

```
//Component tags
```

```
private final static String TAG_COLUMN_COUNT = "COLUMN_COUNT";  
private final static String TAG_COLUMN_POSITION = "COLUMN_POSITION";  
private final static String TAG_COLUMN_TITLE = "COLUMN_TITLE";  
private final static String TAG_COLUMN_ACTION = "COLUMN_ACTION";  
private final static String TAG_COLUMN_EXTENSION = "COLUMN_EXTENSION";
```

Atlas Copco

```
//Heights & widths
```

```
private final static int HEIGHT_LIST_ROW = 100;  
private final static String WIDTH_COLUMN_1 = "COLUMN_1";  
private final static String WIDTH_COLUMN_2 = "COLUMN_2";  
private final static String WIDTH_COLUMN_3 = "COLUMN_3";  
private final static String WIDTH_COLUMN_4 = "COLUMN_4";
```

```
private final static String WIDTH_COLUMN_5 = "COLUMN_5";  
private ArrowPageList<PBStepResult> arrowList;  
private ListDialogBox<StepItem> stepDetailDialog;  
private ArrayList<StepItem> stepItemsArray;  
private ListDialogBox<StepItem> stepItemDialog;  
public StepResultAPL() {  
    createContent();
```

```
public StepResultAPL() {  
    private void createContent() {  
        //Tightening list
```

```
        arrowList = new ArrowPageList<PBStepResult>(  
            ArrowPageList.DEFAULT_COLUMN_COUNT,  
            ArrowPageList.DEFAULT_COLUMN_POSITION,  
            (ThemeManager) null);  
        //Tightening list
```

```
        arrowList.setShowHeaderPanel(false);  
        arrowList.setUseSimpleSelection(true);
```

```
        arrowList.setShowHeaderPanel(false);  
        arrowList.setUseSimpleSelection(true);
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```
        arrowList.setShowHeaderPanel(false);  
        arrowList.setUseSimpleSelection(true);
```

**Atlas Copco
Solutions
for Integrators
and Line Builders**

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Fast navigation table

Tool	Accuracy	Range	Control parameters	Connectivity
Air tools	+/- 10% according ISO5393	0,1 - 4000 N.m	Only Torque	Only I/O - OK signal
Hydraulic tool	+/- 3% indirect measurement, capability test	81 - 71200 N.m	Torque Angle	Ethernet
EBL	+/- 10% according ISO5393	0,1 - 5,5 N.m	Only Torque	Only I/O - OK signal
MicroTorque	Current control $\pm 7,5\%$ according to ISO5393 Tranducerized $\pm 5\%$ according to ISO5393	0,02 - 2,5 N.m	Torque Rotation Angle Speed	Digital I/O Ethernet Fieldbus RS232
PF6000	Depend on used tool 2.5-7.5% according ISO5393	0,3 - 4000 N.m	Torque Rotation Angle Speed	Digital I/O Ethernet Fieldbus
PM4000	+/- 2.5% according ISO5393	2 - 8000 Nm	Torque Rotation Angle Speed	Digital I/O Ethernet Fieldbus
FLEX	+/- 2.5% according ISO5393	2 - 1000 Nm	Torque Rotation Angle Speed	Digital I/O Ethernet Fieldbus

Air tools

Basic tightening systems from Atlas Copco are pneumatic tools. Pneumatic tools focus on productivity, durability and ergonomics. We offer pneumatic tools handheld as well as for fixture mounting. Tools shut off at target torque by mechanical clutch.

Product portfolio









Straight handheld

Straight fixture

Pistol handle

Angle shape

Main technical parameters:	
Accuracy:	+/- 10% according ISO5393
Torque Range:	0,1 N.m – 4000 N.m
Speed:	Constant speed related to tool specification
Connectivity	OK/NOK pressure signal
Remote start	Yes (some of tools)
Number of tightening programs	1 – mechanically set clutch
Target parameters	Torque
Control parameters	–
Results memory	–

Features	Benefits
Tightening to set torque	Low cost tool
Push start	Long service interval
Trigger start	Fast shut-off clutch – best in class ergonomics
Remote start	Lubrication free models
	Easy maintenance and service

Where to use

Temporary or pre-tightening operations
Tightening screws on non-critical applications - missing screw or wrong tightening is affordable (for example no impact on safety, or function of final product).

Hydraulic tools

Complete range of bolting tools including hydraulic torque wrenches, hydraulic bolt tensioners, permanent hydraulic nuts, hydraulic pumps and wide range of accessories. Special focus of features of these tools is on increasing safety of operators.

Product portfolio



Hydraulic wrenches



Tensioners



Hydraulic pump

Main technical parameters:

Accuracy:	+/- 3% indirect measurement, capability test
Torque Range:	81 - 71180 Nm
Speed:	Usually few RPM, intended for step-by-step tightening
Connectivity	Ethernet and I/O (RTA version)
Remote start	No
Number of tightening programs	1-50
Target parameters	Torque
Control parameters	Torque, angle (RTA version)
Results memory	Yes, result and trace (RTA versions)

Features	Benefits
Full data traceability (RTA version)	Wide range of hex sizes
Wide product portfolio for different application	Designed to suit low clearance applications
Long life time	Excellent power to weight ratio
Compact dimension	High oil flow systems
	Fast, accurate bolt load

Where to use

Very high torque applications
Primarily for maintenance and construction applications
Maintenance, Oil&Gas, Wind Energy, Power Generation, Subsea
Large Presses, Valves, Flanges, Construction applications

EBL are clutch electric screwdrivers designed for low torque applications, brushless motor combined with proven clutch delivers the best for less complex assembly process.

Product portfolio



Straight handheld



Pistol grip



Angle shape

Main technical parameters:

Accuracy:	±10 % acc. ISO 5393
Torque Range:	0,05 – 5,5 Nm
Speed:	600 – 1500 RPM (HI/LO speed setup)
Connectivity	Only I/O - OK signal
Remote start	No
Number of tightening programs	1
Target parameters	Torque only mechanical clutch
Control parameters	No
Results memory	No

Features

OK, Batch OK
 Vacuum pick-up control
 Soft stop to protect sensitive components
 Tightening blocking, tightening allowing
 HI/LO speed setup
 ESD and UL certified
 Push-to-Start or Lever start configurable

Benefits

Brushless motor
 Simple tool, easy to install and operate
 Low cost solution for basic applications
 No need of compressed air compared to pneumatic screwdrivers

Where to use

Tightening screws on non-critical applications - missing screw or wrong tightening is affordable (for example no impact on safety, or function of final product).

Battery clutch tools – BCP and BCP

The main advantage of battery tools is their superior flexibility due to the absence of cables. The brushless BCP – BCP tools are ideal for applications where flexibility is essential. The slim, well-balanced design and ergonomic handle for all-day use.

Product portfolio



Pistol grip



Angle shape

Main technical parameters:

Accuracy:	+/- 10% according ISO5393
Torque Range:	0,8 - 60 N.m
Speed:	40 - 1550 rpm
Connectivity	No or with PF6000 can report tightening OK/NOK status
Remote start	No
Number of tightening programs	1 – mechanical set clutch
Target parameters	Torque
Control parameters	No
Results memory	No

Features	Benefits
Brushless motor	Illumination of application (front LEDs)
High flexibility	Light and sound feedback to the operator
Fast set-up torque on shut-off clutch	Freedom to work without hoses or cables
Possibility to set the speed by Speed setting unit	Ergonomic and lightweight tools
Possibility to send signal OK/NOK (to PF6000)	

Where to use

Tightening screws on non-critical applications - missing screw or wrong tightening is affordable (for example no impact on safety, or function of final product).

MicroTorque

MicroTorque screwdriver range is the advanced and intelligent tightening solution for low torque applications. It excels in ergonomics, compactness and amount of functions designed for low torque applications.

Optimized tools and controller size to fit usual electronics assembly line. Equipped with remote communication standards for robotic or semi-automatic integration. Build with easy use in mind for maintenance crew and production engineers as well as operators.

Designed for production of mobile phones, electronics, medical devices and other fine and sensitive products with smallest screws.

Product portfolio



Fixtured current controlled



Handheld current controlled



Handheld transducerized



Main technical parameters:

Accuracy:	Current control +/- 7,5% according ISO5393 Transducer control +/- 5% according ISO5393
Torque Range:	0,01 N.m - 2,5 N.m
Speed:	0 - 2000 rpm possible change during operation
Connectivity	USB, Ethernet, Fieldbus, digital I/O
Remote start	Yes
Number of tightening programs	Standard 150 (or up to 999 for special robotic applications)
Target parameters	Torque, angle Dynamic strategies based on actual characteristic of respective joint – seating strategy
Control parameters	Torque, angle (rotation), speed, seating point
Results memory	100 000 results 1 000 graphs

Features

ESD & Clean room assembly certification
Push-To-Start, Trigger start & Remote start alternatives
Easy configuration software
Multi-step tightening
Simplified operator guidance / assembly process control
Smart tightening strategies (Seating control – Clamp torque assurance)
Errors detections (Bit slip, Damaged thread, Re-hit, ...)
Barcode & RFID readers for direct connection
Detailed data results stored in the controller
Real-time traces
TN8 compatible (reporting all results, identifiers and curves to server based data collection system)
Remote configuration via LAN
User rights for different access levels

Benefits

Error-proofing
Operators feedback & ergonomics
Traceability
Connectivity
Efficiency
Integration & Automation
Seating strategy

Seating strategy:

Tightening strategy developed to control clamping force instead of torque so it compensates and dynamically responds on variations in production and in material characteristics. Target is maximizing joint and product quality.

Where to use

Handheld and Fixtured low-torque applications up to 2,5 Nm
Applications with medium or high demands
Semi-automatic, Automatic and Robotic stations
Intended also for Quality and Safety critical joints
Typical for electronics products assembly (mobile phones, medical devices, automotive electronics components,...)
Tuned also for tightening in plastics and multi-stacks with different layers of material

PF6000

Key platform for Atlas Copco Assembly Solutions, The Power Focus 6000. Maximizing production uptime, enabling easy integration and changes, brings number of error-proofing solutions, provides multiple ways of new user interfaces and overall maximizing flexibility. PF6000 is key system platform for majority of operations.

The Power Focus 6000 is the perfect choice for most demanding application, safety critical assembly as well as any other joints where quality, productivity, ergonomics, repeatability and TCO are of critical importance. It comes in one single hardware version regardless of which tool model or functionality level is used. Its powerful industrial design gives a reliable process that will speed up your tightening operations.

Platform holds approvals of all key customers from Automotive, Aerospace, Trains, Electronics, Safety, Off-road and many other markets. Contact Atlas Copco to verify existing approval for specific application.



Product portfolio



Main technical parameters:

Accuracy:	3 types of accuracy classes: 2,5% according ISO5393; 5% according ISO5393; 7,5% according ISO5393
Torque Range:	Standard 0,3 Nm – 8000 Nm Customer specific 0,3 Nm to 40 000 Nm
Speed:	1 - 6000 possible change during operation
Connectivity	USB, Ethernet, Fieldbus, digital I/O
Remote start	Yes
Number of tightening programs	up to 600
Target parameters	Torque, angle, based on actual joint characteristics – seating strategy, external signal reach, yield strategies
Control parameters	Torque, angle (rotation), speed, seating point, yield point
Results memory	10 000 results 10 000 graphs

Features

Complex platform with widest tool base
Multiple tools wirelessly connected to 1 controller
IAM
Virtual stations concept
Software PLC
Industrial location guidance
Advanced strategies (Turbo tight, True angle, Yield)
Snug gradient – seating strategy
Multistep strategy
Full traceability

Benefits

One controller for all type of tools
Buy and pay the functionality you need
Easy future extension of functionality, just buy a license and apply to controller no need to buy additional HW or prepare cabling
Possible to transfer special functionality and license to another station [controller]
One controller can manage 1 cable tool and 5 wireless tools or 6 wireless tools
No ergonomic stress for operator- low reaction tools

Snug Gradient – Seating strategy:

Snug Gradient compensates for inconsistencies in hole sizes and subsequently the amount of torque required to set the screw. This feature is most commonly used when fastening into plastic, wood, or other components with high degree of variation in hole sizes. Reduces risk of stripped holes and not fully seated tightenings in inconsistent hole sizes. Reduces cost of recalls, reworks, scrapped material and quality issues and therefore reduces cost related to rework and scrapping.

Multi-tool Controller:

The Power Focus 6000 increases your flexibility in rebalancing assembly lines, helps you save floor space and reduce costs for cable installations. Atlas Copco's virtual stations concept allows you to connect several tools to one controller. Providing you an easy installation with less cables, hardware components and network drops. Reduce your power consumption, save floor space reduce your environmental footprint.

One Platform:

One platform for handheld, fixture or mechanical tools. The Power Focus 6000 reduces your inventory costs and training requirements. Easy to connect and configure back up tools, use same configuration interface. We are continuously launching further solutions compatible with this platform. Power Focus 6000 will be your common controller for all tools and needs.

TURBOTIGHT®:

TurboTight® enables the tool absorb the reaction force and significantly improves ergonomics for the operator. Shorten cycle times and at the same time improves flexibility. Less hardware means less maintenance.

IAM:

Virtual stations, software, tightening data and configuration – all in one place. IAM module with two software areas for smart software management. Allowing a safer upgrade process, always giving the possibility to switch between two software versions.

TRUEANGLE®:

TrueAngle® uses a gyroscope signal from tool to detect operator movements, increasing the accuracy of your angle readings. Enabling handheld angle controlled tightening's while removing operator influence. 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.

Yield:

In normal torque controlled applications the tool is designed to be shut off in the elastic zone of the screw. Yield gives enough accuracy having the tool to be shut-off in the plastic zone. The plastic zone starts when the gradient starts to decrease. This makes it possible to apply higher clamp forces and with that reduce screw dimensions, reduce friction problems in screws, and therefore reduces cost related to rework and scrapping.

Where to use

Robotic, semi-automatic or fully automatic stations with 1 spindle
All handheld operation where is quality, productivity, reliability and ergonomics are important
All operations where it is necessary to have full traceability

PM4000+QST

The PowerMACS 4000 gets your production line in the fast lane, and keep it there. PowerMACS 4000 supports a zero-fault production philosophy with its capacity to collect tightening data for analysis, continuous improvement and traceability. Enables work with single transducer or dual transducer tools. Primarily designed for fully automated stations with robust set of features. PMACS4000 also integrates functions for advanced synchronization of multiple spindles.

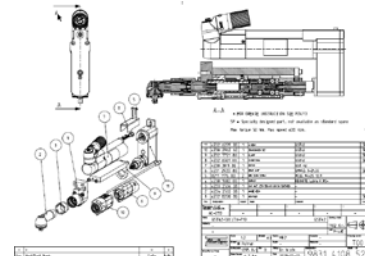
Product portfolio



Straight



Angle



Special

Main technical parameters:

Accuracy:	+/- 2,5% according ISO5393
Torque Range:	Standard 2 – 8000 Nm Customer 2 – 40 000 Nm
Speed:	0 - 3000 rpm
Connectivity	Ethernet, Fieldbus, digital I/O
Remote start	Yes
Number of tightening programs	Up to 600
Target parameters	Torque, angle, based on actual parameters – seating strategy, yield point, multi spindle synchro
Control parameters	Torque, angle (rotation), speed, seating point, yield point
Results memory	10 000 results 10 000 graphs
Extras	QST ~ maintenance interval 1 Million cycles

Features

Integrated software PLC
Modular plug-and-play system
DynaTork™ – Unique torque recovering strategy patented by Atlas Copco. Delivers optimized fastening through improved clamp loading

Where to use

Multispindle application
Fixture application which are integrated in machine
Robotics, semi-automatic or fully automatic applications.

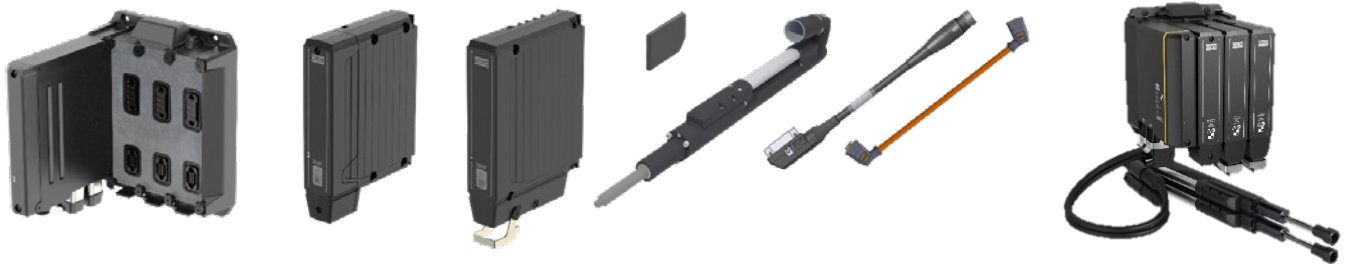
Benefits

Synchronization of multiple spindles used together
Service interval 1 000 000 cycles
Integrated repair management strategy
System does not require cabinet therefore it saves floor space
Integrated Software PLC – save external PLC on some applications
Low maintenance, long lifetime, superb durability
Reduce downtimes through automatic repair management

Flex system

New tightening system build on same configuration interface with PF6000 for maximum commonality and standardization. Enables new ideas about layout of tightening stations. Compact solution can be mounted directly on robot arm or directly on movement axis where are mounted also tightening spindles (small, lightweight, compact and durable units). This new system support also new standards like Profisafe function. As standard functionality of this system is also automatic repair management system if something with tightening goes wrong.

Product portfolio



3 or 6 Rack system

Main technical parameters:

Accuracy:	+/- 2,5% according ISO5393
Torque Range:	2 - 1000 Nm
Speed:	0 - 3000 rpm
Connectivity	Ethernet, Fieldbus, digital I/O
Remote start	Yes
Number of tightening programs	Up to 600
Target parameters	Torque, angle, based on actual parameters – seating strategy
Control parameters	Torque, angle (rotation), speed, seating point
Results memory	No

Features

- Flexible integration possibilities
- Basic configuration via browser
- Maintenance/ Troubleshooting easily performed, easy to replace
- Integrated software PLC
- Compact solution can be mounted on robot head
- Easy and intuitive programing
- Simple automatic repair management

Benefits

- Less cable stress – no cable tray with long cable and complex installations
- Increased uptime
- Facilitated serviceability
- Possible to create compact assembly station no need cabinet can be mounted anywhere

Where to use

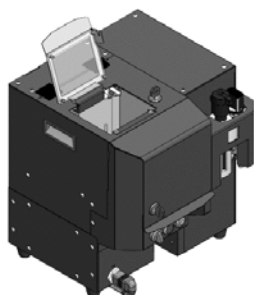
Fixed applications where robot carries both controller and spindles. Fully automated and semi-automated assembly stations. Multi-spindle applications.

Screw-feeding system

Complete screw-feeding solution for automatic or handheld assembly process. Automatic system is available with market proven controller PowerMacs 4000 with QST fixture tool or Microtorque for small screws. This system is delivers complete solution including integrated PLC as standard solution. Optionally available more quality build features for error-proofing and process control like measurement of bolt length, hoper, vacuum nozzle.

Screwfeeding system for handheld applications use modified ES or SL tools with new controller PowerFocus6000.

Handheld system



Step feeder



Controller



Tightening module

Inline



Pistol grip



Technical parameters:

Maximum diameter of thread	3 – 6 mm
Torque capacity	0,3 - 10 N.m
Min cycle time	1,1 sec
Hopper	Optional
Feeder with integrated PLC	Included
Versions	Inline, Pistol grip

Features

Next screw is feeded, while tightening the first one
Quick change function for bit adaptor change
Fast remove of screw from jaws without tools if it is necessary
PLC for feeding process included
No special tools needed for maintenance
Delivery time 6-8 weeks

Benefits

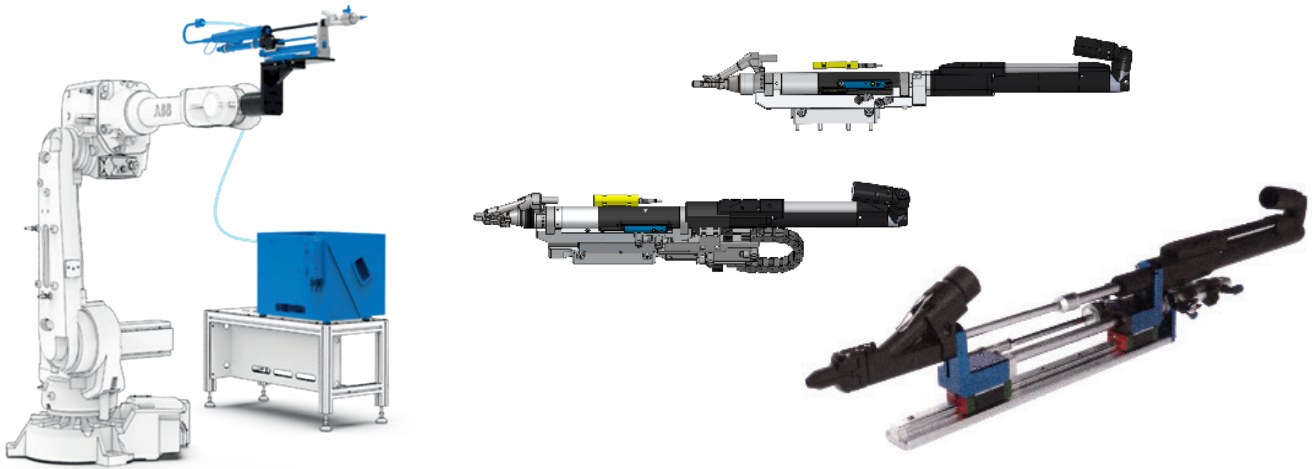
Fast cycle time
Low maintenance costs
Full PF6000 functionality
No special tools for maintenance
Easy and fast installation and set up
Fast delivery

Where to use

Handheld applications with operator

Screw-feeding system

Automatic system



Technical parameters:

Maximum diameter of thread	24 mm
Torque capacity	0,2 - 150 N.m
Capacity of feeder	0,5 - 3 liter
Feeding tact	1 - 5 sec/operation
Hopper	Optional
Measurement of bolt length	Optional
Vacuum for hard to reach place	Optional
Air valve bridge	Included
PLC for operation control	Included
Automatic torque self-diagnostic procedure	Included

Features

All directions
Long time service period
Possibility to check dimension of screw before feeding – Option
Fast change of bits without tool
Fast remove of screw from jaws without tools if it is necessary
PLC for feeding process included
Perfect access to cramped spaces – slim design of jaws
No special tools needed for maintenance
Delivery time 12-14 weeks

Benefits

Low maintenance costs
Saving time due to no need for programing PLC
No special tools for maintenance
Easy and fast maintenance
Fast delivery

Where to use

Automatic or semiautomatic stations with required fast assembly process
In connection with robot can substitute human tightening operation

Manual tightening – MWR Wrench

Mechanical click wrench with wireless connectivity. Available in version with torque transducer and angle encoder to report “click” as well as torque values and angle of rotation.

Combining the productivity of a click wrench with the traceability of an electronic tool. The online results provide a traceability of the tightening process.

Product portfolio



MWR wrench



Focus 61 controller

Main technical parameters:

Accuracy:	Torque measurement accuracy: $\pm 2\%$
Torque Range:	5 - 300 Nm
Speed:	-
Connectivity	Ethernet
Remote start	No
Number of tightening programs	1 program in one wrench
Target parameters	Torque, Angle
Control parameters	Torque, Angle
Results memory	8100 results

Features	Benefits
Two options: MWR-S: Production wrench with wireless Signal transmission MWR-TA: Production wrench with Torque and Angle control Click wrench with transducer and gyroscope Connectivity of up to 10 wrenches per 1 controller Connectivity with controller PF6000	Low weight Easy setting High level of error-proofing Compact dimensions Traceability of manual operation

Where to use

Low volume production where is necessary store data and traceability. Places hard to reach. Anywhere where traceability and process control are needed.

Manual tightening – ST Wrench

ST Wrench is digital torque wrench with modular design, you can build the STwrench to meet your exact requirements. Best tool for tightening applications requiring high accuracy and traceability, or as universal back-up tool or for quality check applications.

Product portfolio



ST wrench

Main technical parameters:

Accuracy:	± 0,5%
Torque Range:	3 – 1000Nm (different SmartHead types)
Speed:	-
Connectivity	WiFi, Ethernet
Remote start	-
Number of tightening programs	200 Programs
Target parameters	Torque, angle
Control parameters	Torque, angle
Results memory	5000 results / 10 trace

Features

TAG recognition: Using RFID technology, Up to 255 tags, automatic selection of program or calibration values depending on used TAG
Universality – one wrench for different tightening programs
Torque range changed by SmartHead
3 battery types to 2 body materials to optimize ergonomics, stand-by time and durability

Benefits

Lightweight tool
Long operation time of 8hours and more
Full traceability
Save working place – 5S concept
One tool for many different applications

Where to use

For application where is necessary to use more tightening torque program
Rather low production volume
Safety critical joints where is necessary full traceability and data storage
Quality check applications
As universal back-up tool
As Universal production tool for accurate and traceable tightening on different products

Airline infrastructure

Atlas Copco's airline infrastructure products and accessories ensure that you have airline installation for your tool for maximum power, best service life, best ergonomics, safety and lowest operational costs. Products deliver best airflow characteristics helping you reach the correct torque in torque-controlled tools and maximize the productivity with maximum power of the tool.

Product portfolio



Air Preparation Unit



Unit with Hose



Hose Reels



Swivel



Couplings



Blow Guns

Features

Air Preparation Units (Filter, regulator, lubricator) 1/4", 3/8", 1/2", 1"

Hose Reels with hose length 8-30m and hose inside ø 8-25mm

Quick Couplings with economical air flow up to 63 l/s, 16 bar, Temperature -20°C to +100°C

Swivel Connectors 1/8", 1/4", 3/8", 1/2" with double Rotates 360° rotates

Hoses ø 6-25mm with low weight, ESD, or Grinding and welding spatter resistance, high mechanical durability, up to superb hoses with Kevlar fibers

Blow Gun with high flow capacity, Plastic body and Air inlet thread in brass

Benefits

Safe working environment

Minimize the service requirements of the tools

Reduce energy costs accessories are made of the highest quality materials for long production cycles

Silicon-free components for automotive

Designed and optimized for AC pneumatic tools

Where to use

Every time when pneumatic tool is used

Torque arms – standard solution

Torque Arm absorb reaction force to deliver best ergonomics and safety in tightening operations by. There is a wide range of tool holders; universal holder, specific diameter holders, spline holders, swiveling holder, mounting plates with spine or hole, pistol tool holders or angle tool holders. There are available arms with encoders for sequence tracking applications or positioning. There telescopic linear motion arms, rotating linear arms or rotating swiveling arms etc.

Product portfolio



SMC



SMC-TT



SMS T / SML T



SML MK II



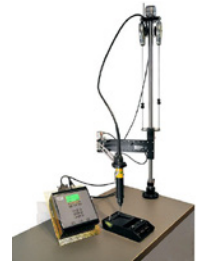
SMF ARM



GHP



AX1



TPS

Main technical parameters:

Capacity range:	Vary per type, in general up to 1000 Nm
Arms for positioning systems	Yes - Batch count together with OK/NOK on position
Connectivity with positioning control	Either separate controller (TPS) or direct connection to PF6000

Features

SMC telescopic carbon arm
 SML T/ SMS T ARM linear arms
 SML MK II linear arms for High torque capacity
 SMF arm with space saving design
 GHP arm for micro torque range
 AX1 articulated arm
 TPS – Tool Positioning System with linear or carbon telescopic arms
 TPS: Up to 50 jobs and up to 500 positions, OK/NOK signal on position, ESD approved

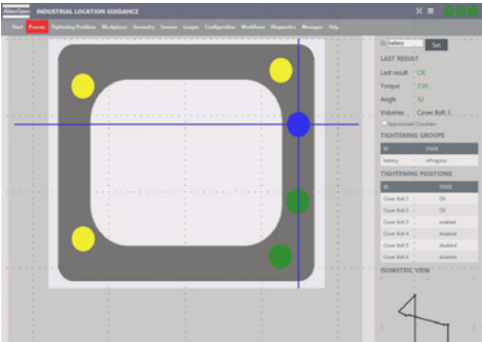
Benefits

Improves finished product quality with all torque absorbed in the joint and no movement of tool
 Light weight and smooth movements for operator comfort (best ergonomics and safety)
 Highest level of error proofing system in tightening with Tool positioning recognition system
 Robust construction for long life and no force transferred to operator
 Balancer included to remove the tool weight

Where to use

Everywhere where are requirements for decrease the force from the tool and prevent the ergonomics stress for operator
 For application where is tightening sequence important
 To ensure highest possible accuracy of the clamp force a torque arm should be used to prevent movement of the tool
 If different joints require different tightening process
 Improve ergonomics of any table of stationary application

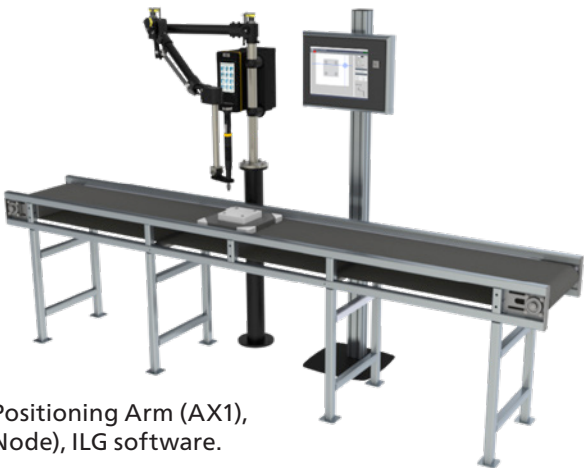
Industrial Location Guidance - ILG



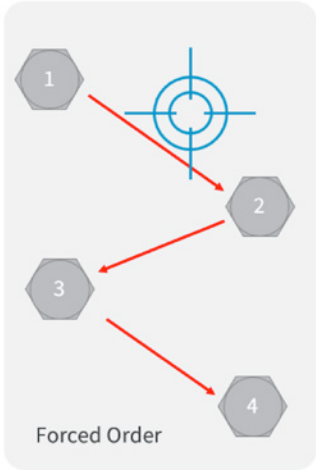
The Atlas Copco's Industrial Location Guidance (ILG) is an integrated, stand-alone error proofing software that offers high-level process security for applications ranging from simple to complex. ILG tracks the exact location of the tool relative to the fastening position, ensuring the correct fasteners are tightened to specification, in the proper sequence.

Comprised of ILG software, positioning hardware and tightening controller, the system combines the functionality of a tightening system with position and process control.

Typical applications for ILG include: low-volume, high-value component assembly, repairs stations and flexible assembly cells.



Example station: Positioning Arm (AX1), Industrial PC (AC Node), ILG software.



Main technical parameters:

ILG	Software solution
PF6K	Embedded license available via FMS
Industrial PC	Special license
SQS	Compatible
Arms compatibility	All Atlas Copco arms (AX1, SMS, SMC)

Features

- Monitors the location of the tool in the working area
- Guides the operator through the correct work sequence
- Automatically selects the tightening parameters for the current position
- Ensures the correct fasteners are tightened to specification
- Unique P-Set selection for each position for full traceability

Benefits

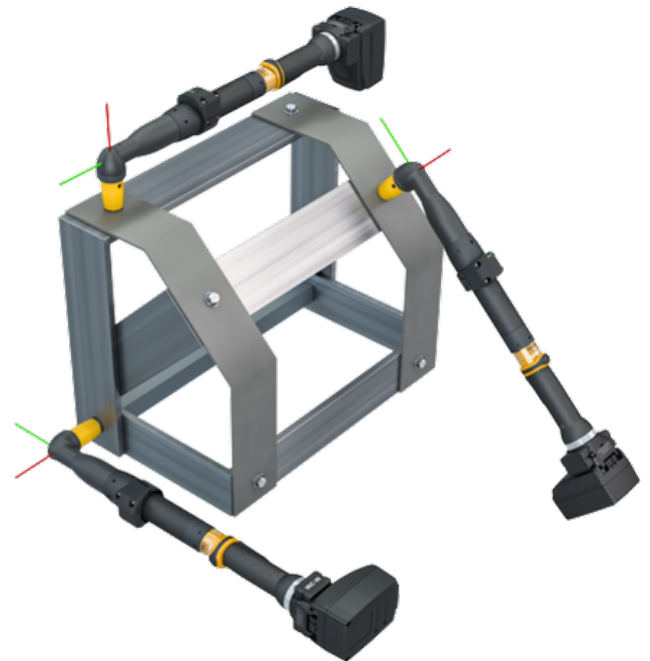
- Ensures consistent production quality through process security regardless of operator
- Provides tightening data based on location
- Provides assembly traceability
- Reduces the need for additional quality checks later
- Balancer included to remove the tool weight

Where to use

- Everywhere where positioning is needed
- Everywhere where you need to have traceability up to the join level

Industrial Location Tethering – ILT

Ensures you that your wireless tools only operate within the right area.



Features

Wireless tool distance measurement based on ultra wideband (UWB) radio technology with a minimum precision of 50 cm

Tool orientation detection in two axes for joint differentiation

Simple configuration using the integrated touch display
Communication via Open Protocol to Power Focus 6000 controllers

Benefits

Your tools will only work where you want them to. Make sure wireless tools are used within the correct station by disabling them if they are outside the set working range.

Control the orientation of the tool. Make sure that the correct bolt is tightened using the orientation detection functionality.

You will have total control of settings and applications. The correct tightening program will automatically be selected based on the tool's position or orientation.

What wireless tethering can do for you

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Global project solution

Atlas Copco is manufacturing also unique subcomponents for integrators and design companies. These components, systems and products are customized low volume items based on individual customer needs. Purpose is easy, reliable and cost efficient integration in complete machine.

Values of Global Projects solutions:

- Common global project process to ensure Right First Time Quality on Time for local and global customers
- Interactive customer experience - online access to project information
- Professional customer buy-off ensure right quality/ solution first time
- Reduced customer start-up time
- Eliminate potential rework costs in the field
- Meet planned SOP
- Fulfill local and special customer certifications

We are focus on:

- Single and multi-spindle tightening systems
- Assembly press workstations
- Gauging applications
- Suspension systems
- IT solutions for data management
- Customer protocol adapters
- Articulated arms with position recognition
- Application consultancy and support



Information and know-how

- Knowledge about international and customer standards
- Global sharing of references and use cases
- Technical knowledge about customer processes and needs
- Consultant and competent partner for production processes
- Global quality team ensures high quality standards
- Same quality standards globally

Modification and standards

- Customization of Atlas Copco standard solutions
- Flexibility towards integrators and final customers
- Globally available engineered standard products (HW/SW) that fill gap between standard catalogue product and customer requirements
- Local project teams allow us to customize solutions to local customer requirements

Tightening multiples



Features

- Base plate custom designed per application
- Adjustable handle mounting components
- Solution rotate handle
- Suspension mounting components with center of gravity adjustment
- Cable management

Benefits

- Fully customizable for process optimization
- Superior operator ergonomics
- Excellent maintenance accessibility
- Improved operator view of part
- Decrease design time
- Long time experience

Torque arms – customized solution



Features

- Lightweight, compact design
- 335 degree rotation at pillar
- Extensive vertical travel
- Parking block for parking and maintenance
- Integrated cable management
- Optional lift assist type: pneumatic or gas shock
- Standard range of tool holders and accessories
- Position Recognition System (PRS) adaptable
- Adjustable limit switch accessories, easily adaptable
- Tightening torque Up to 2000N.m

Benefits

- Low-operating forces and smooth, comfortable handling
- Reduced operator fatigue and increased productivity
- Large working area for operator
- Apply torque in multiple tightening orientations
- Low maintenance for increased productivity

Reaction Suspension System - HTS

Hand Tool Torque Reaction Suspension, designed specifically for hand tool applications, reacts the torque generated by a tool – eliminating the impact to the operator.

Features

Linear motion that provides vertical travel for positioning and torque reaction of the tool

Torque can be applied in either a horizontal or vertical tightening orientation

Equipped with a WP Balancer, the system provides a lift assist for the operator

The balancer can be set to hold at a balanced position along the vertical travel or set to raise to the upper travel position.

Benefits

Reduces operator fatigue

Lightweight and smooth movement for ease of handling

Low handling forces for improved ergonomics

Easy to assemble, maintain and adapt for various tools



Options

Reaction Suspension System - HTS was developed with versatility in mind. Key components of the system can be configured to suit the needs of each specific application. These components are interchangeable and can be reconfigured as required to suit evolving application requirements.



Balancers



Extension Tubes



Trolley Carriages



Tool holders

Press system

Electric servo-press spindle system delivers high productivity and full commonality. It is easy to use and maintain. The compactness and operating speed will have your pressing operations run smooth, fast, safe and accurate with minimum maintenance time and maximum easy integration.

Product portfolio



PST press spindle



PST straight

Main technical parameters:

Accuracy:	+/- 1%
Force range:	1-100kN
Speed:	Up to 500mm/s
Connectivity	Ethernet, fieldbus, digital I/O
Repeatability	0,05mm
Number of pressing programs	50
Target parameters	Force, position, stroke
Control parameters	Force, speed, stroke
Results memory	100 results and curve Ability report to TN8 (server system)

Features

Compact design with best-in-class planetary roller screw
Load cell on outgoing shaft
Mechanical gear unit
Cable length up to 60m

Benefits

Full, high speed acceleration and deceleration control
Accurate and precise load readings
Service interval 1 million cycles
Commonality with QST, same configuration interface as other AC systems

Where to use

Powertrain applications (PWT)
High quality pressing operation requested
Combined QST + PST applications
Applications with highest requirements on repeatability, productivity and quality of pressing

Pneumatic motors

Comprehensive range of standard air motors to meet customer requirements and cost-effective solution when applying power to rotating machines. Consider the air motor features and characteristics giving large benefits to the designer.

Product portfolio



LZB



LZL



PZB



TZB

Main technical parameters:

Power:	0,04-6,5 KW
Speed:	5-21 000rpm
certification:	ATEX Ex II G
Lubrication:	No

Features

- Clockwise, anti-clockwise, Reversible
- Threaded/keyed shaft
- Lubrication free
- Brake models
- Stainless steel
- Long and slim
- ATEX version
- Easy power adjustment (pressure change or throttling)
- Approved version for food and pharma
- Design without springs – long service life

Benefits

- Custom design available on request
- ATEX certification

Where to use

- Transportation
- Oil & Gas
- Chemical & Phrama aplications
- Food processing applications
- Explosive environments
- Where is rotation motion needed and easy and cost effective integration is welcomed

Drills

The handheld drills are of the highest quality and built to provide consistent reliability and performance in a wide range of applications. Their advanced ergonomic designs make your job easier, safer and more efficient.

Product portfolio



LBB -pistol



LBB - straight



LBD16 – modular

Features

- LBB straight and pistol models
- LBV angle models
- LBD modular head straight handle
- LBP modular head pistol models
- Angle Heads 0°, 30°, 45°, 90°, 360°
- Speed 300-26000rpm
- Power up to 820W
- Chuck capacity 0.1 – 16mm
- Collets capacity 1 - 6,6mm
- Lubrication-free
- Dust extraction attachments available

Benefits

- Adjustable air exhaust
- High power to weight ratio
- Directed away from the operator

Where to use

- Aerospace industry
- Everywhere where are requirements for a safer and cleaner working environment
- In confined space
- Hole accuracy is crucial

Grinders

Power tools designed for maximum performance and high productivity!

Product portfolio



GTG Turbo grinders and sanders



Vane grinders and sanders



Die grinders

Features & Benefits

- Best power to weight ratio
- Lowest vibration levels
- Best operator ergonomics
- Long service intervals
- Lubrication free motors
- Power up to 4.5 kW
- Number of patented features for maximum productivity, ergonomics and safety

Where to use

- Foundries
- Mining
- Rail
- Wind energy
- Shipyards
- Steel construction
- Aerospace

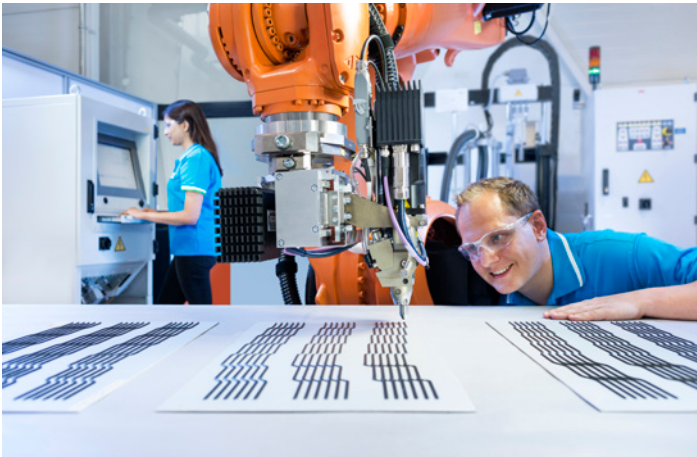
Hybrid joining technologies

New materials like aluminum, magnesium, carbon fibers and others together with increasing importance of lower weight of the cars require new ways of joining material compared to traditional welding.

Dispensing systems

Dispensing systems for fluid materials such as glues, sealers, cements, fillers and similar are usually used for joining parts from different materials. It is used for sealing gaps on car body after spot welding for water isolation and sound damping. On glass-bonding applications to the body or we find these applications on powertrain where fluid sealers are applied.

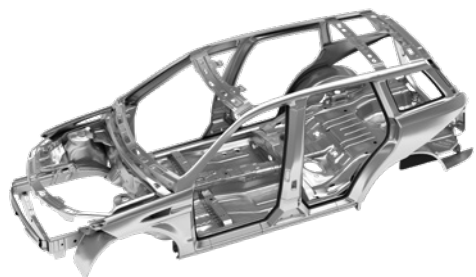
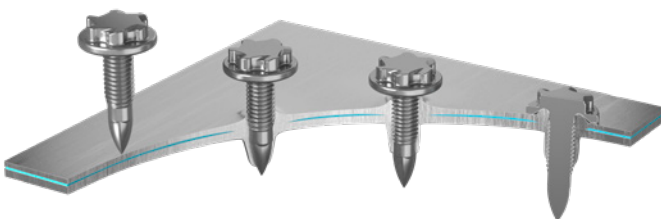
We provide complete system typically for robotic or automatic stations consisting of pumps, control system, hoses, nozzles, dozers up to camera systems assuring automatic quality control.



Flowdrill

A main advantage of flow drill fastening is that only one-sided access is required. Used mainly in body shop applications in the automotive industry, the technique utilizes a fastener as both drill and joining element – an efficient and flexible joining technology.

Applications without pre-hole, fully automated solution typically with robots. Make the hole and tighten the join in single step.



The four main stages in the flow drill fastening process

1. HEATING

The fastener is positioned on the workpiece and rotated at highspeed. This heat up the material.

2. PENETRATION

With high rotation speed (up to 9000 rpm) and high process force (up to 3000 N), the fastener is pushed through the materials.

3. THREAD FORMING

With reduced speed and process force, the fastener drives through the material and forms a thread without cutting.

4. TIGHTENING

The fastener is tightened with the required final torque.

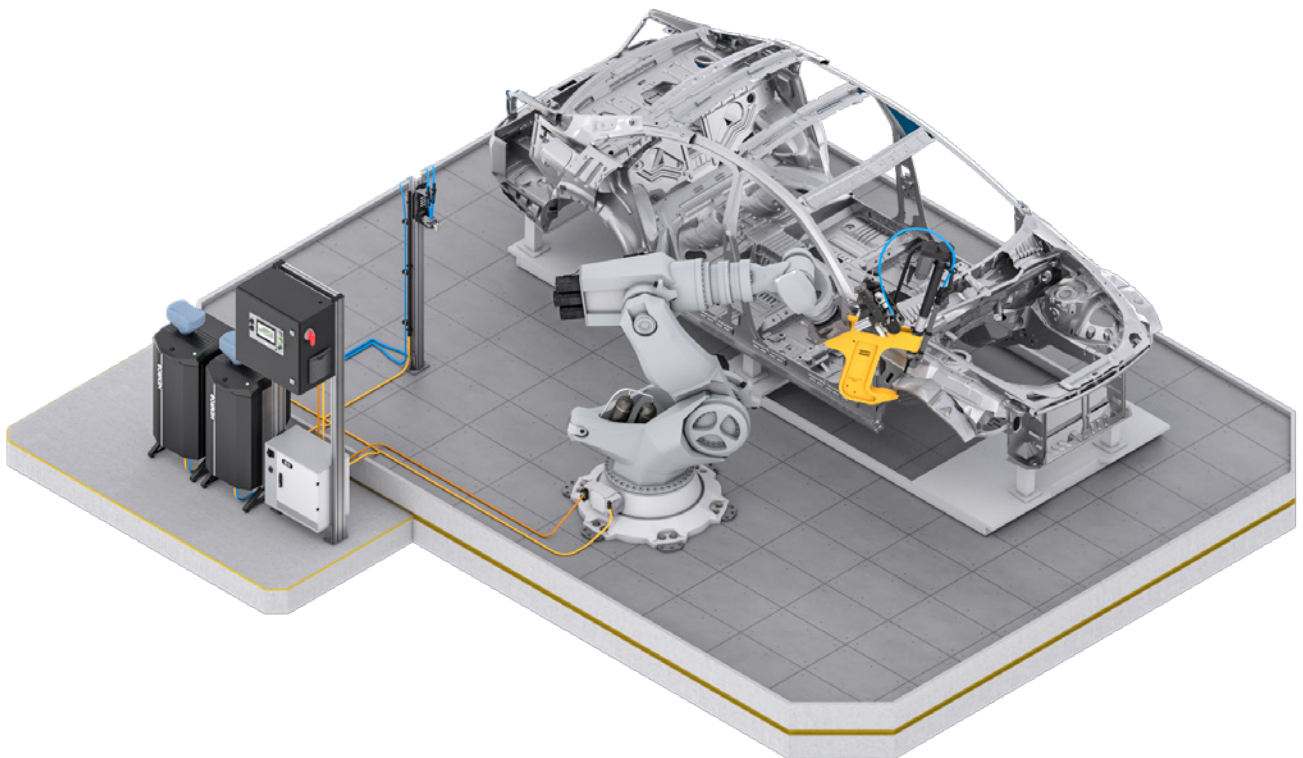
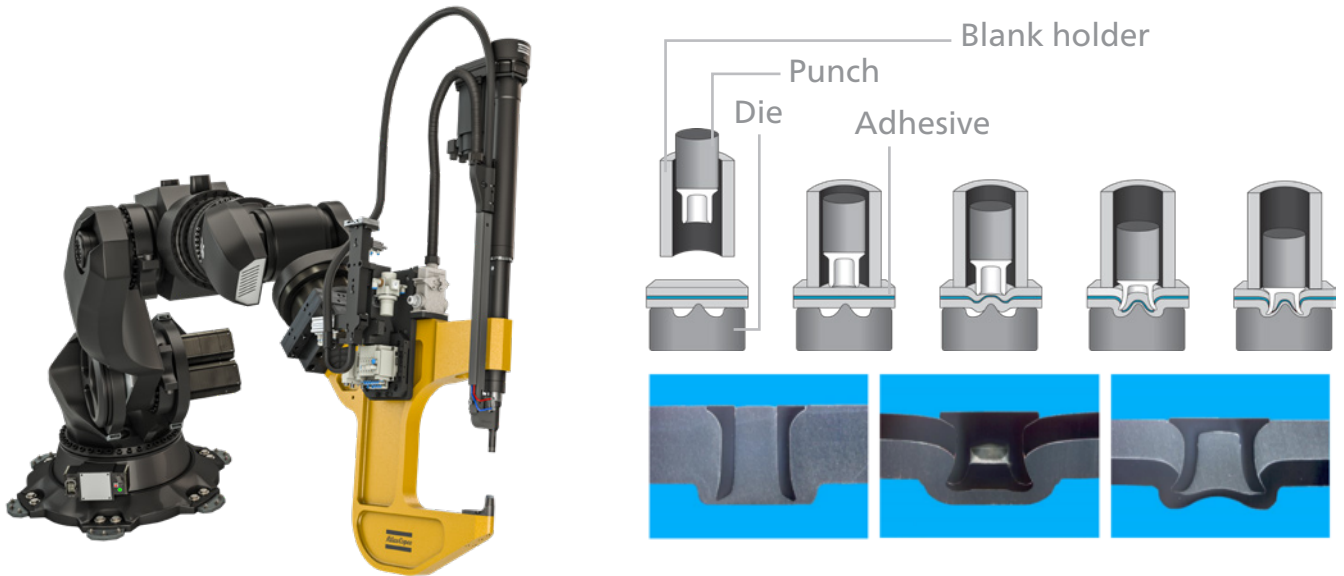


Hybrid joining technologies

Self-pierce riveting

This innovative joining technology using Henrob rivet setters and rivets offers the unique capability to fasten aluminum and other materials quickly and reliably with strong, secure, self-sealed joints. Replacing pre-drilling or pre-punching holes and spot welding, this technology ensures a cleaner manufacturing environment.

We provide advanced self-pierce riveting systems that can join a variety of materials, including thin sheet high-strength steel, aluminum, plastic and composites. When it comes to applications that require an adhesive joining method, self-pierce riveting adds the benefit of ensuring a secure joint while giving the adhesive time to cure and form a tight bond.



Software & Industry 4.0

SQS 3

Process control solution compatible with Atlas Copco environment.

Ready to use, modular, easy configuration. Customizable solution according final Customer needs. Scalable Solution. Handles identifiers, operator guidance, communication with tools, reporting and communication with others systems, pick-to-light solution, industrial HMIs, operator identification, reject and rework management.

Full process control Plug&Play globally established at most respected customers.



Features

Available within 24 hours
Scalable (buy only what You need)
From single station up to full production
No server requirement (up to 10 stations)
Simple installation, intuitive configuration
Built in Data repository
Advance product identification handling
Possible to replace PLC
Operator identification
Part verification and documentation
Tool interlock, Pset triggering / data collecting
I/O handling, Printer integration
Rework station integration (based on previous stations data)
Easy integration of tool position tracking system (ILG)
MES Connectivity
SQS3 is able to easily communicate with higher-level planning systems such as MES
Connections to MES are made through a new Data Bridge component of SQS3. This component hosts an API for MES connections



Benefits

Simple installation and quick delivery
30 days demo license available
Easy to extend solution
Low IT investment because no server required
Local or server process data collection to keep tracking all the time
Filter out operators based on data for further development
Because of I/O for easy tasks PLC not necessary
Control position of the screwdriver by operators (right screw right time with right torque)
Not necessary to have deep knowledge of PLC programming in case of I/O handling
Guide operator through entire assembly process, enable tools when it's needed only
Based on assembly data rework station will be automatically triggered in case of any error

Where to use

Where process control adds value, especially when HMI-operator interaction increases productivity and quality
Where process data documentation and traceability is required

ToolsNet 8 rework option — Facts and Benefits

TN8 as data collector drives rework process for product repair

Target is complete electronic card of the product (production as well as repair operations are 100% documented)

SQS3 Operator guidance software drives worker via assigned tasks based on TN8 data

Software & Industry 4.0

Tools Net8

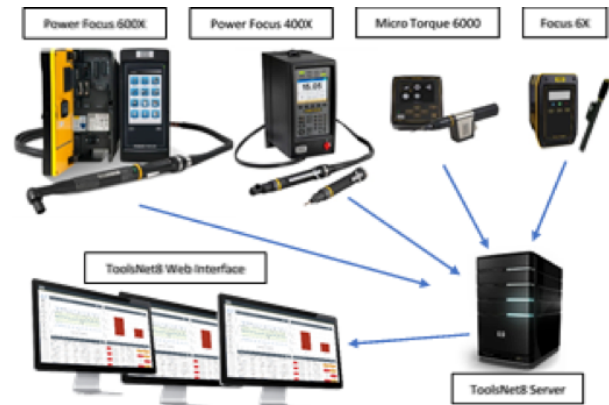
ToolsNet8 (TN8) - Optimal solution for data collection and automatic process analysis. Optimization of maintenance tasks and quality analysis, easy troubleshooting.

Features

Tightening curve storing and analysis
Programmable automatic SMS / e-mail notification in case of errors, events, process changes
Automatic schedule reporting
Automatic Cp/Cpk calculation
Advance Box analysis
Tool overview with maintenance data
Connectivity with Atlas Copco Quality Systems for automatic tool-check process triggering

Where to use

Every production where Atlas Copco tools are located



Benefits

Easy and quick production data analysis
Forget excel and enjoy automatic analysis
SPC supporting, get to know in advance about possible problems
"What if limit like this" option
Instant notification helps to get information about

- Tools and station events
- Trend moving, NOT ok ration and lot more
- Program changes (Pset) tracking

Tools Talk 2

ToolsTalk 2 (TT2) – Power Focus 6000 advance configuration software.

Features

User administration
Curve analysis
Event logs
Tree structure of controllers
Global programming of Psets
Offline programming
Pset history
Access rights for users
Avoiding unauthorized changes in configuration of tools

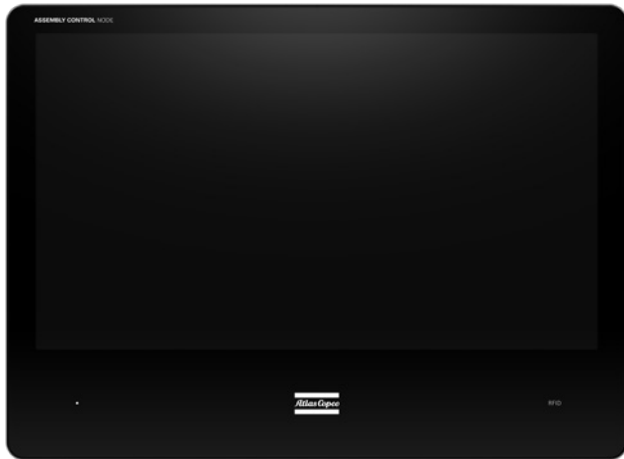
Benefits

Complete overview of controllers in network, best transparency
Global programming of Psets – time saving on production start-up
Remote configuration for PF6000 systems
Possible to lock PF6000 and allow only modification of Pset in case of right user enter to the system
Prepare configuration in advance without Power Focus 6000
Quick return to any previous version of Psets

Where to use

All customers with PF6000 connected to network
If configuration of communication via Profinet, Profi Bus, DeviceNet, etc.
If customer uses Software PLC on PF6000

Industrial PC



Features

4 different version available
Built in RFID reader
WiFi, Bluetooth, 4x LAN, 3x RS232, 8x Digital IO, 4 USB, HDMI, Display port
IP 65, Screen resistance 20 Joule
RAID options
Passive cooling

Benefits

4 different version provide optimal performance for needs
Wide connectivity options
Build in DIO helps to avoid external connectors (BUS)
Modular design gives quick changes and repairs
RAID provide SSD mirroring to avoid data loss
Easy to install
Highest version could fit as line server (i7-7700 up to 4.2 GHz, 16Gb RAM optional 32 Gb, 512 Gb SSD)

Where to use

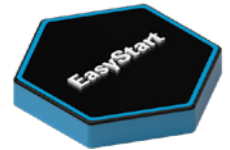
- Fits for clean or dusty environment, because of passive cooling and IP65
- In case of work instruction running on the lines ACNode could be excellent solution
- In case of SQS offer we recommend to use ACNode

Service

Service solutions help customers maximize value of industrial equipment. Combination of analysis of production data with know-how and expertise to enhance your productivity and quality. Maximizing uptime and increasing Operation Excellence keeps your cost under control. Our service offering consists of various services and option.

EasyStart

Service package for a trouble-free start of production. Available for majority of Atlas Copco products and SW.



Features

Installation and setting of the tool
Laboratory Tool Calibration
Residual Torque Check (5x)
Run-off for max 1 hour
Operator training (intro of the tool, how to manipulate with the tool, basic description of the controller - screen, basic manipulation)
EasyStart report signed by the customer and technician

Benefits

Reduced start-up times and costs
World-wide standardized and certified process
Proof of machine capability

Calibration

The efficient way to control quality.



Features

Core competence in calibration of Torque, Rotation Angle and Force
Calibration laboratory in Prague is certified by the Czech Accreditation Body (CAI)
Upon request is calibration available on site at customer's facility
Accredited calibrations according to CAI and standard calibrations are carried out according to:
EN ISO/IEC 17025:2017, EURAMET cg - 14 + EA 4/02, according EN/ISO 6789 + ISO 5393 + EA 4/02.

Benefits

Assurance of quality requirements for process-safe assembly
Reduction of incorrect tightening
Compliance with processes mandatory in product liability cases and audits
Proof of traceability to the national standard (CAI)

Tightening services

Accelerate your business sustainable growth by shortening time to market, Accelerate your business sustainable growth by shortening time to market, increasing your productivity and first time quality in a timely efficient manner.



Tightening Optimization — Stabilize your tightening process

Features

Result data evaluation (min 500 tightenings on regular production)
Traces collection and evaluation (= advanced monitoring options)
Setup and monitoring limitations - proposal
Advanced strategies setup - snug gradient, Yield point, Gradient monitoring

Benefits

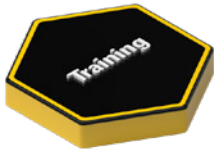
Improved joint quality
Increased productivity
Reduced reworks, warranty and recall costs
Reduced risk of liability claim and damage to reputation

Joint Analyses — Minimize the risk of Joint failure

Features	Benefits
Friction analysis at the bolted connection Analysis of failure limits, clamping force, torque and relaxation behavior Determination of the optimal tightening process	Reduction of recall, warranty and rework costs Process reliability: Definition of process limits Guideline-compliant solutions for problematic joints

Trainings

More quality and productivity with expertise.



Features & Benefits

- Competence in tightening techniques as well as standards and guidelines
- Awareness-raising workshops
- Categorization workshops (joint classification)
- Avoidance of operator-induced tool failures
- Increased sensitivity to quality-related concerns
- Safety and know-how in tightening technique
- Safe and correct use of tightening systems and measuring equipment in production
- Providing understanding of the equipment and its use as well as the processes, thus reducing tool misuse and improving quality and productivity


Dimensional drawings and 3D models of products

[illegible]

Available at: <https://webbox.atlascopco.com/webbox/dimdrw/>

You can download dimensional drawings in PDF or 3D models.

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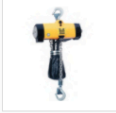
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Welcome Start page




Air Hoists



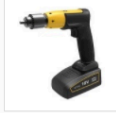
Air Line Infrastructure




Air Motors




Battery Assembly Tools




Battery Drills




Controllers Power Supplies and HMI




Drills




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Fixtured Systems




Grinders



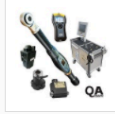
Hydraulic Tools




Percussive Tools




Pneumatic Assembly Tools




Quality Assurance




Software



Trolleys



Uncategorized



Workplace Solutions

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Available at: <https://servaid.atlascopco.com/AssertWeb/en-US/AtlasCopco/Catalogue/1>

Portal where you can find following information:

- 1) Product Data (weights, vibrations, noise, compliance with standards and many others)
- 2) Accessories compatible with tool
- 3) Spare Parts and Exploded views
- 4) Service Kits
- 5) Service Tools
- 6) Safety Instructions
- 7) Production Information
- 8) EC Declarations of Conformity





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