

Solutions for metal packaging

Improved productivity with BALINIT solutions



Using BALINIT coating solutions to improve the productivity of metal packaging production lines

Forming tools for metal packaging are associated with a range of failure mechanisms such as wear and material build-up on the surface of the tools. Oerlikon Balzers offers a range of BALINIT® coatings designed specifically to avoid these failures at the different stages of production.

These solutions can be applied on slitter blades for cutting and on bodyformers for shaping, necking, flanging and beading operations. They can be utilised on tools used in two-piece and three-piece can manufacturing processes forming either aluminium or steel sheet metals as the workpiece material.

Main benefits of using BALINIT coatings in combination with metal packaging tools

- Elimination of aluminium build-up on the tools
- Elimination of wear and galling on the tools predominantly in the manufacturing of steel cans for a variety of food and non-food fillings
- Stable and controlled production process
- Fewer scrap parts, resulting in higher productivity

Three-piece welded steel cans

1.
Shaping a rectangular piece of steel sheet metal into a cylinder making the base of can body. A final shape of the can is then finalized for the desired optical purposes.

4.
Double seaming of the bottom end.



5.
Once the can has been filled, the top end is seamed.

2.
Flanging/Swing-flanging of the upper and/or lower side of the cylinder necessary for the subsequent seaming processes for the attachment of top and bottom ends.

3.
Beading of the side walls for the sake of appearance as well as the structural stability.

BALINIT coating solutions from Oerlikon Balzers

The following table indicates the appropriate BALINIT® coatings for the type of application (two-piece or three-piece cans), workpiece material (aluminium or steel) and type of fillings (food or non-food) in a typical metal packaging forming process:

Type		TWO-PIECE CANS	
		THREE-PIECE CANS	
Workpiece material		Steel	Aluminium
Industries	Food	Tea, coffee, tuna fish	Beverages
	Food & non-food	Crowns, caps and closures, top & bottom lids etc.	
	Non-food	Oil barrels, paint cans, etc.	Aerosols, perfumes, etc.
Services		BALINIT FORMERA / BALINIT ALCRONA EVO	BALINIT TRITON STAR / BALINIT MAYURA / BALINIT DYLYN

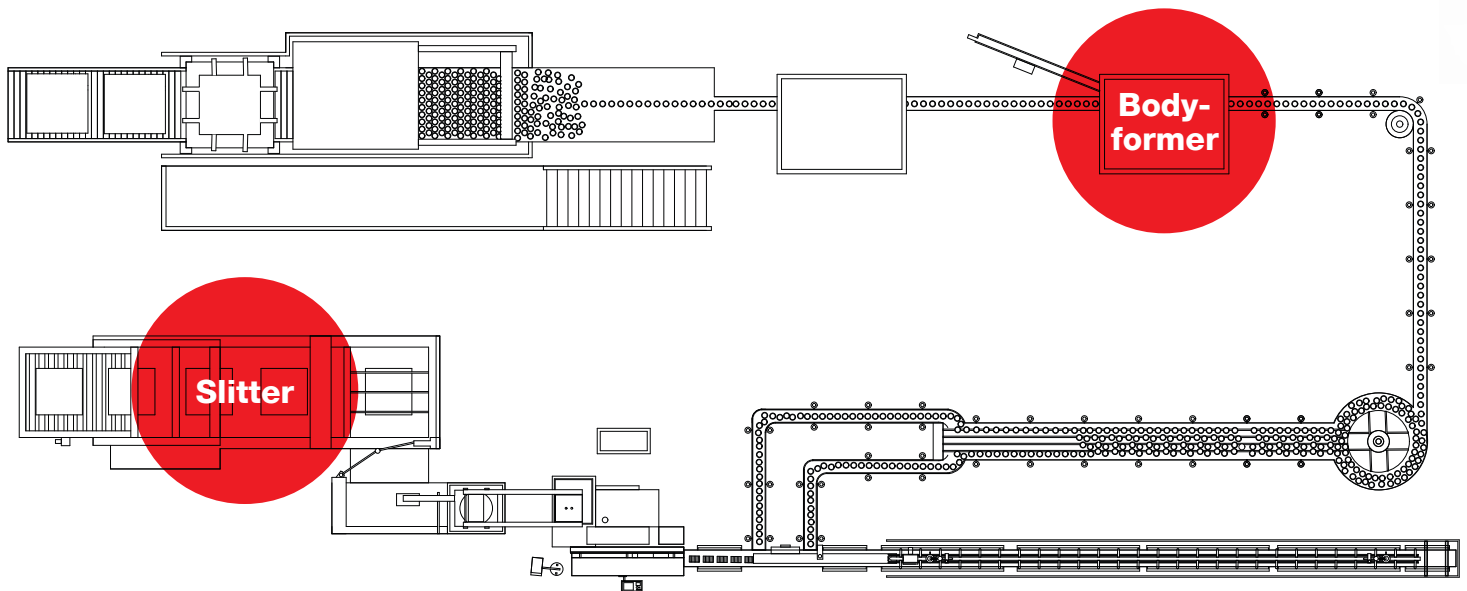
Coating properties at a glance

Coating	BALINIT ALCRONA EVO	BALINIT FORMERA	BALINIT TRITON STAR	BALINIT MAYURA	BALINIT DYLYN
Description	AlCrN-based	CrAlN-based Multilayer	Multilayer	ta-C	a-C:H:Si Multilayer
Thickness [µm]	2 – 4	6 – 12	4 – 6	0.3	1 – 3
Process temperature [°C]	< 500	480	200 – 250	< 150	180 – 220
Max. service temperature [°C]	1,100	900	350	> 500	300
Coating hardness H_T [GPa]	44 +/- 4	28 +/- 2	~20 – 25	> 65	~20 – 25
Colour	bright grey	silver-light grey	black	rainbow / rainbow black	black

All given data are approximate values and depend on application, environment and test conditions.

Two-piece drawn and ironed (D&I) cans

1. Depending on the final shape of the can, a circular or rectangular piece of sheet metal is fed into the bodyformer unit.
2. A punch die draws the sheet metal to create the desired height.
3. Trimming and flanging of the cup edge and beading of the side walls, if needed and desired.
4. Adding the top end after the cans have been filled.



Slitters benefiting from BALINIT coatings

Use of BALINIT® coatings results in increased productivity by maintaining the sharpness of the blades over an extended period of time. Less frequent resharpenering is required, therefore higher profitability is achieved.



Aerosols & perfume/spray bottles



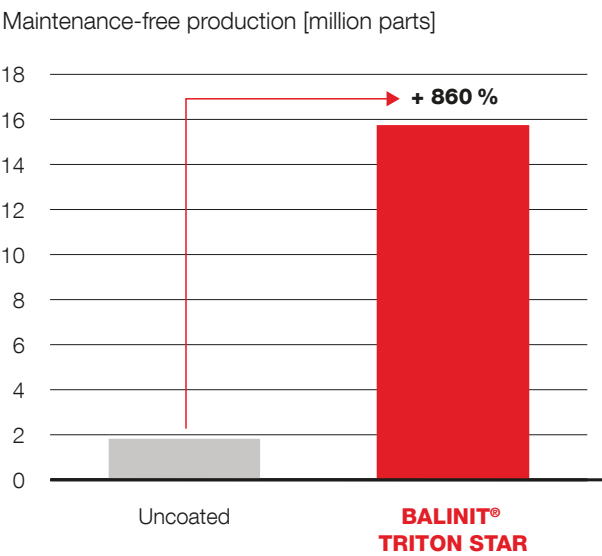
Containers



Tins & boxes



Tool steel	1.2379 (D2, SKD11)
Application	Two-piece cylindrical can for aerosol
Workpiece material	Aluminium 6xxx series (Mg/Si alloyed)
Solution	BALINIT® TRITON STAR
Benefit	Less frequent maintenance, shorter downtime, increased product quality, better-quality products and fewer scrap parts



Steel drums



Crowns



Metalcaps & closures



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Mexico
USA

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Germany
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Italy
Liechtenstein
Luxembourg

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Portugal
Romania
Slovakia
Spain
Sweden
Switzerland
Turkey
United Kingdom

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Indonesia
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Malaysia
Philippines
Singapore

South Korea
Thailand
Vietnam

Asia

more than **35** customer centres in

Contact us now!

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