



Stronger Bikes, Quality Wheels

The unexpected fast acceptance of electric mountainbikes creates a boom in this product category. It also gives a new push to overall e-bike sales, also in upcoming markets. Electric drive trains on mountainbikes also mean higher speed and more forces on the wheel sets.

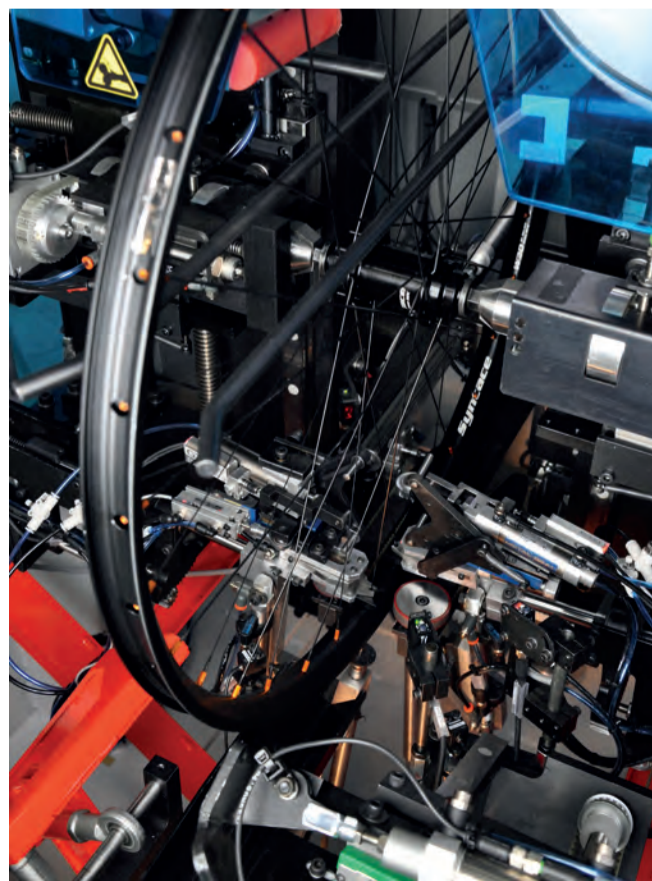
The e-mountainbike is top of mind in all leading European countries, including Germany, France, UK, Italy and Austria. According to the latest statistics e-bike sale in the Netherlands, where it is mainly used for urban transportation and recreation, is growing by double digits again. Pioneer Switzerland is even taking the next step as e-bike sale is no longer increasing, but the speed e-bike is the new trend. This market development in Europe needs a different approach in production technology, including wheelbuilding.

Today's high-end bicycle market requires more than image, people want the best quality in wheel building. It is part of the global trend towards more high-end bicycles in road and mountainbike categories. These consumers prefer quality products above all, regardless the image. In road racing, people often tend buy two or three additional wheelsets, each fully adapted to the road and weather conditions or depending on the usage. The differences of these wheelsets are reduced to the max while the cyclists require the most from the product. They don't want compromises, they simply want the best.

The past decades have shown an all new generation of wheel builders entering the market, all showing their craftsmanship. For Holland Mechanics these people have the skills and the know-how with respect to wheelbuilding. Their craftsmanship in manual wheelbuilding is translated into recipes for Holland Mechanics' machinery. The Dutch based company provides the advanced tools and the intelligent software. The flexibility of today's machinery makes it possible to build virtually any kind of wheel. It still is and always will be the wheelbuilder who decides about the final product. The implementation of modern technology also creates room for a track and trace systems, an important as-

pect when talking about product liability. Syntace has been using this system based on bar-codes for some time while ENVE is the first to register all the wheelbuilding data in the cloud which can be approached via a QR code on the rim.

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Product innovation in e-mountainbike requires wheelsets with an increased spoke tension. As product leader in this industry Holland Mechanics is always looking for new trends in cycling and responding to market developments with the introduction of innovative technology. Simultaneously with increasing spoke tension, the tolerances in side and height deviation are minimalized, thanks to Holland Mechanics' latest software applications. For example the pre-stressing system which is now offered as an option on Holland Mechanics machinery. When pre-stressing, the robot lifts the assembled wheel set and adapts a pre-set force on the hub to both sides. The level of displacement and force are both set in the 'recipe' by the wheelbuilder.

To meet a growing demand for wheels with a true axle, Holland Mechanics developed a special adapter which fit 'all' types of true axels. This technique originates from the motorcycle industry for which Holland Mechanics developed a line of wheelbuilding machinery as well. Thanks to this adapter the truing of the wheelset can be done without a minimal tolerance.

The same goes for the TCS spoke systems which prevents the spoke wind-up. Initially developed for Sapim's flat spoke, this technology is now widely implemented and gets the best out of the truing process. The smallest distance of less than 3 millimetre between the gripper and the nipple prevents any deformation of the spokes during the truing process for the best possible final result.

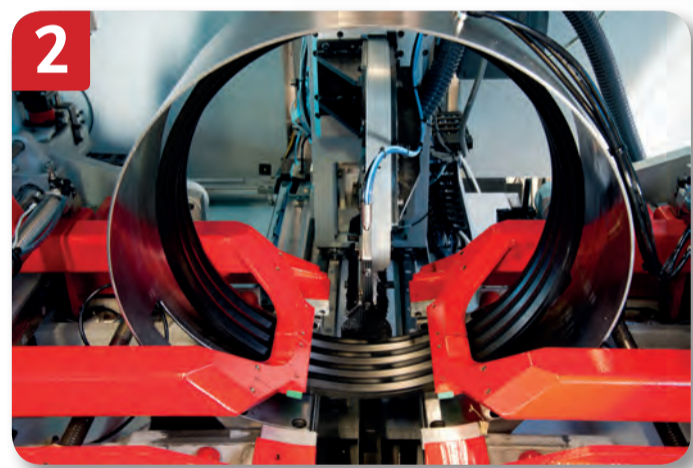
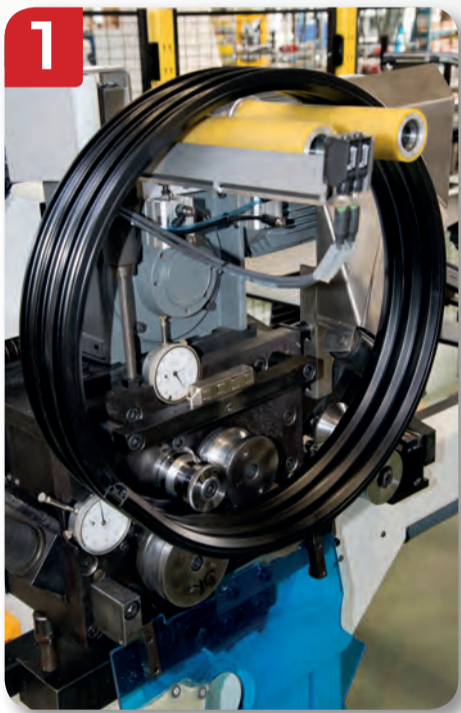
Over the years Holland Mechanics invested substantially in improving the options for flexible wheelbuilding. In today's market with the use of a wider variety of rims sizes, the time to change over in the assembly process has to be limited to a minimum in order to avoid any loss of production time and to reduce the cost of production. This makes investing in up-to-date machinery an opportunity to create new competitive advantages as was shown successfully by several upcoming brands in Europe in the past years.

UNMANNED RIMLINE THE HOLLAND

Holland Mechanics 3-Steps Rim Process is the most efficient rimline on the market. The high-tech Rim Assembly station combines Rim Cutting and Pin-Joining in one machine. The 3-Steps Rim Process is a modular concept whereby you can configure it as a straight line, U-Shape Cell or combine it with manual machines. This makes it possible to fit it in every factory whatever your layout or automation degree is.

1 Rim Bending Station

Extrusion from the Supply Table is automatically loaded into the Bending Station. This machine will spiral 3 rims in one run. From the Bending Station the spiral will be automatically unloaded and loaded to the second station.

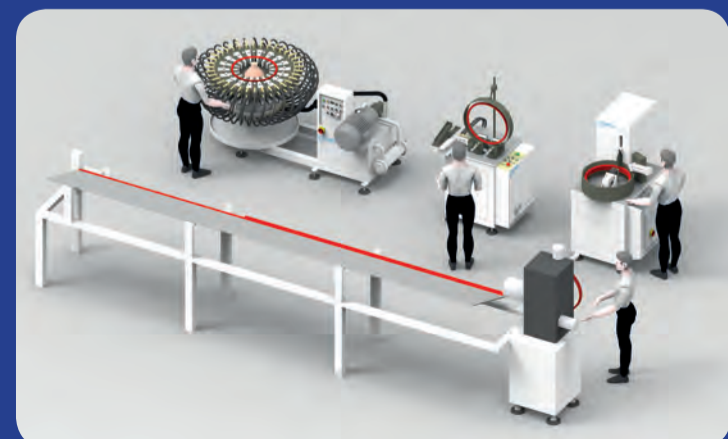


Rimline Layouts

The Holland Mechanics Rimline is configurable in the layout which fits your production strategy. Some companies want a straight line whereby others need a U-Shape layout. Also the degree of automation can be chosen.



Unmanned U-Shape Rimline



Manned U-Shape Rimline

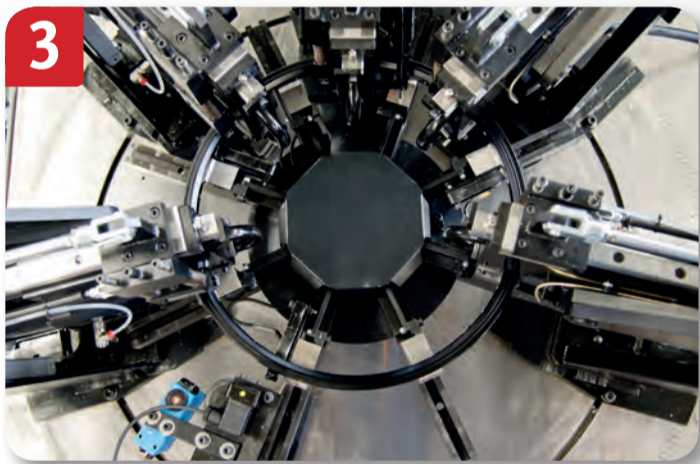
MECHANICS 3-STEPS RIM PROCESS

2 Rim Assembly Station

After the spiral is loaded in the Rim Assembly Station the spiral will be cutted and the rim will be pin-jointed. The pinned rims will be automatically unloaded and transported to the third station. Because the cutting and pin-joining is combined in one station there is no operator needed in this process. All rims are stored in the rim-database which makes it easy to change over.

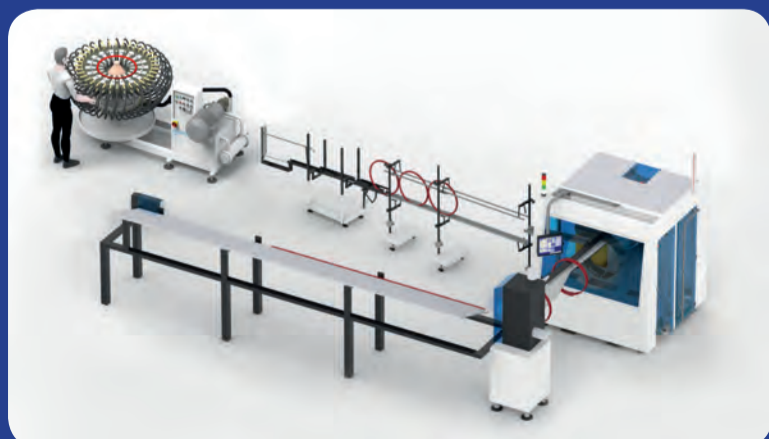
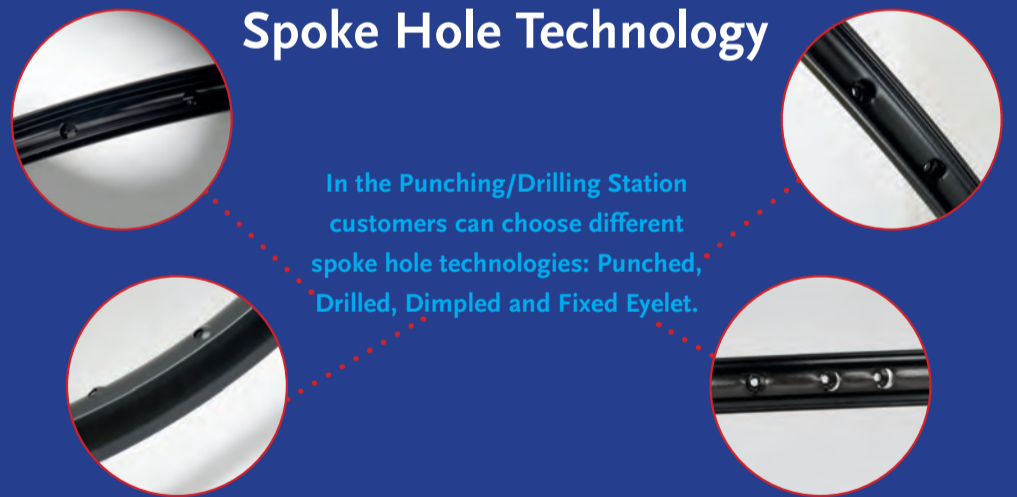
3 Rim Punching / Drilling Station

Rims will be automatically loaded by a Robot arm in the Punching or Drilling Station. This Station can be equipped with High Speed Punching (HSP) or High Speed Drilling (HSD) technology. The High Speed Punching (HSP) is the most advanced punching technology on the market for making rims. With HSP Technology you can make the highest quality punched spoke hole.



Spoke Hole Technology

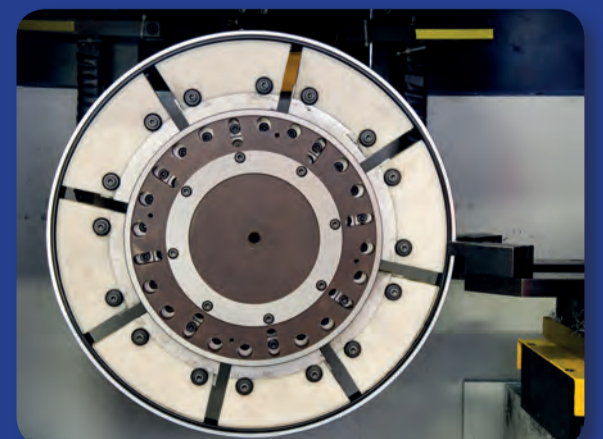
In the Punching/Drilling Station customers can choose different spoke hole technologies: Punched, Drilled, Dimpled and Fixed Eyelet.



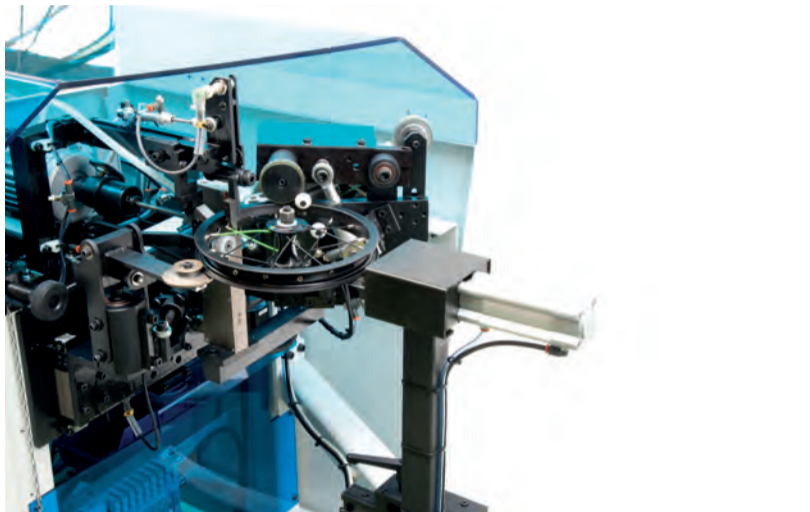
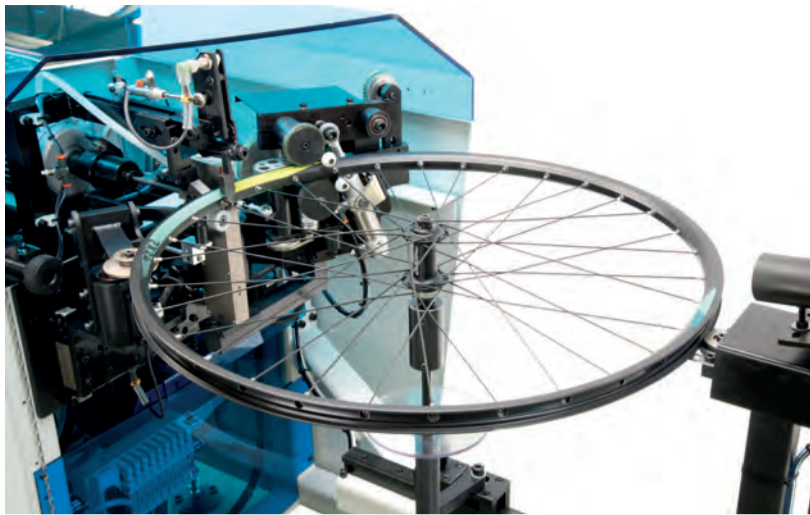
Mixed U-Shape Rimline

Line Extension

The Holland Mechanics rimline is a modular concept. For the manufacturing of rims you only need three machines but you can extend the line with other Stations like Brake Surface or Eyeleting. These machines can be easily connected to the line which makes it an integrated unmanned system.



(SM)ALL Wheel Line – 12" to 29"



The last years the spoked wheel market for children and folding bikes is growing. Therefore Holland Mechanics has introduced the SMALL wheel line. Because most bicycle companies not only make small wheels the challenge for Holland Mechanics was to develop the machine for ALL wheelsizes. On this newest wheel building line customers can make wheels from the smallest 12" to the biggest 29" wheel.

New Colleague at Holland Mechanics



We are glad to announce that from the middle of July Antonio Da Costa is part of the Holland Mechanics sales and service team. Antonio is a well known and very experienced engineer with more than 20 years working exclusively with wheel assembly and rim assembly machines. At Holland Mechanics he will be responsible for the sales and service in South Europe (France, Italy, Portugal and Spain) as well as Central and Latin America. Next to this Antonio will be involved in new developments of machines. We wish him success with his new challenge at the Holland Mechanics family. Antonio can be reached at adcosta@hollandmechanics.com

New "Wheel Massage" Development



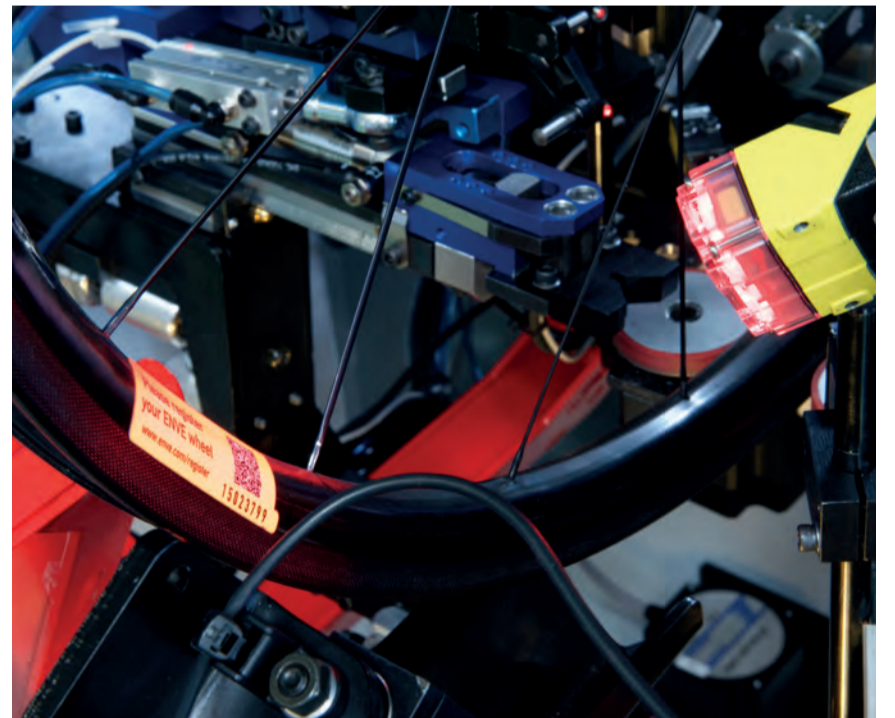
After the introduction of the Stabilizing Technology in 1989 and Spoke De-Winding in 2010 Holland Mechanics introduces a new "Wheel Massage" Technology called Pre-Stressing. Pre-Stressing is a wheel building method whereby the spokes of a tightened wheel are stressed by putting a force on the hub. While pressing the hub, the rim is supported by a disc.

The spokes on one side of the wheel will be stressed, while the tension on the

spoke on the opposite side is released. The adjustable force gives a load on the spokes that can peak over the maximum load during normal use, making the wheel resistant and more stable. This integral approach can even out spoke tension by relaxing high tension spokes.

The new Pre-Stresser is positioned between the Lacing Machine and Truing Robot and can be integrated in your current Holland Mechanics wheel building line.

QR and Barcode Scanning



High-end wheel-sets are becoming more and more personal. Riders want to know what they're riding. With the introduction of QR and barcode identification systems on the rim, riders can scan the wheel with their smartphone and receive a complete overview of wheel-data. This way cyclists see when, where and how their wheels were made and are able to see a complete analysis of the wheel quality. Besides the personal advantages, OEM's

can keep track of ownership so that they can give you more personal service in case of warranty or even loyalty guarantee. This direct way of communication can even help you solve minor problems through video instructions.

The QR or Barcode is automatically scanned in the Robot and the complete wheel data including optional spoke tension diagram will be added to the unique code automatically and can be stored in the cloud or printed as a wheel report.