

## Bike torque wrench - TW-1

### Instructions (READ FULL INSTRUCTIONS BEFORE USING TORQUE WRENCH)

#### Warning

- 1 This is a highly accurate torque wrench for torques ranging from 3 to 15 Nm (2 to 11 ft-lbs, or 26 to 132 in-lbs). If the value you need to apply to a part is greater than 15 Nm, this torque wrench will not work for your application. Do NOT apply torques over 15Nm to the wrench as this will damage the wrench beyond repair. This torque wrench will **NOT** work on cranks.
- 2 Do NOT over tighten the part you are installing as it may damage the part and cause serious injury.
- 3 Do NOT over tighten the torque wrench. If you keep on tightening the torque wrench after you hear a CLICK you will damage the wrench and it cannot be repaired.
- 4 Do NOT use the torque wrench to loosen bolts or parts as this may damage the torque wrench.

#### Important notes

- 1 Store the torque wrench at its lowest torque setting, i.e. 3 Nm
- 2 When you first use the torque wrench, or after it has been stored for a while, put the torque setting to its highest value (i.e. 15 Nm) and apply torque until the wrench makes a CLICK (Do NOT over tighten). Repeat this 10 times so the internal parts are fully lubricated. This will ensure the torque wrench works properly.
- 3 The torque wrench is calibrated at the factory and cannot be calibrated by the user. We cannot re-calibrate the unit for you.
- 4 Do not oil the torque wrench.
- 5 Do not get the torque wrench wet or soak in any type of liquid.

#### How to determine torque value

Refer to the manufacture instruction of the part or component you are installing for correct torque value specifications.

The torque wrench units are in Nm. You must convert the required torque value provided by the manufacture of the part/component to Nm. Refer to formulas and tables below for torque conversion.

#### How to convert to Nm:

- 1) in-lbs to Nm →  $XXX \text{ in-lbs} / 8.8507 = YYY \text{ Nm}$
- 2) ft-lbs to Nm →  $XXX \text{ ft-lbs} \times 1.3556 = YYY \text{ Nm}$
- 3) in-lbs to ft-lbs →  $XXX \text{ in-lbs} / 12 = YYY \text{ ft-lbs}$
- 4) ft-lbs to in-lbs →  $XXX \text{ ft-lbs} \times 12 = YYY \text{ in-lbs}$
- 5) Nm to in-lbs →  $XXX \text{ Nm} \times 8.8507 = YYY \text{ in-lbs}$
- 6) Nm to ft-lbs →  $XXX \text{ Nm} / 1.3556 = YYY \text{ ft-lbs}$

Table 1

From:	To:		
	Nm	in-lb	ft-lb
Nm	N/A	x 8.8507	/ 1.3556
in-lb	/ 8.8507	N/A	/ 12
ft-lb	x 1.3556	x 12	N/A

Table 2

ft-lbs	in-lbs	Nm
1	12	1.36
2	24	2.71
3	36	4.07
4	48	5.42
5	60	6.78
6	72	8.13
7	84	9.49
8	96	10.84
9	108	12.20
10	120	13.56
11	132	14.91

Table 3

in-lbs	ft-lbs	Nm
5	0.42	0.56
10	0.83	1.13
15	1.25	1.69
20	1.67	2.26
25	2.08	2.82
30	2.50	3.39
35	2.92	3.95
40	3.33	4.52
45	3.75	5.08
50	4.17	5.65
55	4.58	6.21
60	5.00	6.78
65	5.42	7.34
70	5.83	7.91
75	6.25	8.47
80	6.67	9.04
85	7.08	9.60
90	7.50	10.17
95	7.92	10.73
100	8.33	11.30
105	8.75	11.86
110	9.17	12.43
115	9.58	12.99
120	10.00	13.56
125	10.42	14.12
130	10.83	14.69

Table 4

Nm	in-lbs	ft-lbs
1	8.85	0.74
2	17.70	1.48
3	26.55	2.21
4	35.40	2.95
5	44.25	3.69
6	53.10	4.43
7	61.95	5.16
8	70.81	5.90
9	79.66	6.64
10	88.51	7.38
11	97.36	8.11
12	106.21	8.85
13	115.06	9.59
14	123.91	10.33
15	132.76	11.07

#### How to set torque wrench with correct torque value

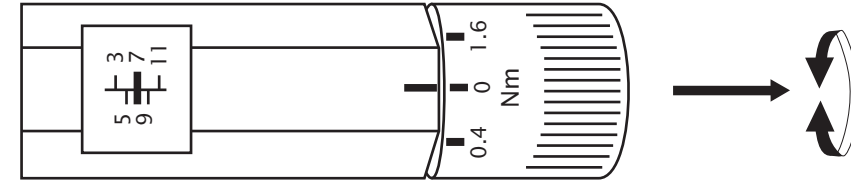
There is a 2 step process to set the torque wrench to a specific torque value (in Nm).

STEP 1: Pull the end of the handle and turn clockwise to increase the torque value or counter-clockwise to decrease the desired torque value. The torque setting value is in Nm and is displayed in the clear window on the middle of the handle.

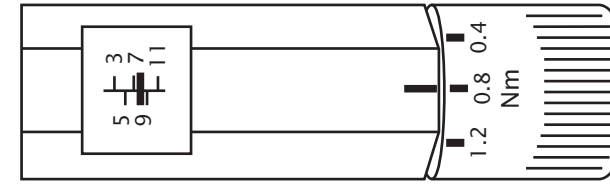
STEP 2: On the end of the handle there is a secondary fine-tuning torque scale ranging from 0 to 1.6 around the circumference of the handle. The value of this scale is added to the value shown in the window to get a total torque value in Nm. Pull the end cap and turn it to the desired value. Make sure the end cap is in the closed position when you finish setting the torque value.

Example:

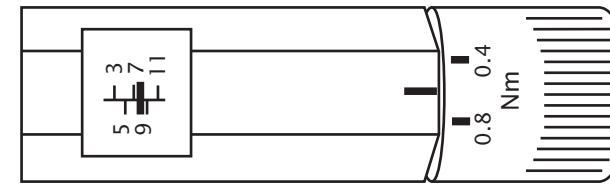
- a) To set the torque wrench to 7 Nm turn the handle so the scale in the window shows 7 Nm and the value on the handle circumference is set to 0.



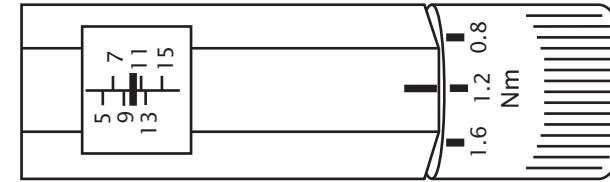
- b) To set the torque wrench to 7.8 Nm turn the handle so the scale in the window shows 7 Nm and the value on the handle circumference is set to 0.8.



- c) To set the torque wrench to 7.6 Nm turn the handle so the scale in the window shows 7 Nm and the value on the handle circumference is set to between 0.4 and 0.8.

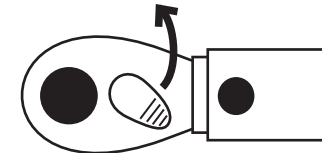


- d) To set the torque wrench to 10.2 Nm turn the handle so the scale in the window shows 9 Nm and the value on the handle circumference is set to 1.2.



#### How to set direction of torque wrench (clockwise or counter-clockwise)

Put the required socket on the torque wrench and set the direction of the torque wrench to clockwise or counter-clockwise (most likely it will be set to clockwise to tighten) with the black lever located at the head of the wrench. Put the wrench on the bolt to be tightened. Picture below shows torque wrench in CW setting.



#### How to properly tighten part

It is important to apply a slow smooth (not jerking) force to the torque wrench when you are tightening a part. If you apply a fast, jerking force you may over tighten the part and damage the part and the torque wrench.

Apply force on the handle of the torque wrench and then STOP applying force IMMEDIATELY after you hear a CLICK sound.

Once you hear the CLICK, stop applying the force; the part is now set to the desired torque.

Do NOT over tighten the torque wrench. If you keep on tightening the torque wrench after you hear a CLICK you may damage the wrench and it cannot be repaired.