

CERTIFICATION

This torque wrench as calibrated at the factory, is certified to meet the accuracy in specifications: ASME B107.14M-1994, GGG-W-686, Type 2, Class A Style 1, 2 and ISO 6789. Additionally all wrenches are calibrated on a torque standard traceable to the National Institute of Standards Technology (N.I.S.T).

CONVERSION TABLE

To convert From	To	Multiply by
lb.in.	oz.in.	16
lb.in.	lb.ft.	.08333
lb.in.	kg.cm.	1.1519
lb.in.	kg.m.	.011519
lb.in.	N.m.	.113
lb.in.	dN.m.	1.13
lb.ft.	kg.m.	.1382
lb.ft.	N.m.	1.356
N.m.	dN.m.	10
N.m.	kg.cm.	10.2
N.m.	kg.m.	.102
oz.in.	lb.in.	.0625
lb.ft.	lb.in.	12
kg.cm.	lb.in.	.8681
kg.m.	lb.in.	86.81
N.m.	lb.in.	8.85
dN.m.	lb.in.	.885
kg.m.	lb.ft.	7.236
N.m.	lb.ft.	.7376
dN.m.	N.m.	.10
kg.cm.	N.m.	.09807
kg.m.	N.m.	9.807

FOR YOUR PERMANENT FILE

**WRENCH
MODEL
NUMBER** _____
**SERIAL
NUMBER** _____

OPERATION MANUAL

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TORQUE WRENCH**

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SAFETY MESSAGES



WARNING



Read operation manual completely before using torque instrument and store for future reference.



Wear safety goggles-both user and bystanders



- An out of calibration torque wrench can cause part or tool breakage
- Periodic re-calibration is necessary to maintain accuracy
- Do not exceed rated torque as overtorquing can cause wrench or part failure
- Do not use torque instrument to break fasteners loose



- Do not use cheater extension on the handle to apply torque
- Broken or slipping tools can cause injury



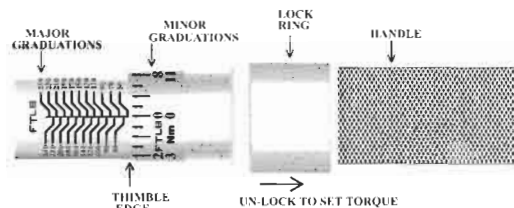
CAUTION - RATCHET HEAD

Ratchet mechanism may slip or break if dirty, mismatched or worn parts are used, or direction lever is not fully engaged. Ratchets that slip or break can cause injury.

MAINTENANCE / SERVICE

1. The torque wrench's internal mechanism is permanently lubricated during assembly. **Do not attempt to lubricate the internal mechanism.**
2. Clean torque wrench by wiping. **Do not immerse.**
3. Store torque wrench in protective case at its lowest torque setting. **Do not force handle below lowest setting.**

ADJUSTMENTS OF TORQUE SETTINGS



A To unlock handle hold tube and pull lock ring back allowing handle to turn CW or CCW.

B. Set wrench to desired torque as follows:

EXAMPLE - 64 ft. lbs.

1. Keep slight rearward pull on lock-ring during all adjustments.
2. Line up thimble edge with the "60" graduation cross line and zero with vertical line. Wrench is now set at 60 ft. lbs. (See Figure I)
3. Turn handle and set thimble graduation to "4" on vertical line. Wrench is now set at 64 ft. lbs. (See Figure II)



Figure I



Figure II

4. Lock handle by releasing back pressure on lock-ring until it clicks and handle doesn't turn.
5. To torque fastener, keep hand centered on the grip handle. Apply a slow steady force in the desired direction until a click/impulse is heard or felt. Stop pulling and allow the wrench to reset.



USE OF EXTENSIONS & ADAPTERS

When using an extension or adapter (increasing the effective length of the torque wrench) the output torque value will change. To calculate the new torque output of the wrench use the following formula:

$$TW = \frac{TA \times L}{L + A}$$

TA = Torque exerted @ end of adapter

L = Distance between square drive and hand position

TW = Wrench scale reading

A = Length of adapter or extension



A number of variables including the length of the adapter or extension, length of the wrench and variations in hand position on the wrench will affect the accuracy of the above calculation.