TEKTON®

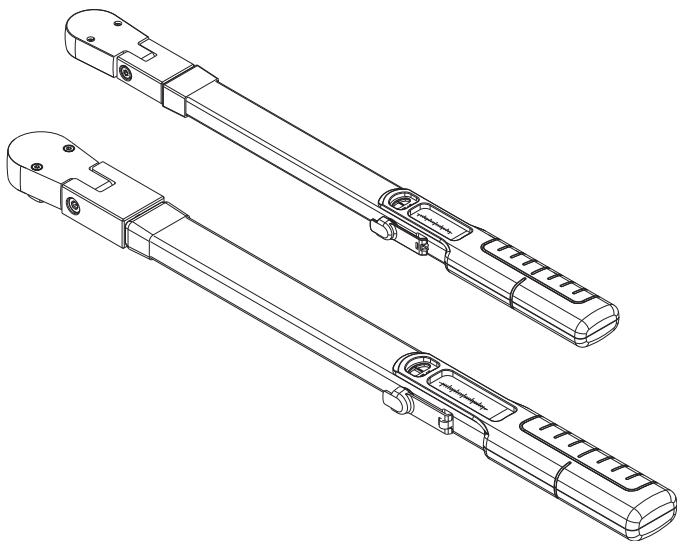## SPLIT BEAM
TORQUE WRENCH

**TRQ62103** - 3/8 in. Drive Split Beam Torque Wrench (20–100 ft.-lb.)
TRQ62203 - 1/2 in. Drive Split Beam Torque Wrench (40–250 ft.-lb.)

Before using the torque wrench, be sure to read and understand the entire manual. This tool is a precision measuring instrument that should be operated, stored, and maintained with care. Failure to follow instructions could result in damage to the tool, damage to property, or injury.

Product Manual
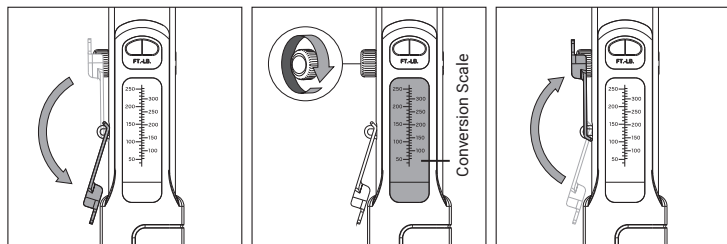
OPERATION

INTERNAL MECHANICS
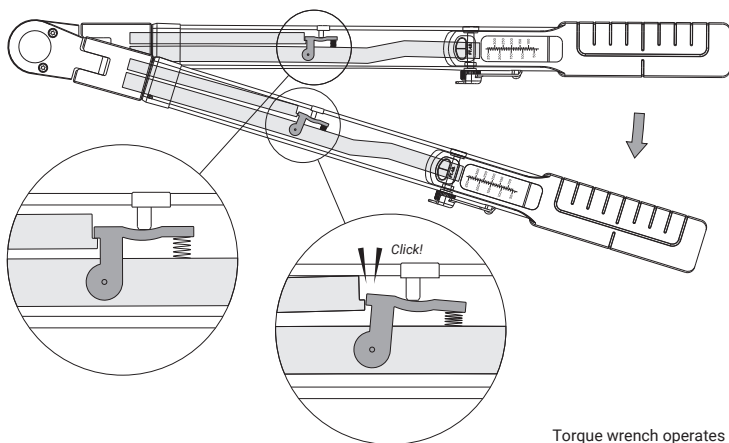
Torque wrench operates and measures in the clockwise direction only.

SETTING THE TORQUE VALUE

Determine the required torque for your application in foot pounds (ft.-lb.). Use the conversion scale on the torque wrench to convert Nm to ft.-lb. If needed, use page 4 to convert other torque units to foot pounds.
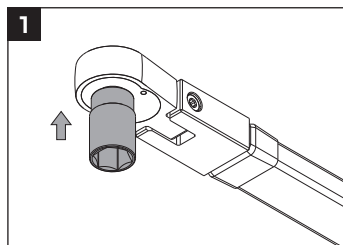

Flip the cover down to access the adjustment knob.

Turn the adjustment knob to the desired torque value.

Replace the cover over the adjustment knob to secure it during use. Confirm the torque setting is accurate.
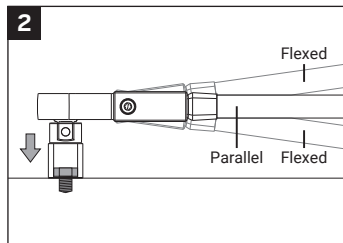
OPERATION

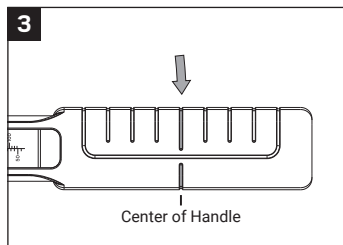## APPLYING TORQUE

Attach a drive tool to the drive tang.

⚠️🔧 For off-axis tools, like a crowfoot wrench, calculate a leverage adjustment on page 5.

Flexed

Parallel   Flexed

Engage the drive tool on the fastener or fitting. For the most accurate reading, the ratchet head must be parallel with the wrench body.

⚠️ The flex joint provides clearance for working around obstacles but, when flexed, can reduce accuracy by up to 4 percent due to the offset from the plane of rotation.

Center of Handle

Grip the center of the handle and apply torque **SLOWLY** in a clockwise direction.

⚠️ Don't use the torque wrench on electrical circuits. The handle doesn't provide insulation from electrical current.
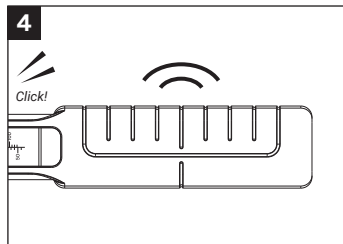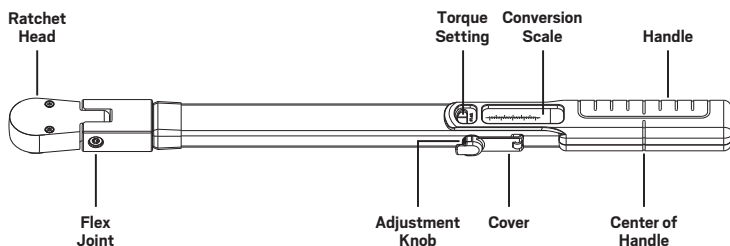

Click!

STOP applying torque when you hear and feel a click. This means you've reached the desired torque value.

⚠️ Don't use extensions on the handle. The torque measurement will be inaccurate and the tool could become damaged.

TORQUE WRENCH DIAGRAM

Ratchet
Head

Torque
Setting

Conversion
Scale

Handle

Flex
Joint

Adjustment
Knob

Cover

Center of
Handle

TORQUE WRENCH CARE

This tool is a precision measuring instrument that should be operated, stored, and maintained with care.

STORAGE

- Store the torque wrench in the storage case in a dry location.
- The torque wrench can be stored at any torque setting because of its internal design. By comparison, other torque wrenches, like click-style models, often have to be stored at the lowest torque setting.

MAINTENANCE

- If the torque wrench is not used regularly, operate it several times at a low torque setting to redistribute lubricant to the internal moving parts.
- The components in the handle are lubricated for life and should not be oiled. The ratchet head may be lubricated for smooth use as needed.

   ⚠ The ratchet head can be disassembled, if needed, for lubrication or service. Don't disassemble other parts of the wrench.

- Clean the wrench by wiping it with a clean, dry, lint-free cloth. Do not immerse the wrench in any type of liquid or cleaner to avoid damaging the internal components.
- The torque wrench should only be serviced or recalibrated by an accredited measurement laboratory.

TORQUE CONVERSION

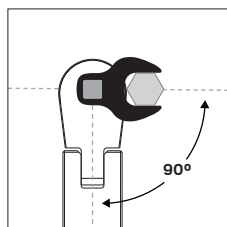| INPUT		OPERATION		OUTPUT		EXAMPLE
Torque Value	Units			Torque Value	Units	
	Nm kg-m kg-cm in.-lb. oz.-in.	×	0.7376 7.233 0.07233 0.08333 0.00521	=		**ft.-lb.**	80 Nm × 0.7376 = 59 ft.-lb.
	ft.-lb.	÷	0.7376 7.233 0.07233 0.08333 0.00521	=		Nm kg-m kg-cm in.-lb. oz.-in.	59 ft.-lb. ÷ 0.7376 = 80 Nm

| FOOT POUNDS (ft.-lb.)	NEWTON METERS (Nm)	KILOGRAM METERS (kg-m)	KILOGRAM CENTIMETERS (kg-cm)	INCH POUNDS (in.-lb.)	OUNCE INCHES (oz.-in.)
1	1.356	0.1383	13.83	12	192
2	2.712	0.2765	27.65	24	384
3	4.067	0.4148	41.48	36	576
4	5.423	0.5530	55.30	48	768
5	6.779	0.6913	69.13	60	960
10	13.56	1.383	138.3	120	1920
15	20.34	2.074	207.4	180	2880
20	27.12	2.765	276.5	240	3840
25	33.90	3.456	345.6	300	4800
30	40.67	4.148	414.8	360	5760
35	47.45	4.839	483.9	420	6720
40	54.23	5.530	553.0	480	7680
45	61.01	6.221	622.1	540	8640
50	67.79	6.913	691.3	600	9600
55	74.57	7.604	760.4	660	10560
60	81.35	8.295	829.5	720	11520
65	88.13	8.987	898.7	780	12480
70	94.91	9.678	967.8	840	13440
75	101.7	10.37	1037	900	14400
80	108.5	11.06	1106	960	15360
85	115.2	11.75	1175	1020	16320
90	122.0	12.44	1244	1080	17280
95	128.8	13.13	1313	1140	18240
100	135.6	13.83	1383	1200	19200
110	149.1	15.21	1521	1320	21120
120	162.7	16.59	1659	1440	23040
130	176.3	17.97	1797	1560	24960
140	189.8	19.36	1936	1680	26880
150	203.4	20.74	2074	1800	28800
160	216.9	22.12	2212	1920	30720
170	230.5	23.50	2350	2040	32640
180	244.0	24.89	2489	2160	34560
190	257.6	26.27	2627	2280	36480
200	271.2	27.65	2765	2400	38400
210	284.7	29.03	2903	2520	40320
220	298.3	30.42	3042	2640	42240
230	311.8	31.80	3180	2760	44160
240	325.4	33.18	3318	2880	46080
250	339.0	34.56	3456	3000	48000

LEVERAGE ADJUSTMENT

CALCULATION

The amount of leverage that's applied to a fastener is affected by the position of a drive tool in relation to the torque wrench's drive tang. When using an off-axis tool that doesn't align with the drive tang, such as a crowfoot wrench, you may need to adjust your torque setting.

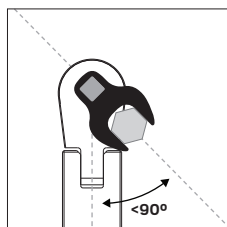**If possible, align the drive tool at a 90-degree angle to the drive tang.**

If a different angle is required, use one of the formulas below to determine the appropriate torque value.

No formula is needed. Set the torque value to the fastener's specification.
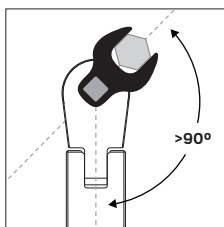
$$T1 \times \left(\frac{L}{L + C}\right) = T2$$

See Example 1

$$T1 \times \left(\frac{L}{L + (-C)}\right) = T2$$

See Example 2

FORMULA INPUTS

T1 — Torque specification for the fastener

L — Effective length of the torque wrench
   TRQ62103: L = 15.62 in.
   TRQ62203: L = 19.22 in.

C — Change in length caused by a crowfoot wrench or other drive tool that doesn't align with the drive tang

   ⚠ Measure from the center of the fastener to the center of the drive tang in a line parallel to the body of the wrench.
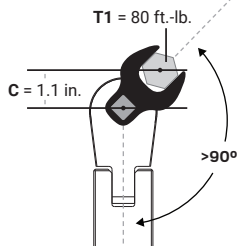
FORMULA OUTPUTS
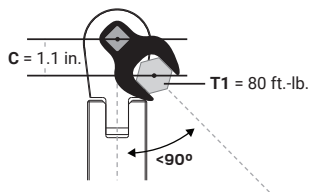
T2 — Torque value you should use

LEVERAGE ADJUSTMENT

DIAGRAM

T1 = Torque Specification for Fastener

Center of Fastener

Center of Drive Tang

C = Change in Length
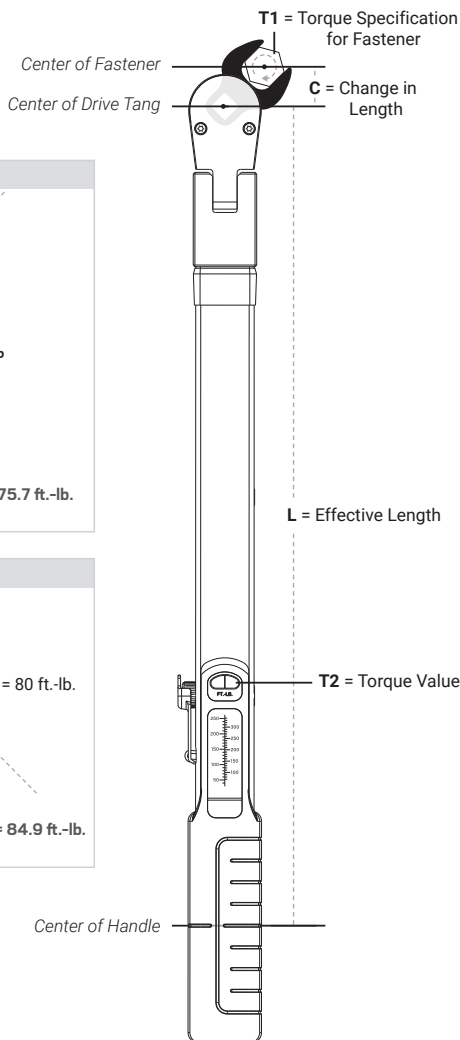
Example 1

T1 = 80 ft.-lb.

C = 1.1 in.

>90º

$$80 \text{ ft.-lb.} \times \left(\frac{19.22 \text{ in.}}{19.22 \text{ in.} + 1.1 \text{ in.}} \right) = 75.7 \text{ ft.-lb.}$$

Example 2

C = 1.1 in.

T1 = 80 ft.-lb.

<90º

$$80 \text{ ft.-lb.} \times \left(\frac{19.22 \text{ in.}}{19.22 \text{ in.} + (-1.1 \text{ in.})} \right) = 84.9 \text{ ft.-lb.}$$

L = Effective Length

T2 = Torque Value

FT.-LB.

Center of Handle

**KEEP THIS MANUAL IN THE STORAGE
CASE FOR FUTURE REFERENCE**