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HM TODAY

HOLLAND MECHANICS

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OUR NEW MACHINE TECHNOLOGY MAKES IT POSSIBLE

Wheel Design & Fashion

Ford Motor Company's special wheel design team

Design and fashion play a key role in today's life. In the car industry for instance design is a necessity; all cars are manufactured according to the same quality level so they need to distinguish on design. Ford Motor Company is having a special design team who are only busy with wheels.

"The trend in wheels is to make a statement. And these wheels do exactly that. They have a sense of importance, a presence, that you find on American vehicles," says Ford's Chief Designer.

We see the same trend in the bicycle industry. Imagine the impact on the looks of a bicycle where more than 70% of the total surface is covered by the wheels. Over the last decade most bike design was based on the frame only, but now manufacturers have discovered the special design in wheels to give a bicycle its own look.

Give your wheels a pretty pattern? For most types of bicycles (hybrids, cruisers, and city bikes) something else than the traditional 32 or 36 spoke cross-over-three pattern may add to the appeal of the bike. On condition, of course, that the fashion wheels are just as comfortable and just as good as what has been developed over the past 100 years as the strongest layout.

Thanks to camera scanned and computer controlled trueing, it is possible to build wheels with exclusive spoke patterns that are just as good and strong as their traditional counterparts would be.

New bicycle design is already for years in the top end racing: same like the Formula 1, the world's top riders in the Tour de France are the first to test and use new developments like special spoke patterns, fewer, and lighter materials.

Nowadays the fashion has trickled down to the sub-top performance level, and that it is now the time to exploit the fantasy spoke patterns to the full. There will be different wheels for different customer groups like sport wheels, luxury wheels, modern wheels and traditional wheels. We see different spoke patterns like 18x2, 9x3, 9x4, and 6x6, but also bladed spokes, inverted nipples and higher rims are all elements that can be used to give the wheel its unique design. To build solid design wheels, it is absolutely necessary to start with the best materials available, and apply extra technology. The larger distance between the spoke groups give an uneven tension on the rim that has to be compensated. The HM trueing software protects the wheel against this 'Flower Effect', the 'budding' of rim sections between the spoke groups and with ASTA (Acoustic Spoke Tension Analyzer) it is possible to measure spoke tension of each wheel individually.

Of course, rims will be double wall or triple wall models, with factory eyelets, or Holland Mechanics QLet eyes instead (these are automatically applied during lacing), and the best available stainless spokes will be used.

For top wheels, it makes sense to lock spoke nipples. Preventing the spokes to work loose will prolong the wheels' technical life. Holland Mechanics makes it all possible by offering the equipment, the software and the know-how to build special designed wheels.

Acoustic Analyzer

Holland Mechanics has developed an Acoustic Spoke Tension Analyzer (ASTA) for fine-tuning spoked wheels. As every single spoke acts as a guitar string, it was a logical step to develop an instrument to measure and compare the exact tones produced by the spokes when strung. This non-interfering method is the most accurate measurement of spoke tension. The newest Robot TCC can be equipped with this innovative audiologic device.

Outside Trueing

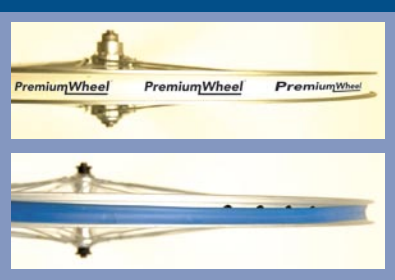
In the latest designs we see more often the 'hidden nipple' to be specified. The smart look of even slimmer wheels is created by not showing the nipples on the inside. HM has taken the lead in developing trueing from the outside. Look, aerodynamics, stronger rims, dirt- and nipple damage preventing are key factors for this design innovation. This new machine can handle all hidden nipples, inverted and internal, and all kind of nipple heads, like torx and hexagon.

Premium Wheel®

• Premium Wheel

Premium Wheel is introduced by Holland Mechanics as a quality mark for individual wheel manufacturers. The Premium Wheel name is synonymous with design, innovation, comfort, quality and durability.

• Less flats with Premium QTape



Next to the standard strong polypropylene rim tape Holland Mechanics developed in close partnership with Tesa – one of the leaders of adhesive solutions – the Premium tape. Premium QTape leads to higher customer satisfaction. One of the most heard complaints of cyclists is a flat tyre, especially when this happens with a new bicycle. Most early flats are caused by the rim strip when it is not properly centered. Automatic fitment is the solution for zero defects in the tyre assembly process.

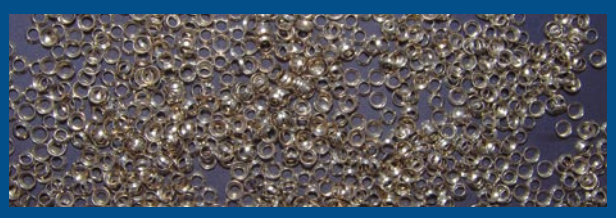
• Choose your own colour QTape

Holland Mechanics is introducing 6 new coloured rim tapes. You can choose your own colour rim tape which can be printed inline with tracing numbers, barcodes and brand names. Premium QTape is available in 15 mm and 18 mm width.

• Wheels last longer with QRims

With QRims the holes are punched with the High Speed Punching technology from Holland Mechanics. You can recognize these rims by their neat holes and there is no waste in the rim. The biggest German rim maker will install this year his fourth Holland Mechanics Punching machine for flexible and high quality rim production.

• Higher and more equal tension with QLets



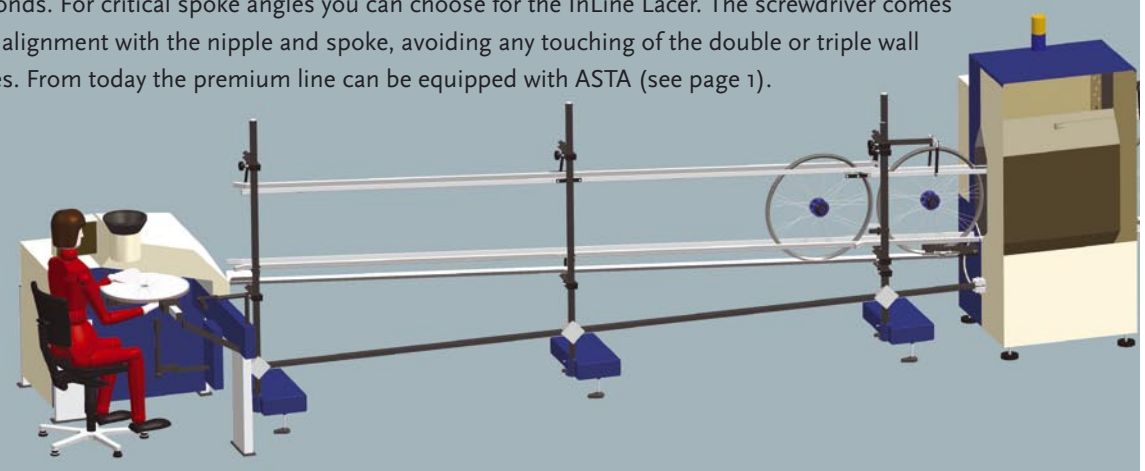
The newest QLet shape-design is smoother and give less underhead friction at the nipple which results in an accurate torque tension relation. Therefore the tension spread is much better and more consistent in wheels with QLets. Also corrosion is avoided in this critical area.

• Secure spoke tension with QLock

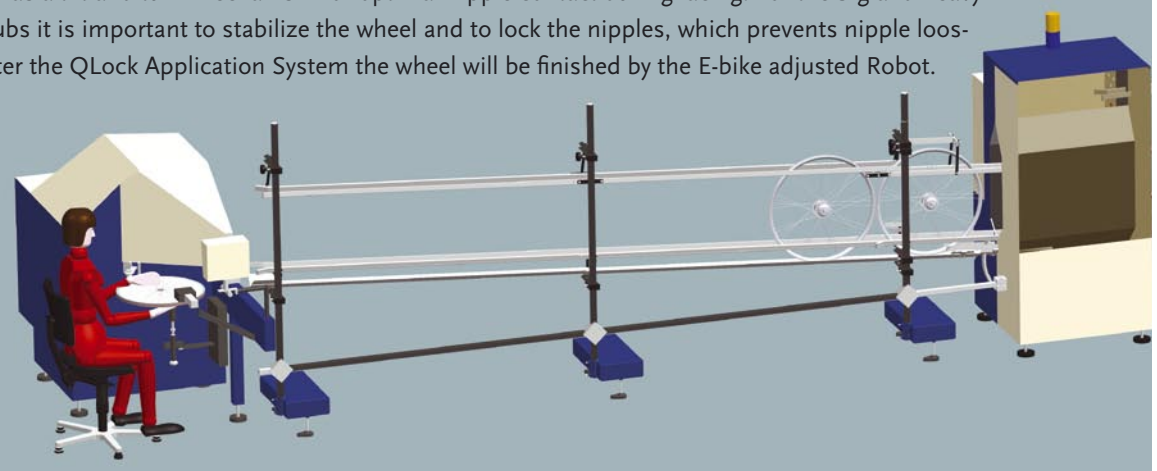
With today's components and exotic wheel designs, where the distance between the spoke groups is wider, the risk of nipple loosening is higher. The loosening process occurs mainly because of rim movement and wheel vibration. Wheels just last longer with QLock!

SET-UP 7 LINE THE 2000

Premium Line The most advanced Holland Mechanics Wheelbuilding line is the Premium Line. This line setup can handle all special pattern wheel designs, for instance 9 x 4, 6 x 6 and 18 x 2. With the integrated QLets, QLock and QTape Application systems this line combines quality with efficiency. Customization of wheels is easy because of the JIT principle where the change over time is within seconds. For critical spoke angles you can choose for the InLine Lacer. The screwdriver comes straight in alignment with the nipple and spoke, avoiding any touching of the double or triple wall spoke holes. From today the premium line can be equipped with ASTA (see page 1).

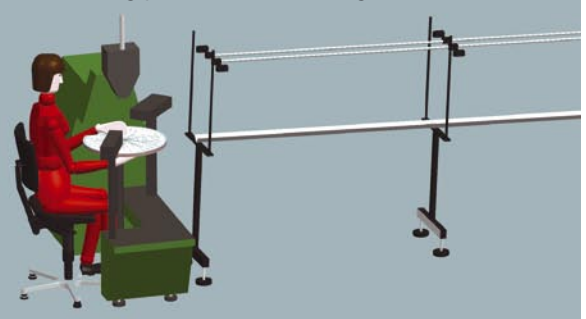


E-bike Line Holland Mechanics has a special line for E-Bikes. The InLine Lacing and Tightening machine has a tilt and turn mechanism for optimal nipple contact during lacing. For the big and heavy electro hubs it is important to stabilize the wheel and to lock the nipples, which prevents nipple loosening. After the QLock Application System the wheel will be finished by the E-bike adjusted Robot.

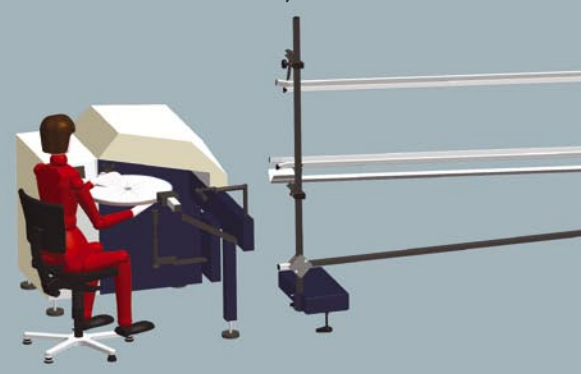


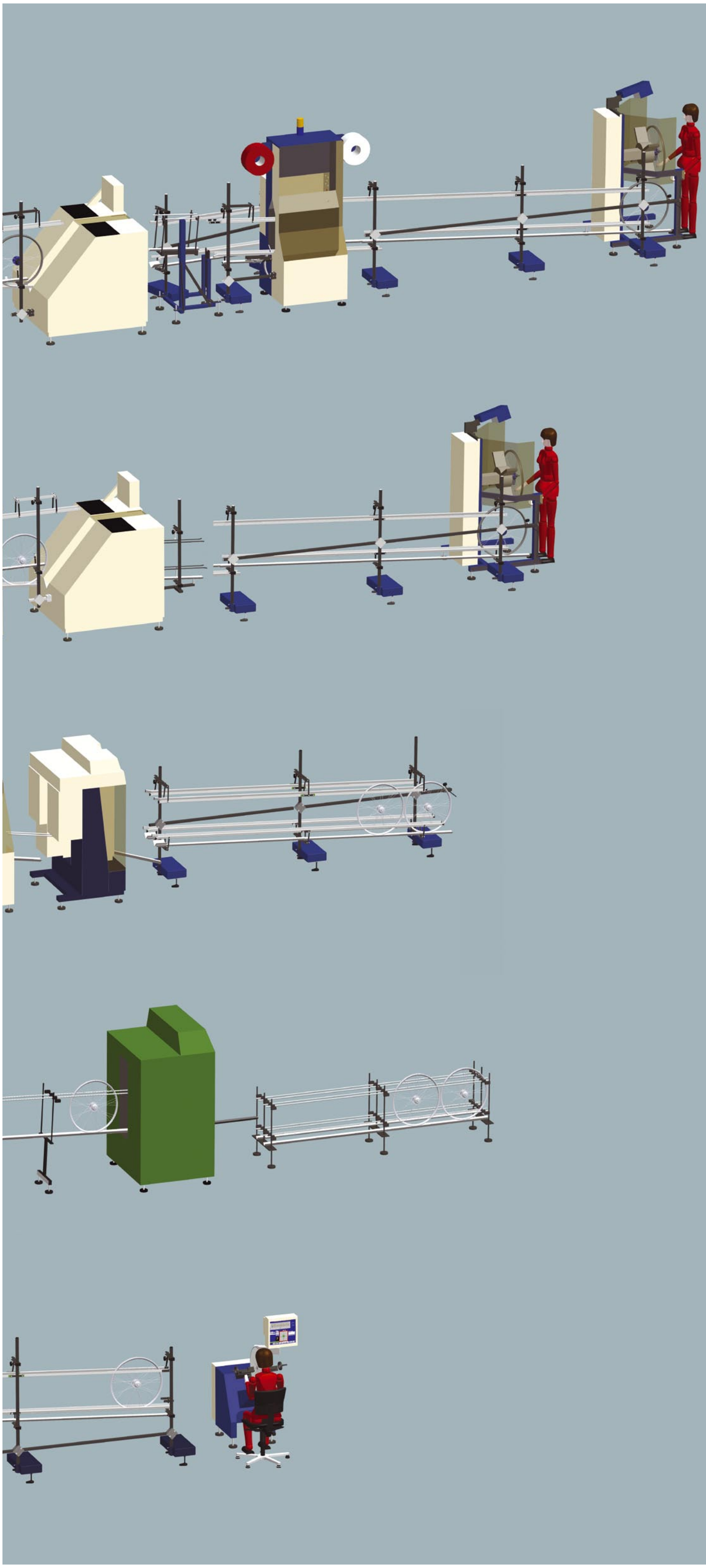
Quality Line Where efficiency meets quality. Efficient wheelbuilding for volume producers is done by automatic hub filling, SL semi automatic lacing, followed by fully automatic stabilizing and finished by the Robot DC. Automatic trueing is a must for consistent wheel quality and reduces labour costs.

Budget Line A combination of the two most sold wheelbuilding machines in the world. The CF lacing and tightening machine and the Robot DA give you a very efficient production. Most companies who are limited on budget but who need a volume based wheelbuilding process are investing in this fully reconditioned line.



Start-up Line Holland Mechanics has a special line for Low volume wheel production. This two step process exists of 'lacing & tightening' and 'easy trueing'. The ISL Wheelbuilding machine does lace and tighten the wheel, during this process every single wheel is tensioned by counting the revolutions of the nipples on the spoke. The controlled tensioned wheel will be hand finished by the SMT.

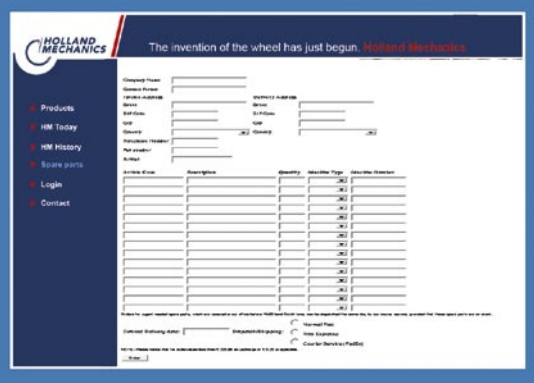




New website

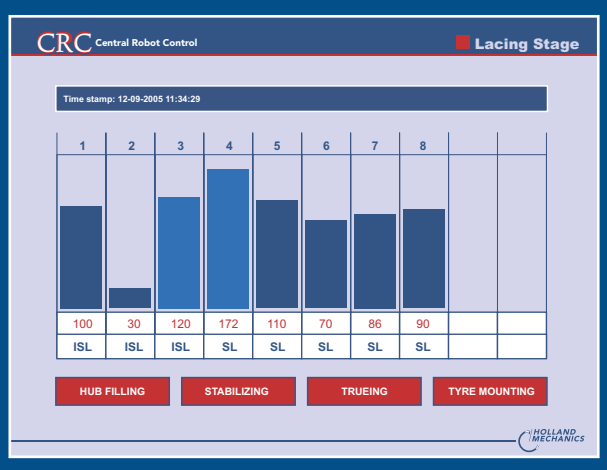
The website, www.hollandmechanics.com, is completely renewed with a lot of detailed information. All product brochures are downloadable and the product presentation is supported by movies. The new website is due to be launched in september.

Online spare parts order



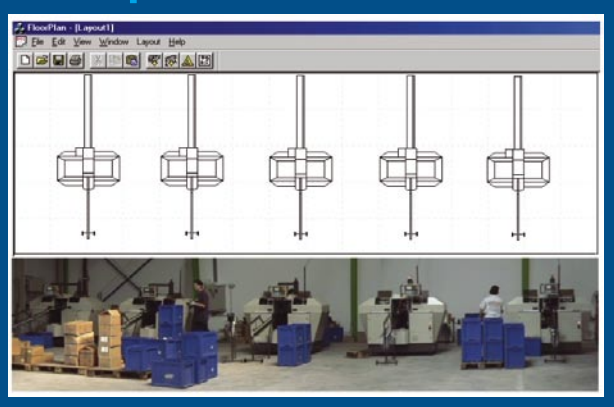
Through the website it is now possible to order parts and QProducts 24 x 7. Go to www.hollandmechanics.com/parts and fill in the form.

Central Robot Control



CRC™ is a real time web-based application which runs on the newest **R**obot **T**win **C**omputer **C**ontrolled. The Master Robot TCC can be connected directly to your local area network and production information can even be viewed at another location through a standard web browser.

Floorplan



Plan your own virtual wheelshop with Holland Mechanics Floorplan. With this Holland Mechanics planning tool you can customize your wheelshop layout, drag and drop machines and connect the machines with wheel-trails. Please contact us for receiving the free of charge software. You can also send your layout information or meet us at one of the international shows, then we can make the layout for you.

What does a well-made wheel look like?

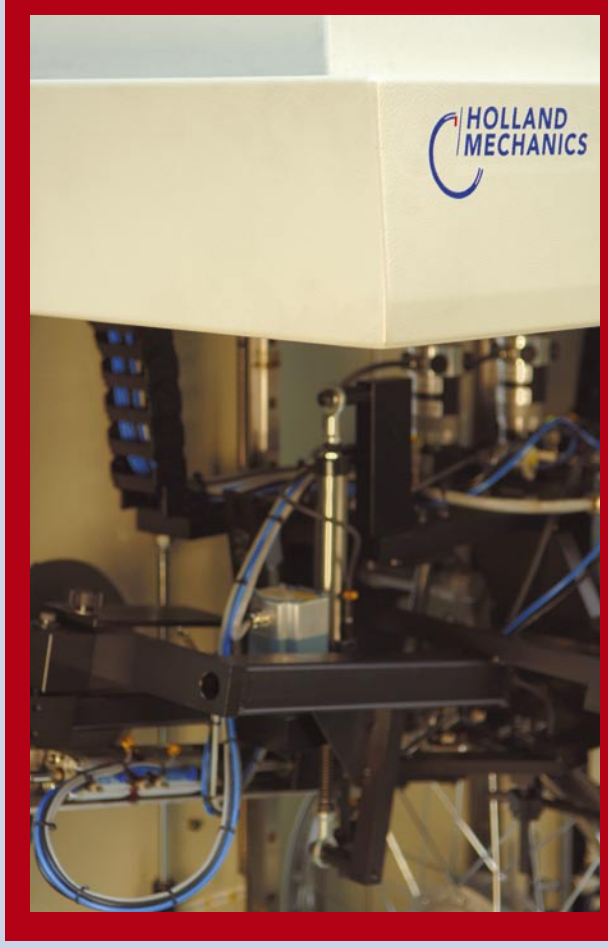
Is the quality of a bicycle wheel visible from the outside? I'm afraid that's not always the case. But some indicators always show, even for the untrained eye. There is the quality of the rim. Is it an anonymous part, or does it bear a name? If so, the manufacturer is not afraid to show his identity. Same for the hub and even the spokes tell their story: are they in galvanized iron-wire (dull-looking metal) or stainless steel (bright, high-gloss metal, or black). The logo of the spoke maker is usually embossed on the inside of the spoke head.

The most difficult part of judging the quality of a wheel is the quality of the manufacturing process. Of course, a dedicated and skilled mechanic can build a perfect wheel by hand, but for mass-produced wheels the machine does a far better job than the hand builder. A good operator of a wheel lacing machine may do up to 60 wheels per hour, whereas a really fast hand builder takes 20 minutes per wheel. But it is not only the labor cost that makes the mechanically-built wheel a better proposition in all cases: the wheel quality is far more consistent; all wheels are perfectly similar if they use the right machinery.

Compare this: the man or woman who trues a wheel by tensioning or relieving spokes. He/she starts to take out the radius differences around the wheel (unroundness), and then the sideways runout. When the wheel feels and reads perfect (on the trueing stand), it has been trued on dimensions only. The machine will true on three dimensions: the dimensions of the wheel plus the variance in spoke tension. The machine is set to the required maximum and minimum tensions, and works within these on dimensions for an optimal wheel with minimal tension variance.

Today, most professional bicycle assemblers make their wheels on wheelbuilding machines. In fact, nearly all bike assemblers in the European Union use high quality wheelbuilding machines. In the Far East it is slightly different: many manufacturers still choose for the cheap labor or bad copied machines and accept the risk of a lower quality standard in wheels. Worldwide market leader in wheelbuilding equipment is Holland Mechanics. If you visit a bicycle factory, watch for Holland Mechanics machinery; it's a hallmark for excellent wheel quality.

Recognizing the mark of excellence



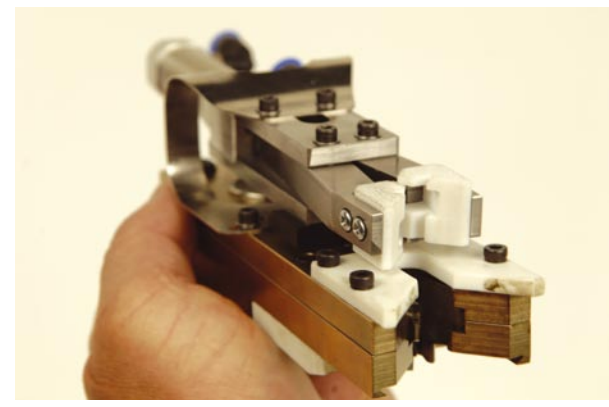
2006 / 2007 HOLLAND MECHANICS SHOW CALENDAR

Date	Event	Location	Booth number
31 aug. until 3 sep.	Eurobike	Friedrichshafen, Germany	A5-104
14 sep. until 17 sep.	IFMA	Cologne, Germany	A20/A28 Hall 09
15 sep. until 18 sep.	EICMA Bici	Milan, Italy	M46
27 sep. until 29 sep.	Interbike, International Bicycle Expo	Las Vegas, USA	1055
28 feb. until 3 mar.	Moscow Int'l Cycling Show	Moscow, Russia	
24 mar. until 27 mar.	Taipei International Cycle Show	Taipei, Taiwan	
30 mar. until 1 apr.	China North Int'l Cycle Show	Tianjin, China	
4 may until 7 may	China Bicycle & Motor Fair	Shanghai, China	

Carbon Lacing

Holland Mechanics has made it possible to lace Carbon wheels. With these wheels it is important to use Holland Mechanics's QLets and QLock. The QLets prevents that the nipple will be pulled through the carbon, QLock secures spoke tension in these vibration sensitive wheels.

From Systems to Solutions



Because of the growing customization in wheels we have set up multi disciplinary workgroups within Holland Mechanics. During this project the customer works in close cooperation with our team of experts, which exist of a Customer Support Engineer, R&D and the Account manager. With this team we are dedicated to find an assembly solution for every wheel.

The latest custom solution is the 'golden nipple hand'. With this solution we made it possible to grip & true large bladed spokes. So custom wheelbuilding solutions from Holland Mechanics give more freedom for design!