1/2” SQUARE DRIVE DIGITAL FLEXI-HEAD ANGLE TORQUE WRENCH 20-200Nm

MODEL NO: **STW309**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

IMPORTANT: **PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.**

1. SAFETY

❒ **WARNING! DO NOT** use the torque wrench if damaged or thought to be faulty.
✓ Ensure all workshop safety rules, regulations and conditions are complied with when using the torque wrench.
✓ Maintain correct balance and footing. Ensure the floor is not slippery and wear non-slip shoes.
✓ Keep children and unauthorised persons away from the working area.
✓ Avoid over-torquing the wrench (110% of maximum torque range) as this will cause loss of accuracy.
✓ Keep the wrench away from magnets.
✓ In operation when you hear the continuous tone, stop pulling immediately especially in case the target torque/ angle is low.
✓ Ensure all sockets, extensions and drivers are rated correctly and are of flawless construction. Avoid using adaptors and extensions for best accuracy.
✗ **DO NOT** use the torque wrench if the batteries are low, torque accuracy will be affected.
✗ **DO NOT** use the wrench as a hammer or similar.
✗ **DO NOT** use on live electrical circuits the plastic handle is not insulated.
✗ **DO NOT** subject the wrench to excessive force or shocks.
✗ **DO NOT** drop, throw, or violently shake the wrench.
✗ **DO NOT** operate the wrench in damp conditions.
✗ **DO NOT** operate the wrench in dusty conditions.
✗ **DO NOT** push on the LCD panel.
✗ **DO NOT** use wrench until first instructed in its use by a qualified person.
✗ **DO NOT** leave the wrench in a place exposed to excessive heat, humidity or direct sunlight.
✗ **DO NOT** use organic solvents such as alcohol or thinners to clean the wrench.
✓ After use, turn the wrench off, clean with a soft dry cloth, place torque wrench in its storage case, and store in a safe, dry, childproof location.
✓ Remove the batteries if the torque wrench is not to be used for a long time, to prevent damage from leaking.

2. INTRODUCTION

Rugged and resilient digital torque wrench suitable for workshop and factory use. LCD read-out with LED, audible alarm and vibration indicating achieved and target torque levels. 180° Flexi-head for increased access in hard to reach applications. Features angle mode, eliminating the need for angle gauges and protractors providing an accurate and fast way to measure torque plus angle tightening sequences. It will also accumulate angle measurement when multiple turns are required, ideal for use where access is limited. Selectable track or peak modes and up to 5 user preset memories available. Read-outs in Nm, lb.in, lb.ft, kgf.m or degrees. Reversible Chrome Vanadium 72-tooth ratchet allows torque reading in either direction. Accurate to ±2% between 10% and 100% of wrench’s stated capacity. Supplied with test certificate and storage case.

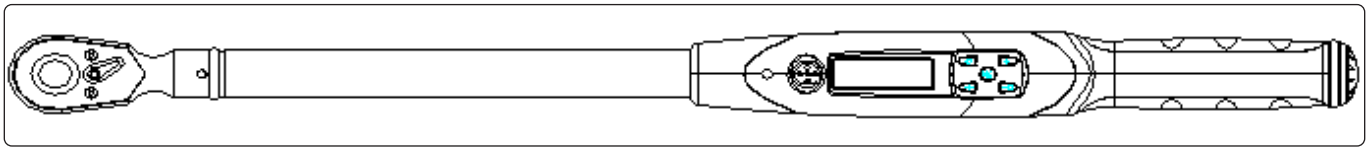
3. SPECIFICATION

3.1. Specification

Model No:	**STW309**
Battery:	4x AAA (supplied)
Drive:	1/2”Sq
Length:	610mm
Range:	20-200Nm
Angle Range:	360°
Cell Qty x Type:	4 x AAA (supplied)
Torque Accuracy:	±2%(C.W. / C.C.W. of reading,
	10% to 100% of full scale)
Torque Resolution:	0.1N.m / 1lbf-in / 0.1lbf-ft / 0.1Kgf.m
Gear Teeth:	72
Units:	N.m / lbf-in / lbf-ft / Kgf.m
Angle Measuring Range:	0° - 360° (C.W. / C.C.W.)
Angle Accuracy:	±2% of reading ±1°
Angle Velocity:	> 10° / Sec < 360° / Sec
Angle Display Resolution:	1°
Operating Temperature:	0 ~ 40°C / 32~104°F
Storage Temperature:	-20 ~ 45°C / -4 ~113°F
Humidity:	Humidity up to 60% Non-condensing

3.2. Calibration check

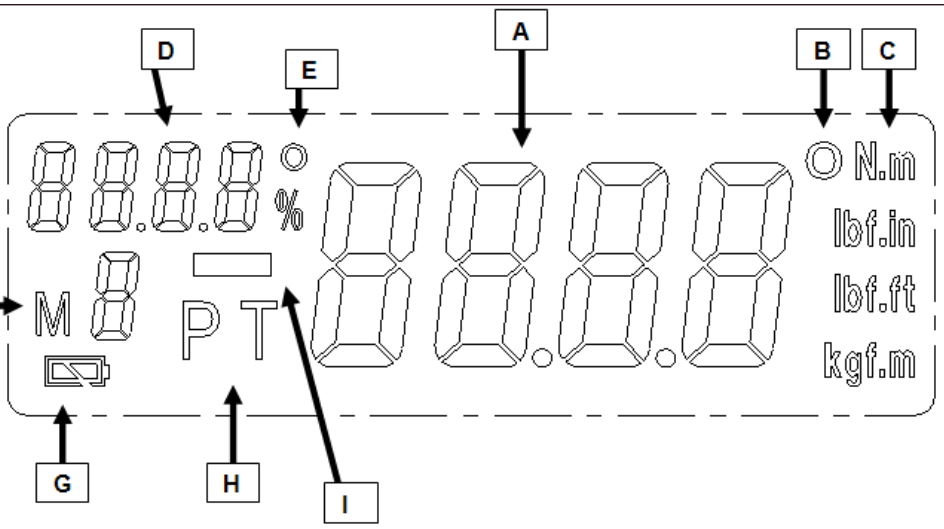
We recommend to ensure continued accuracy the calibration of the wrench should be checked annually, beginning one year after the first time of use. Calibration should also be checked after any impact, over-torquing or other misuse. Contact your Sealey Dealer to arrange recalibration.



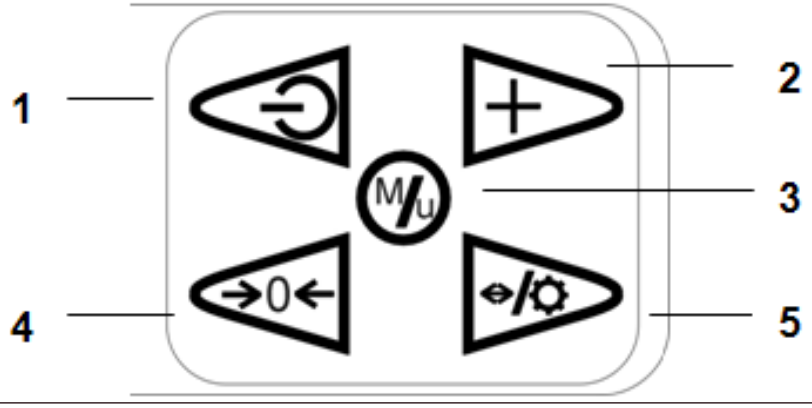
4. OPERATION

4.1. Display

A: Real-time torque value
B: The unit of Angle
C: Torque units
D: Target Torque indicator
E: Target Angle indicator
F: Memory storage numbers
G: Battery indicator
H: Peak / Track mode
I: MINUS symbol for anti-clockwise rotation.



4.2. Control Panel

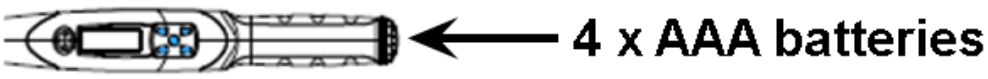


1. Power ON / OFF button
2. Memory storage numbers selection / setting button
3. Setting button / Memorize the torque or angle setting value / Change the rotation of Angle in a CW or CCW direction.
4. Button to zero out the torque and angle values
5. Button for display illumination (hold down for 3 seconds) / for selecting the next digit / Enter angle measurement mode.

4.3. Preparation for use

4.3.1. Open the cover of the battery compartment by turning it counter-clockwise.
4.3.2. Insert four AAA batteries positive end first, push the battery cap on against the spring and screw clockwise to lock.

Note: **DO NOT** mix the type of battery or use new/used ones together. Keep the battery terminals clean. If the battery voltage is low, the battery symbol will be displayed on the screen and soon afterwards the wrench will turn off. Replace batteries.



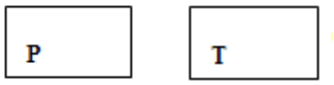
4.4. Turning the tool on / off

4.4.1. Press ⏻ button to turn on. The buzzer sounds and on the display all readouts will be displayed at the same time for a moment
4.4.2. Press ⏻ button again to turn off the electronic system.

4.5. Peak and Track Mode Setting

4.5.1. Press ⏻ to turn the wrench on. After turning on the display, the default is in " Track " mode, i.e. the real-time torque reached during operation will be displayed.
4.5.2. Press M/u button to select:

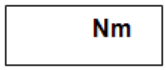
(Peak) mode or back to **(Track)** mode.



4.5.3. During the **"Peak"** mode, the maximum value reached will be saved additionally and the value is shown on the display for approx. 2 seconds. After that, this value is flashing then you keep going for the next application or press →0← button to zero then keep going for the next application.

4.6. Unit Selection

4.6.1. Enter the selecting mode by pressing and holding the M/U button for 5 seconds.

4.6.2. 

is shown on the screen, select the units between N.m/ lbf.ft/ lbf.in/ kgf.m by pressing + button.

4.6.3. Press M/U button to confirm the unit selection. The wrench will switch to the setting of **Auto Power Off.**

Caution:
If no button is touched within 3 seconds, the wrench will remain at the last selection of unit, and return to measuring mode.

4.7. Auto power off setting

The torque wrench will be turned off automatically without any buttons being touched over a period. Change the auto –off setting as follows:

4.7.1. Once the unit is selected, the default Auto-Off time  (5 mins) will be shown on the screen.

4.7.2. Wait for 2 seconds without touching any buttons, or press M/U button to remain on the default setting.

4.7.3. Change the wrench's **Auto-off** time by pressing + button. Select the shut-off time between **5 minutes**, **15 minutes** or **"OFF"** to turn off the Auto-off function.

4.7.4. Press M/U button to confirm the selection. The wrench returns to measuring mode.

Caution:
If no button is touched within 3 seconds, the wrench will remain at the last selection of unit, and return to measuring mode.

4.8. Programming the Torque and Angle

4.8.1. The wrench has five presets for setting the target Torque value and Angle value.

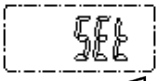
4.9. Target Torque Setting

4.9.1. Press ⏻ button to turn the wrench on.

4.9.2. Press and hold the + button for 5 seconds (or more if required) to select the memory storage number between

M1~M5. 

4.9.3. Once the memory number is chosen, access the target Torque programming by pressing the + button.

4.9.4. When  is shown on screen, the "0000" or last saved torque value is displayed. The first digit of this value ("0000") is flashing. Press →0← button to zero the last saved value OR by repeatedly pressing + button, the value of the flashing digit is gradually increased. When the desired value is achieved, press →/Ω button to skip to the next digit. Repeat this process for all the digits, (ones, tens, hundreds etc.)

4.9.5. When the required torque is set, press M/U to save the pre-set value.

Caution:
"Erro" will be shown on the screen, when the pre-set torque does not exceed the minimal torque of 10% FS or over the 100% of torque value. After 1 second, the wrench returns to target torque value setting.

After pressing the " + " button access the torque setting mode, if no buttons are touched for 3 seconds, the torque wrench will quit automatically and return to measuring mode.

4.10. Target Angle Setting

4.10.1. The display skips to angle setting automatically once the target torque is set, and displays the last saved Angle value. The first digit of this value ("000") is flashing.

4.10.2. Press the →0← button to zero the last saved value or by pressing the + button, the value of the flashing digit is gradually increased.

When the desired value for this digit is achieved, press →/Ω button to skip to the next digit. Repeat this process for all digits, (ones, tens, hundreds etc.)

4.10.3. When the required angle is set, press M/U to save the pre-set value.

4.11. Turning the display illumination on/off

4.11.1. The display illumination can be turned on prior to or after programming the torque.

4.11.2. In order to do this, press and hold the →/Ω button for 5 seconds.

4.12. Operating the torque wrench

4.12.1. Select the socket required for your work.

4.12.2. Attach the socket firmly to the square drive of the torque wrench, until it is kept in place by the ball stop of the square drive.

4.12.3 If possible do not use any extensions because they may distort the torque applied to a nut or bolt.

4.12.4. Place the tool on the bolt or nut. Grip the torque wrench handle and pull on the wrench with quick movements. Avoid jerky movements.

4.12.5. With the target torque pre-set, the target value is indicated on the screen.

4.12.6. The LED light will be GREEN when you are under 50% of the programmed torque value.

4.12.7. As the target torque value is approached, the LED light will turn YELLOW.

4.12.8. When you approach the programmed torque value in **(+/- 5Nm)** the buzzer will sound.

4.12.9. When you are **within 2%** of the programmed value, the LED will display RED and you will also feel the vibration of the handle. **Once you achieve (+/- 2Nm), the buzzer will emit a quicker sound sequence.**

4.12.10. When you are **over 2%** of the programmed torque, the buzzer will emit a continuous tone and the LED will turn GREEN and you will also feel the vibration of the handle.

4.12.11. Press button to switch to ANGLE measuring,  will be shown on the screen. **Hold the wrench still and stable,** the wrench will self-test a few seconds, and show target angle and display 0°. 

4.12.12. Press button to change clockwise or counter-clockwise direction. A "**MINUS" symbol** will appear in front of the displayed value for counter-clockwise direction.

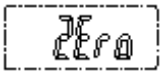
4.12.13. The LED light will be GREEN when you are under 50% of the programmed Angle value.

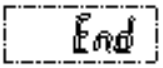
4.12.14. As you approach the target Angle value, the LED light will turn YELLOW.

4.12.15. When you are **within 2%** of the programmed Angle value, the LED will turn to RED.

4.12.16. When the programmed **Angle** has been achieved, the buzzer will sound and the handle will vibrate.

4.12.17. When you are **over 2%** of the programmed Angle, the LED turns to GREEN and the handle will vibrate.

4.12.18. Press button, the screen will show  to zero the Angle reading for the next application.

4.12.19 Press button to quit Angle measurement mode, the display will show  and return to torque measurement mode.

ATTENTION: When you hear the continuous tone, stop pulling immediately, especially in case the target torque/ angle is low.

Caution:
Never use the torque wrench when it has a low battery. The wrench's accuracy will be affected.

"----" will be shown on the screen, when applying torque is exceeded at 100% of the maximum torque value.

Parts support is available for this product. To obtain a parts listing and/or diagram, please log on to www.sealey.co.uk, email sales@sealey.co.uk or telephone 01284 757500.

BATTERY REMOVAL
Under the Waste Batteries and Accumulators Regulations 2009, Jack Sealey Ltd are required to inform potential purchasers of products containing batteries (as defined within these regulations), that they are registered with Valpak's registered compliance scheme. Jack Sealey Ltd Batteries Producer Registration Number (BPRN) is BPRN00705.

WEEE REGULATIONS
Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.

ENVIRONMENT PROTECTION
Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

Note: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.
Important: No Liability is accepted for incorrect use of this product.
Warranty: This product comes with a lifetime guarantee against manufacturing defects. Proof of purchase is required for any claim.

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TORQUE TOOL
CALIBRATION CERTIFICATE

Declaration of Conformance
(in accordance with BS EN ISO 6789-1:2017)[1]

Test machine type/name	TORQUE TESTER
Test machine serial No.	
Test machine calibration date	
Measurement error[2]	±1%

Measurement uncertainty	0.20%
Ambient temperature	26°C
Humidity	52%
Test units: (Nm, lb/ft etc)	Nm

1	Min Torque:	20	Clockwise					
	Max torque:	200						
Target Torque N.m	Maximum Permissible Deviation (± 4 %) N.m		Completed test reading[3]					
	Min	Max	1	2	3	4	5	Average
40	38.40	41.60						
120	115.20	124.80						
200	192.00	208.00						

2	Min Torque:	20	Anti-clockwise					
	Max torque:	200	(This part 2 to be completed only where applicable)					
Target Torque N.m	Maximum Permissible Deviation (± 4 %) N.m		Completed test reading[3]					
	Min	Max	1	2	3	4	5	Average
40	38.40	41.60						
120	115.20	124.80						
200	192.00	208.00						

Tool Model Number	STW309
Tool Serial Number	
Tested by (print name)	
Date of test[4]	

Notes: [1] Testing is in compliance with International Standard procedures, with test equipment calibrated by a laboratory traceable to International Standards.

[2] Measurement error shall be less than ¼ of the maximum permissible relative deviation of the torque tool.

[3] The observed values fall within the maximum permissible deviation (tolerance). For tools with a flexible head, the result is valid only if the measuring axis is perpendicular to the axis of the tool.

[4] This Sealey Declaration of Conformance is issued at the time of manufacture. Its' validity is open ended until the torque tool is used for the first time. The default re-calibration period of 12 months (or 5,000 cycles, whichever occurs first) starts after first use of the torque tool (BS EN ISO 6789-1:2017, clause 5.3 refers).