LOW PRESSURE EXTRUDER DIES

The interchangeable solution for more flexible, cost effective snack production

READING BAKERY SYSTEMS

THOMAS L. GREEN | READING PRETZEL | EXACT MIXING | READING THERMAL

Representing decades of RBS design and development expertise, our latest generation of low pressure extrusion dies is making snack food production more flexible and affordable than ever before.

Shaping products and processes for more than half a century

A low pressure extrusion pioneer

In the early 1950s, Reading Bakery Systems developed the industry's first low pressure extruder and dies for the production of pretzels and other extruded snacks. As with many RBS solutions, it was a key technological development that helped change the shape of the industry.

Since then, Reading Bakery Systems has pioneered several other advances in low pressure extrusion. All of them have gone into the development of our current Low Pressure (LP) Extruder Series machines. Featuring interchangeable compression head and die assemblies, the LP Extruder series offers a flexible, efficient and cost-effective solution for snack production.

That flexibility extends to the development of the die itself. Backed by the advanced R&D resources available at our Science & Innovation Center, our die designers have worked with leading snack food manufacturers to produce thousands of customized extruder dies.

Drop-in forming die

Compression head and forming die

Faster, more flexible production starts here

A single, self-contained extrusion system

Offering manufacturers a cost-effective alternative to conventional dough forming and sheeting systems, our Low Pressure (LP) Extruder Series can create a wide range of extruded shapes. Available in a variety of configurations to maximize throughput, the LP Extruder can have one, or several separate die-forming units.

Designed to deliver consistent, efficient production at every step, each die forming unit in the LP Extruder features twin augers that meter a controlled flow of dough from the hopper, to the compression head, on through the forming die. For most applications, dies bolt to the front of the compression head. For higher-pressure applications such as fried potato snacks, dies slide through the back of the compression head in a no-bolt, drop-in design. Dough extruded through either die type can be cut off with a precision, non-stick bandcutter, or discharged whole onto the transfer conveyor for later cutting or processing. Multi-unit LP Extruders can process up to 3,000 pounds of dough per hour!

Quick-change dies enable countless product possibilities

Beyond the impressive throughput, what really sets the LP Extruder apart is the interchangeability of the forming dies. Product changeover is as simple as switching one compression head and die for another. It's an easy, low-cost process that takes just minutes, but enables countless product possibilities.

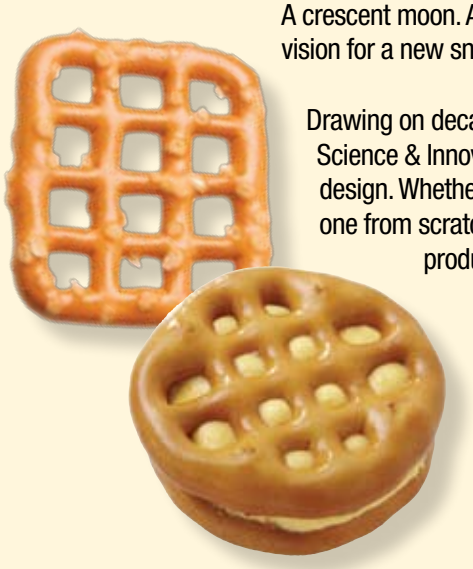
From hard pretzel shapes and sticks to bread snacks and other extruded products, the LP Extruder allows snack makers to test new product ideas, expand product lines, and increase throughput – more reliably and cost-effectively than ever before.

Envisioning a new product?

Make it a reality with RBS

A crescent moon. A fluttering flag. A holiday snowflake. Whatever inspires your vision for a new snack shape, the experts at Reading Bakery Systems can bring it to life.

Drawing on decades of extrusion technology expertise and the R&D resources available at our Science & Innovation Center, RBS die designers and master machinists have perfected the art of die design. Whether you need to make a small tweak to an existing product, or create an entirely new one from scratch, we can help you create a die that will match your vision and meet your production requirements.



READING BAKERY SYSTEMS

Integrated die design, development and manufacturing

Working closely with our customers, our die designers use the latest 3-D software to conceptualize the die and compression head assembly.

Customers help to verify the die shape as it evolves, and die manufacturing does not begin until they give their final approval. At this stage, test dies can be created and tested at the RBS Science & Innovation Center to help validate the shape design and ensure that the product is exactly what the customer wants.

Before Forced Flow Finishing

After Forced Flow Finishing

Once the design is approved, RBS master machinists use a completed 3-D model of the die to program the CNC machine, which will automatically carve the die out of solid metal. The die then undergoes a polishing process known as Forced Flow Finishing, which significantly increases consistent dough flow during production.

Next, the die surface exposed to the bandcutter blade during production is ground down to final design thickness to help boost product consistency and quality. Following a final visual inspection and any necessary de-burring and grinding, the die is ready for testing in the RBS Science & Innovation Center, or at the customer's plant.

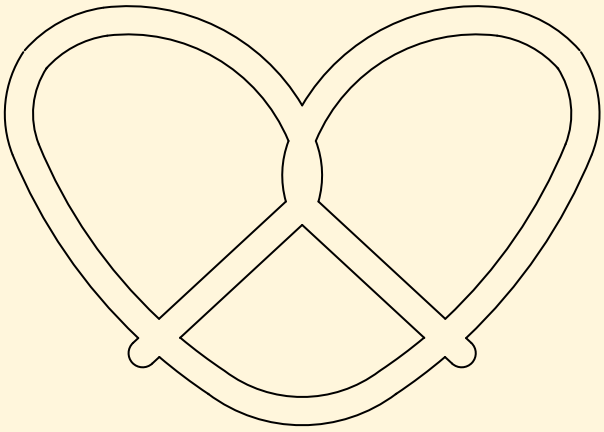
Our 30,000 square-foot Science & Innovation Center is a licensed food processing R&D facility with a complete processing line, including an LP Extruder with bandcutter. Production testing on this unit will verify whether the dough flow and product shape is acceptable. If not, RBS die designers can make the necessary changes. Once the design is approved via dough trials, the rest of the die set is manufactured and shipped to the customer production-ready.

RBS Extruded Die Shape Gallery

Thin Shapes

Reshape your product possibilities

The extensive range of RBS extruded die designs enable the manufacture of many different snack shapes and sizes on one production line. The following examples represent some of our most popular, and most innovative designs.



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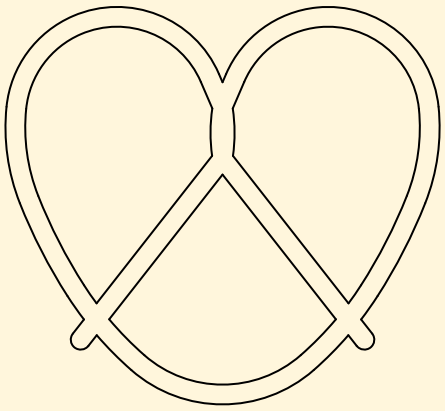

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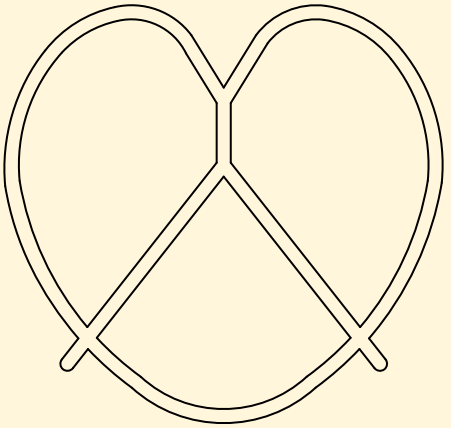

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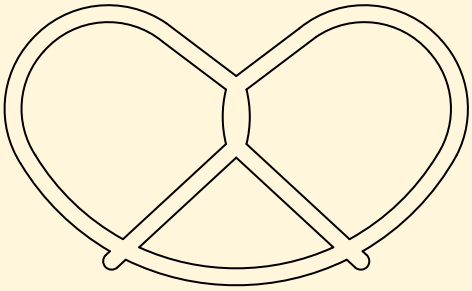

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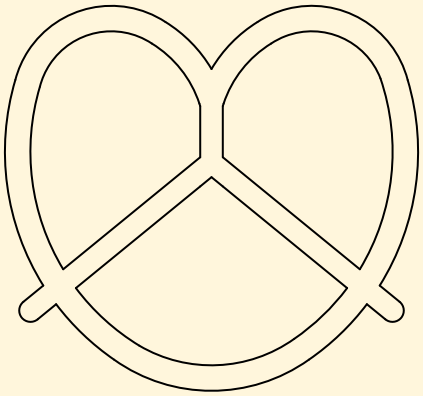

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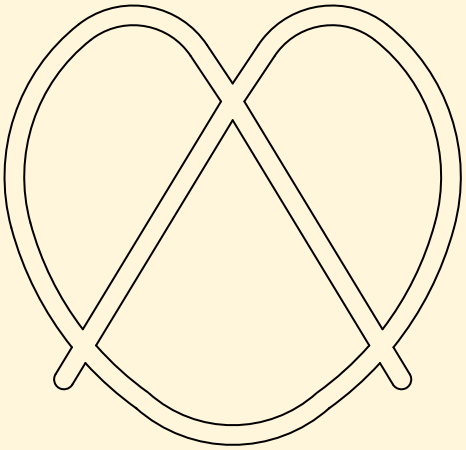

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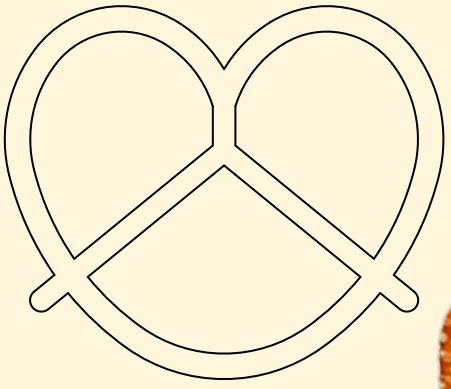

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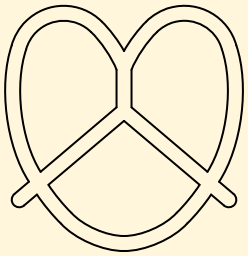
Mini Shapes



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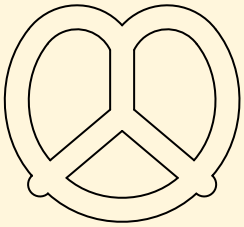

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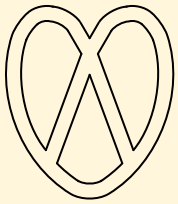

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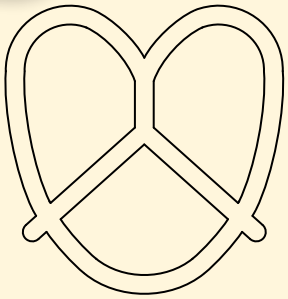

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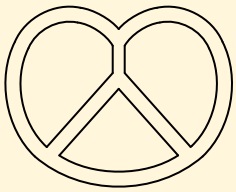

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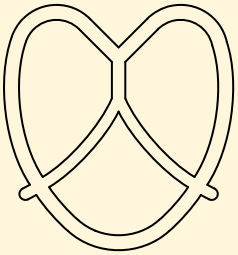

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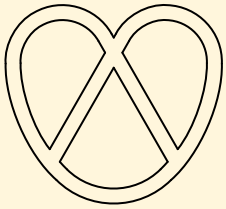

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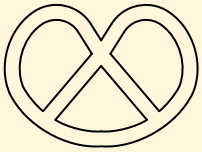

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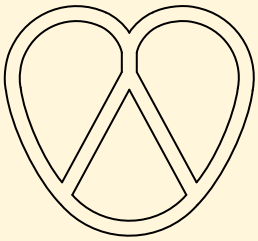

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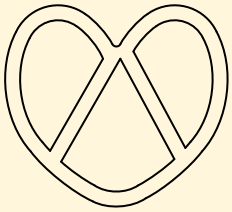

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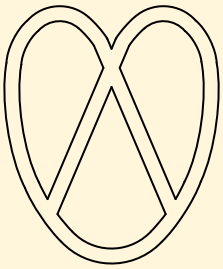

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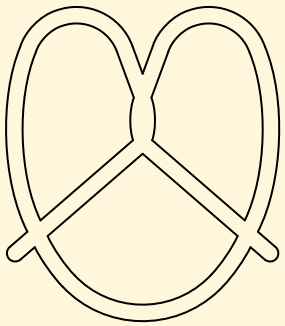

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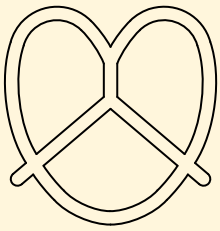

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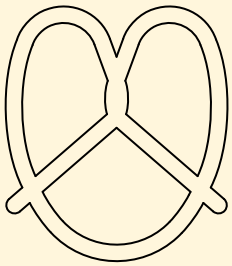

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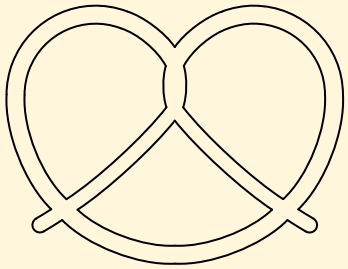
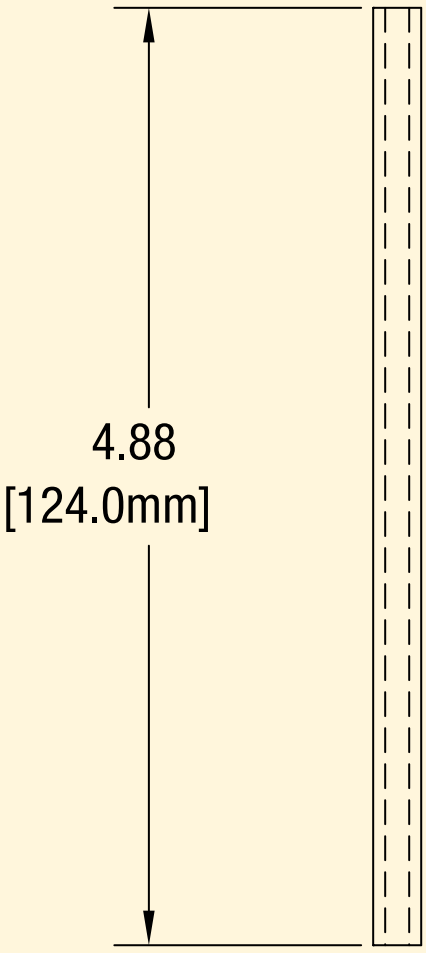
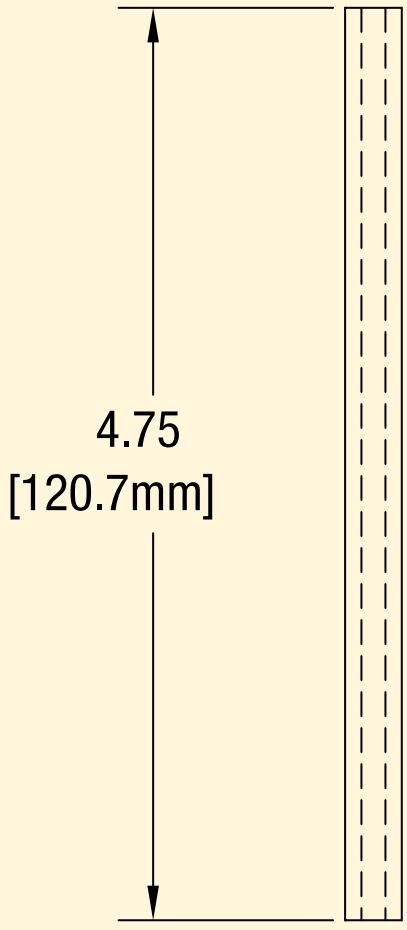


M15

Co-extruded / Filled Product Shapes

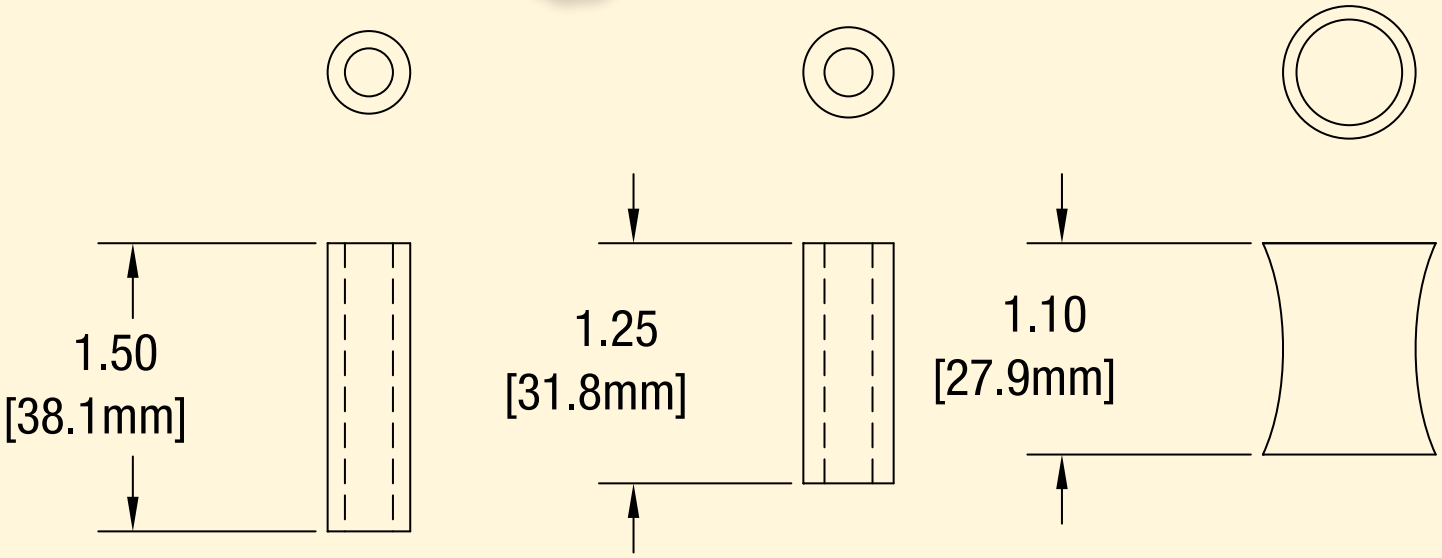




0.25" (6.4mm) OD
0.13" (3.2mm) ID
4.88" (124mm) Lg

0.30" (7.5mm) OD
0.13" (3.2mm) ID
4.75" (120mm) Lg

Die gallery page 3



0.43" (10.9mm) OD
0.25" (6.4mm) ID
1.50" (38mm) Lg

0.47" (11.9mm) OD
0.25" (6.4mm) ID
1.25" (32mm) Lg

0.69" (17.5mm) OD
1.10" (28mm) Lg

Sticks, Nuggets & Rod Shapes

Thin Stick

0.18" (5mm) OD
2.38" (61mm) Lg

Euro Stick

0.20" (5mm) OD
4.72" (120mm) Lg

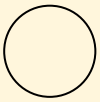
Stick

0.22" (6mm) OD
3.19" (81mm) Lg

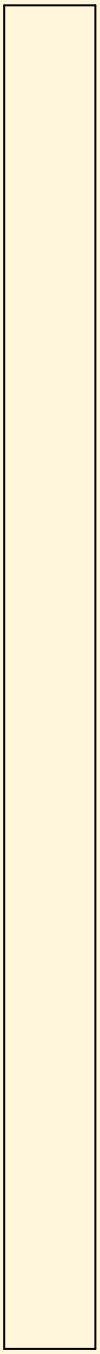
Penny Stick

0.32" (8mm) OD
3.25" (82mm) Lg

Die gallery page 5

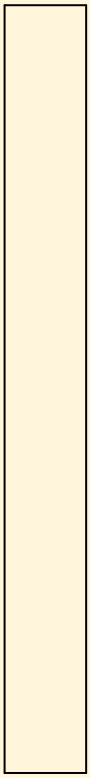


Rod

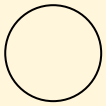


0.48" (12mm) OD
7.00" (178mm) Lg

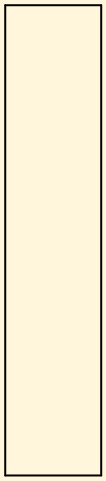
Log



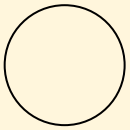
0.42" (11mm) OD
4.00" (102mm) Lg



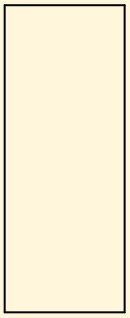
Specialty
Stick



0.50" (13mm) OD
2.45" (62mm) Lg



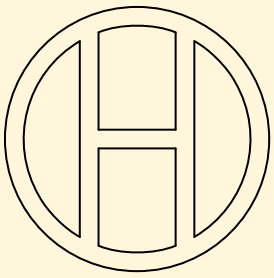
Nugget/
Spilt Nugget



0.63" (16mm) OD
1.60" (41mm) Lg

Company Logo Shapes

These shapes are proprietary and cannot be reproduced. Custom designs for logo shapes available.



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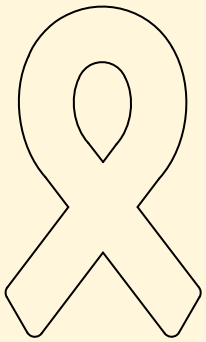

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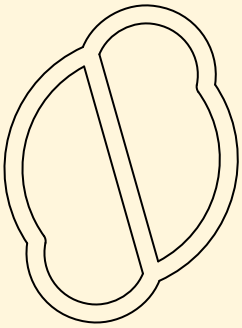

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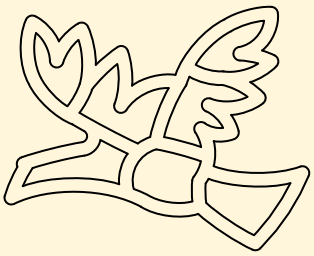

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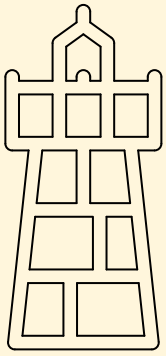

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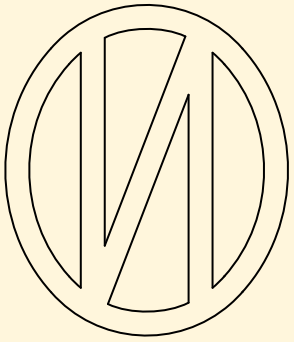

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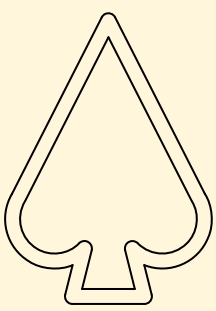
Playing Card Shapes



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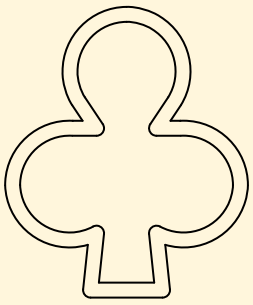

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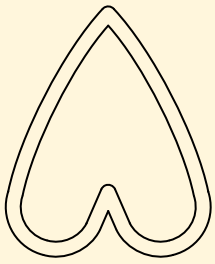

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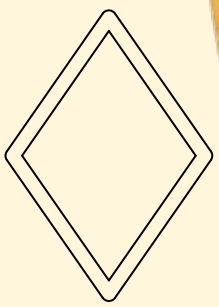

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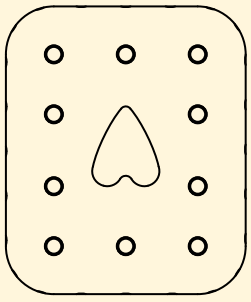

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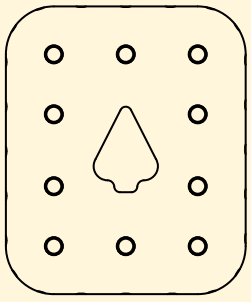

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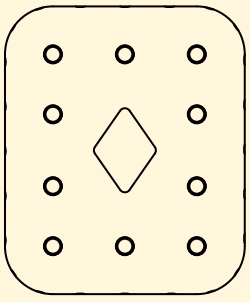

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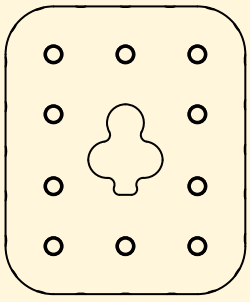


N9

Letter Shapes

B D F H J L N
A C E G I K M
P R T V X Z
O Q S U W Y

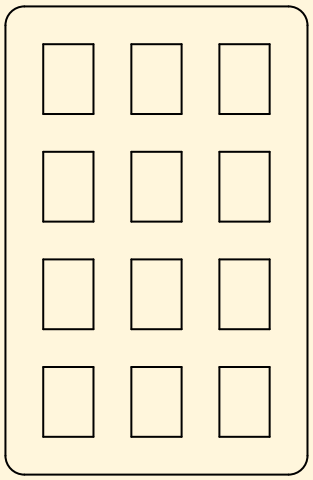
N5

Number Shapes

1 2 3 4 5
6 7 8 9

N10

Flat Product Shapes



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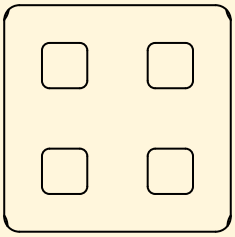
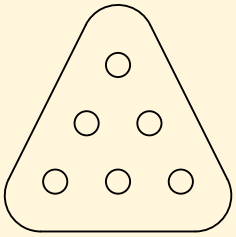


F9



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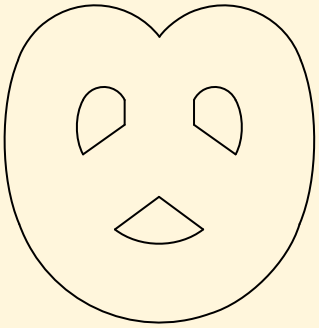

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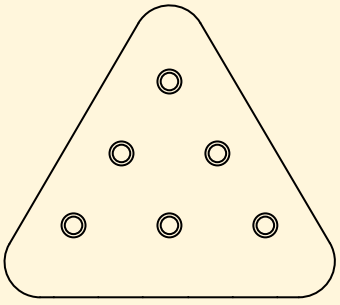

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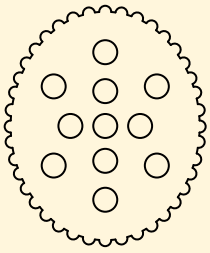

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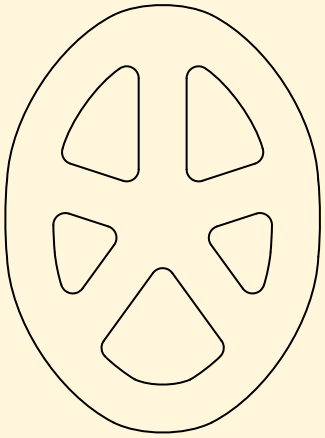

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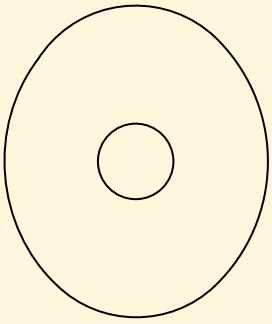

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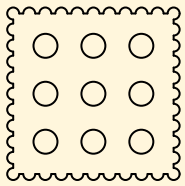

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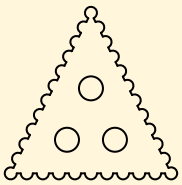

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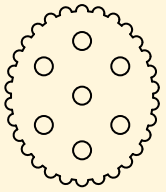

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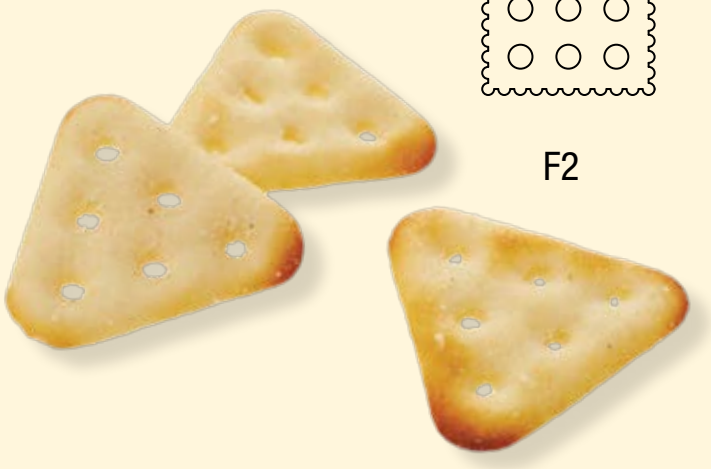
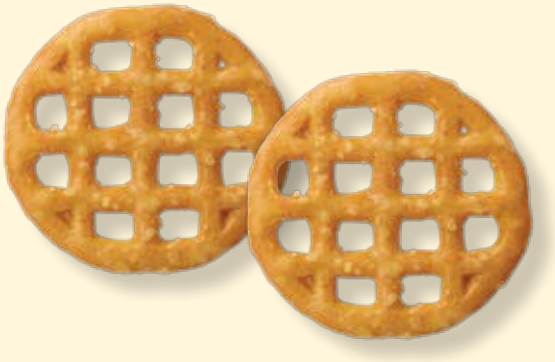
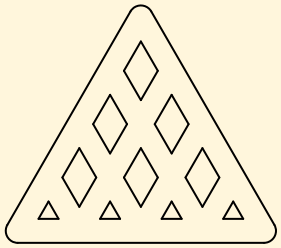


Grid Shapes





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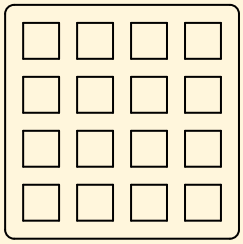

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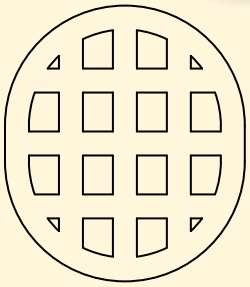

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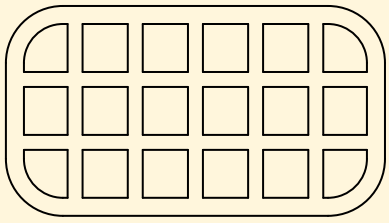

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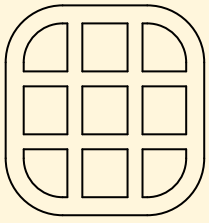

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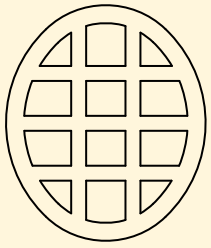

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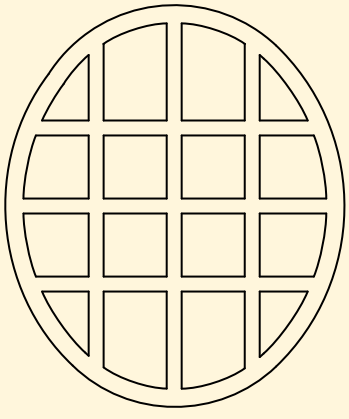

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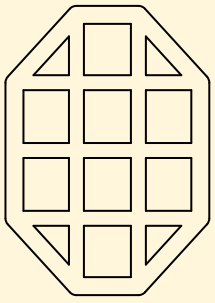

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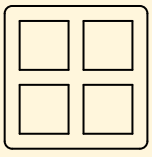

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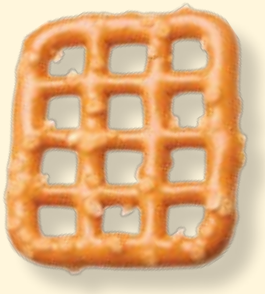
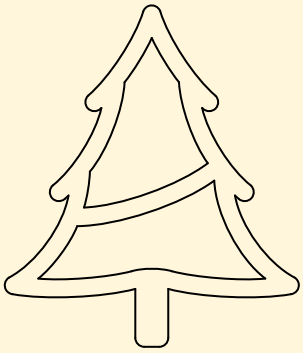


Holiday Shapes



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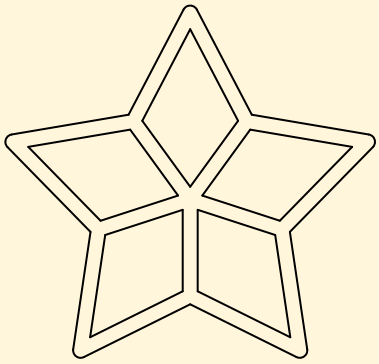

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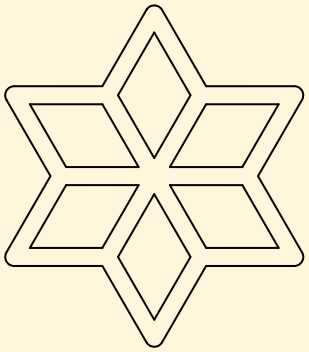

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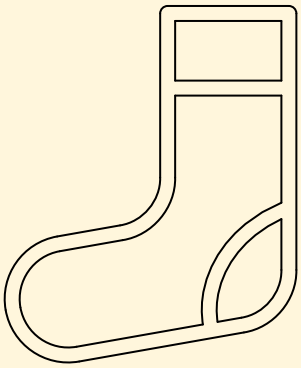

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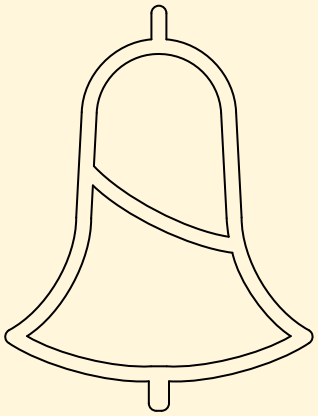

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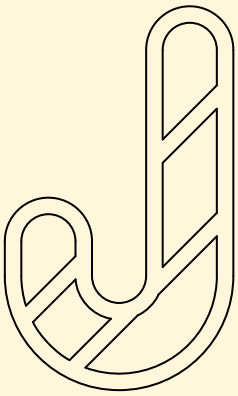

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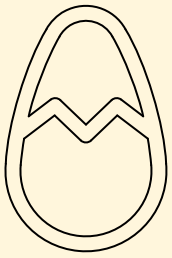

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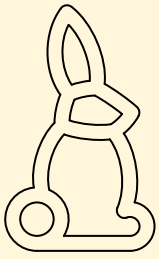

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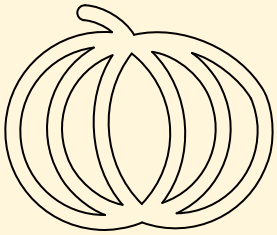

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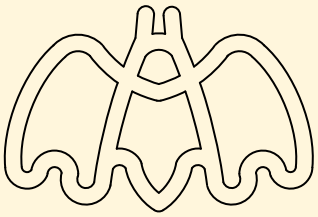

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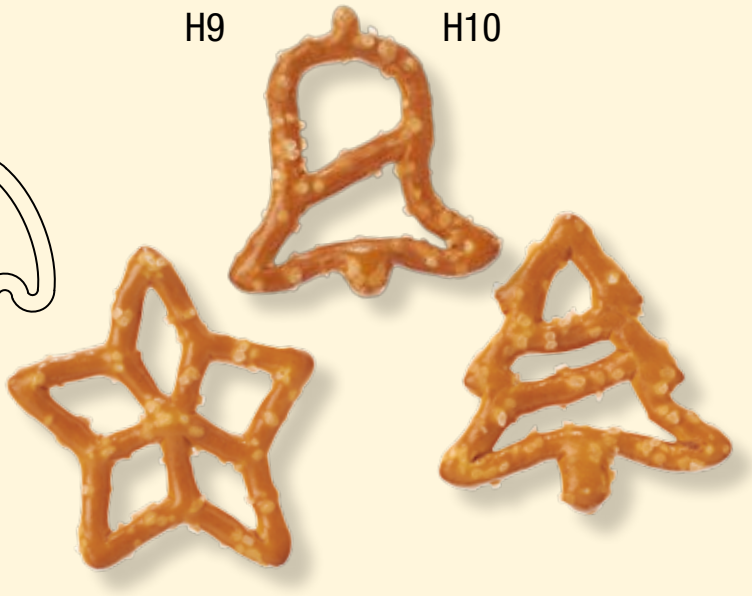
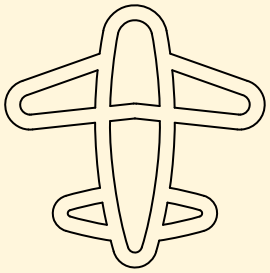


Kids Shapes



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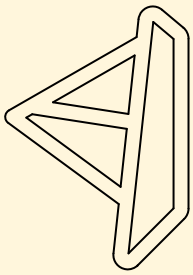

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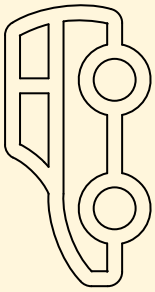

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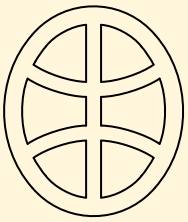

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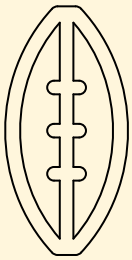

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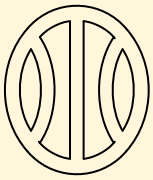

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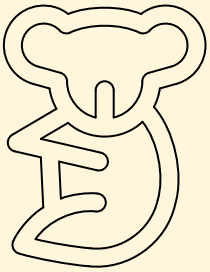

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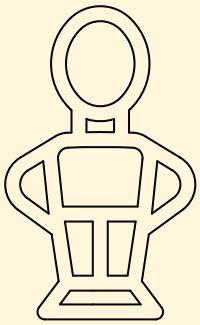

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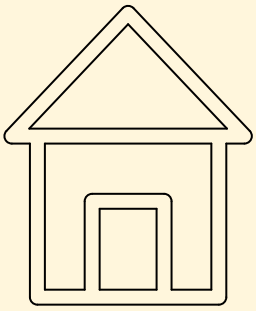

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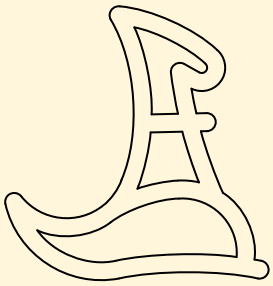

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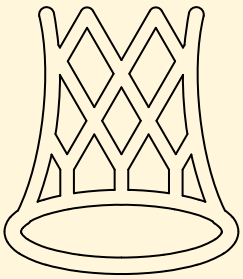

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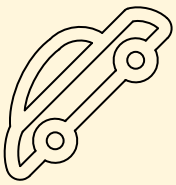

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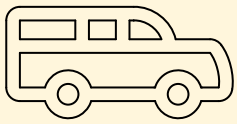

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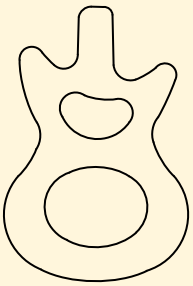

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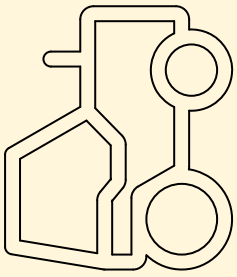

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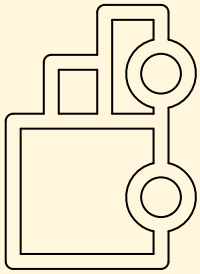
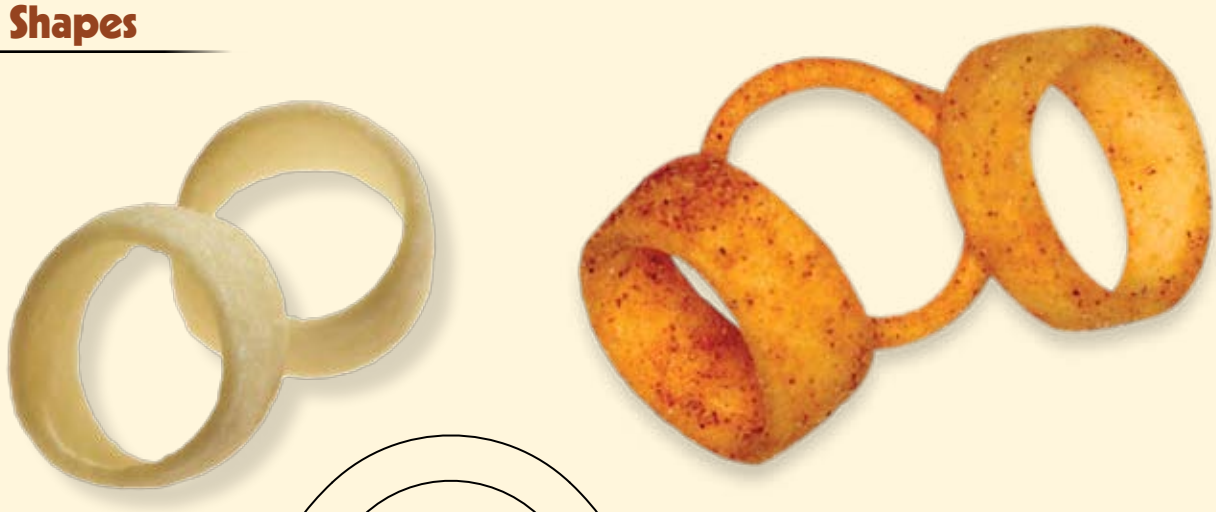
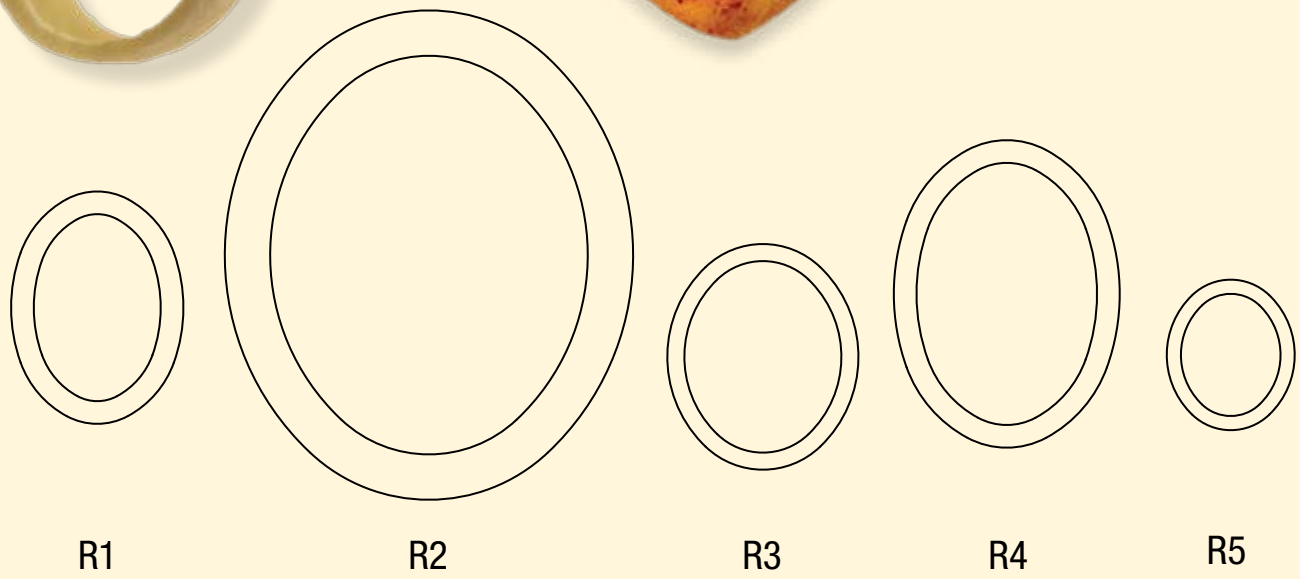
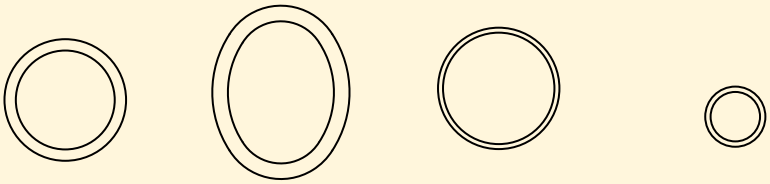


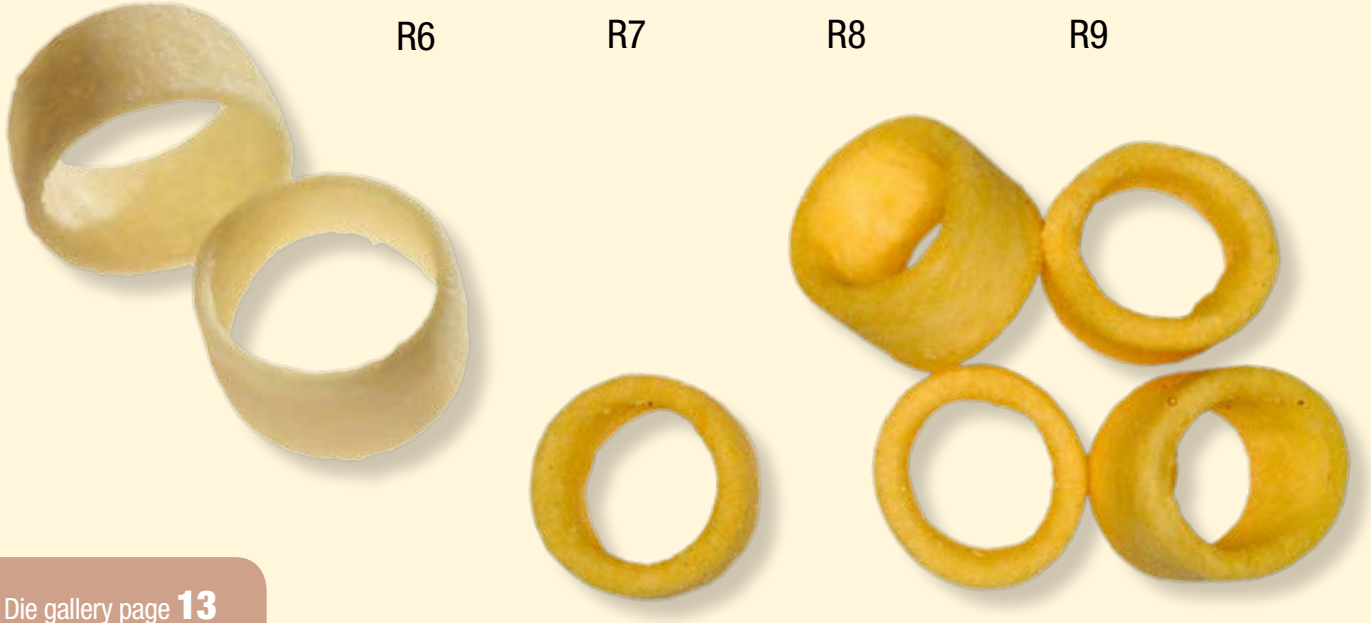
K5

Ring Shapes

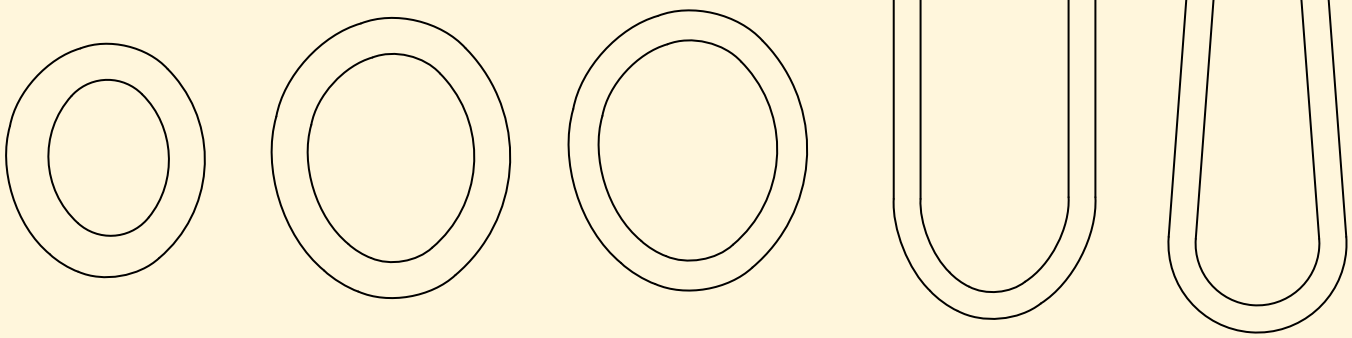




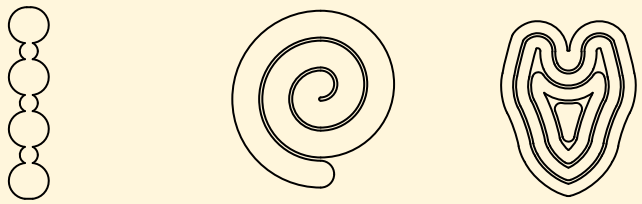




Sushka, Mini-Sushka & Bread Snack Shapes



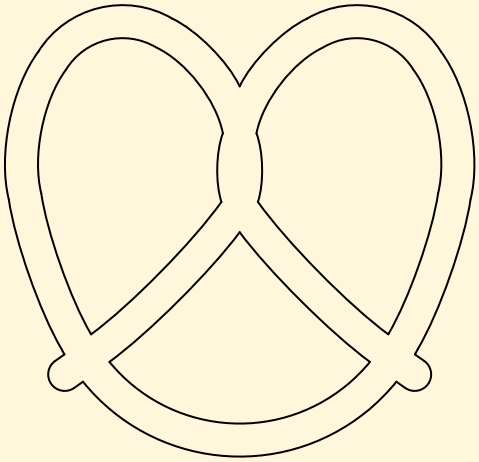
SH1 SH2 SH3 SH4 SH5



SH6 SH7 SH8

Die gallery page **14**

Bavarian Shapes



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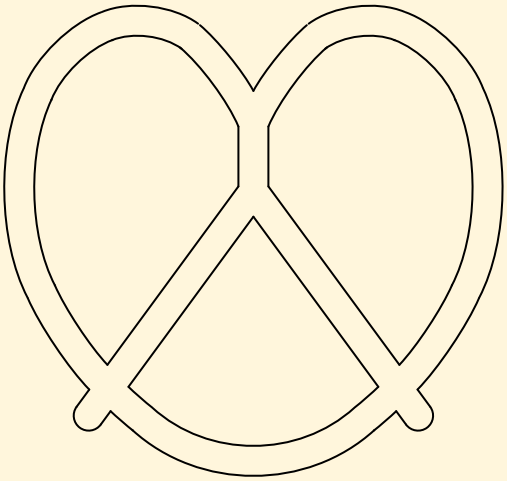

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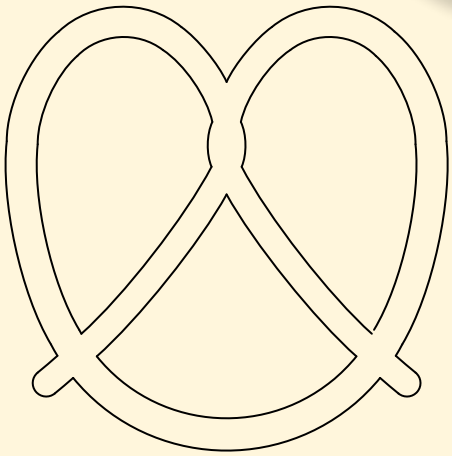

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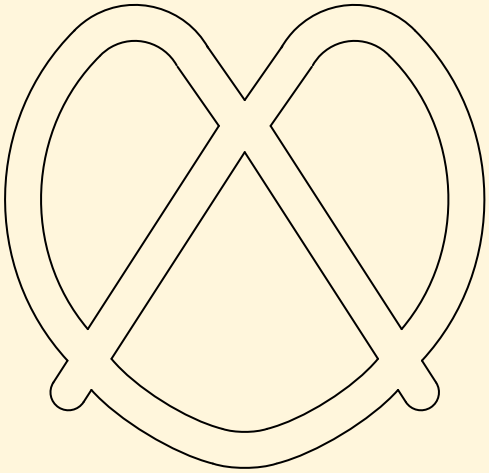

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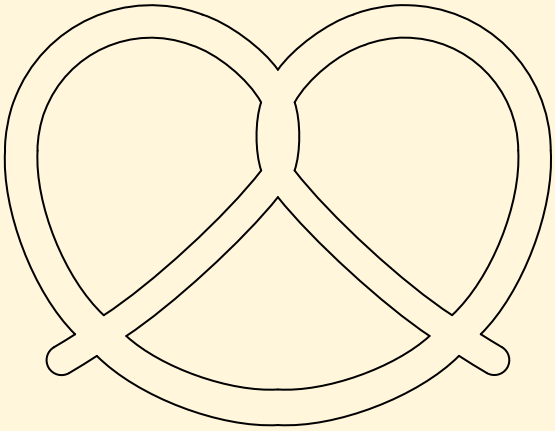

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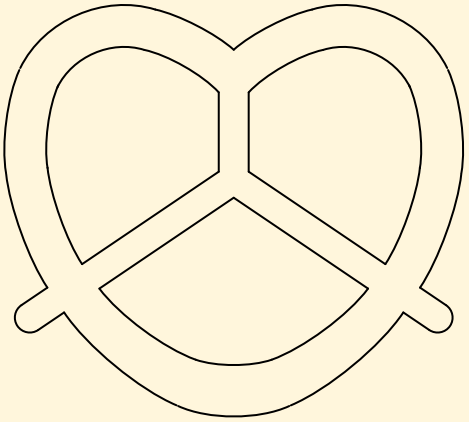

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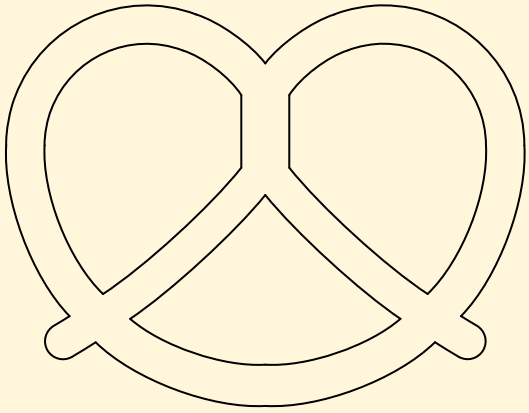

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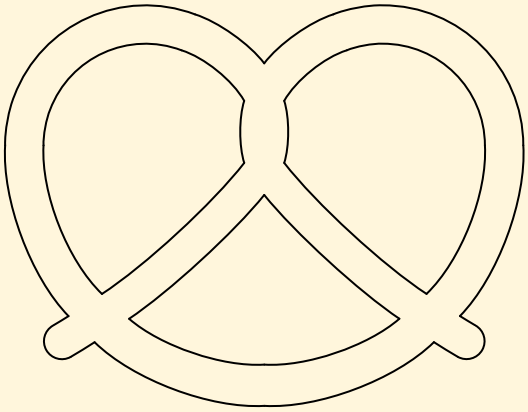
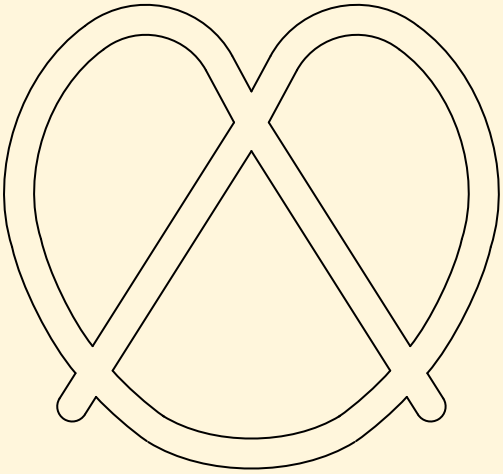


B9



B10

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