

CRAFTSMAN®

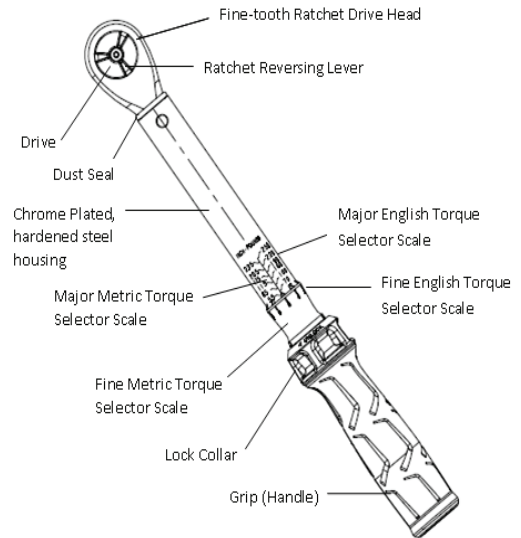
Clicker Style Microtork®

Wrench

**Owner's Manual Model No's:
31423, 31424, 31425**

SAFETY RULES

1. STUDY THIS BOOKLET CAREFULLY BEFORE ATTEMPTING TO OPERATE THIS WRENCH.
2. Never apply more torque than the maximum scale reading
3. This torque wrench is designed for manual tightening of threaded fasteners only. **DO NOT USE IT AS A NUT-BREAKER OR FOR ANY OTHER PURPOSE.**
4. Overtorqued or defective fasteners and sockets may suddenly break. Ratchets that are improperly engaged, worn out, damaged, or overtorqued may slip or break. **TO PREVENT INJURY, KEEP PROPER FOOTING AND BALANCE AT ALL TIMES. DO NOT USE THE WRENCH IN PLACES FROM WHICH YOU MAY FALL OR SLIP, OR AROUND OPERATING MACHINERY.**
5. This wrench will not prevent you from applying more torque than set – it is not a torque limiting tool. At low settings the release is gentle and there usually is no audible 'click' signal. Learn how different amounts of torque 'feel', so you will reduce the possibility of damage and/or injury due to accidental overtorquing.
6. **APPLY FORCE TO THE GRIP ONLY. DO NOT USE 'CHEATER BARS'** (a piece of pipe placed over the hand grip).
7. There are no user-serviceable components inside the wrench. Disassembling the wrench or making any adjustments will result in the loss of accuracy, and will void the warranty.



OPERATING INSTRUCTIONS TO SET TORQUE

1. Unlock the grip by turning the lock collar in the unlock direction.
2. Rotate the grip until the desired torque is indicated on the micrometer scale. See examples of readings below.
3. Lock the grip by turning the lock collar in the lock direction.

WARNING: Use only hand pressure-pliers, wrenches, or other tools may over tighten and damage the lock collar

*Various models and capacities of wrenches are illustrated. Though they might be different from your particular wrench, the principle of obtaining the scale reading is the same.

**By necessity, metric scales are not calibrated in even numbers. Consequently, when using Metric scales, set the wrench at a reading closest to the desired torque.

WARNING: 1. Do not attempt to turn the grip while it is locked. 2. Do not turn the grip either below the lowest scale reading or above the highest scale reading.

Example of Torque Settings*
English Scales



40 In.-Lbs. (40+0) 126 Ft.-Lbs. (120+6) 36.5 Ft.-Lbs. (35+1.5)
(250) In.-Lbs. wrench) (150 Ft.-Lbs. wrench) (75 Ft.-Lbs. wrench)

Example of Torque Settings*
Metric Scales



20.90 N m (20.56+.34) 78.7 N m (74.6+4.1)
(250 In.-Lbs. wrench) (150 Ft.-Lbs. wrench)

All other torque values must be converted to these units first: *Foot Pounds can also be obtained by dividing Inch Pounds by 12

GENERAL CONVERSION TABLE FOR TORQUE UNITS

Multiply Number of To Obtain	Inch Ounces	Inch Pounds	Foot Pounds	Centimeter Kilograms	Meter Kilograms	Newton Meters
Inch Ounces	1	16	192	13.89	1389	141.6
Inch Pounds	.0625 ¹	1	12	.8680	86.80	8.851
Foot Pounds	.005208	.08332 ²	1	.07233	7.233	.7376
Centimeter Kilograms	.07201	1.152	13.83	1	100	10.20
Meter Kilograms	.0007201	.01152	.1383	.01	1	.1020
Newton Meters	.007061	.1130	1.356	.09806	9.806	1

¹ or divide by 16

² or divide by 12

TO APPLY TORQUE

1. Attach the proper socket or other attachment to the drive. Set the reversing lever for the proper direction of the operation.

NOTE: If special attachments are used, torque setting must be corrected in accordance with the directions given below in the Extensions section.

- Place the socket or attachment onto the fastener to be torqued.
- Utilizing the ratcheting head, you may 'spindown' the fastener until resistance is felt

4. Holding the wrench BY THE GRIP ONLY, *apply SLOW AND STEADY pull until a momentary release impulse is felt. Release tightening pressure immediately when the release is felt.

WARNING: At low torque settings the release is gentle and there usually is no audible 'click' signal. Learn how the release feels BEFORE you torque to avoid accidental over-tightening or damage.

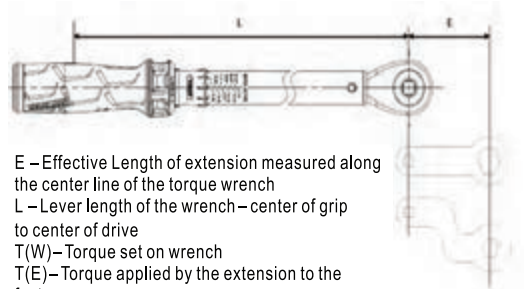
*When using long sockets or extensions, the wrench may be supported at the head (only at the head) with only negligible effects on accuracy.

5. The wrench resets automatically and is ready for the next operation.

EXTENSIONS

At times, it is impossible or impractical to use regular sockets, (a good example being the tightening of threaded tubing connectors), and a special attachment must be utilized. Such attachments change the calibration of the torque wrench, and it is necessary to calculate the correct settings using the following formulas.

NOTE: Regular socket extensions which extend directly under the drive head along the axis of rotation of the ratchet do not affect the calibration of the torque wrench.



E – Effective Length of extension measured along the center line of the torque wrench

L – Lever length of the wrench – center of grip to center of drive

T(W) – Torque set on wrench

T(E) – Torque applied by the extension to the fastener

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

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

CARE AND MAINTENANCE

1. The CRAFTSMAN MICROTORK® Torque Wrench is a precision instrument and should be handled and stored with care. *It should never be used as a hammer or prybar.*
2. DO NOT apply more torque than the rated capacity of the torque wrench. DO NOT use it as a nut-breaker!!
3. When the wrench is not in use, keep it set below 25% of capacity. If you leave the wrench set at a reading over 50% of the wrench capacity for more than a few hours, set the wrench at the lowest setting and leaves it for a few minutes before using it again.
4. The wrench is lubricated for life with a special lubricant. Do not oil it in any manner except that the ratchet head may be lubricated as needed for smooth operation.
5. The plastic grip is not affected by petroleum products, but it will be damaged by Acetone and certain industrial solvents. It may be cleaned with a clean cloth wetted in mineral spirits or denatured alcohol. *Never immerse the wrench or any portion of it in any liquid.*
6. Periodically, the wrench should be checked for accuracy. This should be done if the wrench is used frequently or is subjected to abnormal handling or storage. In assembly line type of usage, the wrench should be checked every 5,000 torque applications. Calibration service is available by returning it to your Sears store.
7. With the exception of the ratchet mechanism, the wrench is not user serviceable. *Return it to the nearest Sears store for service.*
8. The ratchet head may be repaired by ordering kits #3297 for 3/8" drive and #32973 for 1/2" drive models from Sears, Dept.98, Source 449.

SPECIFICATIONS

Model No.	31423	31424	31425
Drive	3/8" Ratchet	3/8" Ratchet	1/2" Ratchet
Capacity	25-250 in-lbs 3.61-29.03 N-m	10-75 ft-lbs 16.9-105.1 N-m	20-150 ft-lbs 33.9-210.1 N-m
Increments	1 in-lbs .11 N-m	.5 ft-lbs .7 N-m	1 ft-lbs 1.4 N-m
Dimensions	13.6"x2.0"x2.0"	19.3"x2.0"x2.3"	22.6"x2.0"x2.2"
Weight, lb/oz (gm)	2/6 (1080)	2/15 (1356)	3/10 (1651)
Lever Length*	Varies with different torque settings		

*Center of drive to center of handle

ACCURACY: +/-4% on clockwise or right-hand readings greater or equal to 20% of capacity. Complies with American National Standard B107.14M and International Standard ISO 6789.

NOTE: The wrench will not actuate or 'click' when used in the counter-clockwise or left-hand direction

CRAFTSMAN ONE YEAR FULL WARRANTY

FOR ONE YEAR from the date of purchase, this product is warranted against any defects in material or workmanship. A defective product will receive free repair or replacement if repair is unavailable. If this product needs recalibration within ninety (90) days from the date of purchase, it will be recalibrated free of charge. After 90 days you must pay for recalibration.

For warranty coverage details to obtain free repair, replacement or recalibration, visit the web site: www.craftsman.com

This warranty is void if this product is ever used while providing commercial services or if rented to another person.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears Brands Management Corporation, Hoffman Estates, IL 60179

P/N: 10203B

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