

YOUR PARTNER FOR BLOW MOULDS.

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A dynamic splash of water in shades of blue, with droplets and ripples, serving as the background for the central text.

Your Partner for Blow Moulds

RÖDERS GMBH

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appr. 500 employees in 3 sites / more than 10.000 m2 prod. area



RÖDERS GMBH

- Family-run business since 6 generations
- Blow mould manufacturing since 1975
- Capacity of 6.000 moulds per year
- Mould manufacturing on Röders HSC milling machines



RÖDERS = Pioneer in Blow Mold Making

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- > **1975: manufacturing of the first blow molds for Krupp Corpoplast**
- > 1982: manufacturing of the 1st petaloid base
- > **1984: start of using 3D CAD/CAM technology as one of the first companies in Germany besides Volkswagen and Daimler Benz**
- > 1991: 1st self developed High Speed Milling for use within the blow mould manufacturing process
 - ==> new (3.) branch for RÖDERS
 - ==> lead-times were cut by up to 50% versus old technology



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> **1993: Development 1st Quick-Change-System**

==> Röders customers use the system before other system e.g. offered by Sidel

==> 1995 Development of the Eco-Shell-System for SIG - Corpoplast

> 1994: manufacturing of 1st Heat Set Mould für Johnson Controls (today APPE → Plastipak)

> **1997: Kronos chooses Röders as exclusive partner für development and manufacturing of the molds for the new Contiform – machines**

> 1999: Development of mold system for SIPA's rotative SFR - machine generation

> 2001: founding of ROEDERS of America and Roeders China

> 2012: founding of ROEDERS Vietnam



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- > 2013: Development of Röders RMC (Rapid Mould Change) system available for Kronen, Sidel, KHS
- > 2015: Introduction of 3D printing technology for quick mockups
- > 2019: New office building for machine tool business → more space for mould department in 2020
- > 2019: New laboratory blowing machine for test blowings with pilot moulds
- > 2021: New laser scanner for quick re-engineering
- > 2023: New burst tester for lab, new equipment for CO2 retention testing (non-destructive)



RÖDERS = Development of
special mold systems

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Low Pressure Base

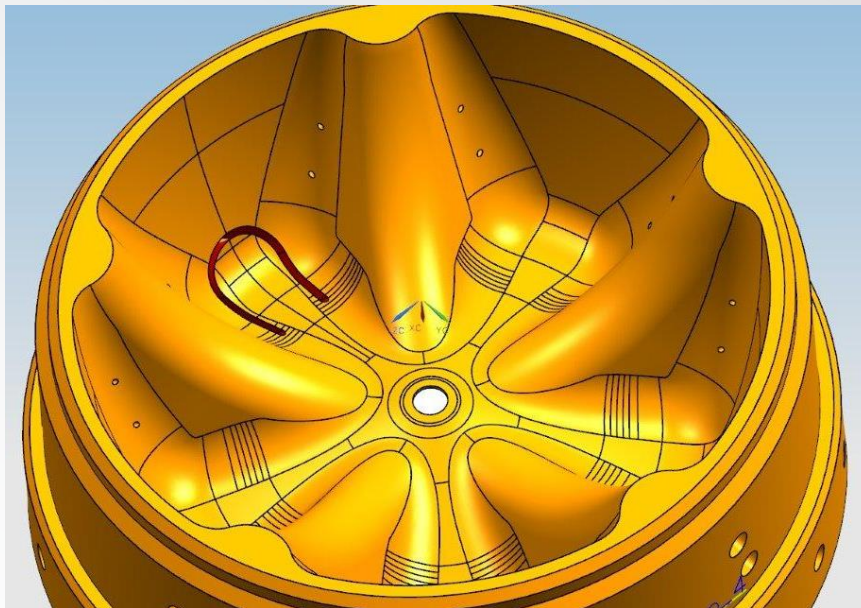
available for 0,33L – 2,5L
all petaloid / CSD – types
all machine types

**RÖDERS = Development of
special mold systems**

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Low Pressure Base

5-foot base mould with special features



Low Pressure Base

- optimized material flow due to special base + feet design
- special venting channels for quick air exhaust
- minimum material requirement
- significant cost reduction due to reduced energy requirements
- venting channels do not affect the stability
- in most cases: replacement of base mould only → no need to order full set of moulds



Low Pressure Base

- existing base moulds cannot be modified to the new base design → manufacturing of new base moulds required
- all results depend on the general conditions such as stretching values of the preform, blow mold quality, current preform weight, bottle shape, condition and status of blowing machine
- complete set of base moulds required for a test run on all stations of the blowing machine
- in the case existing moulds are not manufactured by RÖDERS, a full spare mould is required for re-engineering purposes

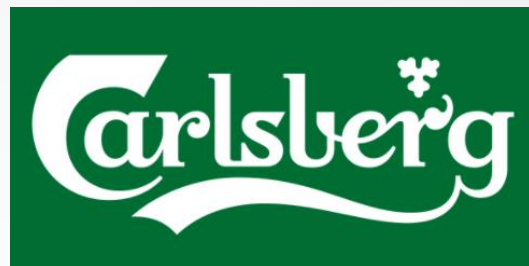


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Low Pressure Base

- LP base already is installed in several plants accross Europe



Low Pressure Base

330ml bottle Coca-Cola

Blowing machines:

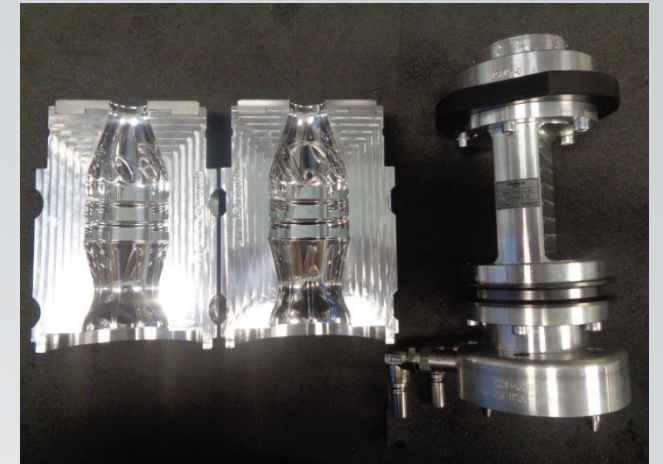
- Krones Contiform Gen. 3 (2015)

P2 pressure before installation of the LP base moulds:

➤ ca. 25 bars

P2 pressure after installation of the LP base moulds:

➤ ca. 17 bars



Low Pressure Base

PepsiCo bottler: 500ml Axl / Ripples

Blowing machines:

- Sidel SBO18 S2 (2000)
- Kronen S10 G2 (2003)

P2 pressure on 500ml format before:

➤ ca. 29 bars

P2 pressure with new 500ml Axl moulds:

➤ ca. 20 bars

„Base design, additional venting and a good preform match will help to bring down the blowing pressure while still having properly blown bottles.“



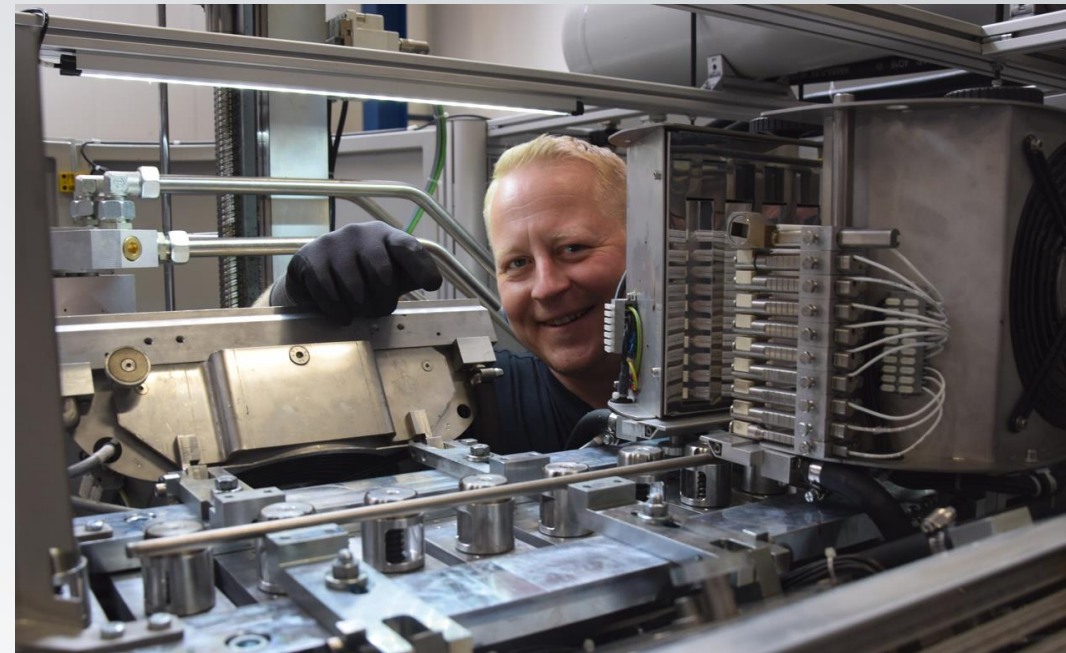
RÖDERS = 100 % Service

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Technical support on site

Experienced technicians are available to help optimizing your blowing process to achieve...

- > Proper material distribution
- > Reduced energy consumption
- > Stable blowing process
- > Training of your operators



**RÖDERS = Development of
special mold systems**

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Low Pressure Base

- Not working on 5-foot solution only, but also on other base designs
- Sample photo for 8-foot base used for juice applications



Low Pressure Base

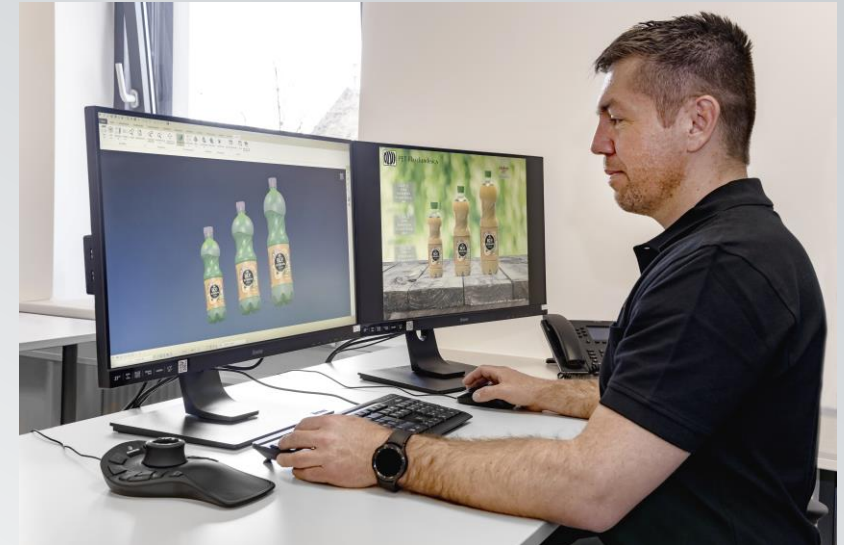
All potential results are related to local conditions:

- Stretching ratio of the preform
- Condition of the moulds
- Used preform weight
- Bottle shape and volume
- Configuration and condition of the blowing machine



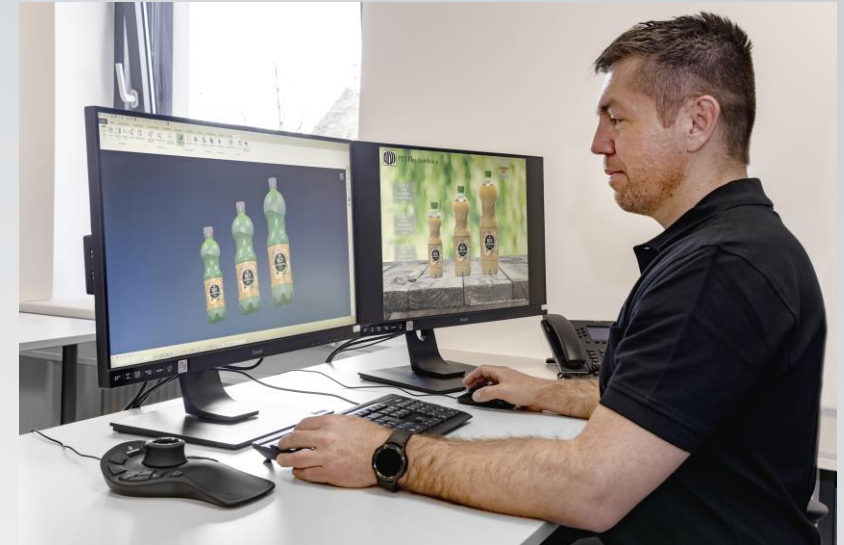
Checklist for bottle design

- Bottle size = fill-level volume + headspace
- Product to be filled
- CO2 level or use of nitrogen
- Name of the project
- Preform neck finish and estimated weight
- Main requirements for dimensions (\emptyset / H)
- Labelling
- Base design
- Other details



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Thank you