

USER'S MANUAL

Snap-on®

*QTSP135 Series
Preset Torque
Limiting Screwdriver*



Specifications

QTSP135

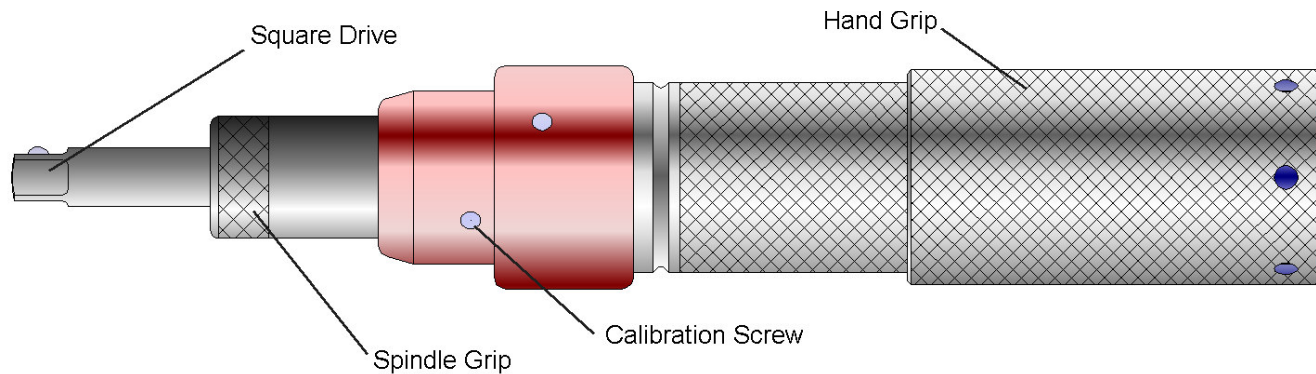
Torque Range 5-35 lb.in.
Factory Pre-Set 15 lb.in.
Square Drive 1/4"
Releases Per Revolution 8
Rotation CW & CCW
Length 7"
Weight 13½ oz

The guaranteed accuracy of this precision measurement tool (within 3% of setting in both directions from 5-35 lb.in.) exceeds the requirements of MIL-W-26497C and ASME B107.14M-1994.

Fastener	Type	Minimum Tensile Strength	Material	PRODUCTION TORQUE GUIDE							
				Body size of Outside Diameter							
				2	3	4	5	6	8	10	1/4
	S.A.E 2 Steel	74000 P.S.I	Low Carbon								6
	S.A.E. 5 Steel	120000 P.S.I	Medium Carbon Heat Treat								10
	S.A.E. 7 Steel	133000 P.S.I.	Medium Carbon Alloy								13
	S.A.E. 8 Steel	150000 P.S.I.	Medium Carbon Alloy								14
	Socket Head Cap Screw	160000 P.S.I.	High Carbon Quenched Tempered								16
	Socket Set Screw	212000 P.S.I.	High Carbon Quenched Tempered					9*	16*	30*	70*
	Machine Screw Stainless		18-8	2.6*	4*	5.5*	8*	10*	20*	23*	75*
	Machine Screw Stainless		316	2.7*	4*	5.7*	8*	10*	22*	25*	80*
	Machine Screw Yellow Brass	60000 P.S.I.	CU 63 ZN 37	2*	3.3*	4.4*	6.4*	8*	16*	20*	65*
	Silicone Bronze Type "B"	70000 P.S.I.	CU 96 ZNI-5 Min.	2.3*	3.7*	4.9*	7.2*	10*	19*	22*	70*
	Machine Screw Aluminum	55000 P.S.I.	CU 3.8-4.9 1.2-1.8 MN .3-.9	1.4*	2.1*	2.9*	4.3*	5.4*	12*	15*	46*
	Machine Screw Monel	82000 P.S.I.	NI 67 CU 30 FE 1.4	2.5*	4*	5.5*	8*	11*	21*	27*	87*
	Sems Heat Treated Steel	120000 P.S.I.	1018 1022	4*	5*	7*	11*	15*	27*	37*	90*
	Studs	Use SAE 2.5 and 8 values when grade is known, with nut of sufficient strength.									
	Tapping Screw	Set up joint as it will be in production. Use 70% of over-torque failure as production specifications.									
All figures are POUND FEET except those marked with an ASTERISK (*) WHICH ARE pound inches. These values are for lubricated fasteners.											

THREADED FASTENER TENSION GUIDE					
(Figures Represent Pounds of Clamping Force)					
Stress Area	0.0091	0.0141	0.0175	0.0318	0.0524
Outside Diameter	No.6	No.8	No.10	1/4"	5/16"
Threads Per Inch	32	32	24	20	18
Torque: 5 lb.in.	205	157			
10 lb.in.	410	316	315		
20 lb.in.	820	632	630	337	
40 lb.in.		1264	1264	674	541
80 lb.in.				1348	1082
10 lb.ft.				2043	1625
20 lb.ft.				4092	3250
40 lb.ft.					6503
In some cases it may be desirable to know the total clamping force obtained for a given torque. Values are approximate. SAE 30 engine oil was used as lubricant. Use of high stress lube may increase value 20% or more. Highest values for a given size may only be obtained with heat treated bolts having minimum tensile strengths of 150,000 P.S.I. or more.					
* Stress area is calculated as the area of the circle whose diameter is the mean between the root and pitch diameters. This closely approximates the actual stress condition. Maximum theoretical clamping force cannot be obtained from threaded fasteners. Additional stresses to the fastener are caused by the torsional forces of tightening.					

GENERAL TORQUE SPECIFICATION CHART FOR I.F.I.*				
METRIC FASTENERS** (when SAE10 oil is used as a lubricant)				
Minimum Tensile Strength Mpa	400	420	520	
Proof Load MPa	225	310	380	
Property Class	4.6	4.8	5.8	
Bolt Diameter	Torque: Newton Metre			
metric	inch			
5mm	0.197	2.9	4	5
6mm	0.236	5	-	-
*** Megapascal				
** Note: Use only when manufacturer's specifications are not available, these values are for stiff metal-to-metal joints and are based on 90% of proof load. DO NOT USE for gasket joints or joints of soft materials				
* I.F.I. = Industrial fasteners Institute.				



Safety Warnings & Cautions:

- ⚠ **1. This tool is designed for hand use. Do not connect to power equipment.**
- ⚠ **2. This tool is a precision instrument. Physical abuse may alter its accuracy.**
- ⚠ **3. Do not immerse this tool in liquids or cleaners.**

SETTING THE TORQUE RELEASE VALUE

To discourage unauthorized adjustment of the torque release value, the QTSP135 has no reference scale for torque setting. Checking or adjusting of the release mechanism must be done using a torque tester as a standard. The torque tester (due to the dynamic nature of the releasing mechanism, as with all click wrenches) must have a low inertia reaction element that can accurately track the torque release curve of the screwdriver. Applications of the screwdriver (to achieve accurate test readings) must be made reasonably slow and very smooth.

The TBT600 digital torque tester and TBTT12 transducer are recommended for setting the QTSP135.

The QTSP135 will be set to release at 15 Lb. In. from the factory unless another setting is specified.

To change the torque setting, loosen the calibration screw. Rotate the spindle grip clockwise (in) to increase readings or counterclockwise (out) to decrease readings. When set to the proper value, tighten the calibration screw and re-test.

TORQUING FASTENERS

With the driver and the correct size 1/4" drive socket attachment properly aligned with the fastener, rotate the driver in the "tightening" direction. As you approach the desired torque, make sure the rotation is slow and smooth. When the set torque is reached, you will feel the torque mechanism release. It will rotate freely for about 25 degrees.

MAINTENANCE

The QTSP135 torque screwdriver does not require any maintenance. Calibration should be checked periodically.

CONVERSION OF VARIOUS UNITS OF TORQUE

Convert			Convert		
From	To	Multiply	From	To	Multiply
lb.in.	oz.in.	16	oz.in.	lb.in.	.0625
lb.in.	lb.ft.	.08333	lb.ft.	lb.in.	12
lb.in.	kg.cm.	1.1519	kg.cm.	lb.in.	.8681
lb.in.	kg.m.	.011519	kg.m.	lb.in.	86.81
lb.in.	N•m	.133	N•m	lb.in.	8.85
lb.in.	dN•m	1.13	dN•m	lb.in.	.885
lb.ft.	kg.m.	.1382	kg.m.	lb.ft.	7.236
lb.ft.	N•m	1.356	N•m	lb.ft.	.7376
N•m	dN•m	10	dN•m	N•m	.10
N•m	kg.cm.	10.2	kg.cm.	N•m	.09807
N•m	kg.m.	.102	kg.m.	N•m	9.807

Caution

Always use manufactures specifications when available. The "Production Torque Guide", "Threaded "General Torque Specification Chart" and Fastener *Tension* Guide" specifications are approximate and may not be appropriate for some applications. No liability is assumed for errors which may result from the use of any of these torque specifications.

If Your Torque Wrench Needs Repair

1. Send it to an authorized Snap-on Service Center, or give it to your Snap-on representative. Do not attempt to repair it yourself.
2. If the warranty is no longer in effect, your Snap-on Customer Service Representative will contact you with repair charges for your approval before being repaired.
3. A series of testers are available from Snap-on for checking the accuracy of your Torque Wrench. See your Snap-on representative for more information.

Visit us at www.torqwrench.com

MECHANICAL AND ELECTRONIC TORQUE PRODUCTS FULL 12-MONTH WARRANTY PROFESSIONAL USE

SNAP-ON TOOLS MANUFACTURING COMPANY WARRANTS TO THE ORIGINAL PURCHASER OF TORQUE PRODUCTS FOR BUSINESS OR PROFESSIONAL USE THAT THE COMPANY'S TORQUE PRODUCTS ARE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS. Snap-on will repair or replace torque products which fail to give satisfactory service due to defective workmanship or materials (excluding calibration) for 12 months from the date of original purchase. Snap-on warrants "initial, out of box calibration" of each new, unused torque product. Repair, replacement or recalibration shall be at the election and expense of Snap-on Tools Manufacturing Company, and is your exclusive remedy in place of all other rights and remedies. Products must be returned with proof of purchase to a Snap-on repair center or an authorized Snap-on representative for warranty service.

Consumable products are warranted only against defects in workmanship or materials in a new product that prevents its use. Consumable products are goods reasonably expected to be used up or damaged during use, including but not limited to sensors, internal mechanical torque wrench components and batteries. Snap-on does not provide any warranty for products subjected to abnormal use. Abnormal use includes misuse, accident, modification, unreasonable use, neglect, lack of maintenance, use in production-related service, or use after the tool is significantly worn.

SNAP-ON SHALL NOT BE LIABLE FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL COSTS OR DAMAGES INCURRED BY THE PURCHASER OR OTHERS (including without limitation, lost profits, revenues, anticipated sales, business opportunities, goodwill, or interruption of business and any other injury or damage.)

CONSUMER WARRANTY INFORMATION

Consumers buying for personal use can obtain product warranty information by sending a written request, including the catalog number, page number and a description of the products, to:

Snap-on Tools
Consumer Warranty Information Center
2801 - 80th Street
Kenosha, Wisconsin 53143

Rev 10/00

Snap-on Tools
Kenosha, WI 52140-1410