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BAKING AND PASTRY EQUIPMENT

AFTER READING THIS CHAPTER, YOU SHOULD BE ABLE TO:

1. Identify the principal pieces of large equipment used in baking and pastry making and indicate their uses.
2. Identify the principal pans, container, and molds used in baking and pastry making and indicate their uses.
3. Identify the principal hand tools and other equipment used in baking and pastry making and indicate their uses.



MUCH OF A baker's art and craft involves simple tools. Learning to become a successful baker requires developing a great deal of manual skill using these tools. For example, a pastry bag is nothing more than a cone-shaped piece of fabric or plastic, open at both ends. Although its construction is simple, and no operating manual is required to understand how it works, hours of practice are necessary to become skilled at using a pastry bag for decorative work.

At the other extreme are large machines such as floor-model mixers, ovens of many types, and dough-handling equipment such as molders, dividers, and sheeters. Of these, perhaps only ovens are essential to a baker's work. The other items are important labor-saving devices that enable workers to produce goods

in large quantities with greater speed. Without this equipment, much of the output of a bakeshop would not be economically feasible.

This chapter is an outline of the most important pieces of equipment used by bakers and pastry chefs, from large equipment to containers and molds to hand tools. In addition to these tools, most bakeshops contain an array of equipment also found in most kitchens, including pots and pans, spoons, ladles, spatulas, knives, and so on. Learning to use these tools is the subject of much of this book.

LARGE EQUIPMENT



Small table-model mixer.
Courtesy of Hobart Corporation.



Large floor-model mixer.
Courtesy of Hobart Corporation.

MIXERS, OVENS, AND dough-handling equipment take up most of this category.

Mixers

Mixers of various types are essential tools in the bakeshop. While small quantities of doughs and batters can be mixed by hand, commercial baking in any quantity would be next to impossible without power mixers.

Two main types of mixer are used in small and medium-size bakeshops: vertical and spiral. Other types of specialized equipment are used in large industrial bakeries.

Vertical Mixer

Also called a *planetary mixer*, the vertical mixer is the most common type used in baking, as well as in cooking. The term *planetary* is descriptive of the motion of the beater attachment. Just as a planet spins on its axis while revolving around the sun, so, too, does the beater attachment spin on its axis while rotating in an orbit to reach all parts of the stationary bowl.

Tabletop mixers range in capacity from 5 to 20 quarts (4.75 to 19 L). Floor models are available as large as 140 quarts (132 L).

Vertical mixers have three main mixing attachments:

1. The *paddle* is a flat blade used for general mixing.
2. The *wire whip* is used for such tasks as beating egg foams and cream.
3. The *dough arm* or *hook* is used for mixing and kneading yeast doughs. Dough hooks may be standard *J*-hooks or spiral hooks.

Be sure to use the right-size attachment for the bowl. Using a 40-quart paddle with a 30-quart bowl could cause serious damage to the equipment. Make sure both the bowl and the mixing attachment are firmly in place before turning on the machine. Always turn off the machine before scraping down the bowl or inserting a scraper, spoon, or hand into the bowl.

Additional special attachments are also available. These include the following:

- The *sweet dough arm* combines the actions of the dough arm and the flat paddle and is used for mixing sweet doughs.
- The *wing whip* is used for mixing materials too heavy for the standard wire whip.
- The *pastry blender* is used to blend fat and flour, as in making pie doughs.



Mixer attachments (left to right): whip, paddle, dough arm.

Courtesy of Hobart Corporation.

The availability of such a variety of attachments points up one of the main advantages of the planetary mixer: its versatility. With a single machine, the baker can produce a great variety of doughs, batters, creams, meringues, and other goods. In addition, vertical mixers have an attachment hub that can be used to power many other tools, such as grinders and slicers. This makes vertical mixers useful in the kitchen as well as the bakeshop.

Spiral Mixer

Spiral mixers are designed for doughs and heavy batters and are used primarily for making large quantities of yeast doughs for breads and bagels. Unlike vertical mixers, spiral mixers do not have interchangeable bowls and agitator arms. The agitator arm is in the shape of a spiral, and both the bowl and the spiral arm rotate to develop the dough quickly and efficiently. In a typical model, the bowl may be set to rotate in either direction.

Dough capacities range from 5 to 30 pounds (2.3 to 14 kg) for small machines to more than 500 pounds (230 kg) in large machines.

Because spiral mixers are used exclusively for mixing doughs, they do not have the versatility of vertical mixers, as just described. However, they do have several important features and advantages that make them the preferred mixers of bread bakers and pizza makers:

- Spiral mixers blend and develop dough more efficiently than planetary mixers. Because of their design, they develop dough more intensively and in less time, resulting in lower machine friction and dough warming (see p. 123).
- The design of the bowl and beater allows for a wide range of dough capacity for each machine. For example, a medium-size mixer may handle as little as 10 pounds (4.5 kg) of dough or as much as 200 pounds (90 kg). By contrast, a vertical mixer bowl handles only a narrow range of dough weights; too large or too small a quantity will not mix properly.
- Spiral mixers are sturdier and more rugged than vertical mixers. They handle more dough, last longer, and require less repair and maintenance.

Three main varieties of spiral mixer are available:

1. **Fixed-bowl mixers.** These have a nonremovable bowl. The dough must be lifted out by hand.
2. **Removable-bowl mixers.** These have a bowl that may be removed from the machine, usually on a wheeled trolley. They are useful for high-volume operations, because a new bowl of ingredients may be wheeled into place as soon as the earlier batch is removed.
3. **Tilt mixers.** On these machines, the entire machine tilts up to deposit the finished dough onto a tray or another container.

Most spiral mixers have two operating speeds, although some specialized machines for stiff doughs have only one speed. In a typical mixing procedure, the baker uses the first speed for the first phase of dough mixing, when the ingredients are blended, and switches to the second speed for the later phase of dough development. Machines with automated controls have timers to regulate each phase of mixing.

Similar to spiral mixers are *fork mixers*. Instead of a single spiral agitator or beater, these machines have a two-pronged fork-shaped beater that enters the bowl at about a 45-degree angle. Like spiral mixers, fork mixers are used specifically for bread doughs.

Horizontal Mixer

Horizontal mixers are large, industrial-size machines capable of handling as much as several thousand pounds of dough at a time. Each model is designed to work best with a specific range of products, such as bread doughs, pastry doughs, or soft doughs and batters. Beater or agitator designs differ for each of these specialized models.

Many horizontal mixers are equipped with water jackets that surround the mixing container. Water of the desired temperature is circulated through the jacket, enabling the operator to control the dough temperature with great precision.

Dough-Handling Equipment

Dough Fermentation Trough

This item is used to hold mixed yeast doughs during fermentation. Small operations might simply use large mixing bowls on stands instead.

Divider

Dividers cut scaled pieces of dough into equal portions by means of a die or cutter attached to a hydraulic or mechanical lever assembly. For example, a divider may



Spiral mixer.

Courtesy of TMB Baking, Inc.

CONTINUOUS MIXER

Another type of mixer used in large bakeries is the *continuous mixer*. Here, small amounts of scaled ingredients enter the machine continuously at one end. The ingredients are blended and developed into a dough as they move through the machine. The finished dough emerges at the other end of the machine. These mixers are efficient because instead of having to blend, say, 200 pounds of flour into a dough all at once, they can take in the flour in 5-pound increments, making the blending much easier.



Horizontal mixer.

Courtesy of Topos Mondial (Model THM-140T 3 roller bar mixer).

**Divider.**

Courtesy of American Baking Systems and S.A. Jac NV.

cut a 3-pound piece of dough (called a *press*) into 36 pieces, 1½ ounces each, for making dinner rolls. After they are divided, the individual pieces must be rounded by hand (see p. 109).

Divider-Rounder

This machine divides the dough, as does a simple divider, and it then automatically rounds the individual portions, greatly speeding makeup of the dough products.

Dough Sheeter

A sheeter rolls out portions of dough into sheets of uniform thickness. It consists of a canvas conveyor belt that feeds the dough through a pair of rollers. To make thin sheets, the dough usually must be passed through the rollers several times. The operator decreases the space between the rollers after each pass.

**Sheeter.**

Courtesy of American Baking Systems and S.A. Jac NV.

Molder

A molder rolls and forms pieces of bread dough for standard loaves, baguettes, and rolls, eliminating the need to perform these tasks by hand.

Proofer

A proofer is a special box in which the ideal conditions for fermenting yeast doughs can be created. The box maintains a preset warm temperature and humidity level appropriate to the specific dough.

Retarder

Chilling or refrigerating yeast dough slows or retards the rate of fermentation so the dough can be stored for later baking. A retarder is a refrigerator that maintains a high level of humidity to prevent the dough from drying out or crusting.

Retarder-Proofer

This machine is, as its name suggests, a combination retarder and proofer. A dough can be retarded for a preset time, after which the machine switches to proofing mode and warms up to a second preset temperature and humidity level. For example, breakfast breads can be made up the previous day, held, and be fully proofed and ready to bake when the shop opens the next morning.

Divider-rounder.

Courtesy of TMB Baking, Inc.

**Molder.**

Courtesy of American Baking Systems and S.A. Jac NV.

**Proofer.**

Courtesy of Bevles.

**Retarder-proofer.**

Courtesy of TMB Baking, Inc.

Ovens

Ovens are, of course, the workhorses of the bakery and pastry shop. They are essential for producing breads, cakes, cookies, pastries, and other baked items. Ovens are enclosed spaces in which food is heated, usually by hot air (except in the case of microwave ovens, which are not especially useful in a bakeshop). Several kinds of oven are used in baking.

Steam is important in baking many kinds of breads, as discussed in Chapter 6. Ovens used in bakeshops, including deck ovens, rack ovens, and mechanical ovens, may have steam injected into them during part of the baking cycle.

Deck Oven

Deck ovens are so called because the items to be baked—either on sheet pans or, in the case of some breads, freestanding—are placed directly on the bottom, or deck, of the oven. There are no racks for holding pans in deck ovens. Deck ovens are also called *stack ovens* because several may be stacked on top of one another. Breads baked directly on the floor of the oven rather than in pans are often called *hearth breads*, so another name for these ovens is *hearth ovens*. Deck ovens for baking bread are equipped with steam injectors.



Rack oven.

Courtesy of Lang Manufacturing Company.

Although this usage is not strictly correct, you may hear the term *rack oven* used for conventional ovens, such as those found in restaurant ranges, because the pans are placed on racks rather than directly on the bottom, as in deck ovens.

Mechanical Oven

In a mechanical oven, the food is in motion while it bakes. The most common type is a revolving oven, in which the mechanism is like that of a Ferris wheel. This mechanical action eliminates the problem of hot spots, or uneven baking, because the mechanism rotates the foods throughout the oven. Because of their size, mechanical ovens are especially useful in high-volume operations. Revolving ovens can be equipped with steam injectors.

A typical revolving oven is shown in the illustration. Each of the multiple trays in such an oven holds one or more sheet pans. The operator loads one tray at a time through the narrow door in the front.



Deck oven.

Courtesy of Baxter/ITW Food Equipment Group, LLC.

Rack Oven

A rack oven is a large oven into which entire racks full of sheet pans can be wheeled for baking. Normal baker's racks hold 8 to 24 full-size sheet pans, but racks made specifically to go into rack ovens usually hold 12 to 20 pans. Rack ovens hold 1 to 4 of these racks at once. The ovens are also equipped with steam injectors.



Revolving oven.

Courtesy of Baxter/ITW Food Equipment Group, LLC.

WOOD-FIRED OVENS

Wood-fired brick ovens are similar in function to deck ovens in that items are baked directly on the oven floor. These ovens are used in some operations that produce artisan breads, as well as in some restaurants that serve pizzas and similar items. The heat is generated by a wood fire built inside the oven. The fire heats the thick brick floor and walls, which retain enough heat to bake foods. Gas-fired brick ovens are similar, but the heat in them is easier to control.



Convection oven.

Courtesy of Vulcan-Hart Company.

Convection Oven

Convection ovens contain fans that circulate the air and distribute the heat rapidly throughout the interior. The forced air makes foods cook more quickly at lower temperatures. However, the strong forced air can distort the shape of items made with batters and soft doughs, and the air-flow may be strong enough to blow baking parchment off sheet pans. Therefore, convection ovens are not as versatile for the baker as are the other kinds of ovens discussed here.

Steam-Jacketed Kettle

Steam-jacketed kettles, or steam kettles, have double walls between which steam circulates. Liquids in the kettle itself are heated quickly and efficiently. Although restaurants may use large floor-mounted kettles for making stocks, smaller table models are more useful in the bakeshop for making custards, creams, and fillings.

Tilting kettles with a pouring lip are called *trunnion kettles*. Table models range in capacity from a few quarts or liters to 40 quarts (38 L).



Steam-jacketed kettle.

Courtesy of Vulcan-Hart Company.

Fryer

Fryers are needed in the bakeshop for doughnuts and other fried items.

Small operations often use standard deep fryers (or even stovetop kettles), but larger doughnut fryers are best if you make doughnuts in quantity. They should be used in conjunction with screens, for lowering the doughnuts into the fat and removing them when fried.

In the fryer in the illustration, the proofed doughnuts are arranged on the screen at the right side of the fry kettle. The operator then manually lowers the screen into the hot fat by means of the two raised handles. The illustration also shows, on the left side, a batter depositor for cake doughnuts.



Doughnut fryer.

Courtesy of Belshaw Adamatic Bakery Group

PANS, CONTAINERS, AND MOLDS

MANY OF THE pots and pans found in the hot kitchen are also used in the bakeshop. For example, saucepans are used to boil syrups and to cook creams and fillings. This section, however, concentrates on specialty containers and molds for the bakery. The following list gives a representative sample of the more important of these, in alphabetical order.

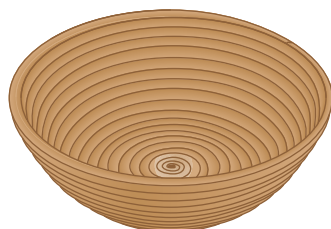
Molds are of two types: those for baking dough or batter items, and those for giving shape to refrigerated items such as mousses and bombes. Other containers, such as mixing bowls, are included in the list.

Baba mold. A small thimble-shaped mold for making babas (p. 186).

Banneton. A bentwood basket, available in various shapes, for holding and giving shape to certain hearth bread doughs as they proof. Similar canvas-lined baskets are also available.



Baba mold.



Banneton.

Barquette. A small boat-shaped mold for petits fours and small tartlets.

Bombe mold. A dome-shaped mold for frozen desserts (p. 558).

Brioche mold. A flared pan with fluted sides for making brioche (p. 201).

Cake pans. Most cake pans are round, but other shapes, such as hearts, are available for specialty cakes. Cake pans come in many sizes.

Cake ring. See *Charlotte ring*.

Charlotte mold. The classic charlotte mold is round, tapered, and flat-bottomed, with two handles near the top rim. Except for the Apple Charlotte (p. 583), which is baked in this mold, classic charlottes are made with a Bavarian cream filling and refrigerated until set, not baked.

Charlotte ring. Also called *cake rings*, these are stainless-steel rings in various diameters and heights, most often used for making molded desserts and for shaping and holding desserts made of layers of cake, pastry, and fillings. The rings are removed after the fillings have set and before serving or display. (See Chapter 17, where a charlotte ring in use is illustrated on page 445.)

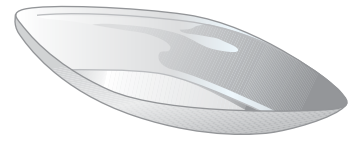
Chocolate molds. Used for all sorts of chocolate work, from large display pieces to bite-size truffles. (See Chapter 23.)

Cornstick pan. Special baking pan with indentations shaped like small ears of corn. Used for baking cornbread items.

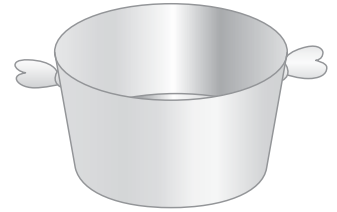
Flexipan. This is the brand name for a line of nonstick baking pans made of a flexible silicone material. Flexipans are available in dozens of shapes and sizes to make a wide range of products, from muffins and quick-bread loaves to petits fours.

Hotel pan. A rectangular pan, usually made of stainless steel. Designed to hold foods in service counters. Also used for baking and steaming, and often for baked items such as bread pudding. The standard size is 10 × 20 inches (325 × 530 mm). Fractions of this size ($\frac{1}{2}$, $\frac{1}{3}$, and so on) are also available. Standard depth is 2½ inches (65 mm), but deeper pans are also available.

Loaf pan. A rectangular pan, usually with slightly flared sides, used for baking loaf breads. Loaf pans can also be used for molding refrigerated and frozen desserts. A special type of loaf pan is the Pullman pan, which has straight, not flared sides, and a removable lid, for baking Pullman loaves of bread (p. 148).



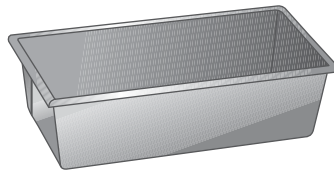
Barquette.



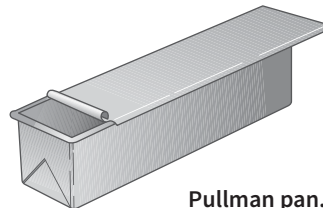
Charlotte mold.



Full-size and half-size hotel pans.

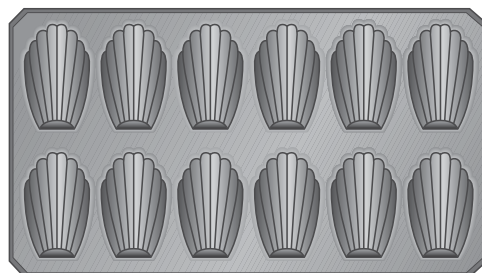


Loaf pan.



Pullman pan.

Madeleine pan. A special baking pan with shell-shaped indentations, used for baking madeleines (p. 412).



Madeleine pan.

Mixing bowls. The most useful mixing bowls are made of stainless steel and have round bottoms. They are used for general mixing and whipping. The round construction enables the whip to reach all areas, for thorough mixing or whipping.

Muffin pan. Metal baking pan with cup-shaped indentations for baking muffins (see Chapter 10). Pans are available for making muffins in several sizes.

Petit four molds. Tiny metal molds in a variety of shapes, used for baking an assortment of little tartlets, financiers (p. 368), and other petits fours.

Pie pan. Shallow pan with sloping sides, used for baking pies. Disposable aluminum pie pans are usually used in retail bakeshops.



Savarin mold.

Savarin mold. Small ring-shaped or doughnut-shaped metal mold for baking savarins (p. 186).

Sheet pan. A shallow, rectangular pan (1 inch/25 mm deep) for baking sheet cakes, cookies, rolls, and other baked goods. A full sheet pan measures 18 × 26 inches (46 × 66 cm). Half-sheet pans are 13 × 18 inches (33 × 46 cm). Perforated sheet pans are the same size, but the bottom is full of tiny holes. These allow even baking and browning of breads and rolls because the holes let the oven's hot air circulate freely around the items as they bake.

Pan extenders are metal or fiberglass frames that fit inside sheet pans. They give straight sides to sheet cakes and make the pan deeper. Extenders are usually 2 inches (5 cm) high.



Sheet pan.

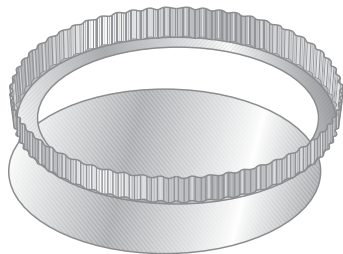


Springform pan.

Springform pan. A cake pan with a removable bottom. Used primarily for baking cheesecakes and other items too delicate to be easily and cleanly removed from standard cake pans.

Tart pan. A shallow (1 inch/2.5 cm deep) metal pan, usually with fluted sides, used for baking tarts. Standard pans are round, but square and rectangular pans are also available. They may be made in one piece or with a removable bottom to make removal of the baked tart from the pan easier.

Tart pans make multiserving pastries, but smaller tartlet pans make single-portion tartlets. Like tart pans, these come in a variety of sizes. The smallest usually are in one piece and lack the removable bottom.



Tart pan.

Tube pan. A deep cake pan with a tube in the center. The tube promotes even baking of angel food cakes and similar items.



Tube pan.

HAND TOOLS AND MISCELLANEOUS EQUIPMENT

Hand Tools

The category of hand tools is a broad one, encompassing large and small items, some more familiar than others. Those described here are considered indispensable to a bakeshop or commercial baking establishment.

Blowtorch. A tool used for caramelizing and controlled browning of various pastry items, and for caramelizing the sugar topping of crème brûlée. Butane or propane is used as fuel, depending on the model.

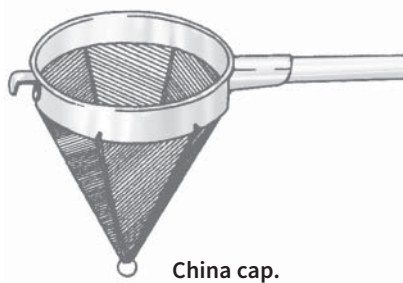
Bowl knife. Also called a *straight spatula* or *palette knife*, this tool has a long, flexible blade with a rounded end. Used mostly for spreading icing on cakes and for mixing and bowl scraping. A variant with an angled blade is called an *offset spatula*. The bent blade allows spreading and smoothing batters and fillings inside pans.

Brushes. Pastry brushes are used to brush items with egg wash, glaze, and so on. Larger bench brushes are used to brush flour from tabletops and from the surface of dough. Oven brushes are used to clean excess flour from deck ovens.

Chinois and china cap. A chinois is a conical strainer with a fine mesh, used mostly for straining sauces. A china cap is also a conical strainer, but it is made of perforated steel, so it doesn't strain as finely. A china cap is usually lined with several layers of cheesecloth if the liquid must be well strained.



Chinois.



China cap.

Comb, icing. A small plastic tool, usually triangular, with serrated edges in various patterns, for decorating icings and other pastry and decorative items.

Cutters. Many types of cutters are used in the pastry department. Cookie cutters and pastry cutters, available in many shapes, cut decorative shapes by stamping them from rolled-out dough. Roller cutters have a handle on each end, like a rolling pin, and are rolled over rolled-out dough to cut repetitive shapes quickly and efficiently, with minimal loss of dough to trimmings and scraps. Roller cutters are often used for croissants (p. 200).

Pastry bag. A cone-shaped cloth or plastic bag with an open end that can be fitted with metal or plastic tubes or tips of various shapes and sizes. Used for shaping and decorating with items such as icing; for filling certain kinds of pastries and other items, such as éclairs; and for portioning creams, fillings, and doughs. Use of the pastry bag and tubes for decorative work is discussed and illustrated in Chapter 17.

Peel. A thin, flat wooden board or steel sheet with a long handle, used for inserting and removing hearth breads from deck ovens. Because they are thinner than traditional wooden peels, steel peels are easier to slide under baked loaves.



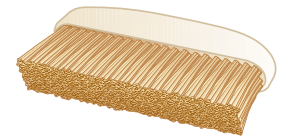
Peel.



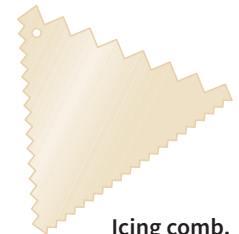
Blowtorch.



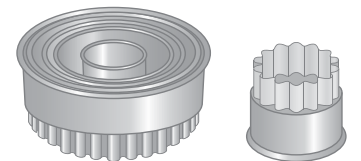
Straight spatula.



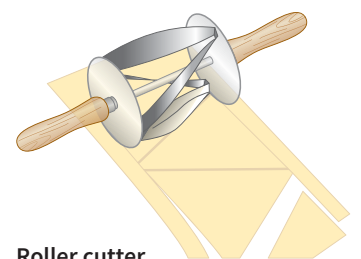
Bench brush.



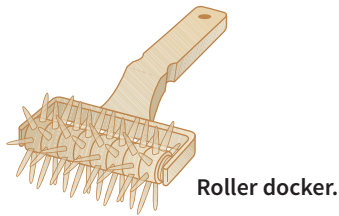
Icing comb.



Cookie cutters and pastry cutters.



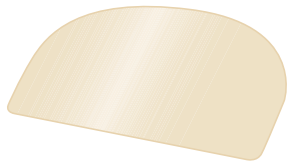
Roller cutter.



Roller docker.



Bench scraper.



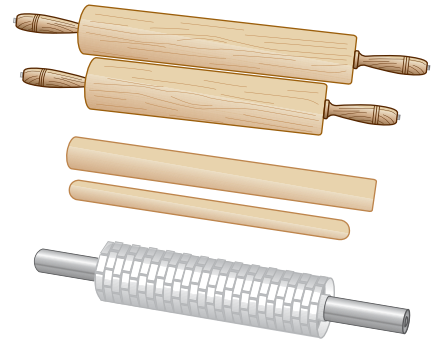
Bowl scraper.



Sieve.

Roller docker. A tool that pierces holes in rolled-out dough to prevent bubbling during baking. It consists of a handle attached to a rotating tube fitted with rows of spikes.

Rolling pins. Many types of rolling pin are used in the bakeshop for rolling out doughs. Perhaps the most versatile pin, used for most general rolling tasks, is simply a solid hardwood rod, about 2 inches (5 cm) thick and 20 inches (50 cm) long. A French rolling pin is about 2 inches (5 cm) thick at the center and tapered toward the ends. It is useful for rolling pie doughs and other doughs that must be rolled to a circular shape. For large quantities or heavy work, a heavy ball-bearing pin may be used. This pin is 3 to 4 inches (8 to 10 cm) thick and has a swiveling rod inserted through the center, with a handle at each end. Textured rolling pins are used to emboss designs, such as a basketweave pattern, in sheets of marzipan, pastillage, and similar pastes and doughs.



Ball-bearing rolling pins, straight wooden rolling pins, and textured rolling pin.

Scrapers. A bench scraper, also called a *dough scraper*, is a small rectangle of stainless steel with a handle along one of the long edges. It is used for cutting and portioning dough and for scraping tabletops. A bowl scraper is a piece of plastic about the same size, but with one curved edge and no handle. It is used for scraping out the contents of mixing bowls.

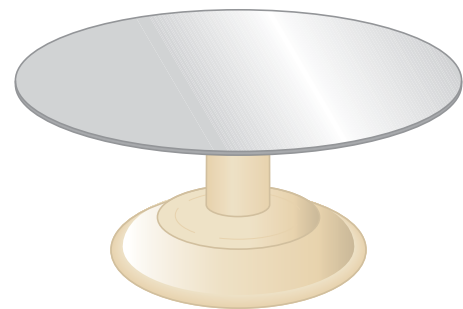
Sieve. A round metal screen supported in a stainless-steel hoop frame. It is used for sifting flour and other dry ingredients. Also called a *drum sieve* or *tamis* (pronounced tah-mee).

Strainer. A round-bottomed, cup-shaped tool made of screen mesh or perforated metal, with a handle on one side. Used for separating solids from liquids, such as draining the juice from fruit. Screen-mesh strainers can also be used for sifting dry ingredients, like a sieve.

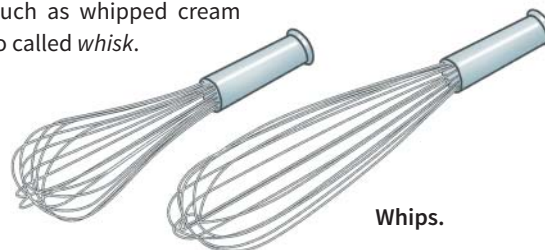
Turntable. A round, flat disk that swivels freely on a pedestal base. Used for holding cakes for decorating.

Wire rack. A wire grate used to hold baked goods as they are cooling, or to hold items such as cakes while liquid icings, such as fondant, are applied.

Whip. Loops of stainless-steel wire fastened to a handle. Whips with a few stiff wires are used for mixing and blending, and whips with many flexible wires are used for whipping foams, such as whipped cream and egg foams. Also called *whisk*.



Turntable.



Whips.

Miscellaneous Tools and Equipment

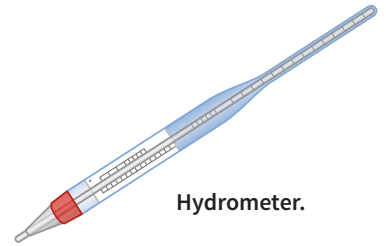
A number of other tools and equipment, which together may be categorized as miscellaneous, also should be considered essentials to the bakeshop or commercial bakery kitchen.

Acetate. A type of clear plastic. Acetate strips are used for lining charlotte molds (described in *Pans, Containers, and Molds*) in the production of certain cakes, pastries, and refrigerated

desserts. For retail display, the strips can be left on after the charlotte rings are removed to support the dessert while displaying the layers. Acetate sheets are most often used in decorative chocolate work, as illustrated in Chapter 22.

Couche. A sheet of heavy linen or canvas, used for supporting certain breads, such as baguettes, as they are proofed. The cloth is placed on a sheet pan and pleated to form troughs to hold the loaves so they can proof without spreading.

Hydrometer. Also called a *sugar densimeter*, *saccharometer*, and *Baumé hydrometer*. Used to test the density of sugar syrups. (Sometimes called a *thermometer*, but this is inaccurate because it doesn't measure temperature.) It is a glass tube, weighted at one end, that is floated in the solution to be tested. Because it floats higher in denser solutions, the density can be read off the scale marked along the length of the tube at the point where the surface of the liquid meets the tube.



Hydrometer.

Ice cream freezer. Machine for churning and freezing ice creams and sorbets. It consists of a large refrigerated canister or container with a paddle, called a *dasher*, that rotates inside. The ice cream or sorbet mix freezes against the walls of the canister and is continually scraped off and remixed to prevent the formation of ice crystals. Unlike home models, which depend on a salted ice water mixture to create freezing temperatures, commercial ice cream freezers contain a built-in electrically operated freezing unit.



Ice cream freezer.

Marble. A stone material used for tabletop or work surfaces in pastry shops. The hard, cool surface of marble is ideal for working with pastry doughs, as well as for tempering chocolate and for some decorative work, such as pastillage. Marble slabs may be installed on top of under-the-counter refrigerated storage boxes. This keeps the marble cool even in warm weather.

Parchment paper. Also called *baking paper* or *silicone paper*, this is a sheet of treated non-stick paper sized to fit standard sheet pans. When used to line pans, parchment eliminates the need for greasing them. Also used to make piping cones for decorative work. (See Chapter 17.)

Rack, cooling. A wire rack used to hold baked goods while cooling. The rack allows air circulation around the items.

Silicone mat. Flexible fiberglass mat coated with nonstick silicone, used to line baking sheets. Available to fit full and half-size sheet pans. Also used in sugar work (see Chapter 25). The mats withstand temperatures up to about 480°F (250°C) and can be reused indefinitely if well cared for and not folded or creased. There are several manufacturers of silicone mats, but they are often known by one brand name, Silpat.

Thermometers. Thermometers have many uses in the bakery, and there are many types of specialized thermometers. The sugar thermometer, also called a *candy thermometer*, is one of the most important. It is used for measuring the temperature, and hence the concentration, of boiling sugar syrups (p. 252). The chocolate thermometer is used for tempering chocolate (p. 627). Other thermometers measure the temperature of bread doughs, frying fat, and the interiors of ovens, refrigerators, and freezers (to check the accuracy of the equipment's thermostat).

In addition to the above items, other tools for special decorative work are illustrated in the appropriate chapters. See the following pages:

Chocolate, page 627

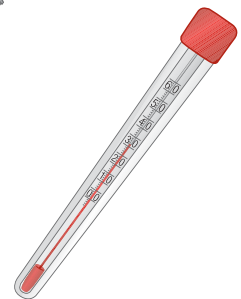
Pastillage, page 652

Sugar, page 663

Marzipan, page 649



Sugar thermometer.



Chocolate thermometer.

KEY POINTS TO REVIEW

- What are the principal types of mixers and attachments?
- What are the principal types of dough-handling equipment used in the bakeshop?
- What are the four principal types of ovens used in the bakeshop?