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纽拉斯特：自动化生产楦的革命

纽拉斯特专注于自动化生产鞋楦，并研发生产出一系列新型机器，该新型机器可以加工技术型楦头，速度和精度都较以前有很大的提高。

第一代SDF（纽拉斯特刻楦机），于2006年问世，引入一种具有革命性的刀具旋转概念，结束了手工操作，不需要手工除去和打磨前足支撑。基于达到此种目的，首先要改变机器固定楦头的方式，之前是上下顶针卡住楦头，然后围绕旋转轴进行刻楦，而现在是夹住楦头筒口顶部。

的引入是真革新。
在楦头生产过程中，达到更高的精度是技术型楦头和标准楦的基础。因此，多年来，和时装鞋公司合作的楦头厂已经明白了此项技术的优势，并购买了纽拉斯特的SDF无头尾刻楦机。
纽拉斯特也不时在自问：在哪些楦头生产领域或工艺方面还需要革新
很难去想象：在传统的制楦过程中，还有什么其他的需要做的。纽拉斯特销售经理Galbiati如是说。2014年我们引入HS系列产品，扩充了机器品种，改善生产效率，生产效率增加了达35%。因而我们转向关注技术性楦头的刻楦机，这些机器可生产用于自动化生产线上注塑鞋生产线使用的楦头。
自动化生产线上使用的楦头，一个很关键的方面是金属夹具部位的精准定位，这个夹具在楦头生产过程中用于卡住固定楦头。该部件连接着楦头筒口顶部或 楦头两侧，可让机器对楦头进一步铣削和钻孔，以前这项工作是由员工用不同的操作系统手工完成的

“为了便于质的跳跃”，Galbiati继续道：“很重要就是结束楦头厂里的人为因素。这些过程都很微妙，因为他们的误差都很小。从CAD阶段开始他们必须严格遵守工艺流程，并自动传送到数控机里，以保证在整个生产过程中稳定的质量。”

NEWLAST: INNOVATION IN AUTOMATED LAST TECHNOLOGY

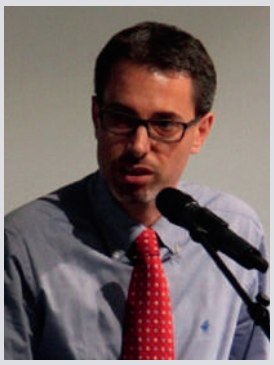
Newlast focuses on lasts for automation and launches a new machine that can make theproduction of technical lasts fasterand more precise

The first SDF machine (Newlast milling machine for lasts), launched in 2006, introduced a new and revolutionary concept of turning, eliminating a critical manual operation: the removal of the supports and the finishing of the toe and heel. To obtain this result, it was first of all necessary to change the way in which the last block was clamped by the machinery: no longer on the toe and heel - along the rotation axis of the turning lathe machine - but on the top surface i.e. on the part that footwear ma-chines already used to block the last during the lasting phase.

The introduction of the SDF was a real revolution.The greater precision that could be obtained in the milling of the last was fundamental for both the standard and the technical lasts.

As result, over the years, even last factories that mainly work with fashion companies and therefore with cemented construction have understood the advantages of this technology and have invested in the range of SDF machines. Newlast then asked itself in which areas of the engineering and production process of the lasts could innovations still be introduced.
“It is diffi cult to imagine what more can be done in the turning of traditional lasts,”

says Andrea Galbiati, sales manager of Newlast, “except to improve productivity, as we did in 2014 by introducing the HS series, which expanded the range of machines and increased their productivity by about 35%. We therefore turned our attention to the world of technical lasts, i.e. those used by injection machines, and in the automated manufacturing lines.”



Andrea Galbiati, Newlast's commercial director

One of the critical aspects of the lasts used in automation is the precision in the positioning of the metal parts which are used by machines and robots to clamp the last during the handling and machining operations.. These components are connected to the top surface and on the sides of the last and require further milling and drilling, which is currently carried out by hand by an operator using separate and laborious systems.

“In order to make a qualitative leap,” continues Galbiati, “it is essential to eliminate this human factor in the last factory. These processes are very delicate because they are subject to very low tolerances. They must be engineered starting from the CAD stage and must be automatically transmitted to numerical control machines that ensure consistent quality along the entire production process.”
To achieve this, Newlast has launched the following systems:

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•SLIM 4.0(鞋楦集成生产)软件系统，可以将用于生产技术性楦头所有需要的信息整合成一个单一的工程环境。

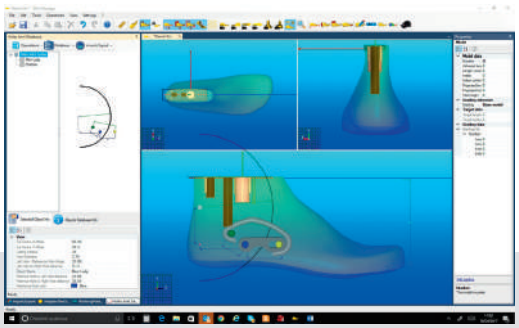
•SDMC4工具机器，可以接受工程软件下达的指令，并执行所有之前手工操作和没有集成的操作系统。至此现在，这些都是由非集成系统手工完成的，这些系统彼此没有连贯性。

现在这些都变成可能，把所有指令存在.FRV文档里，这些指令可以执行传统的刻楦过程，也可执行另外的自动楦生产的一些操作：如钻大孔，小孔，研磨楦头边侧和顶部。从打粗到SDMC4工具机，再到SDF机器，每台机器都能从这个由工程软创建的文件中感知他们要做的工作。

新技术的优势:

- 加工时间的减少：SDMC4工具机可自动连续地执行之前由楦头操作员手工操作的工作。
- 精度更高：在工程办公室里，精确定位，楦头必须放在准确的位置研磨和钻孔，工具机接受指令并精准稳定地工作，这是手工不能达到的。
- 先进的加工：SDMC4可以在楦头底部上侧挖出统一深度的槽，可将橡胶垫圈塞进去，在注塑鞋合模起保护作用

“在未来的楦头厂里，我们还有什么发明值得期待呢？”Galbiati 断言，“下一步将会是新型的铁钩概念。但是这要求我们重新完整地思考铁钩的制作方式。”



- the S.L.I.M. 4.0 (Shoe Last Integrated Manufacturing) software system which integrates all the information needed for producing the technical last into a single engineering environment.
- The SDMC4 tool machine, which receives instructions from the engineering software, and is able to perform all those operations that until now were carried out by hand or using non-integrated systems that did not speak to each other.

It is now possible to store in the .FRV file of the last all the instructions needed to perform traditional turning processes as well as additional operations required to produce lasts for automation: drilling cycles, milling of the side and top surface, free holes, spines, bushes, microchip holes, joint holes.
“Potentially every machine, from the roughing machine to the SDMC4 tool machine up to the SDF, knows exactly what it has to do from the single file created by the engineering software”.

Advantages of this new technology:

- Reduction in machining times: the SDMC4 tool machine automatically and sequentially performs a series of operations that were previously done by hand by last operators
- Greater precision: the exact positions where the last must be milled or drilled are determined in the engineering office, the tool machine receives instructions and works with a precision and constancy that is impossible to achieve by hand.
- Advanced machining: the SDMC4 machine is able to excavate a uniform depth at the closure of the mould ring to insert a protective rubber gasket.

What further innovations can we expect in the future of last factories? “The next step,” concludes Galbiati, “could be a new hinge concept.
But this will require us to completely rethink the way the hinge is made.”

FMT -米兰楦头工厂团队已经在未来

“我不会看见没有自动化的未来”这是我们对Gian-marco Gemme 投资开发SLIM 4.0系统最好的解释。
自动化是未来鞋业的重要话题。所有产品正在回归到原生产国或原生产国附近，这已经得到提示。我们必须为此而准备。
FMT 22年前已经开始了注塑楦。当手工钻孔时，，并知晓怎样将工具机或铁制品机器适配到其要求时，伴随着SDF机器的到来，FMT 没有犹豫投资未来。对我们而言，这是场革命。相比由手工完成，它让我们达到更优质的精度。我们已将所有产品生产转移到新系统，现今没有手工操作。新系统完全由CAD控制，具有可使每个型体数字化扫描和以数字化储存的优势。
现今SLIM 4.0可让FMT采取进一步行动。我相信自动化的未来不仅涉及注塑产品，还涉及传统产品。这一点，对精度的保证，生产效率，以及及时的送货都是非常关键的。
进一步而言，新系统还让我们在注塑模制作阶段更完整地控制楦头，因而更好地可以对生产过程进行控制，更好地保证高精密度。可以想象下在安全生产工业里，头部定位的误差是非常小的。该系统可让客户省心，不需担心楦头在模子里的定位了。

Gianmarco Gemme, owner's FMT

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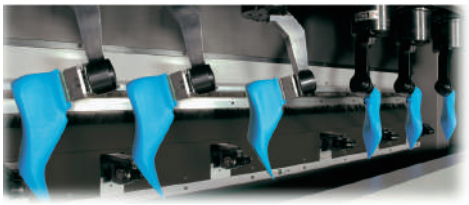

FMT - Formificio Milanese Team is already in the future

“I don’t see a future without automation,” this is how we could explain the decision of Gianmarco Gemme to invest in the new S.L.I.M. 4.0 system by Newlast.
“Automation will be the key word of the future for the footwear industry. It is demonstrated, among other things, by all the productions that are returning to the countries or close to the countries of origin. We must be prepared”.
FMT began with injection 22 years ago, “when the holes were still drilled by hand,” and knew how to adapt tool machines or ironworking machines to its requirements, so with the arrival of the first SDF machines, it did not hesitate to invest in the future. “For us, it was a revolution.
It allowed us to achieve an excellent level of precision compared to finishing by hand. We moved all our production to the new system and today no manual operations are performed on the last, which is managed entirely by CAD, with the advantage of having every model digitised and digitally stored”.
Today S.L.I.M. 4.0 by Newlast will allow FMT to take a further step forward: “I believe that the future of automation will not only involve the injected product, but also the traditional product.
At that point, it will be crucial to not only guarantee the accuracy, but also the productivity and punctuality in the deliveries.
The new system, furthermore, allows us to completely manage the last in the model-making phase and therefore to better manage the production process, guaranteeing highlevel precision.
Think of the safety industry where the tolerances in the positioning of the toe are infinitesimal. This system will give customers peace of mind and they will no longer be afraid of positioning the last in the mould.”

SDMC4

SDMC4机器是一个多功能的CNC机器，用来在鞋楦上进行一些特殊的铣削及钻孔操作。这个机器有5个轴，使用电动的方式移动一个工具头。铣削和钻孔操作可以垂直于鞋楦的表面，且可以在鞋楦的侧面上进行。机器装备了一个工具盒，里面含有10个工具。生产的时候，使用头尾支撑进行锁定，可以安装2双粗削过或是通过铁钩连接起来的鞋楦。

The SDMC4 is a numerically controlled machine for special drilling and milling cycles on shoe lasts. The machine consists of fi ve axes that move one head with an electrospindle to rotate the last. Drilling and milling cycles perpendicular to the surface of the last and drilling or milling on the side can be performed.
The machine is equipped with a magazine for 10 tools and the production is carried out on two pairs of roughed and jointed lasts, locked on the toe and heel supports.

S.L.I.M. 4.0

这是一个完整的集成的生产系统。通过一个集中管理的软件，指定操作命令，该命令服务于高精度鞋楦，主要是生产注塑楦和自动化楦。这个系统包含一个管理软件和最新的专用的机器。工作循环是通过一个人性化的界面来完成，在3D环境中，包含了所有增加设置、放置位置，钻孔及铣削的工作，可以很灵活地操作。

A complete and integrated system consisting of centralised software for defining the operations required for high-precision lasts, destined for direct injection lasts and automate shoe production.
The system includes management software and a new dedicated machine.
The creation of cycles is achieved through a user-friendly interface that, in a 3D environment, includes the possibility of adding, setting and applying, milling and drilling operations in a completely fl exible way.