



Ratchet Head



Micrometer Adjustable



Single Setting

Ratchet Head (in.-lb. Graduations)					
Model No.	Torque Range		Graduations		Drive Size
	in.-lb.	Nm	in.-lb.	Nm	
TCI-150RA *	30-150	3.4-17.0	1.0	0.11	1/4"
TCI-150RA-3/8 *	30-150	3.4-17.0	1.0	0.11	3/8"
TCI-250R *	50-250	5.7-28.3	1.0	0.11	3/8"
TCI-750R	150-750	-----	5.0	-----	3/8"
TCI-750R-1/2	150-750	-----	5.0	-----	1/2"

* Note: Dual Scale Model

Ratchet Head (ft.-lb. Graduations)					
Model No.	Torque Range		Graduations		Drive Size
	ft.-lb.	Nm	ft.-lb.	Nm	
TCI-75FRN *	15-75	20.3-102	0.5	0.7	3/8"

* Note: Dual Scale Model

Micrometer Adjustable Wrench (in.-lb. Graduations)					
Model No.	Torque Range		Graduations		Drive Size
	in.-lb.	Nm	in.-lb.	Nm	
CH-150 *	30-150	3.4-17.0	1.0	0.11	---

* Note: Dual Scale Model

Micrometer Adjustable Wrench (ft.-lb. Graduations)					
Model No.	Torque Range		Graduations		Drive Size
	ft.-lb.	Nm	ft.-lb.	Nm	
CH-75F *	15-75	20.3-102	0.5	0.7	---
CH-150F *	30-150	40.7-203	1.0	1.4	---

* Note: Dual Scale Model

Single Setting (Preset) Wrench					
Model No.	Torque Range				Drive Size
	in.-lb.	Nm	ft.-lb.	cm-kg	
CHA-6	10-50	1.2-6	0.9-4.5	12-60	---
CHA-11	20-100	2.2-11	1.6-8	22-110	---
CHA-23	40-200	4.6-23	3.4-17	46-230	---
CHB-55	100-500	11-55	8-40	112-560	---
CHB-85	150-750	17-85	12.5-62.5	172-860	---
CHB-110	200-1000	22-110	16-80	224-1120	---
CHB-170	300-1500	34-170	25-125	346-1730	---
CHB-225	400-2000	45-225	33-165	460-2300	---

Note: Single setting wrenches do not have a scale and must be set on a torque tester.

“Click” Type Torque Sensing Wrenches

Micrometer Adjustable Torque Sensing Wrenches:

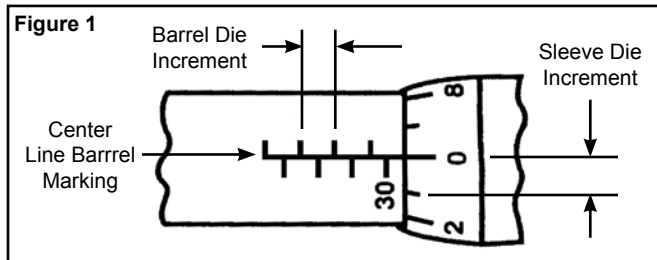
These torque sensing wrenches automatically signal by *SOUND* and *IMPULSE* when the desired torque is reached. These wrenches are calibrated for right hand (clockwise) and left hand (counter clockwise) torque applications.

Setting a Torque:

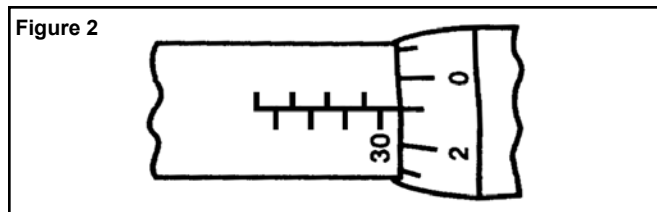
Unlock: Pull back, fully, and hold the automatic lock collar. While holding the lock collar, advance the handle up the barrel by turning it in a clockwise direction or counter clockwise to move down the barrel. The barrel is marked in even increments of torque and one complete turn of the handle will change the torque setting one complete barrel increment.

If the barrel is marked in increments of ten, each complete turn of the handle would change the torque setting by ten. The sleeve die is marked around the circumference with intermediate increments.

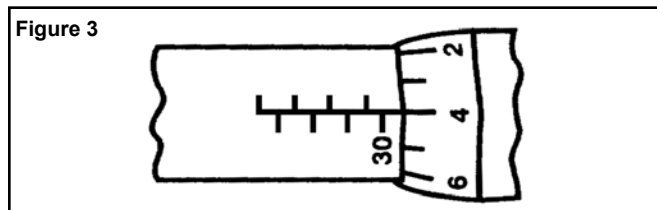
The sleeve die markings start at 10 and are divided into ten equal marks. Every other mark is numbered. To set at an even barrel increment the zero marking on the sleeve die should line up with the center of the barrel marking, see Figure 1.



By advancing the handle one sleeve die mark you have increased the torque an amount equal to 1/10th the increase between two barrel increments, see Figure 2.



If the barrel increments are 10, 20, etc. and the original setting was 30, by moving the handle on the sleeve die one increment you increase the torque an amount equal to 1. Your new torque setting would be 31. If you turned the handle four (4) sleeve die marks in a clockwise direction from zero you have advanced the torque four (4) increments and your new torque setting would be 34, see Figure 3.



Lock:

When you have lined up a sleeve die mark with the center line barrel mark, you can release the lock collar and it will automatically move forward and lock the handle to the barrel.

To Use:

Attach the appropriate socket wrench or adapter to the torque wrench square drive and apply to the application. Hold the torque wrench by the padded handle and tighten the fastener. Apply force with a steady, smooth action.

Do not apply force by holding any part of the wrench, other than the padded handle. Do not use an extension or other lever aid on the handle. When the torque setting is reached, the wrench will momentarily release with a feel impulse and audible click. The wrench will move freely through a small arc of approximately two (2) degrees. At this point the set torque has been achieved and force on the handle must be released. The wrench will automatically snap back to its original position and is ready for the next torque application.

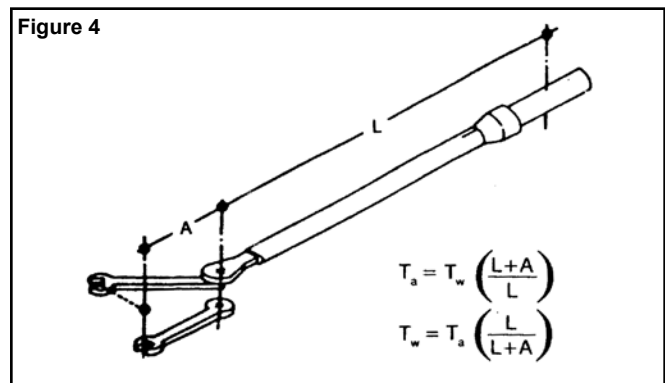
NOTE: When set at the lower torque range, the audible signal will be much lower. However, there is an audible sound which in conjunction with the feel impulse should present no difficulty in operating the wrench at the lower scale settings.

Torque Extensions:

When an extension is used on the drive end of the torque wrench, the torque applied at the end of the extension is **NOT** the same as the torque setting on the wrench. The method of determining the actual torque produced using various types of extensions is as follows:

- T_a = Torque applied at the end of extension
- T_w = Torque Wrench setting
- L = Length of wrench (center of handle to drive)
- A = Length of extension *

* Note: Dimension always taken parallel to the line of the wrench regardless of extension configuration.



NOTE: To obtain the actual torque values as calculated, force must be applied only at the center point of the handle.

“Click” Type Torque Sensing Wrenches

Torque Settings for Dual Scale Models

TCI-150RA, TCI-150RA-3/8, TCI-250R, TCI-75FRN, CH-150, CH-75F and CH-150F:

The torque settings of these wrenches are read from two micrometer scales: Major and Fine. These wrenches can be utilized in Foot-Pounds (ft-lbs) or Inch-Pounds (in-lbs) and Newton meters (Nm) applications. Therefore there are two major and fine scales. The ft-lb or in-lb and Nm scales are on opposite sides of the barrel.

Scale increments:

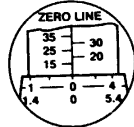
TCI-75FRN and CH-75F:

Major ft-lb = 5 ft-lbs

Fine ft-lb = 0.5 ft-lbs

Major Nm = 6.8 Nm

Fine Nm = 0.7 Nm (rounded)



TCI-150RA, TCI-150RA-3/8, TCI-250RA and CH-150:

Major in-lb = 10 in-lbs

Fine in-lb = 1 in-lbs

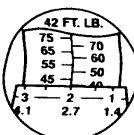
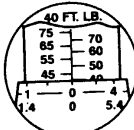
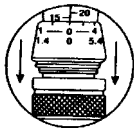
Major Nm = 1.1 Nm

Fine Nm = 0.11 Nm (rounded)

Setting the wrench is accomplished by considering all torque settings as being made up of two parts, major scale plus fine scale. *Example: A torque setting of 42 ft-lbs would be 40 ft-lbs on the major scale plus 2 ft-lbs on the fine scale.*

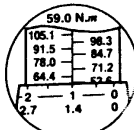
These wrenches can be set to the desired torque as follows:

1. Grasp the locking collar between the thumb and forefinger and pull it toward the wrench handle as far as possible. Hold it in this position.
2. While holding the barrel of the wrench securely in one hand, rotate the handle until the major scale increment below the torque desired is even with the edge of the sleeve and the 0 increment on the sleeve is in line with the zero line of the barrel.
3. Rotate the handle clockwise until the fine scale torque increment desired lines up with the zero line on the barrel. Release the lock collar and the wrench is automatically locked at the torque setting selected.



NOTE: The lock collar will not lock until an increment line on the sleeve lines up with the zero line on the barrel.

4. For Newton meter torque settings, use the same procedure as described in steps 1-3 but using the Newton meter major scale on the barrel and the fine scale on the sleeve. The illustration shows a setting of 59.0 Nm. This can be accomplished by setting 57.6 on the major scale plus 1.4 on the fine scale. *NOTE: The fine scale values have been rounded to the nearest whole decimal.*



Single Setting (Preset) Torque Wrenches:



These wrenches are designed so when torque is applied to a fastener, it will momentarily release and signal by impulse and audible click (or snap) that the preset torque value has been reached.

The preset torque wrench is calibrated and sealed at the factory to the torque value specified by the customer. Wrenches are also available not preset or sealed when requested. Wrenches preset at the factory are set to an accuracy tolerance of $\pm 4\%$ of the specified torque value.

To Use:

Attach the appropriate adapter to the torque wrench and apply to the application. Hold the torque wrench by the padded handle and tighten the fastener. Apply force with a steady, smooth action.

Do not apply force by holding any part of the wrench, other than the padded handle. Do not use an extension or other lever aid on the handle. When the torque setting is reached, the wrench will momentarily release with a feel impulse and audible click (or snap). The wrench will move through a small arc about the pivot pin. At this point the set torque has been achieved and force on the handle must be released. The wrench will automatically snap back to its original position and is ready for the next torque application.

CAUTION: Do not apply force after the wrench releases, clicks (or snaps) at the set torque. If the fastener is over torqued, loosen it and repeat the operation.

Always actuate the wrench a few times before use and after a period when the wrench has not been in use.

To Calibrate or Re-Calibrate:

1. Calibration of this torque wrench should only be done on a certified Torque Tester for the required torque range.
2. Using a suitable adapter, attach the wrench to the torque tester.
3. Using a hex key, loosen the lock plug in the rear of the handle.
4. Using a hex key (CHB models) or screwdriver (CHA models), turn the adjusting plug clockwise to increase the torque value or counter clockwise to decrease. Turn the adjusting plug in small increments at a time. Actuate the wrench by applying force on the handle and observe the readings on the torque tester. Continue this procedure until the desired torque setting has been reached.
5. Tighten the lock plug and recheck the torque reading on the torque tester.
6. Make sure the seal washer is in place before applying any liquid seal over the lock plug.

Sales & Service Centers

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Dallas, TX
**Apex Tool Group
Sales & Service Center**
1470 Post & Paddock
Grand Prairie, TX 75050
Tel: 972-641-9563
Fax: 972-641-9674

Detroit, MI
**Apex Tool Group
Sales & Service Center**
2630 Superior Court
Auburn Hills, MI 48326
Tel: 248-391-3700
Fax: 248-391-7824

Houston, TX
**Apex Tool Group
Sales & Service Center**
6550 West Sam Houston
Parkway North, Suite 200
Houston, TX 77041
Tel: 713-849-2364
Fax: 713-849-2047

Lexington, SC
Apex Tool Group
670 Industrial Drive
Lexington, SC 29072
Tel: 800-845-5629
Tel: 803-951-7544
Fax: 803-358-7681

Los Angeles, CA
**Apex Tool Group
Sales & Service Center**
15503 Blackburn Avenue
Norwalk, CA 90650
Tel: 562-623-4457
Fax: 562-802-1718

Seattle, WA
**Apex Tool Group
Sales & Service Center**
2865 152nd Avenue N.E.
Redmond, WA 98052
Tel: 425-497-0476
Fax: 425-497-0496

York, PA
**Apex Tool Group
Sales & Service Center**
3990 East Market Street
York, PA 17402
Tel: 717-755-2933
Fax: 717-757-5063

Canada
**Apex Tool Group
Sales & Service Center**
5925 McLaughlin Road
Mississauga, Ont. L5R 1B8
Canada
Tel: 905-501-4785
Fax: 905-501-4786

Germany
Apex Tool Group
GmbH & Co. OHG
a company of
Apex Tool Group, LLC
Industriestraße 1
73463 Westhausen
Germany
Tel: +49 (0) 73 63 81 0
Fax: +49 (0) 73 63 81 222

England
Cooper Power Tools
GmbH & Co. OHG
a company of
Apex Tool Group, LLC
C/O Spline Gauges
Piccadilly, Tamworth
Staffordshire B78 2ER
United Kingdom
Tel: +44 1827 8741 28
Fax: +44 1827 8741 28

France
Cooper Power Tools SAS
a company of
Apex Tool Group, LLC
25 rue Maurice Chevalier
77330 Ozoir-La-Ferrière
France
Tel: +33 1 6443 2200
Fax: +33 1 6443 1717

China
Cooper (China) Co., Ltd.
a company of
Apex Tool Group, LLC
955 Sheng Li Road,
Heqing Pudong, Shanghai
China 201201
Tel: +86-21-28994176
Fax: +86-21-51118446

Mexico
Cooper Tools
de México S.A. de C.V.
a company of
Apex Tool Group, LLC
Vialidad El Pueblito #103
Parque Industrial Querétaro
Querétaro, QRO 76220
Mexico
Tel: +52 (442) 211-3800
Fax: +52 (442) 103-0443

Brazil
Cooper Tools Industrial Ltda.
a company of
Apex Tool Group, LLC
Av. Liberdade, 4055
Zona Industrial - Iporanga
SP Brazil
Tel: +55 15 2383929
Fax: +55 15 2383260

Hungary
Cooper Tools Hungaria Kft.
a company of
Apex Tool Group, LLC
Berkenyefa sor 7
Pf: 640
9027 Győr
Hungary
Tel: +36 96 66 1383
Fax: +36 96 66 1135

Apex Tool Group, LLC
1000 Lufkin Road
Apex, NC 27539
Phone: 919-387-0099
Fax: 919-387-2614
www.apextoolgroup.com

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