



GEBRÜDER LEONHARDT
BLEMA KIRCHEIS



Heat-Sealing Technology

Peel-Off Solutions for the Metal Packaging Industry



Table of Contents

- 1 Introduction of Gebrüder Leonhardt Blema Kircheis
- 2 Technology
 - 2.1 Peel-off explained
 - 2.2 Heat-sealing explained
- 3 Peel-off applications and heat-sealing equipment from Blema Kircheis
 - 3.1 Peel-off end
 - 3.2 Direct-sealed metal can
 - 3.3 Push'n'Peel

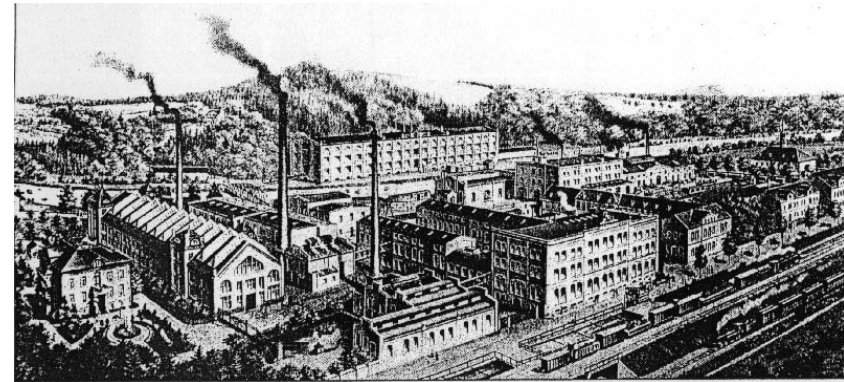
Heat-Sealing Technology

Metal Packaging Peel-Off Solutions

1 Introduction

TRADITION

- established in 1861 by engineer, inventor and pioneer *Erdmann Kircheis*
- today the oldest existing manufacturer for metal packaging machinery worldwide



INNOVATION

- modern facilities
- engineering, parts manufacturing and assembly all on site in Germany
- experience and flexibility
- 100 % family-owned and -managed

1 Introduction

Product range (metal packaging)

- complete end lines
- traditional deep-drawn steel can lines
- three-piece can making lines for food and aerosol cans
- twist-off and PT-cap making high-speed equipment
- high-speed embossing equipment for food and aerosol cans
- seaming equipment
- heat-sealing machines for metal ends and cans

1 Introduction

Product range (composite can making)

- membrane sealing machines
- cardboard bottom sealing machines
- composite can making machines

MARKET LEADERSHIP





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Technology

Peel-off explained



2.1 Peel-off explained

Peel-off / Easy-Peel

key advantages for the customer

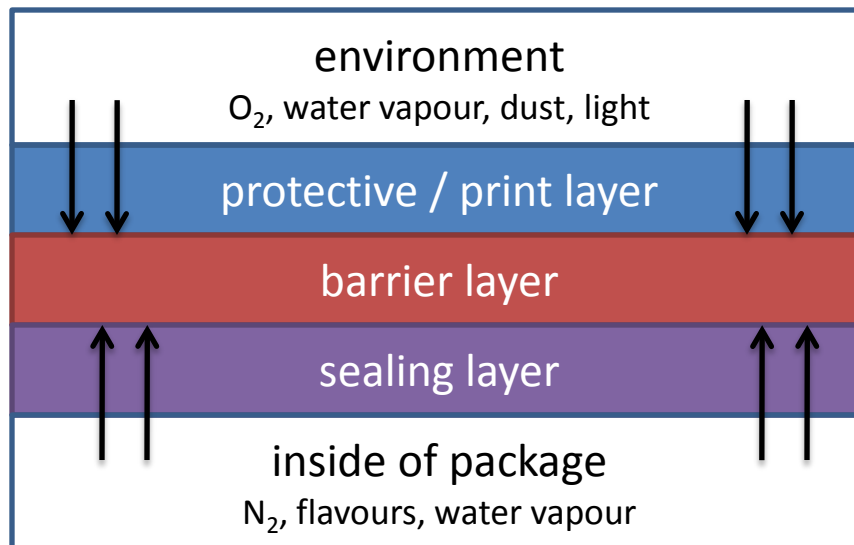
- very low opening forces (7..15 N)
- no risk of injury
- easy access to the product
- tamper evidence
- modern image to the can

C O N V E N I E N C E



2.1 Peel-off explained

Peel-off membrane



thickness = 50...150 μm

Al, SiO_x , EVOH, PVDC, xPET

PE, PP, sealing lacquer

retortable – heat-sealing to PP-coated or lacquered tinplate

non-retortable – heat-sealing to plain or lacquered tinplate



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Technology

Heat-sealing explained

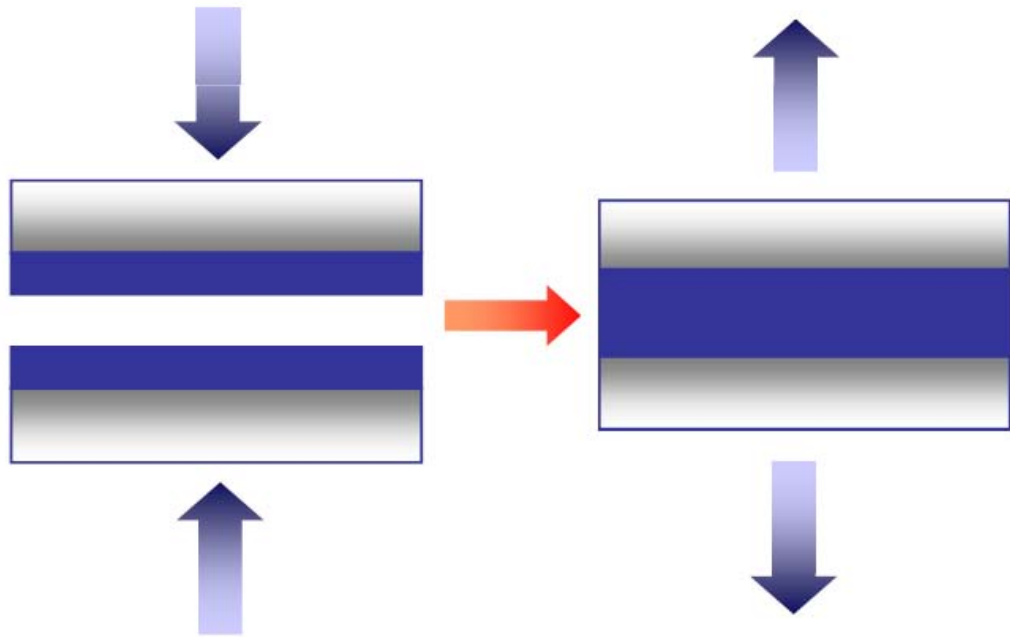


2.2 Heat-Sealing explained

Heat-Sealing

is the firm joining of a thermoplastic sealing layer of a packaging material to a suitable partner using

- Energy
- Time
- Pressure



2.2 Heat-Sealing explained

Heat-Sealing

by means of heated contact tooling only

disadvantages:

- heat-dissipation through the metal (excellent heat conductor)
- the heat is supplied from outside and is not created within the sealing layer
 - bad distribution of heat, long sealing times
 - danger of burning the membrane or tinplate lacquer

2.2 Heat-Sealing explained

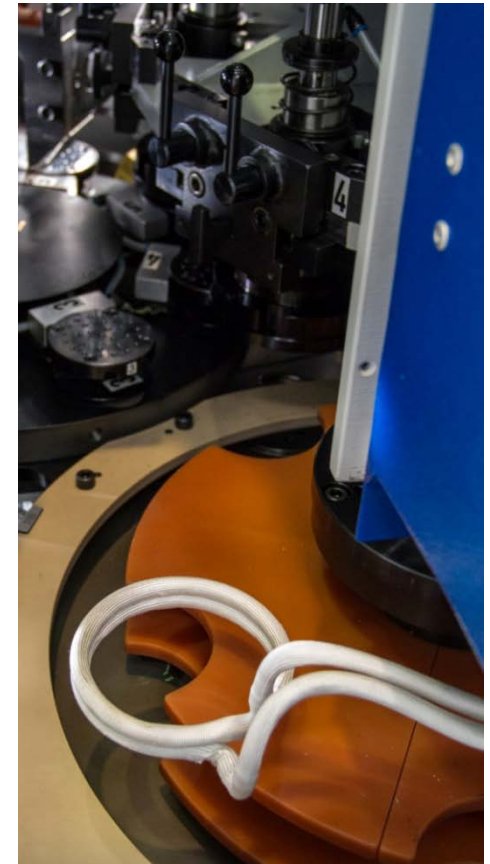
Heat-Sealing

using *inductive pre-heating*

advantages:

- + usage of stored energy within the metal for the sealing process
- + gentle and controlled temperature distribution
- + very short sealing times of ~ 80 ms

H I G H P E R F O R M A N C E



2.2 Heat-Sealing explained

Heat-Sealing

using *elastomeric heat-sealing stamps*

advantages:

- + compensation of irregularities of the sealing surface
- + sealing over welding-seam possible

RELIABILITY





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Applications and Equipment

Peel-off end



3.1 Peel-off end (POE)

- classic peel-off solution for metal packaging
- membrane sealed to preformed metal ring



- + retort-applications possible
- + can be seamed by traditional and available equipment
- + proven solution with many applications
- high initial investment
- high material cost

3.1 Peel-off end (POE)

- new development – **transparent retortable** peel-off ends
e.g. for fish cans
- introduced in Europe for premium sprats in oil products



3.1 Peel-off end (POE)

next generation machine **RHO IV** from Blema Kircheis

- indexed machine in rotary design
- performance up to 300 epm
- round and non-round formats up to D127
- fully servo-driven working stations and state-of-the-art process monitoring
- + high flexibility due to quick format change system and modular design
- + high reliability
- + ability to run retort and transparent membranes
- + economical price and small footprint

A V A I L A B L E I N 2 0 1 4

3.1 Peel-off end (POE)

turn-key solution by Blema Kircheis

- end line for round or non-round formats
- transfer press for ring forming
- heat-sealing machine
- conveying and bagging





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Applications and Equipment

Direct-sealed metal can



3.2 Direct-sealed metal can



membrane sealed directly to the top of the can

- + huge material savings (omission of ring)
- + savings in equipment / initial investment
- + no reduction of opening diameter

leak tightness (helium flow rate):

$$\text{max. } 2...3 \cdot 10^{-7} \text{ (mbar} \cdot \text{l) / s}$$

burst pressure up to 1.2 bar

3.2 Direct-sealed metal can

Metal Can Sealing Machine **RHO III**

- continuously running turret design
- performance up to 300 cpm
- optional integrated plastic capping module
- optional membrane embossing



Heat-Sealing Technology

Metal Packaging Peel-Off Solutions

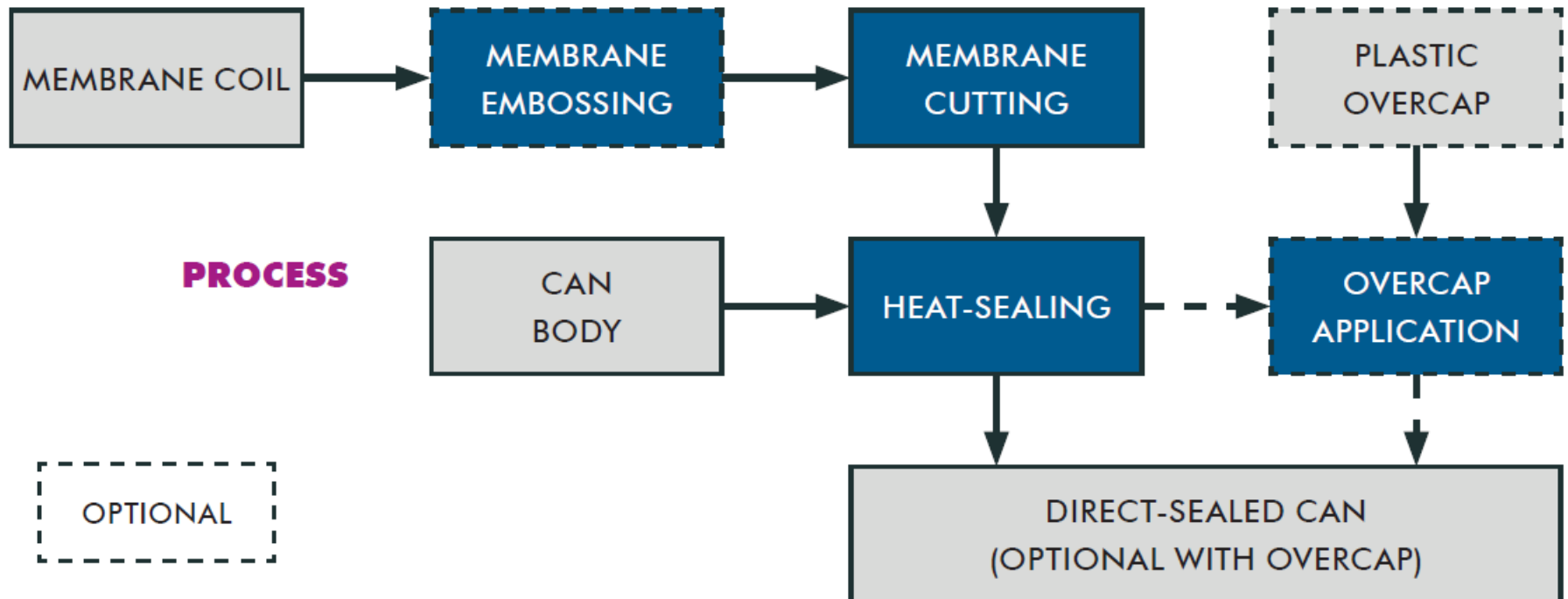
3.2 Direct-sealed metal can

- won acclaimed German Packaging Award in 2013

Best Packaging Machine

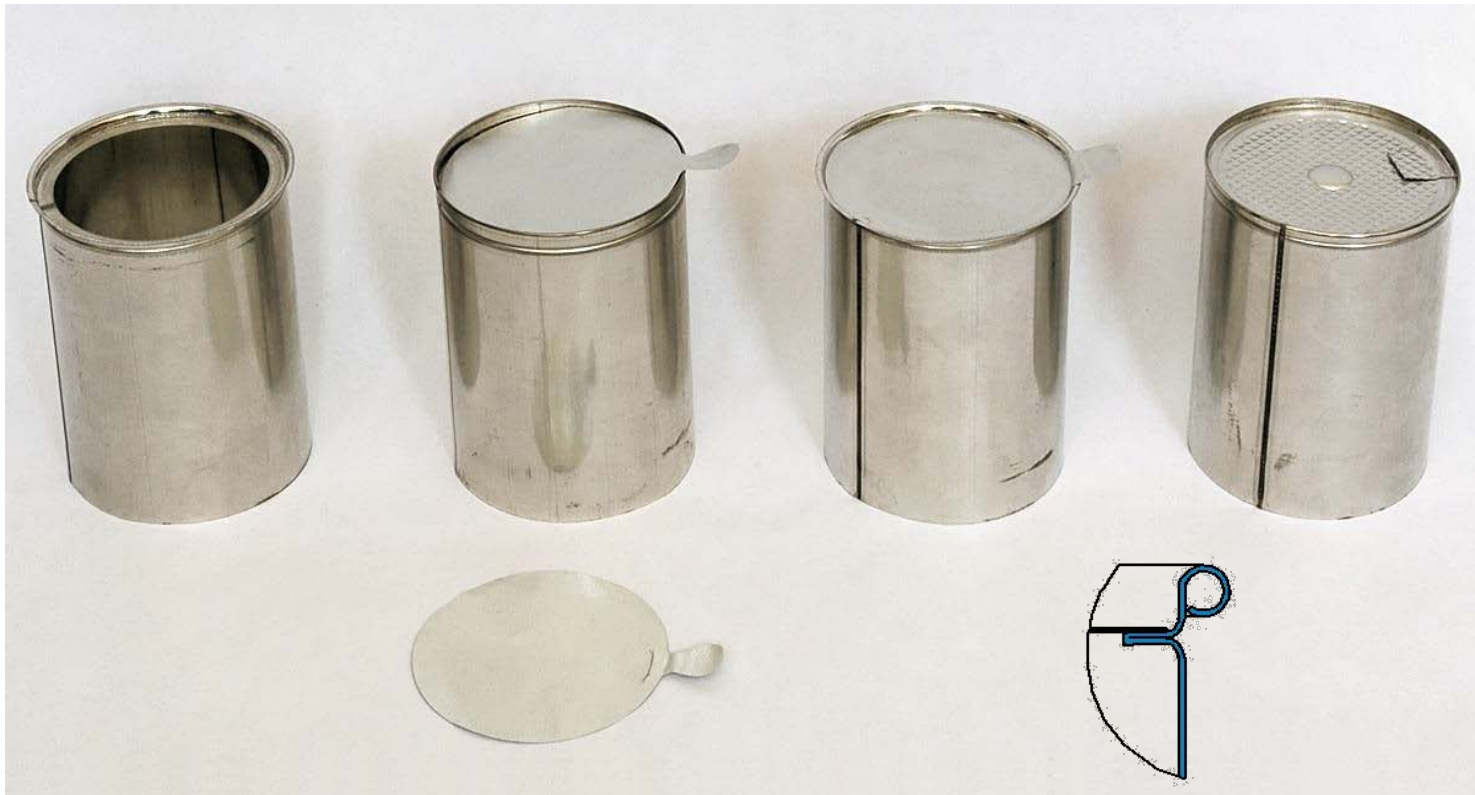


3.2 Direct-sealed metal can



3.2 Direct-sealed metal can

ledge-sealing – direct-sealing of a membrane to a ledge created from the can by deep beading and flattening



3.2 Direct-sealed metal can

GAMMA II Modular Can Maker

- 1) deep beading module
- 2) bead flattening module

RHO V Metal Can Sealer

direct sealing to recessed ledge





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Applications and Equipment Push'n'Peel



3.3 Push'n'Peel

Push'n'Peel

- patented technology by Blema Kircheis
- unique twist to easy-peel



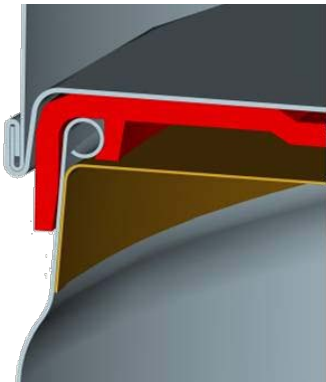
push'n'peel end



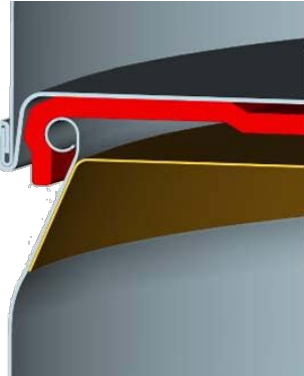
push'n'peel direct-sealed can

3.3 Push'n'Peel

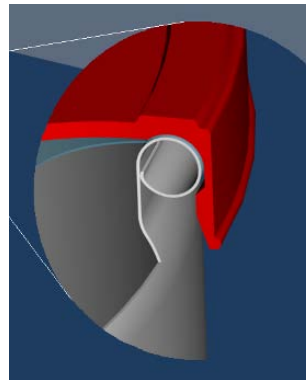
- stackability
- inner pressure supports sealing area
→ reliable closure
- plastic cap for protection and reclosability



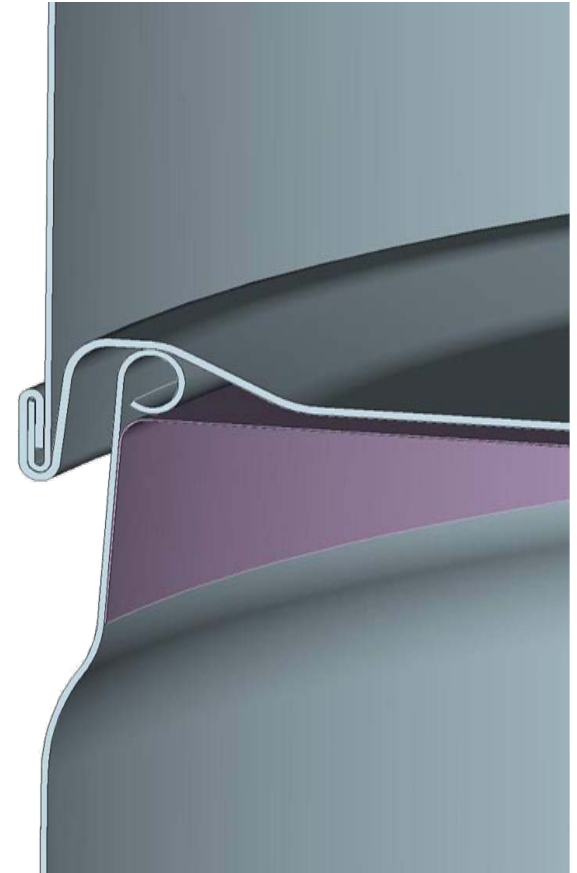
sealed can with
inner roll



sealed can with
outer roll



can with outer
roll sealed on
the roll



Thank you very much for your attention!

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