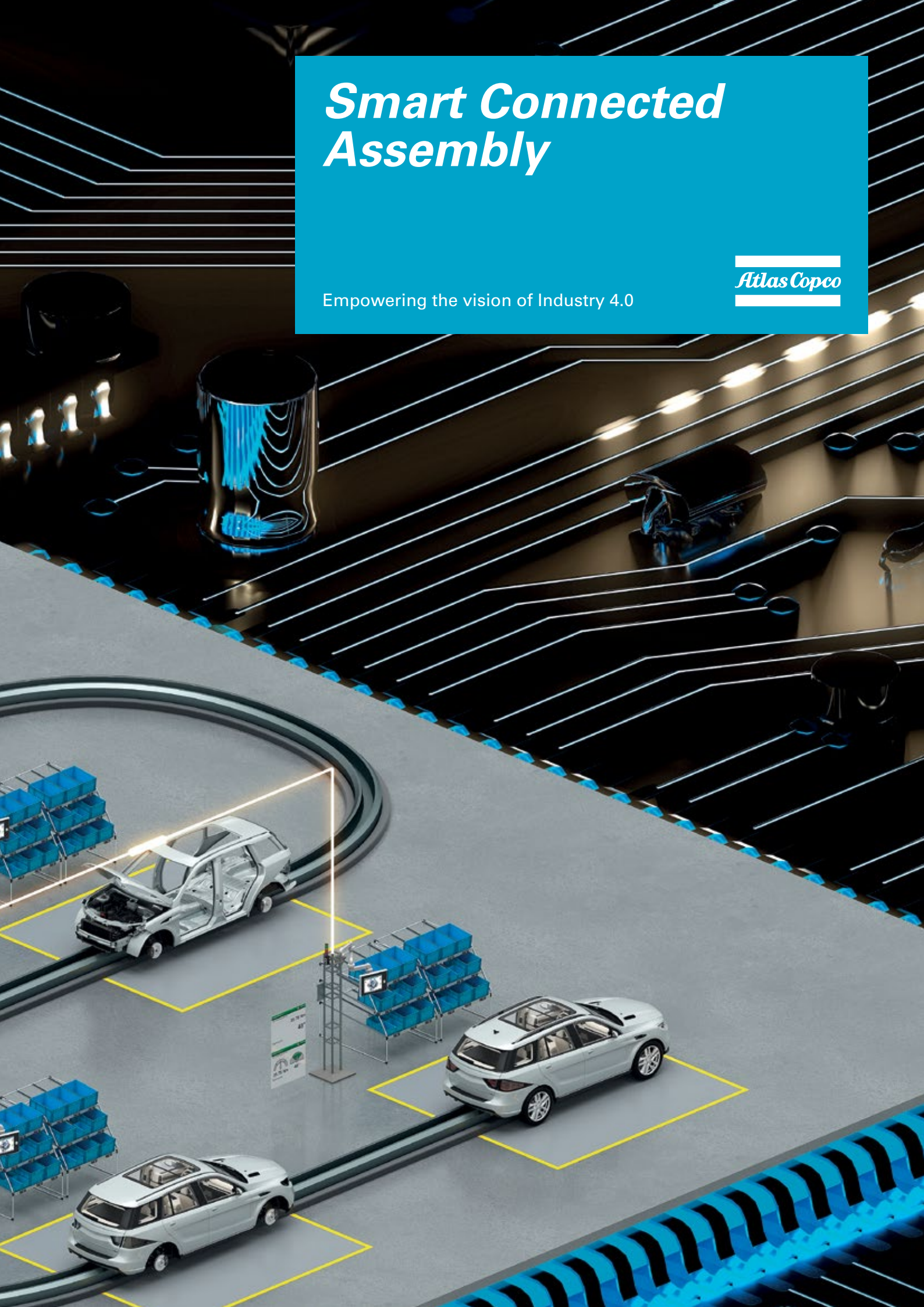
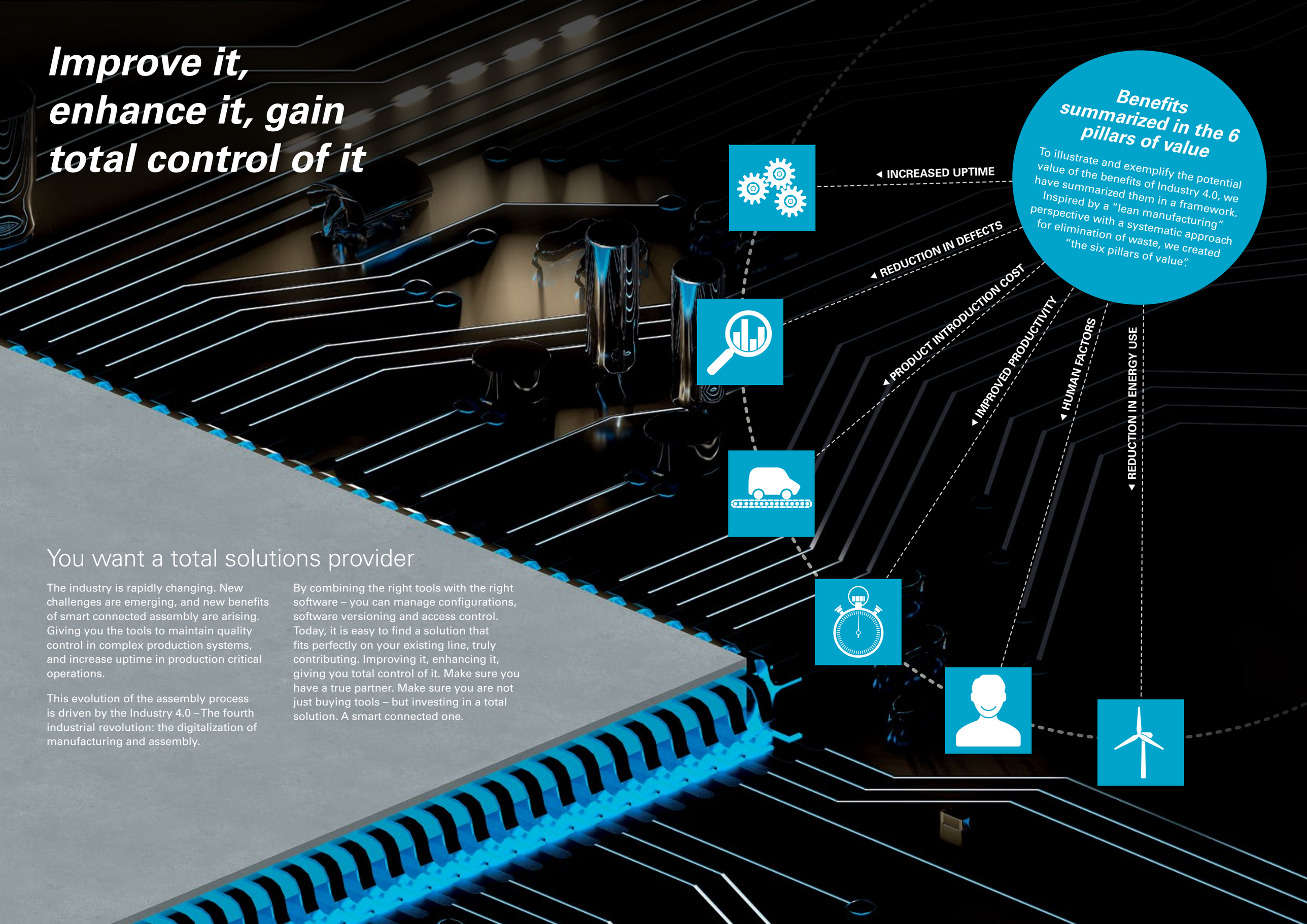
Smart Connected Assembly

Empowering the vision of Industry 4.0

Atlas Copco



Improve it, enhance it, gain total control of it



Benefits summarized in the 6 pillars of value

To illustrate and exemplify the potential value of the benefits of Industry 4.0, we have summarized them in a framework. Inspired by a "lean manufacturing" perspective with a systematic approach for elimination of waste, we created "the six pillars of value".

You want a total solutions provider

The industry is rapidly changing. New challenges are emerging, and new benefits of smart connected assembly are arising. Giving you the tools to maintain quality control in complex production systems, and increase uptime in production critical operations.

This evolution of the assembly process is driven by the Industry 4.0 –The fourth industrial revolution: the digitalization of manufacturing and assembly.

By combining the right tools with the right software – you can manage configurations, software versioning and access control. Today, it is easy to find a solution that fits perfectly on your existing line, truly contributing. Improving it, enhancing it, giving you total control of it. Make sure you have a true partner. Make sure you are not just buying tools – but investing in a total solution. A smart connected one.

Increased tool uptime to 99,5%

Increased uptime by 78%

Increase tool up-time from 98% to 99,5%, by combining a traditional approach for preventive maintenance, with a more data driven approach for predictive maintenance. The maintenance tasks are determined by the condition of the equipment – rather than the average or expected life statistics. Thanks to the dramatically improved data analytics capability, and the sophisticated maintenance models, the repair can be scheduled at a time that minimizes the impact on production.

Correct parts – in the right quantities

15% reduction in defects

By integrating applications for part verification and documentation, operator guidance and pick-to-light solutions, you can achieve a reduction in defects and rework by 15%. The operator guidance application visualizes all process steps and data, to direct the operator through the assembly process. And with the help of a pick-to-light system, the selection of the correct parts – in the right quantities – is ensured for versatile production processes.

A simple software change is all it takes.

Costs for introduction of new products down 57%

Introducing new products often requires adding or moving production equipment around. However, the use of Virtual Stations brings the cost for new product introduction down by impressive 57%.

This by decentralizing and virtualizing control logic, processes and operations. New products can now be added or moved without re-allocating or commissioning of new hardware. A simple software configuration change is all it takes.

First time through, increased to 98%

Improved productivity by 73%

First time through, increased from 92,5% to 98% in one year with a structured data analysis process. This improved productivity is achieved through fewer reworkings, higher end-product quality and maximum uptime on the assembly line. Just a few of the many benefits offered by smart process monitoring and analysis software like Atlas Copco ToolsNet. Enhancing the capability to monitor, document, analyze, and improve the assembly process.

Problems are identified and rectified by systematical and regular check of the most frequent “not OK” applications – analysing the trace information, speed and windows.

Enhanced Operator Guidance

The human factor – 30% reduction in training

Smart integrated software solutions offer enhanced operator guidance, resulting in fast recognition of rework process, traceability in assembly and manual operations, error proofing, data analysis and plant monitoring. So when introducing a new model or changing the assembly process – you have a reduced amount of operator training required.

Meet Environmental Policies.

80% Reduction in energy use

Multiple wireless tools running on one virtual assembly process controller, leads to a significant reduction in energy use. Recent studies indicate that up to 80% of energy in a typical industrial environment, is consumed when the equipment and tools are in stand-by mode. For factories powered by wind and solar, reducing energy consumption is more than a cost reduction, it’s a necessity to meet environmental policies.

Tools and Softwares

The Power Focus 6000 – designed to deliver

The Power Focus 6000 –The perfect choice for safety critical assembly. Supporting hand held and fixtured tools, the Power Focus 6000 is designed to make everyday production easier and more efficient. The Power Focus 6000 also increases your flexibility in re-balancing assembly lines.

Benefits

- Compatible with: Tensor STR, ST, STB, SR and ES
- Connect up to 6 tools to the same controller
- Simpler installation with less cables, hardware components and network drops
- Lower power consumption
- Less floor space utilization
- ... and a much smaller environmental footprint.

Intelligence making a difference – IAM is your key

IAM – Intelligent application module is like holding a key to Smart Connected Assembly. It unlocks all the benefits of software, tightening data and configurations. With IAM you have access to smart software management enabling you to benefit from easy and stable upgrades, with a rapid back-up function.

IAM Software, tightening data and configuration – in a future proof portable module.

PF6000 The Power Focus 6000 is a Multi Tool Controller designed to optimize your assembly process.

More information on www.atlascopco.com

Virtual Stations – the enabler

Using less hardware will save you up to 80% power consumption – great news for the environment!

The Virtual Station is the enabler of your assembly. It controls the tool, the communication and the accessories in your assembly station. Controlling multiple tools, working with virtual station gives you less cable management, less network connections and less hardware components. You will gain increased flexibility with increased re-balancing speed in your production.

The Virtual Station keeps all information about your assembly process, giving you an instant overview of what is going on in your production.

Tool Control:
Making sure your tool is performing correct tightenings for your assembly.

- Pset selection
- VIN handling
- Batch sequence control

Communication Control:
Communicating for easy and seamless integration with your production systems.

- Open Protocol
- Fieldbus
- Customer Protocols

Accessory Control:
Taking care of multiple accessories per virtual station.

- Stacklight
- Socket selector
- Digital I/O

Virtual Station. We call it the enabler – of gaining control, communication and smart connected assembly.

Revolutionary tightening strategies

TurboTight. Improve operator experience, let the tool absorb the reaction force.

The TurboTight Strategy

The Turbo Tight strategy lets the tool absorb the reaction force, and significantly improve ergonomics for the operator. Shortening cycle times and at the same time improving flexibility. Less hardware means less maintenance. And if you're doing 200 tightenings a day that makes the world of a difference.

True Angle. Narrow down your angle window, detect the common assembly problems – and increase your quality!

Eliminate operator influence

TrueAngle uses a gyro signal to read operator movement, increasing the accuracy of your angle reading. This allows you to narrow down your angle window, and detect the most common assembly problems such as wrong or missing components and damaged threads. Avoid premature shut-offs and detect re-hits. Increase your quality and lower your costs connected to scrapping and rework.

Tensor STR – increase individual productivity

Increase your speed and reduce the weight – gain outstanding performance.

The Tensor STR is more than just a powerful nutrunner. Its outstanding performance and robust and ergonomic design, lifts this tool into a new era. High-end performance in every detail, and the modular design will allow you to reduce your spare part inventory. Angle, straight and pistol tools available.

Extremely fast, compact and easy to operate, reducing operation cycle times

More information on www.atlascopco.com

The pistol grip Tensor

The Tensor ETP STR61 is a fast, light, robust tool offering impressive ergonomic features. The STR61 motor has improved cooling and gives a tool that is up to 45% faster than its predecessors and 30% lighter. A built- in torque transducer allows best possible tightening accuracy, reducing the need for reworking while ensuring that all tightening data can be recorded.

The two trigger tool

Cycle time savings with our two trigger tool

Accurate and reliable, the Tensor STR Two Trigger Tool has a market leading accuracy, thanks to it's innovative placement of the transducer. Increasing accuracy to 2,5%. This increases process reliability, minimizing risk for recall and reducing assembly problems.

With one hand free, pre-tighten with the upper trigger.

With both hands on the tool, tighten to target torque using the lower trigger.

More information on www.atlascopco.com

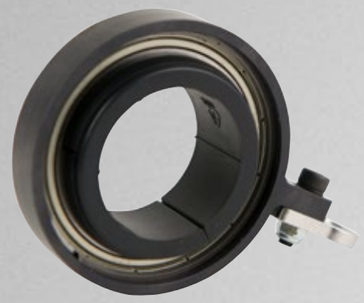
STR Accessories

A fantastic tool series enhanced with smart accessories

Whether your mission is to get your tightenings to your exact specification, or to set up that perfect operating solution, Tensor STR is your go-to-tool. There are lots of accessories and they are all designed to fulfill your demands.

Barcode Scanner

Protective Cover for Barcode Scanner

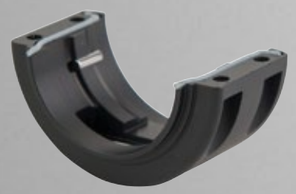


Swiveling Suspension Yoke

Suspension Yoke

Front Lever Trigger

Front Lever Trigger



Top ring Light Module

Headlight

Top Side Trigger

More information on www.atlascopco.com

The Revo ST

Increase your speed and reduce the weight – gain outstanding performance.

The Tensor Revo ST, focusing on safety critical applications, was developed with low weight and productivity in mind. Great for safety-critical applications demanding a traceable torque value, the Tensor ST range complements the S range, ensuring extremely high levels of productivity. Tensor ST tools are used where quality is absolutely critical.

Tensor SR – Compact and Powerful

Ideal nutrunner for use in applications where a smaller tool is needed.

Incredibly strong and powerful for its size, the SR nutrunners offer an unmatched power to weight ratio. This super compact power package is ideal for use in application where a smaller tool is needed. Suitable for safety critical applications, high cycle rates and tough joints.

Tensor ES – Durable Performance

The Tensor ES nutrunner is designed for tough working environments. Its industrial design and torque transducer, together makes the decision to go electric easy. Durable performance in quality critical assembly, now faster than ever thanks to the new and revolutionary tightening strategy TurboTight.

Atlas Copco's ETF electric screwdriver has been designed to perform consistently and precisely time after time. Their range has been carefully created to match your needs, making micro torque more of a science and less of an art.

More information on www.atlascopco.com

BCP/BCV

A screwdriver with superior ergonomics

The cordless BCP screwdrivers offer superior ergonomics for the operator, contributing to outstanding performance. This lightweight pistol-grip tool comes in 7 brushless models offering variable speed with a speed setting unit. Low speed models are available.

Benefits

- 7 brushless models offering variable speed with a speed setting unit.
- Torque range: 0.8-12 Nm.
- Low speed models available.
- Two 18 V batteries: 2.1 Ah fl at pack or 4.2 Ah regular pack.

Durable and reliable, the BCV nutrunner

The BCV nutrunners are durable and reliable, offering flexible assembly. This nutrunner is lightweight and handy, for maximum operator comfort.

Benefits

- Robust yet ergonomic angle tool.
- Torque range 1.5-45 Nm.
- 3 Li-Ion batteries, 18 V (2.1 and 4.2 Ah) and 36 V (2.1 Ah).
- Two 18 V batteries: 2.1 Ah fl at pack or 4.2 Ah regular pack.

Both ways. The battery can be fitted both forwards and backwards. BCP is built for easy access.

Tensor STB Battery Nutrunners

Cordless Freedom – Zero Fault Process

The Tensor STB is a reliable solution that is connected, flexible and built on state of the art technology. With a wide range of tools, accessories and services, Atlas Copco supports the vision of Industry 4.0. With the freedom provided by battery tools, and the quality assurance you gain from knowledge and control.

With Virtual Stations you can take advantage of cordless freedom and work the tools where they are needed – yet always staying connected. Flexible re-balancing and quick adaptations make a productive solution.

Tensor SB

Tensor SB can reduce energy consumption by as much as 80%

Suitable for a wide range of applications, including heavy duty tasks, the user-friendly Tensor SB is an advanced, transducerized industrial battery nutrunner offering high quality tightening. Choosing Tensor SB can reduce energy consumption by as much as 80% compared to using a corresponding air tool. The Tensor SB's Atlas Copco Li-Ion battery is powerful, reliable and has no memory effect, which adds up to increased production uptime.

More information on www.atlascopco.com

QST and PST

The QST nutrunners are available in several different models e.g. in-line, offset, angle head , U-shaped and many more. The tool is designed to be durable, reliable and productive. The standard torque range of QST is from 2 -1750 Nm

The PST press spindle is using the same powerful motor as our QST tightening spindles as well as the same controller PowerMACS 4000. Thanks to this you can achieve high level of commonality on your assembly line for both tightening and pressing operations.

ErgoPulse PTI

Tightening with air tools – pulse tool innovation

ErgoPulse PTI is designed for industrial users, who has a need for a robust one hand tool. Robust tool means a low investment cost in a long run. It has the highest uptime among pulse tools, and the oil refill has been made very easy.

More information on www.atlascopco.com

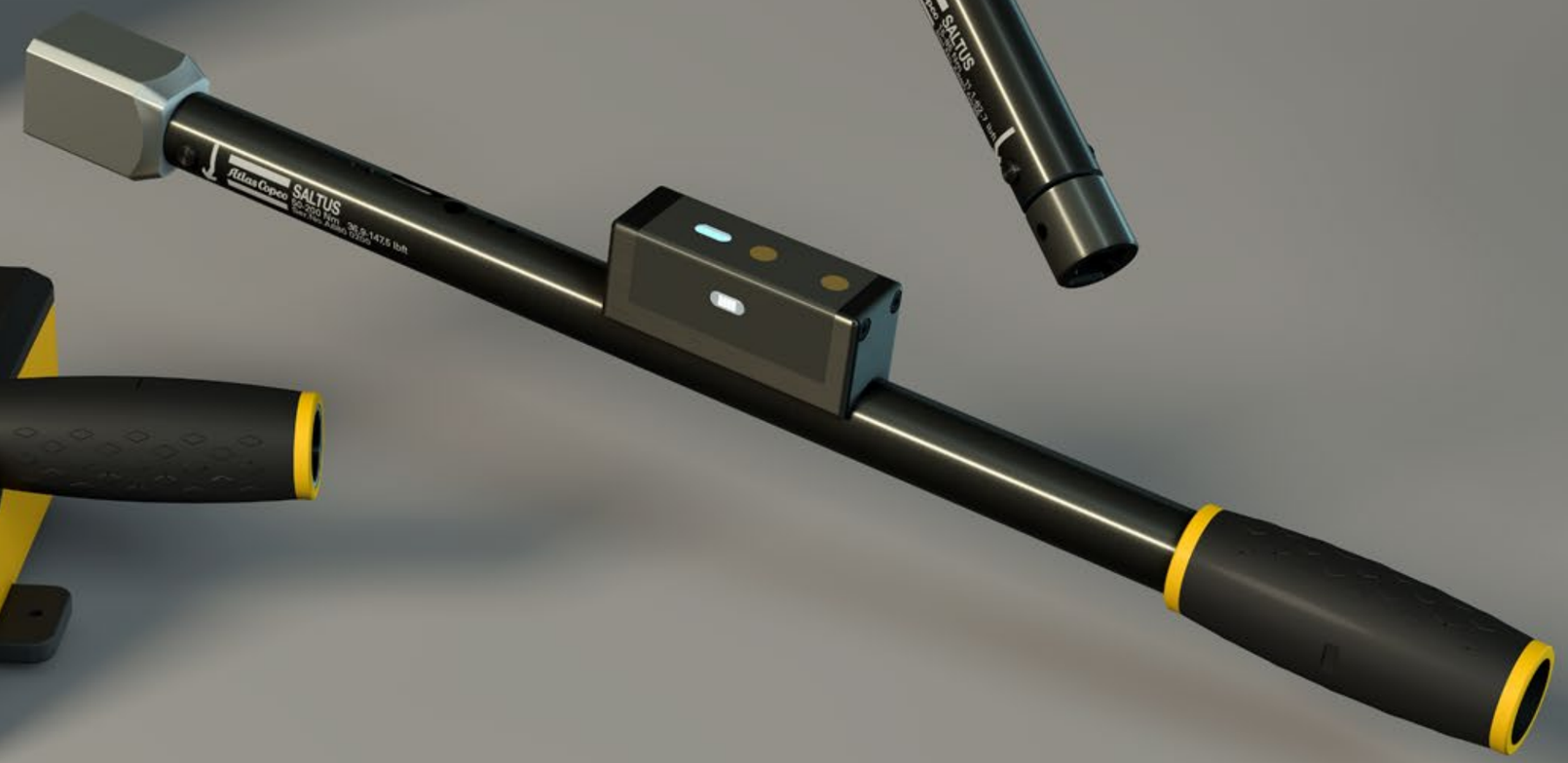
Mechatronic Click Wrenches

More Than A Click

Increase the quality of your joints considerably with the Error Proofing functionalities of the MWR mechatronic system. Combining the productivity of a click wrench with the traceability of an electronic one, this smart manual fastening system for tightening processes is a good investment.

Based on the mechanical “click” wrench, the MWR mechatronic wrench is highly productive. The clear physical feedback of the “click” makes it easy to handle even for untrained workers, giving you a very short training period.

In combination with the controller Focus 60 or 61 the MWR mechatronic series combines the easy handling of a click wrench with the controlled tightening possibilities of electronic wrenches.



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Quality Assurance

STbench

We provide a full range of Joint Simulator Benches, with a patented system for testing tools in real production conditions, or Static transducer benches as an all-in-one mobile system.

The STa6000

The STa 6000 is a portable quality assurance tool – checking tool performance, repeatability and accuracy for all types of power tools and torque wrenches. Test your tools in the tool crib following service and continuously on the line to monitor performance.

IRC-Connect

IRC-Connect transforms your transducer in a smart wireless transducer. Data is safely stored with no dependence on the network and the test is reliable in all the working conditions.

STwrench

The STwrench Controller and Smart Head is a state-of-the-art, four-patent wrench that employs the modularity concept to check the residual torque on an already tightened joint. It can also be used to tighten a bolt with the most advanced torque or torque/angle strategies with complete traceability and error-proofing functionalities.

STpad

STpad is the core device in QA. It can be used with either IRC-Connect or with an STbench, seamlessly moving from one to another. An optional docking station makes the STpad fast to program a PC.A large touch screen interface with a rugged, durable design.

QA Supervisor

QA Supervisor is a all new server based software making the quality managers job easier. Every single detail of the plant structure can be defined in QA Supervisor. It then keeps track of every change in the line setup, making any audit quick and effective.

More information on www.atlascopco.com

Microtorque System

Fixtured

Extremely light and compact, full of functionalities. The QMC fixtured screwdrivers combined with the all new MT Focus 6000 controller, boosts productivity, improves quality and reduces costs. It is the most advanced tightening solution for any low torque application.

Handheld

The Microtorque Handheld Screwdriver range is the most advanced tightening solution for any low torque application. Extremely ergonomic, very compact and full of functionalities it is the right tool to boost productivity and quality, resulting in high efficiency and cost reduction.

MT Focus 6000

MT Focus 6000 is the future – in the present. A smart, fully connected controller ready for the Industry 4.0 and Internet of Things. Check system status, change parameters and setups, create new configurations and visualize tightening results and graphs. Take full control through Remote Programming, ToolsNet 8 Reporting, Batch Sequences and smart monitoring setups. MT Focus 6000 – smart, connected and efficient.

The Microtorque system comes with a wide range of accessories such vacuum adapters.

More information on www.atlascopco.com

Single Quality Solution

Error proofing software

The Single Quality Solution (SQS) is a comprehensive solution that drives quality, process reliability and transparency, as well as product safety at assembly station SQS guides operators through the assembly process leaving no room for error or oversight. It is capable of managing the assembly process of many different products and is ideally suited for subassembly stations, backup stations, and repair areas.

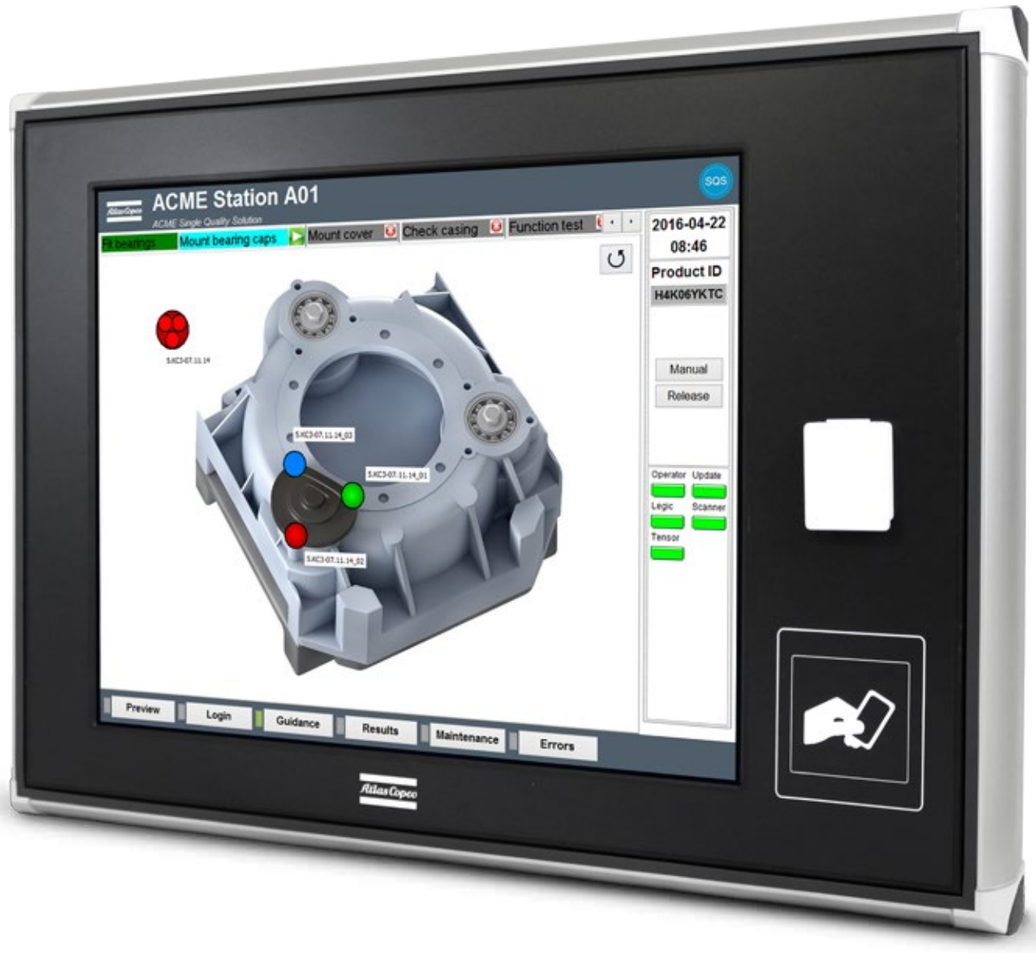
Entry level standalone solution

Set of standard functionalities

Plug & Play

Easy to configure

HLTQ Series



The solution for visualization and control on the shop floor

With a robust design and high-performance components the HLTQ (Hard Line Terminal) series are state-of-the-art devices for your industrial purposes. Choose between four standard models that are pre-configured and available off-the-shelf, or a customized version which can be configured individually based on available options.

More information on www.atlascopco.com

ToolsNet 8

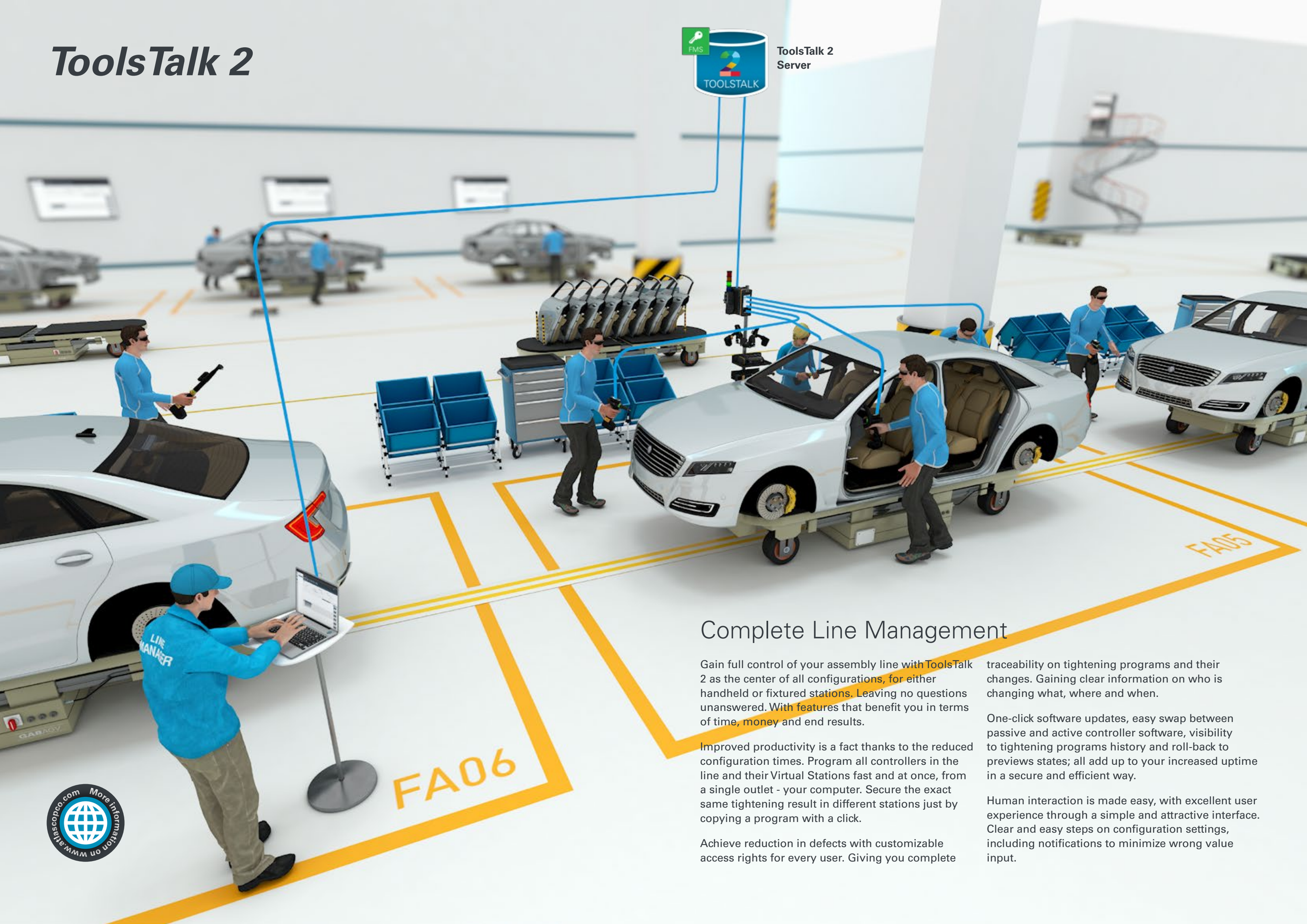
Personalized control of production

Atlas Copco ToolsNet 8 provides data collection for your tools. Documenting each tightening from every specific tool and station with full knowledge of every single end-product. This gives you the possibility to improve the tightening process, answer questions about every tool in production, and have every tool serviced and optimized for its task. The necessary information you need to extract – your way.

Improve your assembly line. In everyday production you may need to keep control of service and maintenance. With Toolsnet 8 it is easy to get a complete overview of the assembly line to analyze productivity. Perhaps you need to monitor a certain station to improve on quality, or view the top NOK applications to find the applications with the highest failure rate for a configured part of the tool structure. Comparing stations, finding bottlenecks and improving quality – The information you need has never been more structured and accessible.

More information on www.atlascopco.com

ToolsTalk 2



Complete Line Management

Gain full control of your assembly line with ToolsTalk 2 as the center of all configurations, for either handheld or fixtured stations. Leaving no questions unanswered. With features that benefit you in terms of time, money and end results.

Improved productivity is a fact thanks to the reduced configuration times. Program all controllers in the line and their Virtual Stations fast and at once, from a single outlet - your computer. Secure the exact same tightening result in different stations just by copying a program with a click.

Achieve reduction in defects with customizable access rights for every user. Giving you complete traceability on tightening programs and their changes. Gaining clear information on who is changing what, where and when.

One-click software updates, easy swap between passive and active controller software, visibility to tightening programs history and roll-back to previews states; all add up to your increased uptime in a secure and efficient way.

Human interaction is made easy, with excellent user experience through a simple and attractive interface. Clear and easy steps on configuration settings, including notifications to minimize wrong value input.

Wireless News

We live by the expression "There is always a better way". Two products that are truly a result of that stance are the all new SRB and the Selector 6. SRB is a battery powered low reaction tool. SRB reports wirelessly to the Power Focus 6000 system and takes full advantage of Virtual Stations, Turbo Tight, Tensor Pulse and much more.

A socket selector really should be wireless. The all new Selector 6 is a smart, wireless and expandable solution. Error proofing right at the operators fingertips, literally. Powered by battery or power-over-ethernet and it also comes with daisy-chain possibilities.

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Eco Design and environmental aspects of product development is nothing new to us. Atlas Copco has a history of developing modular tools with a deep respect for materials and natural resources used in the products. We always strive to maximize the functionality of the product and at the same time minimize the energy consumption to make sure the environmental impact is as low as possible. By developing accurate tools we make sure the customer never has to waste time or energy to re-do an operation. For battery tools we also have the option to connect multiple tools to one controller and thereby decrease the standby energy consumption considerably.

Eco Design is all about minimizing a product's environmental impact during its entire life-cycle, including extraction of raw materials, manufacturing, customer usage and recycling while maximizing the productivity.

Information to Customer

We prepare for upgrading, maintenance and recycling, through labeling, modularization and information in the product information.

Energy Efficiency

We consider how the final product will be used in order to minimize energy and resource consumption in the use phase, in production and during transportation.

Reuse and Recycling

We design with recycling in mind. We promote repair and upgrading, especially for long lasting and system-dependent products. To increase the customer's awareness regarding the importance of recycling, we are now including Recycling Instructions in the Product Information (PI).

Hazardous Substances

We avoid hazardous substances and materials listed on the Atlas Copco Restricted & Prohibited list.

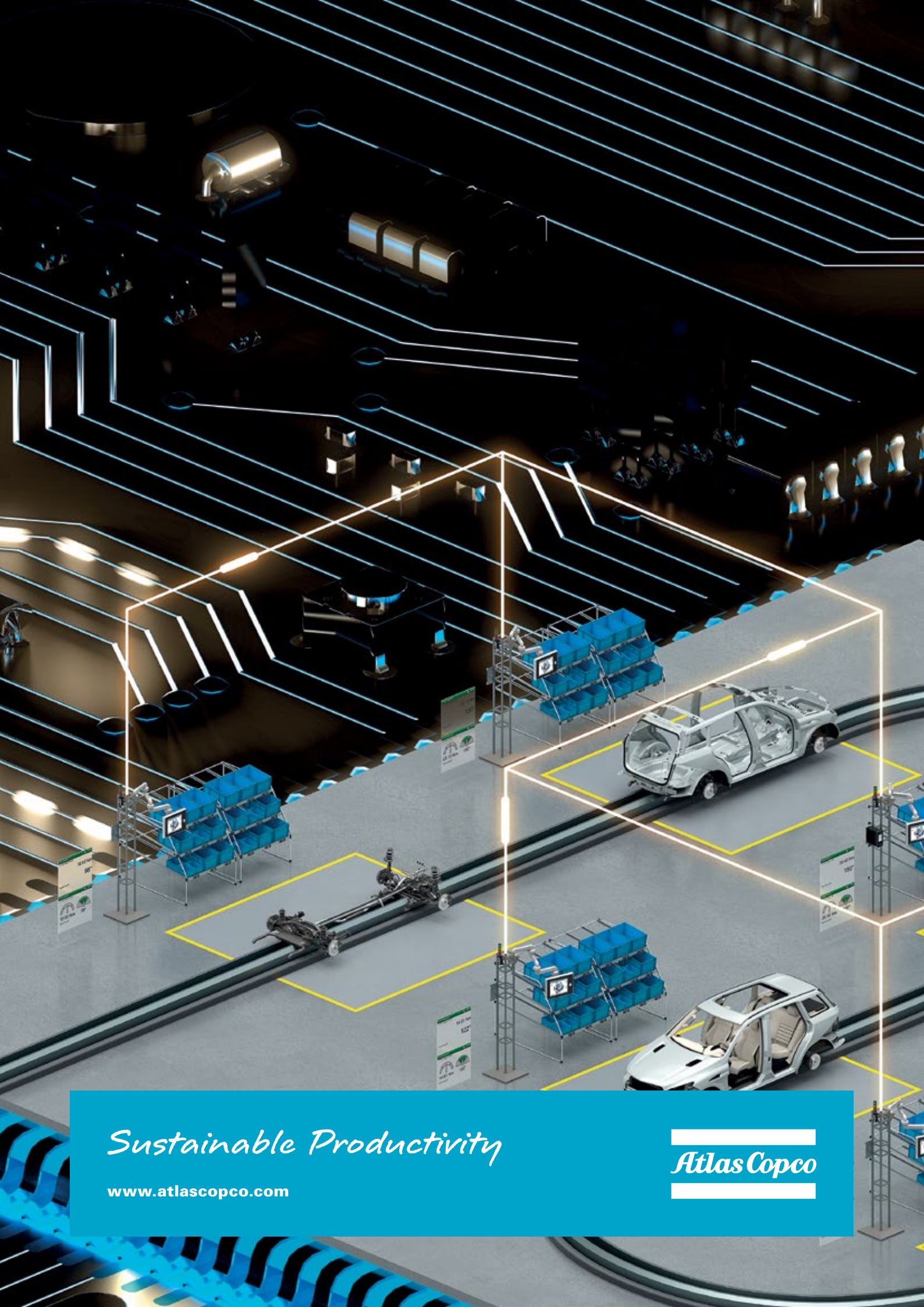
Materials

We use materials and structural features to minimize the product's weight and invest in strong, durable materials to protect the product.

Mix and Modularity

We avoid mixing materials since blends inhibit recycling and consider fastening methods to facilitate disassembly.

For full information
about our tools
and softwares visit
atlascopco.com



Sustainable Productivity

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