

Making its Mark on 4000 Years of History

An Automated Line Inherits the Tradition of Handmade Bread Making

Type

AD

STRESS FREE® SYSTEM

Multi Bread Line AD - H - 400 / AD - V - 400 / AD - V - 600 / AD - V - 800



Produce Bread of All Shapes, Sizes,
and Formulas with the AD Line

RHEON®

An Automated Line Inherits

The Development of the STRESS FREE® System

■ Bread Production from a Dough Sheet

Recent experiments in High Polymer Rheology have shown that bread forming from a thin dough sheet minimizes the damage to the dough's *gel* structure. The result is high quality bread.

Rheon's Research and Findings

Dough sheet forming lowers the pressure applied to dough to less than 100g/cm². This is less pressure than the hand needs to form a dough ball. Rheon far outstrips conventional rounding methods, which apply over 500g/cm² shearing stress on the dough. Rheon's **STRESS FREE®** system reproduces the techniques of handmade bread making, for high quality, traditional bread.

■ The Development of the STRESS FREE® System

A conventional roller applies high pressure and shearing stress that cause damage during dough sheet stretching. Since dough is an elastic material, conventional machines require a pressure of more than 1000g/cm² to transform a dough sheet into another shape. The shearing stress applied in this process is more than enough to destroy the dough elasticity. Until now, this mechanically damaging process has been the only forming method available to the industry.

This conventional method corrupted the status of the gluten structure from *gel* to *sol*. Therefore, conventionally formed dough was structurally too weak to enclose the gases released during fermentation. This necessitated an intermediate proofing stage to recover from the forming damage.

In contrast, Rheon's High Speed Stretcher extends the dough by applying only tensile stress (negative pressure) and vibrations to reconstruct the cross linkages among the *gel* components.

No extra pressure is applied to the dough during forming, and the original quality of the dough is retained. Rheon's process strengthens dough elasticity, bringing good bake results from even overtime dough.

The **STRESS FREE®** system completely eliminates the intermediate proofing stage from the bread production process.



the Legacy of Handmade Taste

■ Pre-Proofed Frozen Products with the *STRESS FREE*® System

Since the *STRESS FREE*® system does not damage the dough's *gel* structure, the dough holds no free, or unbound, water. Therefore, proofed bread can be frozen and stored over extended periods of time, long after final fermentation is taken. Now, Rheon's users can offer freshly baked bread to their customers all day.

These pre-proofed frozen products can be stored for about one year, facilitating the organization of a centralized production plant that serves various satellite sale outlets.

The High Speed Stretcher (or Action Roller) is developed according to the *STRESS FREE*® system, and forms a dough sheet safely without damaging the dough's *gel* structure. When using frozen dough without fluidity, however, return the dough temperature to at least 5°C (41°F) before supplying the dough to the line.



Sour Dough Bread

STRESS FREE® Means



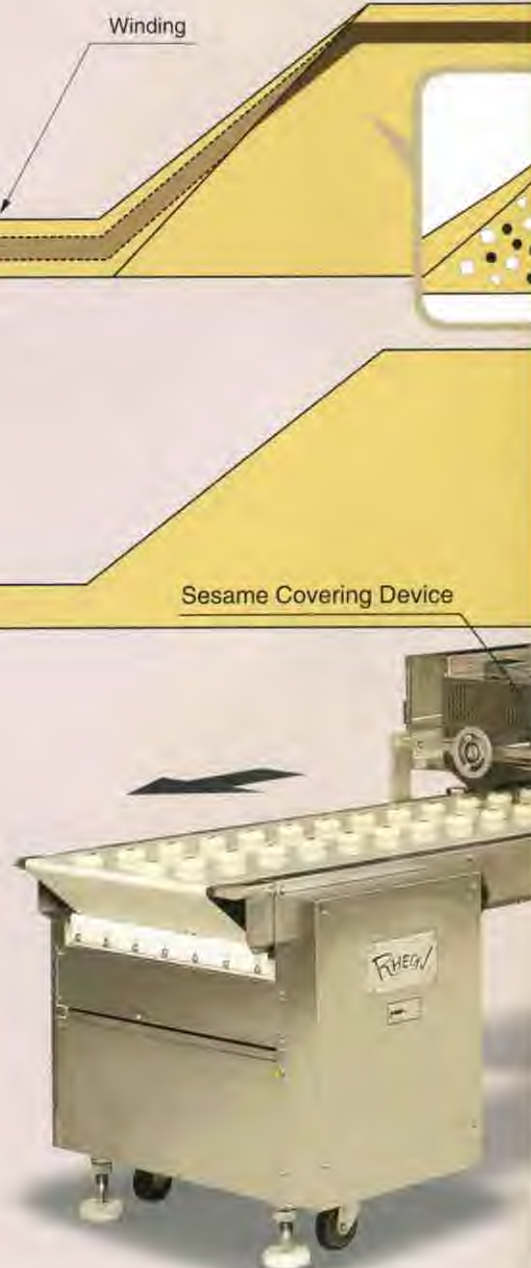
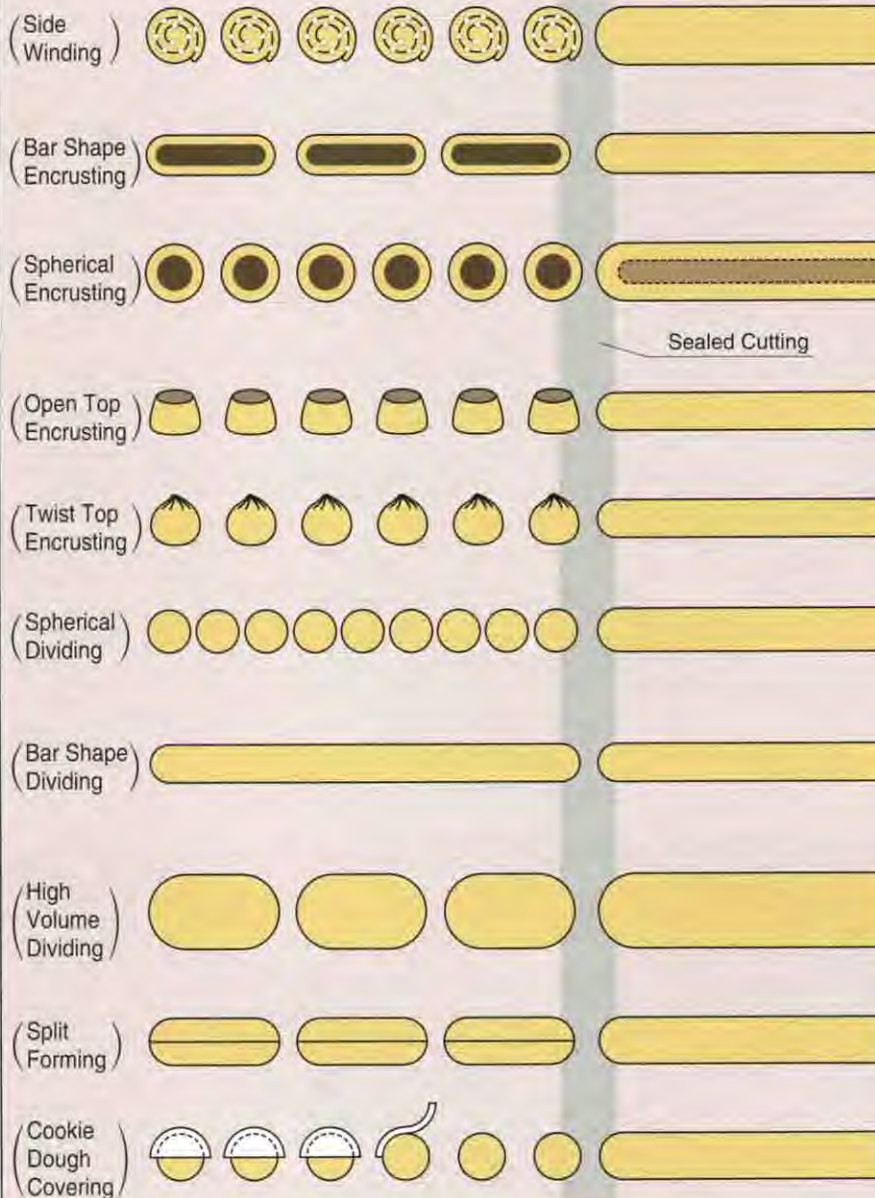
The *STRESS FREE*® System Reduces Oil Absorption

Using the same principles laid out in the *STRESS FREE*® system, the V4 system does not damage the dough structure and strengthens the air cells. This reduces the oil absorption rate by half, for high quality doughnut production.



Dough Sheet Forming Offers the Flexibility of Handmade a Limitless Range of Product Shapes

One line can produce a variety of bread. (Adjust product weight as desired.)



Handmade Quality

The *STRESS FREE*® System Produces High Quality Filled Buns

The High Speed Stretcher extends the dough into a thin dough sheet using the principles of the *STRESS FREE*® system. Produce filled buns that are rich in volume through a completely automated process with Rheon's lines.

The *STRESS FREE*® System Means Constant High Performance

The *STRESS FREE*® system strengthens and expands the air cell membranes of the dough's gluten structure. The internal texture of a *STRESS FREE*® loaf bread shows consistent sized cells that expand lengthwise.



Bread Making and



The V4 Dough Feeder and High Speed Stretcher are both based on the principles of the *STRESS FREE*® system. This means that a thin and continuous dough sheet can be formed without applying stress.



AD-V-400

Touch Panel

- The touch panel screen constantly updates and displays the production status.
- Input a product code to memorize the necessary product data.
- Input the product data to automatically produce products of the desired weight and length.

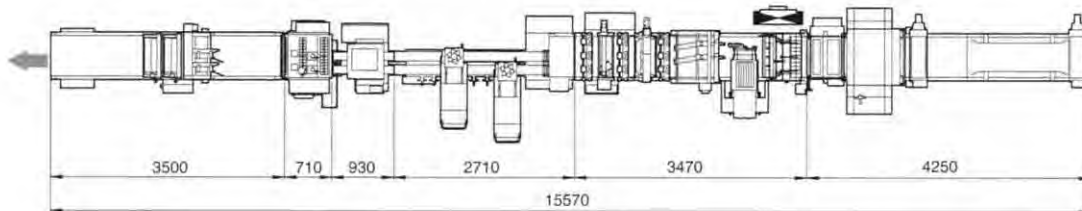
In Weighed Cutting mode, the cutting length depends on the specified weight and winding diameter.

The *STRESS FREE*® System

■ The lines in the drawings below use individual weighing devices.

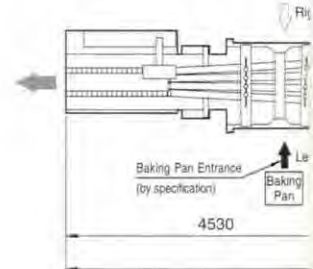
■ AD-H-400 Dough is Supplied by Hand

Produce a variety of bread in 2 to 3 rows. (Effective dough sheet width of 400mm)



■ AD-V-800 Dough is Supplied by Hand

Produce a variety of bread in 2 to 3 rows. (Effective dough sheet width of 400mm)

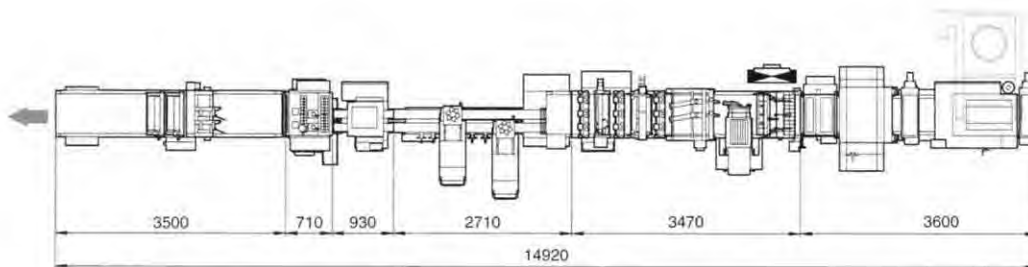


■ AD-V-400 Dough is Automatically Supplied from a Mixer Bowl

Produce a variety of bread in 2 to 3 rows. (Effective dough sheet width of 400mm)

100kg ~ 400kg/hr

AD-V-400 production capacity

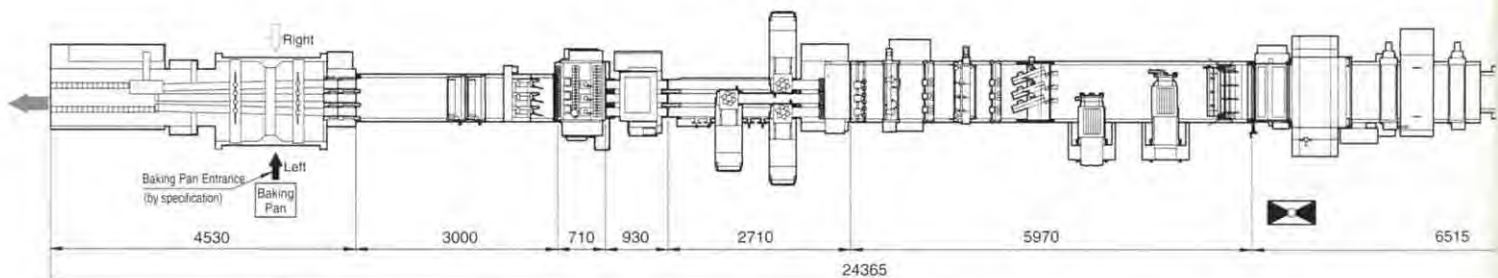


■ AD-V-600 Dough is Automatically Supplied from a Mixer Bowl

Produce a variety of bread in 2 to 4 rows using a completely automated line. (Effective dough sheet width of 600mm)

150kg ~ 600kg/hr

AD-V-600 production capacity



Offers Compact Solutions

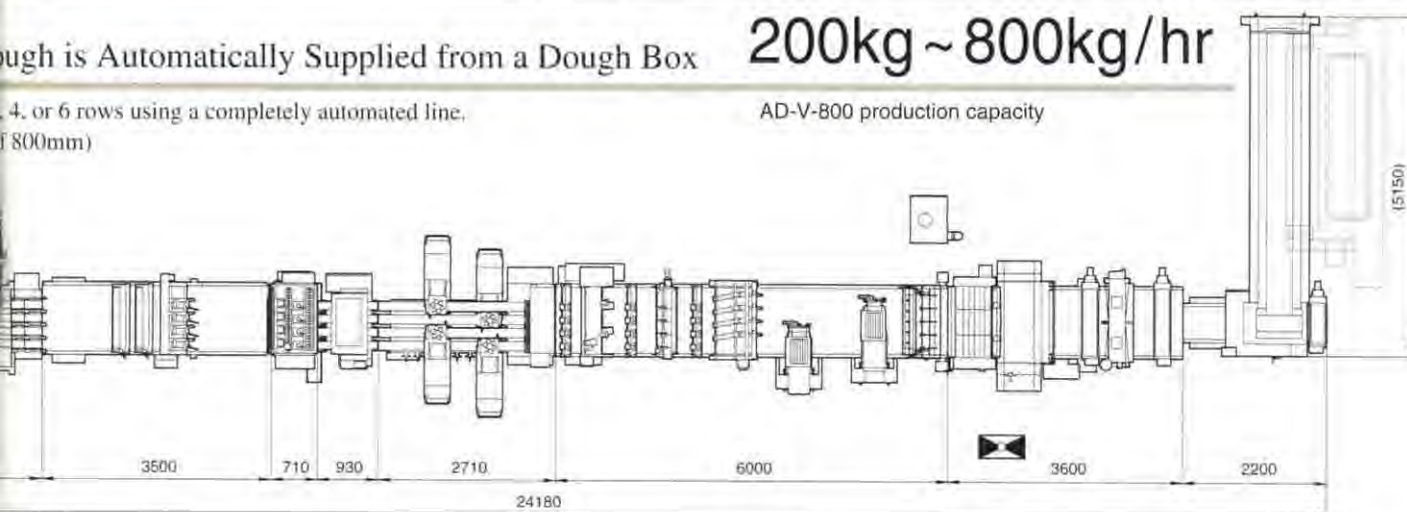
(No Overhead Proofer is Necessary)

Dough is Automatically Supplied from a Dough Box

200kg ~ 800kg/hr

4, or 6 rows using a completely automated line,
(800mm)

AD-V-800 production capacity



Specifications

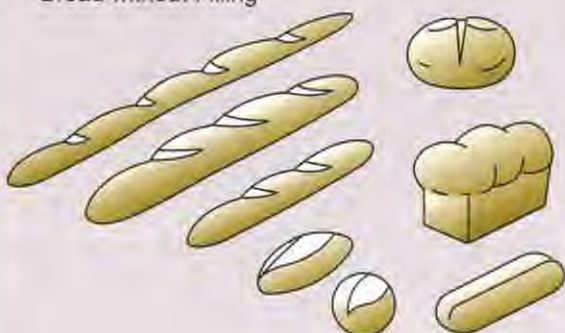
Line Name	No. of Rows	Products with Filling (Spherical Encrusting)				Products without Filling			
		Product Weight	Maximum Output	Filling to Casing Ratio (%) (The weight of one product being 100%)		Product Weight	Maximum Output (Spherical Products)	Dimensions of Bar Shaped Products (After Forming)	
				Filling	Casing			Product DIA (mm)	Product Length
AD-H-400	2 rows	40g ~ 120g	1800pcs/h X 2rows = 3600pcs/h	60 ~ 0	40 ~ 100	40g ~ 1000g	1800pcs/h X 2rows = 3600pcs/h	φ 60	1000mm
AD-V-400	3 rows	40g ~ 70g	1800pcs/h X 3rows = 5400pcs/h			20g ~ 660g	1800pcs/h X 3rows = 5400pcs/h	φ 30	
AD-V-600	2 rows	60g ~ 180g	1800pcs/h X 2rows = 3600pcs/h			90g ~ 1500g	1800pcs/h X 2rows = 3600pcs/h	φ 90	
	3 rows	40g ~ 120g	1800pcs/h X 3rows = 5400pcs/h	60 ~ 0	40 ~ 100	40g ~ 1000g	1800pcs/h X 3rows = 5400pcs/h	φ 60	1000mm
	4 rows	40g ~ 80g	1800pcs/h X 4rows = 7200pcs/h			30g ~ 700g	1800pcs/h X 4rows = 7200pcs/h	φ 40	
AD-V-800	3 rows	60g ~ 160g	1800pcs/h X 3rows = 5400pcs/h			70g ~ 1300g	1800pcs/h X 3rows = 5400pcs/h	φ 80	
	4 rows	40g ~ 120g	1800pcs/h X 4rows = 7200pcs/h	60 ~ 0	40 ~ 100	40g ~ 1000g	1800pcs/h X 4rows = 7200pcs/h	φ 60	1000mm
	6 rows	40g ~ 70g	1800pcs/h X 6rows = 10800pcs/h			20g ~ 500g	1800pcs/h X 6rows = 10800pcs/h	φ 30	

- Product weight and maximum output may differ due to the product. Please confirm production output through trial runs.
- The maximum production output of bar shaped products differs due to product length.
- Product variety is limited in 3 row AD-H-400 and AD-V-400 production, 4 row AD-V600 production, and 6 row AD-V-800 production.
- The maximum production capability may differ due to variations in the character and behavior of the material used.
- The specifications in this catalogue are subject to change without notice and without obligation.
- For production capabilities and specifications other than those listed on this page, please call the Rheon sales office nearest you.

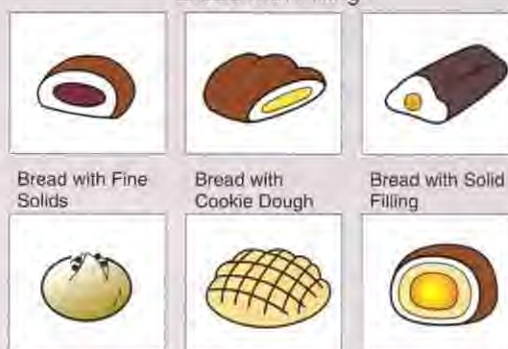
0kg/hr

A Fully Automated Line Produces Bread of Various Shapes and Sizes as Desired, without the Need for an Overhead Proofer

Bread without Filling



Bread with Filling



The *STRESS FREE*® System is Appli

<No Limit to Dough Type>



Brioche



Poppy Seed Bread and Oat Bread

Enjoy Handmade Quality and Flexibility.

cable to All Dough Mixing Processes

(Straight Method, Sponge Method, Brew Method, ...)

<No Limit to Product Possibility>



Hawaiian Bun



Garlic Hard Bread

Change Product Size as Desired.

**Enjoy High Automated Productivity without Sacrificing
the Flexibility of Handmade Bread Making**



For New or Traditional Products, Rheon Provides the Solution





RHEON®

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