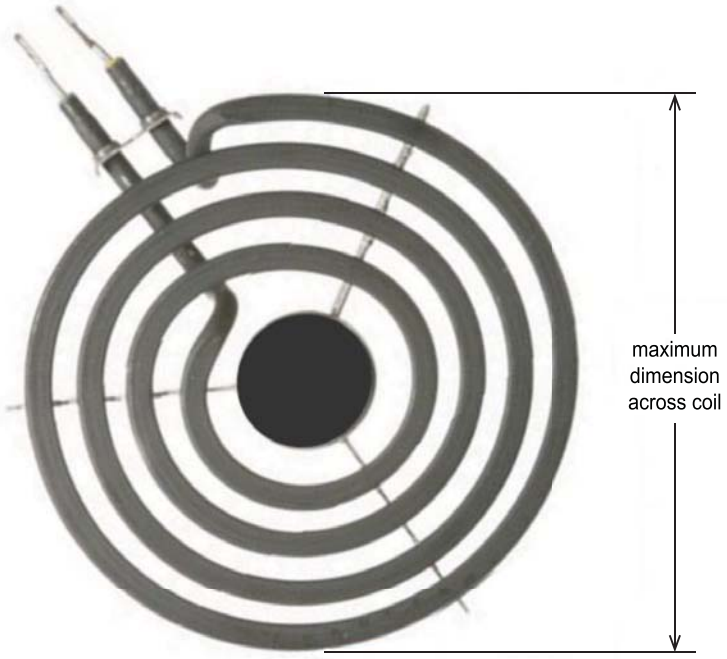
Table 60A.1
Reference cast iron test pan dimensions and oil amounts

Heating Element Size	Reference Bottom Thickness A in (mm) ± 0.010	Reference Bottom Flatness B in (mm) ± 0.010	Reference Overall Diameter C in (mm) ± 0.1	Reference Height D in (mm) ± 0.1	Reference Side Angle E degrees ± 5°	Oil Amount g
≤ 7 in	.15 (3.8)	0.010 (.25)	8.26 (210)	1.90 (48.3)	68	58
> 7 in.	.15 (3.8)	.03 (0.8)	10.40 (264)	2.04 (52)	70	106

Figure 60A.2
Determination of coil heating element size



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60A.6 *Deleted*

60A.7 *Deleted*

60A.8 *Deleted*

60A.9 Canola oil shall be added directly to the pan until an amount equal to the weight specified in Table 60A.1 is obtained. For reference, this will result in an approximate depth of 0.125 in (3.175 mm).