

BALINIT FORMERA

The coating solution for Cold Forging
fasteners and components

BALINIT FORMERA

适用于冷锻紧固件和配件的表面处理解决方案



Metal Forming



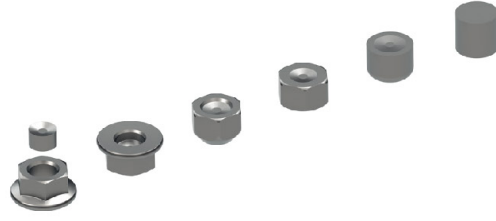
BALINIT FORMERA – The best choice for Cold Forging applications

冷锻应用的最佳选择

Cold forging is being used in a wide variety of industries including fastener, automotive etc. Cold forged components are of high accuracy and surface quality. 冷锻应用于紧固件，汽车等多种行业。其配件精度高，表面质量好。但是，配件的

However, the plastic flow characteristics of the workpiece have to be improved by high quality tooling with added performance delivered by premium coatings. 塑性流动特性必须通过高质量的工具以及优质涂层提供的附加性能得以改善。

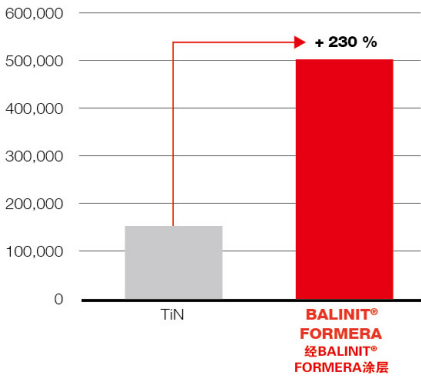
© Nedschroef



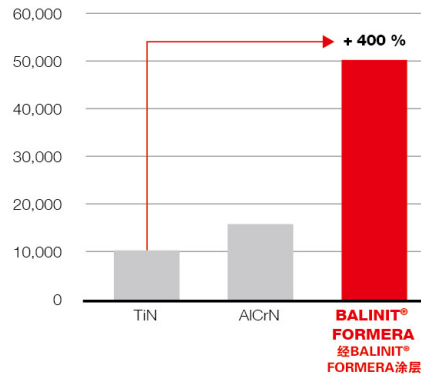
© TEMSA

BALINIT® FORMERA Performance BALINIT® FORMERA 性能

No. of strokes 挤压次数



No. of strokes 操作次数



Tool 工具	Extrusion die Ø 60 mm, 5 station cold former Collar nut manufacturing 直径60mm的挤压模，5工位冷成型螺母制造
Tool material 工具材质	HSS 1.3243 – AISI M35
Challenge 挑战	Difficult forward extrusion process wears out the die 正向挤压工艺的难度会使模具磨损
Solution 解决方案	Tool life increased by 200 % Higher productivity due to less frequent tool changes 工具寿命延长200%，更换工具频率降低，生产力提高
Source 来源	Automotive fastener supplier, Europe 欧洲汽车行业紧固件供应商

Tool 工具	Piercing punch Ø 19 mm 穿孔机
Tool material 工具材质	ASP® 2023 – HSS-PM 1.3395 – AISI M3:2 Cemented carbide tip 硬质合金顶部
Challenge 挑战	High wear in tough piercing and sizing operation 强力钻孔和定位操作会高度磨损表面
Solution 解决方案	Tool life increased by 400 % Burr formation reduced 工具寿命延长400%，毛刺减少
Source 来源	Global leader in cold forming components 冷成型部件全球领导者

BALINIT® FORMERA delivers superior performance in cold forging applications BALINIT® FORMERA在冷锻应用中表现卓越

- Excellent results in forward and backward extrusion, piercing, upsetting and trimming
前后挤压成型，钻孔，顶锻，切边表现卓越
- Better surface quality (reduced roughness) of the workpiece
提升工件表面质量（粗糙度降低）
- Reduction of burr after piercing operations
钻孔操作毛刺减少

Take advantage of outstanding coating properties

	BALINIT® FORMERA*
Coating material 涂层材质	CrAlN-based
Coating hardness H _T (GPa) 涂层硬度	28 ± 2
Coefficient of friction (dry) vs. steel 对钢的摩擦系数（干式）	0.35
Max. coating temperature (°C) 最高涂层温度	480
Coating colour 涂层颜色	silver-light grey 浅银灰色

* Available in BALINIT® ADVANCED Series

Benefit from the BALINIT FORMERA coating solutions

Contact us now

从BALINIT FORMERA获得收益，请即刻联系我们

Oerlikon Balzers Coating AG | Balzers Technology & Service Centre | Iramali 18 | 9496 Balzers | Liechtenstein
T: +423 388 7500 | www.oerlikon.com/balzers

Oerlikon Balzers Coating (Suzhou) Co., Ltd | No.9 Chang Yang Street | Suzhou Industrial Park 215024 | Jiangsu Province | P.R.China
T: +86 512 67620369 | F: +86 512 67620359 | E: info.balzers.cn@oerlikon.com | www.oerlikon.com/balzers/cn

欧瑞康巴尔查斯涂层（苏州）有限公司 | 苏州工业园区长阳街9号，215024 | 江苏省 | 中国

电话: +86 512 67620369 | 传真: +86 512 67620359 | 邮箱: info.balzers.cn@oerlikon.com | www.oerlikon.com/balzers/cn

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

HQ253EN (1903)