

# Tensor Electric Assembly Tools

Tighten up on error proofing and productivity



*Sustainable Productivity*



**A**tlas Copco is already the acknowledged global leader in industrial power tools. Our tools are powerful, smart, cost-efficient, reliable and ergonomic to use. But the real reason is even simpler: we see tools as system-critical components in the overall assembly process.

Modern industrial assembly plants are complex integrated systems: each component and unit must be optimized for quality, efficiency and safety. Full system integration is the key to efficient production. Our intelligent multifunctional tools and interactive software ensure error-proof support for minimum downtime and maximum productivity.



# Right first time...

Tensor assembly tools are the complete solution to the high-quality industrial assembly of threaded fasteners. Fully integrated control and visualization systems ensure consistent accuracy, reliability and quality. And Tensor tooling even resolves many 'human factor' issues.

- Error proofing – in-built intelligent error monitoring functions – to eliminate operator error, avoiding incorrectly tightened or missing screws.
- Advanced ergonomic design, for complete, quiet, well-balanced tools that reduce operator strain and enhance productivity.
- Ingenious Tensor technology and software, for high accuracy on all joint types combined with the fastest cycle times to boost productivity.
- Legendary dependability – our tools just keep on going. And, in the unlikely event that a problem arises, our global support network is there for you – round the clock.

**Now you know it's right – first time.**





# Tensor electric assembly tools

## **Tensor assembly plant**

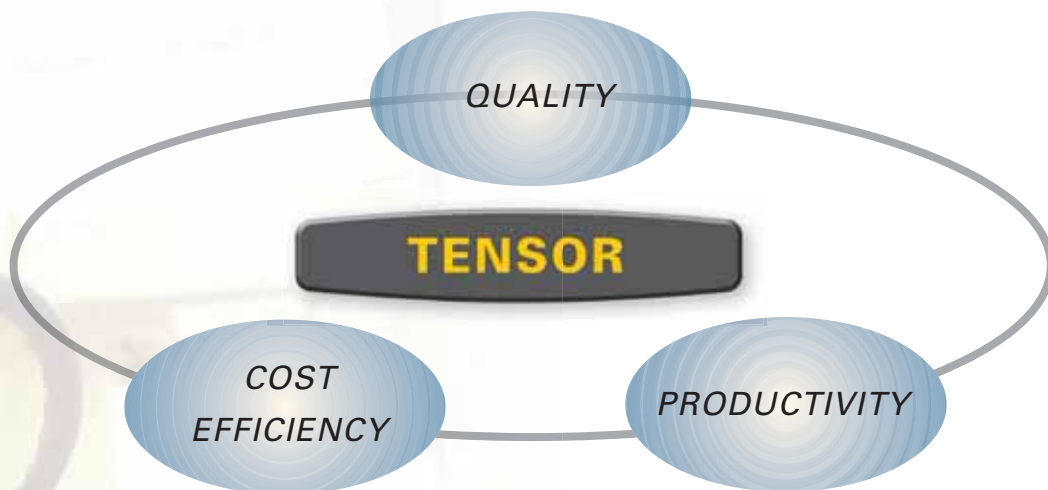
More Atlas Copco electrical assembly tools are installed on production lines across the world than any other make. With good reason. Extensive enough to cover every application requirement, the Tensor range features the latest technologies, for improved productivity, quality and efficiency. Thanks to this combination of high performance and broad choice, Atlas Copco Tensor Electric Tools now dominate the global fastening market.

## **Pioneering innovative technology**

We know what assembly plants look for: high productivity, top quality and value for money. Equipped with the Tensor range, an electric assembly plant meets all three criteria.

- More power, more flexibility, more durability, more reliability – more productivity.
- Less weight, less vibration, less noise, less operator strain – less worker absenteeism.
- Higher speeds, greater precision, reduced service requirement – better value for money.

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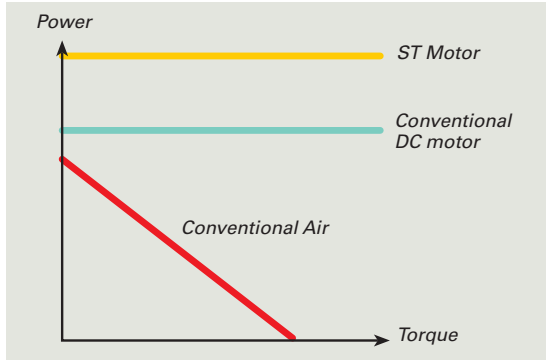
*"Traceable torque values  
minimize labor costs and  
boost productivity in modern  
assembly plants".*



# Tensor productivity gains

## Superior spindle performance

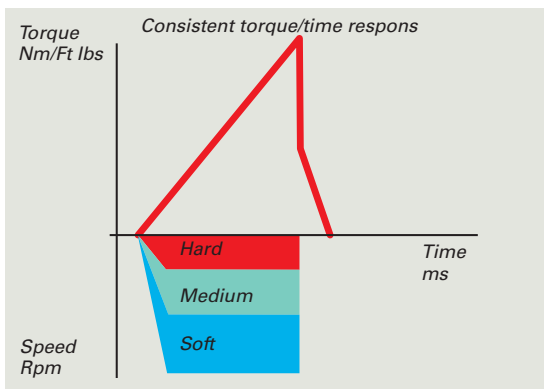
Motor power and spindle performance are critical to increased productivity. The proprietary motor technology that powers all Tensor tools ensures superior cycle times and optimum cycle rates at maximum efficiency. This makes Tensor nutrunners the natural choice for the all of today's most demanding applications.



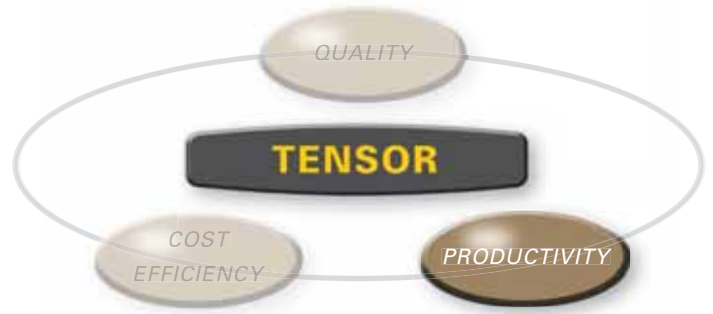
- Fast cycle times
- High cycle rates
- Demanding applications

## Optimized ergonomics

Modern industrial thinking recognizes that ergonomically designed tools enhance productivity. Atlas Copco has been supplying ergonomically designed tools for more than 50 years. Each tool is optimized to ensure that operators avoid unnecessary strain or fatigue caused by weight, an uncomfortable grip, vibration or sudden changes in the reaction force. This yields dividends in increased productivity. The programmable ErgoRamp further reduces strain.

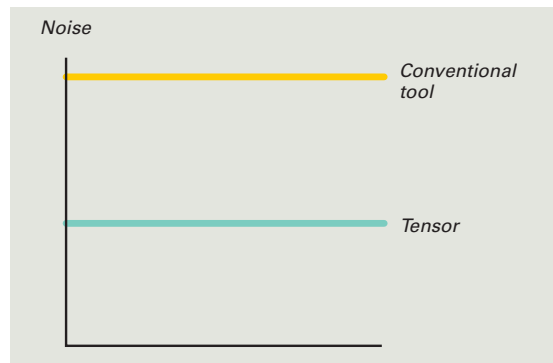


- Low weight
- Optimized balance
- Low vibration



## Improve the working environment

Tensor electrical tools generate significantly less noise than conventional tooling, offering sound levels of 50-60 dBA for a quieter workplace. And electrical tools emit no oil mist. Low noise and clean air – for a happier and more productive workforce.



- Low noise
- Cleaner environment
- Happier workforce

## Eliminate click wrenches

The torque value from transducerised tools such as the Tensor S and ST is traceable. This value can be stored to confirm that the tightening operation has been carried out, and to the correct torque level. Termed 'right first time', no additional tightening operation is required, eliminating the need for click wrenches (sometimes used to verify the original tightening process further down the line). This minimizes labor costs and is a major productivity booster in the modern assembly plant.

- Right first time
- Eliminate click wrenches
- Increase productivity



*"Tensor Electric tools increase product quality and improve the working environment".*





# Tensor quality benefits

## Accurate and controlled fastening

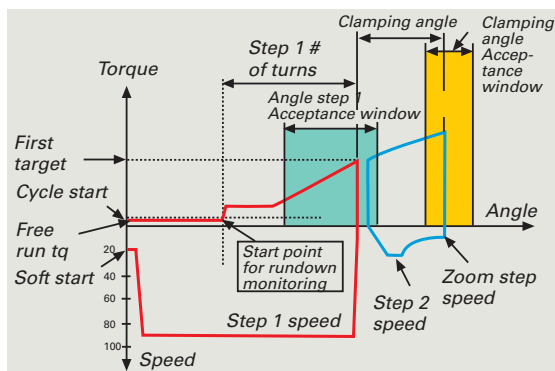
Tensor tools meet the highest standards of accuracy for hand-held electrical nutrunners. Add Atlas Copco design know-how in gear packages and you have a tool that offers exceptional levels of fastening accuracy. Tensor tool accuracy is tested in compliance with the international ISO5393 test standard for power tools.



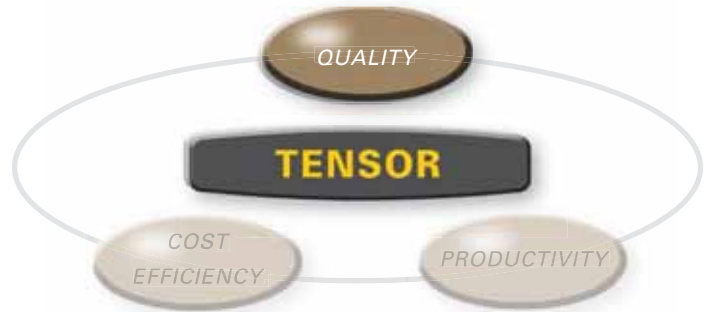
- ✓ Advanced control strategies
- ✓ Well designed gear packs
- ✓ Accurate fastening

## Monitor the complete process

The Tensor tool is the final element of a complete quality control system. All tool types are capable of monitoring the number of turns or the angle during the entire fastening process, from the moment the operator hits the start trigger. As well as detecting stripped or crossed threads, monitoring the tightening and run-down angle also ensures complete rundown of the fastener. Angle monitoring functionality is also used to detect missing washers and trapped cables/material beneath the bolt head.



- ✓ Detect stripped and crossed threads
- ✓ Rundown monitoring
- ✓ High-quality fastening



## Feedback for zero fault assembly

Clear and reliable operator feedback is essential for quality assurance. Signal lights built into the tool handle ensure the operator is immediately notified of any problems relating to the tightening process. Reliable feedback ensures operators take appropriate corrective action if problems arise in the fastening process.



- ✓ Operator signal lights
- ✓ Reliable electronic reporting
- ✓ Zero-fault process

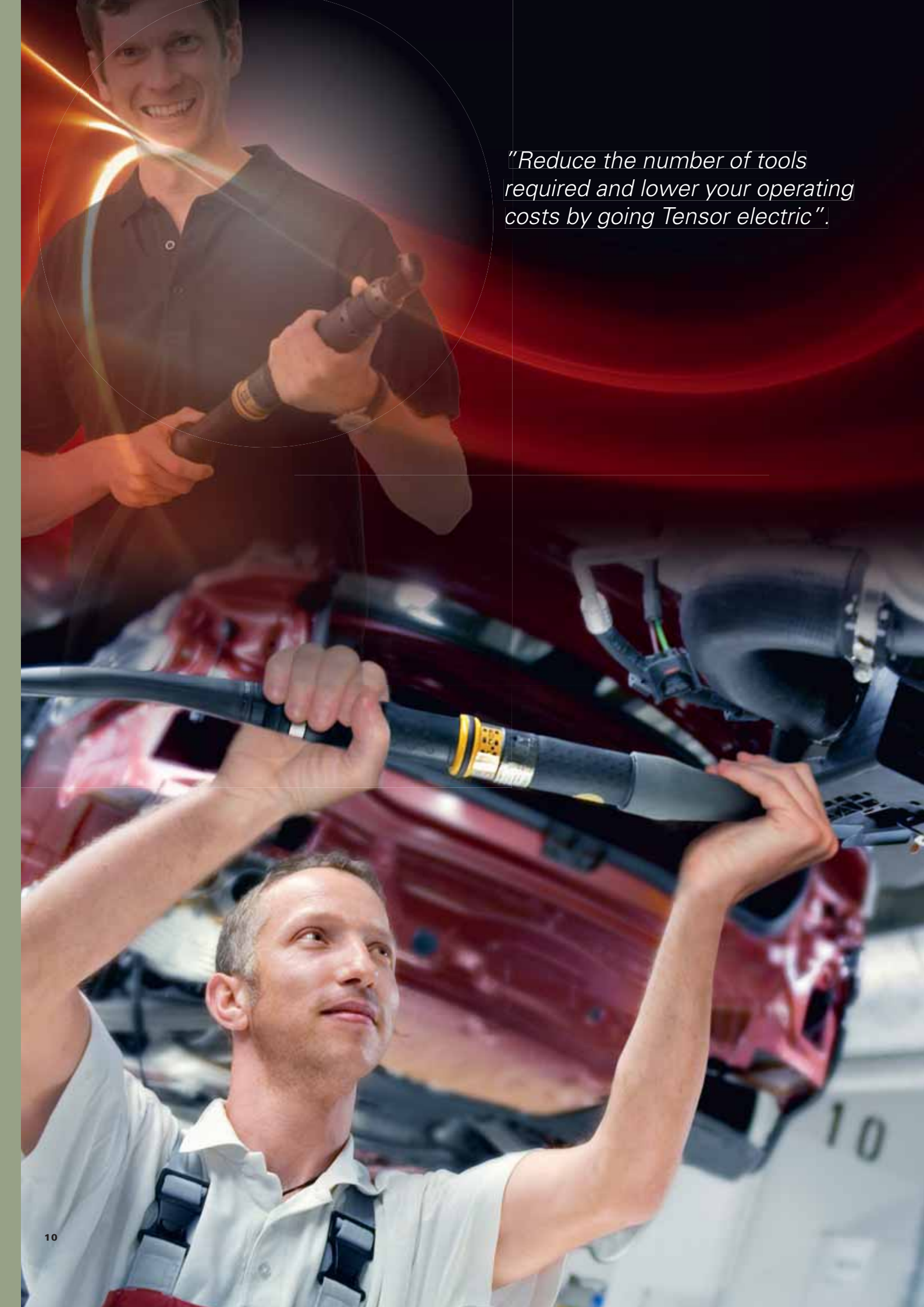
## A cleaner environment

High-quality products demand assembly in a clean environment with no risk of contamination. Any decline in quality can cause negative publicity and prove highly costly. The oil mist generated by conventional tooling leads inevitably to contamination and reduced product quality. Lubrication-free electrical tools emit no oil mist, ensuring a cleaner environment and contributing to higher-quality products.



- ✓ No oil mist or contamination
- ✓ High quality products
- ✓ Improved reputation





*“Reduce the number of tools required and lower your operating costs by going Tensor electric”.*

# Cut costs with Tensor

## Less maintenance

Fewer mechanical parts compared to conventional tools make Tensor tools more reliable. Modular design keeps the number of components to a minimum, for increased reliability in even the harshest conditions. All parts are optimized for maximum service life, to increase maintenance intervals and minimize break-downs. All Tensor models are tested for durability.



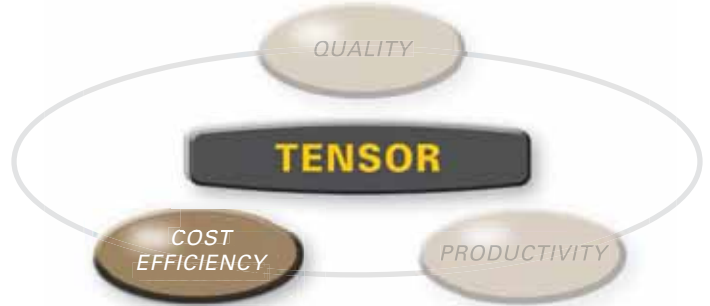
- ✓ High-quality parts
- ✓ Minimal components
- ✓ Modular design

## One tool – many applications

Selecting Tensor electrical tools instead of conventional tools significantly reduces the total number of tools required to do the same job. The torque applied by any Tensor tool is fully programmable within the specified torque range. With this multi-torque capability, a single tool can be used for many applications requiring different target torque specifications. This multi-torque capability generally permits reductions of up to 10% in the conventional tool population, and sometimes even more.



- ✓ Fully programmable torque
- ✓ Multi-torque capability
- ✓ Reduced tool population



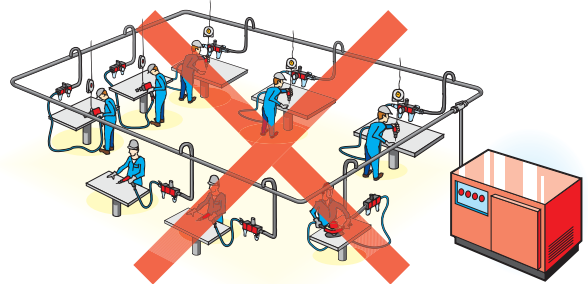
## Connect to existing supplies

Choose Tensor electric tools and reduce set-up and installation costs. Tensor systems connect directly to the existing mains supply – no need to invest in a compressor or airline system. Purchase and installation costs for a conventional tool system, when based on a total cost analysis, far outweigh the cost of a comparable electric tool alternative. For new or refurbished manufacturing facilities, Tensor tools are the natural choice to reduce investment costs.

- ✓ Simple installation
- ✓ Connect to existing power supply
- ✓ Reduced investment costs

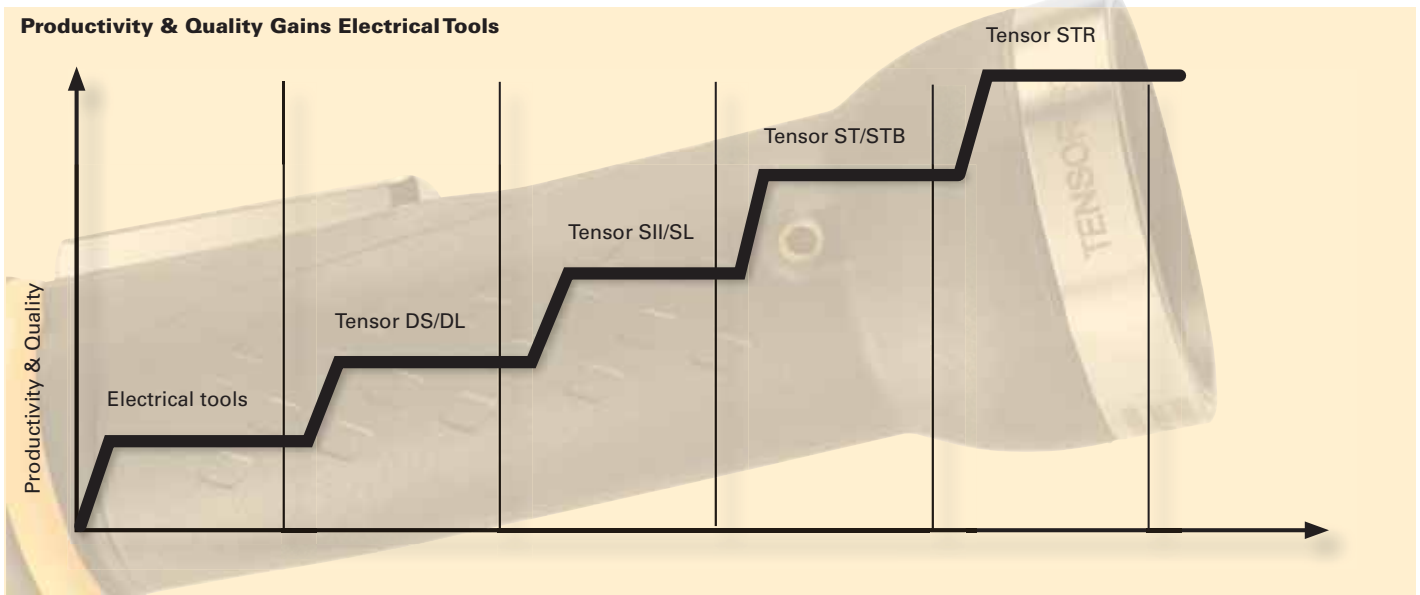
## Lower operating costs

The introduction of Tensor electrical tools can lead to significant reductions in assembly plant operating costs. In pneumatic systems, compressors are not only inherently inefficient, leakage from the air mains accounts for up to 30% of operating costs. Normally speaking, energy consumption for a Tensor electrical tool is approximately only a twentieth of what a conventional tool consumes. Start saving today!



- ✓ No compressor
- ✓ No air mains
- ✓ Lower operating costs

# Tensor Overview



## A complete range

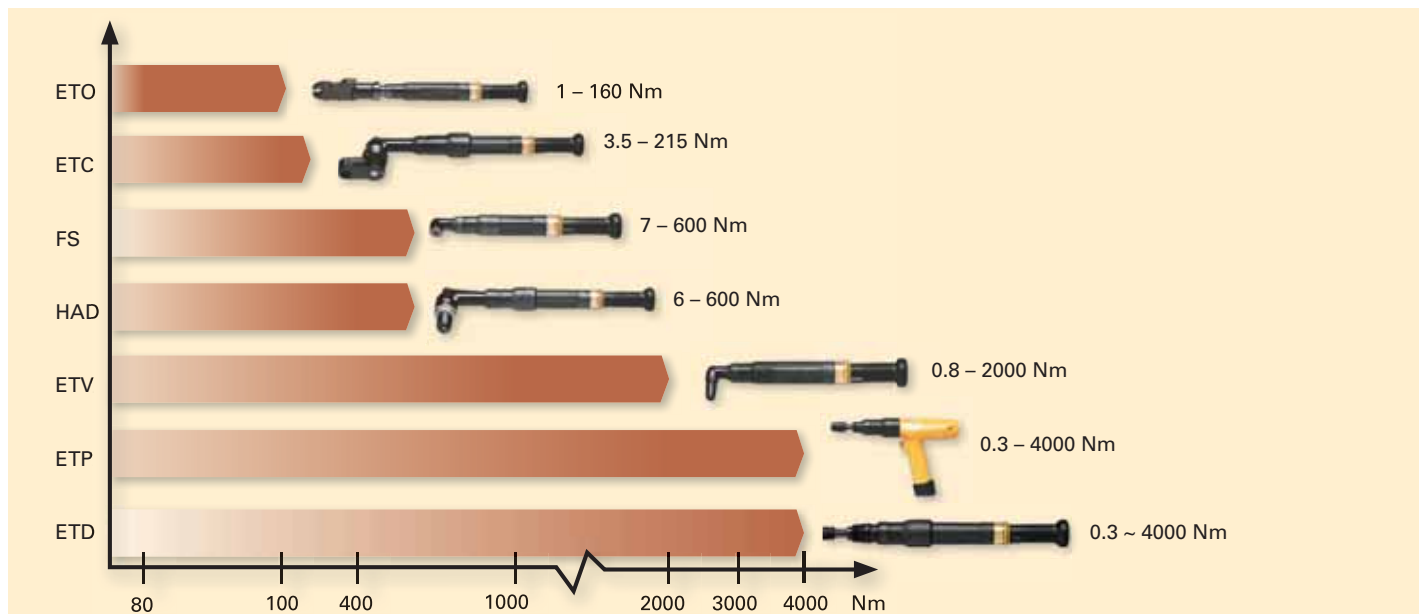
The Tensor electrical tool range covers all assembly line requirements for safety- and quality-critical fasteners. The first true non-transducerized electric power tool, the Tensor DS, made it feasible to equip an entire facility with electrical tools. The Tensor all-electric plant had arrived. Tensor DL completes the offer as a screwdriver for low torque applications.

The Tensor S remains a world beater in the field of transducerized power tools. Featuring the innovative S motor, based on Atlas Copco's proprietary technology, the Tensor S has rapidly revolutionized the assembly industry.

The innovative Tensor ST is Atlas Copco's third-generation electrical tool, used by assembly plants keen to reap the latest productivity and quality gains. ST technology refines what is already a strong product range. Tensor STR is the ultimate offer from Atlas Copco. Light and small but powerful tool ensure boosting your productivity. Primary Straight, Angle and Pistol ranges are available. There is a Tensor tool for every assembly application.

## Tensor tool configurations

The Tensor family comprises a broad range of tool configurations, to cover every hand-held or fixtured application found in an assembly plant. Available for torques ranging from 0.3 to 4000 Nm, and in 7 different configurations, the Tensor range of multi-torque electrical tools can be used to equip an entire facility.



# Seven tool ranges cover all application demands



## Tensor DL: quality-critical low torque

The Tensor DL range is used for quality-critical screws. Optimized for small screw assembly, the DL is the electrical choice in the low torque segment.



## Tensor ST

Also used 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 SL: safety-critical low torque

The Tensor SL range is optimized for safety-critical small screw assembly. It is a compact and powerful transducerised screwdriver. The Tensor SL is the ideal tool for achieving zerofault production in a wide range of low-torque applications.



## Tensor STB

The Tensor STB offer the same benefits and zero-fault process control as Tensor ST and on top of that you get rid of the cable.



## Tensor DS2: quality-critical

The Tensor DS range is used for quality-critical fasteners not requiring a traceable measured torque value. DS offers major productivity and quality gains compared with conventional tooling.



## Tensor STR

Tensor STR is more than just a powerful nutrunner. Its outstanding performance and ergonomic design, in combination with robust design, lift this tool into a new era.

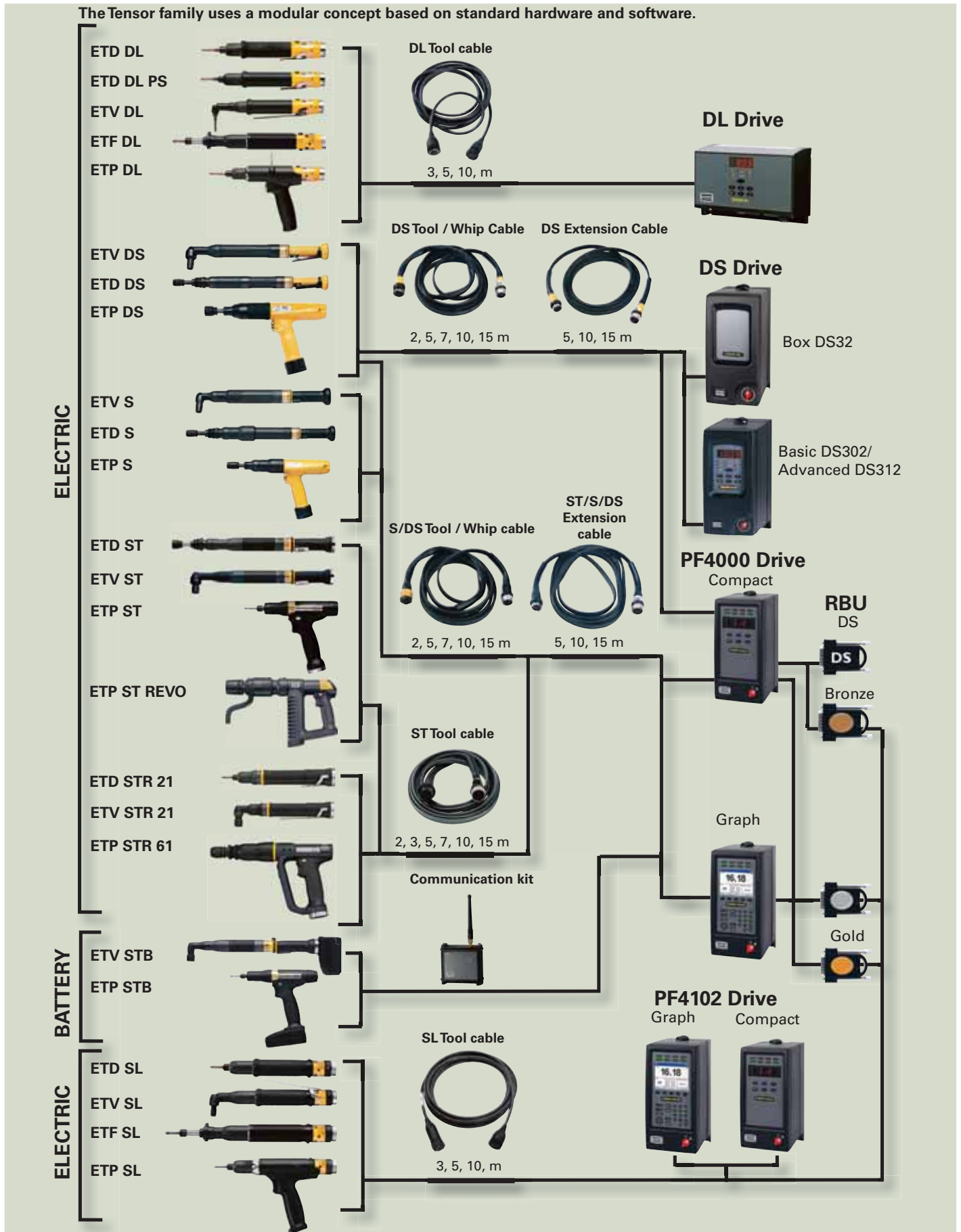


## Tensor S2: safety-critical/traceable feedback

The Tensor S2 range is designed for safety-critical applications or applications that demand a particularly high level of accuracy. Safety-critical applications require a traceable torque value, that can be recorded to confirm that the fastener was fastened both to the specified torque and within pre-defined limits.

# Tensor Modularity

The Tensor family uses a modular concept based on standard hardware and software.



# Product safety

## Safety

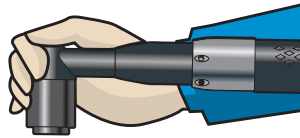
Atlas Copco wants everyone to operate our tools safely. Always read and follow all product operating and safety instructions, and follow all local safety regulations. We have produced a range of additional accessories for use with Atlas Copco productive tools.

They are intended to reduce the risk of injury during certain assembly processes. Please ask your local sales representative about the important, user-friendly accessories we offer in the catalogue.

## How to make tool operation safer

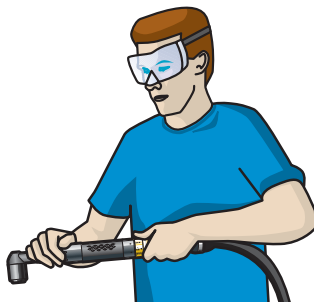
### 1. Entanglement hazard

- Hands and other objects (long hair, necklaces etc.) can get entangled with the rotating drive, causing severed or broken fingers.
- Do not use gloves.
- Never hold the drive, socket or extension with your hands.



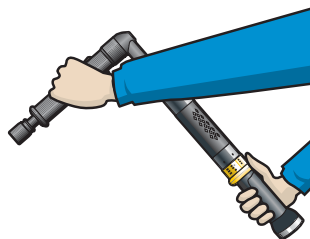
### 2. Hold the tool correctly

- Keep hands and other objects (long hair, necklace, etc.) away from the rotating drive, socket or extension.
- Hold the tool correctly with one hand on the handle of the tool and the other hand on the top of the angle head.



### 3. Supported extensions

- If you use an extension, never hold the extension with your hand while it is rotating. If you need to guide the extension, in order to locate the socket quickly and accurately, use an accessory to reduce the risk of entanglement.

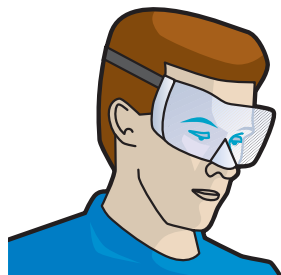


Other advantages are:

- Longer life for angle gear.
- More uniform tightening results.

### 4. Use goggles

- Always use goggles to protect your eyes from objects that might accidentally fly into your face.



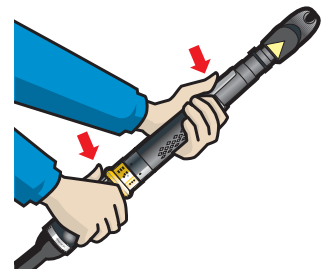
### 5. Reaction bar

- When a reaction bar is used, keep hands away from the reaction bar while tightening a joint, otherwise hands may get squeezed.



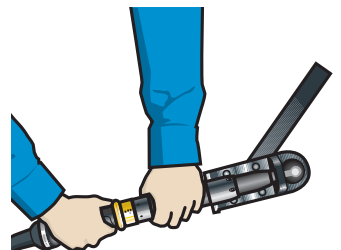
### 6. Open end tools

- Never put your finger into the open end of a tool, even if dual action trigger is used.
- To avoid accidents, to activate the tool, both triggers must be pressed within 500 ms.



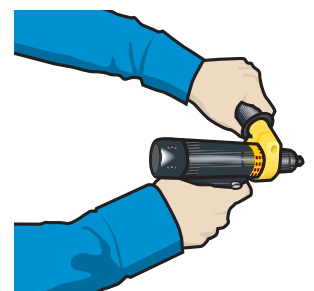
### 7. Angle nutrunners with reaction bar

- Use reaction bar at high torque. For soft joints, a reaction bar should be used at >60 Nm.



### 8. Screwdrivers

- For straight or pistol version and for torques of 4Nm and upward
- Consider using a support handle or support arms, particularly for pistol versions and for torques of 6 Nm and upwards.



# Tensor DL

## Where every fastener counts!

### Quality-critical applications – low torque

Tensor DL is fast – so fast that you will notice a marked increase in your overall productivity. Unlike a pneumatic tool, Tensor DL maintains a given speed even under increasing torque load. High torque precision gives high quality end-products with fewer rejects.

### Tune the system to the process

All assembly processes are different, so why should the tool always operate within the same parameters? Using programming software, Tensor DL can easily be configured for optimum performance in a specific application.

### A better working environment

Tensor DL's electric motor is significantly quieter than that of a pneumatic tool. In addition there is no risk of the workpiece being damaged by oil contamination from the exhaust air. Work-related operator health and safety issues will also be reduced thanks to the ergonomic soft action of the Tensor DL.

### Fast payback

With Tensor DL, superior productivity, combined with process security and low operating costs, mean a fast payback of the initial tool investment.



**Configurable  
push-to-start.**

**Configurable tool  
front lights.**

**Excellent ergonomics.**  
*High power-to-weight ratio.  
A 10 Nm tool weighs only  
0.6 kg. Operator-friendly  
trigger and soft-grip handle.*





**ESD certified.**

Tensor DL is certified against electrostatic discharges, ESD. This is your guarantee against damage to electrical components caused by ESDs from the tool in your plant.

**High-performance motor.**

High speed Tensor motor with wide torque range give shorter cycle times. Low noise level <70dB(A).

**Function button.**

The configurable function button can be set up for different reverse modes and toggling between parameter sets.



**DigiTork™.**

The highly accurate, patented digital torque control concept has a very soft action, preventing shock damage to components, screws and bits.



**Simple and reliable trigger action.**

**Signal lights.**

Red light ensures immediate detection of NOK tightenings by the operator.

# Tensor SL

## Intelligent tools for demanding applications

### Traceable processes

In a quality focusing and consumer protective environment, you will increasingly need to keep detailed records of critical torque results. With its proven transducer, the Tensor SL ensures that the torque applied is traceable and stored in the controller.

### Industrial network integration

Our complete Tensor SL system, which includes the screwdriver, a controller and a smart cable, is based on advanced digital communications technology, enabling you to integrate the system with your existing plant network through standard Ethernet TCP/IP, serial or optional Fieldbus connectivity.

### Tightening flexibility

When assembling a wide diversity of products, operators need to be able to use the right torque, speed, and angle. Instead of using several different tools, you can program the Tensor SL to allow for quick and accurate changes in tightening sequences during assembly.

### Full operator support

Due to its high power-to-weight ratio and soft grip handle, the 0.7 kg screwdriver is a comfortable and easy to use electronic tool. Coupled with a number of configurable features, such as 4 signal lights and buzzer for operator feedback, the Tensor SL provides full operator support and productivity.



### **Tool front lights.**

*Powerful and programmable lights on the straight version guide the operator.*

### **Configurable push-to-start.**

*Push-to-start on the ETD version is preferred for fast, accurate tool triggering. Otherwise, lever start may be used.*

### **Tensor Power Focus controller**

Based on the well-proven Power Focus platform, the highly compact Tensor SL controller provides numerous tightening strategies, ensures the proper job work sequence, and provides data traceability and networking.

**High-performance motor.**

High-speed Tensor motor with wide torque range gives shorter cycle times and enables faster production.

**Configurable function button.**

The configurable function button can be set up for different reverse modes and toggling between parameter sets.

**Configurable buzzer.**

Different buzzer sounds can be downloaded and used as alert sounds for immediate detection of NOK tightenings by the operator, or to indicate that a Job sequence has been accomplished.

**Proven transducer.**

Torque transducer for traceable results. Transducer signals are sent digitally to the controller.

**Spiral gears.**

Tensor ETV version has an angle head with spiral gears ensuring durability and accuracy.

**Superior ergonomics.**

Soft grip handle and high power-to-weight ratio. The 10 Nm tool weighs only 0.7 kg.

**Signal lights.**

Four signal lights for operator feedback including a blue LED light. The blue light can be configured, for example, to show when a batch of screws is finished. Also, a red LED light ensures immediate detection of NOK tightenings by the operator.

# Tensor DS2

## Smart tools help you to be certain

Available in pistol, angle or straight configuration, Tensor DS2 is the perfect tool to suit any tightening operation. With torques ranging from 1 – 4000 Nm, it has the versatility and ease of use to ensure that operators are happy and the fastening quality is assured each and every time.

*Compact angle head with unique spiral gear design provide consistent performance with unrivalled durability.*

*The new handle grip of the motor sleeve improves grip and operator comfort.*



**For high torque applications** Tensor DS2 pistol nutrunner is the preferred solution for many high torque applications. The new compact gear package provides significant weight reduction and allows it to be used in a true hand held manner. The swivelling front part allows full versatility for the operator.

**Tensor DS2 eliminates the four most common assembly problems**

- 1 Missing fasteners**  
By simply counting each fastener as it is tightened. Tensor DS2 ensures that your operators get all the operations right.
- 2 Incorrect joint conditions**  
With measurement of rundown and clamping angle of the tightening, Tensor DS can detect thread defects such as cross threads, stripped threads and incorrect screw length. Even missing components such as washers or gaskets can be detected.

- 3 Inconsistent repeatability**  
Using conventional compressed air tools, the final torque can vary due to inconsistencies in air pressure, variances in joint hardness, or even the type of materials being assembled. With Tensor DS2, the right tightening parameters are easily allocated for different conditions.
- 4 Wrong torque applied**  
Applying low torque is a common problem that is often compensated for by using secondary manual torque wrench operation. This may result in much torque being applied. Tensor DS removes the human factor by shutting off at the desired torque whilst ensuring a minimum level has been reached. The right result is achieved every time.

*Signal lights on the tool provide instant visual feedback for the operator.*



*The unique DigiTork™ technology ensures the right torque each and every time. This eliminates the need for secondary checking operations which are unreliable and a waste of valuable production time.*

*Service indicator prevent unnecessary and costly failures.*

*Low noise and vibration levels to ensure the best work environment for the operator.*

*The electrical driven Tensor DS2 removes the costly problem of leaking air hose connections.*

# Tensor S2

## For even greater reliability

Tensor S made its name as the industry nutrunner of choice for safety-critical applications and tasks requiring a high degree of accuracy or documentation.

Now Tensor S2 takes your durability further, with a new angle head and upgraded ergonomics that maintain their superior accuracy over time, and make the tool more comfortable to operate during the shifts. This translates directly into improved productivity, reduced maintenance costs and better cost of ownership.

One of the key features of the new Tensor S2 is the new design of the angle head, featuring an improved spiral gear design. New – but already proven, because this design made its successful debut with other Atlas Copco tool ranges. These spiral gears have increased contact ratio, thus lower rates of wear, so

they maintain their accuracy over their service life. This means less downtime and fewer spare parts. And the new gears are also designed for smoother running.

Tensor S2 builds on the success of the S range – and you'll find many of the family benefits apply here. The same connection capabilities and service friendly design; just hook up and you're ready to run. The tool memory contains the tool serial number and vital service data. And you'll benefit from the same legendary power and reliability of Atlas Copco's proprietary motor technology that is commonly found in some of the most demanding assembly applications around the world.



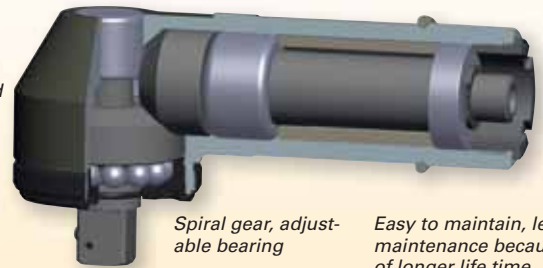
### **New angle head design for greater accuracy**

New – but already proven in other Atlas Copco tools, the angle head design features a spiral gear system that improves contact ratio between the gears, maintains the tool's accuracy over its service life and makes for smoother running gear.

*New angle housing*

*Better accuracy and more even results*

*Improved centricity of the square drive because of the new flange construction*



*Spiral gear, adjustable bearing*

*Easy to maintain, less maintenance because of longer life time*

**Quality engineered gear system – manufactured by Atlas Copco for our own tools**

The new gear system on Tensor S2 is manufactured by Atlas Copco and is unique to our tools. The spiral gear design reduces the wear between the gear interfaces, ensuring the accuracy of the tool over longer periods of time.

**New ergonomic motor sleeve design**

The sleeker, moulded hand grip of the motor sleeve improves grip and comfort for the operator, and makes the tool even easier to handle. The material also provides improved noise and heat insulation, adding to operator comfort and productivity.



**Traceable process for quality assurance**

The built-in transducer ensures that the torque applied is traceable by test equipment in compliance with QS9000. This is important for applications with safety-critical joints.

**High-power S motor**

This well-proven and reliable unit provides the superior performance that has made the Tensor range the tools of choice in some of the most demanding industrial applications around the world.

# Tensor ST

## Productivity boost – faster tools and less strain on the operators

Do you assemble many fasteners at a time, perhaps with high prevailing torque? Do you have bottlenecks that slow down production or problem applications that demand the ultimate in terms of tool ergonomics?

- Tensor ST can cut your cycle time by half (ETV ST81-50-10, 1090 rpm, 1.8 kg, 55 Nm)
- It's the operator's choice when the application creates awkward working positions (ETV ST61-50-10, 655 rpm, 1.5 kg, 55 Nm)
- The ST cable's flexibility means you can now safely tighten those applications previously difficult or impossible to access.

The Tensor ST means faster spindle speeds, lower cycle times and higher cycle rates. Tools can be changed rapidly, without having to power-off. Keep your assembly line running and downtime to a minimum with Tensor ST.



### The talking tool

Operator information is critical to ensure a quality fastening process. The Tensor ST raises operator feedback to a new level, with built-in loudspeaker that can be programmed to 'talk' to the operator.

*Transducer for traceable result.*

*Electrical accessory connection point.*

*Ultra-compact onepiece angle head for reduced weight and accuracy.*



*On-tool barcode scanner (optional).*

*Unique, T-design allow for compact tool and 360° swivel with integrated transducer.*

## Tensor ST Rev0 – a revolution in high-torque tightening

### Smarter – for highest quality

**Error proofing:** High accuracy and full rundown control eliminates assembly errors and ensures process stability.

**Full traceability:** Transducer measured torque ensures a traceable process. Easily combined with data collection software.

**Clear feedback:** Visual and audio feedback allows operator to correct errors at source.

### Lighter – for highest usability

**50% lighter and 40% more compact:** Improves ergonomics and simplifies access and installation.

**Easy positioning:** 360° gear swivel on transducerised tool enables easy positioning and access to bolt.

**Simpler process:** Quick and easy program change directly on tool.



**Electrical accessory bus**

On modern assembly lines, tool controllers must be fully integrated with other in-plant quality control equipment. The Tensor ST features a built-in connection point for electrical accessories such as barcode readers. A secondary start trigger and lamps to illuminate the workplace can be connected for added safety. The Tensor ST offers a fully integrated, cost effective and reliable tooling solution.

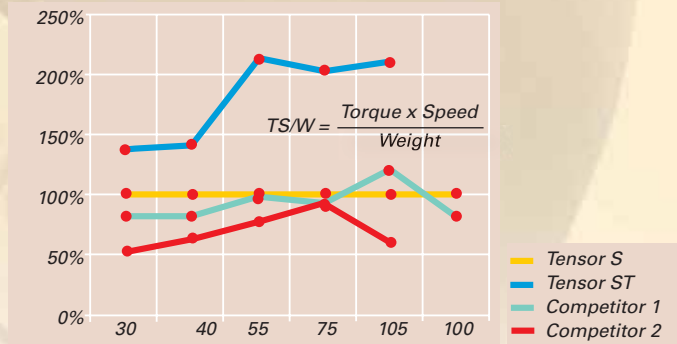
**Flexible installation**

Tensor ST is the first tool to incorporate 100% digital communication for both torque and angle signals. All analogue signals are digitized, providing a new standard of signal integrity. Digital technology also enables cables of up to 50 meters in length to be used, maximizing installation flexibility.

**Visual signals for operator feedback**

Accurate data and reliable operator feedback is critical in ensuring a quality fastening process. The Tensor ST incorporates four fully configurable signal lights (green, red, amber and blue) to supply the operator with comprehensive feedback.

**TS/W Productivity Factor**



At 50 Nm, over double the productivity compared with the second best alternative, Tensor S.

*Built-in memory chip for service data.*

*Configurable loudspeaker for operator feedback.*

*Configurable button – optional.*

*ErgoGrip for greater comfort.*



*ST motor – more power and greater control.*

*Lightweight components for improved balance.*

*Four configurable signal lights for improved operator feedback.*

*Longer trigger for greater comfort.*

*Fast and strong Tensor motor for maximum speed.*

*On-tool barcode scanner (optional).*

*Unique, T-design allow for compact tool and 360° swivel with integrated transducer.*



*Reaction bar and gear package.*

*Multiple LEDs.*

*Program selector.*

# Tensor STB

## Cordless freedom with zero-fault process control

Critical joints demand not only validation and documentation, but speed and accuracy. However, tool cables limit smooth movement along the line and cause access problems in cramped spaces.

Introducing Tensor STB, a new generation of nutrunners that have cut the cord – twice. First, they are battery powered. Second, they use Industrial Radio Communication (IRC) to give you full process control.

In other words, Tensor STB tools offer the same benefits and zero-fault process control as Tensor ST nutrunners – but without any strings attached.

### Higher productivity

Tensor STB offers genuine ergonomic advantages for the operator which in turn raises individual productivity.

- Low tool weight and high spindle speed reduce cycle time
- Awkward working positions caused by the cable are eliminated
- Lightweight components help reduce operator fatigue

*Spiral gear.*

*Torque transducer for traceable result.*

*Service indicator.*

*Four extra signal lights for communication status, Batch OK, Battery status and tool error.*



*Ultra-compact, one-piece angle head for reduced weight.*

*New motor – more power and greater control.*

*Four sets of signal lights for improved operator feedback.*

### One of a kind

There are, of course, other battery tools on the market. However, no other battery-powered tool can offer Atlas Copco's unique fastening performance and advanced process control.

### Superior ergonomics

With no cord in the way, the operator works unhindered in ergonomic positions which result in reduced operator fatigue.

### Better operator feedback

The operator is kept well informed by the tool. For example, if a tightening error occurs the operator will be alerted and can take immediate action, thereby avoiding the expense of reworking.

### IRC – industrial strength

Atlas Copco have developed special communication technology that is designed for industrial environments.

IRC is also equipped with AFH (Adaptive Frequency Hopping). With this spread-spectrum technology the transceivers hop from one frequency to the next at fixed time intervals. A major advantage of this design is that it offers a more robust link, especially in noisy environments.

IRC offers many benefits:

- Robust transference
- Low power consumption
- Adaptive Frequency Hopping (AFH)
- Long range (100 meters)
- Communication degrades gracefully at increasing disturbance and recovers automatically.

**The Tensor STB system**

Tensor STB nutrunners require a Communication Kit to work with Power Focus 3100 and Power Focus 4000.

The Communication Kit gives you:

- Easy installation
- Quick installation
- Requires no fixed infrastructure

**Pair & Play**

Pairing the tool with the controller is quick and easy, which makes the system flexible when an application change is needed.

*ErgoGrip for maximum comfort.*

*Configurable buzzer for operator feedback.*



*Configurable button is standard.*

*Long trigger for operator comfort.*

**Less parts in stock**

Since no cables are required, there are no cables to keep in stock. In addition to this, Tensor STB shares many of the components and accessories used in Tensor ST. And by eliminating dirty cables, your end-products remain clean.

*Lithium-ion battery. A high energy-to-weight ration and a slow loss of charge when not in use.*

*Lightweight components for improved balance.*

# Tensor STR

**State-of-the-art tools that will boost your productivity**



*ESD protection.*

*Superior speed will double your productivity*

*Choose your option from the function button.*



*Robust aluminum housing.*

*Ergonomic handle.*



*Spiral gear.*

*Easy-to-mount reaction bar.*

## **Tensor STR21 angle and straight nutrunners**

The Tensor STR21 tool range includes ETV angle and ETD straight nutrunners and screwdrivers, with torques from 1.4 to 16 Nm. The tools' robust designs ensure high durability and longer service intervals.

### **Less weight, more power**

The new STR21 motor provides more power in a lighter package. Improved dynamics give better control of the motor and the tightening process. Rundown is very fast to meet current needs for high-speed production.

### **Highly user-friendly**

STR21 tools have ergonomically designed handles with an extended trigger allowing the operator to change his or her grip spontaneously. Compact tool designs ensure optimum accessibility to the workpiece, while one-handed operation leaves one hand free to hold a part.

## Tensor ETP STR61 pistol grip nutrunner

The Tensor ETP STR61 is a fast, light, robust tool offering impressive ergonomic features. There are two models, Standard and Cable-on-Top. Each range comprises six tools with torques from 5 up to 125 Nm.

### Speed and accuracy raise productivity

The new STR61 motor with improved cooling 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.

### Highly user-friendly

The tool is equipped with an ergonomic handle and a support handle is provided with dual trigger as an accessory. A D-grip incorporating powerful LED front lights protects the operator's fingers. Awkward working positions caused by using heavy tools are eliminated.

*Same cable and controller for ST tool.*

*Digital communication for hot swap of tools.*

*One-handed operation.*

*Configurable buzzer.*

*New powerful STR motor.*

*Function button*

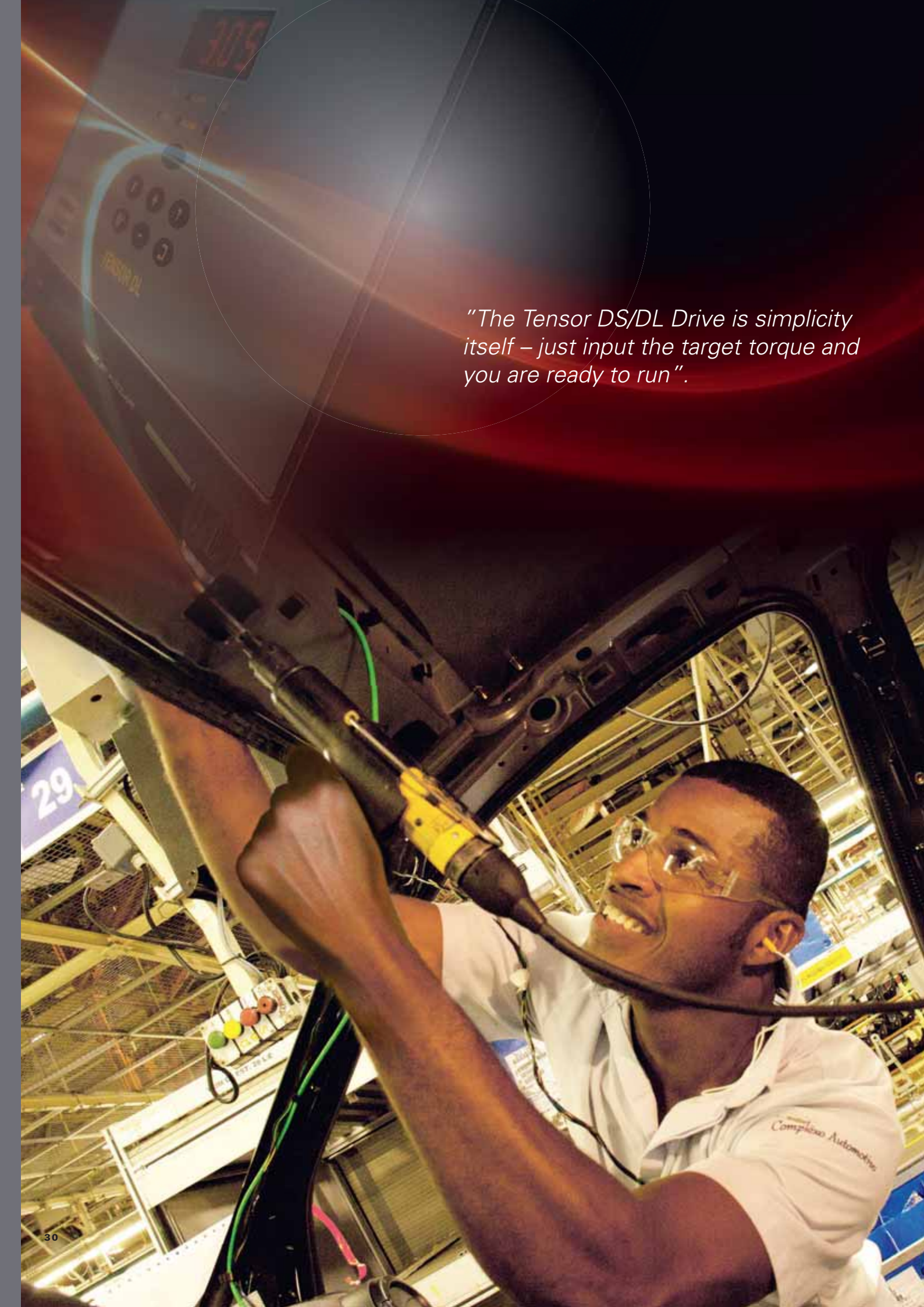


*Reverse button.*

*Front light enables easy bolt tightening in poor lighting, thus raising quality in assembly*

*Improved ergonomic handle grip reduces operator fatigue.*

*Improved overall tool design. D-grip handle protects operator's fingers for maximum safety. It also helps to cool the motor, resulting in higher productivity and tool durability.*

A photograph of a male worker in a white polo shirt and safety glasses, smiling as he uses a yellow and black torque wrench on a car chassis. In the background, a digital display shows the number '30.9'. The scene is set in an industrial environment with various mechanical parts and wiring visible.

*"The Tensor DS/DL Drive is simplicity itself – just input the target torque and you are ready to run".*

# DS and DL Drive

## Flexible solutions meets different requirements

The drive is the heart of any electrical quality fastening process. The DS drive monitors Tensor DS tools and comes in four different

ent models, Box, Basic, Advanced and Power Focus. For Tensor DL tools we offer two drives optimized for small screws assembly, Basic and Advanced. The drives are tailored with functionality to meet demands from many different customers.

## Choose your own level of functionality

The tool does the work, but the box provides the intelligence

### BOX

Simple, smart and effective



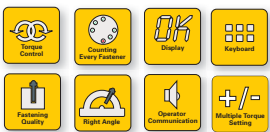
### BASIC

Extra security with the information you need



### ADVANCED

Optimal quality control with multiple options



### POWER FOCUS

A common solution for any level of complexity



## Quality control accessories

A range of quality control accessories can be used with DS and DL drive to further improve assembly quality. These include RE-alarm and Stacklight for visual and audio feedback of the tightening process, and socket selector that determines the tightening program for the specific application.



4.58

35

6.29 6.10

6.14 6.35

6.25 6.10

View Type Command H Draw

POWER FOCUS

POWER FOCUS

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*"Standard building blocks make Power Focus 4000 the natural choice for both single and multiple spindle applications".*



# Power Focus 4000

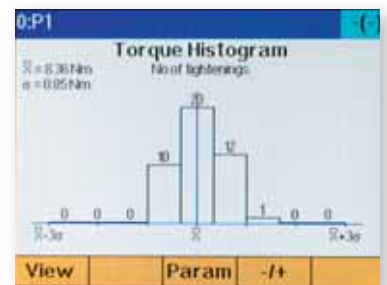


## Power Focus 4000 Compact – a handy alternative

Completing the range, the Power Focus 4000 Compact has a basic operator interface with a six-button keyboard and LED display. Preprogrammed using ToolsTalk Power Focus and with a PC as the interface, it offers the same functions as the Graph.

## Traceable, zero-fault process control

Advanced control functions built into the Power Focus 4000 prevent the operator deviating from the required process. When it receives assembly information, the programmed "Job" function automatically selects the correct tightening sequence and parameters. When combined with barcode scanning for component identification, the "Job" function offers traceable, zerofault process control.



## One model is all you need

The Power Focus 4000 is a new generation of control systems suitable for Tensor S, ST, DS and ETX models. Unlike its predecessor, the Power Focus 3100, the Power Focus 4000 is available in one model with two versions, Compact and Graph, that can handle all torque levels. This favours your maintenance budget, since fewer back-up units are required.

## Power Focus 4000 Graph – full-colour display, more compact design

Once you start working with the new Power Focus 4000 Graph, you won't want to work with any other controller. The easy-to-read LCD colour display gives you all the information you need. Statistical data is collected, analyzed and presented on the screen. Changes and trends in the assembly process are indicated by diagnostics and statistical alarms, such as SPC monitor charts and capability (Cpk) alarms. Alpha-numeric keys allow on-unit set-up and easy checking of traces and statistics. After listening to our customers, we made the Power Focus 4000 much more compact as well. A standardized mounting plate ensures easy installation at every work station.



# Power Focus 4000

## Built-in PLC functionality eliminates problems

It couldn't be more convenient! The advanced Power Focus 4000 has an integrated Logic Configurator. This provides basic PLC functionality as an integrated part of the controller, without additional hardware components. You can now configure your "PLC style" signal flow between the line or the fixture, and the Power Focus 4000, thus the need for an interface PLC is eliminated.

## It saves you time and money

The integrated Logic Configurator cuts purchase, set-up and installation costs and simplifies system maintenance. It also saves you time and trouble.

## Different hardware options for flexibility

Different applications make different demands in terms of the operator interface. The Power Focus is based on two standard hardware units, designed to meet these different demands. The Compact unit has a basic operator interface with six-button keyboard and LED display, the Graph unit has a larger LCD display and full keyboard. The hardware is essentially the same for all units, only differing in the user interface.



## Flexible Plug & Play software functionality

Different applications demand different functionality too. The Power Focus is based on standard software functionality components, to provide cost-efficient solutions from the most basic non-networked system to a system that is fully integrated with the factory network. There are four standard software levels: DS, Bronze, Silver and Gold. A Rapid Backup Unit (RBU) provides the key to the required functionality. The RBU software keys are matched to the hardware options, using a 'plug and play' approach.



## RBU cuts downtime

Atlas Copco's patented Rapid Backup Unit (RBU) concept transfers functionality to an 'empty' hardware unit, ensuring that hardware can easily be upgraded should functionality requirements change. The RBU also acts as backup for programming and configuration. As program changes are made, they are transferred simultaneously to the RBU unit and stored. If a change of hardware is required, just fit the RBU to the new hardware, switch on the unit and you're ready. All programming and network configurations are transferred in seconds. The RBU cuts downtime to a minimum.

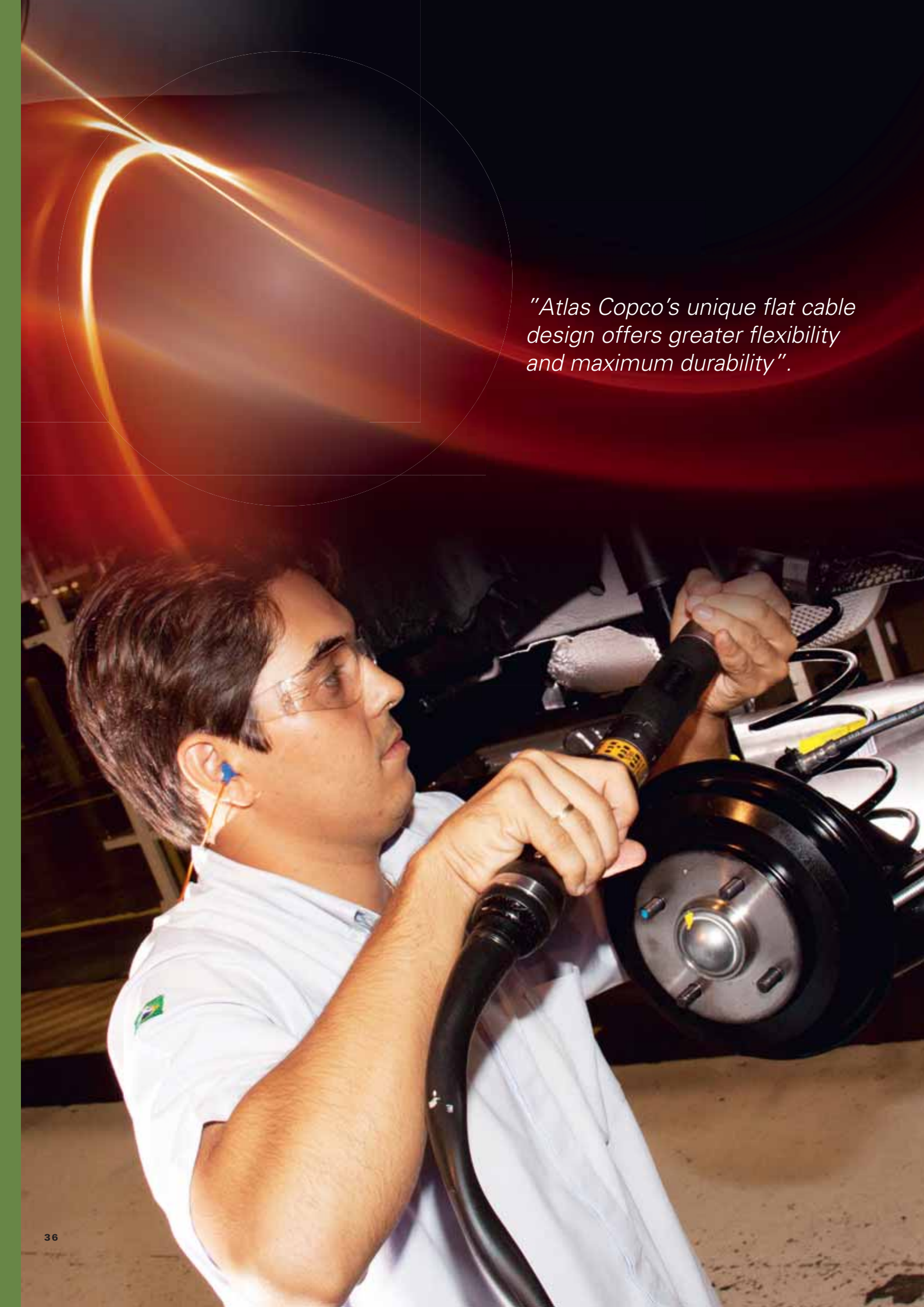
## Zero-fault process control

The Power Focus incorporates advanced control functions to prevent operator deviation from the required process. On receipt of assembly information, the Power Focus automatically selects the correct tightening sequence and parameters. This is the "Job" operator-process control function. When combined with barcode scanning for component identification, the "Job" function offers traceable zero-fault process control.

# Power Focus

## Functionality overview

General Functionality Level / RBU Runs Tool Types	DS / DL			Power Focus 4000			
	Box DS	Basic DS / DL	Advanced DS / DL	DS DS	Bronze S / ST / STR	Silver DS / S / ST / STR	Gold DS / S / ST / STR
<b>Tensor controllers</b>							
Compact hardware	x	x	x	x	x	x	x
LED display		x	x	x	x	x	x
6 button keyboard		x	x	x	x	x	x
Graph hardware						x	x
LCD display						x	x
Full keyboard						x	x
<b>Functionality</b>							
Number of tools	1	1	1	1	1	1	1
Number of Psets	1	1	10	64	64	250	250
Batch count	x	x	x	x	x	x	x
Open end spanner	x	DS only	DS only	x	x	x	x
Quick programming	x	x	x	x	x	x	x
Cross thread / Rehite detection	x	x	x	x	x	x	x
Tool service indicator	x	x	x	x	x	x	x
Autoset	x	x	x	x	x	x	x
Lock on reject	x	x	x	x	x	x	x
Line control			x	x		x	x
Transducer torque traceability					x	x	x
Tightening status storage (default)				5 000	5 000	5 000	5 000
Tightening data storage (default)					5 000	5 000	5 000
MultiStages				8		8	8
Trace storage					8	8	8
Real time statistics					x	x	x
SPC					x	x	x
RBU				x	x	x	x
Bar code reading				x		x	x
ID input to select Pset				x		x	x
Job function				x		x	x
Number of jobs (default)				32		99	99
ID input to select job				x		x	x
Logic Configurator (PF4000 only)				x		x	x
Cell programming				x		x	x
Label printer (via Open protocol)				x		x	x
Cell Job							x
<b>Strategies and options</b>							
Two stage/Quick step/Ergoramp	x	x	x	x	x	x	x
Torque control and angle monitoring	x	x	x	x	x	x	x
DS control	x	x	x	x		x	x
Auto zoom step	x	x	x	x	x	x	x
CW / CCW operation	x	x	x	x	x	x	x
Rundown angle monitoring	x	x	x	x	x	x	x
Self tap / PVT monitoring	x	x	x	x	x	x	x
Reverse angle	x	x	x	x	x	x	x
Rotate spindle	x	x	x	x	x	x	x
Click wrench input					x	x	x
Torque and angle control					x	x	x
Angle control and torque monitoring					x	x	x
Current monitoring					x	x	x
Post view torque						x	x
Yield control (PF 4000 and ETX combination only)							x
StepSync, SynchroTork (PF 4000 only)							x
Home position							x
Snug gradient							x
<b>I/O</b>							
RS232 programming port	x	x	x	x	x	x	x
USB port (PF 4000 only)				x	x	x	x
Discrete I/O	x	x	x	x	x	x	x
Remote start	x	x	x	x	x	x	x
Socket selector (optional)			x	x	x	x	x
RE Alarm (optional)			x	x	x	x	x
Parallel printer port				x	x	x	x
I/O Expander (optional)				x	x	x	x
Expandable I/O (up to 124 in / 124 out)				x	x	x	x
Operator ID card input				x		x	x
Fieldbus card				Optional		Optional	Optional
RS232 bar code reader port				x		x	x
Easily programmed fieldbus protocol				x		x	x
Ethernet port for remote prog				x		x	x
Ethernet port for data collection				OK-NOK		x	x
<b>Protocols</b>							
Open protocol serial				x	x	x	x
Open protocol Siemens 3964R serial				x	x	x	x
Open protocol Ethernet				x		x	x

A man in a white polo shirt with a small green logo on the sleeve, safety glasses, and blue earplugs is working in a factory. He is holding a black, flexible flat cable tool with both hands, applying it to a large, circular metal component. The background is dark with some industrial equipment visible. A large, glowing orange and red circular graphic is overlaid on the top left of the image.

*"Atlas Copco's unique flat cable design offers greater flexibility and maximum durability".*

# Tensor Cables

## Flat cable for greater durability

Atlas Copco has been producing assembly tool cables since 1987 and has unrivalled experience in the field. Flexibility and durability have steadily improved since the introduction of the company's first-generation cables, resulting in today's optimum cable performance. Atlas Copco's flat-cable design combines maximum flexibility (for access to difficult applications) with maximum durability. No other manufacturer can offer such a potent combination of flexibility and performance.



Tensor



Round

**Guidance to connect via cable, fast and easy to the tool.**

**Digital communication, less wires = even better flexibility.**

**Durable connector housing.**

*Tensor ST cable – less internal leads, lower weight, higher flexibility and better durability.*

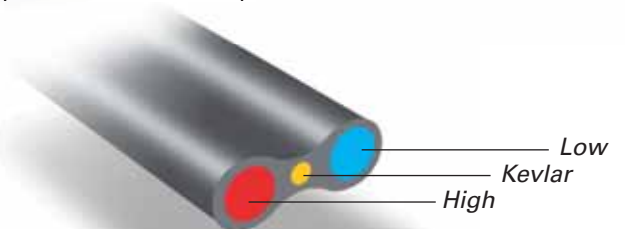
## Centralized strain relief to prevent lead damage

The flat cable design features a Kevlar-reinforced core, to absorb the tensile loads to which cables can be subjected in tough applications. When subjected to high tensile loads, this centralized load-relief Kevlar core also prevents cable leads being damaged or compressed, as happens with most round cable designs which have the strain relief outside the cable leads. For maximum signal integrity, the flat cable design also ensures optimum separation of high and low voltage conductors.

## Smaller bending radius for greater accessibility


Atlas Copco engineers its tool cables to withstand consistent and long-term flexing. Cable size (diameter) is the most critical factor in terms of flex life. The best way to reduce fatigue affecting the internal cable conductors is to keep cable thickness to a minimum. Atlas Copco's flat-cable design is just under half the thickness of a comparable 'round' cable, offering an exponential gain in flex life. When it comes to durability and flexibility, the Atlas Copco cable is unique.

**Locking mechanism to prevent unscrewing.**



## Innovative 'Cable Twist' design

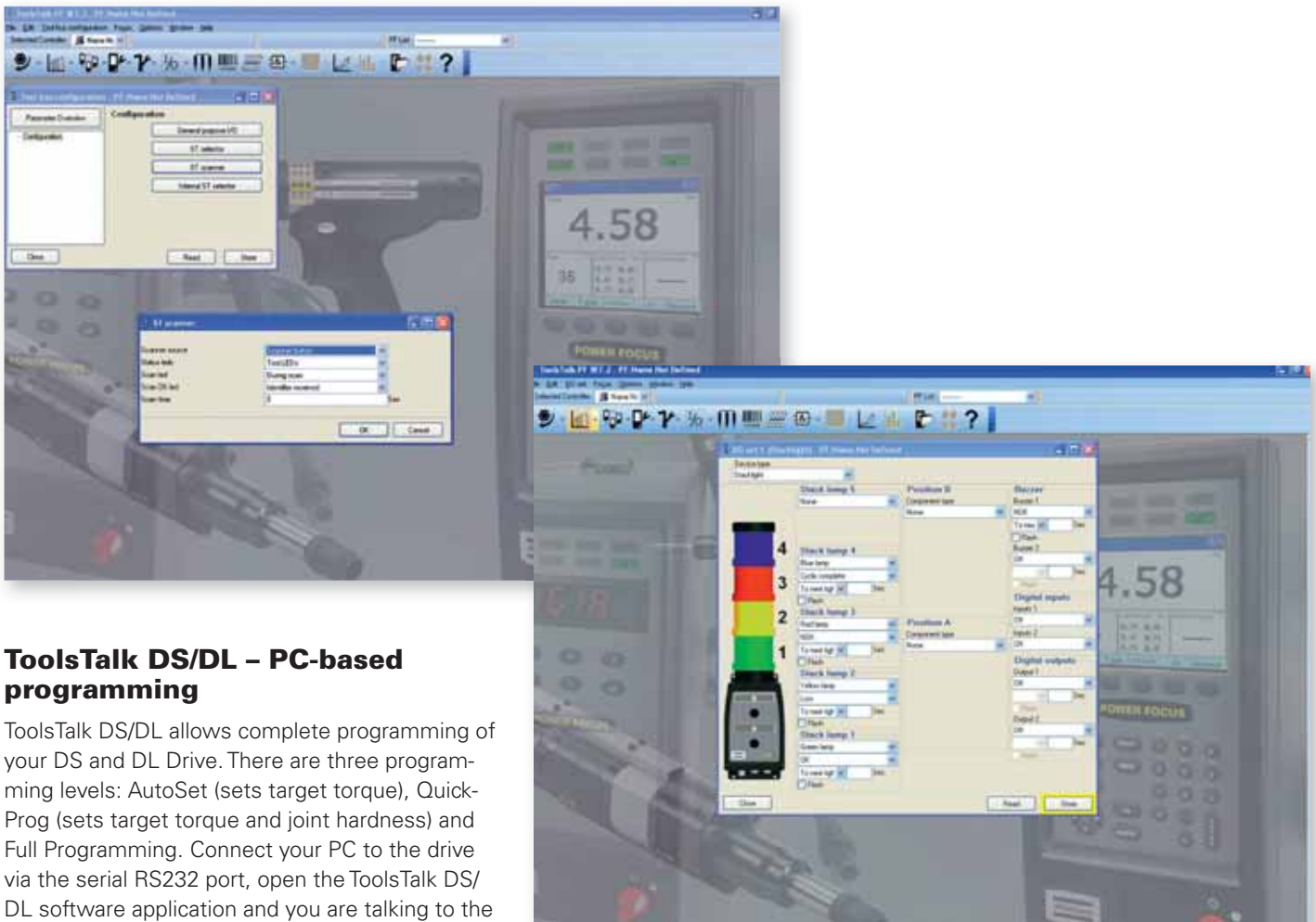
The most critical area for an assembly tool cable is at the point of maximum flex – generally close to the tool connection point. Atlas Copco's '**Cable Twist**' design spreads the flex load over a greater distance, to minimize flex in the critical area. This patented flat-cable 'twist' design is unique to Atlas Copco.



*"On-line or remote programming and analysis is made simple using our standard ToolsTalk software applications".*



# Configuration & analysis



## ToolsTalk DS/DL – PC-based programming

ToolsTalk DS/DL allows complete programming of your DS and DL Drive. There are three programming levels: AutoSet (sets target torque), Quick-Prog (sets target torque and joint hardness) and Full Programming. Connect your PC to the drive via the serial RS232 port, open the ToolsTalk DS/DL software application and you are talking to the drive. As simple as that.

Programming structure is intuitive, logical and easy to follow. ToolsTalk DS/DL software also features diagnostic tools for simple problem identification. ToolsTalk DS/DL runs on a Windows NT/XP environment.

## ToolsTalk PF – remote programming

ToolsTalk PF has the capability to program parameters in all versions of Power Focus 4000 hardware/software configurations, via a user-friendly PC interface.

For customized reporting, ToolsTalk can retrieve all results from a specified controller. With a simple click, these results can then be imported directly into other commercial software such as MS Excel etc.

ToolsTalk PF features built-in advanced monitoring and analytical tools, such as Operator Monitor, providing real time statistical data and powerful joint analysis, with high resolution graphics. ToolsTalk PF communicates with the Power Focus 4000 control systems via an RS232 serial connection or an Ethernet TCP/IP, either direct or, as is more common in modern plants, via the factory network from the office. ToolsTalk PF runs in a Windows NT/XP environment.

# Quality Integrated Fastening Station Software

ToolsNet 4000 is a data collection and process improvement software application for use with Power Focus, Pulsor Focus, PowerMACS and STWrench. Combined, these products provide total control of the assembly process, providing a platform for quality improvements. Historical data, statistics and capability indexes can be accessed at any time via a standard web browser such as Microsoft Internet Explorer. ToolsNet is the complete assembly process improvement tool.

## Traceability minimizes recall costs

The production can be followed in real-time or monitored through different reports such as the Result List report or Product List report which provides information of every tightening related to a specified period or product. In the event of warranty recalls, the result database provides access to critical information which can easily minimize the extent of any recall leading to an overnight payback on your investment.

## The right solution for your needs

ToolsNet 4000 is divided in three different packages to cover different needs.

## Reports

Take the first step in traceability by collecting all tightening results and storing them in a secure database system. Legal documentation and process improvements can be handled by running several pre-formatted reports specially designed to save user time and effort.

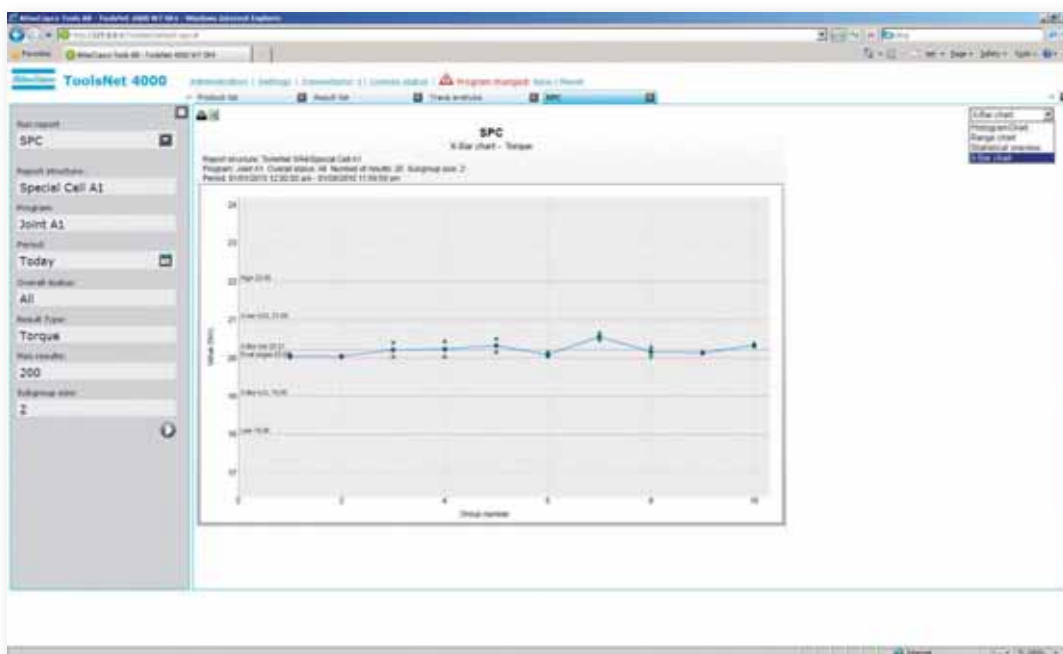


## Alert

Extend the usage of available information by collecting all events as they occur on the assembly line, in real time. Generate reports to identify events that are happening often and trigger emails to the right personnel based on event distribution rules you create. Be always on the alert for quality variation and workstations that require preventative or corrective tool maintenance.

## History

Full traceability of programming changes. Any change that may be done on the controller will be reported to the ToolsNet database. Super users can approve or not approve the change and later on cross check which products were built with detailed information.





# ToolsNet 4000

## Functionality overview

Features	ToolsNet 4000 Reports	ToolsNet 4000 Alert	ToolsNet 4000 History
ToolsNet open protocol supporting data collection from production equipment	x	x	x
Admin interface for hiding of old controllers	x	x	x
Delete maintenance of results	x	x	x
Result storing	x	x	x
Result list.	x	x	x
Result details. Table view including step information from PowerMACs	x	x	x
NOK summary. Table view.	x	x	x
Admin interface for custom groupings of controllers	x	x	x
Table export to Excel from all reports	x	x	x
Reporting based on custom grouping(s)	x	x	x
Trace storing	x	x	x
Support for multiple databases from same user interface	x	x	x
Scheduled export of data from production to long term database	x	x	x
Result list	x	x	x
NOK summary. Chart view.	x	x	x
Product summary report	x	x	x
Product list report	x	x	x
Product details report	x	x	x
Top NOK applications. Table view and chart view.	x	x	x
NOK trend per day. Table view and chart view.	x	x	x
Cp/Cpk report. Table view.	x	x	x
Trace reports - overlay multiple traces from different bolts.	x	x	x
Error distribution report	x	x	x
Unit change history	x	x	x
Email events to organization		x	x
Delete maintenance of events		x	x
Event list		x	x
Event statistics		x	x
Program change alert			x
Program change admin features			x
Admin interface for storage of safety critical / non safety critical joints			x
Program change summary			x
Program details			x
Program compare feature			x

# Tensor DL screwdrivers



ETD DL



ETP DL



ETF DL



ETV DL



ETD DL PS

Model	Torque range		Speed r/min	Weight		Length mm	CS distance <sup>a</sup> mm	Ordering No.
	Nm	in lb		kg	lb			
<b>Straight tools, lever start</b>								
ETD DL21-04-I06	1 - 4	8.8 - 35.4	1600	0.6	1.3	235	18 / 19.5	8433 4014 25
ETD DL21-07-I06	2.2 - 7.5	19.5 - 66	970	0.6	1.3	235	18 / 19.5	8433 4017 31
ETD DL21-10-I06	3 - 10	26.6 - 88.5	720	0.6	1.3	235	18 / 19.5	8433 4019 10
<b>Straight tools, push-to-start and front lights</b>								
ETD DL21-01-I06-PS	0.3 - 1.2	2.6 - 10	2200	0.6	1.3	243	18 / 19.5	8433 4010 89
ETD DL21-04-I06-PS	1 - 4	8.8 - 35.4	1600	0.6	1.3	243	18 / 19.5	8433 4014 91
ETD DL21-07-I06-PS	2.2 - 7.5	19.5 - 66	970	0.6	1.3	243	18 / 19.5	8433 4017 69
ETD DL21-10-I06-PS	3 - 10	26.6 - 88.5	720	0.6	1.3	243	18 / 19.5	8433 4019 25
<b>Right angle tools, lever start</b>								
ETV DL21-04-I06	1 - 4	8.8 - 35.4	1600	0.7	1.5	268	9	8433 4004 47
ETV DL21-04-I06-QC	1 - 4	8.8 - 35.4	1600	0.7	1.5	268	9	8433 4004 73
ETV DL21-04-I06	1 - 4	8.8 - 35.4	1600	0.7	1.5	268	9	8433 4004 91
ETV DL21-07-I06	2.2 - 7.5	19.5 - 66	970	0.7	1.5	268	9	8433 4007 66
ETV DL21-07-I06-QC	2.2 - 7.5	19.5 - 66	970	0.7	1.5	268	9	8433 4007 79
ETV DL21-07-I06	2.2 - 7.5	19.5 - 66	970	0.7	1.5	268	9	8433 4007 94
ETV DL21-10-I06	3 - 12	26.6 - 106.4	610	0.7	1.5	282	11	8433 4009 34
ETV DL21-10-I06-QC	3 - 12	26.6 - 106.4	610	0.7	1.5	282	11	8433 4009 61
ETV DL21-10-I06	3 - 12	26.6 - 106.4	610	0.7	1.5	282	11	8433 4009 77
<b>Pistol grip, lever start</b>								
ETP DL21-04-I06	1 - 4	8.8 - 35.4	1600	0.6	1.3	235	20	8433 4024 19
ETP DL21-07-I06	2.2 - 7.5	19.5 - 66	970	0.6	1.3	235	20	8433 4027 26
ETP DL21-10-I06	3 - 10	26.6 - 88.5	720	0.6	1.3	235	20	8433 4029 13
<b>Pistol grip, push-to-start and front lights</b>								
ETP DL21-01-I06-PS-H	0.3 - 1.2	2.6 - 10	2200	0.6	1.3	243	20	8433 4020 77
ETP DL21-04-I06-PS-H	1 - 4	8.8 - 35.4	1600	0.6	1.3	243	20	8433 4024 66
ETP DL21-07-I06-PS-H	2.2 - 7.5	19.5 - 66	970	0.6	1.3	243	20	8433 4027 53
ETP DL21-10-I06-PS-H	3 - 10	26.6 - 88.5	720	0.6	1.3	243	20	8433 4029 28
<b>Fixture tools, lever start or remote start</b>								
ETF DL21-01-I06-T25	0.3 - 1.2	2.6 - 10	2200	0.7	1.5	328	18 / 19.5	8433 4040 04
ETF DL21-04-I06-T25	1 - 4	8.8 - 35.4	1600	0.7	1.5	328	18 / 19.5	8433 4042 13
ETF DL21-07-I06-T25	2.2 - 7.5	19.5 - 66	970	0.7	1.5	328	18 / 19.5	8433 4043 22
ETF DL21-10-I06-T25	3 - 10	26.6 - 88.5	720	0.7	1.5	328	18 / 19.5	8433 4044 11

<sup>a</sup> For ETV, CS distance over angle head.

# Tensor SL screwdrivers



ETD SL



ETP SL



ETV SL



ETF SL

Model	Torque range		Speed r/min	Weight		Length mm	CS distance <sup>a</sup> mm	Stroke mm	Ordering No.
	Nm	in lb		kg	lb				
<b>Straight tools, push-to-start and front lights</b>									
ETD SL21-01-I06-PS	0.3 - 1.2	2.7 - 10	2950	0.7	1.6	246	18/19.5	-	8433 2102 92
ETD SL21-04-I06-PS	0.8 - 4	7 - 35	1600	0.7	1.6	246	18/19.5	-	8433 2104 91
ETD SL21-07-I06-PS	1.5 - 7.5	13 - 66	970	0.7	1.6	246	18/19.5	-	8433 2107 69
ETD SL21-10-I06-PS	2.0 - 10	18 - 89	720	0.7	1.6	246	18/19.5	-	8433 2108 25
<b>Right angle tools, lever start</b>									
ETV SL21-04-I06	0.8 - 4	7 - 35	1600	0.75	1.7	279	9	-	8433 2004 47
ETV SL21-04-I06-QC	0.8 - 4	8 - 35	1600	0.75	1.7	279	9	-	8433 2004 73
ETV SL21-04-I06	0.8 - 4	9 - 35	1600	0.75	1.7	279	9	-	8433 2004 91
ETV SL21-07-I06	1.5 - 7.5	13 - 66	970	0.75	1.7	279	9	-	8433 2007 66
ETV SL21-07-I06-QC	1.5 - 7.5	14 - 66	970	0.75	1.7	279	9	-	8433 2007 79
ETV SL21-07-I06	1.5 - 7.5	15 - 66	970	0.75	1.7	279	9	-	8433 2007 94
ETV SL21-12-I06	2.5 - 12	22 - 106	610	0.8	1.8	282	11	-	8433 2008 34
ETV SL21-12-I06-QC	2.5 - 12	23 - 106	610	0.8	1.8	282	11	-	8433 2008 61
ETV SL21-12-I06	2.5 - 12	24 - 106	610	0.8	1.8	282	11	-	8433 2008 77
ETV SL21-20-I06	4 - 20	36 - 180	465	0.95	2.1	285	14	-	8433 2009 55
ETV SL21-20-B10	4 - 20	36 - 180	465	0.95	2.1	285	14	-	8433 2009 60
<b>Pistol grip, push-to-start</b>									
ETP SL21-01-I06-PS	0.3 - 1.2	2.7 - 10	3000	0.85	1.9	246	20.5	-	8433 2201 16
ETP SL21-04-PS	0.8 - 4	7 - 35	1600	0.85	1.9	246	20.5	-	8433 2204 66
ETP SL21-07-PS	1.5 - 7.5	13 - 66	970	0.85	1.9	246	20.5	-	8433 2207 53
ETP SL21-10-PS	2 - 10	18 - 89	720	0.85	1.9	246	20.5	-	8433 2208 28
<b>Fixtured tools, lever start or remote start</b>									
ETF SL21-01-I06-T25	0.3 - 1.2	2.7 - 10	3000	0.95	2.1	322	18	25	8433 2404 13
ETF SL21-04-I06-T25	0.8 - 4	7 - 35	1600	0.95	2.1	322	18	25	8433 2404 19
ETF SL21-07-I06-T25	1.5 - 7.5	13 - 66	970	0.95	2.1	322	18	25	8433 2407 26
ETF SL21-10-I06-T25	2 - 10	18 - 89	720	0.95	2.1	322	18	25	8433 2408 13

<sup>a</sup> For ETV, CS distance over angle head.

# Tensor DS angle tools



ETV DS

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Ordering No.
		Nm	ft lb		kg	lb			
<b>ETV DS42</b>									
ETV DS42-05-06	1/4	1.5 - 6	1.1 - 4.4	1488	1.2	2.6	381	11	8433 1705 31
ETV DS42-05-10	3/8	1.5 - 6	1.1 - 4.4	1488	1.2	2.6	381	13.5	8433 1705 49
ETV DS42-08-06	1/4	2 - 8	1.5 - 5.9	1105	1.2	2.6	381	11	8433 1706 10
ETV DS42-10-06	1/4	3 - 12	2.2 - 8.8	762	1.3	2.9	381	11	8433 1706 14
ETV DS42-10-10	3/8	3 - 12	2.2 - 8.8	762	1.3	2.9	381	13.5	8433 1706 21
ETV DS42-20-10	3/8	5 - 20	3.7 - 14	401	1.3	2.9	381	13.5	8433 1706 49
<b>ETV DS42 Ball retainer</b>									
ETV DS42-10-B10	3/8	3 - 12	2.2 - 8.8	762	1.3	2.9	381	13.5	8433 1706 31
ETV DS42-20-B10	3/8	5 - 20	3.7 - 14	401	1.3	2.9	381	13.5	8433 1706 51
<b>ETV DS72</b>									
ETV DS72-15-10	3/8	4.5 - 17	3.3 - 12	1525	1.4	3.1	412	13.5	8433 1720 10
ETV DS72-28-10	3/8	7 - 28	5.1 - 20	1171	1.4	3.1	412	13.5	8433 1720 28
ETV DS72-30-10	3/8	9 - 35	6.6 - 25	800	1.4	3.1	412	13.5	8433 1721 42
ETV DS72-40-10	3/8	10 - 40	7.4 - 29	800	1.6	3.5	434	18	8433 1721 94
ETV DS72-50-10	3/8	14 - 55	11 - 40	480	1.6	3.5	434	18	8433 1722 58
ETV DS72-70-13	1/2	20 - 80	15 - 59	348	2.1	4.6	461	20	8433 1723 16
ETV DS72-100-13	1/2	28 - 110	21 - 81	229	2.3	5.1	482	20	8433 1723 70
ETV DS72-160-13	1/2	40 - 160	30 - 118	152	2.8	6.2	525	25.5	8433 1723 98
ETV DS72-180-13	1/2	45 - 180	34 - 133	123	2.8	6.2	525	25.5	8433 1724 15
ETV DS72-200-20	3/4	53 - 210	39 - 155	123	3.0	6.6	525	27	8433 1724 40
<b>ETV DS72 Flush Socket</b>									
ETV DS72-30-FS	-	9 - 35	6.6 - 25	800	1.4	3.1	412	13.5	8433 1721 65
ETV DS72-50-FS	-	14 - 55	11 - 40	480	1.6	3.5	434	18	8433 1722 75
ETV DS72-70-FS	-	20 - 80	15 - 59	345	2.1	4.6	461	20	8433 1723 26
ETV DS72-160-FS	-	40 - 160	36 - 118	152	2.8	6.2	525	25.5	8433 1724 00
ETV DS72-200-FS	-	50 - 200	37 - 147	137	3.5	7.7	527	28	8433 1725 05
<b>ETV DS72 Hold &amp; Drive</b>									
ETV DS72-50-HAD	-	14 - 55	11 - 40	480	3.0	6.6	504	26	8433 1722 60
ETV DS72-70-HAD	-	20 - 80	15 - 59	348	3.1	6.8	479	26	8433 1723 30
ETV DS72-100-HAD	-	28 - 110	21 - 81	229	3.2	7.1	525	26	8433 1723 73
ETV DS72-160-HAD	-	40 - 160	30 - 118	152	3.3	7.3	525	26	8433 1724 02
ETV DS72-200-HAD	-	50 - 200	37 - 148	123	3.5	7.7	525	26	8433 1724 45
<b>ETV DS72 Ball retainer</b>									
ETV DS72-15-B10	3/8	5 - 17	3.7 - 12	1525	1.4	3.1	412	13.5	8433 1720 20
ETV DS72-30-B10	3/8	9 - 35	6.7 - 25	800	1.4	3.1	412	13.5	8433 1721 54
ETV DS72-40-B10	3/8	10 - 40	7.4 - 29	800	1.6	3.5	434	18	8433 1721 99
ETV DS72-50-B10	3/8	14 - 55	11 - 40	480	1.6	3.5	434	18	8433 1722 63
ETV DS72-70-B13	1/2	20 - 80	15 - 59	348	2.1	4.6	461	20	8433 1723 21
ETV DS72-100-B13	1/2	28 - 110	21 - 81	240	2.3	5.1	482	20	8433 1723 68
ETV DS72-160-B13	1/2	40 - 160	36 - 118	152	2.8	6.2	525	25.5	8433 1724 12
ETV DS72-180-B13	1/2	45 - 180	34 - 133	123	2.8	6.2	525	25.5	8433 1724 20
<b>ETV DS92</b>									
ETV DS92-100-13	1/2	25 - 100	19 - 74	642	3.3	7.3	534	20	8433 1750 21
ETV DS92-180-13	1/2	45 - 180	34 - 113	395	3.8	8.4	578	25.5	8433 1750 68
ETV DS92-270-20	3/4	70 - 270	52 - 199	240	7.0	15.4	661	33.5	8433 1751 38
ETV DS92-370-20	3/4	95 - 370	70 - 273	152	7.1	15.7	661	33.5	8433 1751 86
ETV DS92-450-20	3/4	115 - 450	85 - 333	131	11.6	25.6	702	54	8433 1752 04
ETV DS92-600-25	1	150 - 600	111 - 444	112	11.6	25.6	702	54	8433 1752 63
ETV DS92-600-20TM	3/4	150 - 600	111 - 444	97	9.7	21.4	603	26.3	8433 1752 40
ETV DS92-1000-25TM	1/2	250 - 1000	185 - 740	60	12.0	26.5	666	32	8433 1752 90
ETV DS92-2000-38TM	1/2	500 - 2000	370 - 1480	30	17.0	37.5	706	63.5	8433 1752 96
ETV DS92-4000-38TM	1/2	1000 - 4000	740 - 2960	14	21.0	46.3	615	71	8433 1753 25
<b>ETV DS92 Hold &amp; Drive</b>									
ETV DS92-370-HAD	-	95 - 370	70 - 273	170	8.3	18.3	661	35	8433 1751 95

# Tensor DS straight tools



ETD DS

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Spline/ Mounting	Ordering No.
		Nm	ft lb		kg	lb				
<b>ETD DS4</b>										
ETD DS4-05-10S	3/8	2 - 5	1.5 - 3.6	1315	1.1	2.5	380	28	- / 1	8433 0710 29
ETD DS4-10-10S	3/8	4 - 14	3 - 10	620	1.1	2.5	380	28	- / 1	8433 0710 52
ETD DS42-20-10	3/8	5 - 20	3.7 - 15	390	1.1	2.5	380	28	- / 1	8433 1711 16
<b>ETD DS4 Telescopic</b>										
ETD DS4-05-10ST	3/8	2 - 5	1.5 - 3.6	1315	1.3	2.9	418	28	2 / 2	8433 0710 37
ETD DS4-10-10ST	3/8	4 - 14	3 - 10	620	1.3	2.9	418	28	2 / 2	8433 0710 73
<b>ETD DS4 Female Hex</b>										
ETD DS4-02-106S	1/4	1 - 2.5	0.7 - 1.8	2942	1.1	2.5	371	28	- / 1	8433 0710 22
ETD DS4-05-106S	1/4	2 - 5	1.5 - 3.6	1310	1.1	2.5	371	28	- / 1	8433 0710 26
ETD DS4-10-106S	1/4	4 - 14	3 - 10	620	1.1	2.5	371	28	- / 1	8433 0710 46
<b>ETD DS7</b>										
ETD DS7-20-10S	3/8	6 - 20	4.4 - 14.5	1240	1.4	3.1	411	28	- / 1	8433 0730 23
ETD DS72-30-10S	3/8	10 - 35	7.3 - 25	745	1.4	3.1	411	28	- / 1	8433 1730 88
ETD DS72-50-13S	1/2	17 - 55	12 - 40	540	1.9	4.2	456	28	2 / 2	8433 1731 12
ETD DS7-70-13S	1/2	21 - 70	15 - 51	370	2.2	4.9	477	28	2 / 2	8433 0731 31
ETD DS7-90-13S	1/2	28 - 95	21 - 69	275	2.2	4.9	477	28	2 / 2	8433 0731 45
ETD DS7-120-13S	1/2	38 - 125	28 - 91	225	2.2	4.9	477	28	2 / 2	8433 0731 84
<b>ETD DS7 Telescopic</b>										
ETD DS7-20-10ST	3/8	6 - 20	4.4 - 14.5	1240	1.5	3.3	449	28	2 / 2	8433 0730 44
ETD DS7-30-10ST	3/8	10 - 35	7.3 - 25	745	1.5	3.3	449	28	2 / 2	8433 0731 05
ETD DS7-50-13ST	1/2	17 - 55	12 - 40	540	2.1	4.7	483	28	3 / 5	8433 0731 24
ETD DS7-50-13ST50	1/2	17 - 55	12 - 40	540	2.2	4.8	540	28	3 / 5	8433 0731 22
ETD DS7-70-13ST	1/2	21 - 70	15 - 51	370	2.4	5.4	504	29.5	3 / 5	8433 0731 40
ETD DS72-70-13ST75	1/2	21 - 70	15 - 51	370	2.5	5.5	645	29.5	3 / 5	8433 1731 39
ETD DS7-90-13ST	1/2	28 - 95	21 - 69	275	2.9	6.5	504	29.5	3 / 5	8433 0731 52
ETD DS7-90-13ST50	1/2	28 - 95	21 - 69	275	3.0	6.6	562	29.5	3 / 5	8433 0731 64
ETD DS7-120-13ST	1/2	38 - 125	28 - 91	225	3.0	6.6	504	29.5	3 / 5	8433 0731 96
ETD DS7-120-13ST50	1/2	38 - 125	28 - 91	225	3.1	6.8	562	29.5	3 / 5	8433 0731 99
ETD DS7-200-13ST	1/2	50 - 200	37 - 146	225	3.2	7.1	616	29.5	3 / 5	8433 0732 10
<b>ETD DS7 Ball Retainer</b>										
ETD DS7-50-B13S	1/2	17 - 55	12 - 40	540	1.9	4.2	456	28	2 / 2	8433 0731 20
ETD DS7-90-B13S	1/2	28 - 95	21 - 69	275	2.2	4.9	477	32	2 / 2	8433 0731 48
<b>ETD DS9</b>										
ETD DS9-100-13S	1/2	40 - 100	29 - 73	715	3.0	6.7	529	32	2 / 2	8433 0756 42
ETD DS9-150-13S	1/2	60 - 150	44 - 110	455	3.2	7.1	544	32	2 / 2	8433 0757 54
ETD DS9-200-13S	1/2	80 - 200	58 - 146	340	3.2	7.1	544	32	2 / 2	8433 0758 71
ETD DS9-270-20S	3/4	68 - 270	50 - 199	220	6.2	14	603	36	6 / 8	8433 0760 53
ETD DS9-450-20S	3/4	115 - 450	85 - 328	125	7.4	16	639	40.5	6 / 8	8433 0760 71
ETD DS92-600-20S	3/4	150 - 600	110 - 438	110	7.6	17	639	40.5	6 / 8	8433 1761 29
ETD DS9-1000-25S	1	250 - 1000	184 - 730	68	12.3	27	769	47	7 / 11	8433 0763 60
ETD DS9-1200-25S	1	300 - 1200	220 - 880	55	12.3	27	769	47	7 / 11	8433 0763 80
ETD DS9-1500-38S	1 1/2	375 - 1500	280 - 1100	42	16.8	37	725	68	8 / 12	8433 0763 91
ETD DS9-2000-38S	1 1/2	600 - 2000	440 - 1475	34	20.5	45	725	68	8 / 12	8433 0764 05
ETD DS9-3000-38S	1 1/2	750 - 3000	550 - 2200	21	21.7	47.8	809	68	8 / 12	8433 0764 23
ETD DS9-4000-38S	1 1/2	1000 - 4000	730 - 2950	17	21.7	47.8	809	68	8 / 12	8433 0764 37
ETD DS92-4000-38S	1 1/2	1000 - 4000	730 - 2950	17	21.7	48	809	68	8 / 12	8433 1764 37
<b>ETD DS9 Telescopic</b>										
ETD DS9-100-13ST	1/2	40 - 100	29 - 73	715	3.2	7.1	557	32	3 / 5	8433 0756 92
ETD DS9-150-13ST	1/2	60 - 150	44 - 110	455	3.4	7.6	572	32	3 / 5	8433 0758 03
ETD DS9-200-13ST	1/2	80 - 200	58 - 146	340	3.4	7.6	572	32	3 / 5	8433 0759 11
ETD DS9-270-20ST	3/4	108 - 270	79 - 197	225	6.0	13	653	36	6 / 8	8433 0760 55
ETD DS9-450-20ST	3/4	115 - 450	85 - 328	125	7.6	17	689	40.5	6 / 8	8433 0760 88
ETD DS9-600-20ST	3/4	150 - 600	110 - 438	110	7.6	17	689	40.5	6 / 8	8433 0761 35
ETD DS9-1000-25ST	1	250 - 1000	184 - 730	68	12.5	28	824	47	7 / 11	8433 0763 63
ETD DS9-1200-25ST	1	300 - 1200	220 - 880	55	12.5	28	824	47	7 / 11	8433 0763 83
ETD DS9-1500-38ST	1 1/2	375 - 1500	280 - 1100	42	17	37.5	824	68	8 / 12	8433 0763 93
ETD DS9-2000-38ST	1 1/2	600 - 2000	440 - 1475	34	21	47	824	68	8 / 12	8433 0764 20
ETD DS92-3000-38ST	1 1/2	750 - 3000	550 - 2200	21	21.9	48.3	904	68	8 / 12	8433 1764 25
ETD DS9-4000-38ST	1 1/2	1000 - 4000	730 - 2950	17	21.9	48	904	68	8 / 12	8433 0764 40
<b>ETD DS9 Swivelling</b>										
ETD DS92-750-25SSW	1	188 - 750	138 - 552	84	5.5	12.1	579	47	5	8433 0761 75
ETD DS92-1000-25SSW	1	250 - 1000	185 - 737	68	12.3	27	769	47	7/11	8433 0763 70
ETD DS92-1200-25SSW	1	300 - 1200	220 - 884	55	12.3	27	769	47	7/11	8433 0763 85
ETD DS92-2000-25SSW	1 1/2	500 - 2000	370 - 1480	34	20.5	45	725	68	8/12	8433 0764 10
ETD DS92-4000-25SSW	1 1/2	1000 - 4000	740 - 2960	17	21.7	48	809	68	8/12	8433 0764 45

# Tensor DS pistol tools

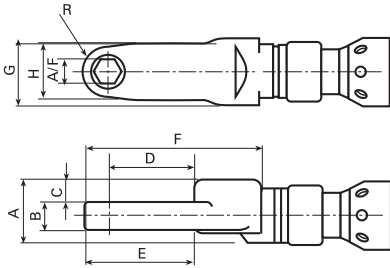


ETP DS

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Spline/ Mounting	Ordering No.
		Nm	ft lb		kg	lb				
<b>ETP DS4</b>										
ETP DS4-05-06S	1/4	2 - 5	1.5 - 3.6	1310	1.1	2.5	193	21.5	- / -	8433 0708 76
ETP DS4-10-06S	1/4	3.5 - 12	2.5 - 8.8	660	1.1	2.5	193	21.5	- / -	8433 0708 92
ETP DS42-10-10S	3/8	3.5 - 12	2.5 - 8.8	905	1.0	2.2	188	21.3	- / -	8433 0709 11
<b>ETP DS4 Female Hex</b>										
ETP DS42-02-106	1/4	1.0 - 2.5	0.7 - 1.8	2950	0.9	2.0	188	21.3	- / -	8433 0708 40
ETP DS42-05-106	1/4	2 - 5	1.5 - 3.6	1770	0.9	2.0	188	21.3	- / -	8433 0708 69
ETP DS4-07-106S	1/4	2.1 - 7	1.5 - 5.1	905	1.1	2.5	201	21.5	- / -	8433 0708 80
ETP DS42-10-106	1/4	3.5 - 12	2.5 - 8.8	905	1.0	2.2	188	21.3	- / -	8433 0708 87
ETP DS42-20-106	1/4	6 - 20	4.4 - 14.5	471	1.0	2.2	188	21.3	- / -	8433 0709 34
<b>ETP DS7</b>										
ETP DS7-20-10S	3/8	6 - 20	4.4 - 14.5	1240	1.6	3.6	273	21.5	- / 1	8433 0726 36
ETP DS7-30-10S	3/8	10 - 35	7.3 - 25	750	1.6	3.6	273	21.5	- / 1	8433 0726 53
ETP DS7-50-13S	1/2	17 - 55	12 - 40	540	1.9	4.2	318	21.5	2 / 2	8433 0726 87
ETP DS7-70-13S	1/2	21 - 70	15 - 51	370	2.1	4.7	340	21.5	2 / 2	8433 0727 01
ETP DS7-90-13S	1/2	28 - 95	21 - 69	275	2.1	4.7	340	21.5	2 / 2	8433 0727 19
ETP DS7-120-13S	1/2	38 - 125	28 - 91	220	2.1	4.7	340	21.5	2 / 2	8433 0727 47
<b>ETP DS7 Telescopic</b>										
ETP DS7-30-10ST	3/8	10 - 35	7.3 - 25	750	1.7	3.7	313	21.5	2 / 2	8433 0726 55
ETP DS7-50-13ST	1/2	17 - 55	12 - 40	540	2.1	4.6	350	21.5	2 / 2	8433 0726 92
ETP DS7-70-13ST	1/2	21 - 70	15 - 51	370	2.2	4.9	367	22.5	3 / 5	8433 0727 05
<b>ETP DS7 Female Hex</b>										
ETP DS7-20-106	1/4	6 - 20	4.4 - 14.5	1240	1.6	3.6	273	21.5	- / 1	8433 0726 38
<b>ETP DS7 Swivelling<sup>a</sup></b>										
ETP DS7-70-13SSW	1/2	21 - 70	15 - 51	370	2.2	4.9	339	29.5	2 / 4	8433 0727 09
ETP DS7-90-13SSW	1/2	28 - 95	21 - 69	275	2.2	4.9	339	29.5	2 / 4	8433 0727 28
ETP DS7-120-13SSW	1/2	38 - 125	28 - 91	220	2.2	4.9	339	29.5	2 / 4	8433 0727 84
<b>ETP DS9</b>										
ETP DS9-100-13S	1/2	40 - 100	29 - 73	790	3.8	8.5	378	32	2 / 2	8433 0765 39
ETP DS9-150-13S	1/2	60 - 150	44 - 110	510	3.8	8.5	392	32	2 / 2	8433 0765 58
ETP DS9-200-13S	1/2	80 - 200	58 - 146	375	3.8	8.5	392	32	2 / 2	8433 0766 05
ETP DS9-270-20S	3/4	108 - 270	79 - 197	250	5.8	12.9	451	36	6 / 8	8433 0766 49
ETP DS9-450-20S	3/4	115 - 450	85 - 328	140	7.4	16.5	487	40.5	6 / 8	8433 0767 52
ETP DS9-600-20S	3/4	150 - 600	110 - 438	120	7.4	16.5	487	40.5	6 / 8	8433 0768 08
ETP DS9-1000-25S	1	250 - 1000	184 - 730	68	12.1	26.7	620	47	7 / 11	8433 0768 66
ETP DS9-1200-25S	1	300 - 1200	220 - 880	55	12.1	26.7	620	47	7 / 11	8433 0768 83
ETP DS9-2000-38S	1 1/2	500 - 2000	440 - 1475	34	16.8	37	574	68	8 / 12	8433 0769 10
ETP DS9-4000-38S	1 1/2	1000 - 4000	730 - 2950	17	21.7	47.8	654	68	8 / 12	8433 0769 50
<b>ETP DS9 Telescopic</b>										
ETP DS9-1000-25ST	1	250 - 1000	184 - 730	68	12.3	27.1	672	47	7 / 11	8433 0768 79
ETP DS9-2000-38ST	1 1/2	500 - 2000	440 - 1475	34	17	37.5	672	68	8 / 12	8433 0769 20
ETP DS9-4000-38ST	1 1/2	1000 - 4000	730 - 2950	17	21.9	48.3	753	68	8 / 12	8433 0769 60
<b>ETP DS9 Swivelling<sup>a</sup></b>										
ETP DS9-150-13SSW	1/2	60 - 150	44 - 110	510	3.9	8.7	394	32	2 / 4	8433 0765 69
ETP DS9-200-13SSW	1/2	80 - 200	58 - 146	375	3.9	8.7	394	32	2 / 4	8433 0766 12
ETP DS9-350-20SSW	3/4	100 - 370	75 - 270	180	5.2	11.5	387	35	4	8433 0766 56
ETP DS9-500-20SSW	3/4	140 - 530	105 - 390	125	5.2	11.5	387	35	4	8433 0767 71
ETP DS9-750-25SSW	1	220 - 750	162 - 553	84	5.5	12.1	428	47	5	8433 0768 24
ETP DS9-1000-25SSW	1	250 - 1000	184 - 730	68	12.1	26.7	620	47	7 / 11	8433 0768 76
ETP DS9-1500-25SSW	1	375 - 1500	280 - 1100	45	8.5	18.8	450	46	9	8433 0768 99
ETP DS9-2000-38SSW	1 1/2	500 - 2000	440 - 1475	34	16.8	37	574	68	8 / 12	8433 0769 15

<sup>a</sup> Non-reversible start button as standard.

# Tensor DS crowfoot tools



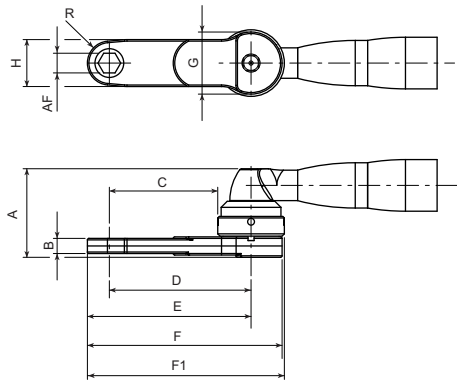
Dimensions



ETC DS

## In-Line crowfoot tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	R mm	Ordering No.
	Nm	ft lb		kg	lb												
<b>ETC DS72</b>																	
ETC DS72-25-13-LI3	10 - 28	7.3 - 21	560	1.9	4.2	507	13	34	15	12.5	45.5	70.7	94	35	30	13	8433 1701 90



Dimensions

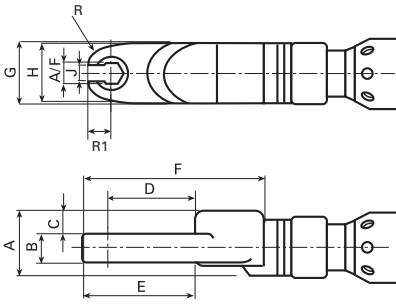


ETC DS

## Offset crowfoot tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	R mm	F1 mm	Ordering No.
	Nm	ft lb		kg	lb													
<b>ETC DS72</b>																		
ETC DS72-18-10-LO5	6.3 - 18	4.7 - 13.2	800	1.7	3.7	475	10	61.8	15	47.4	66	76.6	90.6	36.5	22	10	94	8433 1701 12
ETC DS72-25-13-LO5	6.3 - 24	4.7 - 17.7	800	1.9	4.2	496	13	63	15	62	84	97	117.5	44	30	13	119	8433 1701 29
ETC DS72-35-13-LO5	9.8 - 38.5	7.2 - 28.4	480	2.2	4.8	525	13	70.5	18	71.6	47	108.1	128.6	44	31	14.5	130.1	8433 1701 38
ETC DS72-40-17-LO3	11.2 - 44	8.3 - 32.4	480	2.1	4.6	507	17	77	24	27	123	140	88.5	48	36	18	90	8433 1701 46
ETC DS72-50-19-LO5	14-56	10.3 - 41.3	348	3.5	7.7	581	19	84	28	91.2	51	66	166.4	62.5	30	15	172	8433 1701 49
ETC DS72-80-21-LO3	22-88	16.2 - 64.9	229	3.1	6.8	553	21	78.9	20	35	66	140.4	112	62.5	40	20	117.3	8433 1701 60
ETC DS72-80-21-LO5	19-77	14 - 56.7	229	3.5	7.7	619	21	84.9	20	101	132	152	178	62.5	40	20	183.3	8433 1701 65
<b>ETC DS92</b>																		
ETC DS92-140-18-LO7	65 - 145	48 - 107	240	10	22	831	18	144.3	37	148.1	186.6	205.1	239.1	77	37	18.5	242	8433 1703 95

# Tensor DS tube nut tools



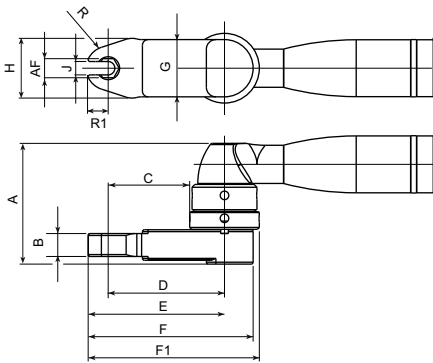
Dimensions



ETO DS

## In-Line tube nut tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	R1 mm	R mm	Ordering No.
	Nm	ft lb		kg	lb														
<b>ETO DS72</b>																			
ETO DS72-15-10-LI3	6 - 15	4.4 - 11	898	1.8	4	479	10	32	12	11	27.9	26.1	68	33.5	32	8	10.3	14	8433 1703 10
ETO DS72-30-13-LI3	9.9 - 33	7.3 - 24	564	2.3	5.1	526	13	43	18	14	34.3	31.4	83	40	40	10.4	12.4	25	8433 1703 21
ETO DS72-50-17-LI3	18 - 55	13.2 - 41	370	3	6.6	620	17	46	12	20	60.3	38.8	124	45	59	16	20.1	32	8433 1703 35
ETO DS72-80-19-LI3	29 - 80	21 - 59	195	3.9	8.6	650	19	46	18	17	53.8	38.8	137	64	59	17	20.1	32	8433 1703 40



Dimensions



ETO DS

## Offset tube nut tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	R1 mm	R mm	F1 mm	Ordering No.
	Nm	ft lb		kg	lb															
<b>ETO DS72</b>																				
ETO DS72-25-13-LO3	7.5 - 28	5.5 - 21	800	2	4.4	469	13	65	11	12.8	36.8	51.8	74.3	48	50	10.4	15	31	75.8	8433 1703 75
ETO DS72-50-17-LO3	15 - 55	11 - 41	348	2.8	6.2	510	17	73.5	12	18	49.2	69.3	96.8	62.5	59	16	20.1	32	100.6	8433 1703 80
ETO DS72-80-22-LO3	22 - 80	16.2 - 59	229	3.1	6.8	536	22	79.9	18	18	49.2	69.3	96.8	62.5	59	17	20.1	32	100.6	8433 1703 85
ETO DS72-100-24-LO3	30 - 110	22 - 81	152	4.2	9.2	584	24	97.1	20	23.2	60	84.6	118.6	73.5	77	20.5	24.6	33	121.4	8433 1703 90



# Tensor S angle tools



ETV S Mark II

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Ordering No.
		Nm	ft lb		kg	lb			
<b>ETV S42</b>									
ETV S42-05-06	1/4	1 - 6	0.7 - 3.6	1232	1.5	3.3	381	11	8433 1236 12
ETV S42-05-10	3/8	1 - 6	0.7 - 3.6	1232	1.5	3.3	381	13.5	8433 1236 26
ETV S42-10-06	1/4	3 - 15	2.2 - 11	798	1.5	3.3	381	11	8433 1236 35
ETV S42-10-10	3/8	3 - 15	2.2 - 11	798	1.5	3.3	381	13.5	8433 1236 51
ETV S42-20-10	3/8	4 - 25	2.9 - 18.3	447	1.5	3.3	382	13.5	8433 1236 91
ETV S42-30-10	3/8	6 - 35	4.4 - 27.7	268	1.6	3.5	384	15.5	8433 1237 04
<b>ETV S42 Ball Retainergelung</b>									
ETV S42-10-B10	3/8	3 - 15	2.2 - 11	798	1.5	3.3	381	11	8433 1236 62
ETV S42-20-B10	3/8	4 - 25	2.9 - 18.3	447	1.5	3.3	382	13.5	8433 1236 95
<b>ETV S72</b>									
ETV S72-28-10	3/8	5 - 29	4 - 21	1305	1.6	3.5	413	13.5	8433 1245 20
ETV S72-30-10	3/8	6 - 35	5 - 25	893	1.6	3.5	415	15.5	8433 1247 33
ETV S72-40-10	3/8	8 - 40	6 - 29	887	1.7	3.7	435	18	8433 1250 00
ETV S72-50-10	3/8	10 - 55	7 - 40	533	1.9	4.2	435	18	8433 1252 87
ETV S72-70-13	1/2	14 - 80	10 - 58	384	2.2	4.8	461	20	8433 1273 09
ETV S72-100-13	1/2	20 - 100	15 - 80	307	2.5	5.5	489	22.5	8433 1280 00
ETV S72-150-13	1/2	30 - 160	22 - 117.3	190	2.9	6.4	525	25.5	8433 1288 67
ETV S72-180-13	1/2	40 - 180	29 - 132	142	3.0	6.6	525	25.5	8433 1291 17
ETV S72-200-20	3/4	40 - 210	29 - 154	142	3.2	10.4	527	27	8433 1291 35
<b>ETV S72 Ball Retainer</b>									
ETV S72-28-B10	3/8	5 - 29	4 - 21	1300	1.6	3.5	413	13.5	8433 1245 23
ETV S72-30-B10	3/8	6 - 35	5 - 25	893	1.6	3.5	415	15.5	8433 1247 35
ETV S72-40-B10	3/8	8 - 40	6 - 29	887	1.7	3.7	435	18	8433 1250 42
ETV S72-50-B10	3/8	10 - 55	7 - 40	533	1.9	4.2	435	18	8433 1252 62
ETV S72-70-B13	1/2	14 - 80	10 - 58	384	2.2	4.8	461	20	8433 1273 44
ETV S72-100-B13	1/2	20 - 110	15 - 80	307	2.5	5.5	489	22.5	8433 1280 31
ETV S72-150-B13	1/2	30 - 160	22 - 117.3	190	2.9	6.4	525	25.5	8433 1288 46
ETV S72-180-B13	1/2	40 - 180	29 - 132	142	3.0	6.6	525	25.5	8433 1291 44
<b>ETV S72 Hold &amp; Drive</b>									
ETV S72-50-HAD	-	10 - 55	6 - 29	533	2.1	4.7	436	18.3	8433 1253 74
ETV S72-70-HAD	-	14 - 80	7 - 40	384	2.1	4.7	436	18.3	8433 1274 15
ETV S72-100-HAD	-	20 - 110	10 - 58	307	3.3	7.3	504	26	8433 1280 97
ETV S72-150-HAD	-	30 - 150	22 - 110	185	3.7	8.2	525	26	8433 1288 93
<b>ETV S72 Flush Socket</b>									
ETV S72-180-FS	1/2	40 - 180	29 - 132	137	3.3	7.3	525	26	8433 1291 79
<b>ETV S92</b>									
ETV S92-50-13	1/2	15 - 55	10.8 - 36	1147	4.2	9.2	552	20	8433 1349 47
ETV S92-70-13	1/2	30 - 80	22 - 58	966	4.3	9.4	552	20	8433 1350 03
ETV S92-100-13	1/2	40 - 110	30 - 73	746	4.4	9.7	561	22.5	8433 1350 22
ETV S92-180-13	3/4	45 - 180	33 - 132	455	4.5	9.9	595	25.5	8433 1350 85
ETV S92-200-20	3/4	40 - 210	29 - 154	455	4.7	7.1	597	27	8433 1351 31
ETV S92-270-20	3/4	65 - 270	47 - 198	267	7.4	16.3	661	33	8433 1352 39
ETV S92-370-20	3/4	90 - 370	66 - 270	170	7.5	16.5	661	33	8433 1352 74
ETV S92-450-20	1	135 - 450	97 - 324	146	10.0	22	702	54	8433 1353 15
ETV S92-600-25	-	150 - 600	110 - 432	124	10.1	22.2	702	54	8433 1353 81
<b>ETV S92 Hold &amp; Drive</b>									
ETV S92-100-HAD	-	40 - 100	30 - 73	746	4.9	10.8	595	26	8433 1350 28
<b>ETV S92 Torque Multiplier</b>									
ETV S92-600-20TM	3/4	150 - 600	110 - 440	107	9.7	21.4	603	30	8433 1353 32
ETV S92-1000-25TM	1	250 - 1000	184 - 730	67	12	26.5	666	40	8433 1354 00
ETV S92-2000-38TM	1 1/2	500 - 2000	370 - 1475	34	17	37.5	706	68	8433 1354 24
ETV S92-4000-38TM	1 1/2	1000 - 4000	740 - 2950	15	21	46.3	706	68	8433 1354 50

# Tensor S straight tools



## ETD S

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Spline/ Mounting	Ordering No.
		Nm	ft lb		kg	lb				
<b>ETD S4</b>										
ETD S4-04-10CTADS	3/8	1 - 5	0.7 - 3.6	1465	1.4	3.1	381	28	- / 1	8433 0237 81
ETD S4-10-10CTADS	3/8	3 - 14	2.2 - 10.3	690	1.4	3.1	381	28	- / 1	8433 0238 18
ETD S4-20-10CTADS	3/8	5 - 20	3.6 - 15	415	1.4	3.1	381	28	- / 1	8433 0239 72
<b>ETD S4 Female Hex</b>										
ETD S4-02-I06CTADS	1/4	0.5 - 2.5	0.35 - 1.8	2930	1.4	3.1	372	28	- / 1	8433 0237 43
ETD S4-04-I06CTADS	1/4	1 - 5	0.7 - 3.6	1465	1.4	3.1	372	28	- / 1	8433 0237 47
ETD S4-10-I06CTADS	1/4	3 - 14	2.2 - 10.3	690	1.5	3.3	372	28	- / 1	8433 0238 06
<b>ETD S7</b>										
ETD S7-20-10CTADS	3/8	5 - 20	3.6 - 15	1380	1.6	3.6	411	28	- / 1	8433 0294 42
ETD S7-30-10CTADS	3/8	6 - 35	4.4 - 25	830	1.6	3.6	411	28	- / 1	8433 0295 07
ETD S7-50-13CTADS	1/2	10 - 55	7.3 - 40	595	2.1	4.7	456	28	2 / 2	8433 0297 37
ETD S7-70-13CTADS	1/2	14 - 80	11 - 58	410	2.4	4.7	477	29.5	2 / 2	8433 0298 04
ETD S7-90-13CTADS	1/2	20 - 95	15 - 69	335	2.8	6.2	477	29.5	2 / 2	8433 0299 11
ETD S7-120-13CTADS	1/2	25 - 125	18 - 91	280	2.9	6.5	477	29.5	2 / 2	8433 0299 72
<b>ETD S7 Ball Retainer</b>										
ETD S7-30-B10CTADS	3/8	6 - 35	3.6 - 15	830	1.6	3.6	411	28	- / 1	8433 0295 09
ETD S7-50-B13CTADS	1/2	10 - 55	7.3 - 40	595	2.1	4.7	456	28	2 / 2	8433 0297 56
ETD S7-70-B13CTADS	1/2	14 - 80	11 - 58	410	2.4	4.7	477	29.5	2 / 2	8433 0298 07
<b>ETD S7 Female Hex</b>										
ETD S7-20-I06CTADS	1/4	5 - 20	3.6 - 15	1380	1.6	3.6	402	28	- / 1	8433 0294 47
<b>ETD S9</b>										
ETD S9-100-13CTADS	1/2	25 - 100	19 - 73	795	4.0	8.9	547	31.8	2 / 2	8433 0361 52
ETD S9-200-13CTADS	1/2	50 - 200	36 - 146	370	4.1	9.1	547	31.8	2 / 2	8433 0362 38
ETD S9-270-20CTADS	3/4	65 - 270	47 - 198	250	6.5	14.5	603	36	6 / 8	8433 0363 83
ETD S9-450-20CTADS	3/4	110 - 450	80 - 330	140	7.9	17.6	639	40.3	6 / 8	8433 0364 52
ETD S9-600-20CTADS	3/4	150 - 600	110 - 440	120	7.9	17.6	639	40.3	6 / 8	8433 0364 82
ETD S9-1000-25CTADS	1	250 - 1000	180 - 730	76	12	26.5	770	47	7 / 11	8433 0365 32
ETD S9-1200-25CTADS	1	300 - 1200	220 - 880	62	12	26.5	770	47	7 / 11	8433 0365 80
ETD S9-1500-38CTADS	1 1/2	375 - 1500	280 - 1100	47	16.8	37.0	727	68	8 / 12	8433 0365 97
ETD S9-2000-38CTADS	1 1/2	500 - 2000	370 - 1475	35	16.8	37.0	727	68	8 / 12	8433 0366 15
ETD S9-3000-38CTADS	1 1/2	750 - 3000	550 - 2200	24	21.7	47.8	808	68	8 / 12	8433 0366 35
ETD S9-4000-38CTADS	1 1/2	1000 - 4000	730 - 2950	18	21.7	47.8	808	68	8 / 12	8433 0366 44

# Tensor S pistol tools



ETP S

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Splines/ Mounting	Ordering No.
		Nm	ft lb		kg	lb				
<b>ETP S4</b>										
ETP S4-10-06CTADS	1/4	3 - 12	2.2 - 8.8	735	1.2	2.7	192	21.3	- / -	8433 0235 11
ETP S4-10-10CTADS	3/8	3 - 12	2.2 - 8.8	735	1.2	2.7	194	21.3	- / -	8433 0235 39
ETP S4-20-10CTADS	3/8	5 - 20	3.6 - 15	415	1.7	3.7	243	21.3	- / -	8433 0235 64
<b>ETP S4 Female Hex</b>										
ETP S4-02-106CTADS	1/4	0.5 - 2.5	0.35 - 1.8	2930	1.2	2.7	200	21.3	- / -	8433 0233 50
ETP S4-04-106CTADS	1/4	1 - 5	0.7 - 3.6	1465	1.2	2.7	200	21.3	- / -	8433 0234 75
ETP S4-10-106CTADS	1/4	3 - 12	2.2 - 8.8	735	1.2	2.7	200	21.3	- / -	8433 0235 01
<b>ETP S4 Ball Retainer</b>										
ETP S4-10-B10CTADS	3/8	3 - 12	2.2 - 8.8	735	1.2	2.7	194	21.3	- / -	8433 0235 53
<b>ETP S7 Female Hex</b>										
ETP S7-20-106CTADS	1/4	5 - 20	3.6 - 15	1380	1.9	4.2	265	21.5	- / 1	8433 0313 61
ETP S7-30-106CTADS	1/4	6 - 35	4.4 - 25	830	1.9	4.2	265	21.5	- / 1	8433 0314 28
<b>ETP S7 Ball Retainer</b>										
ETP S7-30-B10CTADS	3/8	6 - 35	4.4 - 25	830	1.9	4.2	274	21.5	- / 1	8433 0314 18
<b>ETP S9</b>										
ETP S9-70-13CTADS	1/2	25 - 70	18 - 49	1180	3.7	8.3	395	31.8	2 / 2	8433 0367 19
ETP S9-100-13CTADS	1/2	40 - 100	29 - 73	795	3.9	8.7	395	31.8	2 / 2	8433 0367 45
ETP S9-200-13CTADS	1/2	50 - 200	36 - 146	370	3.9	8.7	395	31.8	2 / 2	8433 0367 86
ETP S9-270-20CTADS	3/4	65 - 270	47 - 198	250	6.5	14.5	451	36	6 / 8	8433 0368 52
ETP S9-450-20CTADS	3/4	110 - 450	80 - 330	140	7.9	17.6	487	40.5	6 / 8	8433 0368 99
ETP S9-600-20CTADS	3/4	150 - 600	110 - 440	120	7.9	17.8	487	40.5	6 / 8	8433 0369 38
ETP S9-1000-25CTADS	1	300 - 1200	220 - 880	62	12	26.5	620	47	7 / 11	8433 0370 50
ETP S9-1200-25CTADS	1	250 - 1000	180 - 730	76	12	26.5	620	47	7 / 11	8433 0370 11
ETP S9-1500-38CTADS	1 1/2	375 - 1500	280 - 1100	47	16.8	37.0	572	68	8 / 12	8433 0370 62
ETP S9-2000-38CTADS	1 1/2	500 - 2000	440 - 1475	38	16.8	37.0	572	68	8 / 12	8433 0371 05
ETP S9-3000-38CTADS	1 1/2	750 - 3000	550 - 2200	24	21.7	47.8	654	68	8 / 12	8433 0372 12
ETP S9-4000-38CTADS	1 1/2	1000 - 4000	730 - 2950	18	21.7	47.8	654	68	8 / 12	8433 0372 55

# Tensor ST angle tools



ETV ST

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Height mm	Ordering No.
		Nm	ft lb		kg	lb				
<b>ETV ST31</b>										
ETV ST31-05-10	3/8	1 - 5	0.7 - 3.6	2390	1.0	2.2	381	11	39	8433 2011 21
ETV ST31-10-10	3/8	3 - 12	2.2 - 8.8	1020	1.0	2.2	381	11	39	8433 2013 66
ETV ST31-15-10	3/8	5 - 15	3.6 - 10	755	1.0	2.2	381	11	39	8433 2015 98
ETV ST31-20-10	3/8	5 - 22	3.7 - 16.1	545	1.2	2.6	415	14	42	8433 2017 10
<b>ETV ST31 Ball Retainer</b>										
ETV ST31-05-B10	3/8	1 - 5	0.7 - 3.6	2390	1.0	2.2	381	11	39	8433 2011 87
ETV ST31-10-B10	3/8	3 - 12	2.2 - 8.8	1020	1.0	2.2	381	11	39	8433 2014 12
ETV ST31-15-B10	3/8	5 - 15	3.6 - 10	755	1.0	2.2	381	11	39	8433 2016 36
ETV ST31-20-B10	3/8	5 - 22	3.7 - 16.1	545	1.2	2.6	415	14	42	8433 2018 23
<b>ETV ST31 Female Hex</b>										
ETV ST31-05-I06-QC	-	1 - 5	0.7 - 3.6	2390	1.0	2.2	381	11	39	8433 2011 95
ETV ST31-10-I06-QC	-	3 - 12	2.2 - 8.8	1020	1.0	2.2	381	11	39	8433 2014 21
<b>ETV ST61</b>										
ETV ST61-28-10	3/8	6 - 29	4 - 21	1450	1.3	2.9	440	14	42	8433 2021 76
ETV ST61-30-10	3/8	7 - 35	5 - 25	1090	1.3	2.9	440	15.5	42	8433 2023 92
ETV ST61-40-10	3/8	8 - 40	6 - 29	1090	1.5	3.3	454	18	47	8433 2027 85
ETV ST61-50-10	3/8	10 - 55	7 - 40	655	1.5	3.3	454	18	47	8433 2031 58
ETV ST61-70-13	1/2	15 - 80	10 - 58	475	2.0	4.5	466	20	58	8433 2035 30
ETV ST61-100-13	1/2	20 - 100	15 - 80	350	2.5	5.5	502	22.5	60	8433 2039 02
ETV ST61-150-13	1/2	30 - 160	22 - 117	227	3.0	6.6	536	25.5	65	8433 2042 70
ETV ST61-180-13	1/2	35 - 180	26 - 133	190	3.0	6.6	536	25.5	65	8433 2045 53
ETV ST61-200-20	3/4	40 - 200	30 - 154	185	3.0	6.6	537	27	70	8433 2046 39
<b>ETV ST61 ATEX</b>										
ETV ST61-28-10-ATEX	3/8	6 - 29	4 - 21	1450	1.3	2.9	440	14	42	8433 2023 76
ETV ST61-30-10-ATEX	3/8	7 - 35	5 - 25	1090	1.3	2.9	440	15.5	42	8433 2026 92
ETV ST61-40-10-ATEX	3/8	8 - 40	6 - 29	1090	1.5	3.3	454	18	47	8433 2030 85
ETV ST61-50-10-ATEX	3/8	10 - 55	7 - 40	655	1.5	3.3	454	18	47	8433 2034 98
ETV ST61-70-13-ATEX	1/2	15 - 80	10 - 58	475	2.0	4.5	466	20	58	8433 2037 90
ETV ST61-150-13-ATEX	1/2	30 - 160	22 - 117	230	3.0	6.6	536	25.5	65	8433 2045 20
ETV ST61-200-20-ATEX	3/4	40 - 200	30 - 154	185	3.0	6.6	537	27	70	8433 2048 49
<b>ETV ST61 Ball Retainer</b>										
ETV ST61-28-B10	3/8	6 - 29	4 - 21	1450	1.3	2.9	440	14	42	8433 2022 32
ETV ST61-30-B10	3/8	7 - 35	5 - 25	1090	1.3	2.9	440	15.5	42	8433 2025 09
ETV ST61-40-B10	3/8	8 - 40	6 - 29	1090	1.5	3.3	454	18	47	8433 2029 13
ETV ST61-50-B10	3/8	10 - 55	7 - 40	655	1.5	3.3	454	18	47	8433 2032 87
ETV ST61-70-B13	1/2	15 - 80	10 - 58	475	2.0	4.5	466	20	60	8433 2036 93
ETV ST61-100-B13	1/2	20 - 100	15 - 80	350	2.5	5.5	502	22.5	58	8433 2040 70
ETV ST61-150-B13	1/2	30 - 160	22 - 117	230	3.0	6.6	536	25.5	65	8433 2043 62
ETV ST61-180-B13	1/2	35 - 180	26 - 133	190	3.0	6.6	536	25.5	65	8433 2045 61
<b>ETV ST61 Flush Socket</b>										
ETV ST61-30-FS	-	7 - 35	5 - 25	1090	1.3	2.9	440	16	32	8433 2025 50
ETV ST61-40-FS	-	8 - 40	6 - 29	1090	1.5	3.3	454	18	39	8433 2029 50
ETV ST61-50-FS	-	10 - 55	7 - 40	655	1.5	3.3	454	18	39	8433 2033 15
ETV ST61-70-FS	-	15 - 80	10 - 58	475	2.0	4.5	466	20	50	8433 2037 36
ETV ST61-100-FS	-	20 - 110	15 - 80	350	2.5	5.5	502	23	51	8433 2040 75
ETV ST61-150-FS	-	30 - 160	22 - 117	220	3.0	6.6	539	26	58	8433 2044 14
ETV ST61-180-FS	1/2	35 - 180	26 - 133	190	3.0	6.6	539	26	58	8433 2045 72
ETV ST61-200-FS	-	40 - 200	30 - 154	185	3.0	6.6	541	27	58	8433 2047 21

# Tensor ST angle tools

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Height mm	Ordering No.
		Nm	ft lb		kg	lb				
<b>ETV ST61 Hold &amp; Drive</b>										
ETV ST61-28-HAD	-	6 - 29	4 - 21	1450	1.9	4.2	463	18.3	80	8433 2023 21
ETV ST61-30-HAD	-	7 - 35	5 - 25	1090	1.9	4.2	463	18.3	80	8433 2026 25
ETV ST61-40-HAD	-	8 - 40	6 - 29	1090	2.0	4.4	440	18.3	80	8433 2030 08
ETV ST61-50-HAD	-	10 - 55	7 - 40	655	2.0	4.4	440	18.3	80	8433 2033 92
ETV ST61-90-HAD	-	20 - 95	15 - 70	400	2.1	4.5	522	26	80	8433 2038 25
ETV ST61-120-HAD	-	30 - 130	22 - 100	350	2.6	5.5	540	26	80	8433 2041 53
ETV ST61-150-HAD	-	30 - 160	22 - 117	220	3.1	6.6	540	26	80	8433 2044 80
ETV ST61-180-HAD	-	35 - 180	26 - 133	190	3.1	6.6	540	26	80	8433 2045 80
ETV ST61-200-HAD	-	40 - 200	30 - 154	185	3.1	6.6	541	26	80	8433 2048 27
<b>ETV ST61 with Barcode Scanner</b>										
ETV ST61-28-10-BCR	3/8	6 - 29	4 - 21	1450	1.4	3.2	440	14	42	8433 2023 46
ETV ST61-28-B10-BCR	3/8	6 - 29	4 - 21	1450	1.4	3.2	440	14	42	8433 2023 55
ETV ST61-30-10-BCR	3/8	7 - 35	5 - 25	1090	1.4	3.2	440	15.5	42	8433 2026 66
ETV ST61-30-B10-BCR	3/8	7 - 35	5 - 25	1090	1.4	3.2	440	15.5	42	8433 2026 72
ETV ST61-50-10-BCR	3/8	10 - 55	7 - 40	655	1.6	3.6	454	18	47	8433 2034 67
ETV ST61-50-B10-BCR	3/8	10 - 55	7 - 40	655	1.6	3.6	454	18	47	8433 2034 75
ETV ST61-70-10-BCR	1/2	15 - 80	10 - 58	475	2.1	4.8	466	20	58	8433 2037 55
ETV ST61-70-B10-BCR	1/2	15 - 80	10 - 58	475	2.1	4.8	466	20	58	8433 2037 61
<b>ETV ST81</b>										
ETV ST81-50-10	3/8	16 - 55	12 - 40	1090	1.8	3.9	473	18	48	8433 2051 55
ETV ST81-70-13	1/2	20 - 80	15 - 58	790	2.3	5.0	485	20	58	8433 2053 48
ETV ST81-100-13	1/2	20 - 100	15 - 80	540	2.7	5.9	522	22.5	60	8433 2056 82
ETV ST81-150-13	1/2	30 - 160	22 - 117	380	3.2	7.0	555	26	65	8433 2060 12
ETV ST81-180-13	1/2	35 - 180	26 - 133	310	3.2	7.0	555	26	65	8433 2062 31
ETV ST81-200-20	3/4	40 - 200	30 - 154	300	3.2	7.0	556	27	70	8433 2063 42
<b>ETV ST81 Ball Retainer</b>										
ETV ST81-50-B10	3/8	16 - 55	12 - 40	1090	1.8	3.9	473	18	48	8433 2052 36
ETV ST81-70-B13	1/2	20 - 80	15 - 58	790	2.3	5.0	485	20	58	8433 2054 62
ETV ST81-100-B13	1/2	20 - 100	15 - 80	540	2.7	5.9	522	22.5	60	8433 2058 24
ETV ST81-150-B13	1/2	30 - 160	22 - 117	380	3.3	7.0	555	25.5	65	8433 2060 97
ETV ST81-180-B13	1/2	35 - 180	26 - 133	310	3.2	7.0	555	25.5	65	8433 2062 43
<b>ETV ST81 Flush Socket</b>										
ETV ST81-100-FS	-	20 - 100	15 - 80	540	2.7	5.9	522	23	51	8433 2058 68
ETV ST81-180-FS	-	35 - 180	26 - 133	310	3.2	7.0	555	26	58	8433 2062 50
ETV ST81-200-FS	-	40 - 200	30 - 154	300	3.2	7.0	557	28	58	8433 2064 59
<b>ETV ST81 Hold &amp; Drive</b>										
ETV ST81-50-HAD	-	16 - 55	12 - 40	1090	2.3	5.0	473	18.5	80	8433 2052 80
ETV ST81-90-HAD	-	20 - 95	15 - 70	665	2.4	5.1	540	26	80	8433 2056 03
ETV ST81-120-HAD	-	30 - 130	22 - 100	540	2.8	6.0	560	26	80	8433 2058 65
ETV ST81-150-HAD	-	30 - 160	22 - 117	365	3.3	7.0	560	26	80	8433 2061 81
ETV ST81-180-HAD	-	35 - 180	26 - 133	310	3.3	7.0	560	26	80	8433 2062 60
ETV ST81-200-HAD	-	40 - 200	30 - 154	300	3.3	7.0	561	28	81	8433 2065 09
<b>ETV ST81 Extended</b>										
ETV ST81-100-13-L150	1/2	20 - 110	15 - 80	540	2.7	5.9	672	22.5	60	8433 2059 36
ETV ST81-200-20-L150	3/4	40 - 200	30 - 154	300	3.2	7.0	708	27	70	8433 2065 29
<b>ETV ST101</b>										
ETV-ST101-100-13	1/2	20 - 100	15 - 74	920	4.2	9.3	572	22.5	44	8433 2080 10
ETV-ST101-180-13-HS	1/2	50 - 180	37 - 133	485	4.2	9.3	600	25.3	47	8433 2080 52
ETV-ST101-200-20	3/4	50 - 200	37 - 147	485	4.4	9.7	602	27.5	47	8433 2080 92
ETV-ST101-270-20	3/4	65 - 270	48 - 199	380	7.3	16.1	672	32.9	62	8433 2081 23
ETV-ST101-370-20	3/4	90 - 370	66 - 273	280	7.3	16.1	672	32.9	62	8433 2082 26
ETV-ST101-450-20	3/4	110 - 450	81 - 332	230	10.6	23.4	715	54.0	76	8433 2082 81
ETV-ST101-600-25	1	150 - 600	111 - 443	151	10.6	23.4	715	54.0	76	8433 2083 56



# Tensor ST straight tools



## ETD ST

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Spline/ Mounting	Ordering No.
		Nm	ft lb		kg	lb				
<b>ETD ST31</b>										
ETD ST31-05-10	3/8	1 - 5	1.1 - 3.6	2825	0.9	2.0	388	24	- / 1	8433 2112 42
ETD ST31-10-10	3/8	2 - 10	2.2 - 7.2	1200	1.1	2.4	388	24	- / 1	8433 2114 86
<b>ETD ST31 Telescopic</b>										
ETD ST31-05-10-T25	3/8	1 - 5	1.1 - 3.6	2825	0.9	2.0	437	24	- / 13	8433 2111 34
ETD ST31-10-10-T25	3/8	2 - 10	2.2 - 7.2	1200	1.1	2.4	437	24	- / 13	8433 2113 79
<b>ETD ST31 Ball Retainer Telescopic</b>										
ETD ST31-05-B10-T25	3/8	1 - 5	1.1 - 3.6	2825	1.1	2.4	437	24	- / 13	8433 2113 44
<b>ETD ST31 Female Hex</b>										
ETD ST31-05-I06	1/4	1 - 5	1.1 - 3.6	2825	0.9	2.0	350	24	- / 14	8433 2112 87
<b>ETD ST61</b>										
ETD ST61-15-10	3/8	4 - 16	3 - 12	2250	1.4	3.1	438	24	- / 1	8433 2120 91
ETD ST61-20-10	3/8	5 - 22	3.6 - 16	1700	1.4	3.1	438	24	- / 1	8433 2122 62
ETD ST61-30-10	3/8	6 - 35	4.4 - 25	1020	1.4	3.1	429	24	- / 1	8433 2125 06
ETD ST61-50-13	1/2	10 - 55	7.3 - 40	740	1.9	4.2	474	24	2 / 2	8433 2128 79
ETD ST61-70-13	1/2	15 - 80	12 - 58	505	2.3	5.0	491	26.5	2 / 2	8433 2132 51
ETD ST61-90-13	1/2	20 - 95	15 - 70	410	2.3	5.0	491	26.5	2 / 2	8433 2136 22
<b>ETD ST61 Telescopic</b>										
ETD ST61-15-10-T25	3/8	4 - 16	3 - 12	2250	1.5	3.3	477	24	2 / 2	8433 2120 43
ETD ST61-20-10-T25	3/8	5 - 20	3.6 - 15	1700	1.5	3.3	477	24	2 / 2	8433 2121 55
ETD ST61-30-10-T25	3/8	6 - 35	4.4 - 25	1020	1.5	3.3	468	24	2 / 2	8433 2123 80
ETD ST61-50-13-T25	1/2	10 - 55	7.3 - 40	740	2.1	4.6	501	24	3 / 5	8433 2127 54
ETD ST61-70-13-T25	1/2	15 - 80	12 - 58	505	2.4	5.4	518	26.5	3 / 5	8433 2131 27
ETD ST61-90-13-T25	1/2	20 - 95	15 - 70	410	2.4	5.4	518	26.5	3 / 5	8433 2134 99
ETD ST61-120-13-T25	1/2	25 - 125	19 - 95	305	2.4	5.4	518	26.5	3 / 5	8433 2138 68
<b>ETD ST61 Female Hex</b>										
ETD ST61-15-I06	1/4	4 - 16	3 - 12	2250	1.4	3.1	430	24	- / 1	8433 2121 36
<b>ETD ST81</b>										
ETD ST81-30-10	1/2	10 - 30	7 - 22	1700	1.8	4.0	450	24	- / 1	8433 2151 93
ETD ST81-50-13	1/2	16 - 50	12 - 37	1230	2.1	4.6	493	24	2 / 2	8433 2153 34
ETD ST81-70-13	1/2	15 - 70	12 - 51	880	2.5	5.5	510	26.5	2 / 2	8433 2156 03
ETD ST81-90-13	1/2	20 - 95	15 - 70	675	2.5	5.5	510	26.5	2 / 2	8433 2158 14
ETD ST81-120-13	1/2	25 - 125	19 - 91	505	2.5	5.5	510	26.5	2 / 2	8433 2160 25
<b>ETD ST81 Telescopic</b>										
ETD ST81-30-10-T25	3/8	10 - 30	7 - 22	1700	1.9	4.2	488	24	2 / 2	8433 2151 21
ETD ST81-50-13-T25	1/2	16 - 50	12 - 37	1230	2.3	5.0	520	24	3 / 5	8433 2152 72
ETD ST81-70-13-T25	1/2	15 - 70	12 - 51	880	2.6	5.8	538	26.5	3 / 5	8433 2154 98
ETD ST81-90-13-T25	1/2	20 - 95	15 - 70	675	2.6	5.8	538	26.5	3 / 5	8433 2157 25
ETD ST81-120-13-T25	1/2	25 - 125	19 - 91	505	2.6	5.8	538	26.5	3 / 5	8433 2159 53
<b>ETD ST101</b>										
ETD ST101-100-13	1/2	25 - 100	18 - 73	1043	3.2	7.0	631	30.5	-	8433 2179 00
ETD ST101-120-13	1/2	30 - 120	22 - 88	875	3.2	7.0	631	30.5	-	8433 2180 22
ETD ST101-150-20	3/4	30 - 150	22 - 109	685	4.3	9.3	706	33	-	8433 2181 36
ETD ST101-200-20	3/4	50 - 200	36 - 146	500	4.3	9.3	706	33	-	8433 2182 05
ETD ST101-300-20	3/4	70 - 300	51 - 221	345	4.3	9.3	706	33	-	8433 2182 70
ETD ST101-500-20	3/4	120 - 500	88 - 368	204	8.3	18.5	717	33	-	8433 2183 28
ETD ST101-750-25	1	150 - 750	109 - 553	143	9.1	20.3	681	45	-	8433 2184 40
ETD ST101-1000-25	1	250 - 1000	184 - 737	100	9.7	21.6	708	45	-	8433 2185 60
ETD ST101-1200-25	1	300 - 1200	220 - 885	81	12	26	787	47	-	8433 2186 10
ETD ST101-1200-25-S	1	300 - 1200	220 - 885	81	12	26	787	47	7	8433 2196 10
ETD ST101-2000-38	1 1/2	500 - 2000	370 - 1475	48	17	37	742	68	-	8433 2187 22
ETD ST101-2000-38-S	1 1/2	500 - 2000	370 - 1475	48	17	37	742	68	8	8433 2197 22
ETD ST101-4000-38	1 1/2	1000 - 4000	735 - 2950	25	22	48	823	68	-	8433 2187 40
ETD ST101-4000-38-S	1 1/2	1000 - 4000	735 - 2950	25	22	48	823	68	8	8433 2197 40

# Tensor ST straight tools

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Spline/ Mounting	Ordering No.
		Nm	ft lb		kg	lb				
<b>ETD ST101 Fan</b>										
ETD ST101-100-13-F	1/2	25 - 100	18 - 73	1043	3.2	7.0	631	30.5	-	8433 2179 05
ETD ST101-120-13-F	1/2	30 - 120	22 - 88	875	3.2	7.0	631	30.5	-	8433 2180 28
ETD ST101-150-20-F	3/4	30 - 150	22 - 109	685	4.3	9.3	706	33	-	8433 2181 40
ETD ST101-200-20-F	3/4	50 - 200	36 - 146	500	4.3	9.3	706	33	-	8433 2182 10
ETD ST101-300-20-F	3/4	70 - 300	51 - 221	345	4.3	9.3	706	33	-	8433 2182 72
ETD ST101-500-20-F	3/4	120 - 500	88 - 368	204	8.3	18.5	717	33	-	8433 2183 30
ETD ST101-750-25-F	1	150 - 750	109 - 553	143	9.1	20.3	681	45	-	8433 2184 50
ETD ST101-1000-25-F	1	250 - 1000	184 - 737	100	9.7	21.6	708	45	-	8433 2185 70
<b>ETD ST101 Telescopic</b>										
ETD-ST101-100-13-T25	1/2	25 - 100	18 - 73	1043	3.3	7.3	656	30.5	-	8433 2179 10
ETD-ST101-120-13-T25	1/2	30 - 120	22 - 88	873	3.3	7.3	656	30.5	-	8433 2180 32
ETD-ST101-150-20-T40	3/4	30 - 150	22 - 109	685	4.4	9.7	656	30.5	-	8433 2181 46
ETD-ST101-200-20-T40	3/4	50 - 200	36 - 146	500	4.4	9.7	756	33	-	8433 2182 23
ETD-ST101-300-20-T40	3/4	70 - 300	51 - 221	345	4.4	9.7	756	33	-	8433 2182 82
ETD-ST101-500-20-T40	3/4	120 - 500	88 - 368	204	8.4	18.5	768	37	-	8433 2183 38
ETD-ST101-750-25-T50	1	150 - 750	109 - 553	143	9.2	20.3	727	45	-	8433 2184 56
ETD-ST101-4000-38-T50	1/2	1000 - 4000	735 - 2950	25	22	48	921	68	-	8433 2187 42
<b>ETD ST101 Telescopic Fan</b>										
ETD-ST101-100-13-T25F	1/2	25 - 100	18 - 73	1043	3.3	7.3	656	30.5	-	8433 2179 15
ETD-ST101-120-13-T25F	1/2	30 - 120	22 - 88	873	3.3	7.3	656	30.5	-	8433 2180 48
ETD-ST101-150-20-T40F	3/4	30 - 150	22 - 109	685	4.4	9.7	656	30.5	-	8433 2181 59
ETD-ST101-200-20-T40F	3/4	50 - 200	36 - 146	500	4.4	9.7	756	33	-	8433 2182 45
ETD-ST101-300-20-T40F	3/4	70 - 300	51 - 221	345	4.4	9.7	756	33	-	8433 2182 91
ETD-ST101-500-20-T40F	3/4	120 - 500	88 - 368	204	8.4	18.5	769	37	-	8433 2183 49
ETD-ST101-750-25-T50F	1	150 - 750	109 - 553	143	9.2	20.3	769	45	-	8433 2184 69
ETD-ST101-1000-25-T50F	1	250 - 1000	184 - 737	100	9.8	21.6	755	45	-	8433 2185 89
ETD ST101-1000-25-T50F	1	250 - 1000	184 - 737	100	9.8	21.6	754	45	-	8433 2185 78
ETD ST101-1200-25-T50F	1	300 - 1200	22 - 885	81	12	26	844	47	-	8433 2186 12
ETD ST101-1200-25-T50-SF	1	300 - 1200	220 - 885	81	12	26	844	47	7	8433 2196 12
ETD ST101-2000-38-T50F	1 1/2	500 - 2000	370 - 1475	48	17	37	840	68	-	8433 2187 20
ETD ST101-2000-38-T50-SF	1 1/2	500 - 2000	370 - 1475	48	17	37	840	68	8	8433 2197 20
ETD ST101-4000-38-T50-SF	1 1/2	1000 - 4000	735 - 2950	25	22	48	921	68	8	8433 2197 42
<b>ETD ST31 Ball Retainer/Telescopic/Fan</b>										
ETD ST101-120-B13-T25	1/2	30 - 120	22 - 88	873	3.3	7.3	656	30.5	-	8433 2180 38
ETD ST101-120-B13-T25-F	1/2	30 - 120	22 - 88	873	3.3	7.3	656	30.5	-	8433 2180 55
ETD ST101-150-B20-T40	3/4	30 - 150	22 - 109	685	4.4	9.7	732	33	-	8433 2181 50
ETD ST101-150-B20-T40-F	3/4	30 - 150	22 - 109	685	4.4	9.7	732	33	-	8433 2181 65



# Tensor ST pistol tools



ETP ST

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	Height mm	Ordering No.
		Nm	ft lb		kg	lb			
<b>ETP ST32</b>									
ETP ST32-05-10	3/8	1 - 5	0.7 - 3.6	2820	0.75	1.7	197	179	8433 2211 03
ETP ST32-05-106	1/4	1 - 5	0.7 - 3.6	2820	0.75	1.7	197	179	8433 2212 19
ETP ST32-10-10	3/8	3 - 11	2.2 - 8.0	1210	0.8	1.8	197	179	8433 2213 48
ETP ST32-10-106	1/4	3 - 11	2.2 - 8.0	1210	0.8	1.8	197	179	8433 2214 63
ETP ST32-20-10	3/8	5 - 20	3.6 - 15.0	677	0.91	2	235	179	8433 2216 95
ETP ST32-20-106	1/4	5 - 20	3.6 - 15.0	677	0.91	2	235	179	8433 2217 11
<b>ETP ST32 with Barcode Scanner</b>									
ETP ST32-05-10BCR	3/8	1 - 5	0.7 - 3.6	2820	0.87	2	197	205	8433 2211 13
ETP ST32-05-106BCR	1/4	1 - 5	0.7 - 3.7	2820	0.87	2	197	205	8433 2212 29
ETP ST32-10-10BCR	3/8	3 - 11	2.2 - 8.0	1210	0.92	2.1	197	205	8433 2213 58
ETP ST32-10-106BCR	1/4	3 - 11	2.2 - 8.0	1210	0.92	2.1	197	205	8433 2214 73
ETP ST32-20-10BCR	3/8	5 - 20	3.6 - 15.0	677	1.03	2.3	237	205	8433 2217 05
ETP ST32-20-106BCR	1/4	5 - 20	3.6 - 15.0	677	1.03	2.3	237	205	8433 2217 26

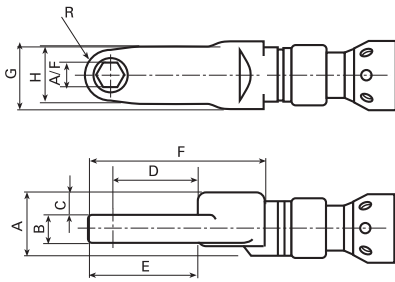


ETP ST Revolver

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Spline	Ordering No.
		Nm	ft lb		kg	lb				
ETP ST101-200-20	3/4	60 - 200	45 - 145	396	4.8	10.5	303	32.5	3	8433 2302 01
ETP ST101-500-20	3/4	150 - 500	110 - 365	186	5.5	12.1	334	33.5	4	8433 2305 01
ETP ST101-750-25	1	220 - 750	160 - 550	132	5.8	12.8	353	33.5	5	8433 2307 51
ETP ST101-1000-25	1	300 - 1000	220 - 735	99	6	13.2	364	33.5	5	8433 2310 01
<b>Model with fan</b>										
ETP ST101-200-20-F	3/4	60 - 200	45 - 145	396	5.2	10.9	303	32.5	3	8433 2302 02
ETP ST101-500-20-F	3/4	150 - 500	110 - 365	186	5.9	12.4	334	33.5	4	8433 2305 02
ETP ST101-750-25-F	1	220 - 750	160 - 550	132	6.2	13	353	33.5	5	8433 2307 52
ETP ST101-1000-25-F	1	300 - 1000	220 - 735	99	6.4	13.4	364	33.5	5	8433 2310 02

Reaction bar not included for ETP ST101.

# Tensor ST crowfoot tools



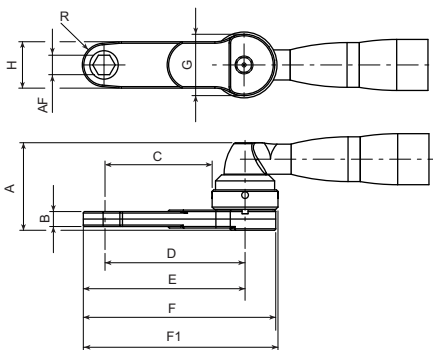
Dimensions



ETC ST

## In-Line crowfoot tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	R mm	Ordering No.
	Nm	ft lb		kg	lb												
<b>ETC ST61</b>																	
ETC ST61-18-10-LI3	5 - 18	4 - 13	1429	1.9	4.2	523	10	34	15	12.5	36.7	59.2	82.2	35	22	10	8433 2311 11
ETC ST61-20-12-LI3	6 - 23	4 - 17	1189	1.8	4	524	12	34	10	15	51.9	54.3	102	35	31	14.5	8433 2311 17
ETC ST61-28-12-LI3	6 - 28	4 - 20	767	1.9	4.2	524	12	34	15	12.5	45.5	71	94	35	30	13	8433 2311 14
ETC ST61-90-21-LI3	20 - 90	14 - 66	316	4.1	9	684	21	46	20	16	74.5	44	158.8	64	40	20	8433 2311 44
ETC ST61-120-18-LI3	30 - 136	22 - 100	217	4.3	9.5	684	18	46	32	11.5	74.8	146.5	157.8	64	38	19	8433 2311 38
ETC ST61-100-19-LI3	26 - 110	19 - 81	250	4.2	9.2	678	19	46	28	13.5	69.6	75	151.6	64	36	18	8433 2311 35
ETC ST61-100-20-LI3	23 - 105	17 - 77	256	4.2	9.2	694	20	46	20	15.5	82.5	49.6	169	64	45	22.5	8433 2311 50
ETC ST61-150-22-LI3	33 - 150	24 - 110	197	4.4	9.7	688	22	48	33	14	77.5	84	161.5	64	40	20	8433 2311 47



Dimensions

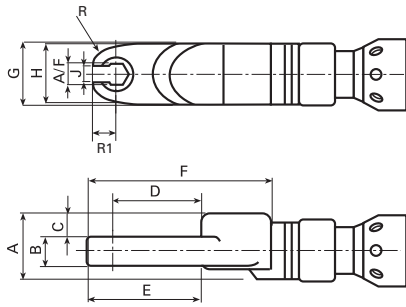


ETC ST

## Offset crowfoot tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	R mm	F1 mm	Ordering No.
	Nm	ft lb		kg	lb													
<b>ETC ST61</b>																		
ETC ST61-18-10-LO3	4 - 18	3 - 13	1450	1.5	3.3	469	10	60.3	15	14.55	32.8	42.8	57.8	36.5	22	10	61.1	8433 2310 09
ETC ST61-28-12-LO5	5 - 28	4 - 20	1090	2	4.4	533	12	69.5	15	62	84	97	117.5	44	30	13	119	8433 2310 12
ETC ST61-20-13-LO5	5 - 23	4 - 17	1090	1.7	3.7	534	13	57	10	71.6	93.6	108.1	128.6	44	31	14.5	130.1	8433 2310 15
ETC ST61-40-14-LO3	8 - 44	6 - 32	655	2	4.4	497	14	69.5	18	24.8	46.8	61.3	81.8	44	31	14.5	83.3	8433 2310 18
ETC ST61-40-3/8-LO3	8 - 40	6 - 29	655	2.1	4.6	486	3/8	90.3	36	18.2	40.2	50.5	71	44	29	10.3	72.5	8433 2310 24
ETC ST61-60-16-LO3	12 - 64	9 - 47	475	2.5	5.5	512	16	77.8	24	27	51	66	88.5	48	30	15	90	8433 2310 27
ETC ST61-80-17-LO3	16 - 80	12 - 59	350	3.1	6.8	534	17	81	27	31.8	55.8	72.3	94.8	48	33	16.5	96.3	8433 2310 30
ETC ST61-90-21-LO5	24 - 90	17 - 66	227	4.2	9.2	664	21	89.4	20	100.8	132	152	178	62.5	40	20	183.3	8433 2310 45
ETC ST61-100-19-LO5	21 - 110	15 - 81	227	4.4	9.7	653	19	96.9	28	91.2	122.4	140.4	166.4	62.5	36	18	171.7	8433 2310 36
ETC ST61-140-18-LO3	28 - 140	20 - 103	190	4	8.8	595	18	96.6	32	32	63.2	82.2	108.2	62.5	38	19	113.5	8433 2310 39
ETC ST61-150-21-LO3	32 - 150	23 - 110	185	4	8.8	596	21	99.7	33	34.8	66	86	112	62.5	40	20	117.3	8433 2310 48
<b>ETC ST101</b>																		
ETC ST101-200-22-LO3	52 - 215	38 - 158	380	9.3	20.5	731	21	148.8	40	32.75	70.4	91.4	125.4	75.3	42	21	128.2	8433 2310 51
ETC ST101-215-21-LO3	52 - 200	38 - 147	380	9.3	20.5	738	22	139.8	37	38.55	76.2	98.7	132.7	75.3	45	22.5	135.5	8433 2310 57

# Tensor ST tube nut tools



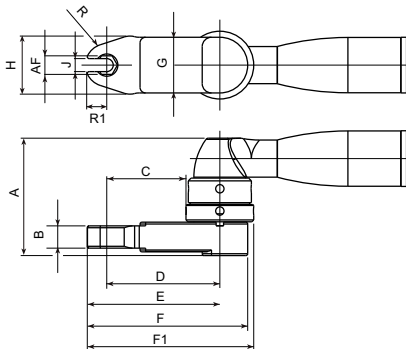
Dimensions



ETO ST

## In-Line tube nut tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	R mm	R1 mm	Ordering No.
	Nm	ft lb		kg	lb														
<b>ETO ST61</b>																			
ETO ST61-8-8-LI3	3 - 8.5	2.2 - 6.2	2250	1.7	3.7	499	8	32	11	12.25	22.7	21.6	60	33.5	29	6	7.8	10	8433 2311 53
ETO ST61-12-8-LI3	4 - 12	3 - 9	1705	1.7	3.7	499	8	32	10	13	27.3	25.4	66.6	33.5	31	7	9.8	11.5	8433 2311 56
ETO ST61-15-8-LI3	4 - 14	3 - 10	1705	1.8	4	505	8	32	12	11	27.3	25.4	66.6	33.5	31	7	9.8	11.5	8433 2311 59
ETO ST61-15-10-LI3	4 - 15	3 - 11	1630	1.8	4	506	10	32	12	11	27.9	26.1	67.8	33.5	32	8	10.3	14	8433 2311 62
ETO ST61-18-10-LI3	5 - 18	3.6 - 13	1278	1.8	4	522	10	34	11	14.5	34.1	31.1	81.5	35	38	8	11.9	15	8433 2311 68
ETO ST61-20-10-LI3	5 - 20	3.7 - 14.7	1278	1.9	4.2	519	10	34	14	13	31.9	29.7	78.6	35	38	8	11.2	14	8433 2311 64
ETO ST61-28-12-LI3	6 - 28	4.4 - 20.6	767	2.3	5.1	558	12	43	11	17.5	43.7	29.3	96.5	40	50	10.4	15	31	8433 2311 77
ETO ST61-30-12-LI3	6 - 33	4.4 - 24.3	772	2.3	5.1	544	12	43	18	14	34.3	31.4	83	40	40	10.4	12.4	25	8433 2311 74
ETO ST61-35-16-LI3	6 - 35	4.4 - 25.8	761	2.5	5.5	578	16	46	11	20.8	52	47.3	113.7	45	55	12.5	17.2	32	8433 2311 83
ETO ST61-50-19-LI3	15 - 60	11 - 44	371	3.6	7.9	638	19	46	18	17	49.3	44.6	111	45	59	14	17.2	32	8433 2311 86
ETO ST61-80-19-LI3	21 - 80	15 - 59	267	4.1	9	662	19	46	18	17	53.8	38.8	137.2	64	59	17	20.1	32	8433 2311 92
ETO ST61-100-21-LI3	21 - 100	15.5 - 73.7	267	4.4	9.7	674	21	46	20	16	64.4	56.5	148.9	64	76	18	22.3	32	8433 2311 95
<b>ETO ST81</b>																			
ETO ST81-100-24-LI3	39 - 110	28 - 81	240	4.6	10.1	706	24	46	20	16	71.3	50.6	160.4	64	77	20.5	24.6	33	8433 2311 98



Dimensions



ETO ST

## Offset tube nut tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	R1 mm	R mm	F1 mm	Ordering No.
	Nm	ft lb		kg	lb															
<b>ETO ST31</b>																				
ETO ST31-12-10-LO3	4 - 14	1.5 - 10.3	545	1.4	3.1	437	10	63.3	12	6.9	25.1	34.9	49.9	36.5	31	7	9.8	11.5	53.2	8433 2310 63
ETO ST31-12-10-LO5	3 - 12	2.2 - 8.8	545	1.5	3.3	473	10	61.8	10	42.7	60.9	70.7	85.7	36.5	31	7	9.8	11.5	89	8433 2310 66
<b>ETO ST61</b>																				
ETO ST61-18-12-LO5	4 - 18	3 - 13.2	1450	1.8	4	511	12	62	11	51	73	84.9	105.4	44	38	8	11.9	15	106.9	8433 2310 75
ETO ST61-18-12-LO3	5 - 18	3.7 - 13.2	1090	1.6	3.5	470	12	62	11	9.4	31.4	43.8	64.3	44	38	8.5	12.4	16	65.8	8433 2310 78
ETO ST61-20-12-LO3	5 - 20	3.7 - 14.7	1450	1.6	3.5	466	12	64	14	7	29	40.2	60.7	44	38	8	11.2	14	62.2	8433 2310 72
ETO ST61-28-13-LO3	6 - 28	4.4 - 20.6	1090	1.9	4.2	488	13	65	11	12.8	36.8	51.8	74.3	48	50	10.4	15	31	75.8	8433 2310 84
ETO ST61-33-13-LO5	7 - 33	5.2 - 24.3	655	2.1	4.6	524	13	72.5	18	53.3	75.3	87.7	108.2	44	40	10.4	12.4	25	109.7	8433 2310 81
ETO ST61-50-17-LO5	10 - 50	7.3 - 37	475	2.8	6.2	552	17	80	18	66.8	90.8	105.8	128.3	48	50	12	15	31	129.8	8433 2310 87
ETO ST61-55-21-LO3	11 - 55	8.1 - 40.5	445	2.7	5.9	515	21	73.8	12	18	49.2	69.3	96.8	62.5	59	16	20.1	32	100.6	8433 2310 93
ETO ST61-100-21-LO3	23 - 100	17 - 74	227	4.4	9.7	588	21	97.8	20	20.6	54.6	76.9	110.9	75.3	76	18	22.3	32	114.6	8433 2310 99
ETO ST61-100-27-LO3	23 - 100	17 - 74	227	4.5	9.9	597	27	95.8	20	23.2	60	84.6	118.6	73.5	77	20.5	24.6	33	121.4	8433 2311 02

# Tensor STB angle and pistol tools



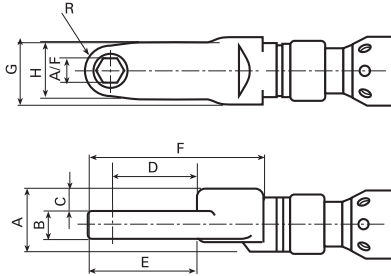
ETV STB



ETP STB

Model	Square drive in	Torque range		Battery	Speed r/min	Weight		Weight incl. battery		Length mm	CS distance mm	Height mm	Ordering No.
		Nm	ft lb			kg	lb	kg	lb				
<b>Angle</b>													
ETV STB32-10-10	3/8	2 - 10	2 - 7.5	Li-Io 18 V	943	1.3	2.9	1.9	4.2	406	11	41	8433 3010 20
ETV STB32-10-10-BCR	3/8	2 - 10	2 - 7.5	Li-Io 18 V	943	1.5	3.2	2.05	4.5	406	11	41	8433 3010 25
ETV STB32-10-B10	3/8	2 - 10	2 - 7.5	Li-Io 18 V	943	1.3	2.9	1.9	4.2	406	11	41	8433 3010 30
ETV STB32-10-B10-BCR	3/8	2 - 10	2 - 7.5	Li-Io 18 V	943	1.5	3.2	2.05	4.5	406	11	41	8433 3010 35
ETV STB32-15-10	3/8	4 - 15	3 - 11	Li-Io 18 V	720	1.3	2.9	1.9	4.2	406	11	41	8433 3010 82
ETV STB32-15-10-BCR	3/8	4 - 15	3 - 11	Li-Io 18 V	720	1.5	3.2	2.05	4.5	406	11	41	8433 3010 89
ETV STB32-15-B10	3/8	4 - 15	3 - 11	Li-Io 18 V	720	1.3	2.9	1.9	4.2	406	11	41	8433 3010 96
ETV STB32-15-B10-BCR	3/8	4 - 15	3 - 11	Li-Io 18 V	720	1.5	3.2	2.05	4.5	406	11	41	8433 3010 99
ETV STB32-20-10	3/8	5 - 20	4 - 14.5	Li-Io 18 V	480	1.4	3.08	1.99	4.41	440.3	14	41.8	8433 3011 05
ETV STB32-20-10-BCR	3/8	5 - 20	4 - 14.5	Li-Io 18 V	480	1.5	3.41	2.14	4.74	440.3	14	41.8	8433 3011 10
ETV STB32-20-B10	3/8	5 - 20	4 - 14.5	Li-Io 18 V	480	1.4	3.08	1.99	4.41	440.3	14	41.8	8433 3011 15
ETV STB32-20-B10-BCR	3/8	5 - 20	4 - 14.5	Li-Io 18 V	480	1.5	3.41	2.14	4.74	440.3	14	41.8	8433 3011 20
ETV STB32-30-10	3/8	6 - 30	4.5 - 22	Li-Io 18 V	380	1.5	3.3	2.1	4.6	444	14	41.8	8433 3011 66
ETV STB32-30-10-BCR	3/8	6 - 30	4.5 - 22	Li-Io 18 V	380	1.6	3.6	2.2	4.9	444	14	41.8	8433 3011 69
ETV STB32-30-B10	3/8	6 - 30	4.5 - 22	Li-Io 18 V	380	1.5	3.3	2.1	4.6	444	14	41.8	8433 3011 76
ETV STB32-30-B10-BCR	3/8	6 - 30	4.5 - 22	Li-Io 18 V	380	1.6	3.6	2.2	4.9	444	14	41.8	8433 3011 79
ETV STB62-30-10	3/8	6 - 30	4.5 - 22	Li-Io 30 V	610	1.75	3.85	2.65	5.8	466	14	41.8	8433 3030 21
ETV STB62-30-10-BCR	3/8	6 - 30	4.5 - 22	Li-Io 30 V	610	1.9	4.2	2.8	6.2	466	14	41.8	8433 3030 28
ETV STB62-30-B10	3/8	6 - 30	4.5 - 22	Li-Io 30 V	610	1.75	3.85	2.65	5.8	466	14	41.8	8433 3030 36
ETV STB62-30-B10-BCR	3/8	6 - 30	4.5 - 22	Li-Io 30 V	610	1.9	4.2	2.8	6.2	466	14	41.8	8433 3030 38
ETV STB62-40-10	3/8	12 - 40	9 - 29	Li-Io 30 V	465	1.7	3.8	2.55	5.7	479	18	47	8433 3031 22
ETV STB62-40-10-BCR	3/8	12 - 40	9 - 29	Li-Io 30 V	465	1.9	4.1	2.75	6.1	479	18	47	8433 3031 28
ETV STB62-40-B10	3/8	12 - 40	9 - 29	Li-Io 30 V	465	1.7	3.8	2.55	5.7	479	18	47	8433 3031 39
ETV STB62-40-B10-BCR	3/8	12 - 40	9 - 29	Li-Io 30 V	465	1.9	4.1	2.75	6.1	479	18	47	8433 3031 48
ETV STB62-50-10	3/8	15 - 50	10 - 37	Li-Io 30 V	375	1.7	3.8	2.55	5.7	479	18	47	8433 3032 67
ETV STB62-50-10-BCR	3/8	15 - 50	10 - 37	Li-Io 30 V	375	1.9	4.1	2.75	6.1	479	18	47	8433 3032 68
ETV STB62-50-B10	3/8	15 - 50	10 - 37	Li-Io 30 V	375	1.7	3.8	2.55	5.7	479	18	47	8433 3032 75
ETV STB62-50-B10-BCR	3/8	15 - 50	10 - 37	Li-Io 30 V	375	1.9	4.1	2.75	6.1	479	18	47	8433 3032 78
ETV STB62-70-13	1/2	15 - 70	10 - 50.7	Li-Io 30 V	265	2.3	5.1	3.2	7.1	492	20	58	8433 3033 05
ETV STB62-70-13-BCR	1/2	15 - 70	10 - 50.7	Li-Io 30 V	265	2.5	5.4	3.35	7.4	492	20	58	8433 3033 10
ETV STB62-70-B13	1/2	15 - 70	10 - 50.7	Li-Io 30 V	265	2.3	5.1	3.2	7.1	492	20	58	8433 3033 15
ETV STB62-70-B13-BCR	1/2	15 - 70	10 - 50.7	Li-Io 30 V	265	2.5	5.4	3.35	7.4	492	20	58	8433 3033 20
ETV STB62-100-13	1/2	20 - 100	15 - 72.5	Li-Io 30 V	170	2.9	6.4	3.8	8.4	528.5	22.5	60.5	8433 3034 05
ETV STB62-100-13-BCR	1/2	20 - 100	15 - 72.5	Li-Io 30 V	170	3.1	6.73	3.95	8.71	528.5	22.5	60.5	8433 3034 10
ETV STB62-100-B13	1/2	20 - 100	15 - 72.5	Li-Io 30 V	170	2.9	6.4	3.8	8.4	528.5	22.5	60.5	8433 3034 15
ETV STB62-100-B13-BCR	1/2	20 - 100	15 - 72.5	Li-Io 30 V	170	3.1	6.73	3.95	8.71	528.5	22.5	60.5	8433 3034 20
<b>Pistol grip</b>													
ETP STB32-06-10	3/8	2 - 6	2 - 4	Li-Io 18 V	1500	0.9	2	1.5	3.3	218	-	186	8433 3110 25
ETP STB32-06-10-BCR	3/8	2 - 6	2 - 4	Li-Io 18 V	1500	1	2.3	1.6	3.5	218	-	186	8433 3110 28
ETP STB32-06-I06	1/4	2 - 6	2 - 4	Li-Io 18 V	1500	0.9	2	1.5	3.3	218	-	186	8433 3110 37
ETP STB32-06-I06-BCR	1/4	2 - 6	2 - 4	Li-Io 18 V	1500	1	2.3	1.6	3.5	218	-	186	8433 3110 38
ETP STB32-12-10	3/8	4 - 12	3 - 9	Li-Io 18 V	750	0.9	2	1.5	3.3	218	-	186	8433 3111 35
ETP STB32-12-10-BCR	3/8	4 - 12	3 - 9	Li-Io 18 V	750	1	2.3	1.6	3.5	218	-	186	8433 3111 38
ETP STB32-12-I06	1/4	4 - 12	3 - 9	Li-Io 18 V	750	0.9	2	1.5	3.3	218	-	186	8433 3111 48
ETP STB32-12-I06-BCR	1/4	4 - 12	3 - 9	Li-Io 18 V	750	1	2.3	1.6	3.5	218	-	186	8433 3111 58

# Tensor STB crowfoot tools



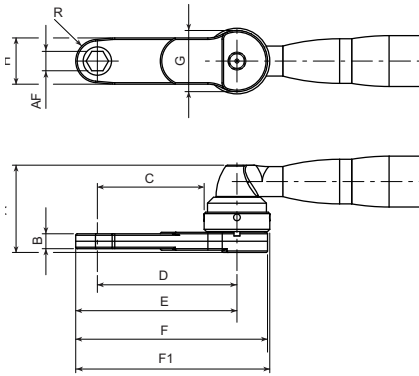
Dimensions



ETC STB

## In-Line crowfoot tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	R mm	Ordering No.
	Nm	ft lb		kg	lb												
<b>ETC STB62</b>																	
ETC STB62-18-10-LI3	4 - 18	3 - 13	470	2.7	5.9	616	10	34	15	12.5	36.7	59.2	82	35	22	10	8433 2316 11
ETC STB62-20-12-LI3	6 - 23	4 - 17	226	2.7	5.9	636	12	34	10	15	51.9	54.3	102	35	31	14.5	8433 2316 17
ETC STB62-28-12-LI3	7 - 28	5 - 20	226	2.7	5.9	617	12	34	15	12.5	45.5	71	94	35	30	13	8433 2316 14



Dimensions

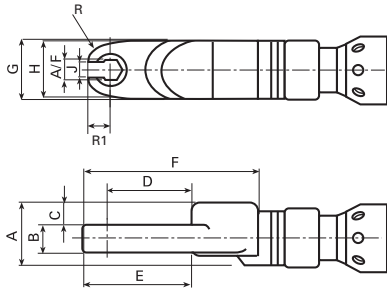


ETC STB

## Offset crowfoot tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	R mm	Ordering No.
	Nm	ft lb		kg	lb												
<b>ETC STB62</b>																	
ETC STB62-18-10-LO3	5 - 18	4 - 13	610	2.3	5.1	495	10	60.3	15	17	33	43	58	37	22	10	8433 2315 09
ETC STB62-20-13-LO5	5 - 23	4 - 17	610	2.6	5.7	568	13	57	10	72	94	108	129	44	31	14	8433 2315 15
ETC STB62-28-12-LO5	6 - 28	5 - 20	465	2.9	6.4	558	12	69.5	15	62	84	97	118	44	30	13	8433 2315 12
ETC STB62-40-14-LO3	8 - 44	6 - 32	375	2.8	6.2	522	14	69.5	18	25	47	61	82	44	31	14	8433 2315 18
ETC STB62-40-3/8-LO3	8 - 40	6 - 29	375	3	6.6	512	10	90.3	36	18	40	51	71	44	29	10	8433 2315 24
ETC STB62-50-16-LO3	12 - 64	8 - 47	265	3.4	7.5	538	16	77.8	24	27	51	66	89	48	30	15	8433 2315 27

# Tensor STB tube nut tools



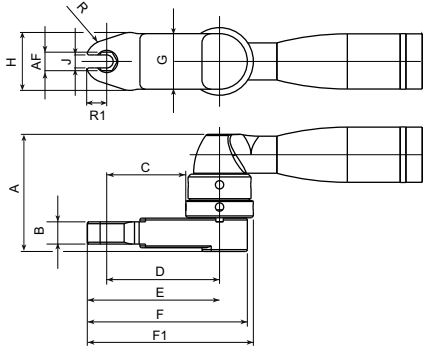
Dimensions



ETO STB

## In-Line tube nut tools

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	R1 mm	R mm	Ordering No.
	Nm	ft lb		kg	lb														
<b>ETO STB62</b>																			
ETO STB62-8-8-LI3	3 - 8	2 - 6	945	2.6	5.7	592	8	32	11	12.3	22.7	21.6	60	33.5	29	6	7.8	10	8433 2316 53
ETO STB62-12-8-LI3	4 - 12	3 - 9	723	2.6	5.7	598	8	32	10	13	27.3	25.4	66	33.5	31	7	9.8	11.5	8433 2316 56
ETO STB62-15-10-LI3	4 - 15	3 - 11	589	2.6	5.7	599	10	32	12	11	27.9	26.1	68	33.5	32	8	10.3	14	8433 2316 62



Dimensions



ETO STB

**Offset tube nut tools**

Model	Torque range		Speed r/min	Weight		Length mm	A/F mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	R1 mm	R mm	F1 mm	Ordering No.
	Nm	ft lb		kg	lb															
<b>ETO STB32</b>																				
ETO STB32-12-10-LO5	3 - 12	2 - 9	480	2.3	5.1	566	10	62	10	42.7	60.9	70.7	85.7	36.5	31	7	9.8	11	89	8433 2315 66
ETO STB32-15-10-LO3	4 - 14	3 - 10	480	2.3	5.1	530	10	63.3	12	7	25.1	34.9	49.9	36.5	31	7	9.8	11	53.2	8433 2315 63
<b>ETO STB62</b>																				
ETO STB62-18-12-LO5	4 - 18	3 - 13	610	2.6	5.7	604	12	62	11	51	73	84.9	105.4	44	38	8	11.9	14	107	8433 2315 75
ETO STB62-20-12-LO3	5 - 20	3 - 15	610	2.4	5.3	559	12	64	14	7	29	40.2	60.7	44	38	8	11.2	14	62.2	8433 2315 72
ETO STB62-30-13-LO5	10 - 33	7 - 24	265	3.8	8.4	617	13	72.5	18	53.3	75.3	87.7	108.2	44	40	10.4	12.4	25	109.7	8433 2315 81
ETO STB62-30-13-LO3	6 - 28	4 - 21	465	2.8	6.2	581	13	65	11	12.8	36.8	51.8	74.3	48	50	10.4	15	31	75.8	8433 2315 84
ETO STB62-40-17-LO5	10 - 50	7 - 37	265	3.6	7.9	645	17	80.5	18	66.8	90.8	105.8	128.3	48	50	12	15	31	129.8	8433 2315 87
ETO STB62-50-17-LO3	11 - 60	8 - 44	265	3.6	7.9	598	17	77.8	18	11.1	42.4	59.6	85.6	62.5	59	14	17.2	32	90.9	8433 2315 90
ETO STB62-50-21-LO3	11 - 55	8 - 40	265	3.6	7.9	608	21	73.8	12	18	49.2	69.3	96.8	62.6	59	16	20.1	32	100.6	8433 2315 93

# Tensor STR angle tools



*ETV STR*

Model	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Spline/ Mounting	Ordering No.
	Nm	ft lb		kg	lb				
ETV STR21-12-10	2.5 - 12	1.9 - 8.9	1350	1.1	2.4	297	14	-	8436 6120 12
ETV STR21-25-10	5 - 25	3.7 - 18.5	1000	1.2	2.6	297	14	-	8436 6120 25

# Tensor STR straight tools



*ETD STR*

Model	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Spline/ Mounting	Ordering No.
	Nm	ft lb		kg	lb				
ETD STR21-07-106-PS	1.5 - 7	1.0 - 5.2	2090	0.9	1.9	259	24	-	8436 6220 07
ETD SRT21-16-106-PS	3.5 - 16	2.6 - 11.8	1460	1.0	2.2	276	24	-	8436 6220 16



# Tensor STR pistol tools



ETP STR



ETP STR COT

Model	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Splines/ Mounting	Ordering No.
	Nm	ft lb		kg	lb				
ETP STR61-20-10	5 - 22	3.7 - 16.2	2100	2.87	1.3	244	24	-	8436 6360 20
ETP STR61-30-10	6 - 32	4.4 - 23.5	1530	2.87	1.3	244	24	-	8436 6360 30
ETP STR61-50-13	10 - 55	7.4 - 40.6	820	3.75	1.7	282	24	-	8436 6360 50
ETP STR61-70-13	14 - 80	10.3 - 59	560	4.41	2.0	298	26.5	-	8436 6360 70
ETP STR61-90-13	20 - 95	14.7 - 70.4	450	4.41	2.0	298	26.5	-	8436 6360 90
ETP STR61-120-13	24 - 125	17.7 - 89.4	380	4.41	2.0	298	26.5	-	8436 6360 12
<b>COT-version</b>									
ETP STR61-20-10 COT	5 - 22	3.7 - 16.2	2100	3.75	1.7	296	24	-	8436 6368 20
ETP STR61-30-10 COT	6 - 32	4.4 - 23.5	1530	3.75	1.7	296	24	-	8436 6368 30
ETP STR61-50-13 COT	10 - 55	7.4 - 40.6	820	4.63	2.1	334	24	-	8436 6368 50
ETP STR61-70-13 COT	14 - 80	10.3 - 59	560	5.29	2.4	350	26.5	-	8436 6368 70
ETP STR61-90-13 COT	20 - 95	14.7 - 70.4	450	5.29	2.4	350	26.5	-	8436 6368 90
ETP STR61-120-13 COT	24 - 125	17.7 - 89.4	380	5.29	2.4	350	26.5	-	8436 6368 12

Reaction bar not included, see accessories, page 73.

# Tensor cables

## Tensor DL

Model	Ordering No.
<b>Tool cable</b>	
3 m	4220 2604 03
5 m	4220 2604 05
10 m	4220 2604 10
15 m	4220 2604 15
20 m	4220 2604 20
<b>Heavy duty cable</b>	
3 m	4220 3265 03
5 m	4220 3265 05
10 m	4220 3265 10
15 m	4220 3265 15
20 m	4220 3265 20
<b>Cables with 90 degrees connector</b>	
3 m	4220 3705 03
5 m	4220 3705 05
10 m	4220 3705 10
15 m	4220 3705 15
20 m	4220 3705 20
<b>Spiral cable straight</b>	
5 m	4220 3240 05
<b>Spiral cable with 90 degrees</b>	
5 m	4220 3706 05
<b>Extension cable</b>	
3 m	4220 2795 03
5 m	4220 2795 05
10 m	4220 2795 10



DL Cable



DL spiral cable



DL cable with 90 degrees connector

## Tensor SL

Model	Ordering No.
<b>Tool cable</b>	
3 m	4220 3319 03
5 m	4220 3319 05
10 m	4220 3319 10
15 m	4220 3319 15
20 m	4220 3319 20
<b>Heavy duty cable</b>	
3 m	4220 3378 03
5 m	4220 3378 05
10 m	4220 3378 10
15 m	4220 3378 15
20 m	4220 3378 20
<b>Cables with 90 degrees</b>	
3 m	4220 3607 03
5 m	4220 3607 05
10 m	4220 3607 10
15 m	4220 3607 15
20 m	4220 3607 20
<b>Spiral cable straight</b>	
5 m	4220 3746 05
<b>Spiral cable with 90 degrees</b>	
5 m	4220 3617 05
<b>Extension cable</b>	
3 m	4220 2795 03
5 m	4220 2795 05
10 m	4220 2795 10



SL Cable



SL Cable with 90 degrees connector



SL Spiral cable

**Tensor DS**

Model	Ordering No.
<b>Tool cable</b>	
2 m	4220 1616 02
5 m	4220 1616 05
7 m	4220 1616 07
10 m	4220 1616 10
15 m	4220 1616 15
<b>Extension cable</b>	
5 m	4220 2047 05
10 m	4220 2047 10
15 m	4220 2047 15
<b>Extension cables for fixtured</b>	
10 m	4220 2046 10
15 m	4220 2046 15



*DS Tool cable*



*DS Extension cable for fixtured applications*

**Tensor S**

Model	Ordering No.
<b>Tool cable flat</b>	
2 m	4220 3606 02
3 m	4220 3606 03
5 m	4220 3606 05
7 m	4220 3606 07
10 m	4220 3606 10
15 m	4220 3606 15
<b>Cables with 90 degrees connector</b>	
5 m	4220 1560 05
10 m	4220 1560 10
15 m	4220 1560 15
<b>Extension cable</b>	
5 m	4220 1007 05
10 m	4220 1007 10
15 m	4220 1007 15
<b>Extension cables for fixtured</b>	
5 m	4220 1563 05
10 m	4220 1563 10
15 m	4220 1563 15



*S Cable with 90 degrees connector*



*S Cable flat*

**Tensor ST / STR**

Model	Ordering No.
<b>Tool cable</b>	
2 m	4220 2636 02
3 m	4220 2636 03
5 m	4220 2636 05
7 m	4220 2636 07
10 m	4220 2636 10
15 m	4220 2636 15
<b>Cables with 90 degrees connector</b>	
2 m	4220 3891 02
3 m	4220 3891 03
5 m	4220 3891 05
7 m	4220 3891 07
10 m	4220 3891 10
15 m	4220 3891 15
<b>Spiral cable (length/stretched length)</b>	
3 m / 4 m	4220 2757 03
7 m / 8 m	4220 2757 07
10 m / 12 m	4220 2757 10
Cable protection	4220 2977 90



*ST/STR Cable*



*ST/STR Cable protection*



*ST/STR Spiral cable*

# Power Focus



DS Drive



DL Drive



Graph



Compact

## Power Focus 4000 for Tensor DS, S, ST, ETX, STB and STR

Model	Ordering No.
<b>Power Focus 4000 W 10</b>	
PF 4000-G-HW	8433 7100 00
PF 4000-C-HW	8433 7100 05
PF 4000-G-DN- HW	8433 7140 00
PF 4000-C-DN-HW	8433 7140 05
PF 4000-G-FLN-HW	8433 7141 00
PF 4000-C-FLN-HW	8433 7141 05
PF 4000-G-PB-HW	8433 7142 00
PF 4000-C-PB-HW	8433 7142 05
PF 4000-G-CC-HW	8433 7143 00
PF 4000-C-CC-HW	8433 7143 05
PF 4000-G-IB-HW	8433 7145 00
PF 4000-C-IB-HW	8433 7145 05
PF 4000-G-MB-HW	8433 7147 00
PF 4000-C-MB-HW	8433 7147 05
PF 4000-G-PN-HW	8433 7148 00
PF 4000-C-PN-HW	8433 7148 05
PF 4000-G-EIP-HW	8433 7149 00
PF 4000-C-EIP-HW	8433 7149 05

To connect STB to Power Focus 4000, need Communication kit 8433 3900 20

## Power Focus 4002 for Tensor SL

Model	Ordering No.
<b>Power Focus 4000</b>	
PF 4002-G-HW	8433 3100 00
PF 4002-C-HW	8433 3100 05
PF 4002-G-DN-HW	8433 3140 00
PF 4002-C-DN-HW	8433 3140 05
PF 4002-G-PB-HW	8433 3142 00
PF 4002-C-PB-HW	8433 3142 05
PF 4002-G-IB-HW	8433 3145 00
PF 4002-C-IB-HW	8433 3145 05
PF 4002-G-MB-HW	8433 3147 00
PF 4002-C-MB-HW	8433 3147 05
PF 4002-G-PN-HW	8433 3148 00
PF 4002-C-PN-HW	8433 3148 05
PF 4002-G-EIP-HW	8433 3149 00
PF 4002-C-EIP-HW	8433 3149 05

Model	Ordering No.
<b>DL Drive</b>	
D303-DL Basic	8433 4850 48
D313-DL Advanced	8433 4850 33
<b>DS Drive</b>	
D32-DS4 Box	8433 0820 66
D302-DS4 Basic	8433 0820 48
D312-DS4 Advanced	8433 0820 33
D32-DS7 Box	8433 0822 66
D302-DS7 Basic	8433 0822 48
D312-DS7 Advanced	8433 0822 33
D32-DS9 Box	8433 0824 66
D302-DS9 Basic	8433 0824 48
D312-DS9 Advanced	8433 0824 33



RBU

## Controller functionality

Model	Ordering No.
RBU-Bronze	8433 0010 10
RBU-Silver	8433 0015 20
RBU-Gold	8433 0020 20
RBU-DS	8433 0005 10
RBU-X	8433 0080 20

## IRC Focus for STwrench and Tensor STB

Model	Ordering No.
<b>IRC Focus</b>	
IRC FOCUS-B-G-HW	8433 6500 00
IRC FOCUS-B-C-HW	8433 6500 02
IRC FOCUS-B-G-DN-HW	8433 6500 04
IRC FOCUS-B-C-DN-HW	8433 6500 06
IRC FOCUS-B-G-FLN-HW	8433 6500 08
IRC FOCUS-B-C-FLN-HW	8433 6500 10
IRC FOCUS-B-G-PB-HW	8433 6500 12
IRC FOCUS-B-C-PB-HW	8433 6500 14
IRC FOCUS-B-G-IB-HW	8433 6500 16
IRC FOCUS-B-C-IB-HW	8433 6500 18
IRC FOCUS-B-G-MB-HW	8433 6500 20
IRC FOCUS-B-C-MB-HW	8433 6500 22
IRC FOCUS-B-G-PN-HW	8433 6500 24
IRC FOCUS-B-C-PN-HW	8433 6500 26
IRC FOCUS-B-G-EIP-HW	8433 6500 28
IRC FOCUS-B-C-EIP-HW	8433 6500 30

# Tensor Software



## ToolsTalk Power Focus

Model	Ordering No.
<b>ToolsTalk PF W10</b>	
1-user license	8092 1190 01
5-user license	8092 1190 05
10-user license	8092 1190 10
Plant license	8092 1190 99
<b>ToolsTalk PF W05 upgrade to W10</b>	
1-user license	8092 1190 51
5-user license	8092 1190 55
10-user license	8092 1190 60
Plant license	8092 1190 69
<b>ToolsTalk PF W07 upgrade to W10</b>	
1-user license	8092 1190 31
5-user license	8092 1190 35
10-user license	8092 1190 40
Plant license	8092 1190 49

## Software

Model	Ordering No.
<b>ToolsTalk DS/DL</b>	
Swedish	8092 1138 60
English	8092 1138 62
German	8092 1138 64
French	8092 1138 66
Spanish	8092 1138 68
Italian	8092 1138 70
<b>Power Focus controller software</b>	
PF World 07 sticker, (12 package)	4222 0820 20
PF World 10 sticker, (12 package)	4222 0820 25

## ToolsTalk PF Functionality

General Functionality Level of RBU	DS	Bronze	Silver	Gold
Serial connection	x	x	x	x
Off line programming	x	x	x	x
Real time analysis	x	x	x	x
Tightening database to PC (Excel)	x	x	x	x
Tightening simulation	x	x	x	x
Operator monitor	x	x	x	x
Picture monitor	x	x	x	x
Fieldbus quick set-up	x	x	x	x
Job monitor	x	x	x	x
Bar code reader configuration	x	x	x	x
Ethernet connection	x	x	x	x
Remote programming	x	x	x	x
View tightening traces	x	x	x	x
Overlay traces	x	x	x	x
Logic Configurator (PF 4000 only)	x	x	x	x
Multiple identifiers	x	x	x	x
Tensor ST sound files	x	x	x	x

ToolsTalk PF can connect with Power Focus 4000, IRC Focus, Power Focus 4002

# Quality Integrated Fastening Hardware

Model	Ordering No.
<b>Remote Start</b>	
Selector 4	8433 0610 04
Selector 8	8433 0610 08
Selector for large sockets	8433 0610 44
Rotary selector	8433 0606 15
Bit selector 8	8433 0612 08
double <sup>a</sup>	4222 0933 92
single <sup>b</sup>	4222 0933 91
RE-Alarm	8433 0560 03
<sup>a</sup> Only compatible with Bit selector.	
<sup>b</sup> Only compatible with Socket selector 4 and 8.	
<b>I/O Expanders</b>	
Open	8433 0564 39
Sealed	8433 0564 45
<b>Stacklights</b>	
ESL-04 Standard	8433 0570 13
Rotating red	8433 0570 30
Rotating yellow	8433 0570 35
Siren	8433 0570 40
Compact	8433 0570 16
DSL-03 with push button	8433 0570 10
DSL-03 with blanking plugs	8433 0570 11
<b>Operator panel</b>	
Advanced	8433 0565 00
Basic	8433 0565 10
<b>HMI's (Human Machine Interface)</b>	
MiniDisplay MD-02, incl. Operator Guidance	8435 3071 00
MaxiDisplay 19, incl. Operator Guidance	8435 3070 10
<b>ComNode 2</b>	
Compact	8433 2711 00
Compact with ATS, 10 spindle license	8433 2711 01
Compact with I/O card	8433 2711 03
Touch	8433 2711 10
Touch with ATS, 10 spindle license	8433 2711 11
Touch with I/O card	8433 2711 13
<b>Communication</b>	
WEAFlex - LAN	8433 1010 00
<b>Remote Start</b>	
Operator handle (ball joint/handle)	
- front/plastic	8435 3030 00
- front/rubber	8435 3030 01
- rear/plastic	8435 3030 02
- rear/rubber	8435 3030 03
Start handle	4220 1391 91
<b>Cables</b>	
<b>Accessory cables</b>	
I/O bus cable 0.5 m	4222 0917 00
1 m	4222 0917 01
3 m	4222 0917 03
5 m	4222 0917 05
10 m	4222 0917 10
15 m	4222 0917 15
I/O Termination plug	4222 0443 00
<b>M12-4 pin</b>	
Female - Open end 5 m	4243 0166 05
Male - Female 5 m	4243 0167 05
10 m	4243 0167 10
15 m	4243 0167 15
<b>WEAFlex (cable 1 m)</b>	
Power24vDC, M12-5 pin	4243 0286 80
EthernetRJ45, M12-4 pin	4222 1540 01

Model	Ordering No.
<b>Cables Ethernet</b>	
Crossed 0.5 m	4222 0682 00
1 m	4222 0682 01
3 m	4222 0682 03
5 m	4222 0682 05
10 m	4222 0682 10
15 m	4222 0682 15
25 m	4222 0682 25
50 m	4222 0682 50
<b>Straight 0.5 m</b>	
1 m	4222 0754 01
3 m	4222 0754 03
5 m	4222 0754 05
10 m	4222 0754 10
15 m	4222 0754 15
25 m	4222 0754 25
50 m	4222 0754 50



Operator Panel advanced



I/O expander sealed



RE-Alarm



Bit selector



Stacklight DSL-03



ComNode compact



Operator handle



Start handle



WEAFlex

# Software

Software	Ordering No.	Upgrade Ordering No.
<b>ToolsNet 4000 - Reports</b>		
		<b>Upgrade<sup>1</sup></b>
5 Spindle license	8092 1410 05	8092 1510 05
10 Spindle license	8092 1410 10	8092 1510 10
25 Spindle license	8092 1410 25	8092 1510 25
50 Spindle license	8092 1410 50	8092 1510 50
75 Spindle license	8092 1410 75	8092 1510 75
125 Spindle license	8092 1410 80	8092 1510 80
200 Spindle license	8092 1410 85	8092 1510 85
350 Spindle license	8092 1410 90	8092 1510 90
500 Spindle license	8092 1410 95	8092 1510 95
Plant Spindle license	8092 1410 00	8092 1510 00
<b>ToolsNet 4000 - Alerts</b>		
		<b>Upgrade<sup>2</sup></b>
5 Spindle license	8092 1411 05	8092 1511 05
10 Spindle license	8092 1411 10	8092 1511 10
25 Spindle license	8092 1411 25	8092 1511 25
50 Spindle license	8092 1411 50	8092 1511 50
75 Spindle license	8092 1411 75	8092 1511 75
125 Spindle license	8092 1411 80	8092 1511 80
200 Spindle license	8092 1411 85	8092 1511 85
350 Spindle license	8092 1411 90	8092 1511 90
500 Spindle license	8092 1411 95	8092 1511 95
Plant Spindle license	8092 1411 00	8092 1511 00
<b>ToolsNet 4000 - History</b>		
		<b>Upgrade<sup>3</sup></b>
5 Spindle license	8092 1412 05	8092 1512 05
10 Spindle license	8092 1412 10	8092 1512 10
25 Spindle license	8092 1412 25	8092 1512 25
50 Spindle license	8092 1412 50	8092 1512 50
75 Spindle license	8092 1412 75	8092 1512 75
125 Spindle license	8092 1412 80	8092 1512 80
200 Spindle license	8092 1412 85	8092 1512 85
350 Spindle license	8092 1412 90	8092 1512 90
500 Spindle license	8092 1412 95	8092 1512 95
Plant Spindle license	8092 1412 00	8092 1512 00
<b>Operator guidance</b>		
1 User license	8092 1185 01	

<sup>1</sup> ToolsNet 3000 W5 is required

<sup>2</sup> ToolsNet 3000 W5, Event Monitor W5 and E-mail module are required.

<sup>3</sup> ToolsNet 3000 W5, Event Monitor W5, E-Mail module and Program History are required.

# Tensor

## Accessories for safe and ergonomic operation



Tool extension



Supported extension



Reaction plate

### Tool extensions

Model	Length	Ordering No.
ETD/ETV DS4/S4	150	4220 1131 80
ETD DS7/S7 20-30	150	4220 1131 80
ETV DS7/S7 30-50	150	4220 1131 80
ETD/ETV DS4/S4	100	4220 1131 86
ETD S7 50-120	150	4220 1132 80
ETV S7 70-200	150	4220 1132 80
ETF S7 50-100	150	4220 1132 80
ETV S9 50	150	4220 1132 80
ETD/ETV DS7 70-200	150	4220 1714 80
ETD S9 200	150	4220 1132 81
ETD S9 200	100	4220 1132 82
ETD/ETV DS9/S9 270-370	150	4220 1585 80
ETD DS9/S9 450-600	150	4220 1585 85
ETV ST31 15-20	150	4220 2903 80
ETV ST61 20-30	150	4220 2903 96
ETV ST61 40-50	150	4220 2903 95
ETV ST61 70	150	4220 2903 97
ETV ST61 100-200	150	4220 2903 91
ETVSL21	150	4220 4600 90

### Supported extensions (~154 mm)

Tensor ST/STR	Tensor S/DS	Ordering No.
STR21, ETV ST31 20, ST61 28-30	ETV S4/S7/DS2/DS7 20-30	4220 3868 90
ETV ST61/ST81 40-50	ETV S7/S9/DS7/DS9 40-50	4220 2209 91
ETV ST61/ST81 70	ETV S7/S9/DS7/DS9 70	4220 2596 91
ETV ST61/81/101 150-180		4220 4125 90
ETV ST61/200	ETV S7 200	4220 4125 82
ETV ST81/101 200		4220 4125 91

### Reaction plate for fixturing

Tensor ST/STR	Ordering No.
STR21, ETV ST31 20, ETV ST61 30, ETV ST61/81 200	4220 1677 91
ETV ST61 40-50	4220 1677 93
ETV ST61/81 70	4220 1677 95
ETV ST61/81 100	4220 1678 97
ETV ST61/81 150-180	4220 1678 90
ETV ST10 180	4220 1677 99
ETV ST10 200-600	Included
ETP ST32 20 106BCR	4220 3491 00



Cover for standard sockets

### Covers for standard sockets

Tensor ST/STR	Ordering No.
ETV S4/ST 28	4220 3154 03
ETV S4/ST 30	4220 3154 04
ETV S7/S9/ST 100	4220 3154 05
ETV S7/S9/ST 150-180	4220 3154 06
ETV S7/S9/ST 40-50	4220 1995 05
ETV S7/S9/ST 70	4220 1993 03
ETV S9/ST 200	4220 3154 07
ETV S9/ST 270-370	4220 3154 08
ETD S7 50-120 CTADS, ETP/ETF S7/S9 50-120, ETD S9 100, ETD ST61/81 50-120	4220 3251 00
ETD S4 02/04 IO6/10CTADS,	4220 3251 01
ETD S4 10 IO6/10CTADS/B10CTADS,	
ETD S4 20 10CTADS, ETD ST61/ST81 15-30	
ETD S7 20-30	4220 3251 02
ETD S7 50-140 CTADST	4220 3251 02
ETV ST31 20, STR21	4220 3154 03



### Pistol grip Tensor DL / SL

Model	Ordering No.
Tensor DL	4220 2743 90
Tensor SL	4220 3516 80

Pistol grip can be mounted on all straight DL tools.

### Tool holder DL / SL

Model	Ordering No.
ETP / ETD	4220 3584 80



Lock-off lever

### Lever Tensor DS / S / ST / STR

Model	Ordering No.
Lever, DS/S	4220 1642 80
Lever, ST	4220 3511 81
Spoon lever, STR21	4220 4338 83
Extended lever, DS/S	4220 1642 85
Extended lever, ST	4220 3511 85
Lock-off lever, DS/S	4220 2356 80
Lock-off lever, ST	4220 3511 83





Suspension yokes



**Suspension yokes**

Model	Type	Assembly	Ordering No.
ETD/ETV DS9	Horizontal	Motor	4220 1418 96
ETD/ETV DS4/DS7	Horizontal	Motor	4220 0987 85
ETD/ETV S4/S7/S9/DS4/DS7/DS9	Vertical	Handle	4220 1417 80
ETD/ETV S9	Horizontal	Motor	4220 1418 93
ETP S4/S7/DS4/DS7	Horizontal	Motor	4220 1154 90
ETD/ETV S4	Fixed	Motor front nut	4220 1675 86
ETD/ETV S4/S7	Horizontal	Motor	4220 0987 90
ETV/ETD ST31/61	Horizontal	Motor	4220 2657 90
ETV/ETD ST31/61	Fixed	Motor	4220 2843 92
ETV/ETD ST81	Horizontal	Motor	4220 0987 90
ETV/ETD ST81	Fixed	Motor	4220 2843 91
ETV/ETD ST31/61,	Vertical	Handle	4220 1417 85
ETD ST10 120-300,	Vertical	Planetary gear	4220 1418 91
ETV ST10 270-600			
ETD ST10 500-1000	Vertical	Planetary gear	4220 1418 90
ETV ST10 100-200	Vertical	Planetary gear	4220 1418 92
ETP DS9 350/500	Swivelling		4210 3088 86
ETP DS9 750	Swivelling		4210 3088 83
ETP DS9 1500	Swivelling		4210 3088 81
ETP STR61	tool upside down		4220 3037 00
ETP STR61	fixed, one side		4220 4334 00
ETP STR61	fixed, both sides		4220 4399 80
ETP STR61 20/30/50	Swivelling		4220 4381 80
ETP STR61 70/90/120	Swivelling		4220 4394 80
ETV ST101 <sup>a</sup>	Horizontal	Motor	4220 3930 90
ETP ST101	Swivelling		4220 4075 90
ETP ST101 BCR <sup>b</sup>	Swivelling		4220 4075 90
STR21	For rear		4220 4410 80
STR21	For front		4220 4409 80

<sup>a</sup> Not telescopic  
<sup>b</sup> To be used if barcode scanner is mounted.



Reaction bar

Mounting bracket

Triangular

**Reaction bars and mounting brackets**

Number	Spline type	Type	L / W / H	Ordering No.
1	-	Bracket	100/60/8	4220 1029 00
2	Spline type 2	Bracket	70/41/14	4210 2134 02
3		Triangular	73/72/14	4220 2137 02
4		Bar	270/35/14	4220 1903 00
5	Spline type 3	Bracket	100/50/12	4210 2219 03
6		Triangular	82/80/12	4220 2137 03
7		Bar	400/29/12	4210 2219 80
8	Spline type 6	Bracket	200/100/15	4220 1200 00
9		Triangular	112/109/15	4220 2137 06
10		Bar	560/80/15	4220 1200 01
11	Spline type 7	Bracket	250/150/20	4220 1445 00
12	Spline type 8	Bracket	250/160/20	4220 1972 00
13	-	Bracket	100/60/8	4220 1029 01
14	-	Bracket	100/60/8	4220 1029 02

For model				
ETD ST10 120		Bracket	150/100/16	4220 3677 00
ETD ST10 200/300/500		Bracket	200/150/16	4220 3677 01
ETD ST10 750/1000		Bracket	200/150/20	4220 3677 02
ETP STR61 20/30		Bar	250/15/8	4220 4495 00
ETP STR61 50/70/90/120		Bar	270/35/14	4220 1903 00

Mounting bracket is included for some tool models. Please match the number from the table with the tool tables.



Lever trigger top



Operator handle



Lever trigger 135 deg.

**Operator handle for ETP STR61**

Model	Ordering No.
ETP STR61	4220 4487 80
ETR STR61 without bracket	4220 4487 81

**Dual trigger for open end**

Model	ETV	ETD	Ordering No.
ST61-S	ST31, ST61 05-50	ST31, ST61 15-30	4220 3186 90
ST61-L	ST61 70-200	ST61 50-120	4220 3186 91
ST81-S	ST81 50	ST81 30	4220 3186 92
ST81-L	ST81 70-180	ST81 50-120	4220 3186 93
ST101	ST10 100-1000	ST10 100-1000	4220 3186 96

**Dual trigger for open end 135 deg.**

Model	ETV	ETD	Ordering No.
ST61-S	ST31, ST61 28-50	ST31, ST61 15-30	4220 3311 90
ST61-L	ST61 70-200	ST61 50-120	4220 3311 91
ST81-S	ST81 50	ST81 30	4220 3311 92
ST81-L	ST81 70-200	ST81 50-120	4220 3311 93
ST101	ST10 100-1000	ST10 100-1000	4220 3311 94

# Tensor

## Accessories for safe and ergonomic operation

### Fixtured extensions

Model	For ext + nut Ordering No.	For nut only Ordering No.
ETV ST10 100, 150, 180, ETD ST10 120	4220 3571 90	Included
ETD ST10 150, 200, 300	4220 3572 90	
ETD ST10 500	4220 3573 90	Included

### Protective covers

Model	Ordering No.
ETV ST31 5-15	4220 2744 05
ETV ST31/ST61 20-30, ETV ST31 200	4220 2744 03
ETV ST61 40-50/ST81 50	4220 2744 02
ETV ST61 70/ST81 70	4220 2744 04
ETP ST31-05	4220 2744 06
ETP ST31-10	4220 2744 07
ETV ST81/ST10 150-180	4220 2744 10
ETV ST81/ST10 100	4220 2744 09
ETP ST101 (included)	4220 4299 00
ETVSTR21-12	4220 4572 00
ETVSTR21-25	4220 4572 01
STR61-20/30	4220 4632 00
STR61-50	4220 4632 01
STR61-70/90/120	4220 4632 02

### Torque multiplier (reaction bar included)

Model	Max. torque Nm	Gear ratio	Square in	Square out	Ordering No.
T-Mult 120	30	4.54	3/8	1/2	8431 0453 53
T-Mult 200	50	4.62	3/8	3/4	8433 0310 07
T-Mult 400	100	4.10	1/2	3/4	8431 0493 65
T-Mult 500	30	16.11	3/8	3/4	8433 0310 28
T-Mult 800	45	18.50	1/2	1	8433 0311 81
T-Mult 1000	250	4.00	3/4	1	8433 0312 16
T-Mult 1500	72	21.10	1/2	1	8433 0312 20

### Barcode scanner



**CAUTION:** This device emits CDRH/IEC Class 2 laser radiation. Do not stare into beam.

Model	ETV	ETD	Ordering No.
ST61-S	ST31, ST61 28-50	ST31, ST61 15-30	8433 0615 10
ST61-L	ST61 70-200	ST61 50-120	8433 0615 20
ST81-S	ST81 50	ST81 30	8433 0615 30
ST81-L	ST81 70-200	ST81 50-120	8433 0615 40
ETP STR61			8436 0999 90
ETP ST101			8433 0615 50

### Parameter set selector

Model	ETV	ETD	Ordering No.
ST61-S	ST31, ST61 28-50	ST31, ST61 15-30	8433 0616 05
ST61-L	ST61 70-200	ST61 50-120	8433 0616 15
ST81-S	ST81 50	ST81 30	8433 0616 25
ST81-L	ST81 70-200	ST81 50-120	8433 0616 35
ST101	ST10	ST10	8433 0616 45
ETP STR61			8436 0999 91



Fixtured extension



Tool holder

### Tool holder

Model	Ordering No.
ETP ST32	4220 3584 80



Protective cover  
Tensor ST



Support handle

### Support handle

Model	Ordering No.
ETP DS9 350/500/750/1500	4220 4374 90
ETP ST31/32 5-10	4220 3517 80
ETP STR61	4220 4343 80
ETD STR21	4220 4347 80
ETP ST101 200/500 (included)	4220 4001 84
ETP ST101 750/1000 (included)	4220 4001 83



Barcode scanner



Parameter set selector

**I/O device module**

Model	ETV	ETD	Ordering No.
ST61-S	ST31, ST61 28-50	ST31, ST61 15-30	8433 0617 12
ST61-L	ST61 70-200	ST61 50-120	8433 0617 22
ST81-S	ST81 50	ST81 30	8433 0617 32
ST81-L	ST81 70-200	ST81 50-120	8433 0617 42
ST101	ST10	ST10	8433 0617 52

**Protection**

Model	Ordering No.
Scanner protection ST61-S >50, ST31/ST32	4220 2762 10
Selector protection	4220 2917 06
I/O device protection	4220 2917 06

**Front button**

Model	ETV	ETD	Ordering No.
ST61-S	ST31, ST61 28-50	ST31, ST61 15-30	4220 3184 90
ST61-L	ST61 70-200	ST61 50-120	4220 3184 91
ST81-S	ST81 50	ST81 30	4220 3184 92
ST81-L	ST81 70-200	ST81 50-120	4220 3184 93
ST101	ST10	ST10	4220 3184 94

**Adjustable headlights**

Model	ETV	ETD	Ordering No.
ST61-S	ST31, ST61 28-50	ST31, ST61 15-30	4220 3292 94
ST61-L	ST61 70-200	ST61 50-120	4220 3292 95
ST81-S	ST81 50	ST81 30	4220 3292 96
ST81-L	ST81 70-200	ST81 50-120	4220 3292 97
ST101	ST10	-	4220 3292 98



I/O device module



Scanner protection



Front button



Adjustable headlights

**Telescopic front part**

Model	Ordering No.
ETP ST101 500	4210 3781 81
ETP ST101 700-1000	4210 3788 81



Protective cover  
Tensor ST



Battery cover  
18 V, 2.6 Ah.



Battery cover  
18 V, 1.3 Ah.

# Tensor STB



Battery charger  
18 V.



Battery  
18 V, 2.6 Ah.



Battery  
18 V, 1.3 Ah.

**Chargers**

Chargers	Voltage	Region	Ordering No.
18 V	230V/50Hz	EU	4211 5428 80
18 V	230V/50Hz	UK	4211 5428 81
18 V	115V/60Hz	US	4211 5428 84
18 V	230V/60V	BRA	4211 5428 83
30 V	230V/50Hz	EU	4211 5424 80
30 V	230V/50Hz	UK	4211 5424 81
30 V	120V/60Hz	US	4211 5424 84
30 V	230V/60V	BRA	4211 5424 83

**Battery – Li-Io**

Voltage	Capacity	Weight kg	Ordering No.
18 V	2.6 Ah	0.60	4211 5426 83
30 V	2.6 Ah	0.85	4211 5426 86

Model	Ordering No.
Protective cover	4220 2744 04
Battery protection (18V)	4211 5602 00
Battery protection (30V)	4211 5444 00

**Com Kit**

Com Kit



Model	Bestell-Nr.
Com Kit Bluetooth (minimum PF SW 7.5) Includes: Serial port adapter, I/O cable, 3 m serial cable and power cable.)	8433 3900 20

Twój dystrybutor:

Centrala Techniczna ELTECH SP. z o.o.  
ul. Fabryczna 1-3, 58-100 Świdnica

tel. 74 858 27 00, fax 74 858 27 01

[www.eltech.com.pl](http://www.eltech.com.pl), [eltech@eltech.com.pl](mailto:eltech@eltech.com.pl)

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