Steam Baking Master
The Artisan French Bread Pan

The essence of baking bread!
A perfect loaf of bread every time, thanks to The Steam Baking Master™
CONGRATULATIONS

Congratulations on your new purchase of the Steam Baking Master™, an innovative and patented baking pan system, brought to you by Testrite Baparoma™ International LLC after several years of research and development.

The Steam Baking Master™ brings the tradition back to your kitchen easier, better, more reliable, hassle-free and messy-free so you can enjoy a good loaf of freshly baked bread with flavorful, crispy crust and fluffy, moist crumb.

You can find step-by-step instructions with pictures about everything you need to know to bake a loaf of world-class French bread at home even for a beginner.

Recipes are included. No fancy ingredients are required, just flour, water, yeast and salt. The all-purpose flour works just fine. These recipes are unique in a sense that they contain less water than the traditional French bread recipe. The dough is very easy to handle, and no special and expensive tools are required. It is not necessary to flour the work surface so you can forget the mess in making dough and the headaches of cleaning up. Although the whole process might take up to 3 hours, the actual hands-on work should not take more than 10-15 minutes. If you like freshly baked bread but do not like to knead the dough, you can also use refrigerated dough, available in supermarkets.

Visit us at www.baparoma.com; new recipes will be continuously updated.

Like something to read? This booklet reveals the food science of “steam in baking” and how it leads to the quality attributes that we all like.

Listening to the cracking sounds, tasting the crispiness and freshness and smell the wonderful aroma and you will never settle for less.
Innovated and Patented Baking Method

"Steam in baking" is the secret behind a loaf of world-class artisan French bread with crispy, glossy and golden brown crust and fluffy and moist crumb. Professional bakeries rely on this technique and now you can too. It is simple, safe and easy to do right in your own home.

Multi-functional Bakeware

Baking - The Steam Baking Master™ is multi-functional and not just for steaming/baking. The upper pan can be used separately as a standard perforated baking pan. The upper pan can also be combined with a dry lower pan to be used as an insulated baking pan to avoid a burned bottom.

Proofing (Dough Rising) – Forget the damp towel or plastic wrap that just may stick to the dough and put hours of your work into the drain!

Forget the expensive plastic rising cover! Try the Steam Baking Master™ with your next proofing job. It works like a professional proof box. The cover reduces surface drying of the dough and the water in the lower pan vaporizes to replenish moisture on the dough surface to allow more accurate proofing.

Reheating – Do not throw away your uneaten bread or never eat a cold bread purchased from a local bakery again! The Steam Baking Master™ can rejuvenate an old loaf and make it fresh. Simply add a little water to the lower pan and reheat. You will be delighted by the results.

Storing and Serving – You do not have to change cookware. Just serve the baked loaf directly fresh from oven to table, save it from table to kitchen counter, and reheat it from counter to oven.
CONSTRUCTION & FEATURES

- Constructed with professional quality heavy gauge aluminized steel
- High quality double-layered non-stick silicone coating

- The Cover – gives the necessary humidity for the dough to rise and to expand without drying out the surface
- The Upper Pan – where dough is placed is perforated for steam injection to the dough
- The Lower Pan, Side Water Reservoir – for adding water to generate steam for a glossy and crispy crust
- The Lower Pan, The Central Water Reservoir – for adding water to generate steam for a moist and fluffy bread crumb
Before first use, wash Steam Baking Master™ in warm soapy water with a soft cloth or non-abrasive scrubber that is safe for cleaning non-stick surface. Rinse and dry. Follow recipe directions for greasing. When suggested, apply a film of cooking oil only to the dough region of the upper pan with paper towel or cooking spray. It is recommended to use distilled water in baking to avoid water stains to the lower pan; bottled water or filtered water is also suitable.

After each use first wipe clean the upper pan and lower pan with a paper towel, preferably while they are warm for easy removal of oil residues prior to washing. Wash with a soft cloth or sponge in warm soapy water and dry. Do not use steel wool, abrasive cleaners or scouring pads to clean. Do not use metal utensils on the non-stick surfaces.

The maximum allowable temperature is 450°F. The Steam Baking Master™ is for use in a conventional household oven, and is not for use on range-top or in direct contact with flame. Do not place the Steam Baking Master™ in freezer for a prolonged period of time. Acid from some foods may stain the non-stick surfaces. Occasional scratches or staining will not affect the performance of Steam Baking Master™.

Steam Baking Master™ is dishwasher safe.
Yeast-Leavened French Bread

Recipe 1

2 1/2 cups (410 g) all-purpose flour***
1 cup (8 fl oz/235 g) water
1 1/2 teaspoons (6 g) salt
2 1/2 teaspoons (7 g) or 1 package
active dry yeast

***Use a scale, if available, to measure the ingredients. Measuring cups and spoons should work equally well. Pack tightly by compressing from top and leveling off to the rim. Dough should be soft, smooth, elastic and not sticky after kneading.

Note: Follow instructions for using an electric stand mixer or bread machine. Yields two loaves of French bread.

Instructions for Using an Electric Stand Mixer

1. Place the measured amounts of flour, water, salt and yeast in the stainless steel mixing bowl. Mix the ingredients for 1 minute at speed 1, and then 3 minutes at speed 2 using the dough hook. See tip if you use measuring cups instead of a scale.

2. Increase the mixing to speed 3 and continue to knead for 10 more minutes.

3. Cover the dough in the mixing bowl with plastic wrap, or transfer the dough to a large glass bowl and cover the bowl with plastic wrap, and leave it at a warm place for 45-60 minutes.

4. Remove the dough from the bowl, hand knead it a few times on a flat surface (it is not necessary to flour the surface), divide the dough into two pieces of equal size and shape them into balls. If you only have one Steam Baking Master™, place one piece of dough into a bowl, cover the bowl with a plastic
wrap and keep it in a refrigerator until the first loaf is baked.

5. Press the balls down. Use a rolling pin and fingertips to press the dough into 10 inch by 6 inch rectangles. Since the dough will resist extension, rest the dough when necessary.

6. Roll up the dough as tight as possible into cylinders (you can do that by pulling the dough toward yourself gently while rolling up the dough), and then pinch the seams together with fingertips.

7. Extend the dough to 14 inches by pressing and rolling using both hands. The dough will resist extension so rest it a couple times. Do not shape the dough directly from balls into long cylinders. Do not skip Steps 5 and 6.

8. Prepare the Steam Baking Master™ by adding 1/2 oz water into the central water reservoir and 1/4 oz water into each of the side water reservoir of the lower pan using the included liquid measurement cup (a baster can do equally well). Use distilled water whenever possible to avoid water staining of the lower pan. Filtered or bottled water is an option. Lightly grease the upper pan with cooking spray.
9. Place the dough on the upper pan, and make 4 diagonal cuts using a serrated knife or razor blade not deeper than 1/4 inch. Place the cover.

10. Proof (Rise) the dough at a warm place until the dough volume doubles (1 to 1 1/2 hr.). A good alternative is to move the dough onto the middle shelf of an oven. Turn the oven on at 350°F for 60 - 75 seconds, and then turn it off. Quick heating of the oven creates a perfect temperature for proofing the dough independent of your kitchen temperature. The vapor from the water keeps the dough soft and moist. The Steam Baking Master™ works like a proof box that professionals use. Proof the dough for 45 minutes.

11. Turn the oven on and set the oven temperature to 425°F. Unlike the conventional baking on a baking sheet or baking stone, it is not necessary to preheat the oven. However, if the oven has been turned on for other purposes or simply a personal preference, a pre-heated oven works just fine.

12. Bake for 37 - 40 minutes or until the bread is crispy and the color is golden brown. For a pre-heated oven, reduce the baking time by 3 - 4 minutes. BE CAREFUL - The pans, including the handle, are very hot. Use a potholder and use caution to remove the baking pans and bread.
13. Cool the bread on a cooling rack for 5-10 minutes. You should be able to hear the cracking sound when the bread starts to cool down. Serve warm or with butter.

14. For uneaten bread, store it in the Steam Baking Master™. For reheating, just add 1/2 oz water into the central water reservoir and bake at 350°F for 15 minutes. The steam will revive the freshness of the bread.

**Tip:**

To make certain the use of the right proportion of flour and water, mix flour, salt, yeast and 7 fl oz (between 3/4 and 1 cup) of water according to Step 1. If the dough mass is not formed, gradually add more water (a small amount a time) until the dough mass is formed and dough pulls cleanly from the mixing bowl.

**Instructions for Using a Bread Machine**

1. Place the measured amounts of flour, water, salt and yeast in the mixing bowl according to the sequence suggested by your bread machine manufacturer.

2. Select the DOUGH (or DOUGH/PASTA in some models) cycle and press the START button. A bread machine does both kneading and the first proofing (dough rising).

3. Remove the dough from the bowl at the end of the cycle, press down the dough, hand knead it a few times, divide the dough into two pieces of equal size and shape them into balls. If the dough is too sticky, hand knead the dough with additional flour and use more flour the next time.

*Follow Steps 5 - 14 as above.*
Yeast-leavened French Bread

Recipe 2

For people, who are willing to spend a little extra time and extra steps, to get a wonderful loaf of artisan French bread. You will have to make a fermented paste first before making the dough. The long fermentation gives the extra flavors of the baked bread.

Part A

1/2 cups (82 g) all-purpose flour***
1/3 cups or 3 fl oz water (78 g)
1 teaspoon active dry yeast (2 g)

Part B

2 cups all-purpose flour (328 g)***
2/3 cups or 5 fl oz water (157 g)
1 1/2 teaspoons salt (6 g)
1 teaspoon (2 g) active dry yeast

***Pack tightly by compressing from top and leveling off to the rim. Dough should be soft, smooth, elastic and not sticky after kneading.

Note: Yields two loaves of French bread.

Instructions:

1. Mix well the ingredients listed in Part A in a large bowl and leave it at room temperature for 3 to 12 hours.

2. Prepare the dough by mixing the fermented paste from Step 1 and ingredients in Part B using either an electric stand mixer or a bread machine.

3. Follow the instructions in Recipe 1.
Refrigerated, Canned French Bread Dough

The refrigerated, canned French loaf dough is available in supermarkets.

1. Add water to the lower pan. Put approximately 3/4 oz of water in the central water reservoir and 1/4 oz of water in each side water reservoir using the included liquid measurement cup. Use distilled water whenever possible to avoid mineral deposits on the lower pan. Filtered or bottled water is an option.

2. Remove the dough from the can following the instructions. Place the dough on the upper pan with the seam facing down.

3. Score the dough by making 4 shallow, diagonal cuts on the upper surface using a serrated knife. The cuts should be no deeper than 1/2 inch.

4. Add the cover and place the baking pan on the middle shelf of an oven. You do not need to pre-heat the oven. However, if the oven has been turned on for other purposes or simply a personal preference, a preheated oven works just fine.

5. Turn the oven on and set the temperature to 375°F.

6. Bake for 35-38 minutes or until the bread is crispy and the color is properly browned. If the oven has been pre-heated, reduce the baking time by 2 - 3 minutes. For a crustier loaf, leave the cover off and bake for an additional 3-5 minutes. BE CAREFUL - The pans, including the handle, are very hot. Use a potholder and use caution to remove the baking pans and bread.

7. Cool the bread on a cooling rack for 5 - 10 minutes. Serve warm or with butter.
Although the variety of bread is too numerous to be counted, it is also justifiable to say that there are only two types of bread, one characterized by a crispy crust and the other, a soft one. French bread, being the best representative of the former, has become the universal symbol for bread.

Characterized by a thin, crispy, eggshell-like, and crackly crust, French bread has a crumb that is fluffy, chewy, light and with diagonal cuts across the top. Its color varies from light gold to deep gold with tones of reddish brown. The surface glossiness ranges from semi-glossy to glossy. It has a sweet taste, smell and surely is a wonderful serving to any meal.

What defines a loaf of professional artisan French bread? "The Cracking Sound", every professional baker has experienced, makes a perfect bread moment. But what is the secret of the trade that makes the bread crust so crispy and crunchy and it actually cracks with sound? Certainly each step in its making from kneading, proofing (rising), shaping to baking, does count but the secret lies crucially in the magic touch of a catalyst—steam. A professional bakery oven is equipped with steam generation capability. Steam is normally injected into the oven during the beginning phase of baking. That is why every bread recipe book calls for the use of a humid or steamy oven in baking French bread. Testrite Baparoma has successfully developed a very simple and reliable way of making professional quality French bread that promises to bring the perfect bread moment into your daily life.

The food science of "The Magic of Steam in Baking" that creates a world-class artisan French bread to give cracking sound is explained below, in detail, to provide interested readers with additional information.

The major component of flour is starch. Starch is a biopolymer, with multiple units of glucose. Starch goes though a phase tran-
sition, known as gelatinization when the temperature is right and there is enough water. Take cornstarch as an example. The starch granules swell and remain as granules when simply soaked in cold water. The starch granules also stay as granules when heated without adding water such as leaving them in a dry heated oven. When cornstarch is first soaked in water, and then heated, the starch-water mixture turns into a viscous paste through starch gelatinization. The temperature where gelatinization initiates is referred to as the starch gelatinization temperature. The gelatinization temperature depends upon the type of starch and water content, the lower the water content, the higher the gelatinization temperature.

When a piece of dough is placed in an oven, simultaneous heat and moisture transfer occurs. The dough surface receives heat from the oven to make the surface temperature to go up and at the same time the water in the dough starts to vaporize. The vaporization takes a significant amount of heat away from the surface to decrease the surface temperature. The higher the temperature is, the faster the water vaporizes. Eventually, an equilibrium is achieved, assuming there is enough water on the surface, so that the surface temperature and the water vaporization rate remain constant. This temperature, known as the wet bulb temperature, is usually much lower than the oven temperature and is also lower than the temperature required for starch gelatinization. The surface temperature begins to rise quickly when the surface water level reduces to a certain level, and finally reaches the oven temperature when the surface is completely dry. In other words, the surface starch is never properly gelatinized during conventional baking without steam in baking. Whenever there is enough water on the surface, the temperature is not high enough, whereas whenever the surface temperature increases, there is not enough water left to make starch gelatinization taking place.

For a professional bakery oven with steam injections, the bak-
ing is quite different. It is just the opposite. The steam condenses on the dough surface almost instantaneously. The condensation not only provides additional water to the dough surface but also releases a significant amount of energy that quickly raises the surface temperature. The combination of temperature and plenty amount of water quickly and completely gelatinizes the starch granules on the surface.

Spraying water onto the dough surface may be helpful but is by far not as effective as the condensing steam. It adds a layer of water, however, without the heat released from steam condensation, the starch granules may not be completely gelatinized.

The fully gelatinized starch is an amorphous (something similar to the melt glass). It transforms into a physical state, known as a glassy state, when it dries and cools. Therefore, the crust, after it is fully developed in a hot, dry oven and cools down at room temperature, is not much different than a sheet of thin glass in terms of its molecular structure and mechanical properties. As soon as the bread leaves the oven, the interior starts to contract because of the condensation of steam pulling the crust inward. Since the pulling forces are uneven, they break the crust like crack a sheet of glass causing the cracking sound and yielding the crackly crust (or eggshell-like crust).

The crust tends to become soft and chewy after a certain period of time after baking. The crust softening is the result of water migration from the crumb (wetter region) to crust (drier region). Imagine a material like glass, a good water barrier, to significantly slow down the water transport. Therefore, a loaf of bread ending up with the cracking sound or crackly crust is not only very crispy but also remains crispy even the bread is not consumed immediately.

The ability to reflect light, between crust with ungelatinized starch granules and crust that is virtually a continuous layer of glass, is quite different.
It is not difficult to realize why steam baked loaf has a glossier look. Many bread recipe books suggest the use of glaze such as egg white to paint the dough surface before baking. Nevertheless, the glossiness is the direct consequence of steaming in baking.

Maillard reactions are a series of chemical reactions that lead to the development of desirable flavor and brownness of baked and toasted goods. The Maillard pathways are modified with the presence of steam during baking leading to the attractive light to deep golden brown color and the improved flavor characteristics of world-class artisan French bread.

Texture and appearance also play very significant roles in determining the bread quality. Having a crispy crust is only part of a complete story. The crumb should be moist and fluffy when it is warm and somewhat chewy when it cools.

In general, it is desirable to have a bread volume, known as the specific volume (volume of bread per unit weight of bread), to be as large as possible. Adequate proofing (dough rising) before baking and having steam at the early stage of baking are both important to bread volume. The dough surface dries very quickly in a hot, dry oven. The dried, stiff layer hinders the further expansion of the dough and produces a loaf of smaller volume with unnecessary ragged breaks or boursgeons. With steam, the surface remains soft and stretchable for a longer time, preferably during the entire period of dough expansion, and allows the development of greater loaf volume and more uniform, better shape.

In conclusion, steam plays a magic role in baking artisan French bread. The crackling sound is indeed the sound of perfection judging from scientific point of view.
LIMITED WARRANTY FOR
"STEAM BAKING MASTER™" BAKEWARE

Testrite Baparoma International LLC warrants this Steam Baking Master™ to be free from defects in material and workmanship for 3 years from the date of purchase under normal and proper household use complying with use and care instructions.

If product is found to be defective under normal use, it will be replaced, at no charge, with the same item or similar item to the original purchaser with proof of purchase. For replacement shipment, allowing approximate 2 weeks for shipping and handling. The original purchased product must be returned with transportation cost prepaid to Customer Service Department, Testrite Baparoma International LLC, 5620 Knott Avenue, Buena Park, CA 90621-1808.

This warranty shall not apply to any damage resulting from misuse, abuse, accidents or commercial use. Deterioration and damage caused by normal use such as scratches, staining and discoloration are not covered by this warranty. This product is not designed to be used with metal utensils.

For customer service you can contact us at 1-888-201-2776 or visit us at www.baparoma.com.

TESTRITE BAPAROMA INTERNATIONAL LLC
5620 Knott Avenue, Buena Park, CA 90621-1808
Tel: 714.690.8369
Fax: 714.690.8360
E-mail: dirbprm@baparoma.com

Copyright © 2000 Test Rite Baparoma International LLC
All rights reserved

Printed in Taiwan