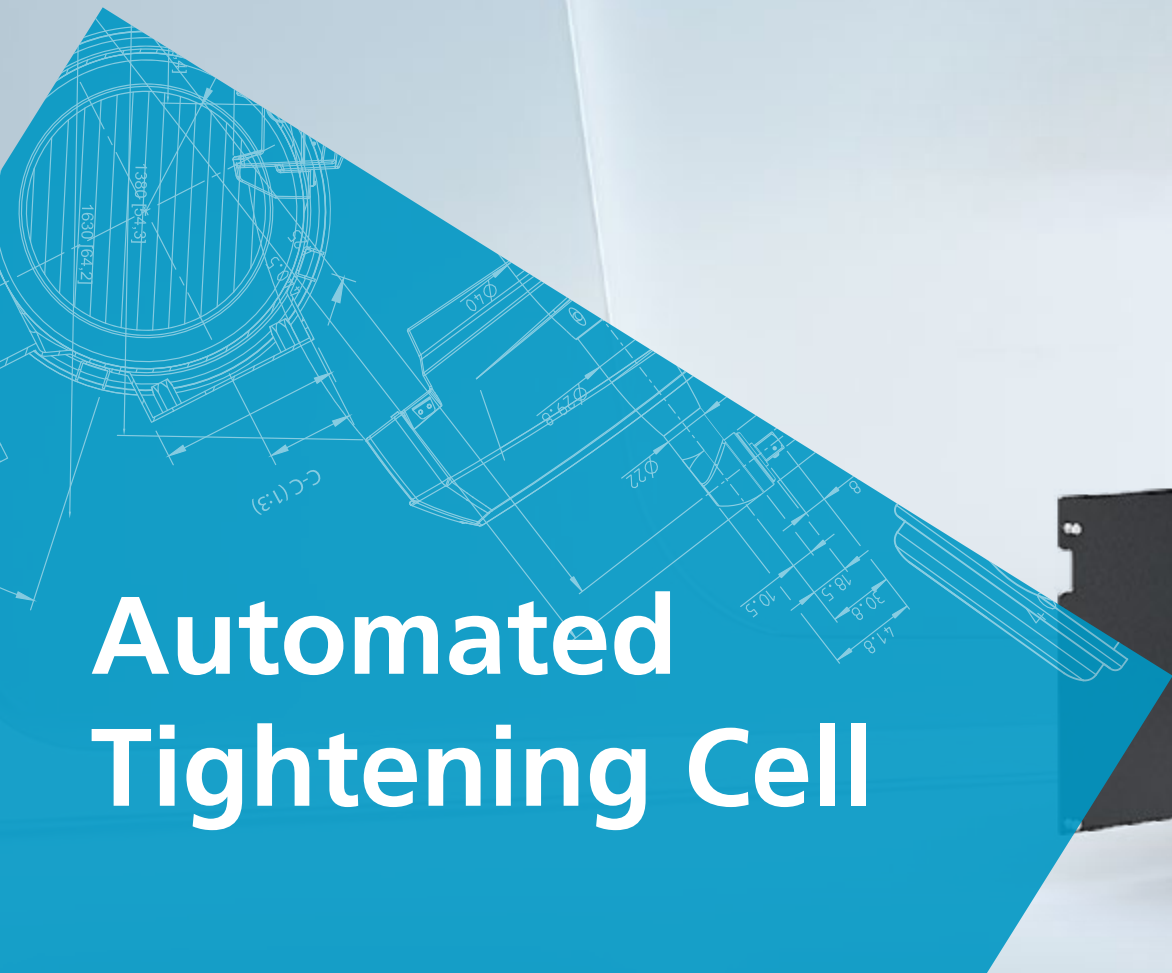


Atlas Copco



# Automated Tightening Cell

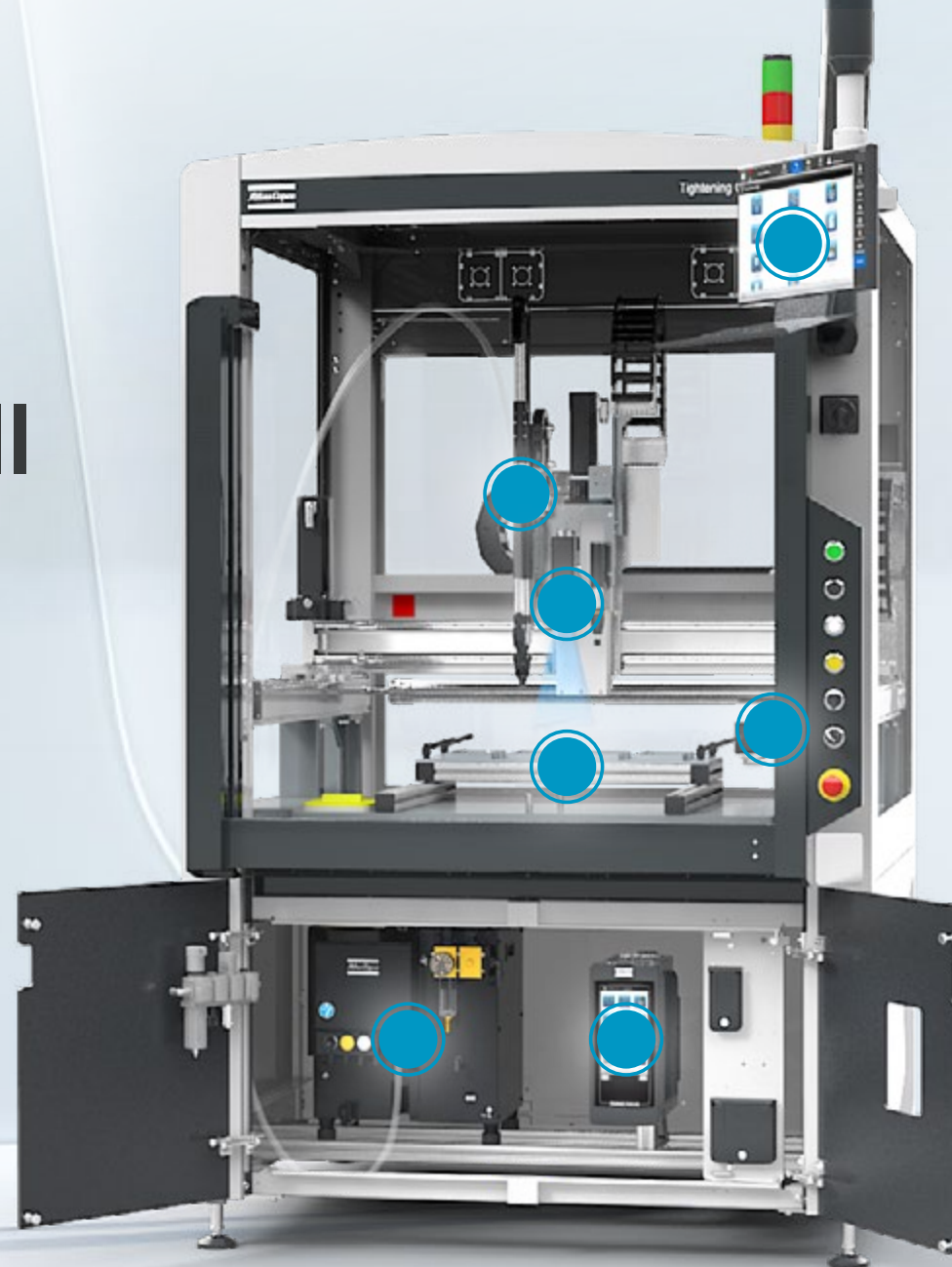




Tightening Cell TC 803



# Automated Tightening Cell



# 1 | General Information

## Information

Parts Handling

Tools

Tightening System

Vision

Software

Screw Feeding

Safety

Technologies

Technical Details

Service

Global Presence

Sustainability

## Automated Tightening Cell

The modular designed automated Tightening Cell is built on the automation platform of Atlas Copco and cover a wide range of joining and quality assurance processes.

With just one of these compact systems, you can combine a wide range of processes, such as:

- Screw assembly with torques up to 20 Nm
- Screw feeding
- Optical inspection/quality monitoring

Software applications (SQS for scalable quality assurance, ToolsNet8, or the intelligent Assembly Management System Smart-AMS)

Automated production and test cells are suitable for inline production but can also be used as an independent island solutions. They can also be integrated into MES system of the customers.





# 2 | Parts Handling

HIGH MODULARITY

SCALABLE AUTOMATION SOLUTION

FLEXIBLE CUSTOMIZATION

- Information
- Parts Handling**
- Tools
- Tightening System
- Vision
- Software
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## Stationary Table

- 7 standard cell sizes
- Manual part holder



## Drawer

- Min. sell size 1400 x 1200
- 2 drawer positions
- Manual part holder

**The Tightening Cell can be delivered with 4 different standardized loading- and unloading solutions.**

Depending on the automation level of the production process, the modular designed solution can be selected.

All necessary modification towards the customer products are made in house at Atlas Copco engineering department.

## Rotary Table

- 2 positions (load/work)
- 3 different sizes
- Manual part holder



## Conveyor

- Belt driven
- Standard WPC (Bosch, ...)
- Automatic part holder



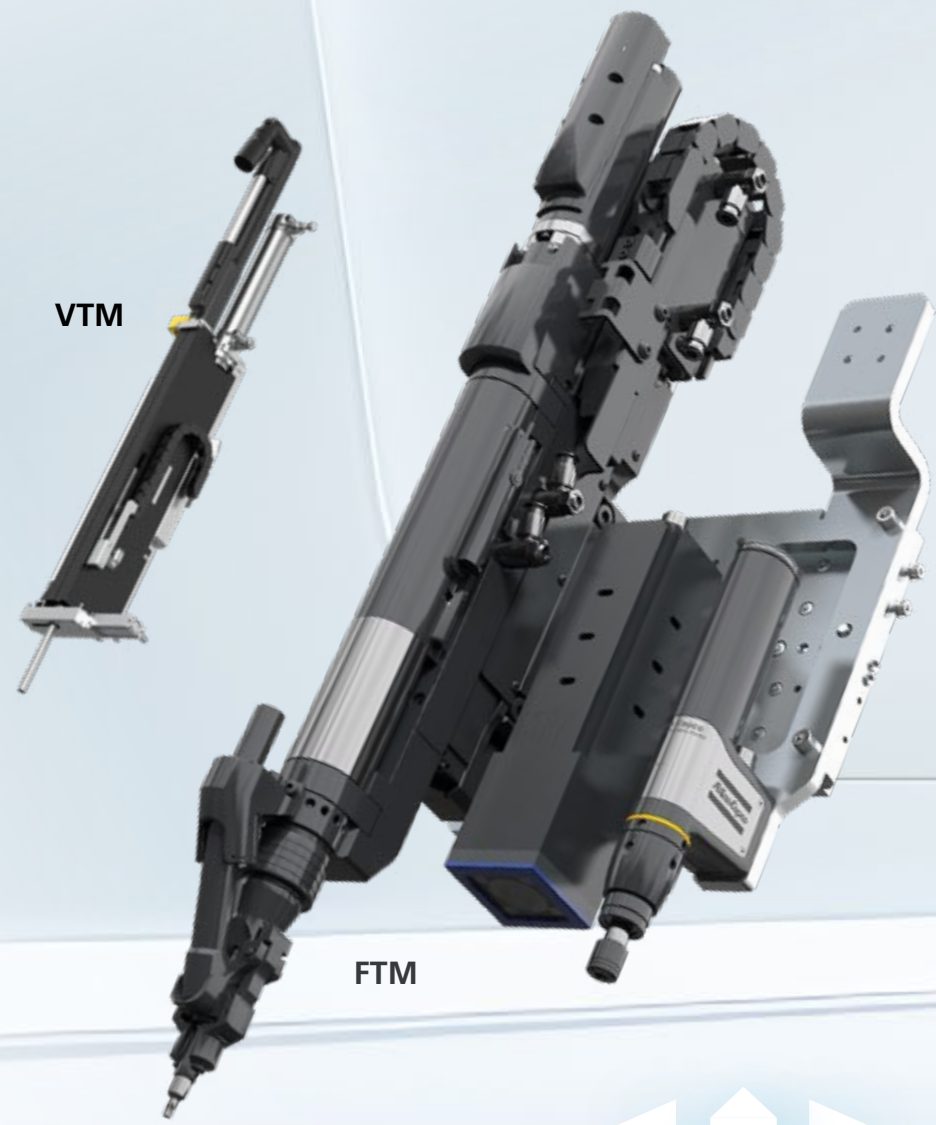
# 3 | Tools & Tightening Modules

HIGH PRODUCTIVITY

MAXIMUM UPTIME & RELIABILITY

EASY MAINTENANCE

- Information
- Parts Handling
- Tools**
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The standard designs of the Tightening Cell, cover a torque range from 0.01 Nm to 20 Nm using up to 2 tools from the following series.

- MicroTorque – QMT and QMC
- Tensor SL/ES/STR – ETD and ETF
- Fixtured – QST34 and QST42
- FTM (Fixture Tightening Module)
- slim design and high tightening frequencies
- VTM (Vacuum Tightening Module) access of complex areas – effective stroke up to 98 mm

**Additional integrated features:**



# 4 | Tightening System

- Information
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- Tools
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PowerFocus 6000



PowerFocus 8 / PFS



MFT 6000



Flex System

HIGH  
PRODUCTIVITY

DOCUMENTED  
QUALITY

USER  
FRIENDLY

The automated Tightening Cell can be equipped with all standard tightening systems from Atlas Copco, such as the **PowerFocus**-family and **Flex System**.

For low torque tightenings, the **MicroTorque** system is available.

Our modular assembly platform offers all the features you would expect from an automatic station, ensuring a synergy of speed, precision, and efficiency.

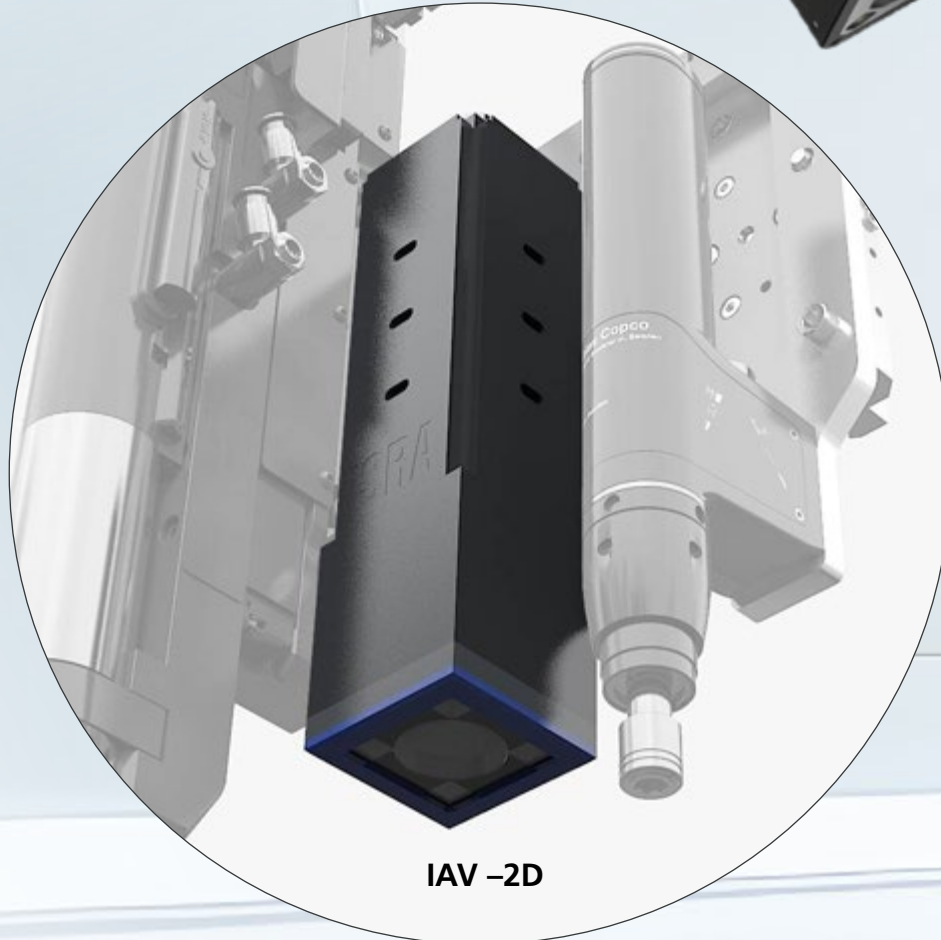




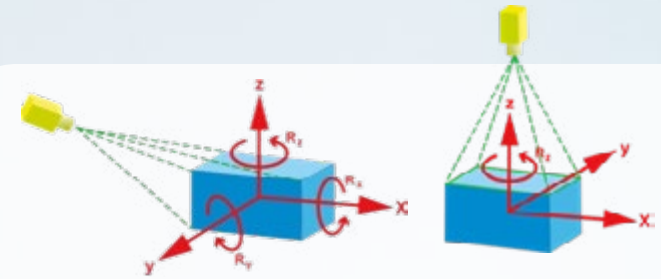
# 5 | Vision

- Information
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IAV – 3Dcloud



IAV – 2D



## Machine Vision Solutions

- Vision Solution made by Atlas Copco
- Perfect match of the interfaces and software
- Quad camera 3D Vision system with point cloud calculation
- Trigger measurement
- CAD comparison
- Screw / Nut detection
- Calculation of tightening position
- Type check of screw
- Interface for third party camera manufacturer available





# 6 | Software UVIS / UPIC / Automation Control Platform



- Information
- Parts Handling
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**The configuration software of the Tightening Cell is based on the same platform which is used for dispensing applications and continuous developed to keep a high standard of usability.**

Configuration changes can be made without any PLC knowledge, access to is controlled with individual defined user levels.

Additionally, a new and modern software product – the ACP (Automation Control Platform) is designed to connect a standardized and modular product portfolio for accessories and features.

### **Standard functions:**

- Display of system status and results
- Result- and Processdata storage
- Remoteaccess and -support
- MES connection to upper-level systems
- Event logging
- Teach-function with joystick



# 7 | Screw Feeding

- HIGH PRODUCTIVITY
- ERGONOMIC NOISE LEVEL
- EASY MAINTENANCE

- Information
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## The Screw Feeder SF36

sorts and separates up to 60 screws per minute and feeds them to the tightening module via a round tube.

Compared to conventional vibration feeder, noise pollution is reduced and contamination due to material abrasion is avoided.

Atlas Copco's innovative design of the separator offers maximum availability even at the highest production rates.

SF36



# 8 | Safety & Environment



- Information
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Our safety sensor concepts are in-line with the application requirements and your local regulations, to offer you maximum protection for human, machine and environment – while achieving maximum productivity.

- Light curtain
- Safety locking
- Software user level

As an expert for electronics manufacturing industry, we are also familiar with ESD and clean room environment.



# 9 | Integrated technologies

- Information
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## Atlas Copco as a turn-key supplier

By choosing Atlas Copco as your turn key supplier our customers can save time and money by having one single point of contact for all their needs. This helps our customers to streamline their operations and reduces the risk of errors or delays.

Atlas Copco is not only the supplier of the Automated Tightening Cell but also the manufacturer of all integrated technologies. The result are perfectly matching interfaces without bugfixing and an availability of the machine of more than 98%.

Customers can use the advantages of our global structure and resources when they are using an Automated Tightening Cell of Atlas Copco.



**Matching Interfaces**



**Global presence**



**Service**



**Quality**



**Contact**





# 10 | Technical Details

- Information
- Parts Handling
- Tools
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## Atlas Copco Automated Tightening Cell

Specification	value
Outer dimension (WxTxH)	1000 x 1100 x 2385 mm 1180 x 1300 x 2385 mm 1380 x 1300 x 2385 mm <b>(customization possible)</b>
Max. traversing range X/Y axis	455 x 370 mm 635 x 610 mm 835 x 610 mm <b>(customization possible)</b>
Max. traversing range Z axis	240 mm
Kinematic	Linear 3 axis portal
Max. speed X/Y / Feed speed z axis	600mm/sec / 200mm/sec
Repeatability	X/Y: +/-0.05mm Z: +/- 0.02mm
Max. torque	20Nm
Max. payload workpiece	15kg
OPTION: Screw Feeding	complete Atlas Copco screwfeeding portfolio
OPTION: screw Presenter	complete Atlas Copco pick & place portfolio
OPTION: Vision	acc. to customers request
Control unit	UVIS / UPIS or Atlas Copco Automation Control Platform



# 11 | Service



## Built to meet your needs

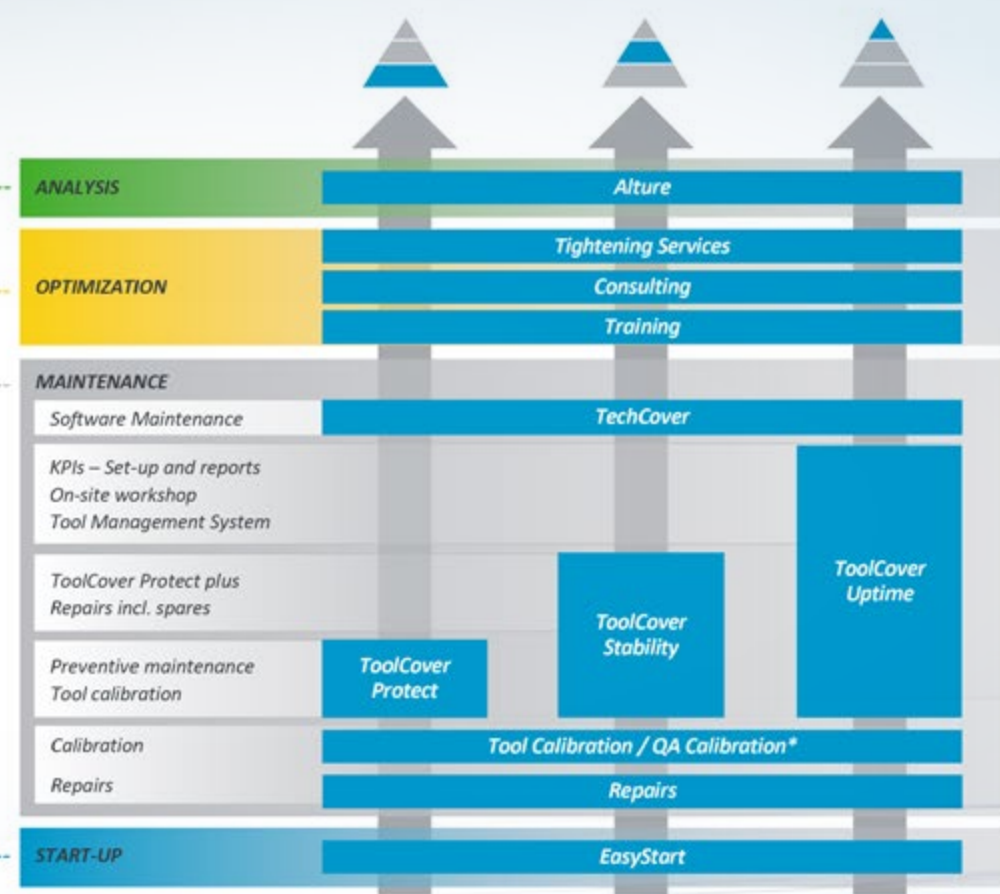
- Information
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**ANALYSIS** of tightening data allows the detection of negative trends and optimization potential in production.

Our **OPTIMIZATION** modules not only provide long-term savings, many have resulted in short-term savings of 20-80%.

Our tool **MAINTENANCE** agreements have saved our customers between 20-50% based on experience from more than 1.000 service agreements.

A professional **START-UP** is the best way to maximize savings in the future.



# 12 | Global Presence

SOLUTIONS  
GLOBAL  
AVAILABLE

SUPPORT  
IN LOCAL  
LANGUAGE

GLOBAL  
SPARE PART  
SERVICE

We are where you are

- Information
- Parts Handling
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# 13 | Sustainability

- Information
- Parts Handling
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## Automated Tightening Cell: the most efficient way to produce

Atlas Copco's automated Tightening Cells are a great example of a sustainable solution that can help you to improve your manufacturing processes.

An automated Tightening Cell is a sustainable solution for your manufacturing needs. By automating the tightening process, you can reduce the required amount of energy and resources to produce your products.

All drive functions are created on electronic base. This reduces the standby energy consumption to a minimum. The shift away from compressed air as a driving force also reduces CO2 emissions, as electric components require less energy.

The modular automated tightening cells of Atlas Copco are built on an automation platform and can be used for a wide range of processes, including tightening, screw feeding, dispensing, and quality inspection. They are designed to be compact and efficient, with a minimal footprint that can help you save floorspace in your factory.

This can lead to a significant reduction in your carbon footprint and help you achieving your sustainability goals.





*Atlas Copco*

