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Edition 2
August 2012

Manual Torque Wrench

Product Information

EN Product Information

ZH 产品信息

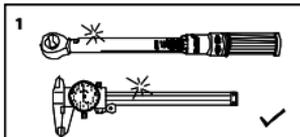


Save These Instructions

IR *Ingersoll Rand*

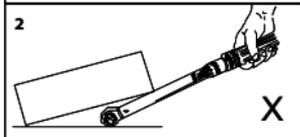
Read before you use

1. This torque wrench is a precision instrument intended to be used only to tighten screws, bolts and nuts to a desired torque.



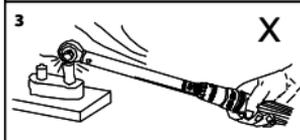
2. Do not use it as a "nut breaker", pry bar, hammer, or in lieu of a regular ratchet wrench.

3. Do not apply torque in excess of the maximum capacity of the wrench. Apply load on the grip only, and do not use any handle extension bars (a piece of pipe put over the grip).



4. Head Holder torque wrench should be used with IR heads. If using special heads, please set torque as formula on page 15.

5. Make sure that you adjust the wrench to the exact torque units your specifications call for, or you will severely under-torque or over-torque, causing severe damage to the equipment you are working on.



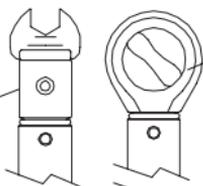
6. Do not disassemble the wrench for any reason. Highly stressed internal components may cause severe injury when released in an unintended manner.

7. The wrench should be re-calibrated periodically. The

calibration of the wrench should be checked at least once a year, after any abnormal handling or overloading, or after 5,000 cycles ("clicks").

Head types

Head Holder torque wrench holds different size Ratchet Heads



Hardened alloy steel housing

Minor Torque Scale: N.m or Lb.ft

Torque wrench indicates when the preset torque has been reached by releasing for a few degree of free travel, which is usually accompanied by an audible "click" signal. 45-tooth reversible ratchet: wrench operates in both clockwise and counterclockwise direction.

EASY TO READ SCALES

Major Torque Scale: N.m or Lb.ft

Twist shifter cap clockwise for counterclockwise direction

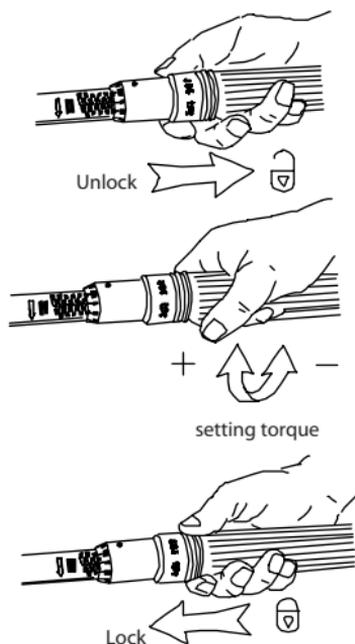


Twist shifter cap counterclockwise for clockwise direction

Pull/push style lock knob secures selected torque from accidental change, easy to lock and unlock

All-metal durable knurled grip

Setting Torque

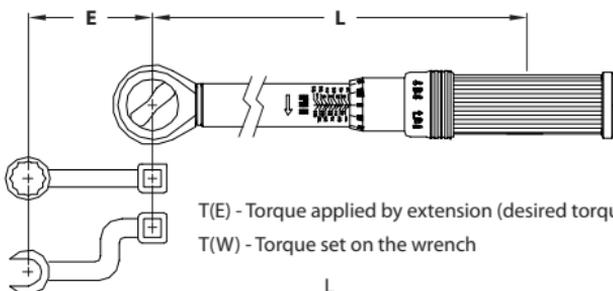
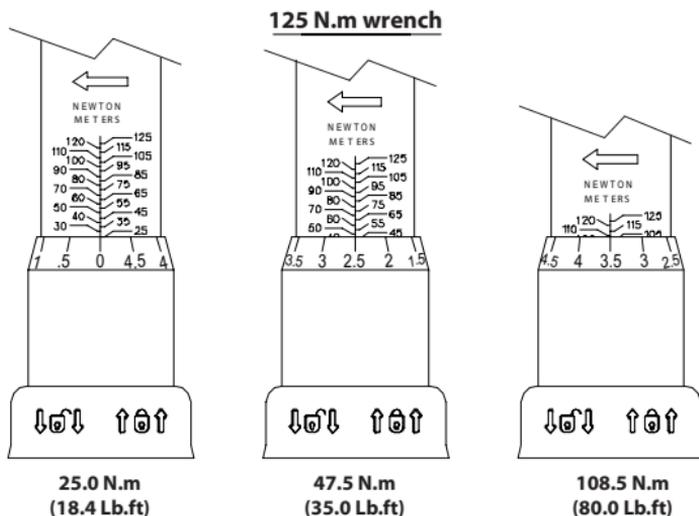


1. Pull the lock knob out downside. The locking and unlocking directions are indicated by appropriate icons on the lock knob.
2. Turn the grip in the clockwise direction to increase the torque, and in the counterclockwise to decrease it.
3. The major scales show the amount of torque in both primary and secondary units. The minor scale shows fine increments in primary units. See examples on the next page.
4. Push the lock knob back to lock the grip. The minor scale may move a small amount to either side of the centerline mark without affecting the accuracy of your setting.

Use of Extensions

Extensions that put the center of the fastener being tightened away from the centerline of the ratchet drive, result in the effective torque being different from the one shown on the wrench. Consequently, the torque set on the wrench must be corrected using the formula shown on the next page.

Examples of Setting



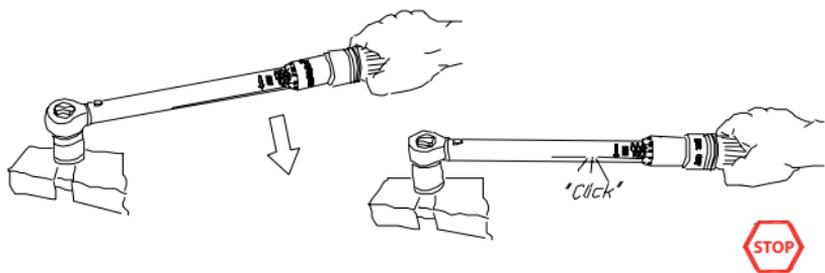
$T(E)$ - Torque applied by extension (desired torque)

$T(W)$ - Torque set on the wrench

$$T(W) = T(E) \frac{L}{L+E}$$

Applying Torque

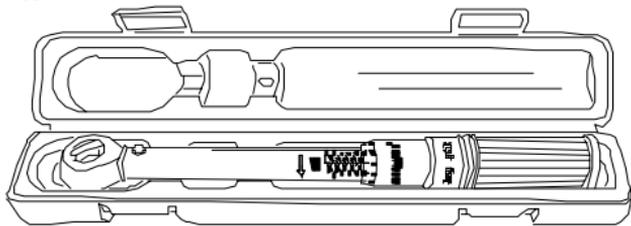
1. Insert an appropriate socket or drive attachment onto the square drive of the ratchet and onto the fastener you want to tighten.
2. Apply hand pressure to the grip, and **ONLY TO THE GRIP**. You may support the wrench at the ratchet head with the other hand to steady it, especially when using long socket extensions, without appreciably affecting the accuracy of the wrench.
3. If, due to the required effort, you need to use both hands, put the other hand on the top of the first hand, never on any other part of the wrench.
4. Apply slow and steady pull or push until the wrench momentarily releases, with or without a distinct "click" sound. Release the pressure right at this point. **DO NOT OVER TORQUE!**



Safety warning

Overtorqued or defective fasteners, sockets, as well as the wrench itself, may suddenly break causing you to lose balance, fall, or to suffer other trauma. Be sure that you have firm footing, are properly balanced, and if necessary are using appropriate harness, back support, or other safety device.

Maintenance

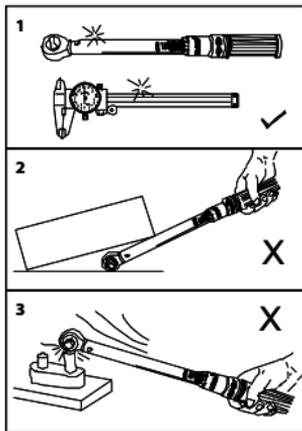


1. When not in use, adjust the wrench to its lowest reading (except on Preset and Electronic torque wrenches), and store it in the provided case.
2. With the exception of the ratchet mechanism, do not lubricate the wrench. The ratchet mechanism may be lubricated as needed with a few drops of light machine oil.
3. Do not use acetone or other solvents to clean the wrench, use window cleaner or denatured alcohol applied with a clean cloth instead.
4. With the exception of the ratchet mechanism, there are no user-serviceable parts. Do not disassemble the torque wrench for any reason. When service is needed, send the wrench to the nearest factory-authorized service center.

Certification

This torque wrench is certified to have been calibrated prior to shipment to the accuracy of $\pm 4\%$ in the clockwise direction.

扭力扳手说明



1、这种扳手是一种很精密的仪器。它仅用于将螺丝、螺栓和螺母拧紧到所需的力矩上。

2、不要将其用来撬螺母,不能用来做撬棍或替代一般的棘轮扳手。

3、不能将扳手当榔头使用。使用时不要超过扳手的最大扭矩。

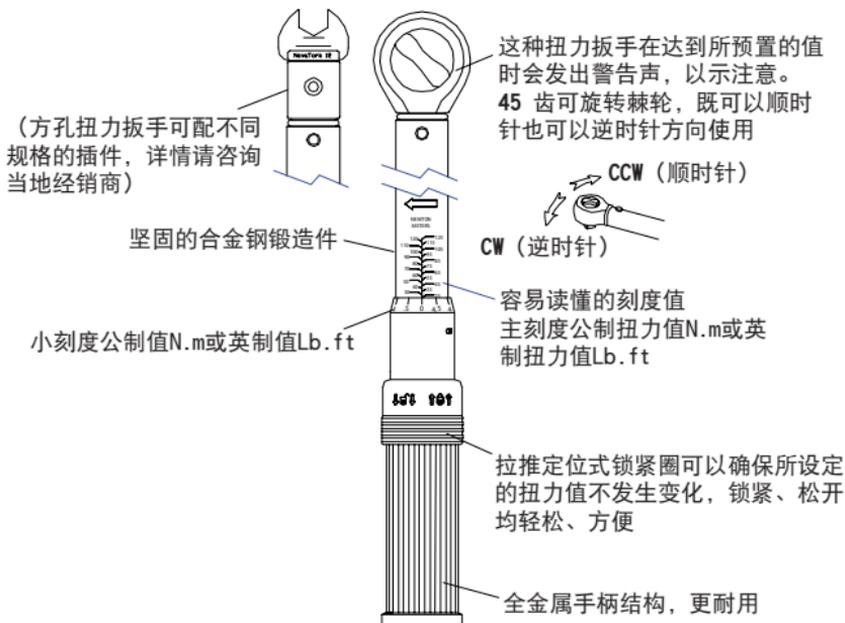
4、只能在手柄负荷的范围内使用,不要在该产品上附加任何的接杆;方孔扭力扳手所需插件建议使用本公司标准插件,若自配插件,请按第5页公式计算扭力值。任何不正确的使用都会引起误差,甚至可能会损坏扳手。

5、扳手的扭力值必须调整到与所需扭力值相同。如果你所调整的扭力值过大或过小都会严重损坏你扳手所拧的装备。

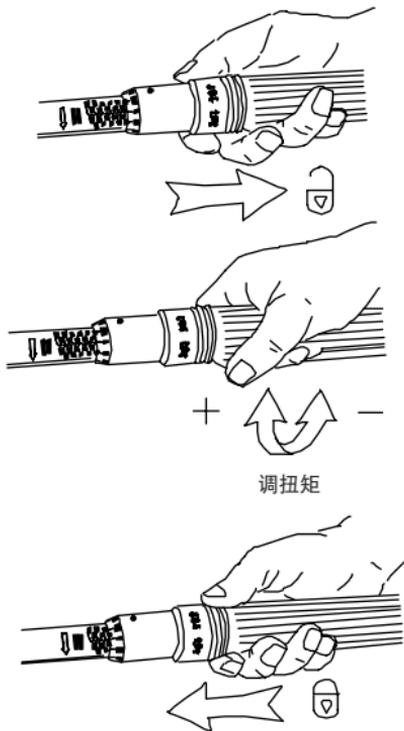
6、不要随便拆装此扳手。不正确的拆装可能会导致内部结构的受损而使扳手严重损坏。

7、必须对其进行定期的校验。至少一年一次,非正常的使用,或使用了五千次后也有必要校验,工厂可根据自身的使用频率制定相应的校验周期。

特点



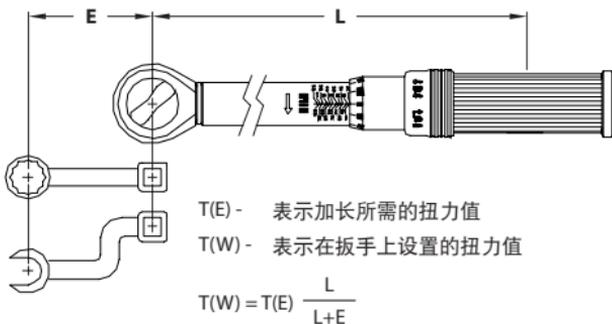
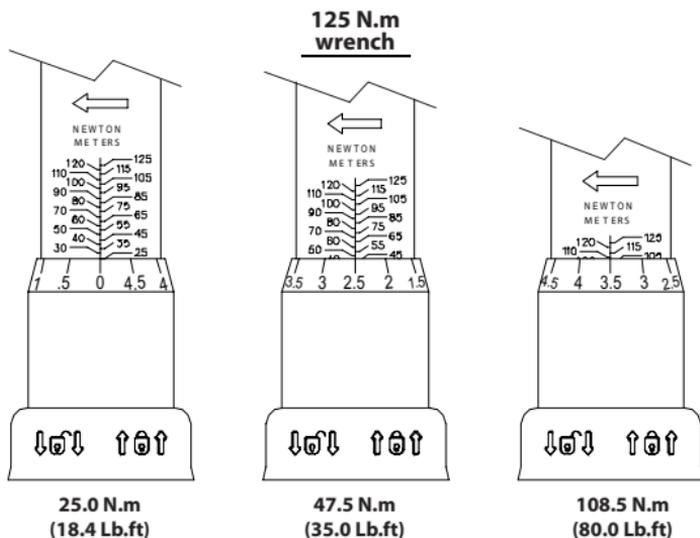
扭力值的设置



- 1、将锁紧圈向下拉。锁住的状态和打开的状态在锁环上有正确的图标显示。
- 2、把手柄顺时针方向旋转就会增加扭力值，逆时针就会减少。
- 3、大尺度显示了总扭力的公制和英制值，小尺度显示了扭力精确的分段。请看下一页的例子。
- 4、将锁紧圈向上推，锁住手柄。小尺度的指示标此时应在中间的位置向两边稍稍偏移，但是不会影响你设置的精确度。

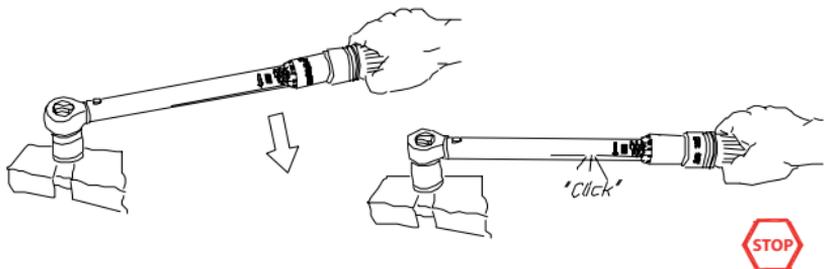
加长扭力扳手

加长驱动头(如下页图示)，从而会使扳手上的扭力值和实际所需的扭力值有差别。因此，扳手上的扭力值应该按照下页的公式调整。



扭力扳手的应用

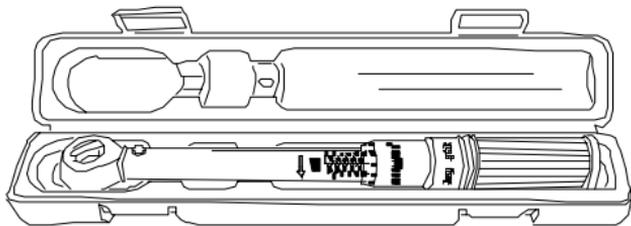
- 1、将一个合适的套筒或者其他相匹配物插入棘轮转头中，然后将其套入你所要扭紧的紧固件上。
- 2、用力握住手柄（只能握住手柄）。你需要另外一只手去按住棘轮的头部以此来固定扳手（尤其在使用了加长套筒后）。以防影响扳手的精确度。
- 3、如果你想达到预期的效果，你的双手需配合作业。将一只手放在另一只手的上面，千万不要放在扳手的其他地方。
- 4、均匀的施加压力直到扳手有所松动，或者发出一个咯哒的警告声。此时马上松手，扭力值不要设置得太大。



安全警告

扭力值过大或者紧固件、套筒和扳手有瑕疵可能会突然断裂，使你失去平衡、跌倒或者受到其他的创伤。确定在作业时你已经站稳，把握好了平衡。如果有必要可以有适当的保护，支持或者其他的安全设施。

维护



- 1、不使用时，请将扳手调到最小扭力值，并装入指定的盒子里。
- 2、除了棘轮机构之外不要润滑扳手的其他地方。需要时可以滴入棘轮机构少许的机油。
- 3、不要用丙酮或其他溶剂去清洗扳手。用干净的抹布蘸取少量酒精清洗。
- 4、除了棘轮机构之外的其他部件，使用者不得自行拆卸。

出厂测试

该扭力扳手出厂前经测试调整到 $\pm 4\%$ 的误差精度。

Notes:

Notes:



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