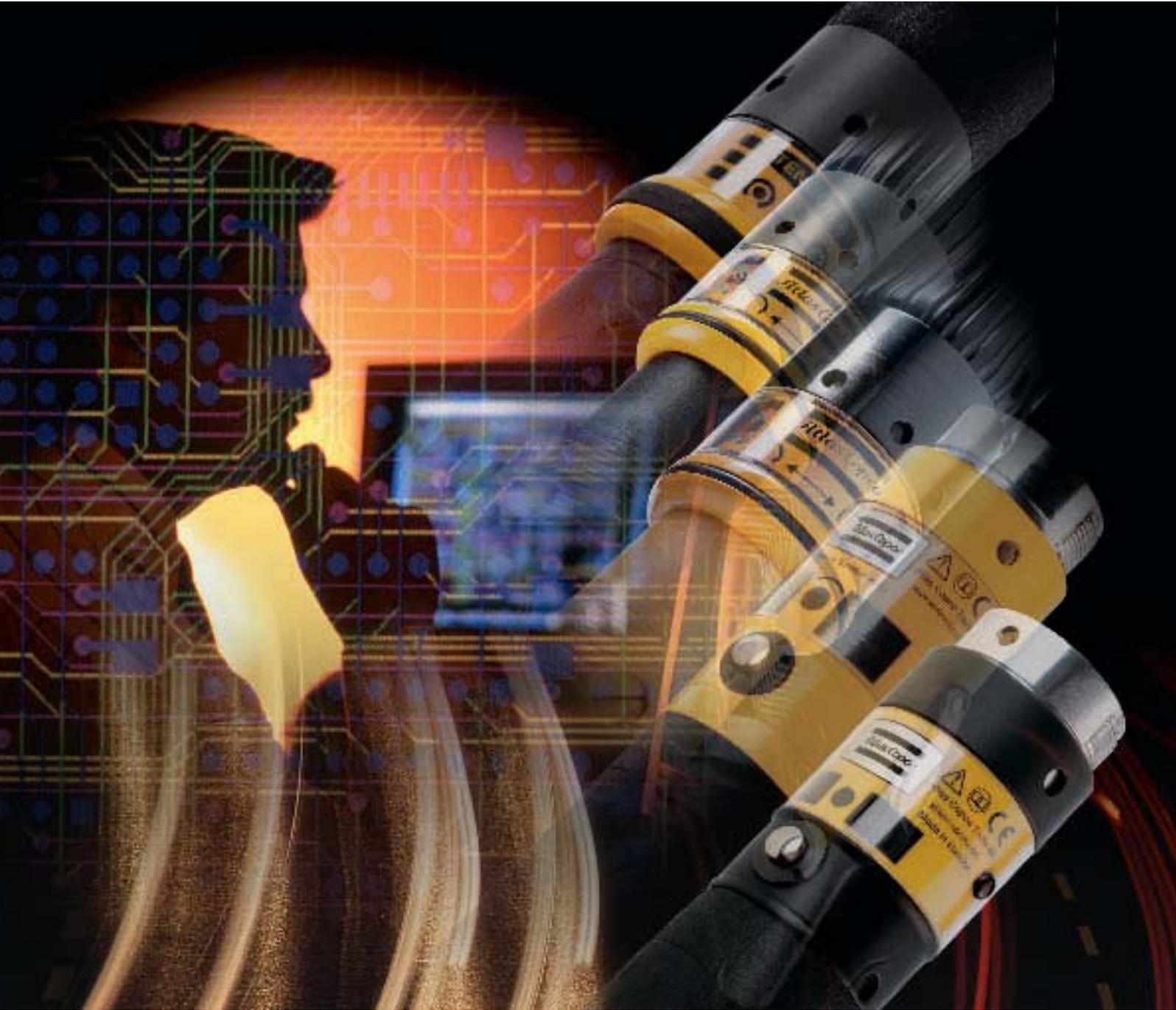


Tensor Electric Assembly Tools

Tighten up on error proofing and productivity



Atlas Copco

Right first time...



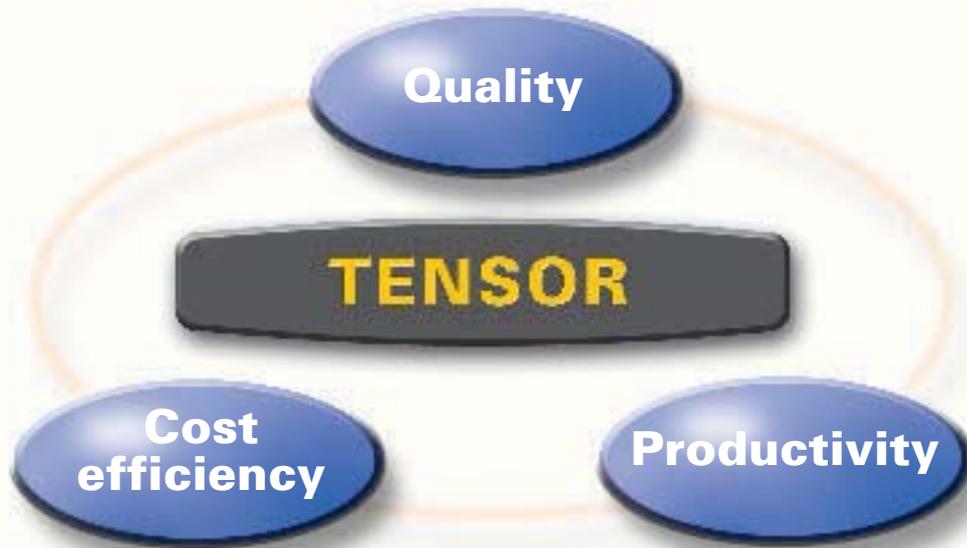
Tensor assembly tools are the complete solution to the high-quality industrial assembly of threaded fasteners. Fully integrated control and visualization systems ensure consistent accuracy, reliability and quality. And Tensor tooling even resolves many 'human factor' issues.

- *Error proofing – built-in 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.

Tensor electric benefits

6

Tensor assembly tools

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Tensor control units

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Tensor cables

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Software applications

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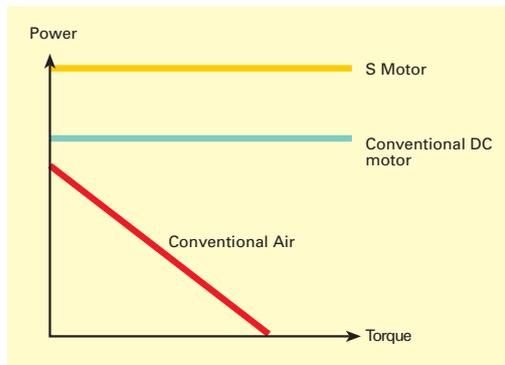
Technical information

36

Tensor productivity gains

Superior spindle performance

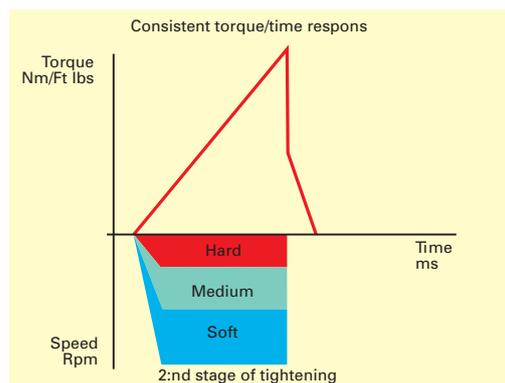
Motor power and spindle performance are critical to increased productivity. The proprietary motor technology that powers all Tensor tools ensures superior cycle times and optimum cycle rates at maximum efficiency. This makes Tensor nutrunners the natural choice for the all of today's most demanding applications.



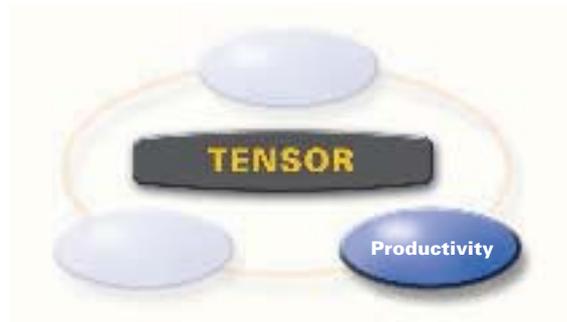
- ✓ *Fast cycle times*
- ✓ *High cycle rates*
- ✓ *Demanding applications*

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.

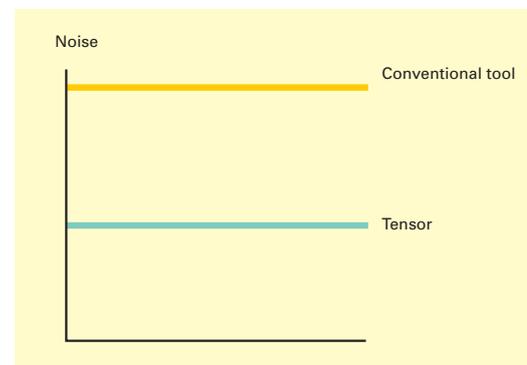


- ✓ *Low weight*
- ✓ *Optimized balance*
- ✓ *Low vibration*



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 quality benefits



Accurate and controlled fastening

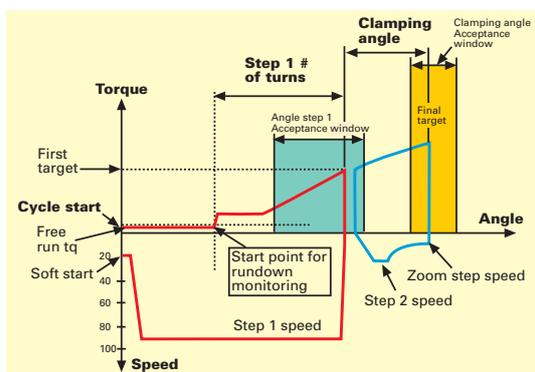
Tensor tools meet the highest standards of accuracy for hand-held electrical nutrunners. Add Atlas Copco design know-how in gear packages and you have a tool that offers exceptional levels of fastening accuracy. Tensor tool accuracy is tested in compliance with the international ISO5393 test standard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



Trace of Tensor DS Rundown Monitoring.

- ✓ 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

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 breakdowns. 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

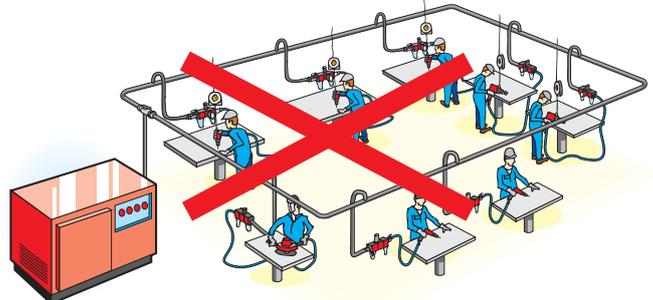
Choose Tensor electric tools and reduce set-up and installation costs. Tensor systems connect directly to the existing mains supply – no need to invest in a compressor or airline system. Purchase and installation costs for a conventional tool system, when based on a total cost analysis, far outweigh 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

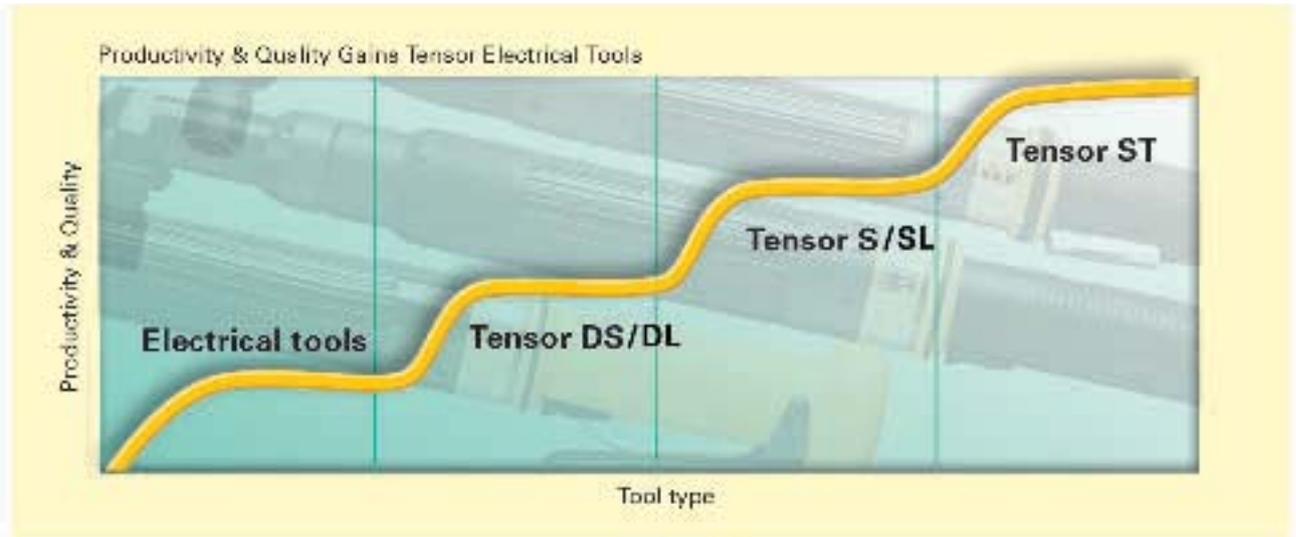
Lower operating costs

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 tool overview



A complete range

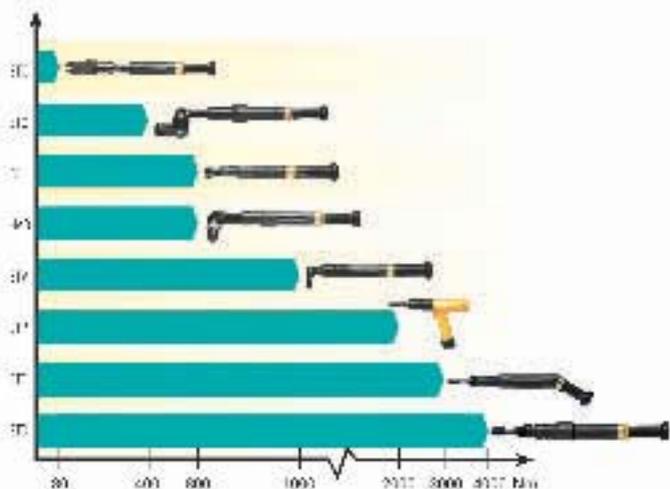
The Tensor electrical tool range covers all assembly line requirements for safety- and quality-critical fasteners. The first true non-transducerized electric power tool, the Tensor DS, made it feasible to equip an entire facility with electrical tools. The Tensor all-electric plant had arrived. Tensor 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. Choose from all five ranges. 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 8 different configurations, the Tensor range of multi-torque electrical tools can be used to equip an entire facility.



Five 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 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 zero-fault production in a wide range of low-torque applications.



Tensor DS: 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 S: safety-critical/traceable feedback

The Tensor S 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 ST: top of the line

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



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.

Configurable push-to-start.

Excellent ergonomics.

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



Configurable tool front lights.



DigiTork™.

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

Tensor DL

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.

High-performance motor.

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

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.

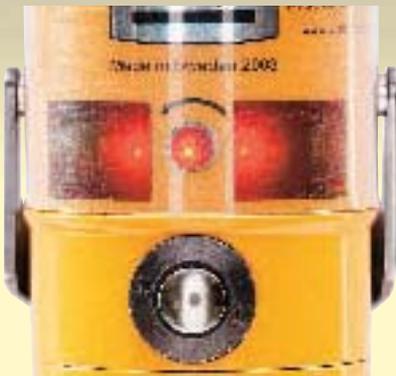
Function button.

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

Signal lights.

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

Simple and reliable trigger action.



DS and DL Drive



DS and DL Drive functionality overview

The drive or controller is the heart of any electrical quality-fastening process. The DS drive controls and monitors Tensor DS tools, whereas the DL drive runs Tensor DL tools. The DS and DL drives provide a high degree of functionality with minimal set-up and configuration. There are two versions: the Basic model, for stations not requiring multi-torque capability, and the Advanced model. 'PLC'-type functions, such as line control, as well as multi-torque capability, are standard on the advanced model. A single tool can now replace up to ten conventional tools!

Simplified installation with DS Compact



Both Basic and Advanced DS Drives are available as a Compact Hardware unit. The size and configuration of the Compact Hardware unit makes it easy to install and ideal for multi-controller installations involving more than one spindle. The Drive display itself shows the torque value applied and provides clear operator feedback, even at a considerable distance. The unit also features a built-in six-button keypad for basic programming.



AutoSet – programming made easy

Programming the Drive could not be easier. Hit the Autoset button, set the target torque using the +/- keys on the keypad, press "Set" – and start fastening! It's that simple. The Drive automatically configures the correct speeds and torque shift points for the specific application. AutoSet functionality is a patented Atlas Copco design that greatly simplifies the set-up process and reduces start-up times.



PLC functions banish missing bolts

Forgotten screws, the most common assembly problem related to fastening, jeopardize assembly quality and can create a potential hazard. In-built PLC functions such as 'batch counting', and 'line control' (Advanced) combined with digital inputs/outputs, alarms and line-interlocking options prevents forgotten screws and/or parts being passed down the assembly line or to the next assembly station. The Tensor DS/DL ensures that it is 'right first time' – every time.



Quality-control accessories

A range of quality control accessories can be used in conjunction with the DS and DL Drive, to further enhance the quality of the assembly process. These include an RE-alarm that generates visual and audio signals for monitoring the tightening process, and a socket selector, that determines the correct fastening parameter (or P-set) for the specific application. All accessories are linked to the Drive via a single cable, using the built-in I/O bus. This greatly simplifies the installation process.



DL drive optimized for station assembly

The weight and size of the DL drive is half of the DS drive. Contacts are accessible from the front and are protected by a removable cover plate. This makes the DL system an excellent small screw assembly station.

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), QuickProg (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.

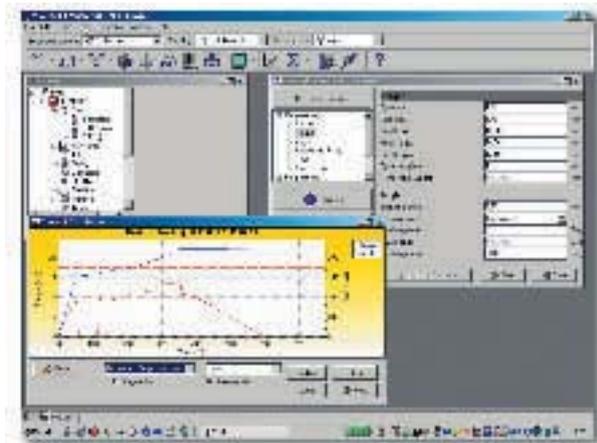
ToolsTalk DS/DL software also features diagnostic tools for simple problem identification.

ToolsTalk DS/DL runs on a Windows 95/98/2000/NT/XP environment.

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 3100 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 95/98/2000/NT/XP environment.



ToolsTalk PF – remote programming

ToolsTalk PF has the capability to program parameters in all versions of Power Focus 3100 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.

Tensor DL screwdrivers



Model	Torque range		Speed r/min	Weight		Length mm	CS distance ¹ mm	Ordering No.
	Nm	in lbs		kg	lb			
Lever start								
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
Push-to-start and front lights								
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	242	18 / 19.5	8433 4014 91
ETD DL21-07-I06-PS	2.2 – 7.5	19.5 – 66	970	0.6	1.3	242	18 / 19.5	8433 4017 69
ETD DL21-10-I06-PS	3 – 10	26.6 – 88.5	720	0.6	1.3	242	18 / 19.5	8433 4019 25

1) x/y; x=CS distance without handle, y=CS distance with handle

All models: • Are reversible • Female hexagon drive for bits: 1/4" • Have quick change chuck



Model	Torque range		Speed r/min	Weight		Length mm	CS distance ² mm	Ordering No.
	Nm	in lbs		kg	lb			
Lever start								
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 DL21-04-06	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 DL21-07-06	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 DL21-10-06	3 – 12	26.6 – 106.4	610	0.7	1.5	282	11	8433 4009 77

2) CS distance over angle head



Model	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Ordering No.
	Nm	in lbs		kg	lb			
Pistol grip lever start								
ETP DL21-04-I06	1 – 4	8.8 – 35.4	1600	0.65	1.4	235	19	8433 4024 19
ETP DL21-07-I06	2.2 – 7.5	19.5 – 66	970	0.65	1.4	235	19	8433 4027 26
ETP DL21-10-I06	3 – 10	26.6 – 88.5	720	0.65	1.4	235	19	8433 4029 13
Pistol grip push-to-start and front lights								
ETP DL21-01-I06-PS-H	0.3 – 1.2	2.6 – 10	2200	0.60	1.3	243	18 / 19.5	8433 4020 77
ETP DL21-04-I06	1 – 4	8.8 – 35.4	1600	0.65	1.4	242	19	8433 4024 66
ETP DL21-07-I06	2.2 – 7.5	19.5 – 66	970	0.65	1.4	242	19	8433 4027 53
ETP DL21-10-I06	3 – 10	26.6 – 88.5	720	0.65	1.4	242	19	8433 4029 28



Model	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Ordering No.
	Nm	in lbs		kg	lb			
Fixed tools (lever start or remote control)								
ETF DL21-01-I06	0.3 – 1.2	2.6 – 10	2200	0.7	1.5	328	18 / 19.5	8433 4040 04
ETF DL21-04-I06	1 – 4	8.8 – 35.4	1600	0.7	1.5	328	18 / 19.5	8433 4042 13
ETF DL21-07-I06	2.2 – 7.5	19.5 – 66	970	0.7	1.5	328	18 / 19.5	8433 4043 22
ETF DL21-10-I06	3 – 10	26.6 – 88.5	720	0.7	1.5	328	18 / 19.5	8433 4044 11

Tensor cables

Tensor DL

Tensor DL Tool Cable	Ordering No.
3 m	4220 2604 03
5 m	4220 2604 05
10 m	4220 2604 10

Tensor DL Extension Cable	Ordering No.
3 m	4220 2795 03
5 m	4220 2795 05
10 m	4220 2795 10

Tensor DL Heavy duty Cable	Ordering No.
5 m	4220 3265 05

Tensor DL Spiral Cable	Ordering No.
1.5 m	4220 3240 06



Tensor DL Tool Cable

Tensor SL

Tensor SL Tool Cable	Ordering No.
3 m	4220 3319 03
5 m	4220 3319 05
10 m	4220 3319 10

Tensor SL Extension Cable	Ordering No.
3 m	4220 2795 03
5 m	4220 2795 05
10 m	4220 2795 10

Tensor SL Heavy duty Cable	Ordering No.
3 m	4220 3378 03
5 m	4220 3378 05
10 m	4220 3378 10

Tensor SL Tool Cable with 90° connector	Ordering No.
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

Tensor SL Spiral Cable with 90° connector	Ordering No.
5 m work length with 7.6 m total length	4220 3617 05



Tensor SL Tool Cable



Tensor SL Tool Cable with 90° connector

Tensor DS

Tensor DS Tool Cable	Ordering No.
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



Tensor DS Tool Cable

Tensor DS Extension Cable	Ordering No.
5 m	4220 2047 05
10 m	4220 2047 10
15 m	4220 2047 15



Tensor DS Extension Cable

Tensor DS Extension Cables for fixtured applications	Ordering No.
5 m	4220 2046 05
10 m	4220 2046 10
15 m	4220 2046 15



Tensor DS Extension Cable for fixtured applications

Tensor ST

Tensor ST Tool Cable	Ordering No.
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
Cable protection	4220 2977 90



Tensor ST Tool Cable



Cable protection

Tensor ST Spiral Cable	Ordering No.	
Length	Stretched length	Ordering No.
3 m	4 m	4220 2757 03
7 m	8 m	4220 2757 07
10 m	12 m	4220 2757 10

Tensor S extension cables are fully compatible with Tensor ST.



Tensor ST Spiral Cable

Tensor S

Tensor S Tool Cable	Ordering No.
2 m	4220 0982 02
3 m	4220 0982 03
5 m	4220 0982 05
7 m	4220 0982 07
10 m	4220 0982 10
15 m	4220 0982 15



Tensor S Tool Cable

Tensor S Extension Cables for fixtured applications	Ordering No.
5 m	4220 1563 05
10 m	4220 1563 10
15 m	4220 1563 15



Tensor S Extension Cable for fixtured applications

Tensor S Extension Cable	Ordering No.
5 m	4220 1007 05
10 m	4220 1007 10
15 m	4220 1007 15



Tensor S Extension Cable

Tensor S Cables with 90° connector	Ordering No.
5 m	4220 1560 05
10 m	4220 1560 10
15 m	4220 1560 15



Tensor S Cable with 90° connector

Tensor S Cable with loop for high flexibility	Ordering No.
5 m	4220 1845 05
10 m	4220 1845 10
15 m	4220 1845 15



Tensor S Cable with loop

Controller accessories

Controller accessories	Ordering No.
Selector 4	8433 0610 04
Selector 8	8433 0610 08
Bit Selector	8433 0612 08
Bit Selector Pad Double ^{a)}	4222 0933 92
Bit Selector Pad Single ^{b)}	4222 0933 91
Selector for large sockets	8433 0610 44
Rotary selector	8433 0606 15
RE-Alarm	8433 0560 03
I/O Expander	8433 0564 38
Start handle	4220 1391 91
Operator Panel advanced	8433 0565 00
Operator Panel basic	8433 0565 10
Stacklight ESL-04 standard	8433 0570 13

a) Only compatible with Bit Selector
b) Only compatible with Socket Selector 4 & 8



Ordering No. 8433 0606 15



Ordering No. 8433 0564 38



Ordering No. 8433 0610 04



Ordering No. 8433 0610 08



Ordering No. 8433 0612 08



Ordering No. 8433 0560 03



Ordering No. 4220 1391 91



Operator Panel



Stacklight



ComNode



ComNode Touch Screen

Accessory cables	Ordering No.
I/O bus cable 0.5 m	4222 0470 00
I/O bus cable 1 m	4222 0470 01
I/O bus cable 3 m	4222 0470 03
I/O bus cable 5 m	4222 0470 05
I/O bus cable 10 m	4222 0470 10
I/O bus cable 15 m	4222 0470 15
I/O Termination plug	4222 0443 00

Power Focus 3100 Manuals	Ordering No.
English	9836 1648 01
Swedish	9836 1648 02
French	9836 1648 03
German	9836 1648 04
Spanish	9836 1648 05
Portuguese	9836 1648 06
Italian	9836 1648 07

These must be ordered separately.

DS Drive 300 Manuals	Ordering No.
English	9836 1716 01
Swedish	9836 1716 02
French	9836 1716 03
German	9836 1716 04
Spanish	9836 1716 05
Portuguese	9836 1716 06
Italian	9836 1716 07

These must be ordered separately.

DL Drive Manuals	Ordering No.
English	9836 2050 01
Swedish	9836 2050 02
French	9836 2050 03
German	9836 2050 04
Spanish	9836 2050 05
Italian	9836 2050 07

These must be ordered separately.

Model	Display	Ordering No.
ComNode	-	8433 2710 00
ComNode Touch Screen	12" Touch Screen	8433 2710 10

Ethernet cables	Ordering No.
Crossed 0.5 m	4222 0682 00
Crossed 1 m	4222 0682 01
Crossed 3 m	4222 0682 03
Crossed 5 m	4222 0682 05
Crossed 10 m	4222 0682 10
Crossed 15 m	4222 0682 15
Crossed 25 m	4222 0682 25
Crossed 50 m	4222 0682 50
Straight 0.5 m	4222 0754 00
Straight 1 m	4222 0754 01
Straight 3 m	4222 0754 03
Straight 5 m	4222 0754 05
Straight 10 m	4222 0754 10
Straight 15 m	4222 0754 15
Straight 25 m	4222 0754 25
Straight 50 m	4222 0754 50

Tensor DL carbon fibre torque arm	Ordering No.
Table mount	8202 9001 00
Wall mount	8202 9001 10

Tensor Tracker arms	Ordering No.
Tensor SL Tracker arm table mount	8433 0900 45
Tensor SL Tracker arm wall mount	8433 0900 50



Functionality overview

Tensor Controllers

	DS/DL 300		Power Focus 3100			
General						
Functionality Level / RBU	Basic	Advanced	DS	Bronze	Silver	Gold
Runs Tool Types	DS / DL	DS / DL	DS	S / ST / SL	DS / S / ST / SL	DS / S / ST / SL
Compact Hardware	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
Functionality						
Number of Tools	1	1	1	1	1	1
Number of Psets	1	10	64	64	250	250
Batch Count	x	x	x	x	x	x
Open End Spanner	x	x	x	x	x	x
Quick Programming	x	x	x	x	x	x
Cross Thread / Rehit detection	x	x	x	x	x	x
Tool Service Indicator	x	x	x	x	x	x
Autoset	x	x	x	x	x	x
Lock on Reject	x	x	x	x	x	x
Line Control		x	x		x	x
Transducer Torque Traceability				x	x	x
Tightening status storage			5 000	5 000	5 000	5 000
Tightening data storage				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			32		99	99
ID Input to select Job			x		x	x
Complex Job sequencing			x		x	x
Cell Programming			x		x	x
Label Printer (via Open Protocol)			x		x	x
Cell Job						x
Strategies and options						
Two stage/Quick Step/Ergoramp	x	x	x	x	x	x
Tq Control and Angle Mon	x	x	x	x	x	x
DS Control	x	x	x		x	x
Auto Zoom Step	x	x	x	x	x	x
CW / CCW operation	x	x	x	x	x	x
Rundown Angle Monitoring	x	x	x	x	x	x
Self Tap / PVT Monitoring	x	x	x	x	x	x
Reverse Angle		x	x	x	x	x
Rotate Spindle		x	x	x	x	x
Click Wrench Input				x	x	x
Torque and Angle Control				x	x	x
Torque or Angle Control				x	x	x
Angle Control and Torque Mon				x	x	x
Step sync						x
I/O						
RS232 Programming Port	x	x	x	x	x	x
Discrete I/O	x	x	x	x	x	x
Remote start	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			x		x	x
Protocols						
Open Protocol Serial			x	x	x	x
Open Protocol Siemens 3964R Serial			x	x	x	x
Open Protocol Ethernet			x		x	x
API			x		x	x
Double open protocol sessions			x		x	x

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