

Freedom in Wheel Design

Pro X platform gives product managers maximum flexibility



In the bicycle industry, the quick rise in the popularity of Fatbikes gave an unexpected new push to product development. While the market was adapting to a growing number of sizes, such as the 650b and 27.5 inch wheel, the Fatbike trend made wide rims a serious part of product design. In the long run the Fatbike trend will have wider implications for the bicycle manufacturers and wheel builders than expected. The extreme product design also has an impact on production machinery for wheelbuilding. For Holland Mechanics it has been a major challenge to develop a new platform without creating any limitations to product design.

When the first fat tires popped-up on the mass market in 2012, product design was focused on extreme bikes for the US market and to allow riding on soft unstable terrain, such as snow and sand. Later this idea was transferred to comfortable riding. Within a few years the advantages of the so called fat tires trickled down to other product categories, including mountainbikes, e-bikes and even speed-bikes. For speed-pedeccs the wider rims and bigger tires are not only a matter of comfort, but also a safety issue. Though still called 'fat tires' the looks are completely different to the

original 3.8 tire or 97 millimetre wide rim. Thanks to the integration of the fat tire concept in wheel design, the market for maximum rim size used in the bicycle industry now stands at 100 millimetres wide. In addition to the fat tire that set the limit for the width of the rim, it has been the full carbon road race rims that saw an increase rim height to 90 millimetres. Everything in between is regarded as common and not extreme anymore and that includes spoke pattern design as well. In that sense the wheelbuilding market changed radically from the past, as wheel design has become an integrated part of the bicycle design.

The use of wider rims in a large variety of sizes meets market demand for more product diversification. The next generation wheelbuilding machinery of Holland Mechanics, the Pro X Line, is fully equipped to handle the wide selection of rim sizes, in width and height, as well as different spoke pattern designs. Each machine is made to offer maximum flexibility and makes it possible to handle all kinds of wheelsets for the market, including all niches. The Pro X platform gives the flexibility to react to changing market needs and suits the strategy of Holland Mechanics to facilitate free-

dom in wheel design. Wheelbuilding machinery should not restrict product design and product managers should not be bounded by their production.

With the use of a wider variety of rim sizes the time to change over in the wheelbuilding process is getting more important. Holland Mechanics is known for its Flexible Wheelbuilding systems and change-over times on the new platform are kept to a minimum. This makes investing in the Pro X Line an opportunity to create new competitive advantages, as was shown successfully by several upcoming brands in Europe in the past years. They have calculated the cost per product based on what they can sell, not on the amount of money invested. Top priority for them has always been design and investments are seen as meant to create new opportunities instead of costs only. Two of them, Riese & Müller and Leeze have chosen the new Pro X Line platform. As the machinery is modular Riese & Müller will go for the wide rims for their e-bikes and speed-pedeccs while high-end carbon wheel set builder Leeze selected the option for their 90mm high Carbon rims. Of course both options can be combined in one line as well.

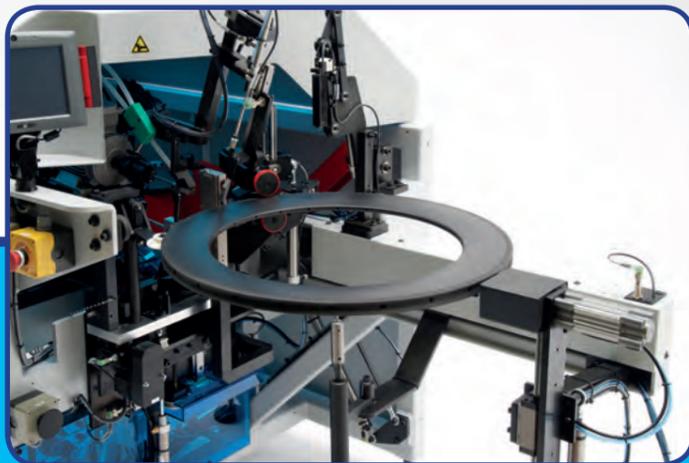
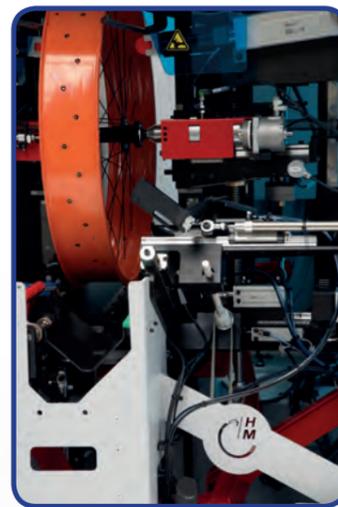
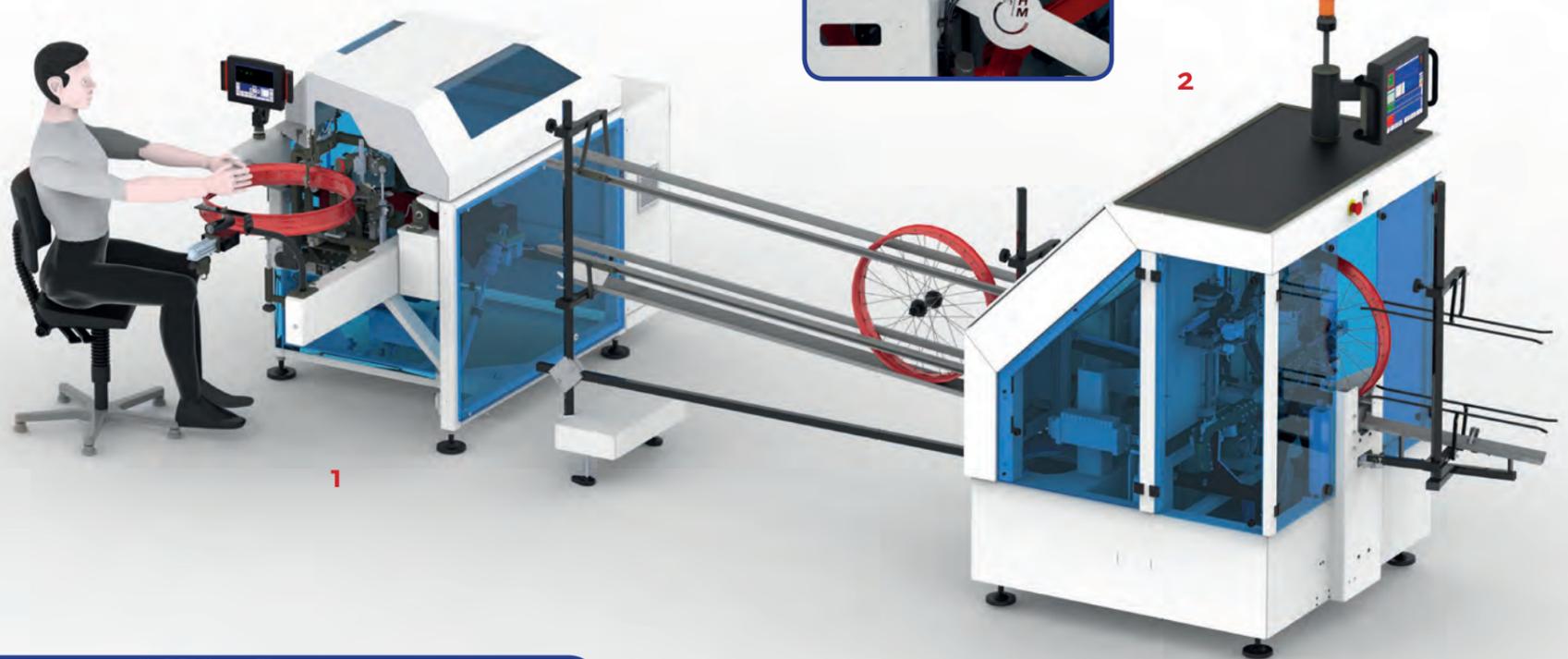


HOLLAND MECHANICS PRO X LINE

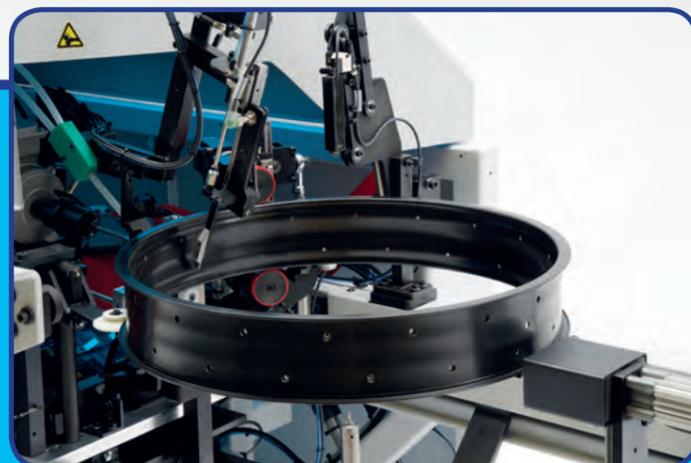
Holland Mechanics Pro X Line is the new platform for the latest wheel designs. During the last years the market for bicycles changed to more individual and exotic models. As a result product managers redesigned their wheels to higher and wider rim profiles.

1 Inline Lacer Pro X is designed for the assembly of high quality wheel components. The IL Pro X can lace angled drilled rims up to 90mm high and 100mm wide. All “in between” rims are no problem for this “all-rounder”. Even the more popular disc-brake rims can be run on the machine without sticker scratching.

2 Robot OT Pro X can easily be connected to the IL Pro X. With this combination you can fully automatic true all wheels which come from the IL Pro X. This means 90mm high and 100mm wide and all “in between”.



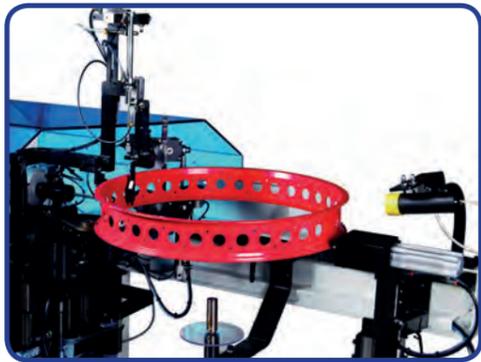
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PRO 90MM HIGH – X 100MM FAT

From 90mm high Carbon till 100mm wide FAT wheels. For these new models Holland Mechanics has searched for wheelbuilding solutions without limits. The result of this new development is a new platform: Platform Pro X.

3 SL Pro X customers with Straight Drilled rims can easily lace their wheels on the SL. The new SL Pro can lace wheels up to 90mm and the X-version can work with 100mm wide rims. Also the rim-driving unit is renewed for disc-brake rims with stickers (anti-scratching).

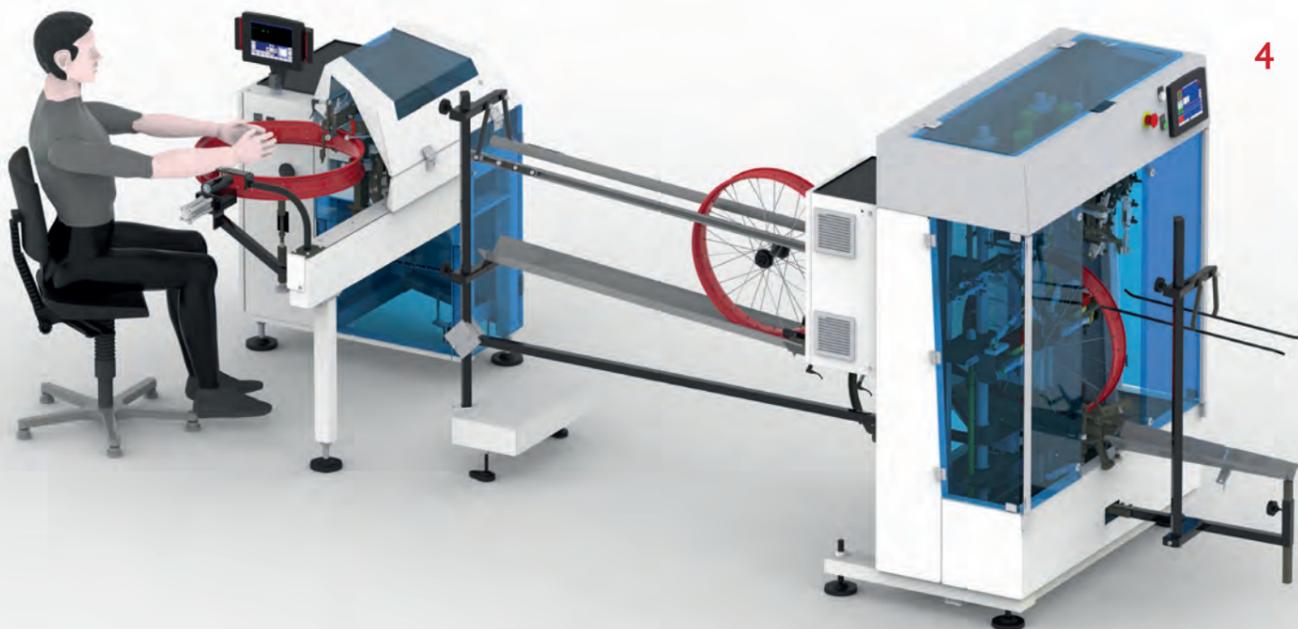


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4 DC Pro X can easily be connected to the SL Pro X. The DC Pro X is designed for flexible-mass bicycle producers who need to produce special wheels. The DC X can true all Xtreme wide rims till 100mm and the Pro version is for high Carbon rims.



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5 ProTruer X for small volume wheel producers the IL Pro or SL Pro can be connected to the ProTruer. This manual process can be used as a start-up line and when volume grows you can automate the line by adding the Robot OT or DC. The ProTruer was already designed for truing wheels up to 90mm high Carbon. The latest X-version can true up to 100mm wide rims.



MORE OUTPUT ON EXISTING WHEELBUILDING LINE

Robot Quattro Integration

For large volume bicycle producers who need more output without compromising on flexibility the Robot Quattro is the solution. Kross, one of the biggest bicycle companies in Poland, has adopted the Lean Wheelbuilding philosophy of Holland Mechanics. The bicycle company is now running three Quattro Lines to their full satisfaction. They have integrated the Robot Quattro in their existing Holland Mechanics wheelbuilding line.

The integration of the Robot Quattro, between the lacers and trueing robot, will result in a higher output with the same amount of operators. Productivity will be improved at every step in the wheelbuilding process. The secret of the Quattro system is that the lacing operators do not need to lace the wheel tight. This so called "Easy Lacing" process is ergonomically better, easier and faster which results in a higher output per operator.

After the Easy Lacing process the wheel will be stabilized and accurately tightened by the four robot hands in the Quattro. When the wheel is tensioned the wheel will be automatically unloaded and rolls in the final Trueing Robot. This Robot will only true the wheel on side and height deviations without tightening round. The software of the Quattro and Trueing Robot are connected and work together. When the Trueing Robot needs more trueing time the Quattro will pre-true the wheel. This results in a balanced production line with a predictable wheelflow.



3-STEPS RIMLINE HAS MANY ADVANTAGES

Unmanned Rim Production

Holland Mechanics has many years of experience in rim production machines. The newest development is the fully automatic rimline. This new line has many advantages like compact footprint, unmanned operation, flexible process and high rim quality.

The HM Rimline is a unique 3-step process which exists of: 1. Rim Bending | 2. Rim Assembly | 3. Rim Punching/Drilling. The Rim Assembly Station is a high tech solution whereby rim sawing and pin-joining are combined in one machine. The line is modular and can be extended with

other Rim Manufacturing Stations, for example the Rim Sidewall Machining Station.

If you are interested in the HM Rimline and would like to see it in operation please send an email to sales@hollandmechanics.com.

