œrlikon
balzers

Solutions for metal packaging

金属包装解决方案

Improved productivity with BALINIT solutions
BALINIT解决方案为您提升生产力

Metal Forming

Using BALINIT coating solutions to improve the productivity of metal packaging production lines
使用BALINIT涂层解决方案提高金属包装生产线的生产效率

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.
金属包装成型模具通常会面临一系列的失效问题，比如表面的磨损和粘料。欧瑞康巴尔查斯的BALINIT系列涂层可专业解决在生产各阶段出现的这类失效。

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.
BALINIT涂层可应用于切割用的分条机刀片，以及用于成型、缩口、翻边和卷边操作的罐体成型机。可用于制造两片和三片铝罐或钢罐的模具。

Main benefits of using BALINIT coatings in combination with metal packaging tools
在金属包装模具上使用BALINIT涂层的优势：

- Elimination of aluminium build-up on the tools
  消除模具上的铝材粘料问题
- Elimination of wear and galling on the tools predominantly in the manufacturing of steel cans for a variety of food and non-food fillings
  消除主要用于制造各种食品和非食品馅料的钢罐模具上的磨损和咬合失效
- Stable and controlled production process
  稳定、可控的生产过程
- Fewer scrap parts, resulting in higher productivity
  减少废品率从而提高生产效率

Three-piece welded steel cans
三片式焊接钢罐

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.
将一块长方形的钢板弯卷成圆柱体作为罐身体。然后根据所需的视觉目的，最终确定罐体的形状。

5.
Once the can has been filled, the top end is seamed.
罐体安装好后，罐盖就可以接合了。

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.
对罐体的上侧和/或下侧进行必要的翻边/包边，以便随后进行冠盖和罐底连接的缝合工艺。

4.
Double seaming of the bottom end.
罐底经双层接合。

3.
Beading of the side walls for the sake of appearance as well as the structural stability.
为了外观以及结构的稳定性，对罐体外侧增加加强筋。

BALINIT coating solutions from Oerlikon Balzers
欧瑞康巴尔查斯的BALINIT涂层解决方案

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:

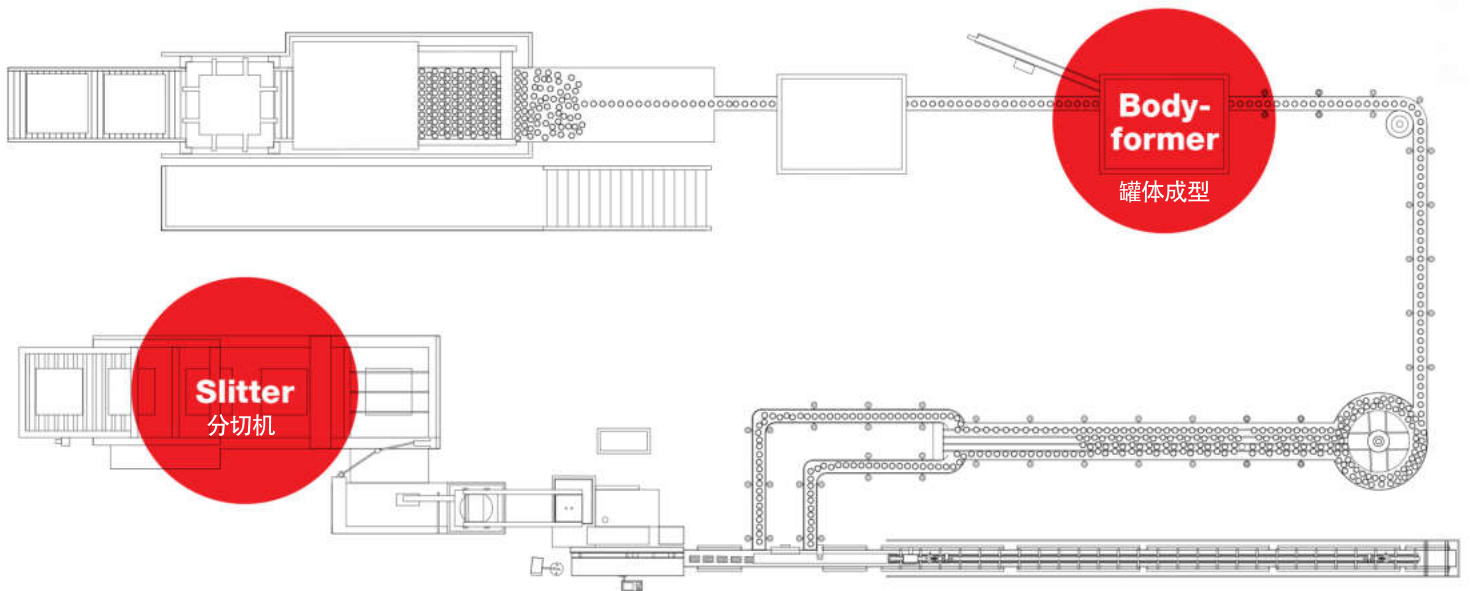下表列出了在典型的金属包装成型过程中，适合各类型应用（两片罐或三片罐）、加工材料（铝或钢）和内容物类型（食品或非食品）的BALINIT涂层：

Type 类型		TWO-PIECE CANS 两片罐	
	THREE-PIECE CANS 三片罐		
Workpiece material 加工材料	Steel 钢		Aluminium 铝
Industries 行业 — Food 食品		Tea, coffee, 茶, 咖啡 tuna fish 金枪鱼罐头	Beverages 饮料
Food & non-food 食品&非食品		Crowns, caps and closures, top & bottom lids etc. 瓶盖, 旋盖, 顶&底盖等	
Non-food 非食品	Oil barrels, paint cans, etc.	Aerosols, perfumes, etc. 气雾剂, 香芬等	
Services 方案	BALINIT FORMERA / BALINIT ALCRONA PRO	BALINIT TRITON STAR / BALINIT HARD CARBON / BALINIT DYLYN	

Coating properties at a glance 涂层性能一览

Coating 涂层	BALINIT ALCRONA PRO	BALINIT FORMERA	BALINIT TRITON STAR	BALINIT HARD CARBON	BALINIT DYLYN
Description 描述	AlCrN-based Multilayer 多层结构	CrAlN-based Nanolayer/Multilayer 单层/多层结构	Multilayer 多层结构	ta-C Monolayer 单层结构	a-C:H:Si Multilayer 多层结构
Thickness 厚度 [μm]	1 – 4	6 – 12	4 – 6	0.2 – 1	1 – 3
Process temperature 工艺温度[°C]	450	480	200 – 250	< 150	180 – 220
Max. service temperature 最高工作温度 [°C]	1,100	900	350	500	300
Coating hardness 涂层硬度 HIT [GPa]	36 +/- 3	28 +/- 2	~20 – 25	50 – 60	~20 – 25
Colour 颜色	bright grey 亮灰色	silver-light grey 银光灰	black 黑色	rainbow black 彩虹色 黑色	black 黑色

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

Two-piece drawn and ironed (D&I) cans 两片式拉伸金属罐

1. Depending on the final shape of the can, a circular or rectangular piece of sheet metal is fed into the bodyformer unit. 根据罐子的最终形状，将一块圆形或矩形的金属板放入成型装置。

2. A punch die draws the sheet metal to create the desired height. 使用冲头将金属板拉伸至所需高度。

3. Trimming and flanging of the cup edge and beading of the side walls, if needed and desired. 根据需求可对罐边进行切边和翻边，并对侧壁做拉延筋。

4. Adding the top end after the cans have been filled. 罐身完成后安装罐盖。

Body-former
罐体成型

Slitter
分切机

Slitters benefiting from BALINIT coatings 经BALINIT涂层处理的分切机优势

Use of BALINIT® coatings results in increased productivity by maintaining the sharpness of the blades over an extended period of time. Less frequent resharpening is required, therefore higher profitability is achieved. 经BALINIT涂层处理的刀片可长期保持锋利，从而提高生产效率，减少修磨的频率，以实现更高的利润率。

Aerosols & perfume/spray bottles
气雾剂和香水/喷雾瓶

Tins & boxes
罐头和盒子

Containers
容器

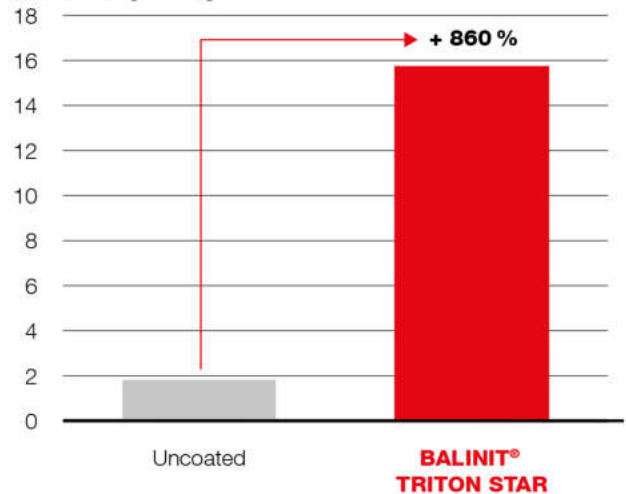|	
Tool steel 模具钢材	1.2379 (D2, SKD11)
Application 应用	Two-piece cylindrical can for aerosol 气雾剂圆柱两片罐
Workpiece material 工件材料	Aluminium铝材 6xxx series系列 (Mg/Si alloyed镁/硅合金)
Solution 解决方案	**BALINIT® TRITON STAR**
Benefit 收益	Less frequent maintenance, shorter downtime, increased product quality, better-quality products and fewer scrap parts 更少的维护频率、更短的停机时间、更高的产品质量、更优质的产品和更少报废件。

Maintenance-free production [million parts]
免维护生产[百万件]

+ 860 %

18
16
14
12
10
8
6
4
2
0

Uncoated

BALINIT® TRITON STAR

Steel drums 钢桶

Crowns 瓶盖

Metalcaps & closures
金属盖＆旋盖

Close to our customers – worldwide
靠近我们的客户—在全球范围内

美洲 Americas

Argentina 阿根廷
Brazil 巴西
Canada 加拿大
Mexico 墨西哥
USA 美国

more than **25** customer centres in
超过25家涂层中心位于

欧洲 Europe

Austria	奥地利	Poland	波兰
Belgium	比利时	Portugal	葡萄牙
Czech Republic	捷克	Romania	罗马尼亚
Finland	芬兰	Slovakia	斯洛伐克
France	法国	Spain	西班牙
Germany	德国	Sweden	瑞典
Hungary	匈牙利	Switzerland	瑞士
Italy	意大利		
Liechtenstein	列支敦士登	Turkey	土耳其
Luxembourg	卢森堡	United Kingdom	
Netherlands	荷兰		英国

around **50** customer centres in
约50家涂层中心位于

亚洲 Asia

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India	印度	Thailand	泰国
Indonesia	印度尼西亚	Vietnam	越南
Japan	日本		
Malaysia	马来西亚		
Philippines	菲律宾		
Singapore	新加坡		

more than **35** customer centres in
超过35家涂层中心位于

Contact us now!
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