

# ***ELECTRIC ASSEMBLY TOOLS AND SYSTEMS***

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## Highest productivity with lowest life-cycle cost

*Atlas Copco supplies a comprehensive range of high productivity assembly tools with intelligent controllers and a sharp focus on ergonomics. Our many product lines were developed to meet all your tightening needs and give you lowest life-cycle cost. Products range from low torque MicroTorque tools providing 0.5 Ncm of torque, to high torque Tensor ST tools, offering up to 4,000 Nm.*

### **EBL SCREWDRIVER**

Low voltage, brushless screwdriver for demanding applications, with shut-off clutch for high fastening precision, time after time.

### **MICROTORQUE LOW TORQUE SCREWDRIVER**

Low torque intelligent screwdrivers that ensure joint integrity in high volume consumer applications and high value critical products.

### **POWER FOCUS 4000 CONTROLLER**

The Power Focus is the market-leading controller for handheld tools and has the capability to run fixtured tools. Power Focus is a modular range of controllers with full flexibility and connectivity to fit your production infrastructure. The Power Focus 4000 controls tools in the Tensor ST, STB, DS, SL and ETX family. The Power Focus 4002 controls Tensor SL tools.

### **POWER FOCUS 600 CONTROLLER**

The Power Focus 600 is compatible with the Tensor ES tools and is the perfect choice for quality critical assembly. It comes in one single hardware version regardless of which tool model or functionality level is used. Its powerful industrial design gives a reliable process that will speed up your tightening operations.

### **DS/DL CONTROLLER**

The DS/DL system offers a quick and easy route to improved process monitoring in your assembly operations. With a range of alternative drives, you can choose the functionality best suited for your operations. The DL drive runs Tensor DL tools and is available as Basic or Advanced models.

### **TENSOR TOOLS**

The Tensor tool range covers all assembly requirements for safety critical and quality critical applications.

Tensor ES: Quality critical applications with high demands on productivity, ergonomics and error proofing.

Tensor SL: Safety-critical low torque tools for small screw applications. It offers compact screwdriver ergonomics with traceability and error proofing capability.

Tensor ST: The second generation of Tensor tools was developed with the focus on reducing tool weight and increasing productivity. Tensor ST has an internal bus connection for intelligent accessories such as a barcode reader and P-selector switch.

Tensor STR, SR: The latest generation of Tensor tools where ergonomics and productivity are taken to a new level.

Tensor DS: Quality critical applications where demands on accuracy and ergonomics are high.

Tensor DL: Quality critical applications with high demands on quality assurance.

Tensor STB: The battery version of Tensor ST for safety critical applications.



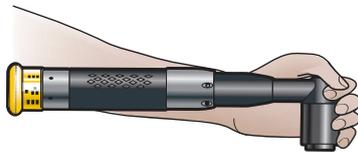
## SAFETY GUIDELINES

At Atlas Copco we want you to operate our tools safely. Always read and follow all operating and safety instructions, and comply with local safety regulations. There is a range of accessories for Atlas Copco tools. They are intended to reduce the risk of injury during certain assembly processes.

### 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.



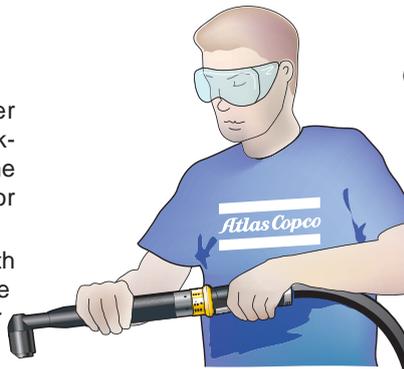
#### 5 Reaction bar

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



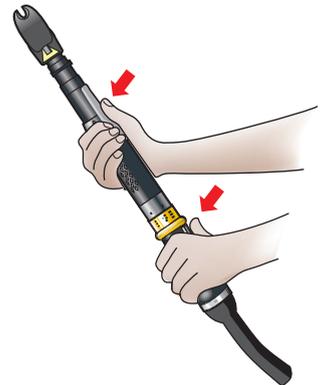
#### 2 Hold the tool correctly

- 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.



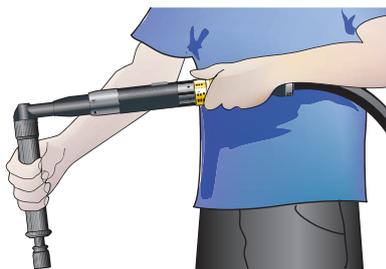
#### 6 Open end tools

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



#### 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.



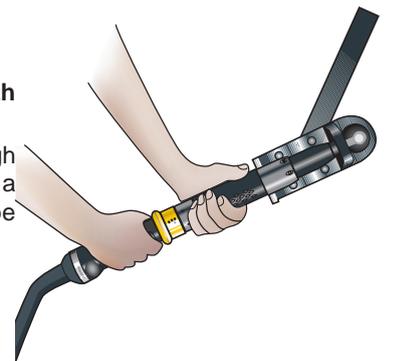
Other advantages are:

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

#### 7

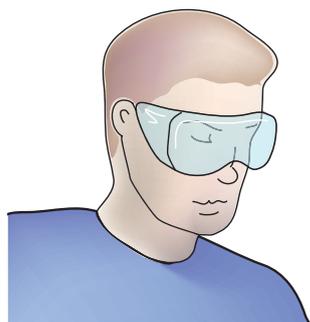
#### Angle nutrunners with reaction bar

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



#### 4 Use goggles

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



#### 8

#### Screwdrivers

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



## If you're looking for quality, you've found it

*Atlas Copco supplies a complete range of advanced electric screwdrivers to match your needs. If it's cutting-edge ergonomics you want, true reliability, or long-life, low maintenance motors, we have them. Models range from EBL and MicroTorque low-torque tools up to Tensor tools with torques of up to 20 Nm. They all have one thing in common – quality.*

### **EBL SCREWDRIVERS**

EBL screwdrivers are the best in class clutch electric screwdriver for low torque applications, its brushless motor combined with the high accuracy, delivers the best tightening solution for any assembly process.

### **MICROTORQUE**

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

### **TENSOR SR TOOLS**

ESD certified, Tensor SR angle tools are fast, compact and easy to operate. They feature an easy-to-configure function button and front LED's for clear operator feedback.

With a push-to-start mechanism and an integrated front guide light, STR straight tools are suitable for both hand-held and fixtured applications

### **TENSOR DL**

Optimized for small screw assembly, Tensor DL non-transducerized screwdrivers are available in straight, right angle and pistol grip versions. There are also Tensor DL straight screwdrivers for fixtured applications. All models have good ergonomic designs and brushless motors offering low maintenance costs.

### **TENSOR SL**

Tensor SL transducerized screwdrivers are available in straight, right angle and pistol grip versions, with a straight model for fixtured applications that is very light and compact. All the tools offer high power-to-weight ratios, good ergonomic designs and clear operator feedback via LED's lights and buzzers (depending on the model).

### **TENSOR ES**

Tensor ES transducerized screwdrivers for quality critical applications are available in straight and right angle versions. All models have a sealed design for robustness and offer high productivity with improved ergonomics.



### **ESD CERTIFIED SCREWDRIVERS**

Atlas Copco offers ESD certified tools in the standard range of screwdriver models most frequently used in the electronics industries. ESD certification means a guarantee against damage of electronic components by an uncontrolled electrostatic discharge (ESD) from the tools.

Conformity to the requirements of IEC 61340-5-1 standard proposal is approved by SP, the Swedish National Testing and Research Institute. In practice it certifies that at no point will the material of the equipment hold an electrostatic potential above 100 V for more than 2 seconds.



## DESIGNED FOR LOW-TORQUE ASSEMBLY OPERATIONS

Featuring superior ergonomics and the latest technology, Atlas Copco's EBL screwdriver is setting new standards for electric low-torque screwdrivers.

- Brushless motor provides long working life, extended service intervals and low maintenance requirements.
- Good ergonomics mean maximum operator comfort: comfortable grip, low tool weight and lower noise level due to the brushless motor.
- Reporting tool models have a batch count feature that ensures that all screws have been tightened.
- Soft-stop feature on certain models prevents damage to sensitive electronics and plastic assembly components.



Model	Screw capacity	Torque range soft joint		Free speed r/min	Weight		Length mm	Bit drive	Ordering No.
		Nm	in lb		kg	lb			
<b>Standard models</b>									
EBL03	M1-2	0.05-0.3	0.4-2.7	870	0.3	0.7	185	Wing type 4 mm	8431 0170 02
EBL03-Q	M1-2	0.05-0.3	0.4-2.7	870	0.3	0.7	185	1/4" Hex	8431 0170 04
EBL12	M2-3	0.2-1.2	1.8-10.6	910	0.5	1.1	215	1/4" Hex	8431 0170 11
EBL12-1500	M2-3	0.2-1.2	1.8-10.6	1500	0.5	1.1	215	1/4" Hex	8431 0170 41
EBL20	M2-3	0.5-2.0	4.5-18	750	0.5	1.1	215	1/4" Hex	8431 0170 16
EBL21-1500	M2-3	0.5-2.1	4.5-19	1500	0.8	1.8	235	1/4" Hex	8431 0170 43
EBL25	M2.5-4	1.0-2.5	8.8-22.1	930	0.8	1.8	235	1/4" Hex	8431 0170 23
EBL25-1500 <sup>a</sup>	M2.5-4	1.0-2.5	8.8-22.1	1500	0.8	1.8	235	1/4" Hex	8431 0170 25
EBL35	M2.5-4	1.0-3.5	8.8-31	700	0.8	1.8	235	1/4" Hex	8431 0170 33
EBL45 <sup>c</sup>	M2.5-5	1.0-4.5	8.8-40	700	0.8	1.8	235	1/4" Hex	8431 0170 40
EBL55 <sup>c</sup>	M2.5-5	1.0-5.5	8.8-48	600	0.8	1.8	235	1/4" Hex	8431 0170 44
<b>Soft-stop models</b>									
EBL03-SS	M1-2	0.05-0.3	0.4-2.7	870	0.3	0.7	185	Wing type 4 mm	8431 0170 07
EBL12-SS	M2-3	0.2-1.2	1.8-10.6	910	0.5	1.1	215	1/4" Hex	8431 0170 15
EBL20-SS	M2-3	0.5-2.0	4.5-18	750	0.5	1.1	215	1/4" Hex	8431 0170 20
EBL25-SS	M2.5-4	1.0-2.5	8.8-22.1	930	0.8	1.8	235	1/4" Hex	8431 0170 28
EBL35-SS	M2.5-4	1.0-3.5	8.8-31	700	0.8	1.8	235	1/4" Hex	8431 0170 38
<b>Reporting models</b>									
EBL03-RE	M1-2	0.05-0.3	0.4-2.7	870	0.3	0.7	185	Wing type 4 mm	8431 0170 55
EBL03-Q-RE	M1-2	0.05-0.3	0.4-2.7	870	0.3	0.7	185	1/4" Hex	8431 0170 06
EBL12-RE	M2-3	0.2-1.2	1.8-10.6	910	0.5	1.1	215	1/4" Hex	8431 0170 13
EBL12-1500-RE	M2-3	0.2-1.2	1.8-10.6	1500	0.5	1.1	215	1/4" Hex	8431 0170 18
EBL20-RE	M2-3	0.5-2.0	4.5-18	750	0.5	1.1	215	1/4" Hex	8431 0170 19
EBL21-1500-RE	M2-3	0.5-2.1	4.5-19	1500	0.8	1.8	235	1/4" Hex	8431 0170 47
EBL25-RE	M2.5-4	1.0-2.5	8.8-22.1	930	0.8	1.8	235	1/4" Hex	8431 0170 26
EBL25-1500-RE <sup>b</sup>	M2.5-4	1.0-2.5	8.8-22.1	1500	0.8	1.8	235	1/4" Hex	8431 0170 22
EBL35-RE	M2.5-4	1.0-3.5	8.8-31	700	0.8	1.8	235	1/4" Hex	8431 0170 36
EBL45-RE <sup>d</sup>	M2.5-5	1.0-4.5	8.8-40	700	0.8	1.8	235	1/4" Hex	8431 0170 42
EBL55-RE <sup>d</sup>	M2.5-5	1.0-5.5	8.8-48	600	0.8	1.8	235	1/4" Hex	8431 0170 45
<b>Soft-stop Reporting models</b>									
EBL03-SS-RE	M1-2	0.05-0.3	0.4-2.7	870	0.3	0.7	185	Wing type 4 mm	8431 0170 08
EBL12-SS-RE	M2-3	0.2-1.2	1.8-10.6	910	0.5	1.1	215	1/4" Hex	8431 0170 17
EBL20-SS-RE	M2-3	0.5-2.0	4.5-18	750	0.5	1.1	215	1/4" Hex	8431 0170 21
EBL25-SS-RE	M2.5-4	1.0-2.5	8.8-22.1	930	0.8	1.8	235	1/4" Hex	8431 0170 29
EBL35-SS-RE	M2.5-4	1.0-3.5	8.8-31	700	0.8	1.8	235	1/4" Hex	8431 0170 39

<sup>a</sup> EBL 25-1500 to be used with EBL Drive Plus.

<sup>b</sup> EBL 25-1500-RE to be used with EBL Drive Plus and EBL RE Module.

<sup>c</sup> EBL 45, 55 to be used with EBL Drive Plus.

**NOTE:** Max torque reduced to 80% when run on slow speed and soft joints.

<sup>d</sup> EBL 45-RE and EBL 55-RE to be used with EBL Drive Plus and EBL RE module.

**NOTE:** Max torque reduced to 80% when run on slow speed and soft joints.

All tools models, drives and cables are ESD and UL certified.

Tool box include cable for drive connection (standard models with 5 pins cable and reporting models with 6 pins cable)

All the models are push-to-start or lever start configurable.

## Optional Accessories

### DRIVES

Model		Ordering No.
EBL Drive	For standard models and soft-stop models	8431 0170 70
EBL RE-Drive	For reporting models and soft-stop + reporting models	8431 0170 75
EBL Drive Plus	For all standard models and soft-stop models	8431 0170 85



EBL Drive

### EBL REPORTING MODULE

Model	Ordering No.
EBL RE module	8431 0170 76

RE module to be connected between EBL Drive or EBL Drive Plus and RE tool.



EBL RE-Drive

### VACUUM PICK-UP ACCESSORIES

Accessories (not ESD approved)	Ordering No.
Vacuum pump – 220V	4220 0062 00
Vacuum pump – 115V	4220 0062 05
Nozzle blank Ø 8 mm for EBL 03	4220 0067 03
Nozzle blank Ø 8 mm for EBL 12, 20, 21, 25, 35	4220 0070 03
Nozzle blank Ø 14 mm for EBL 12, 20, 21, 25, 35	4220 0072 03
Vacuum pick-up adapter for EBL 03	4220 0080 30
Vacuum pick-up adapter for EBL 12, 20	4220 0080 31
Vacuum pick-up adapter for EBL 21, 25, 35	4220 0080 33



EBL Drive Plus

### CABLES

Model	Ordering No.
<b>Cable (not ESD approved)</b>	
Spiral cable, 1.3 m (5 pin)	4220 0347 00
Spiral cable, 1.3 m (6 pin)	4220 0349 00
Heavy duty, cable 2.0 m (5 pin)	4216 0132 00
Heavy duty, cable 2.0 m (6 pin)	4216 0133 00
<b>Cable (ESD approved)</b>	
Extension cable <sup>b</sup> 3.0 m (5 pin)	4220 0138 01
Extension cable <sup>b</sup> 3.0 m (6 pin)	4216 0115 00

<sup>b</sup> Maximum total length 8 m.



EBL RE module

### SCREW DISPENSER

Model	Ordering No.
SDS Screw dispenser	8432 0830 00

### PISTOL GRIP

Model	Ordering No.
EBL 12, 20	4220 0051 04
EBL 21, 25, 35, 45, 55 (ESD approved)	4220 0051 05



Pistol grip



Vacuum pick-up system

### ANGLE HEAD

Model	Ordering No.
<b>Angle head</b>	
Front part square drive 1/4" (06)	4210 4033 90
Hex bit drive 1/4" (42)	4210 4033 81
Hex quick change 1/4" (Q)	4210 4033 82
<b>Adapter</b>	
Adapter EBL 12, 20	4210 4609 85
Adapter EBL 21/25/35/45/55	4210 4609 81



Angle head, EBL



Screw dispenser

Both angle head and adapter needs to be ordered for mounting on EBL.

MicroTorque fixtured screwdriver systems are designed to perform consistently and precisely, time after time.

- High accuracy current controlled tools.
- Complete system, one single ordering number that includes screwdriver, controller, tool cable, PSU and ToolsTalk MT.
- Torque and angle control and monitoring.
- 64 P-sets
- Multiple steps tightening.
- Advanced programming via PC software, ToolsTalk MT.
- Different indication lights for operator feedback.
- Multiple I/Os for integration with assembly line, automation stations or error proofing accessories.



**ETD M 08/20/27 ABL V2**



**ETD M 50/80 ABL V2**



**ETD M 120/200/250 ABL V2**



**ETF M 05 400A**



**ETF M 50/80/100/200 400A**

Model	Torque range		Speed <sup>a</sup> r/min	Length mm	Overall width mm	Weight		Bit drive	Ordering No.
	cNm	in lb				kg	lb		
<b>Fixtured transducerized systems</b>									
ETF MT 5	0.5-5	0.04-0.4	1300	183	20	0.4	0.9	HM 4 mm	8432 0800 10
ETF MT 10	1-10	0.09-0.9	900	183	20	0.4	0.9	HM 4 mm	8432 0800 11
ETF MT 20	2-20	0.18-1.8	900	183	20	0.4	0.9	HM 4 mm	8432 0800 12
ETF MT 50	5-50	0.44-4.4	1300	269	30	1.1	2.42	HM 4 mm	8432 0800 13
ETF MT 80	8-80	0.71-7.1	1300	269	30	1.2	2.65	HM 4 mm	8432 0800 14
ETF MT 100	10-100	0.88-8.8	1300	272	30	1.2	2.65	1/4" HEX	8432 0800 15
ETF MT 100 HM4	10-100	0.88-8.8	1300	269	30	1.2	2.65	HM 4 mm	8432 0800 21
ETF MT 200	20-200	1.77-17.7	800	272	30	1.2	2.65	1/4" HEX	8432 0800 16
ETF MT 500	50-500	4.42-44.2	500	258	40	1.8	4.05	1/4" HEX	8432 0800 17
<b>Fixtured current controlled systems</b>									
ETF M 05	1.5-5	0.13-0.4	1300	183	20	0.4	0.9	HM 4 mm	8432 0810 15
ETF M 10	3-10	0.27-0.9	900	183	20	0.4	0.9	HM 4 mm	8432 0810 16
ETF M 20	5-20	0.44-1.8	900	183	20	0.4	0.9	HM 4 mm	8432 0810 17
ETF M 50	15-50	1.33-4.4	1300	269	30	1.1	2.42	HM 4 mm	8432 0810 18
ETF M 80	20-80	1.77-7.1	1300	269	30	1.2	2.64	HM 4 mm	8432 0810 19
ETF M 100	25-100	2.21-8.8	900	272	30	1.2	2.64	1/4" HEX	8432 0810 20
ETF M 200	50-200	4.42-17.7	650	272	30	1.2	2.64	1/4" HEX	8432 0810 21
ETF M 400	150-400	13.27-35.4	320	258	40	1.8	3.96	1/4" HEX	8432 0810 22
<b>Hand-held current controlled systems, without push-to-start</b>									
ETD M 20 ABL V2 G4	5-20	0.44-1.77	900	185	27	0.30	0.66	HM 4 mm	8432 0815 04
ETD M 27 ABL V2 G4	7.5-27	0.66-2.4	900	185	27	0.30	0.66	HM 4 mm	8432 0815 06
<b>Hand-held current controlled systems, push-start configurable</b>									
ETD M 50 ABL V2 G4	15-50	1.33-4.4	1300	238	36	0.56	1.37	HM 4 mm	8432 0815 09
ETD M 80 ABL V2 G4	20-80	1.77-7.1	1300	238	36	0.56	1.37	HM 4 mm	8432 0815 13
ETD M 120 ABL V2 G4	30-120	2.7-10.6	900	240	43	0.65	1.43	1/4" HEX	8432 0815 14
ETD M 200 ABL V2 G4	50-200	4.42-17.7	700	240	43	0.65	1.43	1/4" HEX	8432 0815 15
ETD M 250 ABL V2 G4	75-250	6.64-22.13	700	240	43	0.65	1.43	1/4" HEX	8432 0815 16

MicroTorque fixtured screwdriver system are designed to perform consistently and precisely, time after time.

- Complete system, one single ordering number that includes screwdriver, controller, Tool Cable, PSU and ToolsTalk MT.
- High accuracy current controlled tools.
- Torque and angle control and monitoring.
- 20 P-sets
- Multiple steps tightening
- Simple programing directly at the controller.
- Advanced programing via PC software, ToolsTalk MT.
- Batch count.
- Different display lights for operator feedback.
- Multiple I/Os for integration with assembly line, automation stations or error-proofing accessories.

MTF 400A



ETF M 05 400A



ETF M 50/80/100/200 400A

Model	Torque range		Speed r/min	Length mm	Overall width mm	Weight		Bit drive	Ordering No.
	cNm	in lb				kg	lb		
<b>Fixtured current controlled, complete system</b>									
ETF M 05 400A	1.5-5	0.13-0.4	750	183	20	0.4	0.9	HM 4 mm	8432 0818 15
ETF M 50 400A	15-50	1.33-4.4	850	269	30	1.1	2.42	HM 4 mm	8432 0818 18
ETF M 80 400A	20-80	1.77-7.1	850	269	30	1.2	2.64	HM 4 mm	8432 0818 19
ETF M 200 400A	50-200	4.42-17.7	600	272	30	1.2	2.64	1/4" HEX	8432 0818 21

**NOTE.** Ordering number for complete system. (Screwdriver, MTF 400 controller, tool cable and PSU).

MicroTorque handheld screwdrivers are designed to perform consistently and precisely, time after time.

- High accuracy current controlled tools.
- Torque and angle control and monitoring.
- Advanced seating control tightening strategy that eliminates floating screws.
- Ergonomic metallic handle.
- V2 Tools are not paired with the controller and are ordered separately.



ETD M 08/20/27 ABL V2



ETD M 120/200/250 ABL V2



ETD M 50/80 ABL V2

Model	Torque range		Speed r/min	Length mm	Overall width mm	Weight		Bit drive	Ordering No.
	cNm	in lb				kg	lb		
<b>Hand-held current controlled, without push-to-start</b>									
ETD M 08 ABL V2	2-8	0.18-0.7	1350	185	29	0.30	0.66	HM 4 mm	8432 0815 18
ETD M 20 ABL V2	5-20	0.44-1.77	900	185	29	0.30	0.66	HM 4 mm	8432 0815 21
ETD M 27 ABL V2	7.5-27	0.66-2.4	900	185	29	0.30	0.66	HM 4 mm	8432 0815 27
<b>Hand-held current controlled, push-start configurable</b>									
ETD M 50 ABL V2	15-50	1.33-4.4	1000	238	36	0.61	1.37	HM 4 mm	8432 0815 50
ETD M 80 ABL V2	20-80	1.77-7.1	1100	238	36	0.61	1.37	HM 4 mm	8432 0815 80
ETD M 120 ABL V2	30-120	2.7-10.6	900	240	43	0.65	1.43	1/4" Hex	8432 0815 82
ETD M 200 ABL V2	50-200	4.42-17.7	700	240	43	0.65	1.43	1/4" Hex	8432 0815 84
ETD M 250 ABL V2	75-250	6.64-22.13	700	240	43	0.65	1.43	1/4" Hex	8432 0815 86

**NOTE.** Ordering number for screwdriver only. Tool cable, controller and PSU need to be ordered separately.

# Fixtured screwdrivers V2

# MicroTorque

MicroTorque fixtured screwdrivers are designed to perform consistently and precisely, time after time.

- High accuracy current controlled tools.
- Torque and angle control and monitoring.
- Advanced seating control tightening strategy that eliminates floating screws.
- Very compact design.
- V2 Tools are not paired with the controller and are ordered separately.



ETF S

Model	Torque range		Speed r/min	Length mm	Overall width mm	Weight		Bit drive	Ordering No.
	cNm	in lb				kg	lb		
<b>Fixtured current controlled</b>									
ETF S 08 V2	2-8	0.18-0.70	1500	125	65	0.3	0.68	HM 4 mm	8432 0832 84
ETF S 25 V2	5.5-25	0.49-2.2	1000	125	65	0.3	0.68	HM 4 mm	8432 0832 85

**NOTE.** Ordering number for screwdriver only. Tool cable, controller and PSU need to be ordered separately.

MT Focus 400 is an extremely compact and advanced controller designed to attend the most demanding assembly processes.

- 20 P-sets
- Multiple steps tightening
- Simple programing directly at the controller.
- Advanced programing via PC software, ToolsTalk MT.
- Batch count.
- Different display lights for operator feedback.
- Multiple I/Os for integration with assembly line, automation stations or error proofing accessories.
- ToolsTalk MT included, with Graph Analysis and Net functionality for detailed information.



**MTF 400A**

Model	Ordering No.
MTF 400A	8432 0850 00

**NOTE:** To be ordered together with V2 tools.

## Accessories

## MicroTorque

### TOOL CABLES FOR ETF S V2 AND ETD M ABL V2

Model	Ordering No.
Cable 2 m	8432 0835 02
Cable 3.5 m	8432 0835 03



*Tool cable*

### POWER SUPPLY UNIT, PSU

Model	Battery / Power	Ordering No.
ETF S08 V2 and ETD M08/20/27 ABL V2	24V / 72W	8432 0840 00
ETF S25 V2	36V / 72W	8432 0840 01
ETD M50/80/100/120/200/250 ABL V2	36V / 180W	8432 0840 02



*Power supply unit*

## Optional Accessories

### CONTROLLER ACCESSORIES FOR MT G4

Model	Ordering No.
Combi (Remote control + program selector)	8432 0830 88
Remote control	8432 0830 08
Digital program selector	8432 0830 34
Controller table fixture	8432 0830 84
Controller wall fixture	8432 0830 32
Y cable for I/O connector <sup>a</sup>	8432 0831 99
Desktop socket (with screwdriver presence sensor)	8432 0831 89
MT TN adapter ToolsNet 4000 <sup>b</sup> (15 pin/26 pin d-sub)	8432 0832 98

<sup>a</sup> Y cable suitable when two I/O accessories are required.

<sup>b</sup> Including adapter cables.

### CONTROLLER ACCESSORIES FOR MTF 400

Model	Ordering No.
Digital program selector	8432 0830 65
Controller wall fixture	8432 0833 83
MT TN adapter ToolsNet 4000 <sup>c</sup>	8432 0832 98

<sup>c</sup> Including adapter cables.

### STACKLIGHTS

Model	Ordering No.
Table stand <sup>d</sup>	8432 0830 97
Wall mount <sup>d</sup>	8432 0830 99

<sup>d</sup> Adapter included, suitable for MT G4 and MTF400 controllers.

### TOOL CABLE

Model	Length	Ordering No.
ETD M ABL, ETF S	2 m	8432 0835 02
ETD M ABL, ETF S	3.5 m	8432 0835 03
ETF M, MT	2 m	8432 0830 36
ETF M, MT	3.5 m	8432 0831 01
ETF M, MT 90 deg angle cable	2 m	8432 0831 15

### CABLE ACCESSORIES

Model	Ordering No.
Cable, RS232	8432 0830 38
Cable, USB	8432 0830 39
Transducer cable	8432 0830 35
Cable bracket	8432 0830 91



Digital program selector



Remote control



Desktop socket



MT G4 table fixture



MT G4 wall fixture



Stacklight wall mount



Stacklight table stand



Tool cable



Tool cable, 90 deg

## Optional Accessories

### VACUUM ADAPTER

Model	Bit length mm	Nozzle Ø mm	Vacuum adapter Ordering No.
ETD 20-80 ABL	64	6	8432 0770 12
ETD 20-80 ABL	44	6	8432 0770 13
ETD 20-80 ABL	64	6	8432 0770 15
ETD 20-80 ABL	44	8	8432 0770 17
ETD 20-80 ABL	64	8	8432 0770 05
ETD 100-250 ABL	50	8	8432 0770 27
ETD 100-250 ABL	70	8	8432 0770 30
ETF 5-80, 100 HM4	44	6	8432 0770 33
ETF 5-80, 100 HM4	64	6	8432 0770 35
ETF 5-80, 100 HM4	44	8	8432 0770 38
ETF 5-80, 100 HM4	64	8	8432 0770 40
ETF 100-200	70	8	8432 0770 43
ETF 400-800	70	10	8432 0770 45



Vacuum adapter



Vacuum adapter, MT

### BLANK NOZZLES

Model	Nozzle Ø mm	Ordering No.
Metallic blank nozzle	6	4216 1189 00
Metallic blank nozzle	8	4216 1190 00
Metallic blank nozzle	10	4216 1164 00



Blank nozzles

### VACUUM PUMP

Model	Ordering No.
Vacuum pump, VPX 6	8432 0830 06



VPX 6 vacuum pump

### SCREW DISPENSER

Model	Screw size	Ordering No.
<b>Screw dispenser for magnetized bit</b>		
SDS screw dispenser	M1.0 - 5.0	8432 0830 00
<b>Screw dispenser for vacuum pick up</b>		
SDS SR 10	M1.0	8432 0870 30
SDS SR 12	M1.2	8432 0870 32
SDS SR 14	M1.4	8432 0870 34
SDS SR 17	M1.7	8432 0870 31
SDS SR 20	M2.0	8432 0870 33
SDS SR 23	M2.3	8432 0870 35
SDS SR 26	M2.6	8432 0870 36
SDS SR 30	M3.0	8432 0870 37



Screw dispenser for magnetic bit



Screw dispenser for vacuum pick up

## TENSOR ES

- Torque transducer with an accuracy of  $\pm 7.5\%$  over six sigma.
- Robust, sealed design with one single extruded aluminum body protecting internal components from dust and oil.
- New durable motor with higher speeds.
- Engineered in modules with component commonality.
- Clear LEDs visible through 360°.
- Hot swap.



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>Angle models</b>										
ETV ES21-04-06	1/4	1.6-4.5	1.2-3.3	1909	0.85	1.9	284	9.5	–	8436 0120 04
ETV ES21-07-06	1/4	2.8-7	2.1-5.2	1147	0.85	1.9	284	9.5	–	8436 0120 07
ETV ES21-12-06	1/4	4.8-12	3.5-8.9	718	0.95	2.1	304	11	–	8436 0120 12
ETV ES21-20-10	3/8	8-20	5.9-14.8	430	1.05	2.3	303	14	–	8436 0120 20
ETV ES61-25-10	3/8	10-25	7.4-18.4	1378	1.8	4.0	419	14	–	8436 0160 25
ETV ES61-30-10	3/8	12-30	8.9-22.1	1160	1.8	4.0	421	15.5	–	8436 0160 30
ETV ES61-40-10	3/8	16-40	11.8-29.5	1153	1.9	4.2	441	18	–	8436 0160 40
ETV ES61-50-10	3/8	20-50	14.8-36.9	692	1.9	4.2	441	18	–	8436 0160 50
ETV ES61-70-13	1/2	28-70	20.7-51.6	439	3.1	6.8	499	20	–	8436 0160 70
ETV ES61-100-13	1/2	40-100	29.5-73.8	370	3.15	6.9	505	22.5	–	8436 0160 10
ETV ES61-150-13	1/2	60-150	44.3-110.6	296	3.2	7.1	541	26	–	8436 0160 15
ETV ES61-180-13	1/2	72-180	53-133	232	3.2	7.1	541	26	–	8436 0160 18
ETV ES61-200-20	3/4	80-200	59-147.5	203	3.4	7.5	543	27	–	8436 0160 20
<b>Angle, quick chuck</b>										
ETV ES21-12-I06-QC	–	4.8-12	3.5-8.9	718	0.95	2.1	304	11	–	8436 0121 12
<b>Angle, ball retainer</b>										
ETV ES61-70-B13	1/2	28-70	20.7-51.6	439	3.1	6.8	499	20	–	8436 0165 70
ETV ES61-100-B13	1/2	40-100	29.5-73.8	370	3.15	6.9	505	22.5	–	8436 0165 10
<b>Straight models</b>										
ETD ES21-02-I06-PS	–	0.8-2	0.6-1.5	4471	0.75	1.7	267	19.5	–	8436 0220 02
ETD ES21-04-I06-PS	–	1.6-4.5	1.2-3.3	1909	0.8	1.8	267	19.5	–	8436 0220 04
ETD ES21-07-I06-PS	–	2.8-7	2.1-5.2	1147	0.8	1.8	267	19.5	–	8436 0220 07
ETD ES21-12-I06-PS	–	4.8-12	3.5-8.9	745	0.8	1.8	267	19.5	–	8436 0220 12
ETD ES61-18-10	3/8	7.2-18	5.3-13.3	2129	1.7	3.75	418	23	-/1	8436 0265 18
ETD ES61-18-10-T25	3/8	7.2-18	5.3-13.3	2129	1.85	4.1	456	23	2/2	8436 0260 18
ETD ES61-25-10	3/8	12-30	8.9-22.1	1793	1.7	3.8	418	23	-/1	8436 0265 25
ETD ES61-25-10-T25	3/8	10-25	7.4-18.4	1793	1.85	4.1	456	23	2/2	8436 0260 25
ETD ES61-30-10	3/8	12-30	8.9-22.1	1077	1.7	3.8	418	23	-/1	8436 0265 30
ETD ES61-30-10-T25	3/8	12-30	8.9-22.1	1077	1.85	4.1	456	23	2/2	8436 0260 30
ETD ES61-50-13	1/2	20-50	14.8-36.9	679	2.95	6.5	493	29	2/2	8436 0265 50
ETD ES61-50-13-T25	1/2	20-50	14.8-36.9	679	3.05	6.7	521	29	3/5	8436 0260 50
ETD ES61-70-13	1/2	28-70	20.7-51.6	608	2.95	6.5	493	29	2/2	8436 0265 70
ETD ES61-70-13-T25	1/2	28-70	20.7-51.6	608	3.1	6.8	521	29	3/5	8436 0260 70
ETD ES61-90-13	1/2	36-90	26.6-66.4	467	2.95	6.5	493	29	2/2	8436 0265 90
ETD ES61-90-13-T25	1/2	36-90	26.6-66.4	467	3.1	6.8	521	29	3/5	8436 0260 90
ETD ES61-120-13	1/2	48-120	35.4-88.5	365	2.95	6.5	493	29	2/2	8436 0265 12
ETD ES61-120-13-T25	1/2	48-120	35.4-88.5	365	3.1	6.8	521	29	3/5	8436 0260 12
<b>Fixture models</b>										
ETF ES21-04-I06-T25	–	1.6-4.5	1.2-3.3	1909	0.96	2.1	338	22.5	– <sup>a</sup>	8436 0224 04
ETF ES21-07-I06-T25	–	2.8-7	2.1-5.2	1147	0.96	2.1	338	22.5	– <sup>a</sup>	8436 0224 07
ETF ES21-12-I06-T25	–	4.8-12	3.5-8.9	745	0.96	2.1	338	22.5	– <sup>a</sup>	8436 0224 12
<b>Pistol grip models</b>										
ETP ES21-02-I06-PS	–	0.8-2	0.6-1.5	4471	0.85	1.87	225	19.5	–	8436 0320 02
ETP ES21-04-I06-PS	–	1.6-4.5	1.2-3.3	1909	0.85	1.87	225	19.5	–	8436 0320 04
ETP ES21-07-I06-PS	–	2.8-7	2.1-5.2	1147	0.85	1.87	225	19.5	–	8436 0320 07
ETP ES21-12-I06-PS	–	4.8-12	3.5-8.9	745	0.85	1.87	225	19.5	–	8436 0320 12

<sup>a</sup> Mounting bracket fixed.

# Tensor DL

Tensor DL non-transducerized screwdrivers exist in two different tool configurations:

**ETP** – Pistol grip handle screwdriver with configurable function button. Available as lever and push to start.

**ETF** – Straight screwdrivers for fixtured applications. Configurable lever or remote start.

- The DL screwdriver range has been optimized for small screw assembly.
- Torque range up to 10 Nm.
- All tools have ESD certification.
- Ergonomic design promotes operator safety.
- Brushless motor gives long service intervals and low maintenance costs.
- Signal lights ensure detection of incorrectly tightened fasteners.



ETF DL



ETP DL

Model	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Ordering No.
	Nm	in lb		kg	lb			
<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>Fixtured 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

## ETD SL

- ETD SL is a very compact screwdriver with excellent power to weight ratio.
- Torque range from 0.3 to 10 Nm.
- Push-to-start function and front lights.
- Small center-to-side distance.
- Ergonomic design.
- Buzzer and additional blue LED for better operator support.



ETD SL



ETP SL



ETV SL



ETF SL

## ETV SL

- ETV SL is the most compact transducerised angle screwdriver in the Tensor range.
- Torque range from 0.8 to 20 Nm.
- High durability with spiral angle gears.
- Ergonomic design.
- Buzzer and additional blue LED for better operator support.

## ETP SL

- ETP SL is our first push-to-start pistol tool.
- Torque range from 0.3 to 10 Nm.
- Ergonomic, balanced pistol tool.
- Front lights for dark applications.
- Blue light and buzzer.

## ETF SL

- ETF SL is the smallest and lightest fixtured tool.
- Torque range from 0.3 to 10 Nm.
- Stroke with 25 mm suspension.
- Small center-to-side distance.

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 SL21-04-06	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 SL21-07-06	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 SL21-12-06	2.5-12	24-106	610	0.8	1.8	282	11	—	8433 2008 77
ETV SL21-20-10	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 SR

## ETV SR

- SR Angle tools are extremely fast, compact and easy to operate.
- ESD certified.
- Easy to configure the function button.
- Front LED's gives better operator feedback.
- Torque range from 2.5 to 30 Nm.



ETV SR

## ETD SR

- SR Straight tools are ideal for hand-held applications and fixture applications.
- Torque range from 1.5 to 16 Nm.
- Front light guide is integrated.
- Push-to-start mechanism.



ETD SR

Model	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Splines/ Mounting	Ordering No.
	Nm	ft lb		kg	lb				
<b>Angle models</b>									
ETV SR21-12-10	2.5-12	1.9-8.9	1350	1.1	2.4	297	14	-	8436 4120 12
ETV SR21-25-10	5-25	3.7-18.5	1000	1.2	2.6	297	14	-	8436 4120 25
ETV SR21-30-10	6-30	4.4-22.1	663	1.2	2.6	299	15.5	-	8436 4120 30
<b>Straight models</b>									
ETD SR21-07-I06-PS	1.5-7	1.0-5.2	2090	0.9	1.9	259	24	-	8436 4220 07
ETD SR21-16-I06-PS	3.5-16	2.6-11.8	1460	1.0	2.2	276	24	-	8436 4220 16
ETD SR21-07-I06-T25	1.5-7	1.0-5.2	2090	0.9	1.9	353	24	-	8436 4224 07
ETD SR21-16-10-T25	3.5-16	2.6-11.8	1460	1.0	2.2	353	24	-	8436 4224 17

## Optional Accessories

### COVERS FOR STANDARD SOCKETS

Model	Ordering No.
ETD ES61-18/ 25/ 30	4220 3251 02
ETD ES61-50	4220 3251 03
ETV ES61-30	4220 3154 04
ETV ES61-100	4220 3154 05
ETV ES61-40/50	4220 1995 05
ETV ES61-70	4220 1993 03
ETV SL21, ETV ES61-25	4220 3154 03



Cover for standard sockets

### SUPPORTED EXTENSIONS (~154 MM)

Model	Ordering No.
SR21, ETV SL21	4220 3868 90



Supported extensions

### SUSPENSION YOKES DL/SL/SR

Model	Type	Assembly	Ordering No.
ETD/ETV SL	Horizontal	Motor	4220 0987 81
SR21	For rear		4220 4410 80
SR21	For front		4220 4409 80

### 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.



Pistol grip  
Tensor DL/SL

### SUPPORT HANDLE

Model	Ordering No.
ETV/ETD ES21	4220 2725 83
ETD SR21	4220 4347 80



Support handle

### LEVER

Model	Ordering No.
Lever SL	4220 2540 81
Extended lever SL	4220 2540 89
Spoon lever SR21	4220 4338 83
Short lever ETV/ETD ES21	4220 4366 86
Long lever ETV/ETD ES21	4220 4366 85



Tool holder

### TOOL HOLDER DL / SL

Model	Ordering No.
ETP / ETD	4220 3584 80

## Optional Accessories

### CABLES TENSOR ES

Model	Ordering No.
<b>Round cables for ES21</b>	
2 m	4220 4204 02
3 m	4220 4204 03
5 m	4220 4204 05
7 m	4220 4204 07
10 m	4220 4204 10
15 m	4220 4204 15
<b>Flat cables for ES61</b>	
3 m	4220 4339 03
5 m	4220 4339 05
7 m	4220 4339 07
10 m	4220 4339 10
15 m	4220 4339 15
<b>Extension cables for all cables</b>	
3 m	4220 4393 03
5 m	4220 4393 05
10 m	4220 4393 10
15 m	4220 4393 15
25 m	4220 4393 25

### 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
<b>Heavy duty cable</b>	
3 m	4220 3265 03
5 m	4220 3265 05
10 m	4220 3265 10
<b>Cables with 90 degrees connector</b>	
3 m	4220 3705 03
5 m	4220 3705 05
10 m	4220 3705 10
<b>Spiral cable straight</b>	
5 m	4220 3240 05
<b>Spiral cable with 90 degrees connector</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 cable with 90 degrees connector



DL spiral cable

## Optional Accessories

### CABLES 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
<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
<b>Cables with 90 degrees connector</b>	
3 m	4220 3607 03
5 m	4220 3607 05
10 m	4220 3607 10
20 m	4220 3607 20
<b>Spiral cable straight</b>	
5 m	4220 3746 05
<b>Spiral cable with 90 degrees connector</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



SR Cable



SR Cable with 90 degrees connector



SR Spiral cable



SR Cable protection

### CABLES TENSOR SR

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>Extension cable</b>	
5 m	4220 1007 05
10 m	4220 1007 10
15 m	4220 1007 15
<b>Extension cables for fixtured applications</b>	
5 m	4220 1563 05
10 m	4220 1563 10
15 m	4220 1563 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
<b>Cable protection</b>	
	4220 2977 90

## Tensor – the operators' choice

*The Tensor range of electric assembly tools covers all station and assembly line requirements for safety critical and quality critical fastening applications. At Atlas Copco we have a proud legacy of putting the operator first and we continuously improve the ergonomic features on each new generation of Tensor tools. Tensor is also one of the most advanced tool ranges on the market in terms of high power-to-weight ratios and operator guidance in the form of clear result feedback via LED's or audio signals.*

### PRODUCTIVITY GAINS

Atlas Copco's unique Tensor motors give the Tensor range outstanding spindle speeds and, thus, help you achieve lower cycle times in your operation. Exceptional ergonomics in terms of balance, grip and low weight make the tools a favorite of the operators and increase individual productivity.

### OPERATOR FEEDBACK

All Tensor tools are equipped with LED's that will indicate the tightening result, green light for tightening OK and red light for NOK. Tensor ST and STR have configurable LED's and an integrated speaker for indicating results via audio signals.

### LOWEST COST OF OPERATION

At Atlas Copco we believe that quality is the road to lowest cost of operation over time. A maintained Tensor tool produces the same performance year after year at minimum and predictable costs while ensuring highest possible uptime.

### TENSOR TOOLS

**Tensor DL:** quality critical

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

**Tensor SL:** low torque safety critical, configurable tool functions

The Tensor SL range is optimized for safety critical small screw assembly. It offers compact screwdriver ergonomics, combined with traceability and error proofing capabilities.

**Tensor DS:** quality critical

Tensor DS is used for quality critical applications not requiring traceable measured torque value. DS offers major productivity and quality gains compared with conventional tooling.

**Tensor ST:** safety critical, configurable tool functions

The second generation of Tensor tools was developed with low weight and productivity in mind. Tensor ST has an internal bus connection for intelligent accessories such as a barcode reader and torque selector switch.

**Tensor STR, SR:** safety critical, configurable tool functions

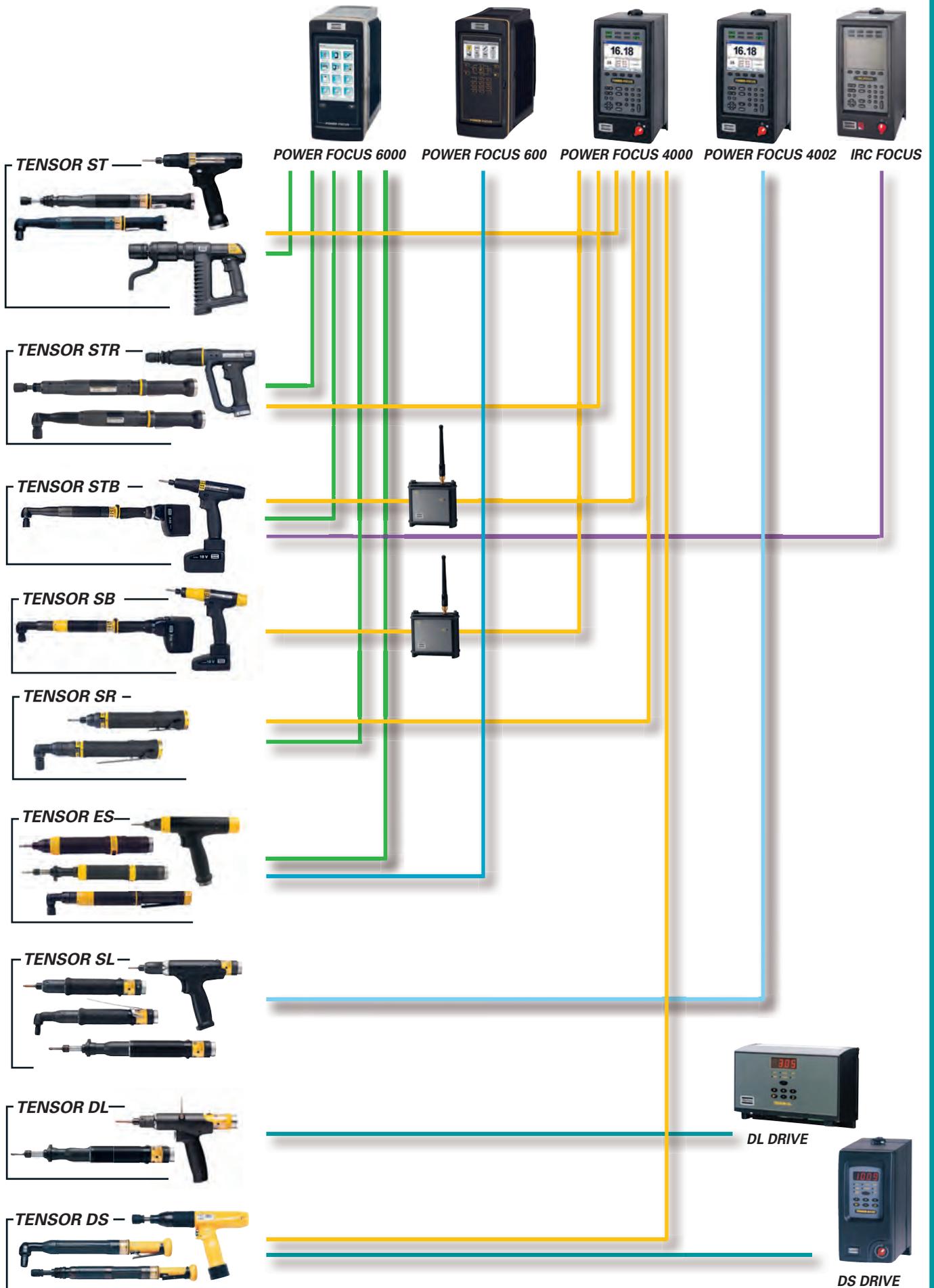
The latest generation of Tensor tools where ergonomics and productivity are taken to a new level.

**Tensor ES:** quality critical

Tensor ES transducerized nutrunners for quality critical applications are available in straight and right angle versions. All models have a sealed design for robustness and offer high productivity with improved ergonomics.



# Tensor Overview



# Tensor ES

## TENSOR ES

- Torque transducer with an accuracy of  $\pm 7.5\%$  over six sigma.
- Robust, sealed design.
- New durable motor with higher speeds.
- Engineered in modules with component commonality.
- Clear LEDs visible through 360°.
- Hot swap.



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>Angle models</b>										
ETV ES21-04-06	1/4	1.6-4.5	1.2-3.3	1909	0.85	1.9	284	9.5	–	8436 0120 04
ETV ES21-07-06	1/4	2.8-7	2.1-5.2	1147	0.85	1.9	284	9.5	–	8436 0120 07
ETV ES21-12-06	1/4	4.8-12	3.5-8.9	718	0.95	2.1	304	11	–	8436 0120 12
ETV ES21-20-10	3/8	8-20	5.9-14.8	430	1.05	2.3	303	14	–	8436 0120 20
ETV ES61-25-10	3/8	10-25	7.4-18.4	1378	1.8	4.0	419	14	–	8436 0160 25
ETV ES61-30-10	3/8	12-30	8.9-22.1	1160	1.8	4.0	421	15.5	–	8436 0160 30
ETV ES61-40-10	3/8	16-40	11.8-29.5	1153	1.9	4.2	441	18	–	8436 0160 40
ETV ES61-50-10	3/8	20-50	14.8-36.9	692	1.9	4.2	441	18	–	8436 0160 50
ETV ES61-70-13	1/2	28-70	20.7-51.6	439	3.1	6.8	499	20	–	8436 0160 70
ETV ES61-100-13	1/2	40-100	29.5-73.8	370	3.15	6.9	505	22.5	–	8436 0160 10
ETV ES61-150-13	1/2	60-150	44.3-110.6	296	3.2	7.1	541	26	–	8436 0160 15
ETV ES61-180-13	1/2	72-180	53-133	232	3.2	7.1	541	26	–	8436 0160 18
ETV ES61-200-20	3/4	80-200	59-147.5	203	3.4	7.5	543	27	–	8436 0160 20
<b>Angle, quick chuck</b>										
ETV ES21-12-I06-QC	–	4.8-12	3.5-8.9	718	0.95	2.1	304	11	–	8436 0121 12
<b>Angle, ball retainer</b>										
ETV ES61-70-B13	1/2	28-70	20.7-51.6	439	3.1	6.8	499	20	–	8436 0165 70
ETV ES61-100-B13	1/2	40-100	29.5-73.8	370	3.15	6.9	505	22.5	–	8436 0165 10
<b>Straight models</b>										
ETD ES21-02-I06-PS	–	0.8-2	0.6-1.5	4471	0.75	1.7	267	19.5	–	8436 0220 02
ETD ES21-04-I06-PS	–	1.6-4.5	1.2-3.3	1909	0.8	1.8	267	19.5	–	8436 0220 04
ETD ES21-07-I06-PS	–	2.8-7	2.1-5.2	1147	0.8	1.8	267	19.5	–	8436 0220 07
ETD ES21-12-I06-PS	–	4.8-12	3.5-8.9	745	0.8	1.8	267	19.5	–	8436 0220 12
ETD ES61-18-10	3/8	7.2-18	5.3-13.3	2129	1.7	3.75	418	23	-/1	8436 0265 18
ETD ES61-18-10-T25	3/8	7.2-18	5.3-13.3	2129	1.85	4.1	456	23	2/2	8436 0260 18
ETD ES61-25-10	3/8	12-30	8.9-22.1	1793	1.7	3.8	418	23	-/1	8436 0265 25
ETD ES61-25-10-T25	3/8	10-25	7.4-18.4	1793	1.85	4.1	456	23	2/2	8436 0260 25
ETD ES61-30-10	3/8	12-30	8.9-22.1	1077	1.7	3.8	418	23	-/1	8436 0265 30
ETD ES61-30-10-T25	3/8	12-30	8.9-22.1	1077	1.85	4.1	456	23	2/2	8436 0260 30
ETD ES61-50-13	1/2	20-50	14.8-36.9	679	2.95	6.5	493	29	2/2	8436 0265 50
ETD ES61-50-13-T25	1/2	20-50	14.8-36.9	679	3.05	6.7	521	29	3/5	8436 0260 50
ETD ES61-70-13	1/2	28-70	20.7-51.6	608	2.95	6.5	493	29	2/2	8436 0265 70
ETD ES61-70-13-T25	1/2	28-70	20.7-51.6	608	3.1	6.8	521	29	3/5	8436 0260 70
ETD ES61-90-13	1/2	36-90	26.6-66.4	467	2.95	6.5	493	29	2/2	8436 0265 90
ETD ES61-90-13-T25	1/2	36-90	26.6-66.4	467	3.1	6.8	521	29	3/5	8436 0260 90
ETD ES61-120-13	1/2	48-120	35.4-88.5	365	2.95	6.5	493	29	2/2	8436 0265 12
ETD ES61-120-13-T25	1/2	48-120	35.4-88.5	365	3.1	6.8	521	29	3/5	8436 0260 12
<b>Fixtured models</b>										
ETF ES21-04-I06-T25	–	1.6-4.5	1.2-3.3	1909	0.96	2.1	338	22.5	– <sup>a</sup>	8436 0224 04
ETF ES21-07-I06-T25	–	2.8-7	2.1-5.2	1147	0.96	2.1	338	22.5	– <sup>a</sup>	8436 0224 07
ETF ES21-12-I06-T25	–	4.8-12	3.5-8.9	745	0.96	2.1	338	22.5	– <sup>a</sup>	8436 0224 12
<b>Pistol grip models</b>										
ETP ES21-02-I06-PS	–	0.8-2	0.6-1.5	4471	0.85	1.87	225	19.5	–	8436 0320 02
ETP ES21-04-I06-PS	–	1.6-4.5	1.2-3.3	1909	0.85	1.87	225	19.5	–	8436 0320 04
ETP ES21-07-I06-PS	–	2.8-7	2.1-5.2	1147	0.85	1.87	225	19.5	–	8436 0320 07
ETP ES21-12-I06-PS	–	4.8-12	3.5-8.9	745	0.85	1.87	225	19.5	–	8436 0320 12

<sup>a</sup> Mounting bracket fixed.

## ETV DS

Tensor DS non-transducerized angle tool is equipped with spiral gears in the angle heads with improved contact ratio: This allows for smoother tightening and improved accuracy throughout the service life of the tool. The molded ergonomic motor sleeve improves grip and comfort for the operator.

- Angle tools are ideal for hand-held operations.
- Torque range from 40 to 4000 Nm.
- Flush Socket and Hold & Drive tools.
- Ball retainer models for easy socket changes.



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 DS72</b>									
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 DS72-160-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 DS72-160-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 DS72-160-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 DS92-180-13	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 1/2	250-1000	185-740	60	12.0	26.5	666	32	8433 1752 90
ETV DS92-2000-38TM	1 1/2	500-2000	370-1480	30	17.0	37.5	706	63.5	8433 1752 96
ETV DS92-4000-38TM	1 1/2	1000-4000	740-2960	14	21.0	46.3	615	71	8433 1753 25

## ETD DS

- ETD DS inline non-transducerized tools. The low torque series is ideal for hand-held bench assembly. The high torque tools are well suited for fixtured applications.
- Torque range from 21 to 4000 Nm.
- Telescopic spindles for fixtured applications.
- Swivelling front parts for easy positioning of reaction force.



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 DS7</b>										
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 DS7-70-13ST	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 DS7-120-13ST	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 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 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 DS9-2000-38S	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
<b>ETD DS9 Swivelling</b>										
ETD DS92-1000-25SSW	1	250-1000	185-737	68	12.3	27	769	47	7/11	8433 0763 70
ETD DS92-2000-25SSW	1 1/2	500-2000	370-1480	34	20.5	45	725	68	8/12	8433 0764 10

## ETP DS

- ETP DS pistol grip tool for both hand-held and fixtured applications.
- Torque range from 2 to 4000 Nm.
- Telescopic spindles for fixtured applications.
- Swivelling front parts for easy positioning of reaction force.
- Female hex drives for bits.
- Swivelling tools are equipped with non-reversible start button, for operator safety.



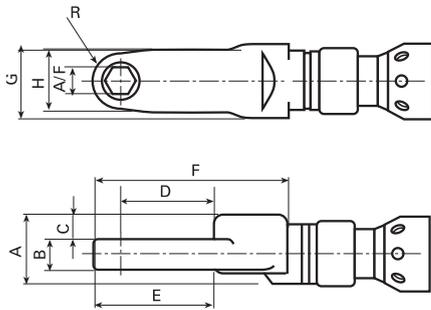
Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Splines/ Mounting	Ordering No.
		Nm	ft lb		kg	lb				
<b>ETP DS4</b>										
ETP DS4-05-06S	1/4	2-5	1.5-3.6	1310	1.1	2.5	193	21.5	- / -	8433 0708 76
ETP DS4-10-06S	1/4	3.5-12	2.5-8.8	660	1.1	2.5	193	21.5	- / -	8433 0708 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 DS9-2000-38S	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

## IN-LINE CROWFOOT TOOLS

### Dimensions

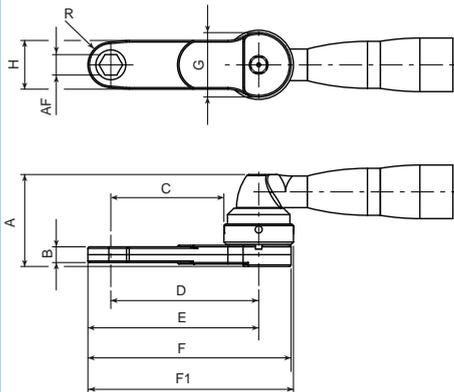


ETC DS

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

## OFFSET CROWFOOT TOOLS

### Dimensions

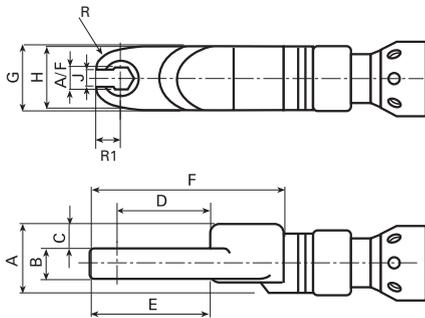


ETC DS

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	65.6	75.6	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	93.6	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	51	66	88.5	48	30	15	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	122.4	140.4	166.4	62.5	36	18	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	86	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

## IN-LINE TUBE NUT TOOLS

### Dimensions

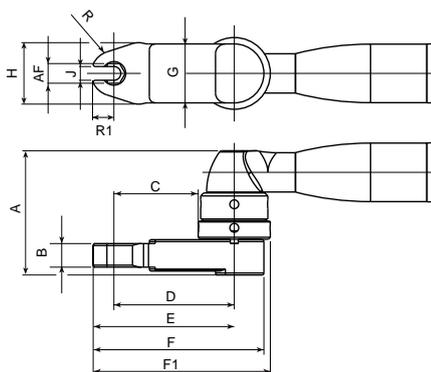


ETO DS

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	126	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

## OFFSET TUBE NUT TOOLS

### Dimensions



ETO DS

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 DS72-28-13-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

## ETV ST

- ETV ST right angle tools are ideal for hand-held and fixtured applications.
- Torque range from 1 to 4000 Nm.
- Tensor ST complements the S range by:
  - Extremely high productivity.
  - More ergonomic benefits.
  - Better operator feedback.
- The ETV ST ATEX tools are certified to be used in environments with hazardous gases and liquids.



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 ST31-10-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 ST61-100-13-ATEX	1/2	20-100	15-80	350	2.5	5.5	502	22.5	60	8433 2041 42
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

Continued...

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 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
<b>ETV ST61 Hold &amp; Drive</b>										
ETV ST61-28-HAD	-	6-29	4-21	1450	1.9	4.2	463	18.3	62	8433 2023 21
ETV ST61-50-HAD	-	10-55	7-40	655	2.0	4.4	440	18.3	80	8433 2033 92
ETV ST61-100-HAD	-	20-100	15-80	350	2.6	5.7	504	23	71	8433 2038 36
ETV ST61-100-HAD-HD	-	20-100	15-80	350	2.6	5.7	539	26	80	8433 2038 35
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 ST61-50-10-BCR	3/8	10-55	7-40	655	1.6	3.6	454	18	47	8433 2034 67
ETV ST61-70-10-BCR	1/2	15-80	10-58	475	2.1	4.8	466	20	58	8433 2037 55
<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	62	8433 2052 80
ETV ST81-100-HAD	-	20-100	15-80	665	2.6	5.7	542	23	71	8433 2056 36
ETV ST81-100-HAD-HD	-	20-100	15-80	665	2.7	5.9	542	26	80	8433 2056 35
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

Continued...

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 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	1/2	50-180	37-133	575	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
<b>ETV ST101 Fan</b>										
ETV ST101-100-13-F	1/2	20-100	15-74	920	4.2	9.3	572	23	44	8433 2080 30
ETV ST101-180-13-F	1/2	50-180	37-133	575	4.2	9.3	600	25	47	8433 2080 63
ETV ST101-200-20-F	3/4	50-200	37-147	485	4.4	9.7	602	28	47	8433 2080 93
ETV ST101-270-20-F	3/4	65-270	48-199	380	7.3	16.1	672	33	62	8433 2081 45
ETV ST101-370-20-F	3/4	90-370	66-273	280	7.3	16.1	672	33	62	8433 2082 48
ETV ST101-450-20-F	3/4	110-450	81-332	230	10.6	23.4	715	54	76	8433 2082 90
ETV ST101-600-25-F	1	150-600	111-443	150	10.6	23.4	715	54	76	8433 2083 69
<b>ETV ST101 Torque Multiplier</b>										
ETV ST101-600-TM	3/4	150-600	111-443	132	7.6	16.8	613	34	143	8433 2083 62
ETV ST101-1000-TM	1	250-1000	184-734	77	11.3	24.3	679	40	191	8433 2084 05
ETV ST101-1500-25-TM	1	325-1500	240-1100	23	12	26	625	43	257	8433 2084 65
ETV ST101-1500-38-TM	1 1/2	325-1500	240-1100	48	19	42	719	71	233	8433 2084 70
ETV ST101-2000-38-TM	1 1/2	500-2000	370-1475	35	19	42	719	71	231	8433 2084 80
ETV ST101-4000-38-TM	1 1/2	1000-4000	734-2950	21.8	21.5	47	710	71	350	8433 2084 90
<b>ETV ST101 Torque Multiplier/Fan</b>										
ETV ST101-600-TM-F	3/4	150-600	111-443	132	7.6	16.8	613	34	143	8433 2083 96
ETV ST101-1000-TM-F	1	250-1000	184-734	77	11.3	24.3	679	40	191	8433 2084 10

## ETD ST

- ETD ST inline tools.
- Torque range from 1 to 4000 Nm.
- Tensor ST complements the S range by ensuring extremely high levels of productivity and better operator feedback.



ETD ST

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>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 ST81-70-13-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

Continued....

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>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	7.4	16.3	706	33	-	8433 2182 05
ETD ST101-300-20	3/4	70-300	51-221	345	7.4	16.3	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-S	1	300-1200	220-885	81	12	26	787	47	7	8433 2196 10
<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 ST101-150-20-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	7.4	16.3	706	33	-	8433 2182 10
ETD ST101-300-20-F	3/4	70-300	51-221	345	7.4	16.3	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 ST101-1200-25-F	1	300-1200	220-885	81	12	26	787	47	-	8433 2186 10
ETD ST101-2000-38-F	1 1/2	500-2000	370-1475	48	17	37	742	68	-	8433 2187 22
ETD ST101-2000-38-S-F	1 1/2	500-2000	370-1475	48	17	37	742	68	8	8433 2197 22
ETD ST101-4000-38-F	1 1/2	1000-4000	735-2950	25	22	48	823	68	-	8433 2187 40
ETD ST101-4000-38-S-F	1 1/2	1000-4000	735-2950	25	22	48	823	68	8	8433 2197 40
<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	7.5	16.5	756	33	-	8433 2182 23
ETD ST101-300-20-T40	3/4	70-300	51-221	345	7.5	16.5	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 ST101-1000-25-T50	1	250-1000	184-737	100	9.8	21.6	754	45	-	8433 2185 78
<b>ETD ST101 Telescopic Fan</b>										
ETD ST101-100-13-T25-F	1/2	25-100	18-73	1043	3.3	7.3	656	30.5	-	8433 2179 15
ETD ST101-120-13-T25-F	1/2	30-120	22-88	873	3.3	7.3	656	30.5	-	8433 2180 48
ETD ST101-150-20-T40-F	3/4	30-150	22-109	685	4.4	9.7	656	30.5	-	8433 2181 59
ETD ST101-200-20-T40-F	3/4	50-200	36-146	500	7.5	16.5	756	33	-	8433 2182 45
ETD ST101-300-20-T40-F	3/4	70-300	51-221	345	7.5	16.5	756	33	-	8433 2182 91
ETD ST101-500-20-T40-F	3/4	120-500	88-368	204	8.4	18.5	769	37	-	8433 2183 49
ETD ST101-750-25-T50-F	1	150-750	109-553	143	9.2	20.3	769	45	-	8433 2184 69
ETD ST101-1000-25-T50-F	1	250-1000	184-737	100	9.8	21.6	755	45	-	8433 2185 89
ETD ST101-1200-25-T50-F	1	300-1200	220-885	81	12	26	844	47	-	8433 2186 12
ETD ST101-1200-25-T50-S-F	1	300-1200	220-885	81	12	26	844	47	7	8433 2196 12
ETD ST101-2000-38-T50-F	1 1/2	500-2000	370-1475	48	17	37	840	68	-	8433 2187 20
ETD ST101-2000-38-T50-S-F	1 1/2	500-2000	370-1475	48	17	37	840	68	8	8433 2197 20
ETD ST101-4000-38-T50-F	1 1/2	1000-4000	735-2950	25	22	48	921	68	-	8433 2187 42
ETD ST101-4000-38-T50-S-F	1 1/2	1000-4000	735-2950	25	22	48	921	68	8	8433 2197 42

## ETP ST

- ETP ST is a pistol grip model for hand-held applications.
- Torque range from 1 to 20 Nm.
- Female hex drive for bits.
- Low weight and ergonomic grip.
- Easy to access, reverse button.
- Operator friendly, feedback signals with sound and lights.



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-I06	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-I06	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-I06	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-I06BCR	1/4	1-5	0.7-3.7	2820	0.87	2	197	205	8433 2212 29
ETP ST32-10-I06BCR	1/4	3-11	2.2-8.0	1210	0.92	2.1	197	205	8433 2214 73
ETP ST32-20-I06BCR	1/4	5-20	3.6-15.0	677	1.03	2.3	237	205	8433 2217 26

## ST REVO

- Unique and patented 360° swivel with transducer.
- Ultra-compact size improves access.
- Reduced weight means less need for fixtures.
- Display on tool gives direct feedback of tightening result.
- Program selection is made directly on tool.
- Ideal for handheld application or fixtures with reduced space.
- Torque range from 60-4000 Nm.



ETP ST Rev0

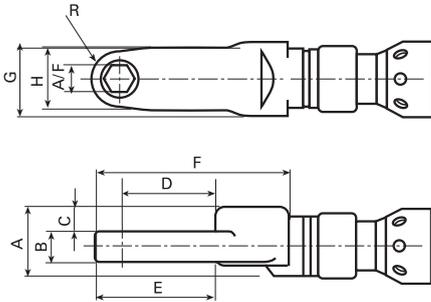
Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Spline	Ordering No.
		Nm	ft lb		kg	lb				
<b>Model with fan</b>										
ETP ST101-200-20-F	3/4	60-200	45-145	396	5.2	11.5	303	32.5	3	8433 2302 02
ETP ST101-300-20-F	3/4	90-300	66-221	293	5.2	11.5	303	32.5	3	8433 2303 02
ETP ST101-500-20-F	3/4	150-500	110-365	186	5.9	13	334	33.5	4	8433 2305 02
ETP ST101-750-25-F	1	220-750	160-550	132	6.2	13.7	353	33.5	5	8433 2307 52
ETP ST101-1000-25-F	1	300-1000	220-735	99	6.4	14.1	364	33.5	5	8433 2310 02
ETP ST101-1500-25-F	1	450-1500	332-1106	47	8.8	19.4	402	43.5	9	8433 2321 52
ETP ST101-2000-38-F	1 1/2	600-2000	442-1475	38	11.5	25.4	454	48	7	8433 2322 02
ETP ST101-3000-38-F	1 1/2	900-3000	664-2212	24	14.8	33	476	59	8	8433 2323 02
ETP ST101-4000-38-F	1 1/2	1200-4000	885-2950	20	15	33	481	59	8	8433 2324 02

Reaction bar not included for ETP ST101. See accessory pages.

# Tensor ST Crowfoot

## IN-LINE CROWFOOT TOOLS

### Dimensions

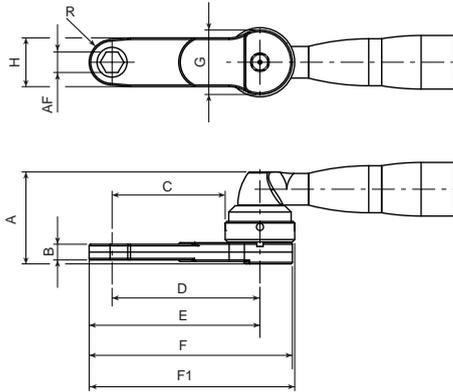


ETC ST

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	542	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	526	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	74.9	151.6	64	36	18	8433 2311 35
ETC ST61-100-20-LI3	23-105	17-77	256	4.2	9.2	695	20	46	20	17.5	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

## OFFSET CROWFOOT TOOLS

### Dimensions

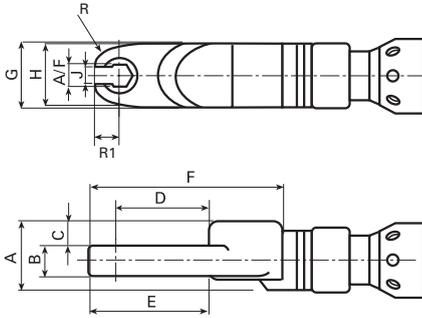


ETC ST

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	57.5	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 ST61-50-16-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	96.9	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 ST101-200-21-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 ST101-200-22-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

## IN-LINE TUBE NUT TOOLS

### Dimensions

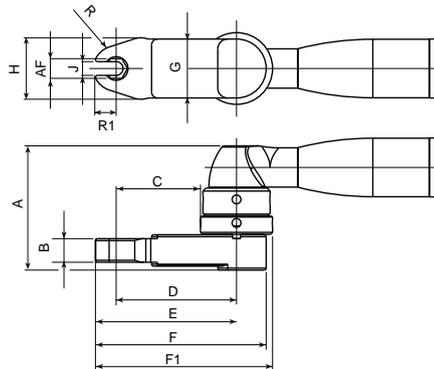


ETO ST

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	505	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

## OFFSET TUBE NUT TOOLS

### Dimensions



ETO ST

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	64	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	475	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

## STR ETV

- Protected against intrusion of dust and water to withstand the toughest environments. IP class 54.
- Built in gyroscope to detect operators influence on tightening.
- Modular STR design for parts commonality between models and sizes.
- Dual accessories support for customizable functionality such as QR code scanning, EHMI display or headlights.
- High cycle rate capability due to improved heat dissipation.
- Operator feed back through built in loudspeaker, vibrator and high visibility LEDs.



STR ETV

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Ordering No.
		Nm	ft lb		kg	lb			
<b>ETV STR31</b>									
ETV STR31-05-10	3/8	1-5	0.7-3.6	3070	1.1	2.4	381	11	8436 6130 05
ETV STR31-10-10	3/8	3-12	2.2-8.8	1310	1.1	2.4	381	11	8436 6130 10
ETV STR31-15-10	3/8	5-15	3.6-10	975	1.1	2.4	381	11	8436 6130 15
ETV STR31-20-10	3/8	5-22	3.6-16	705	1.3	2.9	415	14	8436 6130 20
<b>ETV STR61</b>									
ETV STR61-25-10	3/8	6-28	4-20	1620	1.4	3.1	439	14	8436 6160 25
ETV STR61-30-10	3/8	7-35	5-25	1220	1.4	3.1	441	15.5	8436 6160 30
ETV STR61-40-10	3/8	8-40	6-29	1220	1.6	3.5	452	18	8436 6160 40
ETV STR61-50-10	3/8	10-55	7-40	735	1.6	3.5	452	18	8436 6160 50
ETV STR61-70-13	1/2	15-80	10-58	530	2.1	4.6	464	20	8436 6160 70
ETV STR61-100-13	1/2	20-100	15-80	390	2.6	5.7	501	22.5	8436 6160 10
ETV STR61-150-13	1/2	30-160	22-117	245	3.0	6.6	537	25.5	8436 6160 15
ETV STR61-180-13	1/2	35-180	26-133	215	3.0	6.6	543	25.5	8436 6160 18
ETV STR61-200-20	3/4	40-200	30-154	215	3.1	6.8	539	27	8436 6160 20
<b>ETV STR61 Ball Retainer</b>									
ETV STR61-70-B13	1/2	15 - 80	10 - 58	530	2.1	4.6	464	20	8436 0000 20
ETV STR61-100-B13	1/2	20 - 100	15 - 80	350	2.6	5.7	501	22.5	8436 0000 25
ETV STR61-150-B13	1/2	30 - 160	22 - 117	245	3.0	6.6	537	25.5	8436 0000 40
ETV STR61-180-B13	1/2	35 - 180	26 - 133	215	3.0	6.6	543	25.5	8436 0000 30
<b>ETV STR61 Barcode scanner and Lamp</b>									
ETV STR61-30-10-BL	3/8	7-35	5-25	1220	1.5	3.3	441	15.5	8436 6169 31
ETV STR61-40-10-BL	3/8	8-40	6-29	1220	1.7	3.7	452	18	8436 6169 41
ETV STR61-50-10-BL	3/8	10-55	7-40	735	1.7	3.7	452	18	8436 6169 51
ETV STR61-70-13-BL	1/2	15-80	10-58	530	2.2	4.8	464	20	8436 6169 71
<b>ETV STR61 Flush Socket</b>									
ETV STR61-30-FS		7 - 35	5 - 25	1220	1.4	3.1	441	16	8436 6161 43
ETV STR61-40-FS		8 - 40	6 - 29	1220	1.6	3.5	452	18	8436 6161 50
ETV STR61-50-FS		10 - 55	7 - 40	735	1.6	3.5	452	18	8436 6161 57
ETV STR61-70-FS		15 - 80	10 - 58	530	2.1	4.6	464	20	8436 6161 64
ETV STR61-100-FS		20 - 110	15 - 80	390	2.6	5.7	501	23	8436 6161 08
ETV STR61-150-FS		30 - 160	22 - 117	237	3	6.6	540	26	8436 6161 15
ETV STR61-180-FS		35 - 180	26 - 133	190	3.0	6.6	546	26	8436 6161 22
ETV STR61-200-FS		40 - 200	30 - 154	215	3.1	6.8	543	27	8436 6161 29
<b>ETV STR61 Hold And Drive</b>									
ETV STR61-30-HAD		7 - 35	5 - 25	1220	2	4.4	464	18.3	8436 6161 42
ETV STR61-50-HAD		10 - 50	7 - 40	735	2.1	4.6	438	18.3	8436 6161 56
ETV STR61-100-HAD		20 - 100	15 - 80	390	2.7	5.9	503	23	8436 6161 07
ETV STR61-150-HAD		30 - 160	22 - 117	237	3.1	6.6	541	26	8436 6161 14
ETV STR61-180-HAD		35 - 180	26 - 133	215	3.1	6.6	539	26	8436 6161 21
ETV STR61-200-HAD		40 - 200	30 - 154	215	3.2	7.0	543	26	8436 6161 28

## STR ETD

- Protected against intrusion of dust and water to withstand the toughest environments. IP class 54.
- Built in gyroscope to detect operators influence on tightening.
- Modular STR design for parts commonality between models and sizes.
- Dual accessories support for customizable functionality such as QR code scanning, EHMI display or headlights.
- High cycle rate capability due to improved heat dissipation.
- Operator feed back through built in loudspeaker, vibrator and high visibility LEDs.



STR ETD

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Ordering No.
		Nm	ft lb		kg	lb			
<b>ETD STR31</b>									
ETD STR31-05-10	3/8	1-5	0.7-3.6	3645	1.0	2.2	388	24	8436 6230 05
ETD STR31-10-10	3/8	2-10	1.4-7.3	1555	1.2	2.6	388	24	8436 6230 10
<b>ETD STR61</b>									
ETD STR61-15-10	3/8	4-16	3-12	2500	1.4	3.1	438	24	8436 6260 15
ETD STR61-20-10	3/8	5-22	3.6-16	1890	1.4	3.1	438	24	8436 6260 20
ETD STR61-30-10	3/8	6-35	4.4-25	1130	1.4	3.1	429	24	8436 6260 30
ETD STR61-50-13	1/2	10-55	7.3-40	819	2.0	4.4	474	24	8436 6260 50
ETD STR61-70-13	1/2	15-80	12-58	560	2.3	5.1	491	26.5	8436 6260 70
ETD STR61-90-13	1/2	20-95	15-70	440	2.3	5.1	491	26.5	8436 6260 90

# Pistol Grip Models

# Tensor STR

## STR ETP

- Available in two models, standard and cable on top.
- Outstanding power to weight ratio, increase by 45% compared to Tensor S
- New D-handel shape for increased robustness and safety.
- Easy mounting of additional accessories or optional support handle.
- High cycle rate capability due to improved heat dissipation.
- Operator feed back through built in loudspeaker, vibrator and high visibility LEDs.



STR ETP

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Ordering No.
		Nm	ft lb		kg	lb			
<b>ETP STR61</b>									
ETP STR61-20-10	3/8	5-22	3.7-16.2	2100	1.3	2.87	244	24	8436 6360 20
ETP STR61-20-106	1/4	5-22	3.7-16.2	2100	1.3	2.87	244	24	8436 6360 21
ETP STR61-30-10	3/8	6-32	4.4-23.5	1530	1.3	2.87	244	24	8436 6360 30
ETP STR61-50-13	3/8	10-55	7.4-40.6	820	1.7	3.75	282	24	8436 6360 50
ETP STR61-70-13	1/2	14-80	10.3-59	560	2.0	4.41	298	26.5	8436 6360 70
ETP STR61-90-13	1/2	20-95	14.7-70.4	450	2.0	4.41	298	26.5	8436 6360 90
ETP STR61-120-13	1/2	24-125	17.7-89.4	380	2.0	4.41	298	26.5	8436 6360 12
<b>ETP STR61 Cable On Top</b>									
ETP STR61-120-13 COT	1/2	24-125	17.7-89.4	380	2.4	5.29	350	26.5	8436 6368 12
ETP STR61-20-10 COT	3/8	5-22	3.7-16.2	2100	1.7	3.75	296	24	8436 6368 20
ETP STR61-30-10 COT	3/8	6-32	4.4-23.5	1530	1.7	3.75	296	24	8436 6368 30
ETP STR61-50-13 COT	3/8	10-55	7.4-40.6	820	2.1	4.63	334	24	8436 6368 50
ETP STR61-70-13 COT	1/2	14-80	10.3-59	560	2.4	5.29	350	26.5	8436 6368 70
ETP STR61-90-13 COT	1/2	20-95	14.7-70.4	450	2.4	5.29	350	26.5	8436 6368 90

## STR ETT

- Transducer in front for outstanding accuracy and reliability. +/- 2,5% over 6 sigma.
- Built in gyroscope to detect operators influence on tightening.
- Modular STR design for parts commonality between models and sizes.
- Additional front trigger makes the tool ideal for a combined pre tightening and final tightening combination, two tools in one. front trigger can also be used a safety trigger
- High cycle rate capability due to improved heat dissipation.
- Operator feed back through built in loudspeaker, vibrator and high visibility LEDs.



STR ETT

Model	Square drive in	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Ordering No.
		Nm	ft lb		kg	lb			
<b>ETT STR61</b>									
ETT STR61-20-10	3/8	4-20	3-15	1690	1.6	3.6	384	24	8436 6660 20
ETT STR61-30-10	3/8	6-30	4-22	1300	1.6	3.6	384	24	8436 6660 30
ETT STR61-40-10	3/8	8-40	6-30	1015	1.7	3.7	384	24	8436 6660 40
ETT STR61-50-10	3/8	10-50	7-37	780	1.7	3.7	384	24	8436 6660 50

# Tensor SR

## ETV SR

- SR Angle tools are extremely fast, compact and easy to operate.
- ESD certified.
- Easy to configure the function button.
- Front LED's gives better operator feedback.
- Torque range from 2.5 to 30 Nm.



ETV SR

## ETD SR

- SR Straight tools are ideal for hand-held applications and fixture applications.
- Torque range from 1.5 to 16 Nm.
- Front light guide is integrated.
- Push-to-start mechanism.



ETD SR

Model	Torque range		Speed r/min	Weight		Length mm	CS distance mm	Spline/ Mounting	Ordering No.
	Nm	ft lb		kg	lb				
<b>Angle models</b>									
ETV SR21-12-10	2.5-12	1.9-8.9	1350	1.1	2.4	297	14	-	8436 4120 12
ETV SR21-25-10	5-25	3.7-18.5	1000	1.2	2.6	297	14	-	8436 4120 25
ETV SR21-30-10	6-30	4.4-22.1	663	1.2	2.6	299	15.5	-	8436 4120 30
<b>Straight models</b>									
ETD SR21-07-106-PS	1.5-7	1.0-5.2	2090	0.9	1.9	259	24	-	8436 4220 07
ETD SR21-16-106-PS	3.5-16	2.6-11.8	1460	1.0	2.2	276	24	-	8436 4220 16
ETD SR21-07-106-T25	1.5-7	1.0-5.2	2090	0.9	1.9	353	24	-	8436 4224 07
ETD SR21-16-10-T25	3.5-16	2.6-11.8	1460	1.0	2.2	353	24	-	8436 4224 17

## Optional Accessories

### TENSOR ST/SR/STR

Model	Power Focus 4000 Ordering No.	Power Focus 6000 Ordering No.
<b>Tool cable</b>		
2 m	4220 2636 02	4220 4375 02
3 m	4220 2636 03	4220 4375 03
5 m	4220 2636 05	4220 4375 05
7 m	4220 2636 07	4220 4375 07
10 m	4220 2636 10	4220 4375 10
15 m	4220 2636 15	4220 4375 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	
<b>Cable protection 2 m</b>		
	4220 2977 90	
<b>Extension cable (round, heavy duty)</b>		
3 m		4220 4393 03
5 m	4220 1007 05	4220 4393 05
10 m	4220 1007 10	4220 4393 10
15 m	4220 1007 15	4220 4393 15
<b>Extension cables for fixtured applications (flat)</b>		
5 m	4220 1563 05	
10 m	4220 1563 10	
15 m	4220 1563 15	



ST/SR/STR Cable



ST/SR/STR Cable with 90 degrees connector



ST/SR/STR Spiral cable



ST/SR/STR Cable protection



DS Tool cable

### TENSOR ES

Model	Ordering No.
<b>Round cables for ES21</b>	
2 m	4220 4204 02
3 m	4220 4204 03
5 m	4220 4204 05
7 m	4220 4204 07
10 m	4220 4204 10
15 m	4220 4204 15
<b>Flat cables for ES61</b>	
3 m	4220 4339 03
5 m	4220 4339 05
7 m	4220 4339 07
10 m	4220 4339 10
15 m	4220 4339 15
<b>Extension cables for all cables</b>	
3 m	4220 4393 03
5 m	4220 4393 05
10 m	4220 4393 10
15 m	4220 4393 15
25 m	4220 4393 25
<b>Suspension yoke cable for ES21</b>	
Suspension yoke cable	4210 1810 00

### TENSOR DS

Model	Ordering No.
<b>Tool cable</b>	
2 m	4220 4380 02
3 m	4220 4380 03
5 m	4220 4380 05
7 m	4220 4380 07
10 m	4220 4380 10
15 m	4220 4380 15
<b>Extension cable</b>	
5 m	4220 2047 05
10 m	4220 2047 10
15 m	4220 2047 15

## Optional Accessories

### TOOL EXTENSIONS

Model	Length	Ordering No.
ES61 ETV 70/100/150/180/200, ES61 ETD 50/70/90/120	150	4220 1132 80
ES61 ETV 25/30/40/50, ES61 ETD 18/25/30	150	4220 1131 80
DS7 ETD 20-30, DS7 ETV 30-50, DS4 ETD/ETV	150	4220 1131 80
DS4 ETD/ETV	100	4220 1131 86
DS7 ETD/ETV 50-200	150	4220 1714 80
DS9 ETD/ETV 270-370	150	4220 1585 80
DS9 ETD 450-600	150	4220 1585 85
ST61 ETV 20-30	150	4220 2903 96
ST61 ETV 40-50	150	4220 2903 95
ST61 ETV 70	150	4220 2903 97
ST61 ETV 100-200	150	4220 2903 91
ST101 270-1000	150	4220 1585 80
ST101 600	150	4220 1585 85
STR61 ETV 25	150	4220 2903 80
STR61 ETV 30	150	4220 2903 96
STR61 ETV 40-50	150	4220 2903 95
STR61 ETV 70	150	4220 2903 97
STR61 ETV 100-200	150	4220 2903 91



Tool extension



### SUPPORTED EXTENSIONS (~154 MM)

Tensor ST/SR	Tensor STR	Tensor DS	Tensor ES	Ordering No.
SR21, ST31 ETV 20, ST61 28-30	STR61 ETV 30		ES61 ETV 25/30	4220 3869 90
ST61/ST81 ETV 40-50	STR31 ETV 20, STR61 ETV 25	DS2/DS7 ETV 20-30		4220 3868 90
ST61/ST81 ETV 70	STR61 ETV 40-50	DS7/DS9 ETV 40-50	ES61 ETV 40/50	4220 2209 91
ST61/81/101 ETV 150-180	STR61 ETV 70	DS7/DS9 ETV 70	ES61 ETV 70	4220 2596 91
ST61 ETV 200	STR61 ETV 150-180			4220 4125 90
ST81/101 ETV 200	STR61 ETV 200			4220 4125 92
			ES61 ETV 100	4220 4125 91



### COVERS FOR STANDARD SOCKETS

Tensor DS	Tensor ES	Tensor ST	Tensor SR	Tensor STR	Ordering No
		ST31 ETV 20	SR21	STR31 ETV 20	4220 3154 03
	ES61 ETD 18/ 25/ 30				4220 3251 02
	ES61 ETD 50/70/90/120				4220 3251 03
	ES61 ETV 25	ST61 ETV 28		STR61 ETV 25	4220 3154 03
	ES61 ETV 30	ST61 ETV 30		STR61 ETV 30	4220 3154 04
	ES61 ETV 100	ST ETV 100		STR61 ETV 100	4220 3154 05
	ES61 ETV 150/180	ST ETV 150-180		STR61 ETV 150-180	4220 3154 06
	ES61 ETV 40/50	ST ETV 40-50		STR61 ETV 40-50	4220 1995 05
	ES61 ETV 70	ST ETV 70		STR61 ETV 70	4220 1993 03
DS7 200	ES61 ETV 200	ST ETV 61/81/101 200		STR61 ETV 200	4220 3154 07
DS9 ETV 101 270-370		ST101 ETV 270-370			4220 3154 08
DS7 ETD 50-120		ST61/81 ETD 50-120			4220 3251 00
DS7 ETD 20/30/120		ST61 ETD 15/20/30			4220 3251 02

**Optional Accessories**

**REACTION PLATE FOR FIXTURING**

Model	Ordering No.
ES61 ETV-40/50	4220 1677 92
ES61 ETV-70/100	4220 1678 94
ES61 ETV-150/180	4220 1677 98
ES61 ETV-200	Included
ST10 ETV 180	4220 1677 99
ST10 ETV 200-600	Included
ST61 ETV 30, ST61/81 ETV 200	4220 1677 91
ST61 ETV 40-50	4220 1677 93
ST61/81 ETV 70	4220 1677 95
ST61/81 ETV 100	4220 1677 97
ST61/81 ETV 150-180	4220 1678 90
ST32 ETP 20 106BCR	4220 3491 00
STR31 ETV 5-20	4220 1678 91
STR61 ETV 30	4220 1677 91
STR61 ETV 40-50	4220 1677 93
STR61 ETV 70	4220 1677 95
STR61 ETV 100	4220 1677 97
STR61 ETV 150-180	4220 1678 90



Reaction plate

**LEVER TENSOR DS / ST / SR**

Model	Ordering No.
Lever, DS	4220 1642 80
Lever, ST	4220 3511 81
Spoon lever, SR21	4220 4338 83
Extended lever, DS	4220 1642 85
Extended lever, ST	4220 3511 85
Lock-off lever, DS	4220 2356 80
Lock-off lever, STR	4220 5221 85
Lock-off lever, ST	4220 3511 83



Lock-off lever

**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
<b>For model</b>				
ST10 ETD 120	–	Bracket	150/100/16	4220 3677 00
ST10 ETD 200/300/500	–	Bracket	200/150/16	4220 3677 01
ST10 ETD 750/1000	–	Bracket	200/150/20	4220 3677 02
STR61 ETP 20/30	–	Bar	250/15/8	4220 4495 00
STR61 ETP 50/70/90/120,	–	Bar	270/35/14	4220 1903 00
ES61 ETD 18/25/30	–	–	–	–
ES61 ETD 50/70/90/120	–	Bar	–	4210 2219 80



Reaction bar



Mounting bracket



Triangular

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

## Optional Accessories

### SUSPENSION YOKES

Model	Type	Assembly	Ordering No.
ES21 ETV/ETD	Horizontal	Motor	4220 0987 82
ES61 ETV/ETD	Horizontal	Motor	4220 4586 90
DS4/DS7/DS9 ETD/ETV	Vertical	Handle	4220 1417 80
DS4/DS7 ETD/ETV	Horizontal	Motor	4220 0987 85
DS4/DS7 ETP	Horizontal	Motor	4220 1154 90
DS4 ETD/ETV	Fixed	Motor front nut	4220 1675 86
DS9 ETD/ETV	Horizontal	Motor	4220 1418 96
DS9 ETP 350/500	Swivelling		4210 3088 86
DS9 ETP 750	Swivelling		4210 3088 83
DS9 ETP 1500	Swivelling		4210 3088 81
ST10 ETD 120-300, ST10 ETV 270-600	Vertical	Planetary gear	4220 1418 91
ST10 ETD 500-1000	Vertical	Planetary gear	4220 1418 90
ST10 ETV 100-200	Vertical	Planetary gear	4220 1418 92
ST31/61 ETV/ETD	Horizontal	Motor	4220 2657 90
ST31/61 ETV/ETD	Fixed	Motor	4220 2843 92
ST31/61 ETV/ETD	Vertical	Handle	4220 1417 95
ST81 ETV/ETD	Horizontal	Motor	4220 0987 90
ST81 ETV/ETD	Fixed	Motor	4220 2843 91
ST101 <sup>a</sup> ETV	Horizontal	Motor	4220 3930 90
ST101 ETP 200-1000	Adjustable	Motor	4220 4075 90
ST101 ETP BCR 200-1000 <sup>b</sup>	Adjustable	Motor	4220 4075 91
ST101 ETP 750-2000	Swivelling	Gear	4210 3088 87
ST101 ETP 3000-4000	Swivelling	Gear	4210 3088 81
STR ETV/ETD 31/61	Swivelling		4220 5070 80
STR ETV/ETD 31/61	Fixed		4220 5105 80
STR61 ETP	Tool upside down		4220 3037 00
STR61 ETP	Fixed, one side		4220 4334 00
STR61 ETP	Fixed, both sides		4220 4399 80
STR61 ETP 20/30/50	Swivelling		4220 4381 80
STR61 ETP 70/90/120	Swivelling		4220 4394 80
SR21	For rear		4220 4410 80
SR21	For front		4220 4409 80

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



Suspension yokes

### 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
STR - L	STR61 70-200	STR61 70	8436 6199 12
STR - S	STR31 05-20, STR61 25-50	STR31 05-10, STR61 15-50	8436 6199 10



Lever trigger top

### 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
STR - L			8436 6199 22
STR - S			8436 6199 20



Lever trigger 135 deg.

**Optional Accessories**

**FIXTURED EXTENSIONS**

Model	For ext + nut Ordering No.	For nut only Ordering No.
ES61 ETV 25/30/40/50, ES61 ETD 18/25/30		4220 2579 90
ES61 ETV 70/100/150/180/200, ES61 ETD 50/70/90/120		4220 2469 90
ST10 ETV 100/150/180, ST10 ETD 120	4220 3571 90	Included
ST10 ETD 150, 200, 300	4220 3572 90	
ST10 ETD 500	4220 3573 90	Included



Fixture extension

**PROTECTIVE COVERS**

Model	Ordering No.
ST31 ETV 5-15	4220 2744 05
ST31/ST61 ETV 20-30, ST31 ETV 200	4220 2744 03
ST61 ETV 40-50, ST81 ETV 50	4220 2744 02
ST61 ETV 70, ST81 ETV 70	4220 2744 04
ST31 ETP 05	4220 2744 06
ST31 ETP 10	4220 2744 07
ST81/ST10 ETV 150-180	4220 2744 10
ST81/ST10 ETV 100	4220 2744 09
ST101 ETP (included)	4220 4299 00
STR31 ETV 05-15	4220 5203 01
STR31 ETV 20, STR61 ETV 20-30	4220 5203 02
STR61 ETV 40-50	4220 5203 03
STR61 ETV 70	4220 5203 04
STR61 ETV 100	4220 5203 05
STR61 ETV 150-180	4220 5203 06



Protective cover Tensor ST

**OPERATOR HANDLE**

Model	Ordering No.
STR61 ETP	4220 4487 80
ST101 ETP	4220 4522 82



Operator handle

**SUPPORT HANDLE**

Model	Ordering No.
ES21 ETV/ETD	4220 2725 83
DS9 ETP 350/500/750/1500	4220 4374 90
SR21 ETD	4220 4347 80
ST31/32 ETP 5-10	4220 3517 80
ST101 ETP 200/500 (included)	4220 4001 84
ST101 ETP 750/1000 (included)	4220 4001 83
STR61 ETP	4220 4343 80



Support handle

**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

**TOOL HOLDER**

Model	Ordering No.
ST32 ETP	4220 3584 80



Tool holder

## Optional Accessories



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

### BARCODE SCANNER

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
STR61 ETP			8436 0999 90
ST101 ETP			8433 0615 50
STR-S	STR 31 /61	STR 31 /61	8436 6199 00
STR-L	STR61	STR61	8436 6199 02

L= 70 Nm and up, S= up to 50 Nm



Barcode scanner

### 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
STR61 ETP			8436 0999 91



Parameter set selector

### TLS TOOL TAGS

Model	ETV	ETD	ETP	Ordering No.
TLS ST Tag 32 U1	–	–	ST32, STB32	8433 1030 10
TLS ST Tag 61-S U1	ST31, ST61 28-50, STB32, STB62 30-50	ST31, ST61 15-30	–	8433 1030 20
TLS ST Tag 61-L U1	ST61 70-200, STB62 70-100	ST61 50-120	–	8433 1030 30
TLS ST Tag 81-S U1	ST81 50	ST81 30	–	8433 1030 40
TLS ST Tag 81-L U1	ST81 70-200	ST81 50-120	–	8433 1030 50
TLS ST Tag 101 U1	ST101	ST101	–	8433 1030 60



TLS Tool tag

### 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



I/O device module

**Optional Accessories**

**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
TLS ST tag protection	4220 2917 06



Scanner and TLS ST tag protection

**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
STR-S	STR31/STR61 <50	STR31/STR61 <50	8436 6199 30
STR-L	STR61 >50	STR61 >50	8436 6199 32



Front button

**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 70-100	ST81 50-120	4220 3292 97
ST101	ST10	-	4220 3292 98
STR-S	STR31/STR61 <50	STR31/STR61 <50	8436 6199 40
STR-L	STR61 >50	STR61 >50	8436 6199 42



Adjustable headlights

**TELESCOPIC FRONT PART**

Model	mm	Ordering No.
ST101 ETP 200	25	4220 4592 80
ST101 ETP 500	40	4210 3781 81
ST101 ETP 750/1000	50	4210 3788 80
ST101 ETP 1500	50	4210 3788 81

**MOUNTING RINGS FOR STR**

Model	Ordering No.
Upper ring -S	8436 6199 50
Upper ring -L	8436 6199 52
Lower ring -S	8436 6199 60
Lower ring -L	8436 6699 62

## Optional Accessories

### REACTION BARS

Spline dia mm	Square drive size mm/in	CC distance mm	Ordering No.
<b>Steel bar</b>			
Spline 1	268/36/18		4210 1798 01
Spline 2	270/35/10		4220 1903 00
Spline 3	400/56/12		4210 2219 80
Spline 4	500/62/15		4210 2183 80
Spline 5	500/62/15		4210 2726 80
Spline 6	560/80/15		4220 1200 01
Spline 7	500/100/20		4210 3899 02
Spline 8	500/150/20		4210 3899 03
Spline 9	500/85/20		4210 3899 80
Ø 26 mm	270/34/8		4220 3491 00
<b>Square steel bracket</b>			
Spline 3	100/50/12		4210 2219 03
Spline 4	125/65/16		4210 2183 01
Spline 5	125/65/16		4210 2726 01
Spline 6	200/100/15		4220 1200 00
Spline 7	250/150/20		4220 1445 00
Spline 8	250/160/20		4220 1972 91
Spline 9	150/85/20		4210 3899 01
Ø 24 mm	100/60/8		4220 1029 00
Ø 26 mm	100/60/8		4220 1029 02
Ø 28 mm	100/60/8		4220 1029 01
<b>Triangular steel bracket</b>			
Spline 2	73/72/14		4220 2137 02
Spline 3	82/80/15		4220 2137 03
Spline 6	112/109/15		4220 2137 06
Spline 6	150/145/20		4220 2137 16
<b>Sliding drive reaction bar</b>			
Spline 3	1/2	70-120	4210 4481 83
Spline 3	3/4	70-120	4210 4481 63
Spline 3	1/2	82-218	4210 4616 83
Spline 3	3/4	82-218	4210 4616 63
Spline 4	3/4	76-126	4210 4481 84
Spline 4	3/4	82-218	4210 4616 84
Spline 5	1	80-125	4210 4481 85
Spline 5	1	82-218	4210 4616 85
Spline 6	3/4	120-170	4210 4481 86
Spline 9	1	80-130	4210 4481 89
Spline 9	1	80-280	4210 4616 89
<b>S-Type reaction bar</b>			
Spline 3	110/18/12		4210 4480 03
Spline 4	120/22/15		4210 4480 04
Spline 5	130/25/15		4210 4480 05
Spline 6	125/25/15		4210 4480 06
Spline 7	170/40/20		4210 4480 07
Spline 8	200/65/20		4210 4480 08
Spline 9	160/40/20		4210 4480 09
<b>L-Type aluminum bar</b>			
Spline 3	266x300/29/15		4210 2219 08
Spline 4	144x150/42/15		4210 2183 08
<b>Straight aluminum bar</b>			
Spline 3	L = 400		4210 2219 01
<b>Extended sliding drive reaction bar</b>			
Spline 5	1	68-112	4210 4498 80
<b>Extended sliding tube reaction bar</b>			
Spline 5	1	68-112	4210 4498 82
<b>Bracket stepped</b>			
Spline 1	70/36/13		4210 1798 02
Spline 2	70/41/14		4210 2134 02

Steel bar



Square steel bracket



Triangular steel bracket



Sliding drive reaction bar



S-Type reaction bar



L-Type aluminum bar



Straight aluminum bar



Extended sliding drive reaction bar



Extended sliding tube reaction bar



Bracket stepped



## Error-proofing through intuitive control of the assembly process

*Atlas Copco advanced controllers and software provide intuitive monitoring and control of tightening operations performed using Atlas Copco electric assembly tools. Assembly process control and quality assurance is made easy by advanced control functions. The system guides the operator through the assembly process, avoiding mistakes that can result in costly quality problems.*

### **POWER FOCUS 4000**

The Power Focus range controls tools from the Tensor DS, ST, SR, STR, STB and ETX families. With its built-in functions, it also participates in controlling the station or line segment. The Power Focus and associated software packages provide easy-to-understand information for everyone, from operators to plant managers.

The Power Focus is based on standard hardware and software components which, when combined, will fulfill all demands, from the most basic stand-alone installation to full integration into the factory network. The modules fit together using the “plug-and-play” concept.

Assembly process control and quality assurance is made easy by advanced control functions. On receipt of assembly information, the Power Focus automatically selects the correct tightening sequence and parameters. The operator is guided through the process, avoiding mistakes that can result in costly quality problems.

### **PROGRAMMING SOFTWARE TOOLS-TALK PF**

ToolsTalk PF is the user-friendly tool that enables you to communicate with your Power Focus tool controller. It makes programming and process analysis of a tightening station simple.

### **POWER FOCUS 600**

The Power Focus 600 is compatible with the Tensor ES tools and is the perfect choice for quality critical assembly. It comes in one single hardware version regardless of which tool model or functionality level is used. Its powerful industrial design gives a reliable process that will speed up your tightening operations.

Thanks to the intuitive interface and the fact that it's so easy to use you can set up and run a new system from the box in minutes. External computer software is no longer required since you can

browse in using a web HMI. The intuitive interface and color screen provide clear operator feedback.

Smart software management will guarantee highest possible uptime. Upgrade your controller in a few seconds using only a USB stick.

### **POWER FOCUS 6000**

The Power Focus 6000 is compatible with the Tensor STR tools and is the perfect choice for safety critical assembly. It comes in one single hardware version regardless of which tool model or functionality level is used. Its powerful industrial design gives a reliable process that will speed up your tightening operations.

The Power Focus 6000 is easy to use to use due to its 7 inch touch screen and intuitive software. The web HMI enables you to configure and monitor the controller from any device with a web browser. Smart software management will guarantee highest possible uptime. Upgrade your controller in a few seconds using only a USB stick.

### **TENSOR DS/DL DRIVES**

Tensor DS nutrunners and DL screwdrivers have been developed to give you the benefits of controlled tightening and advanced electric systems throughout your assembly operations.

Their simplicity, reliability, outstanding flexibility and accuracy, can significantly reduce your assembly costs and improve overall productivity.

A suitable choice for quality critical applications, the Tensor DS and DL series have a proven track record in many industries, including aerospace, automotive, construction, white goods and electronics.



## POWER FOCUS 600

The Power Focus 600 controller takes quality critical assembly to the next level. Setting up and using an electric system has never been easier. And, by switching from pneumatic tools, you can reduce your energy consumption by up to 85%. Unbelievable but true – we call it easy transformation!

### EASY

Set up and run a new system from the box in minutes. Computer software is no longer required. Intuitive interfaces enable real-time analysis and fast reaction if needed.

### EFFICIENT

Same controller hardware regardless of tool model. Powerful industrial design gives a reliable process to maximize uptime and speed up your tightening operations.

### ERGONOMIC

Both hardware and software is intuitive, giving clear operator feedback on the screen.



Power Focus 600

Model	Ordering No.
<b>Drive unit</b>	
Power Focus 600 with remote start	8436 3700 01
<b>IAM</b>	
IAM Joint Control	8436 0900 01
IAM Station Control	8436 0900 05

## FUNCTIONALITY OVERVIEW

	IAM Joint Control	IAM Station Control
<b>Functionality</b>		
Number of Psets	1	16
Batch sequence	1	16
Lock on reject	x	x
<b>Strategies and options</b>		
Torque control	x	x
Torque control and angle monitoring	x	x
Configurable limits for torque and angle	x	x
Rotate spindle forward/reverse	x	x
TurboTight	-	x
Two Step	x	x
Quick Step	x	x
Three Step	x	x
CW / CCW operation	x	x
Complete re-hit detection	x	x
Self tap	x	x
<b>Process information and service</b>		
Tightening data storage (Torque, Status OK/NOK, NOK reason)	30	1000
Torque-time trace	x	x
Event log	1000	1000
<b>Hardware and connectivity</b>		
Web-browser client programming	x	x
Read and write programming via remote Ethernet	-	x
Tightening data via local USB	x	x
Tightening data via remote Ethernet	-	x
Controller SW upgrade via local USB	x	x
Controller SW upgrade via remote Ethernet	-	x
1D/2D Barcode reader for selection	-	x
Remote start	x	x
Configurable I/O	x	x
Stacklight	x	x
Socket selector	x	x
Operator panel	x	x

### **POWER FOCUS 6000**

This all new fastening solution from Atlas Copco takes productivity, ergonomics, quality and environmental impact to entirely new levels. And all this with the most user-friendly experience ever.

Enjoy the benefits of a system providing a unique operator experience, with superior quality control and the most flexible integration. The Power Focus 6000 and Tensor STR is the perfect option for your safety critical assembly processes!

### **MULTITool CONTROLLER**

The Power Focus 6000 increases your flexibility in rebalancing assembly lines. Now you are able to connect up to 6 tools to the same controller. Giving you a simpler installation with less cables, hardware components and network drops. Add to that the lower power consumption, less floor space utilization and a much lower environmental footprint, the benefits are obvious.

### **COMMON CONTROLLER**

One platform for handheld and fixtured tools. The Power Focus 6000 reduces your inventory costs and training requirements.

Easy to connect and configure back up tools, using the same programming interface. More compatible solutions will continuously be deployed. And the Power Focus 6000 will be your common controller for all tools and needs.

### **IAM – INTELLIGENT APPLICATION MODULE**

Intelligence in the palm of your hand. Software, tightening data and configuration – carry all important information with you in a future proof portable module. Easy to upgrade and stable with a rapid back-up function. Two software areas allow for smart software management. Allowing a much safer upgrade process, always giving the possibility to switch between two software versions.

**Check with your local Atlas Copco Tools representative regarding availability in your market.**



**Power Focus 6000**

Model	Ordering No.
<b>Drive unit</b> Power Focus 6000	8436 1800 02

# Functionality Overview Controllers - DS/DL, Power Focus 4000

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

### DRIVE FUNCTIONALITY OVERVIEW

Used to control and monitor tools, the DS and DL drives provide a high degree of functionality with minimal setup and configuration. The DS drive runs with the Tensor DS nutrunners and the DL drive is used together with Tensor DL screwdrivers.

### TENSOR DS AND DL REDUCE COSTS

The Tensor DS and DL systems reduce costs by offering three major benefits:

### ELIMINATION OF ASSEMBLY PROBLEMS

Through its control and monitoring functionality, Tensor DS/DL will bring you closer to zero-fault production. By alerting the operator to the most common errors before they continue down the line, the system ensures high-quality end products, and saves you a fortune in reworking costs.

### ONETOOL FOR SEVERAL APPLICATIONS

The Tensor DS/DL can be set with up to 10 different torque settings making it possible to use the same tool for several applications. This reduces operating costs and allows a cleaner design of the work area.

### TENSOR DS/DL IMPROVES PRODUCTIVITY

Tensor DS/DL tools shorten the cycle times through high speed and power. The controller calculates and monitors torque through the highly accurate DigiTork algorithm. The tools are equipped with angle encoders monitoring the rundown angle as well as the tightening angle. Combining torque and angle monitoring you will detect if something is wrong with the joint, guaranteeing quality.



DL Drive

DS Drive

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

## ADVANCED PROCESS CONTROL AND MONITORING FUNCTIONS

Power Focus is a modular range of controllers, with full flexibility, designed for applications ranging from single spindle hand-held operations to fixtured multiple nutrunning systems. Advanced process control and monitoring functions make it easy to view and collect data using the Internet infrastructure.

- Choose your controller – either Graph or Compact.
- Choose your RBU software key to run a tool.
- Choose from various ways to use the controller, as a stand-alone or in a network.
- Run many different kinds of tool, standard, FS, crowfoot or open tools.
- Realtime statistics analysis.
- Error-proofing solution.
- Advanced tightening control and/or monitoring method.
- Trace view.
- Logic configurator.
- Can handle different level of communication.

The Power Focus 4000 is available in two versions, Compact and Graph. The difference between them is the user interface, where the Graph features the color display and a full keyboard.

### COMPACT

This version offers full functionality at a lower cost, but requires a PC with the ToolsTalk PF software for process set-up.

### GRAPH

With the Graph hardware, you have full stand-alone programming possibilities. When networked, the Graph can function as a programming terminal for other Power Focus units.

### RBU CUTS DOWNTIME

Atlas Copco's patented Rapid Backup Unit (RBU) concept transfers functionality to a non-configured hardware unit, ensuring that hardware can easily be upgraded should functionality requirements change. The RBU also acts as back-up for programming and configuration. 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.



Compact



Graph

### POWER FOCUS 4000 FOR TENSOR DS, ST, SR, STR, STB AND ETX

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-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

### IRC FOCUS FOR STWRENCH AND TENSOR STB

Model	Ordering No.
<b>IRC Focus W 10</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-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

### POWER FOCUS 4002 FOR TENSOR SL

Model	Ordering No.
<b>Power Focus 4002 W 10</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-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

### CONTROLLER FUNCTIONALITY

Hardware key	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



RBU

### SPINDLE SYNCHRONIZATION

All Atlas Copco tightening spindles are easily fixtured using our standard range of Express mechanics. The StepSync and SynchroTork tightening strategies give various levels of spindle synchronization during clamp force build-up. Communication between the controllers in the cell or group takes place via the I/O bus. Depending on user-interface preferences and budget, the SyncMaster may be a Compact or Graph hardware unit.

### MULTISTAGE FUNCTIONALITY REDUCES RELAXATION

The inherent "MultiStage" functionality permits the combination of up to eight different parameter sets in a linear sequence. The entire process is activated with just one press of the tool trigger. For joint conditioning, fasteners can be run down to a pre-torque value, backed off by a configurable number of degrees and then re-tightened to the desired final torque. This advanced functionality is ideal for reducing relaxation in a joint.

### CELL NETWORKING GIVES PROCESS SECURITY

The Cell concept allows for Ethernet networking without a PC, and offers overall station process control at a lower cost.

### INTEGRATED WAYS TO COMMUNICATE

#### CONTROLLER LEVEL

Realtime communication over I/O bus independent of the factory net.

#### FIELD BUS LEVEL

The common industry field buses are supported, for example Profibus, Ethernet IP and FL-Net.

#### CELL LEVEL

The cell is a key concept in the system design. It is a cluster of max. 20 controllers networked together via built-in Ethernet TCP/IP. No need for use of a PC.

#### FACTORY LEVEL

Power Focus can be integrated with the factory Ethernet network which enables easy access and reporting anywhere in the plant.

#### INTERNET LEVEL

Worldwide communication is a matter of giving access through a factory network gateway to Power Focus.



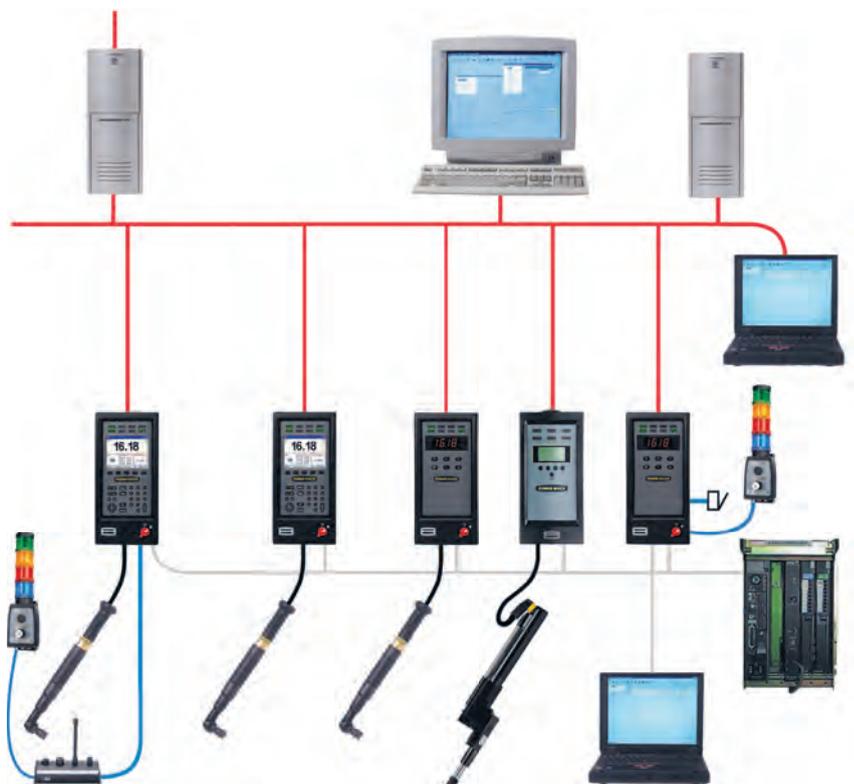
*Tensor spindles are easily fixtured using our standard range of Express mechanics. The control strategies StepSync and SynchroTork synchronize Tensor spindles to provide consistent clamp forces over the entire component mating face.*

A Cell consists of up to 20 units, where the Master controls the process of all Members in the tightening station, and communicates process data as a single interface point.

### ADVANCED STATISTICS FOR BETTER QUALITY CONTROL

Data is continuously collected and analyzed, and can be presented as statistics on, e.g., the Graph color display. Diag-

nostics and statistical alarms such as SPC monitor charts, and capability (Cpk) alarms highlight changes and trends in the assembly process. Effective information and SPC are good motivators, and encourage operators to adopt a proactive approach to monitoring the quality of the assembly process.



*Discrete I/O, I/O bus, Fieldbus, Compact, Graph, PC, access router, host database.*

## TOOLSTALK PF

ToolsTalk PF provides tightening parameter set-up, fieldbus and Logic Configurator set-up, plus customized reporting and presentation of statistics. With a simple click, results can be exported into other commercial file formats.

ToolsTalk communicates with the PowerFocus via Ethernet, USB or serial RS232. If you are networking from your office desk, ToolsTalk PF allows for quickest access to the different control units connected.



## TOOLSTALK POWER FOCUS

Model	Ordering No.
<b>ToolsTalk W14</b>	
1-user license	8092 1191 01
5-user license	8092 1191 05
10-user license	8092 1191 10
Plant license	8092 1191 19
<b>ToolsTalk 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 upgrade to W14</b>	
1-user license	8092 1191 11
5-user license	8092 1191 15
10-user license	8092 1191 20
Plant license	8092 1191 29
<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

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

## QIF error-proofing stations reduce costs and ensure quality

*As part of Atlas Copco's Quality Integrated Fastening (QIF) concept we offer complete error proofing stations. These are created by combining our advanced tightening equipment with standard Atlas Copco hardware and software components. Integrated error-proofing assembly stations help you avoid costly reworking, raise productivity and ensure quality on your production line.*

Atlas Copco is one of the few suppliers able to offer a range of products comprehensive enough to build a fully integrated assembly station. QIF error-proofing stations offer the following benefits:

- Increased product quality.
- Standard modules reduce project and set-up time.
- Fast line re-balancing with standard interfaces.
- Higher productivity due to improved operator guidance.
- Full after sales support from Atlas Copco.

Atlas Copco is one of a few supplier able to offer such a large range of products to build a fully integrated assembly station.

### **FAST, EASY SET-UP**

Most QIF products can easily be connected to Power Focus and Pulsor Focus using one I/O Bus cable, and to Power MACS using one MACS I/O cable. They can be configured using standard Atlas Copco software ToolsTalk. This user-friendly PC software makes programming very simple.

A key factor that makes QIF products so well accepted by users is their logical and intuitive set-up. By combining QIF products with ToolsTalk Logic Configurator, it is possible to make logical diagrams with inputs and outputs that further enhance the flexibility of the products.



# TLS technology takes error-proofing to the next level



**WHAT IS TLS?**

The Tool Location System (TLS) is like a small-scale GPS. Instead of having satellites you have sensors that monitor your plant. Assets, products and/or tools, can be located by placing tags on them. Using ultra wideband (UWB) radio frequency technology, TLS delivers reliable asset location up to 50 cm.

**MAJOR BENEFITS FOR YOUR OPERATION**

On static assembly lines, virtual workstations can be created and tools linked to them, guaranteeing that only the correct tools work in the correct workstation. Once a user informs the system that a product will be assembled in a workstation, a Product Identifier can be sent to the tightening controller. If the product is always placed in the same position, different product areas can also be defined to select PSets or Jobs. This application does not require a Tag on the product.

On moving assembly lines, virtual product areas can be created that move with the product. Tools can also be linked to them, guaranteeing that only the correct tools will work in the correct product area. Once the tool enters this area a Product Identifier (ID) can be sent to the tightening controller. Different product areas can also be defined to select PSets or Jobs. A virtual workstation can also be used in this case to limit the operators' working area.

This application requires a Tag on the product.

**FAST RETURN ON INVESTMENT**

For a larger assembly line, a fast return on investment is achieved due to the TLS system's positive impact on quality, productivity and costs (for instance, by eliminating the need for manual barcode readers and RFID systems).

You will also find it easier to identify areas for process optimization on the line, thus cutting costs even further.!

**THE MOST RELIABLE SYSTEM OUT THERE**

Tracking products and assets needs to be done in a reliable way that gives minimal cost of ownership and an effective error-proofing system. TLS has been successfully installed on MVI assembly lines where the requirements have been reliability of 99.98%, year in year out.

Please contact your nearest Atlas Copco representative for more information about Tool Location System (TLS).



## A complete offering

### FEEDBACK

Higher quality can be achieved by giving audio and/or visual feedback about the assembly process to the operators. Time and costs can be saved by reducing reworking and avoiding faulty products leaving the production line. For feedback use Atlas Copco's Stacklights.



ESL-04 Compact and ESL-04 Standard

### VARIANCE SUPPORT

Productive assembly lines demand efficient operators. These should be supported with appropriate tools providing feedback for all actions. This will save time changing program settings and when performing reworkings in station. For variance support use Atlas Copco's Selectors and Operator Panels.



Selector 4, selector for Large Sockets and Operator Panel Basic

### OPERATOR GUIDANCE

Flexible assembly lines demand different products to be assembled at the same station. It is possible to reduce the number of decisions taken by the operator by providing direct instructions on a screen with photos and texts of the assembly process. For operator guidance use Atlas Copco's HMI's (Human Machine Interface).



MaxiDisplay 3 and MiniDisplay MD-01

### PROCESS MONITORING

Storing production data for documentation and further analysis is a key factor for traceability. Process improvements can be made by analyzing data. This contributes to increasing quality and boosting productivity by minimizing the number of recalls. For process monitoring use Atlas Copco's ToolsNet 4000.



ComNode 3

### REDUCING THE COST OF PERIPHERALS



## SELECTORS

Socket and bit selectors minimize the risk of errors relating to product diversity by automatically selecting correct torque according to the socket or bit selected.

## STACKLIGHTS

Lamps and a buzzer give clear feedback and a key switch can be used to acknowledge errors. This arrangement enables you to detect errors at the workstation and correct them in station instead of further down the line.

## OPERATOR PANELS

Command buttons and integrated lamps provide a highly effective operator interface and enable manual selection of various program settings.

## HMI'S

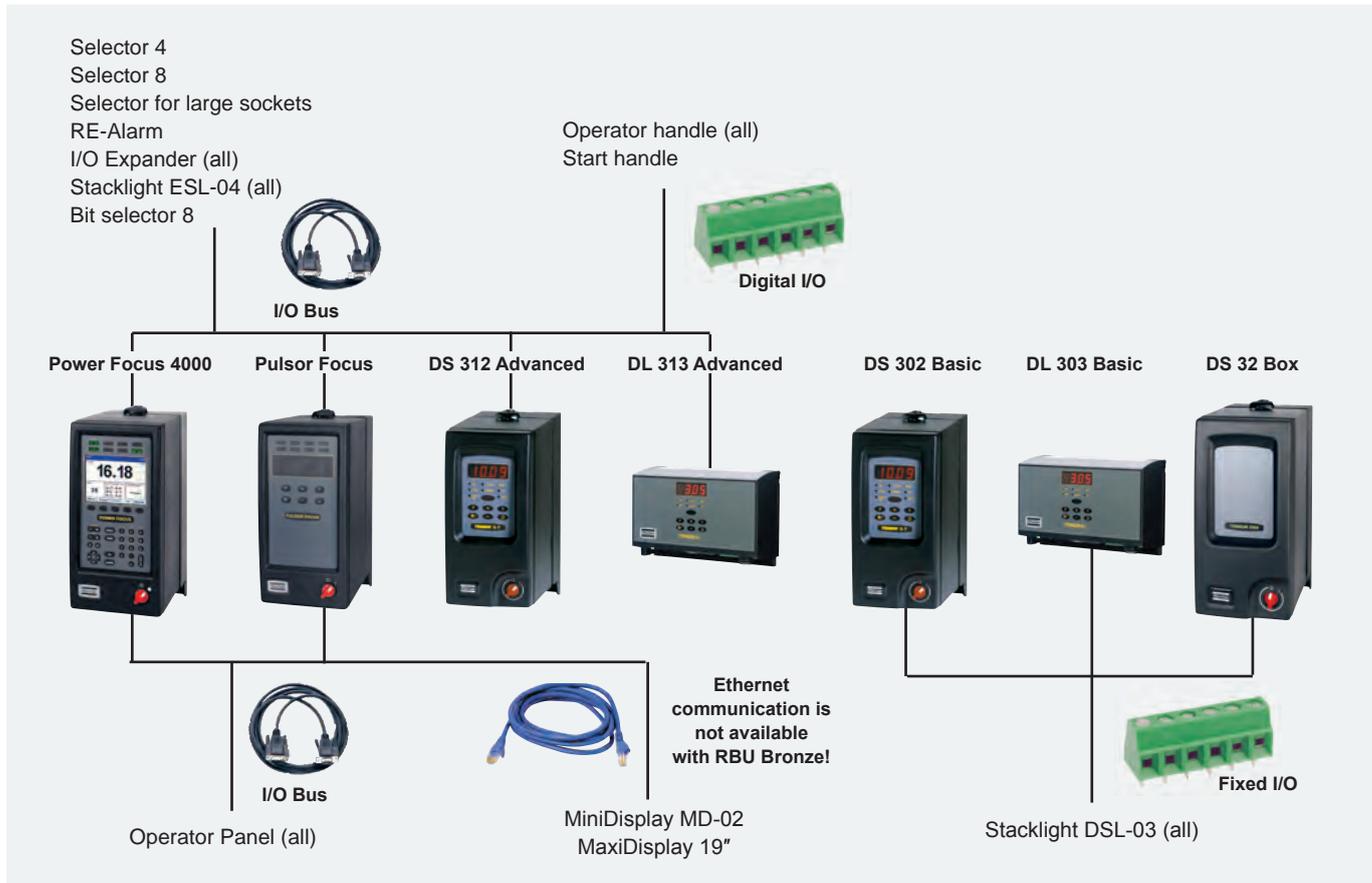
Mini/Maxi display with Operator Guidance software shows photo of the product on the screen, clearly indicating joints to be tightened and giving build instructions.

## WEAFLEX

WEAFlex is a Wireless Ethernet Adapter (WEA) supporting Wireless LAN 802.11b/g interface. Powered by the controller (24vDC), WEAFlex converts the Ethernet port to a Wireless port. This enables communication with ToolsNet for data collection, ToolsTalk for remote programming without USB or Serial cables, production systems or just to exchange information with another controller for a cell job or synchronization.



## MODULARITY



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
<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
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 -2 6.5", incl. Operator Guidance	8435 3071 00
MaxiDisplay 3 (19") excl. Operator Guidance	8435 3070 20
<b>ComNode 3</b>	
ComNode 3 Touch (15")	8433 2712 00
<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>Cables for WEAFlex (1 m)</b>	
Power24vDC, M12-5 pin	4243 0286 80
EthernetRJ45, M12-4 pin	4222 1540 01
<b>Cables Ethernet</b>	
Straight 0.5 m	4222 0754 00
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

## TLS

Model	Ordering No.
<b>Sensors</b>	
TLS Sensor U1-30	8433 1020 30
TLS Sensor U1-65	8433 1020 65
<b>Tool Tags</b>	
TLS ST Tag 32 U1	8433 1030 10
TLS ST Tag 61-S U1	8433 1030 20
TLS ST Tag 61-L U1	8433 1030 30
TLS ST Tag 81-S U1	8433 1030 40
TLS ST Tag 81-L U1	8433 1030 50
TLS ST Tag 101 U1	8433 1030 60
<b>Product Tags (package of 5 units)</b>	
TLS Compact Tag U1-63	8433 1026 05
TLS Power Tag U1-65	8433 1025 05
TLS GPS TAG U1-65	8433 1024 05



WEAFlex



Selector 4



Selector 8



I/O expander sealed



Selector for large socket



Stacklight DSL-03



Rotary selector



Stacklight ESL-04 Compact



Operator handle



Operator panel Advanced



Start handle

ToolsNet 8 is a data collection and process improvement software application for use with Power Focus, Pulsor Focus, PowerMACS and STWrench with support for other controllers over ToolsNet open protocol. 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 through the dashboard 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

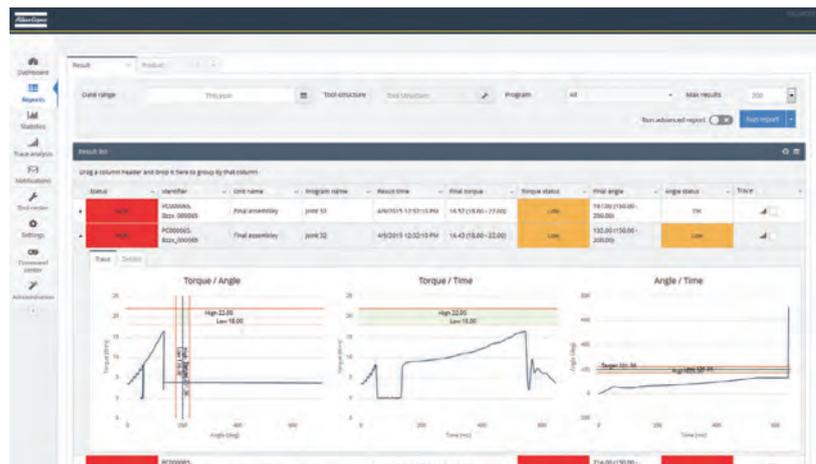
ToolsNet 8 is divided in three different packages to cover different needs.

### 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 production 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.



### ANALYSIS

The analysis package adds advanced statistical capabilities making it possible to search for variations when it comes to large amounts of production data. Another feature that is added with the analy-

sis package is tool center which makes it possible to track detailed information about the tools that are used in production ensuring that they are serviced and calibrated on time.

Software	Ordering No.	Upgrade Ordering No.
<b>ToolsNet 8 - Reports</b>		
5 Spindle license	8092 1710 05	8092 1810 05
10 Spindle license	8092 1710 10	8092 1810 10
25 Spindle license	8092 1710 25	8092 1810 25
50 Spindle license	8092 1710 50	8092 1810 50
75 Spindle license	8092 1710 75	8092 1810 75
125 Spindle license	8092 1710 80	8092 1810 80
200 Spindle license	8092 1710 85	8092 1810 85
350 Spindle license	8092 1710 90	8092 1810 90
500 Spindle license	8092 1710 95	8092 1810 95
Plant Spindle license	8092 1710 00	8092 1810 00
<b>ToolsNet 8 - Alerts</b>		
5 Spindle license	8092 1711 05	8092 1811 05
10 Spindle license	8092 1711 10	8092 1811 10
25 Spindle license	8092 1711 25	8092 1811 25
50 Spindle license	8092 1711 50	8092 1811 50
75 Spindle license	8092 1711 75	8092 1811 75
125 Spindle license	8092 1711 80	8092 1811 80
200 Spindle license	8092 1711 85	8092 1811 85
350 Spindle license	8092 1711 90	8092 1811 90
500 Spindle license	8092 1711 95	8092 1811 95
Plant Spindle license	8092 1711 00	8092 1811 00
<b>ToolsNet 8 - Analysis</b>		
5 Spindle license	8092 1712 05	8092 1812 05
10 Spindle license	8092 1712 10	8092 1812 10
25 Spindle license	8092 1712 25	8092 1812 25
50 Spindle license	8092 1712 50	8092 1812 50
75 Spindle license	8092 1712 75	8092 1812 75
125 Spindle license	8092 1712 80	8092 1812 80
200 Spindle license	8092 1712 85	8092 1812 85
350 Spindle license	8092 1712 90	8092 1812 90
500 Spindle license	8092 1712 95	8092 1812 95
Plant Spindle license	8092 1712 00	8092 1812 00
<b>Operator guidance</b>		
1 User license	8092 1185 01	



Software

<sup>1</sup> ToolsNet 4000 Reports is required.

<sup>2</sup> ToolsNet 4000 Alerts is required.

<sup>3</sup> ToolsNet 4000 History is required.