

# TOHNICHI

Professional Torque Product Catalog

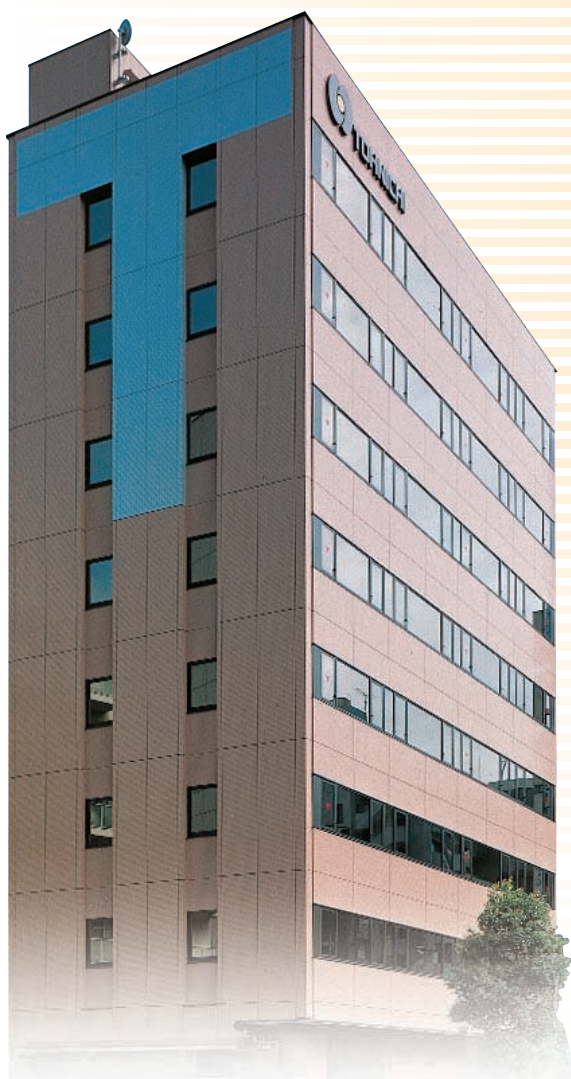
2016

# Your Torque Partner

Through advances in torque technology, Tohnichi contributes to the creation of a safer world by helping to obtain the highest level of product safety in transportation, information technology, and many other fields that affect our daily lives.

## TORQUE CENTER

A wide variety of services available including: theoretical information, application assistance, training seminars, and testing facilities.



Tohnichi Torque Center in Tokyo

### Laboratory

Visitors can use this space. Actual work piece is carried in and proper tightening torque can be measured.



### Showroom

Tohnichi torque products are set-up and displayed so that visitor can have a clear look on what is available on the torque market and what will be coming up soon.



### Lecture room

Various courses of torque engineering seminars are available.



### Training room

Our customers can attend workshops, covering a global training, general repair and adjustment on torque products.



The above facilities and services are available at Tokyo, Osaka, Nagoya in Japan, Tohnichi Shanghai in China, Tohnichi Europe in Belgium, and Tohnichi America in Chicago.

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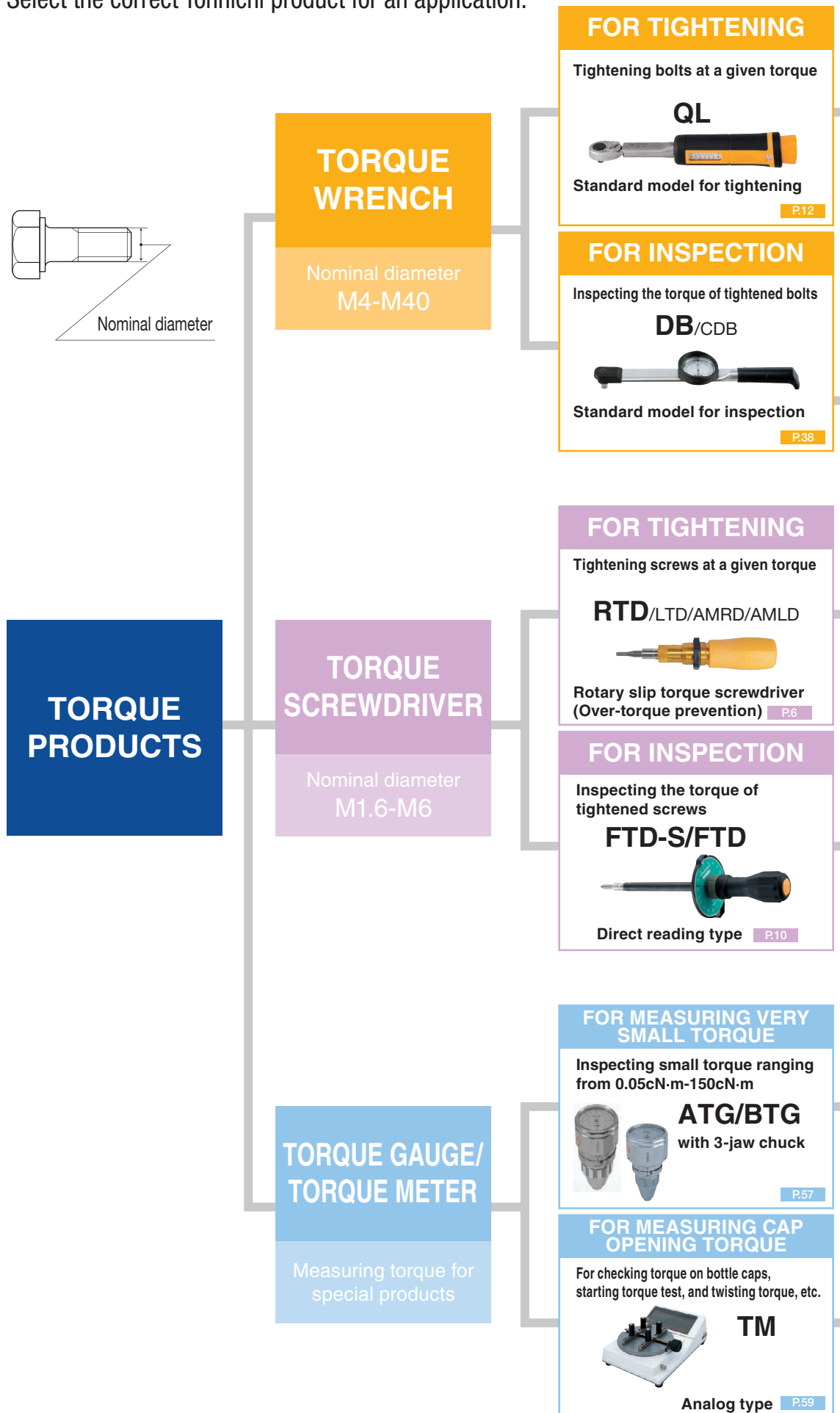
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# How to Select Torque Products

Select the correct Tohnichi product for an application.



If other types of head is requested

**CL**



Interchangeable head version of QL **P.13**

In such working condition where resin handles are not suitable

**QL-MH**



Metal handle version of QL **P.12**

**CL-MH**



Metal handle version of CL **P.13**

If tightening at one particular torque only

**QSP**



Preset version of QL **P.18**

**CSP**



Interchangeable head version of QSP **P.19**

If tightening the same bolts at particular torque only

**SP2**



Preset type open end head **P.20**

**SP2-MH**



**RSP2**



Preset type ring head **P.20**

**RSP2-MH**



**SF/F/QF/CF**



Beam type **P.40**

**CEM3-G/CTB2-G**



Digital type **P.36**

For calibrating torque wrenches



**TCC2-G**

**P.55**



**DOTÉ3-G**

**P.54**

Tightening at one particular torque only

**RNTD/NTD**



Preset version of RTD **P.7**

**STC2-G**



Digital type **P.10**

For daily inspection of torque wrenches



**LC3-G** Line Checker **P.56**



Other Torque Wrench Testers:  
DOT and TF models are also available.

Other Torque Measurement

**ST3-G/TCF/TCR**

**P.56**

**P.60**

**ATGE-G**



Digital type **P.57**

**BTGE-G**



Digital type **P.58**

**TME2**



Digital type **P.59**

Example

**CL 100 N × 15D**

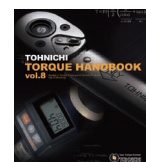
Size of interchangeable head  
\* Interchangeable head type only

Unit (N = N-m, CN = cN-m, MN = mN-m)

Torque range (Maximum torque in S.I. unit)

Model

Please refer to the "Torque Handbook vol. 8" for further technical information.

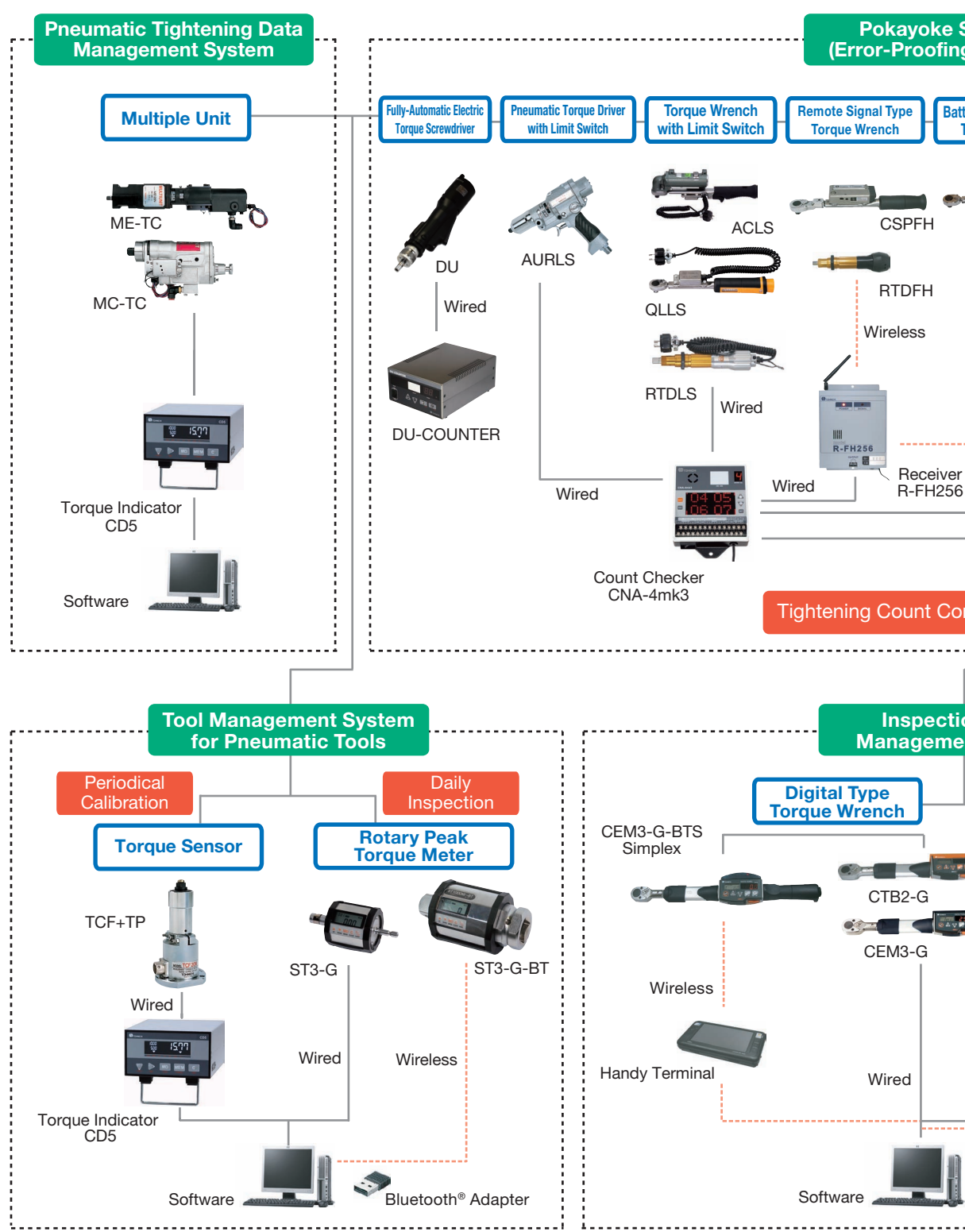


# From Torque Control to Tightening Assurance System

Tohnichi's Torque Assurance System advises the users how to tighten bolts properly and how to eliminate various mistakes which occur during bolt tightening operations.

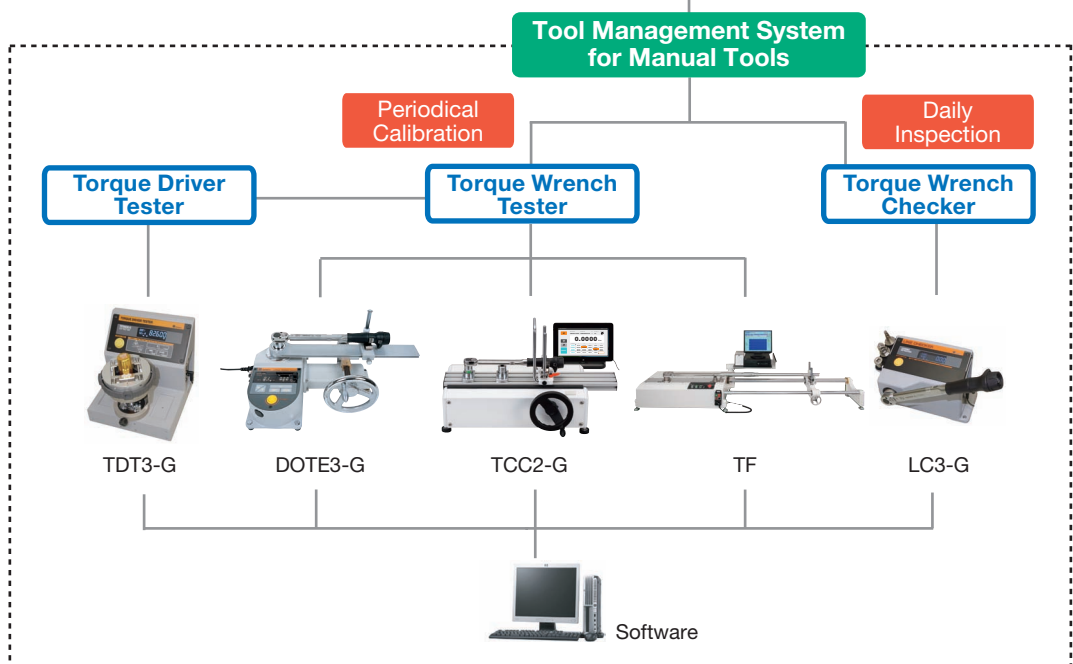
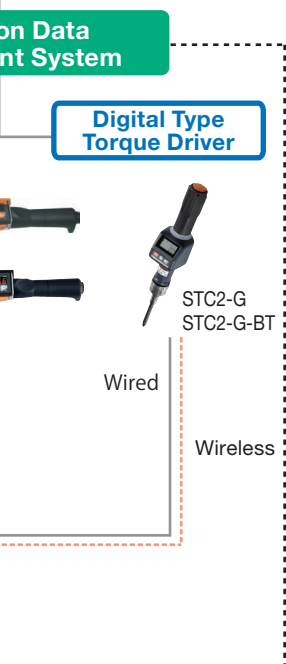
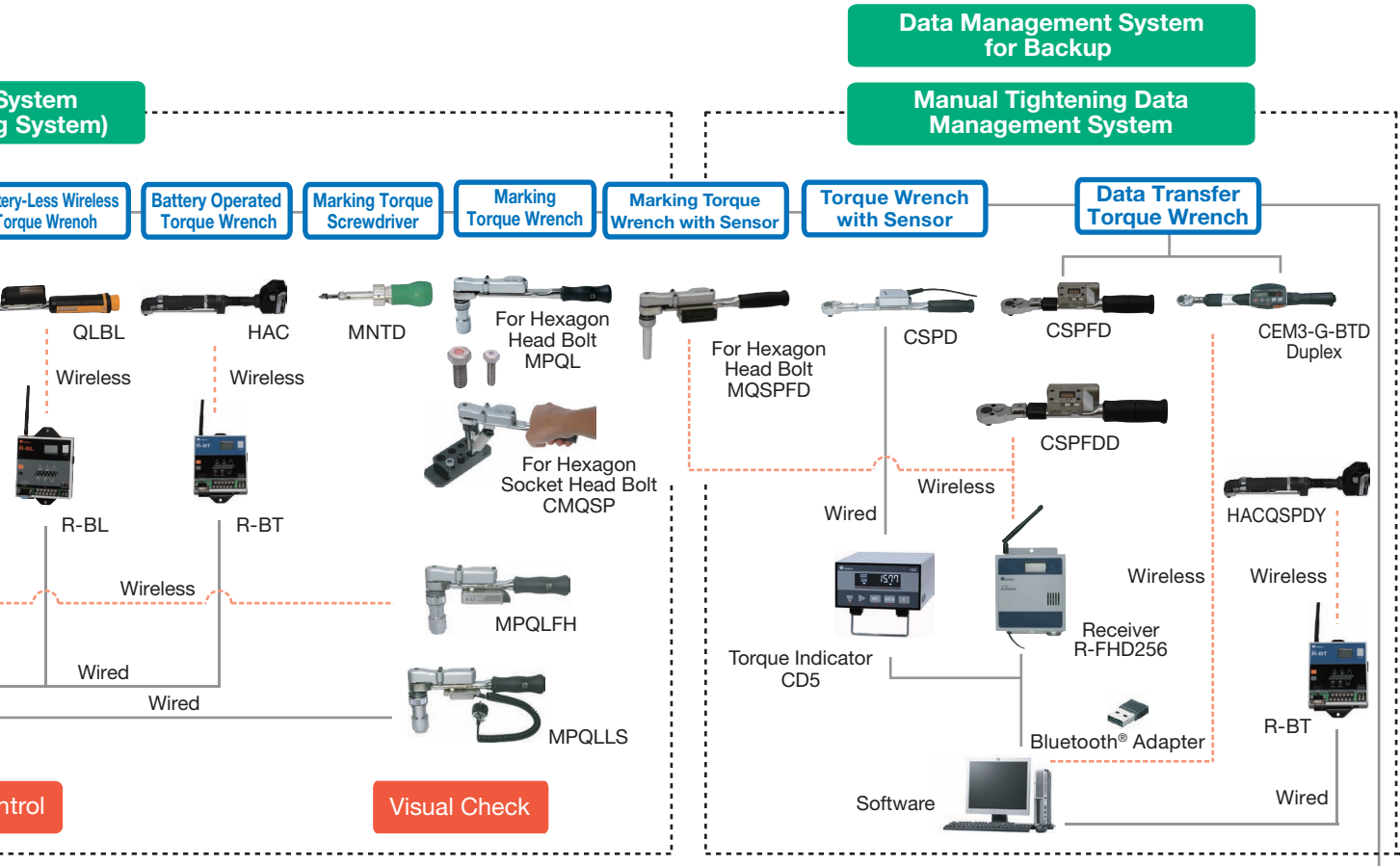
Total Tightening Management System, which completes tightening assurance, will be created through cooperation of your staffs. Each component and product which consists of the system can be sold separately. The components and products are described in the catalog.

## TOHNICHI TIGHTENING ASSURANCE SYSTEM



### Characteristic factors (4M's) of defects in bolt tightening

- |  |   |
|--|---|
| <p>1. <b>MAN</b> (Tightening operator human error)</p> <ul style="list-style-type: none"> <li>· Missed tightening</li> <li>· Improper tightening tool usage</li> </ul> <p>2. <b>METHOD</b> (Improper tightening specification)</p> <ul style="list-style-type: none"> <li>· Wrong tightening value specification</li> <li>· Wrong tightening procedure</li> <li>· Wrong tightening tool selection</li> </ul> | <p>3. <b>MACHINE</b> (Improper tightening equipment)</p> <ul style="list-style-type: none"> <li>· Inaccuracy</li> <li>· Mechanical failure</li> </ul> <p>4. <b>MATERIAL</b> (Improper screw joint material)</p> <ul style="list-style-type: none"> <li>· Part out of tolerance</li> <li>· Defective part material</li> <li>· Insufficient screw part lubricant</li> </ul> |
|--|---|



**RTD**Rotary Slip Adjustable  
Torque Screwdriver**Assembly****Adjustable****Rotary Slip****Graduation****RoHS**

Direction



RTD60CN



RTD120CN with Resin Grip

- Ratcheting mechanism prevents over torque.
- Torque easily set with external scale

Accuracy ±3%

S.I. Model	Torque Range [cN·m]		Metric Model	Torque Range [kgf·cm]		American Model	Torque Range [ozf-in/lbf-in]		Overall Length [mm]	Weight [g]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		
-	-	-	-	-	-	RTD20Z	6-20	0.2	100	50
-	-	-	-	-	-	RTD40Z	15-40	0.5		
-	-	-	-	-	-	RTD80Z	20-80	1	110	80
-	-	-	-	-	-	RTD150Z	30-150	2	130	160
RTD15CN	2-15	0.1	1.5RTD	0.2-1.5	0.01	RTD1.3I	0.2-1.3	0.01	100	50
RTD30CN	4-30	0.2	3RTD	0.4-3	0.02	RTD2.6I	0.4-2.6	0.02		
RTD60CN	10-60	0.5	6RTD	1-6	0.05	RTD5I	1-5	0.05	110	80
RTD120CN	20-120	1	12RTD	2-12	0.1	RTD10I	2-10	0.1	130	160
RTD260CN	60-260	2	26RTD	6-26	0.2	RTD22I	6-22	0.2	150	270
RTD500CN	100-500	5	50RTD	10-50	0.5	RTD40I	10-40	0.5	155	320

**Note**

1. Auxiliary tightening tool for RTD500CN is sold separately.
2. Bits are sold separately. Refer to page 11.

**Standard Accessories**

1. Hook spanner for RTD260CN and RTD500CN
2. Resin grip for RTD120CN and RTD260CN

**LTD**Adjustable Torque  
Screwdriver**Assembly****Adjustable****Graduation****RoHS**

Direction



LTD60CN



LTD120CN with Resin Grip

- Clicks at set torque value
- Torque easily set with external scale

Accuracy ±3%

S.I. Model	Torque Range [cN·m]		Metric Model	Torque Range [kgf·cm]		American Model	Torque Range [ozf-in/lbf-in]		Overall Length [mm]	Weight [g]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		
-	-	-	-	-	-	LTD20Z	6-20	0.2	100	50
-	-	-	-	-	-	LTD40Z	15-40	0.5		
-	-	-	-	-	-	LTD80Z	20-80	1	110	80
-	-	-	-	-	-	LTD150Z	30-150	2	130	160
LTD15CN	2-15	0.1	1.5LTD	0.2-1.5	0.01	LTD1.3I	0.2-1.3	0.01	100	50
LTD30CN	4-30	0.2	3LTD	0.4-3	0.02	LTD2.6I	0.4-2.6	0.02		
LTD60CN	10-60	0.5	6LTD	1-6	0.05	LTD5I	1-5	0.05	110	80
LTD120CN	20-120	1	12LTD	2-12	0.1	LTD10I	2-10	0.1	130	160
LTD260CN	60-260	2	26LTD	6-26	0.2	LTD22I	6-22	0.2	150	270
LTD500CN	100-500	5	50LTD	10-50	0.5	LTD40I	10-40	0.5	155	320
LTD1000CN	200-1000	5	100LTD	20-100	0.5	LTD90I	20-90	0.5	185	580
LTD2000CN	300-2000		200LTD	30-200		LTD180I	30-180		255	1150

**Note**

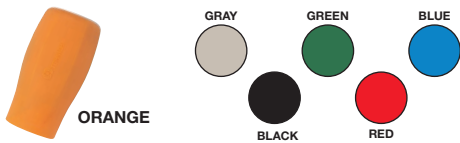
1. Auxiliary tightening tool for LTD500CN and LTD1000CN is available, sold separately.
2. Bits are sold separately. Refer to page 11.
3. Bits for LTD2000CN are Tohnichi original.

**Standard Accessories**

1. Hook spanner for LTD260CN-LTD2000CN
2. LTD2000CN comes with an auxiliary tightening tool.
3. Resin grip for LTD120CN and LTD260CN

### Torque Screwdriver Optional Accessories

#### RESIN GRIP for 120CN, 260CN



For 120CN

Part #	Color	Applicable Model
850	Orange	
851	Gray	RTD120CN
852	Black	LTD120CN
853	Green	RNTD120CN
854	Red	NTD120CN
855	Blue	

For 260CN

Part #	Color	Applicable Model
856	Orange	RTD260CN
857	Gray	LTD260CN
858	Black	
859	Green	RNTD260CN
860	Red	NTD260CN
861	Blue	

#### Resin Grip Dimensions

	120CN		260CN	
	RTD LTD	RNTD NTD	RTD LTD	RNTD NTD
Hexagon width across flats Maximum value [mm]	33		41	
Hexagon width across corner Maximum value [mm]	35		44	
Length [mm]	67		81	68
Overall Length with torque screwdriver [mm]	130	110	150	110

#### ADJUSTING TOOL for RTD/LTD

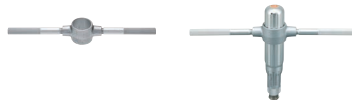
- Used for zero adjustment



Part #	Applicable Model
51	LTD/RTD15CN, 30CN
46	LTD/RTD60CN
47	LTD/RTD260CN
48	LTD/RTD500CN
49	LTD/RTD1000CN
1046	LTD/RTD120CN

#### AUXILIARY TIGHTENING TOOL for RTD/LTD/RNTD/NTD

- Make easier for large torque tightening



Part #	Applicable Model
31	LTD/RTD/NTD/RNTD500CN
32	LTD/NTD1000CN, RTDFH/RNTDFH500CN
40	LTD2000CN
1031	RTDLS500CN
	RNTDSL500CN

#### HOOK SPANNER for RTD/LTD/MNTD

- Torque setting for middle and large size torque screwdriver



Part #	Applicable Model
52	LTD/RTD260CN, MNTD120CN
53	LTD/RTD500CN, MNTD260CN
54	LTD1000CN, MNTD500CN
55	LTD2000CN

#### TORQUE ADJUSTING BAR for RNTD/NTD/RNTDZ

- Used for torque setting of preset torque screwdriver



Part #	Applicable Model
42	NTD/RNTD15CN-120CN
43	NTD/RNTD260CN, RNTDZ260CN
44	NTD/RNTD500CN-1000CN, RNTDZ500CN



# RNTD

Rotary Slip Preset Torque Screwdriver

Assembly

Preset

Rotary Slip

RoHS

Direction



RNTD60CN



RNTD120CN with Resin Grip

- Preset version of RTD
- No external scale, torque set by a torque driver tester

Accuracy ±3%

Model	Torque Range			Overall Length [mm]	Weight [g]
	[cN-m]	[kgf-cm]	[lbf-in]		
	Min.-Max.	Min.-Max.	Min.-Max.		
RNTD15CN	5-15	0.5-1.5	0.5-1.3	95	71
RNTD30CN	10-30	1-3	1-2.5		
RNTD60CN	20-60	2-6	2-5		
RNTD120CN	40-120	4-12	4-10	110	110
RNTD260CN	100-260	10-26	10-22		180
RNTD500CN	200-500	20-50	20-40	120	270

**Note**

1. A torque driver tester is necessary for torque setting. Specify required set torque when you order. Ex. RNTD120CN × 100cN-m
2. Torque adjusting bar is sold separately. Refer to page 46.
3. Bits are sold separately. Refer to page 11.

**Standard Accessories**

1. Resin grip for RNTD120CN and RNTD260CN
2. Auxiliary tightening bar for RNTD500CN

# NTD

Preset Torque Screwdriver

Assembly

Preset

RoHS

Direction



NTD60CN



NTD120CN with Resin Grip



NTD500CN with Auxiliary Tightening Bar

- Preset version of LTD
- No external scale, torque set by a torque driver tester

Accuracy ±3%

Model	Torque Range			Overall Length [mm]	Weight [g]
	[cN-m]	[kgf-cm]	[lbf-in]		
	Min.-Max.	Min.-Max.	Min.-Max.		
NTD15CN	5-15	0.5-1.5	0.5-1.3	95	70
NTD30CN	10-30	1-3	1-2.5		
NTD60CN	20-60	2-6	2-5		
NTD120CN	40-120	4-12	4-10	110	110
NTD260CN	100-260	10-26	10-22		180
NTD500CN	200-500	20-50	20-40	120	270
NTD1000CN	400-1000	40-100	40-90	155	550

**Note**

1. A torque driver tester is necessary for torque setting. Specify required set torque when you order. Ex. NTD120CN × 100cN-m
2. Torque adjusting bar is sold separately. Refer to page 46.

**Standard Accessories**

1. Resin grip for NTD120CN and NTD260CN
2. Auxiliary tightening bar for NTD500CN and NTD1000CN

# RTDZ

Insulated Rotary Slip Adjustable Torque Screwdriver

Direction



RTDZ260CN

Assembly

Adjustable

Rotary Slip

Resin Body

RoHS

- Insulated design suited for use in electric shock hazard conditions
- Ideal for electric car assembly, connection of battery terminal wiring work etc

Accuracy ±3%

S.I. Model	Torque Range [cN-m]		Metric Model	Torque Range [kgf-cm]		Torque Range [lbf-in]		Overall Length [mm]	Weight [g]
	Min.-Max.	Grad.		Min.-Max.	Grad.	Min.-Max.	Grad.		
	RTDZ260CN	60-260		2	26RTDZ	6-26	0.2		
RTDZ500CN	100-500	5	50RTDZ	10-50	0.5	-	-	183	380

**Note**

1. Torque adjusting bar is sold separately. Refer to page 6.
2. Bits are sold separately. Refer to page 11.
3. Bits are not insulation coating.

# RNTDZ

Insulated Rotary Slip Preset Torque Screwdriver

Direction



RNTDZ500CN

Assembly

Preset

Rotary Slip

Resin Body

RoHS

- Insulated design suited for use in electric shock hazard conditions
- Ideal for electric car assembly, connection of battery terminal wiring work etc

Accuracy ±3%

S.I. Model	Torque Range [cN-m]		Metric Model	Torque Range [kgf-cm]		Torque Range [lbf-in]		Overall Length [mm]	Weight [g]
	Min.-Max.	Grad.		Min.-Max.	Grad.	Min.-Max.	Grad.		
	RNTDZ260CN	100-260		-	-	10-26	-		
RNTDZ500CN	200-500	-	-	20-50	-	20-40	-	138	340

**Note**

1. A torque driver tester is necessary for torque setting. Specify required torque when you order. Ex. RNTDZ260CN × 200cN-m
2. Torque adjusting bar is sold separately. Refer to page 6.
3. Bits are sold separately. Refer to page 11.
4. Bits are not insulation coating.



# AMRD/BMRD

Direction



Rotary Slip Adjustable Torque Screwdriver for Small Screws



AMRD4CN



BMRD30CN2

Assembly

Adjustable

Rotary Slip

Graduation

RoHS

- Low torque version of RTD
- AMRD includes Tohnichi original bits.

Accuracy  $\pm 3\%$

S.I. Model	Torque Range [cN-m]		Metric Model	Torque Range [gf-cm/kgf-cm]		American Model	Torque Range [ozf-in/lbf-in]		Overall Length [mm]	Weight [g]	Standard Accessory Bit	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			⊕	⊖ Thickness × Width
AMRD	cN-m	cN-m		gf-cm	gf-cm		ozf-in	ozf-in				
AMRD1CN	0.3-1	0.01	100AMRD	30-100	1	-	-	-				0.15 × 1
AMRD2CN	0.5-2	0.025	200AMRD	50-200	2.5	AMRD3Z	1-3	0.05	93	26	#0	0.2 × 1.5
AMRD4CN	1-4	0.05	400AMRD	100-400	5	AMRD6Z	2-6	0.1				0.3 × 2
AMRD8CN	2-8		800AMRD	200-800	10	AMRD12Z	3-12	0.2				
BMRD		0.1		kgf-cm	kgf-cm		lbf-in	lbf-in				
BMRD15CN2	2-15		1.5BMRD2	0.2-1.5	0.01	1.5BMRD2-A	0.2-1.5	0.005	116	50	-	-
BMRD30CN2	4-30	0.2	3BMRD2	0.4-3	0.02	3BMRD2-A	0.4-3	0.01				

Note

1. Bits for BMRD are sold separately. Refer to page 11.
2. Bits for AMRD are supplied from only Tohnichi.

# AML D/BML D

Direction



Adjustable Torque Screwdriver for Small Screws



AML D4CN



BMLD30CN2

Assembly

Adjustable

Graduation

RoHS

- Low torque version of LTD
- AMLD includes Tohnichi original bits.

Accuracy  $\pm 3\%$

S.I. Model	Torque Range [cN-m]		Metric Model	Torque Range [gf-cm/kgf-cm]		American Model	Torque Range [ozf-in/lbf-in]		Overall Length [mm]	Weight [g]	Standard Accessory Bit	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			⊕	⊖ Thickness × Width
AML D	cN-m	cN-m		gf-cm	gf-cm		ozf-in	ozf-in				
AML D1CN	0.3-1	0.01	100AML D	30-100	1	-	-	-				0.15 × 1
AML D2CN	0.5-2	0.025	200AML D	50-200	2.5	AML D3Z	1-3	0.05	83	26	#0	0.2 × 1.5
AML D4CN	1-4	0.05	400AML D	100-400	5	AML D6Z	2-6	0.1				0.3 × 2
AML D8CN	2-8		800AML D	200-800	10	AML D12Z	3-12	0.2				
BML D		0.1		kgf-cm	kgf-cm		lbf-in	lbf-in				
BML D15CN2	2-15		1.5BML D2	0.2-1.5	0.01	1.5BML D2-A	0.2-1.5	0.005	116	50	-	-
BML D30CN2	4-30	0.2	3BML D2	0.4-3	0.02	3BML D2-A	0.4-3	0.01				

Note

1. Bits for BMLD are sold separately. Refer to page 11.
2. Bits for AMLD are supplied from only Tohnichi.

## Daily Check and Calibration of Torque Screwdrivers

### Digital Torque Gauges for Daily Inspections

One use of ATGE-G and BTGE-G digital torque gauges is to check the accuracy of small torque screwdrivers such as AMLD/AMRD and BMLD/BMRD. Monitoring drivers with daily inspections confirms driver function and accuracy prior to use. Refer to page 57 and 58.

- ATGE-G
- BTGE-G
- ATGE-G with Measurement stand, #808
- BTGE-G with Measurement stand, #809



Torque checking figure for AMRD with ATGE-G and measurement stand, #808.



Torque checking figure for BMRD with BTGE-G

### Torque Driver Tester for Calibration and Adjustments

TDT3-G digital torque screwdriver testers are for the calibration of torque screwdrivers such as click type and indicating type. The loading device keeps the driver steady and in a vertical position during testing for highly accurate calibration and easy adjustments.

- TDT3-G: Refer to page 53.



Click type RTD with TDT3-G



Indicating type FTD with TDT3-G

# MNTD

Marking Torque Screwdriver

**NEW**



MNTD120CN



MNTD500CN



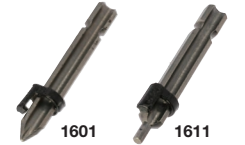
Red marked screw



Blue marked screw



Auxiliary Tightening Tool for MNTD500CN



MNTD Bit

Blue MNTD Marker

Assembly

Preset

RoHS

- Non-rotary prest type marking torque screwdriver
- Total 7 types of phillips and hexagon bits available
- Marking screws as torque is achieved

Accuracy ±3%

Model	Torque Range			Overall Length [mm]	Weight [g]
	Min.-Max. [cN·m]	Min.-Max. [kgf·cm]	Min.-Max. [lbf·in]		
MNTD120CN	40-120	4-12	4-10	150	210
MNTD260CN	100-260	10-26	10-22	152	315
MNTD500CN	200-500	20-50	20-40	168	365

- Note**
1. MNTD special designed bits and markers are sold separately.
  2. Tester is required to set/change a torque value.
  3. MNTD is not applicable with hexagon socket set screws.
  4. Dark colored screws might not be suitable to detect MNTD marking.
- Standard Accessories** Green resin grip for 120CN and 260CN. Auxiliary tightening tool for 500CN

## MNTD Optional Accessories

### MNTD Plus Bit

Part #	Model	Applicable Screw/Ref.
1601	MNTD #1 bit	M2.5, (M3)
1602	MNTD #2 bit	M3, M4, M5
1603	MNTD #3 bit	M6

### MNTD Hex Bit

Part #	Model	Applicable Screw/Ref.
1611	MNTD W2.5 bit	M3
1612	MNTD W3 bit	M4
1613	MNTD W4 bit	M5
1614	MNTD W5 bit	M6

- Note**
1. Tohnichi special designed bit is required for MNTD.
  2. Applicable for screw that head diameter is over ø 5.5mm. Unavailable to hexagon set screws.
  3. In M3 screw, only binding head screw is applicable.

### MNTD Marker

Part #	Model
1621	MNTD Marker Red 10 pcs/set
1622	MNTD Marker Red 100 pcs/set
1623	MNTD Marker Blue 10 pcs/set
1624	MNTD Marker Blue 100 pcs/set

- Note**
1. It is a disposable marker.
  2. 1 pc of marker are capable of 1000 marking operations.

### Preset Hook Spanner for MNTD

Part #	Applicable Model
52	MNTD120CN
53	MNTD260CN
54	MNTD500CN

- Note** To set/change torque value.

# RTDLS/RNTDLS

Direction

Rotary Slip Type Torque Screwdriver with Limit Switch



RTDLS120CN



RNTDLS120CN

Assembly

RoHS

- RTD/RNTD style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

Accuracy ±3%

S.I. Model	Torque Range [cN·m]		Metric Model	Torque Range [kgf·cm]		American Model	Torque Range [lbf·in]		Overall Length [mm]	Weight [g]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		
RTDLS120CN	20-120	1	12RTDLS	2-12	0.1	RTDLS10I	2-10	0.1	184	340
RTDLS260CN	60-260	2	26RTDLS	6-26	0.2	RTDLS22I	6-22	0.2	201	450
RTDLS500CN	100-500	5	50RTDLS	10-50	0.5	RTDLS40I	10-40	0.5	212	540
RNTDLS120CN	40-120	-	-	4-12	-	-	4-10	-	166	320
RNTDLS260CN	100-260	-	-	10-26	-	-	10-22	-	167	390
RNTDLS500CN	200-500	-	-	20-50	-	-	20-40	-	175	480

- Note**
1. Bits are sold separately. Refer to page 11.
  2. RNTDLS models are required a torque driver tester for torque setting. Specify required torque when you order. Ex. RNTDLS120CN × 100cN·m
  3. Limit switch specifications AC30V below 1A, DC30V below 1A
  4. Female connector for LS cable is sold separately. Part# WA5219K.

## POKA Patrol, Count Checker

### CNA-4mk3

Refer to page 28.

\* Sold separately



# RTDFH/RNTDFH

**NEW**

Rotary Slip Type Pokayoke Torque Screwdriver



RTDFH120CN



RNTDFH120CN

Assembly

RoHS

- Torque screwdriver with wireless error-proofing, Pokayoke, function
- High reliable FHSS technology with universal 2.4GHz frequency band

Accuracy ±3%

S.I. Model	Torque Range [cN·m]		Metric Model	Torque Range [kgf·cm]		American Model	Torque Range [lbf·in]		Overall Length [mm]	Weight [g]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		
RTDFH120CN	20-120	1	12RTDFH	2-12	0.1	RTDFH10I	2-10	0.1	184	280
RTDFH260CN	60-260	2	26RTDFH	6-26	0.2	RTDFH22I	6-22	0.2	201	380
RTDFH500CN	100-500	5	50RTDFH	10-50	0.5	RTD40I	10-40	0.5	212	490
RNTDFH120CN	40-120	-	-	4-12	-	-	4-10	-	166	260
RNTDFH260CN	100-260	-	-	10-26	-	-	10-22	-	167	320
RNTDFH500CN	200-500	-	-	20-50	-	-	20-40	-	175	430

- Note**
1. RTDFH/RNTDFH are ESD/Electro Static discharge.
  2. Refer to page 30 for receiver and setting box.
  3. Refer to page 31 for condition of wireless equipment in each country.
  4. Auxiliary tightening tool for RTDFH/RNTDFH500CN is part # 32.

**Standard Accessories** Adjusting handle : RTDFH500CN and RNTDFH500CN

## Receiver R-FH256

Refer to page 28 and 30 for Pokayoke system configuration.

\*Sold separately



## POKA Patrol, Count Checker CNA-4mk3

Refer to page 28.

\* Sold separately



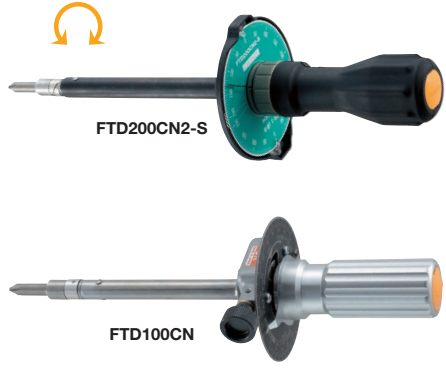
## Transmitter Specifications on Torque screwdriver

Model	RTDFH256/RNTDFH256
Frequency Band	2.4GHz band (2.402GHz-2.479GHz, 1MHz interval 78ch)
Communication System	Spread spectrum (frequency hopping system)
Modulation System	GFSK
Modulation Rate	1Mbps
Group Channel	Gr 000-255
ID	3 digit (000-999), 7 digit (alphanumeric)
Input/Output	-
Power[V]	DV3V(CR2032)
Antenna	Chip Antenna
Display	LED
Operating Temperature [°C]	0-45
Transmitting Receiving Distance	approx. 5-10m

# FTD

Dial Indicating Torque Screwdriver with Memory Pointer

Direction



Inspection Dial Indicating Memory Pointer Direct Reading RoHS

- Ideal for measuring torque
- FTD-S with memory pointer; FTD with preset knob

Accuracy ±3%

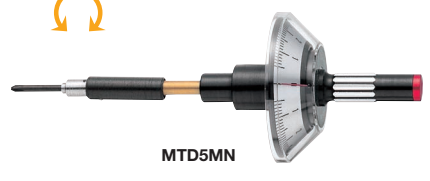
S.I. Model	Torque Range [cN-m]		Metric Model	Torque Range [gf-cm/kgf-cm]		American Model	Torque Range [ozf-in/lbf-in]		Overall Length [mm]	Weight [g]	Standard Accessory Bit	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			⊕	⊖ Thickness × Width
FTD-S	cN-m	cN-m		gf-cm	kgf-cm		ozf-in	ozf-in				
FTD2CN-S	0.3-2	0.05	02FTD2-S	30-200	5	FTD3Z2-S	0.5-3	0.1				
FTD5CN-S	0.5-5	0.1	05FTD2-S	50-500	10	FTD7Z2-S	1-7	0.2				
				kgf-cm	kgf-cm				152	140		
FTD10CN-S	1-10	0.2	1FTD2-S	0.1-1	0.02	FTD15Z2-S	2-15	0.5				
FTD20CN-S	3-20	0.5	2FTD2-S	0.3-2	0.05	FTD30Z2-S	5-30	1				
FTD50CN2-S	5-50	1	5FTD2-S	0.5-5	0.1	FTD70Z2-S	10-70	2				
							lbf-in	lbf-in				
						5FTD2-A-S	0.5-5	0.1				
FTD100CN2-S	10-100	2	10FTD2-S	1-10	0.2	10FTD2-A-S	1-10	0.2	272	370		
FTD200CN2-S	30-200	5	20FTD2-S	3-20	0.5	20FTD2-A-S	3-20	0.5				
FTD400CN2-S	50-400	10	40FTD2-S	5-40	1	40FTD2-A-S	5-40	1				
	N-m	N-m										
FTD8N2-S	1-8	0.2	80FTD2-S	10-80	2	80FTD2-A-S	10-70	2	338	900	# 3	1.2 × 8
FTD16N2-S	3-16	0.5	160FTD2-S	30-160	5	160FTD2-A-S	20-140	5		930		
	FTD	cN-m	cN-m									
FTD50CN	10-50	1	5FTD	1-5	0.1	5FTD-A	1-5	0.1	215	285	# 1	0.7 × 7
FTD100CN	20-100	2	10FTD	2-10	0.2	10FTD-A	1-10	0.2		290		
FTD200CN	40-200	5	20FTD	4-20	0.5	20FTD-A	3-20	0.5	263	390	# 2	0.9 × 7
FTD400CN	80-400	10	40FTD	8-40	1.0	40FTD-A	5-40	1		410		

Note FTD8N2-S, FTD16N2-S: Square drive type, 6.35mm  
Standard Accessories Auxiliary tightening bar for FTD8N2-S and FTD16N2-S

# MTD

Micro Dial Indicating Torque Screwdriver

Direction



Inspection Dial Indicating Direct Reading RoHS

- Low torque capacity version of FTD
- Requires special size bits

Accuracy ±3%

S.I. Model	Torque Range [mN-m]		Metric Model	Torque Range [gf-cm]		American Model	Torque Range [ozf-in]		Overall Length [mm]	Weight [g]	Standard Accessory Bit	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			⊕	⊖ Thickness × Width
MTD1MN	0.1-1	0.02	10MTD	1-10	0.2	-	-	-	110	22		0.15 × 1
MTD2MN	0.3-2	0.05	20MTD	3-20	0.5	-	-	-	100	21	# 0	0.2 × 15
MTD5MN	0.5-5	0.1	50MTD	5-50	1	MTD07Z	0.1-0.7	0.02				0.3 × 2
MTD10MN	1-10	0.2	100MTD	10-100	2	MTD1.4Z	0.2-1.4		132	23		

Note MTD models require Tohnichi made bits. Refer to page 11.

# STC2-G/-BT

Digital Torque Screwdriver

Direction



STC200CN2-G

Assembly Inspection Digital Bit Direct Reading Rechargeable

- Ideal for tightening and inspection operation
- 1000 data memory storage and data output function
- Color LED indicator, White, Blue, Yellow, and Red

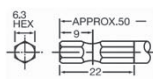
RoHS

Accuracy ±1%

Model	Torque Range								Overall Length [mm]	Weight [g]	
	[cN-m]		[kgf-cm]		[lbf-in]		[ozf-in]				
Standard Version	Bluetooth® Version	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit		
STC50CN2-G	STC50CN2-G-BT	10-50	0.05	1-5	0.005	1-4.4	0.005	15-70	0.05		
STC200CN2-G	STC200CN2-G-BT	40-200	0.2	4-20	0.02	4-17	0.02	-	-	230	325
STC400CN2-G	STC400CN2-G-BT	80-400	0.5	8-40	0.05	8-35	0.05	-	-		

Note 1. Bits are sold separately. Refer to page 11.  
2. Bits size as below  
3. Display can be turned upside down with keypad operation.  
4. Data output of standard version is through USB only.  
5. Data output of Bluetooth® version is through USB and Bluetooth®.  
6. Refer to page 31 for condition of wireless equipment in each country.

Standard Accessories USB cable/384, AC adapter/BA-7, and Battery pack/BP-7. Refer to page 47.



White LED light 80% of target torque



Blue LED light Achieving target torque



Yellow & Red flashing LED light Over torque indication

## STC2-G/-BT Specifications

Accuracy	±1%
Measurement Mode	Tightening / Inspection mode
Battery Indicator	4 levels
Judgment Mode	Buzzer and LED indicator on upper/lower limit
Basic Functions	Auto-power off, Auto memory & reset, Auto zero setting
Power Supply	Lithium Ion Battery
Data Output	USB
Operating Time	approx. 30 hours
Recharging Time	AC adaptor: approx. 5 hours USB through PC: approx. 10 hours

## STC2-G/-BT Communication Specifications

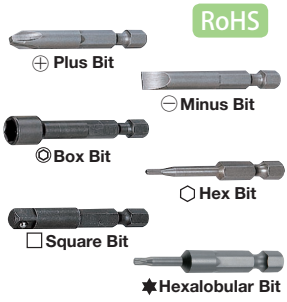
Bluetooth® Version	V3.0
Transmitting System	AFH
Modulation System	GFSK
Wireless Output	4dBm
Transmission Power Class	Class 2
Profile	SPP
Communication Distance	approx. 10m
Operating Time	15 hours

[EX.] Torque checking figure for torque screwdriver



STC2-G

# Interchangeable Bit



	From Torque Tool						
	Torque Screwdriver	RTD/RTDZ/LTD BMRD BMLD FTD50CN - 400CN FTD2CN-S - 400CN2-S STC2-G	FTD8N2-S - FTD16N2-S, (FTD8N - 16N)	AMRD AMLMD MTD	LTD2000CN	-	
Power Torque Tool	U30CN	U (except U30CN)	-	-	-	AUR5N	
Root Shape Sign	A	B	C	D	F	G	
Root Shape and Dimensions							

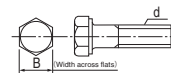
	Sign	Size	Screw	From Bolt		From Torque Tool				
				Tohnichi Original Bit	Common (Standard)	Tohnichi Original Bit	Tohnichi Original Bit	Tohnichi Original Bit	Common (Standard)	
Plus ⊕	0	#0 (S-0)	Refer to Table A	104	109		115			
	1	#1 (H-1)	Refer to Table A		85	106	84	116		
	2	#2 (H-2)	Refer to Table A		86	107	80			
	3	#3 (H-3)	Refer to Table A		87		81		35	
	4	#4 (H-4)	Refer to Table A						36	
	Minus ⊖	10	0.15 × 1	Refer to Table B					111	
		11	0.2 × 1.5	Refer to Table B					112	
		12	0.3 × 2	Refer to Table B					113	
		13	0.4 × 2.4	Refer to Table B	105					
		14	0.6 × 3.8	Refer to Table B			108			
		15	0.7 × 7	Refer to Table B		88				
		16	0.9 × 7	Refer to Table B		89				
		17	1 × 10	Refer to Table B						37
		18	1 × 12	Refer to Table B						38
		19	1.2 × 17	Refer to Table B						39
		20	1.6 × 10	Refer to Table B				82		
	21	1.2 × 8	Refer to Table B				83			
	Box ⊙	Hex Bolt								
		W 5.5	5.5	M3		91				
		W 6	6	(M3.5)		95				
		W 7	7	M4		92				
W 8		8	(M4.5) M5		93					
Hex ⬡	Cap Screw									
	Set Screw									
	W 1.27	1.27	M2.5		56					
	W 1.5	1.5	M3		57					
	W 2	2	M2.5	M4		58				
	W 2.5	2.5	M3	M5		59				
	W 3	3	M4	M6		60				
	W 4	4	M5	M8		61				
	W 5	5	M6	M10		62				
W 6	6	M8	M12 (M14)		63					
W 8	8	M10	M16 (M18)		64					
Square Drive □	□ 2	□ 6.35	(1/4)						33	
	□ 3	□ 9.53	(3/8)						34	
Hexalobular ★	Flat Head									
	Socket Head									
	Set Screw									
	T 5	M2	M2.5			470				
T 6	M2	M3			471					
T 7		M3.5								
T 8	M2.5	M4			472					

## Bolt Head Shape (Ref.)

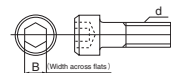


Nominal Size of Screw (d)	Hex head Bolt (B)	Small Hex Head Bolt (B)	High Strength Hex Bolt for Friction Grip Joint (B)	Hex Socket Head Cap Screw (B)	Hex Socket Set Screw (B)
M2.5	4.5	-	-	2	1.27
M3	5.5	-	-	2.5	1.5
(M3.5)	6	-	-	-	-
M4	7	-	-	3	2
(M4.5)	8	-	-	-	-
M5	8	-	-	4	2.5
M6	10	-	-	5	3
(M7)	11	-	-	-	-
M8	13	12	-	6	4
M10	16	17	14	8	5
M12	18	19	17	22	10
(M14)	21	22	19	-	12
M16	24	22	27	-	14
(M18)	27	24	-	-	8
M20	30	27	32	-	10
(M22)	32	34	30	36	-
M24	36	32	41	-	-
(M27)	41	36	46	19	-
M30	46	41	50	22	-
(M33)	50	46	-	24	-
M36	55	50	-	-	-
(M39)	60	55	-	27	-
M42	65	-	-	32	-
JIS	JIS B 1180	JIS B 1180	JIS B 1186	JIS B 1176	JIS B 1177

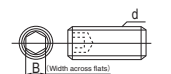
### Hex Bolt



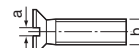
### Cap Screw



### Set Screw



### Flat Head Screw



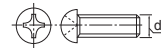
### How to order:

Indicate the model name and catalog No.

(EXAMPLE) MODEL NAME CATALOG No.



### Size of Bits



No. of Cross Nominal Size of Screw (d)	Hole No.	Remark
M1.6, M2	#0 (S-0)	
[M2], (M2.2), M2.5, (M3)	#1 (H-1)	Pan head screw, Flat head screw, Pan flat screw, Bind screw
M3, (M3.5), M4, (M4.5), M5	#2 (H-2)	[(M3) #1 is bind small screw only]
M6	#3 (H-3)	[(M2) #1 is not compliant with ISO]
M8, M10	#4 (H-4)	

Table A

Groove Width (a)	Nominal Size (b)	M1	M1.2	(M1.4)	M1.6	(M1.7)	M2	M2.2M	M2.3	M2.5	(M2.6)	M3	(M3.5)	M4	(M4.5)	M5	M6	M8	M10
		ISO Screws				0.4		0.5			0.6		0.8	1	1.2	1.2	1.6	2	2.5
Non-ISO Screws		0.32		0.4		0.6			0.8			1		1.2	1.6				

Table B

# QL/QL E2

Ratchet Head Type Adjustable Torque Wrench

Assembly Adjustable Ratchet Head Graduation RoHS

- Basic adjustable click style with resin grip
- Torque value easily set with external scale and knob

Direction



Accuracy ±3%

## QL/QL-MH Optional Accessories



842

846

Carrying Case (P.46)

Part #	Applicable Model Dimension [mm]
842	QL5N, QL5N-MH, QL100N4-MH H60 × W400 × D70
843	QL140N, QL140N-MH, QL200N4, QL200N4-MH H60 × W520 × D80
846	QL140N, QL140N-MH and below H170 × W500 × D100
847	QL280N, QL280N-MH and below H170 × W740 × D100



Color Cap

Part #	Color	Applicable Model
879	Red	QL2N, QL5N QL10N, QL15N, QL25N5-1/4, QL25N5
880	Blue	
881	Green	
882	Black	



Protective Head Cover  
Refer to page 46.

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·in/lbf·ft]		Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			
QL	N·m	N·m		kgf·cm	kgf·cm		lbf·in	lbf·in			
QL2N	0.4-2	0.02	20QL	4-20	0.2	QL15I-2A	3-15	0.1			
QL5N	1-5	0.05	50QL	10-50	0.5	QL30I-2A	6-30	0.2	194		0.27
QL10N	2-10		100QL	20-100		QL50I-2A	10-50			6.35	
QL15N	3-15	0.1	150QL	30-150	1	QL100I-2A	20-100	0.5	219		0.29
QL25N5-1/4	5-25	0.2	225QL5-1/4	50-250	2.5	QL200I-2A	50-200	2.5	237		
QL25N5			225QL5			QL200I-3A					0.33
QL50N	10-50	0.5	450QL3	100-500	5	QL400I-3A	100-400	5	260		0.45
-	-	-	-	-	-	QL750I-3A	150-750	10		9.53	
QL100N4-3/8	20-100		900QL4-3/8	200-1000		QL75F-3A	15-75	1	335		0.69
QL100N4	20-100	1	900QL4	200-1000	10	-	-	-	-	-	-
QL140N	30-140		1400QL3	300-1400		QL100F-4A	30-100	1	400		0.88
QL200N4	40-200		1800QL4	400-2000	20	QL150F-4A	30-150		490	12.7	1.4
QL280N-1/2	40-280	2	2800QL3-1/2			kgf·m	kgf·m				
QL280N			2800QL3	4-28		QL200F-4A	30-210	2	695		2.0
QL420N	60-420		4200QL2	6-42	0.2	-	-	-			
QL420N			4200QL2			QL300F-6A	60-300		995		3.4
QLE2	N·m	N·m		kgf·m	kgf·m		lbf·ft	lbf·ft			19.05
QLE550N2	100-550		5500QLE2	10-55		QLE400F-6A	100-400		1189		4.3
QLE750N2	150-750	5	7500QLE2	15-75	0.5	QLE600F-6A	150-600	5	1342		5.6
QLE1000N2	200-1000		10000QLE2	20-100		QLE700F-8A	200-700		1515		7.7
QLE1400N2	300-1400		14000QLE2	30-140	1	QLE1000F-8A	300-1000		1787	25.4	11.1
QLE2100N2	500-2100	10	21000QLE2	50-210		QLE1500F-8A	500-1500	10	1895		14.6
QLE2800N2	800-2800	20	28000QLE2	80-280	2	QLE2000F-12A	600-2000	20	2405	38.1	23.7

- Note
1. QL2N-QL25N5 are yellow/black resin grips. QL50N-QL280N are black resin grips.
  2. QL420N and QLE550N2-QLE2800N2 are knurled handles.
  3. Use a through-hole socket for square drive over 25.4mm.
  4. QLE2 models with built-in Adjusting Handle

## QLLS RoHS

- QL style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

S.I. Model	Metric Model
QLMS2N-MH	20QLMS-MH
QLMS5N-MH	50QLMS-MH
QLMS10N-MH	100QLMS-MH
QLMS10N	100QLMS
QLMS15N	150QLMS
QLMS15N-MH	150QLMS-MH
QLLS25N5	225QL5LS
QLLS50N	450QL3LS
QLLS100N4	900QL4LS
QLLS140N	1400QL3LS
QLLS200N4	1800QL4LS
QLLS280N	2800QL3LS
QLLS420N	4200QL2LS



POKA Patrol, Count Checker  
CNA-4mk3

Refer to page 28.



\* Sold separately

# QL-MH Ratchet Head Type Adjustable Torque Wrench with Metal Handle

Direction



QL100N4-MH

QL5N-MH

Assembly Adjustable Ratchet Head Graduation RoHS

- Knurled metal handle version of QL
- Ideal for oily working conditions

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·in]		Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			
QL2N-MH	0.4-2.0	0.02	20QL-MH	kgf·cm	kgf·cm	QL15I-2A-MH	3-15	0.1	160		0.16
QL5N-MH	1-5	0.05	50QL-MH	10-50	0.5	QL30I-2A-MH	6-30	0.2		6.35	
QL10N-MH	2-10		100QL-MH	20-100		QL50I-2A-MH	10-50	0.5			0.19
QL15N-MH	3-15	0.1	150QL-MH	30-150	1	QL100I-2A-MH	20-100	1	195		
QL25N-MH	5-25	0.25	225QL-MH	50-250	2.5	-	-	-	230		0.25
QL50N-MH	10-50	0.5	450QL-MH	100-500	5	-	-	-	260		0.45
QL100N4-MH	20-100		900QL4-MH	200-1000		-	-	-	335		0.69
QL140N-MH	30-140	1	1400QL-MH	300-1400	10	-	-	-	400	12.7	0.88
QL200N4-MH	40-200		1800QL4-MH	400-2000	20	-	-	-	490		1.4
QL280N-MH	40-280	2	2800QL-MH	kgf·m	kgf·m	-	-	-	695	19.05	1.9
				4-28	0.2						

Accuracy ±3%

# CL/CLE2

Interchangeable Head Type Adjustable Torque Wrench

**Assembly** **Adjustable** **Interchangeable** **Graduation** **RoHS**

Direction



- Interchangeable Head can be easily exchanged.
- Torque value easily set with external scale and knob



CL2N×8D

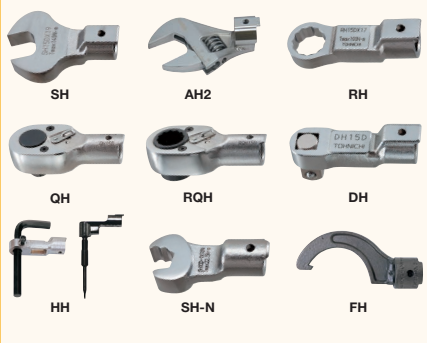


CLE850N2×32D



CL100N×15D

## Interchangeable Head



## CL/CL-MH Optional Accessories



842



846

### Carrying Case (P.46)

Part #	Applicable Model Dimension [mm]
842	CL50N×12D/15D, CL50N×12D/15D-MH, CL100N×15D-MH H60 × W400 × D70
843	CL140N×15D/-MH, CL200N×19D/-MH H60 × W520 × D80
846	CL200N×19D, CL200N×19D and below H170 × W500 × D100
847	CL280N×22D, CL280N×22D-MH and below H170 × W740 × D100



879



880



881

### Color Cap

Part #	Color	Applicable Model
879	Red	CL2N×8D, CL5N×8D CL10N×8D, CL15N×8D CL25N×10D
880	Blue	
881	Green	
882	Black	

Tohnichi Head Size	S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·in/lbf·ft]		Overall Length [mm]	Weight [kg]
		Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		
8D	CL	N·m	N·m	20CL	kgf·cm	kgf·cm	CL15I×8D	lbf·in	lbf·in	174	0.24
	CL2N×8D	0.4-2	0.02	150CL	4-20	0.2	CL30I×8D	3-15	0.1		
	CL5N×8D	1-5	0.05	50CL	10-50	0.5	CL50I×8D	6-30	0.2		
	CL10N×8D	2-10	0.1	100CL	20-100	1	CL100I×8D	10-50	0.5		
	CL15N×8D	3-15	0.15	150CL	30-150	1.5	CL150I×8D	20-100	1		
10D	CL25N5×10D	5-25	0.2	225CL5	50-250	2.5	CL200I×10D	50-200	2.5	216	0.3
12D	CL50N×12D	10-50	0.5	450CL3	100-500	5	450CL3-A	100-400	5	230	0.37
15D	CL50N×15D			500CL3			500CL3-A	100-450	5	235	
15D	CL100N×15D	20-100	1	900CL3	200-1000	10	900CL3-A	200-800	10	310	0.52
19D	CL140N×15D	30-140	1	1400CL3	300-1400	10	1400CL3-A	30-100	1	370	0.67
	CL200N×19D	40-200	2	1800CL3	400-2000	20	1800CL3-A	30-150	1	455	1.2
22D	CL280N×22D	40-280	2	2800CL3	4-28	0.2	2800CL3-A	30-200	2	655	1.8
	CL420N×22D	60-420	2	4200CL2	6-42	0.2	4200CL2-A	60-300	2	940	3.1
27D	CLE2	N·m	N·m	5500CLE2	kgf·m	kgf·m	CLE400F×27D	lbf·ft	lbf·ft	1148	3.9
	CLE550N2×27D	100-550	5	7500CLE2	10-55	0.5	CLE550F×27D	100-400	5		
	CLE750N2×27D	150-750	5	8500CLE2	15-75	0.5	CLE600F×32D	150-550	5		
32D	CLE850N2×32D	200-850	5	8500CLE2	20-85	0.5	CLE600F×32D	150-600	5	1297	5.1
	CLE1200N2×32D	300-1200	5	12000CLE2	30-120	0.5	CLE900F×32D	200-900	5	1464	6.9

- Note**
1. Overall length does not include interchangeable head. Interchangeable heads are optional.
  2. PH type interchangeable head/p.45 is not applicable.
  3. CL2N - CL25N5 are yellow/black resin grips. CL50N - CL280N are black resin grips.
  4. CL420N and CLE550N2-CLE1200N2 are knurled handles.
  5. CLE2 models with built-in Adjusting Handle

# CLLS

RoHS

- CL style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

S.I. Model	Metric Model
CLMS2N×8D-MH	20CLMS-MH
CLMS5N×8D-MH	50CLMS-MH
CLMS10N×8D-MH	100CLMS-MH
CLMS10N×8D	100CLMS
CLMS15N×8D	150CLMS
CLMS15N×8D-MH	150CLMS-MH
CLLS25N5×10D	225CL5LS
CLLS50N×12D	450CL3LS
CLLS100N×15D	900CL3LS
CLLS140N×15D	1400CL3LS
CLLS200N×19D	1800CL3LS
CLLS280N×22D	2800CL3LS
CLLS420N×22D	4200CL2LS

## POKA Patrol, Count Checker CNA-4mk3

Refer to page 28.



\* Sold separately

# CL-MH

Interchangeable Head Type Adjustable Torque Wrench with Metal Handle

Direction



**Assembly** **Adjustable** **Interchangeable** **Graduation** **RoHS**

- Knurled metal handle version of CL
- Ideal for oily working conditions



CL100N×15D-MH



CL5N×8D-MH

Tohnichi Head Size	S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·in]		Overall Length [mm]	Weight [kg]
		Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		
8D	CL2N×8D-MH	0.4-2	0.02	20CL-MH	kgf·cm	kgf·cm	CL15I×8D-MH	lbf·in	lbf·in	140	0.13
	CL5N×8D-MH	1-5	0.05	50CL-MH	10-50	0.5	CL30I×8D-MH	3-15	0.1		
	CL10N×8D-MH	2-10	0.1	100CL-MH	20-100	1	CL50I×8D-MH	6-30	0.2		
	CL15N×8D-MH	3-15	0.15	150CL-MH	30-150	1.5	CL100I×8D-MH	10-50	0.5		
10D	CL25N5×10D-MH	5-25	0.25	225CL-MH	50-250	2.5	-	-	-	200	0.22
12D	CL50N×12D-MH	10-50	0.5	450CL-MH	100-500	5	-	-	-	230	0.37
15D	CL50N×15D-MH			500CL-MH			-	-	235		
15D	CL100N×15D-MH	20-100	1	900CL-MH	200-1000	10	-	-	-	310	0.52
19D	CL140N×15D-MH	30-140	1	1400CL-MH	300-1400	10	-	-	-	370	0.67
	CL200N×19D-MH	40-200	2	1800CL-MH	400-2000	20	-	-	-	455	1.2
22D	CL280N×22D-MH	40-280	2	2800CL-MH	4-28	0.2	-	-	-	655	1.6

- Note**
1. Overall length does not include interchangeable head.
  2. PH type interchangeable head/p.45 is not applicable.
  3. Interchangeable heads are optional.

# DQL/DQLE2

Direction



Dual Square Drives  
Type Adjustable Torque  
Wrench

Assembly

Adjustable

Ratchet Head

Graduation

Bi-Directional

RoHS

- For bi-directional tightening
- Ideal for tightening large vehicle tires



DQL200N4



DQLE750N2

## DQL200N4 Optional Accessories

Carrying Case (P.46)

Part #	Applicable Model Dimension [mm]	Weight [kg]
843	DQL200N4 H60 × W520 × D80	0.36
847	DQL280N and below H170 × W740 × D100	1.0

## Protective Head Cover



No.875 with DQL200N4



No.875

Part #	Applicable Model
875	DQL200N4

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·ft]		Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			
DQL	N·m	N·m		kgf·cm	kgf·m		lbf·ft	lbf·ft			
DQL200N4	40-200	2	1800DQL4	400-2000	20	1800DQL4-A	30-150		490	12.7	1.4
DQL280N	40-280	2	2800DQL3	4-28	0.2	2800DQL3-A	30-210		695		2.0
DQLE2	N·m	N·m		kgf·m	kgf·m		lbf·ft	lbf·ft		19.0	
DQLE550N2	100-550		5500DQLE2	10-55		DQLE400F-6A	100-400		1189		4.4
DQLE750N2	150-750	5	7500DQLE2	10-75	0.5	DQLE600F-6A	150-600	5	1342		5.7
DQLE1000N2	200-1000		10000DQLE2	10-100		DQLE700F-8A	200-700		1515	25.4	7.9

Accuracy ±3%

- Note
1. DQL200N4 and DQL280N have resin grips.
  2. For the model having 25.4mm square drive, use a through-hole socket.
  3. DQLE550N2-DQLE1000N2 have knurled handles.
  4. DQLE2 with built-in Adjusting Handle

# TW2

Adjustable Torque Wrench with Multiplier

Direction



NEW



TW750N2

Assembly

Adjustable

Ratchet Head

Graduation

Bi-Directional

- Easy bolt tightening for large vehicle tires

Accuracy ±5%

Model	Torque Range [N·m]		Square Drive [mm]	Weight [kg]	
	Min.-Max.	Grad.		Body	Torque Wrench
TW750N2	350-750		25.4	20	1.5
TW1000N2	400-1000	5	25.4	20	2.0

- Note
1. TW2 is a set of dedicated torque wrench and stand. Standard torque wrench cannot be used.
  2. Use through hole type socket for square drive 25.4mm.
  3. Socket, pin, and O-ring are sold separately.
  4. Applicable height of nut is between 255 and 790mm

Usage Example



# MTQL

Torque Wrench for Motorsports

Direction



MTQL70N

Assembly

Adjustable

Ratchet Head

Graduation

RoHS

- Wide capacity adjustable style
- Ideal for motorcycle & motorbike maintenance

Accuracy ±5%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·m]		Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.			
MTQL40N	5-40	0.5	400MTQL	0.5-4	0.05	250	9.5	0.45
MTQL70N	10-70	1	700MTQL	1-7	0.1	285		0.47
MTQL140N	20-140		1400MTQL	2-14		400	12.7	0.77

Standard Accessories Carrying case

## MTQL Optional Accessories



842



846

Carrying Case (P.46)

Part #	Applicable Model Dimension [mm]	Weight [kg]
842	MTQL40N, MTQL70N H60 × W400 × D70	0.25
843	MTQL140N H60 × W520 × D80	0.36
846	MTQL140N and below H170 × W500 × D100	1.0



# TiQL/TiQLE

Direction

Titanium Type Adjustable Torque Wrench



TiQL180N



TIEQLE750N

Assembly Pre-Lock Ratchet Head Graduation Titanium Material RoHS

- 50% lighter than standard wrenches
- Ideal for working overhead

Accuracy ±3%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.			
TiQL				kgf·cm	kgf·cm			
TiQL180N	40-180		1800TiQL	40-1800	20	494	12.7	0.9
TiLQL180N		2	1800TiLQL			594		1.0
TiEQL360N	80-360		3600TiEQL	8-36	0.2	987		2.4
TiQLE	N·m	N·m		kgf·m	kgf·m		19.0	
TiEQLE750N	100-750	5	7500TiEQLE	10-75	0.5	1365		4.5
TiEQLE1400N	200-1400	10	14000TiEQLE	20-140	1	1794	25.4	7.5

Note For the model having 25.4mm square drive, use a through-hole socket.

Standard Accessories 1. Hex key and Color bands for TiQL180N, TiLQL180N and TiEQL360N  
2. Adjusting tool for TiEQLE750N, TiEQLE1400N

## TiEQLE Optional Accessories



Adjusting Tool for TiEQLE (P.46)

Part #	Applicable Model
301	TiEQLE750N, 1400N

# TiQLLS RoHS

- TiQL style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

POKA Patrol, Count Checker

## CNA-4mk3

Refer to page 28.



\* Sold separately

S.I. Model	Metric Model
TiQLLS180N	1800TiQLLS
TiLQLLS180N	1800TiLQLLS
TiEQLLS360N	3600TiEQLLS

# PHL/PHLE2

Direction

Pipe-Wrench Head Type Adjustable Torque Wrench



PHL140N



PHLE1300N2

Assembly Adjustable Graduation Pipe-Wrench Head RoHS

- Ideal for use with pipes and plumbing applications

Accuracy ±5%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·in/lbf·ft]		Grippable Pipe Dia. [mm]	Overall Length [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			
PHL				kgf·cm	kgf·m		lbf·in	lbf·ft			
PHL50N	10-50	0.5	500PHL3	100-500	5	450PHL3-A	100-400	5		316	1.46
							lbf·ft	lbf·ft			
PHL100N	20-100		900PHL3	200-900		900PHL3-A	15-75		13-38	472	1.61
PHL140N	30-140	1	1400PHL3	400-1400	10	1400PHL3-A	30-100	1		530	1.76
PHL200N	40-200		1800PHL3	400-1800	20	1800PHL3-A	30-150			620	2.3
		2		kgf·m	kgf·m						
PHL280N	40-280		2800PHL3	4-28		2800PHL3-A	30-200	2		833	2.92
PHL420N	60-420	3	4200PHL	6-42	0.2	4200PHL-A	60-300			1122	4.83
	N·m	N·m		kgf·m	kgf·m			lbf·ft	lbf·ft		
PHLE850N2	200-850		8500PHLE2	20-85		PHLE600F	150-600		26-52	1664	8.2
PHLE1300N2	300-1300	5	13000PHLE2	30-130	0.5	PHLE900F	200-900	5		1831	10

Note 1. PHLE2 Models have extension bar handle.  
2. PHL420N, PHLE850N2, and PHLE1300N2 have knurled handles.  
3. PHLE2 with built-in Adjusting Handle

# QRSP Open Ring Head Type Preset Torque Wrench

Direction



QRSP38N×17

Assembly Preset Open Ratchet Head RoHS

- Ring head opens to allow fitting on tubes or pipes.

Accuracy ±3%

Model	Torque Range		Overall Length [mm]	Weight [kg]
	[N·m] Min.-Max.	[kgf·cm] Min.-Max.		
QRSP38N×17			300	
QRSP38N×19	10-45	100-450	305	0.4
QRSP38N×21				
QRSP38N×24			310	0.43

Note A torque wrench tester is necessary for torque setting. Specify required set torque when you order.  
Ex. QRSP38N×17 × 25N·m

## QRSP Optional Accessories

Thrusting Tool for QRSP (P.46)

Part #	Tool #	Applicable Model
312	A-3	QRSP38N

# QRSPLS RoHS

- QRSP style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

POKA Patrol, Count Checker

## CNA-4mk3

Refer to page 28.



\* Sold separately

Model	Weight [kg]
QRSPLS38N×17	0.4
QRSPLS38N×19	
QRSPLS38N×21	
QRSPLS38N×24	0.43

# PQL

Ratchet Head Type  
Pre-Lock Torque  
Wrench

Direction



## PQL Optional Accessories



842



846

Carrying Case (P.46)

Part #	Applicable Model Dimension [mm]	Weight [kg]
842	50N-100N4 H60 × W400 × D70	0.25
843	140N-200N4 H60 × W520 × D80	0.36
846	200N and below H170 × W500 × D100	1.0
847	280N and below H170 × W740 × D100	0.36



Protective Head Cover

Refer to page 46.

Assembly

Pre-Lock

Ratchet Head

Graduation

RoHS

- External scale, set by a hex key



PQL100N4

Accuracy ±3%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·in/lbf·ft]		Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			
PQL10N	2-10		100PQL	kgf·cm	kgf·cm	PQL50I-2A	10-50	0.5	190	6.35	0.19
PQL15N	3-15	0.1	150PQL	30-150	1	PQL100I-2A	20-100	1			
PQL25N	5-25	0.25	225PQL	50-250	2.5	225PQL-A	50-200	2.5	215	9.53	0.25
PQL50N	10-50	0.5	450PQL	100-500	5	450PQL-A	100-400	5	260		0.40
							lbf·ft	lbf·ft			
PQL100N4	20-100	1	900PQL4	200-1000	10	900PQL4-A	15-75	1	320		0.65
PQL140N	30-140		1400PQL	300-1400		1400PQL-A	30-100		385	12.7	0.75
PQL200N4	40-200		1800PQL4	400-2000	20	1800PQL4-A	30-150	2	470		1.40
		2		kgf·m	kgf·m						
PQL280N	40-280		2800PQL	4-28	0.2	-	-	-	670	19.05	2.0
PQL420N	60-420		4200PQL	6-42		-	-	-	975		3.4

Standard Accessories Hex key for torque adjustment

# PQLLS

RoHS

- PQL style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

S.I. Model	Metric Model
PQLLS25N	225PQLLS
PQLLS50N	450PQLLS
PQLLS100N4	900PQL4LS
PQLLS140N	1400PQLLS
PQLLS200N4	1800PQL4LS
PQLLS280N	2800PQLLS
PQLLS420N	4200PQLLS

POKA Patrol, Count Checker  
CNA-4mk3

Refer to page 28.



\* Sold separately

# PQLZ

Pre-Lock Adjustable  
Insulated Torque  
Wrench

Direction



PQLZ100N4

Assembly

Pre-Lock

Ratchet Head

Graduation

Vinyl Coating

- Insulated casing prevents electrical shocks.
- Specialized version of PQL

Accuracy ±3%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm]		Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.			
PQLZ25N	5-25	0.25	225PQLZ	50-225	2.5	227	9.5	0.28
PQLZ100N4	20-100	1	900PQLZ4	200-900	10	340	12.7	0.80

Standard Accessories Hex key for torque adjustment

# QSPZ

Preset Insulated  
Torque Wrench

Direction



QSPZ25N

Assembly

Preset

Vinyl Coating

- Insulated design suited for use in electric shock hazard conditions
- Ideal for electric car assembly, connection of battery terminal wiring work etc.

Accuracy ±3%

Model	Torque Range			Overall Length [mm]	Square Drive [mm]	Weight [kg]
	[N·m]	[kgf·cm]	[lbf·in]			
QSPZ25N	5-25	50-250	50-200	227	9.5	0.28
QSPZ100N4	20-100	200-1000	100-750	334	12.7	0.8

Note

- A torque wrench tester is necessary for torque adjustment. Specify required set torque when you order. Ex. QSPZ100N4 × 80N·m
- Adjusting tools for QSPZ are sold separately.
- Sockets are sold separately. Refer to page 41.
- Sockets are not insulation coating.

# MT70N

Moto Tork/Pre-Lock  
Adjustable Specialty  
Torque Wrench

Direction



MT70N

Assembly

Pre-Lock

Interchangeable

Graduation

RoHS

- Converts basic hand tools into torque wrenches
- Ideal for motorcycle maintenance

Accuracy ±5%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·m]		Overall Length [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		
MT70N	10-70	0.2	MT-7	1.0-7.0	0.02	238	0.65

Note

- Ring head wrench shown in the photo is not included.
- Max. clamp width for interchangeable tool is approx. 21mm.
- Min. interchangeable hex wrench key size is 5mm.

Standard Accessories

- Carrying case
- Hex key wrench for torque adjustment

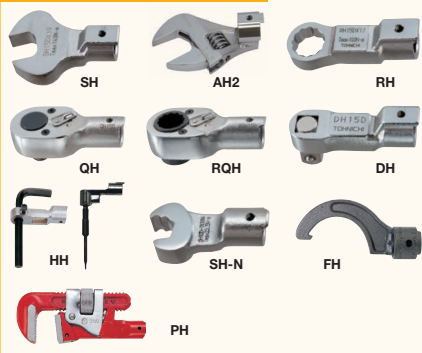
# PCL

Interchangeable Head Type Pre-Lock Torque Wrench

Direction



## Interchangeable Head



Assembly Pre-Lock Interchangeable Graduation RoHS

- Interchangeable head version of PQL
- External scale, set by a hex key



PCL100N×15D

Tohnichi Head Size	S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm]		Torque Range [lbf-in/lbf-ft]		Overall Length [mm]	Weight [kg]	
		Min.-Max.	Grad.		Min.-Max.	Grad.	American Model				
							Min.-Max.	Grad.			lbf-in
8D	PCL10N×8D	2-10	0.1	100PCL	20-100	1	PCL50×8D	10-50	0.5	170	0.16
	PCL15N×8D	3-15		150PCL	30-150		PCL100×8D	20-100	1		
10D	PCL25N×10D	5-25	0.25	225PCL	50-250	2.5	225PCL-A	50-200	2.5	195	0.22
	PCL50N×12D	10-50	0.5	450PCL	100-500	5	450PCL-A	100-400	5	220	0.32
PCL50N×15D	500PCL			500PCL-A			100-450				
15D	PCL100N×15D	20-100	1	900PCL	200-1000	10	900PCL-A	15-75	1	295	0.48
	PCL140N×15D	30-140		1400PCL	300-1400		1400PCL-A	30-100		355	0.63
19D	PCL200N×19D	40-200	2	1800PCL	400-2000	20	1800PCL-A	30-150	2	435	1.3

Accuracy ±3%

- Note**
1. Overall length does not include interchangeable head.
  2. PH type interchangeable head/p.45 is not applicable.
  3. Interchangeable heads are optional.

**Standard Accessories** Hex key for torque adjustment

# PCLLS RoHS

- PCL style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

S.I. Model	Metric Model
PCLLS25N×10D	225PCLLS
PCLLS50N×12D	450PCLLS
PCLLS50N×15D	500PCLLS
PCLLS100N×15D	900PCLLS
PCLLS140N×15D	1400PCLLS
PCLLS200N×19D	1800PCLLS

## POKA Patrol, Count Checker CNA-4mk3

Refer to page 28.



\* Sold separately

# SCL

European Style Interchangeable Head Type Adjustable Torque Wrench

Direction



SCL50N-9×12

Assembly Adjustable Interchangeable Graduation RoHS

- DIN interchangeable head connection
- Same function of CL

S.I. Model	Torque Range [N·m]		Head Size [mm]	Overall Length [mm]	Weight [kg]
	Min.-Max.	Grad.			
SCL25N5-9×12	5-25	0.2	9×12	226	0.3
SCL50N-9×12	10-50	0.5		239	0.37
SCL100N-9×12	20-100	1		313	0.52
SCL200N-14×18	40-200	2	14×18	464	1.2

Accuracy ±3%

- Note**
1. Overall length does not include interchangeable head.
  2. Applicable to European style interchangeable head only. Tohnichi's interchangeable heads are not available for SCL models.
  3. SCL25N5-9 × 12N is a yellow/black resin grip.

# SCSP

European Style Interchangeable Head Type Preset Torque Wrench

Direction



SCSP50N-9×12

Assembly Interchangeable Preset RoHS

- DIN interchangeable head connection
- Same function of CSP

Model	Torque Range		Head Size [mm]	Overall Length [mm]	Weight [kg]
	[N·m]	[kgf·cm]			
	Min.-Max.	Min.-Max.			
SCSP25N-9×12	5-25	50-250	9×12	204	0.15
SCSP50N-9×12	10-50	100-500		230	0.3
SCSP100N-9×12	20-100	200-1000		302	0.45
SCSP200N-14×18	40-200	400-2000	14×18	434	1

Accuracy ±3%

- Note**
1. Overall length does not include interchangeable head.
  2. Applicable to European style interchangeable head only. Tohnichi's interchangeable heads are not available for SCL models.

# QSP

## Ratchet Head Type Preset Torque Wrench

Direction



Assembly Preset Ratchet Head RoHS

- No external scale, torque set by a torque wrench tester
- Ideal for mass production application



QSP100N4

Accuracy ±3%

### QSP Optional Accessories

Thrusting Tool (P.46)

Part #	Tool #	Applicable Model
310	A-1	1.5N-6N
311	A-2	12N, 25N
312	A-3	50N-140N
313	A-4	200N-280N
314	A-5	420N

### QSP3/QSP-MH Optional Accessories



931  
930

314

Adjusting Tool (P.46)

Part #	Applicable Model
931	QSP1.5N4-12N4, QSP25N3/-MH
930	QSP50N3/-MH ~ 280N3/-MH QSP100N4/-MH, 200N4/-MH
314	QSP420N

Model	Torque Range			Overall Length [mm]	Square Drive [mm]	Weight [kg]
	[N-m] Min.-Max.	[kgf-cm/kgf-m] Min.-Max.	[lbf-in] Min.-Max.			
		kgf-cm				
QSP1.5N4	0.3-1.5	3-15	2.7-13.2	165	6.35	0.16
QSP3N4	0.6-3	6-30	5.3-26.5			
QSP6N4	1-6	10-60	8.9-53.1			
QSP12N4	2-12	20-120	17.7-106.2	175		0.25
QSP25N3-1/4	5-25	50-250	44.3-221.2	215	9.53	0.4
QSP25N3						
QSP50N3	10-50	100-500	88.5-442.5	240		0.65
QSP100N4-3/8	20-100	200-1000	177-885	315	12.7	1.2
QSP100N4						
QSP140N3	30-140	300-1400	265.5-1239.1	380		0.7
QSP200N4	40-200	400-2000	354-1770.1	465		1.8
		kgf-m				
QSP280N3-1/2	40-280	4-28	354-2478.2	665	19.05	3.1
QSP280N3						
QSP420N	60-420	6-42	531.1-3717.3	970		

- Note
1. Adjusting tools are sold separately.
  2. A torque wrench tester is necessary for torque setting. Specify required set torque when you order.  
Ex. QSP100N4 × 80N-m
  3. QSP200N4-QSP420N have knurled handles.

# QSPLS

RoHS

- QSP style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

Refer to page 29.



Protective Head Cover  
Refer to page 46.

# QSP-MH

## Ratchet Head Type Preset Torque Wrench with Metal Handle

Direction



QSP100N4-MH

Assembly Preset Ratchet Head RoHS

- Knurled metal handle version of QSP
- Ideal for oily working conditions

Accuracy ±3%

Model	Torque Range			Overall Length [mm]	Square Drive [mm]	Weight [kg]
	[N-m] Min.-Max.	[kgf-cm] Min.-Max.	[lbf-in] Min.-Max.			
QSP25N3-MH	5-25	50-250	44.3-221.2	215	9.5	0.25
QSP50N3-MH	10-50	100-500	88.5-442.5	240		0.4
QSP100N4-MH	20-100	200-1000	177-885	315	12.7	0.65
QSP140N3-MH	30-140	300-1400	265.5-1239.1	380		0.7

- Note
1. A torque wrench tester is necessary for torque adjustment. Specify required set torque when you order.  
Ex. QSP100N4-MH × 80N-m
  2. Adjusting tools for QSP-MH are sold separately.
  3. Sockets are sold separately. Refer to page 41.

# BQSP

## Bi-Directional Type Preset Torque Wrench

Direction



NEW



BQSP70N

Assembly Preset Ratchet Head Bi-Directional RoHS

- Click for both CW & CCW applications
- Same function of QSP

Accuracy ±3%

Model	Torque Range			Overall Length [mm]	Square Drive [mm]	Weight [kg]	Adjusting Tool Part #
	[N-m] Min.-Max.	[kgf-cm/kgf-m] Min.-Max.	[lbf-in] Min.-Max.				
NEW BQSP10N	5-10	50-100	44.3-88.5	213.5	6.35	0.2	931
NEW BQSP20N	10-20	100-200	88.5-177	240	9.53	0.4	930
NEW BQSP40N	20-40	200-400	177-354				
NEW BQSP70N	35-70	350-700	309.8-619.5	314		0.63	
NEW BQSP120N	60-120	600-1200	531-1062	380	12.7	0.73	930
NEW BQSP220N	110-220	1100-2200	973.5-1947	462			
		kgf-m					
NEW BQSP300N	150-300	15-30	1327.5-2655	665	19.05	2.4	314
NEW BQSP400N	200-420	20-42	1770-3717	970.5			

- Note
1. BQSP10N-300N have resin grips.
  2. BQSP400N has a knurled handle.
  3. Adjusting tool is sold separately.
  4. Sockets are sold separately. Refer to page 41.

### BQSP Optional Accessories



931  
930

314

Adjusting Tool (P.46)

Part #	Applicable Model
931	BQSP10N-20N
930	BQSP40-300N
314	BQSP400N

# CSP

Interchangeable Head Type Preset Torque Wrench

Direction



### CSP Optional Accessories

Thrusting Tool (P.46)

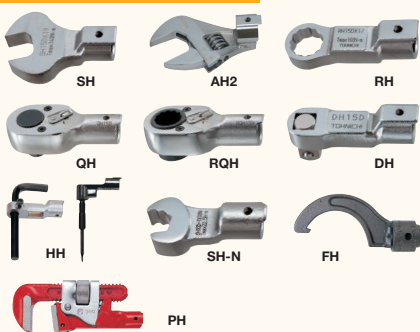
Part #	Tool #	Applicable Model
310	A-1	1.5N-6N
311	A-2	12N, 25N
312	A-3	50N-140N
313	A-4	200N-280N
314	A-5	420N

### CSP Optional Accessories

Adjusting Tool (P.46)

Part #	Applicable Model
931	CSP1.5N4-12N4, 25N3/-MH
930	CSP50N3/-MH ~ 280N3/-MH
314	CSP420N

### Interchangeable Head



Assembly Preset Interchangeable RoHS

- Interchangeable head version of QSP
- No external scale, torque set by a torque wrench tester



CSP100N3x15D

Accuracy ±3%

Tohnichi Head Size	Model	Torque Range			Overall Length [mm]	Weight [kg]
		[N-m] Min.-Max.	[kgf-cm/kgf-m] Min.-Max.	[lbf-in] Min.-Max.		
8D	CSP1.5N4x8D	0.3-1.5	kgf-cm 3-15	2.7-13.2	130	0.2
	CSP3N4x8D	0.6-3	6-30	5.3-26.5		
	CSP6N4x8D	1-6	10-60	8.9-53.1		
10D	CSP12N4x8D	2-12	20-120	17.7-106.2	165	0.3
	CSP25N3x10D	5-25	50-250	44.3-221.2	195	
12D	CSP50N3x12D	10-50	100-500	88.5-442.5	215	0.3
	CSP50N3x15D				220	
15D	CSP100N3x15D	20-100	200-1000	177-885	290	0.45
	CSP140N3x15D	30-140	300-1400	265.5-1239.1	350	0.55
19D	CSP200N3x19D	40-200	400-2000	354-1770.1	430	1.0
22D	CSP280N3x22D	40-280	kgf-m 4-28	354-2478.2	625	1.4
	CSP420Nx22D	60-420	6-42	531.1-3717.3	920	2.7

- Note
1. Overall length does not include interchangeable head.
  2. Adjusting tools are sold separately.
  3. Interchangeable heads are optional.
  4. A torque wrench tester is necessary for torque setting. Specify required set torque when you order.  
Ex. CSP100N3x15D x 80N-m
  5. CSP200N3x19D-CSP420Nx22D have knurled handles.

# CSPLS

RoHS

- CSP style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

POKA Patrol, Count Checker  
CNA-4mk3

Refer to page 28.



\* Sold separately

# CSP-MH

Interchangeable Head Type Preset Torque Wrench with Metal Handle

Direction



CSP100N3x15D-MH

Assembly Interchangeable Preset RoHS

- Knurled metal handle version of CSP
- Ideal for oily working conditions

Model	Torque Range			Overall Length [mm]	Weight [kg]
	[N-m] Min.-Max.	[kgf-cm] Min.-Max.	[lbf-in] Min.-Max.		
CSP25N3x10D-MH	5-25	50-250	44.3-221.2	195	0.2
CSP50N3x12D-MH	10-50	100-500	88.5-442.5	215	0.3
CSP50N3x15D-MH				220	
CSP100N3x15D-MH	20-100	200-1000	177-885	290	0.45
CSP140N3x15D-MH	30-140	300-1400	265.5-1239.1	350	0.55

- Note
1. A torque wrench tester is necessary for torque adjustment. Specify required set torque when you order.  
Ex. CSP100N3x15D-MH x 80N-m
  2. Adjusting tools for CSP-MH are sold separately.
  3. Sockets are sold separately. Refer to page 41.

# BCSP

Bi-Directional Interchangeable Head Type Preset Torque Wrench

Direction



NEW



BCSP70Nx15D

Assembly Preset Interchangeable Bi-Directional RoHS

- Click for both CW & CCW applications
- Same function of CSP

Tohnichi Head Size	Model	Torque Range			Overall Length [mm]	Effective Length [mm]	Weight [kg]	Adjusting Tool Part #
		[N-m] Min.-Max.	[kgf-cm/kgf-m] Min.-Max.	[lbf-in] Min.-Max.				
8D	BCSP10Nx8D	5-10	50-100	44.3-88.5	189.5	176	0.2	931
	BCSP20Nx10D	10-20	100-200	88.5-177	192.5	186	0.23	
12D	BCSP40Nx12D	20-40	200-400	177-354	214	208		0.57
	BCSP70Nx12D	35-70	350-700	309.8-619.5	286	280		
BCSP70Nx15D	290				291			
15D	BCSP120Nx15D	60-120	600-1200	531-1062	348.5	349.5	0.62	930
19D	BCSP220Nx19D	110-220	1100-2200	973.5-1947	427	445	1.2	
22D	BCSP300Nx22D	150-300	kgf-m 15-30	1327.5-2655	625	660	2	
	BCSP400Nx22D	200-420	20-42	1770-3717	918	950	3.7	314

- Note
1. Overall length does not included interchangeable head. Interchangeable heads are optional.
  2. BCSP10N-300N have resin grips.
  3. BCSP400N has a knurled handle.
  4. Adjusting tool is sold separately.
  5. Sockets are sold separately. Refer to page 41.

### BCSP Optional Accessories

Adjusting Tool (P.46)

Part #	Applicable Model
931	BCSP10N-20N
930	BCSP40N-300N
314	BCSP400N

# SP·SP2/-MH RSP2/-MH

Open End/Ring  
Head Type  
Preset Torque  
Wrench

**Assembly**

**Preset**

**Open End Spanner** .....SP-SP2/-MH

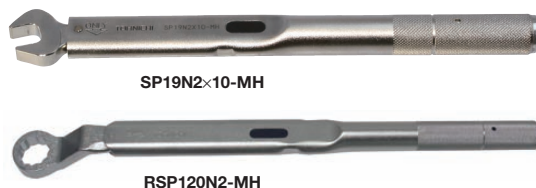
**Ring Head** .....RSP2/-MH

- Various sizes of open end or ring heads fixed on wrench
- Ideal for specific bolt size application

RoHS

RoHS

Direction



Accuracy ±3%

Accuracy ±3%

NEW	Model (Body Size × Width)		Torque Range		Head Dimension O.W. × Thickness [mm]	Overall Length [mm]	Weight [kg]
	SP2	SP2-MH	[N·m]	[kgf·cm]			
			Min.-Max.	Min.-Max.			
NEW	SP2N2×5.5	-	0.4-2	4-20	23×5	180	0.15
NEW	SP2N2×7	-					
NEW	SP2N2×8	-					
NEW	SP2N2×10	-					
NEW	SP2N2×12	-					
NEW	SP2N2×13	-					
NEW	SP2N2×17	-					
NEW	SP2N2×19	-					
NEW	SP8N2×7	-	23×5	180	0.2		
NEW	SP8N2×8	-					
NEW	SP8N2×9	-					
NEW	SP8N2×10	-					
NEW	SP8N2×12	-					
NEW	SP8N2×13	-					
NEW	SP8N2×19	-					
NEW	SP19N2×10	SP19N2×10-MH	1.5-8	15-80		27×6.5	
NEW	SP19N2×11	SP19N2×11-MH					
NEW	SP19N2×12	SP19N2×12-MH					
NEW	SP19N2×13	SP19N2×13-MH					
NEW	SP19N2×14	SP19N2×14-MH					
NEW	SP19N2×17	SP19N2×17-MH					
NEW	SP19N2×19	SP19N2×19-MH					
NEW	SP19N2×21	SP19N2×21-MH					
NEW	SP19N2×1×10	SP19N2×1×10-MH			31×8	220 (216)	
NEW	SP19N2×2×10	SP19N2×2×10-MH					
NEW	SP19N2×3×10	SP19N2×3×10-MH					
NEW	SP38N2×8	SP38N2×8-MH					
NEW	SP38N2×9	SP38N2×9-MH			31×8	250 (245)	
NEW	SP38N2×10	SP38N2×10-MH					
NEW	SP38N2×11	SP38N2×11-MH					
NEW	SP38N2×12	SP38N2×12-MH					
NEW	SP38N2×13	SP38N2×13-MH					
NEW	SP38N2×14	SP38N2×14-MH					
NEW	SP38N2×16	SP38N2×16-MH					
NEW	SP38N2×17	SP38N2×17-MH					
NEW	SP38N2×19	SP38N2×19-MH					
NEW	SP38N2×22	SP38N2×22-MH					
NEW	SP38N2×24	SP38N2×24-MH					
NEW	SP38N2×27	SP38N2×27-MH					
NEW	SP38N2×1×10	SP38N2×1×10-MH					
NEW	SP38N2×2×10	SP38N2×2×10-MH					
NEW	SP38N2×3×10	SP38N2×3×10-MH					
NEW	SP67N2×14	SP67N2×14-MH	41×8	270 (265)			
NEW	SP67N2×16	SP67N2×16-MH					
NEW	SP67N2×17	SP67N2×17-MH					
NEW	SP67N2×18	SP67N2×18-MH					
NEW	SP67N2×19	SP67N2×19-MH					
NEW	SP67N2×21	SP67N2×21-MH					
NEW	SP67N2×22	SP67N2×22-MH					
NEW	SP67N2×24	SP67N2×24-MH					
NEW	SP67N2×27	SP67N2×27-MH					
NEW	SP67N2×29	SP67N2×29-MH					
NEW	SP67N2×30	SP67N2×30-MH					
NEW	SP67N2×32	SP67N2×32-MH					
NEW	SP67N2×33.3	SP67N2×33.3-MH					
NEW	SP120N2×14	SP120N2×14-MH			43×8	270 (265)	
NEW	SP120N2×17	SP120N2×17-MH					
NEW	SP120N2×18	SP120N2×18-MH					
NEW	SP120N2×19	SP120N2×19-MH					
NEW	SP120N2×21	SP120N2×21-MH					
NEW	SP120N2×22	SP120N2×22-MH					
NEW	SP120N2×23	SP120N2×23-MH					
NEW	SP120N2×24	SP120N2×24-MH					
NEW	SP120N2×27	SP120N2×27-MH					
NEW	SP120N2×30	SP120N2×30-MH					
NEW	SP160N2×19	SP160N2×19-MH					
NEW	SP160N2×21	SP160N2×21-MH					
NEW	SP160N2×22	SP160N2×22-MH					
NEW	SP160N2×24	SP160N2×24-MH					
NEW	SP160N2×26	SP160N2×26-MH					
NEW	SP160N2×27	SP160N2×27-MH					

NEW	Model (Body Size × Width)		Torque Range		Head Dimension O.W. × Thickness [mm]	Overall Length [mm]	Weight [kg]
	SP/SP2	SP2-MH	[N·m]	[kgf·cm]			
			Min.-Max.	Min.-Max.			
NEW	SP160N2×41	SP160N2×41-MH	30-160	300-1600	70×14	386 (386)	
NEW	SP220N2×19	SP220N2×19-MH					
NEW	SP220N2×22	SP220N2×22-MH					
NEW	SP220N2×24	SP220N2×24-MH					
NEW	SP220N2×27	SP220N2×27-MH					
NEW	SP220N2×29	SP220N2×29-MH					
NEW	SP220N2×30	SP220N2×30-MH					
NEW	SP220N2×32	SP220N2×32-MH					
NEW	SP220N2×34	SP220N2×34-MH	45-220	450-2200	53×13	448 (447)	
NEW	SP220N2×36	SP220N2×36-MH					
NEW	SP310N2×22	SP310N2×22-MH					
NEW	SP310N2×24	SP310N2×24-MH					
NEW	SP310N2×27	SP310N2×27-MH					
NEW	SP310N2×30	SP310N2×30-MH					
NEW	SP310N2×32	SP310N2×32-MH					
NEW	SP310N2×41	SP310N2×41-MH					
NEW	SP310N2×46	SP310N2×46-MH					
NEW	SP420N×27	-					
NEW	SP420N×30	-					
NEW	SP420N×32	-					
NEW	SP420N×34	-					
NEW	SP420N×35	-					
NEW	SP420N×36	-					
NEW	SP560N×30	-					
NEW	SP560N×32	-					
NEW	SP560N×36	-					
NEW	SP560N×46	-					
NEW	SP560N×55	-					

NEW	Model (Body Size × Width)		Torque Range		Head Dimension O.W. × Thickness [mm]	Overall Length [mm]	Weight [kg]
	RSP2	RSP2-MH	[N·m]	[kgf·cm]			
			Min.-Max.	Min.-Max.			
NEW	RSP8N2×8	-	2-9	20-90	15×6	200	
NEW	RSP8N2×10	-					
NEW	RSP19N2×8	RSP19N2×8-MH	4-14.1	40-141	15×6	220 (220)	
NEW	RSP19N2×10	RSP19N2×10-MH					
NEW	RSP19N2×13	RSP19N2×13-MH					
NEW	RSP38N2×10	RSP38N2×10-MH					
NEW	RSP38N2×12	RSP38N2×12-MH					
NEW	RSP38N2×13	RSP38N2×13-MH					
NEW	RSP38N2×14	RSP38N2×14-MH					
NEW	RSP38N2×16	RSP38N2×16-MH					
NEW	RSP38N2×17	RSP38N2×17-MH					
NEW	RSP67N2×14	RSP67N2×14-MH					
NEW	RSP67N2×16	RSP67N2×16-MH					
NEW	RSP67N2×17	RSP67N2×17-MH					
NEW	RSP67N2×18	RSP67N2×18-MH					
NEW	RSP67N2×19	RSP67N2×19-MH					
NEW	RSP120N2×17	RSP120N2×17-MH					
NEW	RSP120N2×18	RSP120N2×18-MH					
NEW	RSP120N2×19	RSP120N2×19-MH					
NEW	RSP120N2×21	RSP120N2×21-MH					
NEW	RSP120N2×22	RSP120N2×22-MH					
NEW	RSP160N2×19	RSP160N2×19-MH					
NEW	RSP160N2×21	RSP160N2×21-MH					
NEW	RSP160N2×22	RSP160N2×22-MH					
NEW	RSP160N2×24	RSP160N2×24-MH					
NEW	RSP220N2×22	RSP220N2×22-MH					
NEW	RSP220N2×24	RSP220N2×24-MH					
NEW	RSP220N2×27	RSP220N2×27-MH					
NEW	RSP310N2×24	RSP310N2×24-MH					
NEW	RSP310N2×27	RSP310N2×27-MH					
NEW	RSP310N2×30	RSP310N2×30-MH					

Note

1. The value shown in ( ) in the "Overall Length" shows the length of SP2-MH models.
2. Due to a variety of SP2/RSP2 models, specify required inner width, model name and set torque when you order.  
Ex. RSP38N2×10 × 16N·m
3. Refer to page 46 for thrusting and adjusting tool

### SP-SP2-RSP2/-MH Optional Accessories

Thrusting Tool / Adjusting Tool (P.46)

# SP2-H Torque Wrench for Piping Work

Direction



SP38N2x19H



Assembly Preset Open End Spanner RoHS

- Made with smaller outside width to work in narrow spaces, including hydraulic piping, where current open-end type is unable to access.
- Aligned with appropriate inner widths commonly used for hydraulic piping applications.

Accuracy ±3%

Model (Body Size × Width)	Torque Range		Minimum Piping Pitch [mm]	Head Dimension (O.W. × Thickness) [mm]	Overall Length [mm]	Weight [kg]	Adjusting Tool Part #
	[N·m]	[kgf·cm]					
SP2-H	Min.-Max.	Min.-Max.					
NEW SP38N2x14H	8-25	80-250	26	26.3x8	218	0.37	930
NEW SP38N2x19H	8-39	80-390	35	33.1x8	222		
NEW SP67N2x27H	13-67	130-670	46	43.6x11	294	0.48	
SP120N2x32H-MH	24-120	240-1200	54	51.6x14	363	0.75	

- Note
1. Minimum piping pitch is required.
  2. A torque wrench tester is necessary for torque setting. Specify required set torque when you order.  
Ex. SP38N2x14H × 25N·m
  3. SP120N2x32H-MH is a knurled handle. Others are resin handles.

## Thrusting Tool (P.46)

Part #	Applicable Model
930	SP38N2-H, SP67N2-H, SP120N2x32H-MH

# SP2-N/-MH

Direction

Notched Head Type  
Preset Torque Wrench

NEW



SP19N2-1x10N



SP19N2-1x10N-MH

Assembly Preset Notched Head RoHS

- Notch creates speed in tightening process.
- Ideal for brake lines

Accuracy ±3%

Model (Body Size × Width)	Torque Range		Head Dimension		Overall Length [mm]	Weight [kg]	Adjusting Tool Part #
	[N·m]	[kgf·cm]	O.W. × Thickness [mm]	Head Shape			
SP2-N							
NEW SP19N2-1x10N				21x12	203	0.21	931
NEW SP19N2-3x10N				21x15			
NEW SP19N2-4x10N	3.5-19	35-190		21x10			
NEW SP19N2-5x10N				21x15			
NEW SP19N2-9x10N				21x10			
NEW SP38N2x14N	8-38	80-380	32x8	Even	222	0.37	930

- Note
1. A torque wrench tester is necessary for torque setting. Specify required set torque when you order.  
Ex. SP19N2-1x10N × 15N·m
  2. Adjusting tool for SP19N2-N/-MH is 931 and for SP38N2-N/-MH is 930.

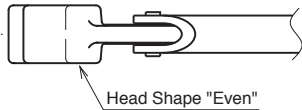
# SPLS2-N/-MH

- SP-N style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

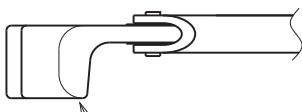
Accuracy ±3%

Model (Body Size × Width)	Torque Range		Head Dimension		Overall Length [mm]	Weight [kg]	Adjusting Tool Part #
	[N·m]	[kgf·cm]	O.W. × Thickness [mm]	Head Shape			
SPLS2-N							
NEW SPLS19N2-1x10N				21x12	203	0.36	931
NEW SPLS19N2-3x10N				21x15			
NEW SPLS19N2-4x10N	3.5-19	35-190		21x10			
NEW SPLS19N2-5x10N				21x15			
NEW SPLS19N2-8x10N				21x12			
NEW SPLS19N2-9x10N				21x10			
NEW SPLS38N2x14N	8-38	80-380	32x8	Even	222	0.52	930

- Note
1. The curl cord length of SPLS19N2-8x10N is about 5m in full extension. Others are extended to about 2m in full extension.
  2. Adjusting tool for SPLS19N2-N/-MH is 931 and for SPLS38N2-N/-MH is 930.
  3. The curl cord length of SPLS19N2-8x10N is about 5m in full extension. Others are extended to about 2m in full extension.



Head Shape "Even"



Head Shape "All down"

# NSP100CNx8

Direction

Break-Over Torque Wrench



NSP100CNx8

Assembly Preset Open End Spanner Break-Over RoHS

- Ideal for SMA connector tightening
- 90 degree of "breaking" upon reaching the set torque to reduce the possibility of over-torque

Accuracy ±5%

Model (Body Size × Width)	Torque Range	Head Dimension [mm]	Overall Length [mm]	Weight [kg]
	[N·m]			
NSP100CNx8	Min.-Max. 50-100	16x4	128	0.33

- Note
1. A torque wrench tester is necessary for torque setting. Specify required set torque when you order.

## NSP Optional Accessories

### Thrusting Tool (P.46)

Part #	Applicable Model
310	NSP100CNx8



# QSPCA

Slip Type Torque Wrench

Direction



QSPCA6N



QSPCA30N



QSPCA70N

### QSPCA Optional Accessories



931  
930

Adjusting Tool (P.46)

Part #	Applicable Model
931	QSPCA6N, QSPCAMS6N QSPCA12N, QSPCAMS12N
930	QSPCA30N, QSPCALS30N QSPCA70N, QSPCALS70N QSPCAFH30N, QSPCAFH70N

Assembly

Preset

Ratchet Head

Slip Type

RoHS



- Cam action mechanism generates a 45 degree "slip" action.
- No torque variation by gripping point
- Conforms to the Electrostatic Discharge (ESD) standard

Model	Torque Range			Overall Length [mm]	Square Drive [mm]	Weight [kg]	Accuracy [%]
	Min.-Max. [N-m]	Min.-Max. [kgf-cm]	Min.-Max. [lbf-in]				
QSPCA6N	2-6	20-60	20-50	197	6.35	0.33	±6%
QSPCA12N	4-12	40-120	40-100				
QSPCAMS6N	2-6	20-60	20-50	267	9.53	0.45	±6%
QSPCAMS12N	4-12	40-120	40-100				
QSPCA30N	10-30	100-300	90-270	346	9.53	1.24	±4%
QSPCA70N	20-70	200-700	180-620				
QSPCALS30N	10-30	100-300	90-270	267	9.53	0.81	±4%
QSPCALS70N	20-70	200-700	180-620				

- Note**
1. A torque wrench tester is necessary for torque setting. Specify required set torque when you order. Ex. QSPCA6N x 5N-m
  2. Adjusting tools for QSPCA are sold separately.
  3. Limit Switch specifications are AC30V below 1A, DC30V below 1A.
  4. Standard curl cord can be extended to about 2m in full extension.
  5. Female connector for LS cable is sold separately. Part# WA5219K.
  6. QSPCA70N and QSPCALS70N have knurled handles.

## QSPCAMS/ QSPCALS

- QSPCA style with Limit Switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

RoHS



QSPCAMS6N



QSPCAMS12N



QSPCALS30N



QSPCALS70N

### POKA Patrol, Count Checker CNA-4mk3

Refer to page 28.



\* Sold separately

## QSPCAFH

- Wireless error-proofing, Pokayoke, system

RoHS

Model
QSPCAFH30N
QSPCAFH70N



QSPCAFH30N



QSPCAFH70N

**Note** Refer to page 31 for condition of wireless equipment in each country.

## YCL2 Two Step Motion Torque Wrench

Direction



YCL90N2x15D

Assembly

Adjustable

Interchangeable

Graduation

Two Step Motion

RoHS

- Two step motion prevents over-torque.
- Suitable for assembly of critical parts
- Easy torque setting by graduation
- Interchangeable head

Tohnichi Head Size	S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm]		American Model	Torque Range [lbf-in/lbf-ft]		Max Hand Force [N]	Effective Legthe [mm]	Overall Length [mm]	Weight [kg]	Accuracy ±3%
		Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.					
10D	YCL10N2x10D	5-10	0.10	100YCL2	50-100	1	YCL100I	lb-f-in	lb-f-in	46.5	215	245	0.35	
	YCL20N2x10D	10-20	0.20	200YCL2	100-200	2	YCL200I	100-200	2	93				
12D	YCL40N2x12D	20-40	0.25	400YCL2	200-400	2.5	YCL400I	200-400	2.5	145.5	275	309	0.53	
	YCL70N2x12D	35-70	0.50	700YCL2	350-700	5	YCL600I	300-600	5	254.5				
15D	YCL90N2x15D	45-90	0.25	900YCL2	450-900	2.5	YCL750I	400-750	2.5	236.8	380	414	1.05	
	-	-	-	-	-	-	YCL1000I	600-1000	5	368.4				
19D	YCL140N2x15D	70-140	0.50	1400YCL2	700-1400	5	YCL100F	45-100	0.5	368.4	310	579	607	1.75
	YCL180N2x19D	90-180	-	1800YCL2	900-1800	-	-	-	-	310				
-	-	-	-	-	-	-	YCL150F	80-150	0.5	-	-	-	-	-



# CPT-G

PRO TORK/  
Digital Torque  
Wrench for  
Tightening

Direction



## PRO TORK™



CPT50×12D-G



CPT100×15D-G

### How to Order:

[Ex. 1] CPT100×15D-G-SET

\* "Set" model version  
with standard accessories

[Ex. 2] CPT200×19D-G

\* "Torque Wrench Only" version  
without standard accessories

### CPT-G Optional Accessories



844

Carrying Case for "SET" model only

Part #	Applicable Model Dimension [mm]	Weight [kg]
844	CPT20×10D-G ~ CPT100×15D-G H170 × W500 × D100	1.0
845	CPT200×19D-G, CPT280×22D-G H170 × W740 × D100	1.6



585



Connecting to CPT-G

Connecting Cable

Part #	Applicable Model
585	CPT-G → PC (D-Sub 9 Pin Female)

Data Processing Software

Model
EXCEL RECEIVER

Assembly Digital Interchangeable Signal Battery RoHS

- Highly responsive to the applied torque value with indicator display
- Equipped with bright LED lamp indicating current torque level
- 5 changeable units of measure through keypad set up
- Data memory, torque set registration and output functions

### "Torque Wrench Only" Models

Accuracy ±3%

Model	Torque Range										Overall Length [mm]	Weight [kg]
	[N·m]		[kgf·cm]		[kgf·m]		[lbf·in]		[lbf·ft]			
	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit		
CPT20×10D-G	4-20	0.02	40-200	0.2	0.4-2	0.002	36-180	0.2	3-14.5	0.02	280.5	0.63
CPT50×12D-G	10-50	0.05	100-500	0.5	1-5	0.005	100-440	0.5	7.5-36	0.05	282.5	0.65
CPT100×15D-G	20-100	0.1	200-1000	1	2-10	0.01	200-880	1	15-73	0.1	384.5	0.85
CPT200×19D-G	40-200	0.2	400-2000	2	4-20	0.02	360-1700	0.2	30-150	0.2	475.5	1.37
CPT280×22D-G	56-280		560-2800		5.6-28		500-2400		42-200		591.5	1.76

- Note**
1. "Torque Wrench Only" version is provided in basic carton product box and does not include TQH Head, Batteries, Storage Case.
  2. "Overall Length" does not include the length of interchangeable head TQH.
  3. "Weight" does not include the weight of interchangeable head TQH and batteries.
  4. Interchangeable heads are sold separately. Refer to page 42-45.

### "Set" Models including Accessories

Model	Standard Accessory			
	Ratchet Head		Battery	Storage Case
	Model	Sq. Drive [mm]		
CPT20×10D-G-SET	TQH10D	9.5	AA Alkaline	Small
CPT50×12D-G-SET	TQH12D			
CPT100×15D-G-SET	TQH15D	12.7	Battery (2 pcs)	Large
CPT200×19D-G-SET	TQH19D			
CPT280×22D-G-SET	TQH22D			

**Note** Recommendation: Use 2xAA Ni-MH batteries for longer continuous use.

### CPT-G Common Specifications

Accuracy	±3% of indicated value
Tightening Direction	Clockwise/Counter clockwise
Display/Character Height	14 segment LCD 6 digits/7mm
	7 segment LCD 4 digits/3mm
Battery Life Indicator	4 steps
Number of Data Memory	50
Torque Setting Memory	Preset Tightening mode: 10 torque values to register
	Judgment Tightening mode: Up to 10 values of each Upper/Lower/Tightening direction
Basic Function	Auto power off (3 minutes)
	Auto memory/Reset
	Auto zero
	Over torque alarm
Power	AA battery × 2pcs
Continuous Use	approx. 40 hours
Operating Condition	0-40 Celsius below 85%RH (no condensation)

Several different tightening modes available to cater to a variety of applications. Quick and accurate tightening while preventing errors.

Modes include:

[Preset Tightening Mode](#), [Judgment Tightening Mode](#), [Peak/Run Modes](#)

\* Retightening/loosening torque is performed in the Peak Mode.

**Preset Tightening Mode:** Allows user to set the target torque with specific % of torque allowable beyond target, then the red LED moves towards the right to indicate the level of the applied torque. When it reaches the target torque range, the blue LED blinks and the buzzer signals tightening completion.

**Judgment Tightening Mode:** Allows user to set judgment ranges for lower/upper limit in the tightening operation. Upon tightening completion a judgment is made as torque value is stored in the memory.

Display example 1



**Preset Tightening Mode**  
Red LED shows the level of the applied torque

Display example 2



**Judgment Tightening Mode**  
As torque is being applied prior to completion

Display example 3



**Judgment Tightening Mode**  
The case of exceeding target torque range

# CTA2-G

Digital Torque and Angle Wrench

Direction

NEW



CTA100N2×15D-G



CTA500N2×22D-G

Assembly Digital Interchangeable Signal Re-Chargeable RoHS

- Snug and angle setting functions
- Buzzer/Light alerts to snug torque and angle completion
- Angle mode activates automatically, once snug torque is achieved.

Accuracy ±1%

Model	Torque Range [N·m]			Torque Range [kgf·cm/kgf·m]			Torque Range [lbf·in/lbf·ft]			Angle Measuring Range		Angle Accuracy	Overall Length [mm]	Weight [kg]	Interchangeable Head
	Min.-Max.	1 digit	1 digit	Min.-Max.	1 digit	1 digit	Min.-Max.	1 digit	1 digit	Min.-Max.	1 digit				
NEW CTA50N2×12D-G	(2.5) 10-50	0.05	(25) 100-500	0.5	(0.25) 1-5	0.005	(22.5) 100-450	0.5	(1.85) 7.5-36.5	0.05		±2°+1digit	282	0.58	QH12D
NEW CTA100N2×15D-G	(5) 20-100	0.1	(50) 200-1000	1	(0.5) 2-10	0.01	(45) 200-900	1	(3.8) 15-75	0.1		(Angular velocity is 30°/X~180°/s when the bolt turned to 90°)	384	0.63	QH15D
NEW CTA200N2×19D-G	(10) 40-200	0.2	(100) 400-2000	2	(1) 4-20	0.02	(88) 350-1750	2	(7.5) 30-150	0.2			475	0.78	QH19D
NEW CTA360N2×22D-G	(18) 72-360	0.4	(180) 720-3600	4	(1.8) 7-36	0.05	(159) 640-3150	5	(13) 52-260	0.5			713	1.13	QH22D
NEW CTA500N2×22D-G	(25) 100-500	0.5	(250) 1000-5000	5	(2.5) 10-50	0.05	(220) 880-4400	5	(18) 72-360	0.5			949	4	QH22D
NEW CTA850N2×32D-G	(43) 170-850	1.0	-	-	(4.3) 17-85	0.1	-	-	(31) 124-620	1			1387	5.14	QH32D

- Note**
1. The value shown in ( ) shows the lowest snug torque. Accuracy cannot be guaranteed for snug torque set beyond the operative torque range.
  2. Overall length does not include interchangeable head.
  3. PH (Pipe wrench head) type interchangeable head cannot be used with this model.
  4. CTA500N2×22D-G and CTA850N2×32D-G have knurled handles.

**Standard Accessories** Battery pack/BP-5, QH interchangeable head (P.44), Quick battery charger/BC-3-G (100-240V), cable/584

## CTA2 Optional Accessories

Battery Pack (P.47)

Model
BP-5

Quick Battery Charger (P.47)

Model	Voltage
BC-3-G	100-240V

Printer (P.65)

Model
EPP16M3

Connecting Cable (P.47)

Part #	Applicable Model
575	CTA2-G → PC, EPP16M3 (D-SUB 9 Pin Female)
584	CTA2-G → PC (USB A Type)

- Note**
1. ( ) shows pin shape of the connecting cables.
  2. Contact Tohnichi for other types of connecting cables.

Carrying Case (P.46)

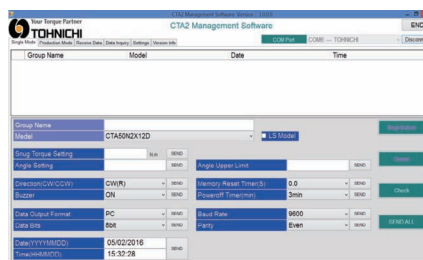
Model	Applicable Model Dimension [mm]	Weight [kg]
846	CTA50N2×12D-G, CTA100N2×15D-G H170 × W500 × D100	1.0
847	CTA200N2×19D-G, CTA360N2×22D-G H170 × W740 × D100	1.6

## CTA2-G Features 2 Tightening Modes: Single Spindle and Production Tightening Modes

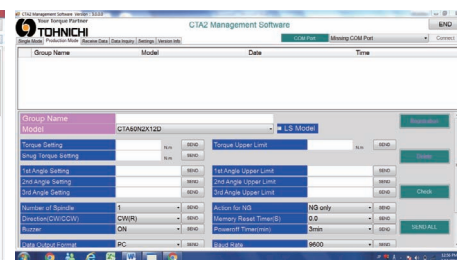
1. Single Spindle Tightening Mode: For angle method tightening of a single bolt tightening with snug torque, tightening angle and tightening angle upper limit settings.

2. Production Tightening Mode: For angle method tightening of multi spindle, with tightening torque, snug torque, 1st, 2nd and 3rd tightening angle, each upper limited angle, the numbers of spindles are registered.

By using the included software package, various settings can be done through the PC and transferred to the wrench with the final tightening values being sent back to an Excel spreadsheet.



Single spindle tightening mode setting display



Production tightening mode setting display

AI	B	C	D	E	F	G
1	Single	Data Output Time: 05/02/2016 15:41:38				
2		Memory Counter	Angle	Torque	Rate	Time
3	4	21	106.11.5	16:02:05	15:39:59	
4	5	22	85.12.4	16:02:05	15:40:03	
5	6	23	58.10.3	16:02:05	15:40:07	
6	7	24	67.11.2	16:02:05	15:40:10	
7	8	25	67.12.1	16:02:05	15:40:13	
8	9	26	41.10.3	16:02:05	15:40:16	
9	10	27	41.8.9	16:02:05	15:40:18	
10	11					
11	12					
12	13					

Output data in single spindle tightening mode

AI	B	C	D	E	F	G	H
1	Production	Memory Counter	Date	Time			
2		001	16/02/05	15:44:20			
3		Bolt No.	Tightening Torque	1st Angle Setting	2nd Angle Setting	3rd Angle Setting	Snug Torque
4	4	17.3	+000	+000	+000	+000	7.3
5	5	27.8	+000	+000	+000	+000	7.8
6	6	39.1	+000	+000	+000	+000	9.1
7	7						
8	8						
9	9						
10	10						

Output data in production tightening mode

## CTA2-G Common Specifications

Data Memory	999 data (Tightening torque, 1st angle value, 2nd angle value, 3rd angle value and final torque value)
Measurement Mode	Single spindle/Production mode
Data Output	RS232C compliant
Zero Adjustment	Auto zero (Angle, Torque)
Power	Ni-MH rechargeable battery
Continuous Use	approx. 20 hours with fully charged (8 hours by 1 hour recharging)
Recharging Time	approx. 3.5 hours
Operating Temperature [°C]	0-40

Other Functions	Snug torque, Tightening torque, Max. tightening torque, 1st, 2nd, 3rd angle, 1st, 2nd, 3rd max. angle, Number of bolts, Auto reset, Judgment, Setting through PC, Battery indicator
-----------------	---

# DWQL

Analog Torque Wrench with Digital Angle Module



DWQL100N

**Assembly** **Adjustable** **Digital** **Ratchet Head** **Graduation** **RoHS**

- Easily apply snug torque with "click" followed by angle with integrated digital angle display.
- Digital angle starts once snug torque setting is achieved.
- Correct angle is calculated and shown even when ratcheting feature is used.

S.I. Model	Torque Range [N·m]		Angle Range		Angle Accuracy	Overall Length [mm]	Weight [kg]
	Min.-Max.	Grad.	Min.-Max.	1 digit			
DWQL50N	(5) 10-50	0.5			±2°+1digit (Angular velocity is 30°/s-180°/s when the bolt is turned to 90°.)	260	0.62
DWQL100N	(10) 20-100	1				335	0.86
DWQL140N	(25) 30-140					400	1.00
DWQL200N	(30) 40-200		0-999°	1		490	1.6
DWQL280N	(30) 40-280	2				695	2.2
DWQL420N	(40) 60-420					995	3.6

Accuracy ±3%

- Note**
1. The capacity values in the ( ) are minimum setting values for snug torque, but these values are not within guaranteed accuracy range.
  2. A value in the ( ) might not be exact same when purchased M-DW is installed on LS torque wrench.
  3. Certificates of calibration for both torque and angle are included.
  4. Prior to use, confirm final applied torque value do not exceed max torque of the tool.



\* M-DW shows 20° from snug torque.

## M-DW

- Convert torque wrench with limit switch to angle torque wrench by installing M-DW.

### Digital Angle Module

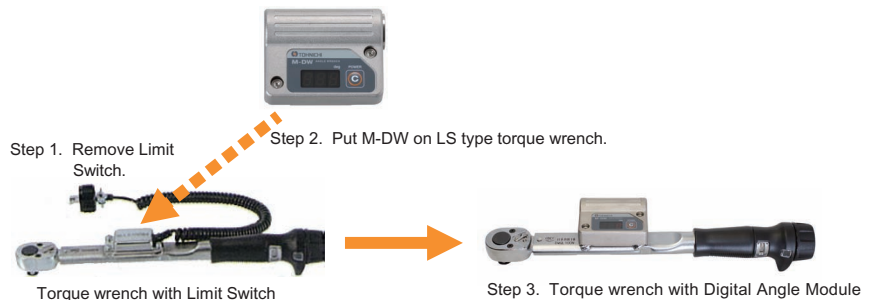
Model	Description
M-DW	Angle module for torque wrench with limit switch

- Note**
1. M-DW can be installed on torque wrench with limit switch except for the following models: QSPCAL5, ALS, ACLS, and MS type torque wrench. Refer to page 29.
  2. Operate within torque range of installed torque wrench.
  3. Certificate of angle calibration is attached.

### M-DW Specifications

Range of Angle	0-999°
1 digit	1°
Angle Accuracy	±2°+1digit (Angular velocity is 30°/s-180°/s when the bolt is turned to 90°.)
Display	7 segments LED, 3 digits/Character height 10mm
Continuous Operation	approx. 60 hours
Operating Condition	0-40°C Below 85%RH (no condensation)
Standard Accessories	Limit switch with connector 1 pc.
	Screw & Washer: 2 pcs. per each
	Operating instruction, AAA battery: 1 pc.
Weight	0.12kg

- Torque wrench with Limit Switch is converted to digital angle torque wrench.



# WQL

Analog Torque and Angle Wrench

Direction



WQL100N4

**Assembly** **Dial Indicating** **Ratchet Head** **Graduation** **Angle Direct Reading** **RoHS**

- Includes built-in protractor with flexible arm
- Specialized version of QL

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·in/lbf·ft]		Square Drive [mm]	Overall Length [mm]	Angle Scale	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			Max.	Grad.
WQL50N	(5) 10-50	0.5	450WQL3	kgf·cm	kgf·m	450WQL3-A	lbf·in	lbf·in	9.5	260		
WQL100N4	(10) 20-100	1	900WQL4	(100) 200-1000	1	900WQL4-A	(40) 100-400	5	12.7	345	360°	2°
WQL200N4	(30) 40-200		1800WQL4	(300) 400-2000	2	1800WQL4-A	(20) 30-150	2		495		
WQL280N	(30) 40-280	2	2800WQL3	kgf·m	kgf·m	2800WQL3-A	(20) 30-200	2	19.0	695		
WQL420N	(40) 60-420		4200WQL2	(4) 6-42	0.2	4200WQL2-A	(30) 60-300	3		975		

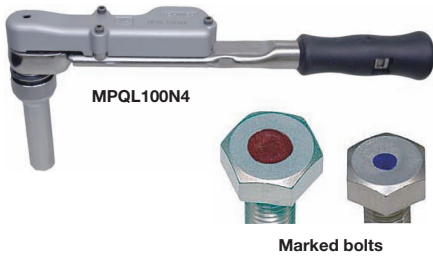
Accuracy ±3%

- Note**
1. The capacity value in the ( ) are minimum setting value for snug torque, but this value is not within guaranteed accuracy range.
  2. WQL Models are supplied upon request.

# MPQL/MQL

Direction

Marking Torque Wrench



Assembly

Pre-Lock

Ratchet Head

Graduation

Quick Drying Ink

RoHS

- Mechanism marks bolt as torque is achieved.
- Requires special socket, marker and ink

Accuracy ±3%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·in/lbf·ft]		Overall Length [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		
MPQL50N	10-50	0.5	450MPQL	100-500	5	450MPQL-A	100-400	5	246	0.7
MPQL100N4	20-100	1	900MPQL4	200-1000	10	900MPQL4-A	15-75	lbf-in	320	0.95
MPQL140N	30-140		1400MPQL	400-1400		1400MPQL-A	30-100	lbf-ft		
MPQL200N4	40-200	2	1800MPQL4	400-2000	20	1800MPQL4-A	30-150	lbf-in	418	1.8
MQL280N	40-280		2800MQL3	4-28		0.2	2800MQL3-A	30-210		

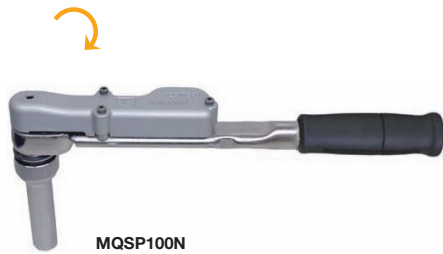
**Note** Please choose a Tohnichi's original socket with width which matches your bolt size, and order it together with the torque wrench. Standard sockets can not be used.

**Standard Accessories** Hex key for torque adjustment

# MQSP

Marking Torque Wrench

Direction



Assembly

Preset

Ratchet Head

Quick Drying Ink

RoHS

- Mechanism marks bolt as torque is achieved.
- Preset style of MPQL

Accuracy ±3%

Model	Torque Range			Overall Length [mm]	Weight [g]
	[N·m]	[kgf·cm]	[lbf·in]		
	Min.-Max.	Min.-Max.	Min.-Max.		
MQSP50N	10-50	100-500	88.5-442.5	240	0.7
MQSP100N	20-100	200-1000	177-885	315	1.0
MQSP140N	30-140	400-1400	265.5-1239.1	380	1.1
MQSP200N	40-200	400-2000	354-1770.1	465	1.8

- Note**
1. Please choose a Tohnichi original socket with width matches your bolt size, and order it together with the torque wrench. Standard sockets can not be used.
  2. A torque wrench tester is necessary for torque adjustment. Specify required set torque when you order. Ex. MQSP50N × 30N·m
  3. Adjusting tools for MQSP are sold separately.
  4. MQSP200N has knurled handles.

# CMQSP

Marking Torque Wrench

Direction



Assembly

Preset

Ratchet Head

Quick Drying Ink

RoHS

- Preset style marking torque wrench for hex screws
- Mechanism marks side of bolt and work piece.

Accuracy ±3%

S.I. Model	Torque Range [N·m]	Width Across Flat	Overall Length [mm]	Weight [kg]
	Min.-Max.	Min.-Max.		
CMQSP-M6	5-25	5	241	0.85
CMQSP-M8	10-50	6		0.85
CMQSP-M10	20-100	8	320	1.13
CMQSP-M12	30-140	10	380	1.13

**Note** A torque wrench tester is necessary for torque setting. Specify required set torque when you order. Ex. CMQSP-M10 × 50N·m

**Standard Accessories** 2 x Hex wrench (including 1 spare), Marker head, Marker case, Hex wrench position adjustment tool

## CMQSP Optional Accessories

Bit

Part #	Description
724	CMQSP-M6 Bit
725	CMQSP-M8 Bit
726	CMQSP-M10 Bit
727	CMQSP-M12 Bit

Marker Head

Part #	Description
792	Marker Head for CMQSP

Refill Ink and Solvent

Part #	Description
776	White Ink
777	Yellow Ink
794	Solvent

CMQSP Adjusting Adapter

Part #	Description	Applicable Tester
811	CMQSP-M6 Adapter	DOTE20N3-G, 50N3-G, 100N3-G
812	CMQSP-M8 Adapter	
813	CMQSP-M10 Adapter	
814	CMQSP-M12 Adapter	DOTE200N3-G, 500N3-G

CMQSP Adjusting Pole Holder

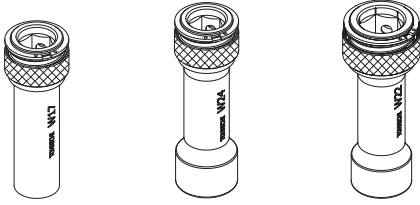
Part #	Applicable Model	Applicable Tester
815	CMQSP-M6, M8 Pole Holder	DOTE20N3-G, 50N3-G, 100N3-G
816	CMQSP-M10, M12 Pole Holder	DOTE200N3-G, 500N3-G

**Note** A torque wrench tester, Tohnichi's Adjusting Adapter, and Pole Holder are necessary for CMQSP torque adjustment.

CMQSP Adjusting Tool (P.46)

Part #	Applicable Model
930	CMQSP-M6, M8, M10, M12

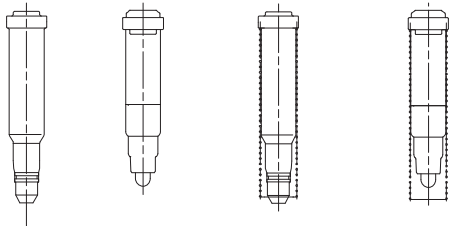
# MPQL/MQL/MQSP Optional Accessories



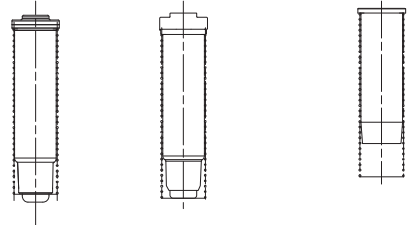
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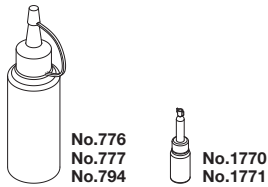
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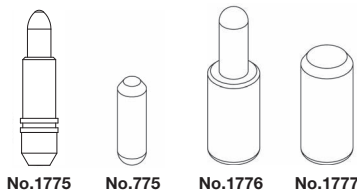


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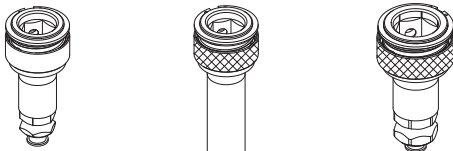


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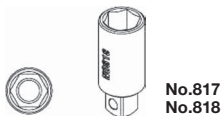
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No.1775      No.775      No.1776      No.1777



No.1749      No.1748      No.1752



No.817  
No.818



No.930

## Socket

Model	Part #	Width Across Flat [mm]	Length H [mm]	Outside Width $\phi$ d [mm]	Applicable Torque T-max [N·m]	Applicable Model
NEW Socket 4MH-10	2700	10	100	17.5	25	MQSP/MPQL 50N-200N4
NEW Socket 4MH-12	2701	12		20.5	35	
NEW Socket 4MH-13	2702	13		21.5	40	
NEW Socket 4MH-14	2703	14		22.5	60	
NEW Socket 4MH-16	2704	16		25	70	
NEW Socket 4MH-17	2705	17		28	110	
NEW Socket 4MH-18	2706	18	105	29	120	MQSP/MPQL 50N-200N4
NEW Socket 4MH-19	2707	19		30	170	
NEW Socket 4MH-22	2709	22		30	190	
NEW Socket 4MH-24	2710	24		32.8	200	
NEW Socket 6MH-22	2720	22		32	255	
NEW Socket 6MH-24	2721	24		34.5	255	
NEW Socket 6MH-27	2722	27	110	38.5	255	MQL280N
NEW Socket 6MH-30	2723	30		42	280	

## Inch Size Socket

Model	Part #	Width Across Flat		Tmax [lb·in] (N·m)	Length H [mm]	Outside Width $\phi$ d [mm]	Applicable Model
		[inch]	[mm]				
NEW Socket 4MH-7/16	2712	7/16	11.113	300(35)	100	20	MQSP/MPQL 50N-200N4
NEW Socket 4MH-1/2	2713	1/2	12.7	400(45)		21	
NEW Socket 4MH-9/16	2714	9/16	14.288	700(80)		23	
NEW Socket 4MH-5/8	2715	5/8	15.875	800(90)	105	25.5	MQSP/MPQL 50N-200N4
NEW Socket 4MH-11/16	2716	11/16	17.463	1000(120)		28.5	
NEW Socket 4MH-3/4	2717	3/4	19.05	1500(170)		30	

## Marker Head

Model	Part #	Marking Diameter [mm]	Color
Marker Head MK53RB	1780	5	Red, Blue
Marker Head MK53WY	1782		White, Yellow
NEW Marker Head MK53RB-MG	2780		Red, Blue
NEW Marker Head MK53WY-MG	2782	9	White, Yellow
NEW Marker Head MK93RB-MG	2783		Red, Blue
NEW Marker Head MK93WY-MG	2785		White, Yellow

- Note**
- MK53-MG and MK93-MG, 2780-2785, come with a marker guide
  - Use MK53-MG for socket below 16mm, 2700-2704.
  - 1780 and 1782 are not applicable for socket below 16mm, 2700-2704.
  - Use MK93-MG for socket over 17mm, 2705-2723.
  - 1780 and 1782 with marker guide, 2786, are applicable for socket over 17mm, 2705-2723.

## Marker Guide

Model	Part #	Marking Diameter [mm]	Content
Marker Guide	2786	-	-
NEW Marker Guide set MK53RB	2787	5	1780 and 2786
NEW Marker Guide set MK53WY	2788		1782 and 2786

- Note** 2787 and 2788 are applicable for socket over 17mm, 2705-2723.

## Refill Ink and Solvent

Model	Part #	Color
Refill Ink R	1770	Red
Refill Ink B	1771	Blue
Refill Ink W	776	White
Refill Ink Y	777	Yellow
Solvent	794	For White and Yellow

- Note**
- Solvent for red and blue inks is not available.
  - Refill Ink and solvent are classified as hazardous material in Aviation law.

## Replacement Tip

Model	Part #	Color
Felt tip for MK53RB	1775	Red, Blue
Felt tip for MK53WY	775	White, Yellow
Felt tip for MK93RB	1776	Red, Blue
Felt tip for MK93WY	1777	White, Yellow

- Note** Sold in pack of ten tip

## Extension Bar

Model	Part #	Applicable Model
MPQL Extension Bar 50mm	1749	MPQL50N-200N4 MQSP50N-200N
MPQL Extension Bar 100mm	1748	
MQL Extension Bar 50mm	1752	MQL280N

## MPQL/MQSP Torque Adjusting Adapter

Model	Part #	Applicable Model	Applicable Tester
MQSP 3/8-17 Adapter	817	MPQL50N MQSP50N	DOTE50N3
MQSP 1/2-17 Adapter	818	MPQL100N4-200N4 MQSP50N-200N	DOTE100N3 DOTE200N3

## MQSP Adjusting Tool

Part #	Applicable Model
930	MQSP50N/100N/200N

# Error-Proofing, Pokayoke, System

## Counter Method

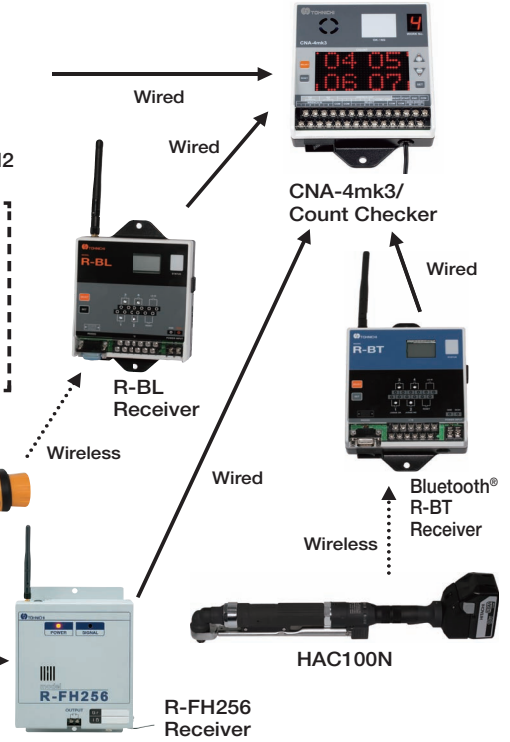
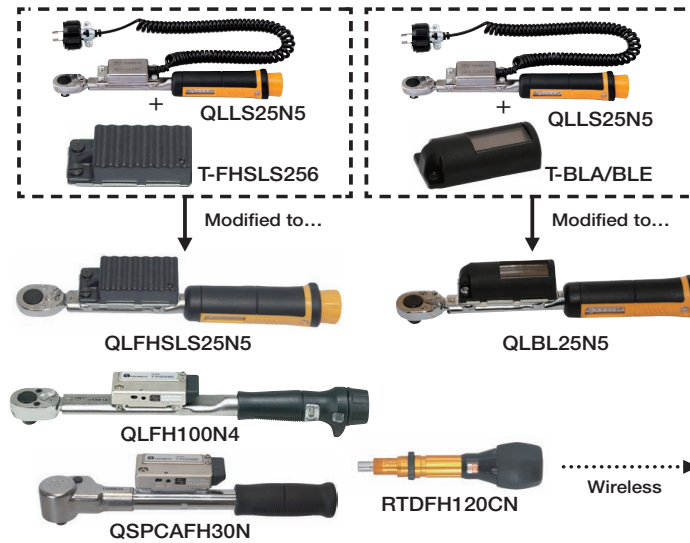
Wired

Examples) QL/QL2 (P.12), CL/CLE2 (P.13), TIQL/TIQL2 (P.15), PQL (P.16), QRSP (P.15), PCL (P.17), QSP (P.18), QSPCA (P.22), CSP (P.19), SP-SP2-RSP2/-MH(P.20), SP2-N/-MH (P.21), AUR (P.48), A/AC2 (P.50)



Control the number of tightening to eliminate missed tightening

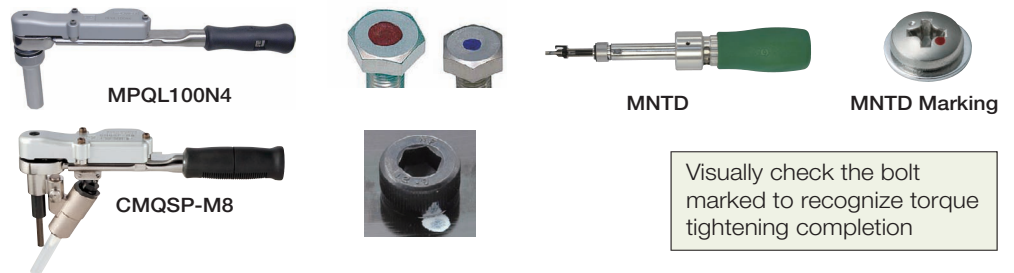
Wireless



Examples) FH transmitter (P.30) mounted on torque wrench such as QL Equipped with FH functions such as HATFH (P.49)

Note : Refer to page 31 for condition of wireless equipment in each country.

## Marking Method (P.26)



Visually check the bolt marked to recognize torque tightening completion

# CNA-4mk3



POKA Patrol/  
Count Checker



CNA-4mk3

Assembly Digital Relay Counter Judgment RoHS

- Tightening number verification counter
- Max. 4 LS torque wrenches can be connected as one time.

Count Display	16 × 32 dot-matrix LEDs
OK/NG Judgment Display	30 × 25 square display lamp (commonly used for OK/NG) OK: Blue lamp turned on NG: Red lamp blinking + Buzzer sounds (4 patterns)
Work No. Selection Display	1-digit 7-segment LED
Count Input	Contact input × 4
Max. Tightening Number of Bolts	99 counts
Max. Number of Works	8 sets
OK/NG Judgment Setting	• Preset judgment, • END input judgment, • Automatic judgment (0 to 300 seconds in steps of 1 second)
Output Function	• OK/NG output (Relay contact output rating: 30 V DC, 1 A, 125 V AC, 0.3 A) • Torque wrench selection signal output (Open collector rating: 100 mA)
Input Function	• SELECT input × 4, • START input, • END input, • RESET input, • WORK SENSOR input
Timer Function Setting	• Double count prevention timer (0 to 10 seconds in steps of 0.1 second) • Automatic reset timer (0 to 60 seconds in steps of 1 second) • Interval warning timer (0 to 99 seconds in steps of 1 second)
Setting Method	Special-purpose application software (USB communication), key operation
Operating Condition	0 ~ 40 [°C], Below 85%RH (no condensation)
Power Supply AC [V] / Electricity Consumption [W]	100 ~ 240V ± 10% 50/60Hz, Below 10
Weight / Dimension	approx. 400g, W121 × D175 × H44.9mm

# Torque Wrench with Limit Switch

- Limit switch counts the number of "Clicks".
- Connect to PLC or Count Checker/CNA-4mk3 to build verification system
- Can be upgraded into wireless output system by installing T-FHLS256



**QLLS25N5**

QL type with LS **RoHS**

S.I. Model	Metric Model
QLMS2N-MH	20QLMS-MH
QLMS5N-MH	50QLMS-MH
QLMS10N-MH	100QLMS-MH
QLMS10N	100QLMS
QLMS15N	150QLMS
QLMS15N-MH	150QLMS-MH
QLLS25N5	225QL5LS
QLLS50N	450QL3LS
QLLS100N4	900QL4LS
QLLS140N	1400QL3LS
QLLS200N4	1800QL4LS
QLLS280N	2800QL3LS
QLLS420N	4200QL2LS

CL type with LS **RoHS**

S.I. Model	Metric Model
CLMS2N×8D-MH	20CLMS-MH
CLMS5N×8D-MH	50CLMS-MH
CLMS10N×8D-MH	100CLMS-MH
CLMS10N×8D	100CLMS
CLMS15N×8D	150CLMS
CLMS15N×8D-MH	150CLMS-MH
CLLS25N5×10D	225CL5LS
CLLS50N×12D	450CL3LS
CLLS100N×15D	900CL3LS
CLLS140N×15D	1400CL3LS
CLLS200N×19D	1800CL3LS
CLLS280N×22D	2800CL3LS
CLLS420N×22D	4200CL2LS

SP2/-MH type with LS **RoHS**

Model (Body Size × Width)	
SPMS2/SPLS2	SPLS2-MH
NEW SPMS2N2×5.5	-
NEW SPMS2N2×7	-
NEW SPMS2N2×8	-
NEW SPMS2N2×10	-
NEW SPMS2N2×12	-
NEW SPMS2N2×13	-
NEW SPMS2N2×17	-
NEW SPMS2N2×19	-
NEW SPMS8N2×7	-
NEW SPMS8N2×8	-
NEW SPMS8N2×9	-
NEW SPMS8N2×10	-
NEW SPMS8N2×12	-
NEW SPMS8N2×13	-
NEW SPMS8N2×19	-
NEW SPMS8N2×24	-
NEW SPMS8N2×27	-
NEW SPLS19N2×10	SPLS19N2×10-MH
NEW SPLS19N2×11	SPLS19N2×11-MH
NEW SPLS19N2×12	SPLS19N2×12-MH
NEW SPLS19N2×13	SPLS19N2×13-MH
NEW SPLS19N2×14	SPLS19N2×14-MH
NEW SPLS19N2×17	SPLS19N2×17-MH
NEW SPLS19N2×19	SPLS19N2×19-MH
NEW SPLS19N2X21	SPLS19N2×21-MH
NEW SPLS19N2-1×10	SPLS19N2-1×10-MH
NEW SPLS19N2-2×10	SPLS19N2-2×10-MH
NEW SPLS19N2-3×10	SPLS19N2-3×10-MH
NEW SPLS38N2×8	SPLS38N2-8-MH
NEW SPLS38N2×9	SPLS38N2-9-MH
NEW SPLS38N2×10	SPLS38N2×10-MH
NEW SPLS38N2×11	SPLS38N2×11-MH
NEW SPLS38N2×12	SPLS38N2×12-MH
NEW SPLS38N2×13	SPLS38N2×13-MH
NEW SPLS38N2×14	SPLS38N2×14-MH
NEW SPLS38N2×16	SPLS38N2×16-MH
NEW SPLS38N2×17	SPLS38N2×17-MH
NEW SPLS38N2×19	SPLS38N2×19-MH
NEW SPLS38N2×22	SPLS38N2×22-MH
NEW SPLS38N2×24	SPLS38N2×24-MH
NEW SPLS38N2-1×10	SPLS38N2-1×10-MH
NEW SPLS38N2-2×10	SPLS38N2-2×10-MH



**QLLS100N4**

QSP type with LS **RoHS**

Model
QSPMS12N4
QSPLS25N3
QSPLS50N3
QSPLS100N4
QSPLS140N3
QSPLS200N4
QSPLS280N3
QSPLS420N

CSP type with LS **RoHS**

Model
CSPMS12N4×8D
CSPLS25N3×10D
CSPLS50N3×12D
CSPLS50N3×15D
CSPLS100N3×15D
CSPLS140N3×15D
CSPLS200N3×19D
CSPLS280N3×22D
CSPLS420N×22D

QRSP type with LS **RoHS**

Model
QRSPMS38N×17
QRSPMS38N×19
QRSPMS38N×21
QRSPMS38N×24

SP2/-MH type with LS **RoHS**

Model (Body Size × Width)	
SPLS2	SPLS2-MH
NEW SPLS38N2-3×10	SPLS38N2-3×10-MH
NEW SPLS67N2×14	SPLS67N2×14-MH
NEW SPLS67N2×16	SPLS67N2×16-MH
NEW SPLS67N2×17	SPLS67N2×17-MH
NEW SPLS67N2×18	SPLS67N2×18-MH
NEW SPLS67N2×19	SPLS67N2×19-MH
NEW SPLS67N2×21	SPLS67N2×21-MH
NEW SPLS67N2×22	SPLS67N2×22-MH
NEW SPLS67N2×24	SPLS67N2×24-MH
NEW SPLS67N2×27	SPLS67N2×27-MH
NEW SPLS67N2×29	SPLS67N2×29-MH
NEW SPLS67N2×30	SPLS67N2×30-MH
NEW SPLS67N2×32	SPLS67N2×32-MH
NEW SPLS67N2×33.3	SPLS67N2×33.3-MH
NEW SPLS120N2×14	SPLS120N2×14-MH
NEW SPLS120N2×17	SPLS120N2×17-MH
NEW SPLS120N2×18	SPLS120N2×18-MH
NEW SPLS120N2×19	SPLS120N2×19-MH
NEW SPLS120N2×21	SPLS120N2×21-MH
NEW SPLS120N2×22	SPLS120N2×22-MH
NEW SPLS120N2×23	SPLS120N2×23-MH
NEW SPLS120N2×24	SPLS120N2×24-MH
NEW SPLS160N2×19	SPLS160N2×19-MH
NEW SPLS160N2×21	SPLS160N2×21-MH
NEW SPLS160N2×22	SPLS160N2×22-MH
NEW SPLS160N2×24	SPLS160N2×24-MH
NEW SPLS160N2×26	SPLS160N2×26-MH
NEW SPLS160N2×27	SPLS160N2×27-MH
NEW SPLS220N2×19	SPLS220N2×19-MH
NEW SPLS220N2×22	SPLS220N2×22-MH
NEW SPLS220N2×24	SPLS220N2×24-MH
NEW SPLS220N2×27	SPLS220N2×27-MH
NEW SPLS220N2×29	SPLS220N2×29-MH
NEW SPLS220N2×30	SPLS220N2×30-MH
NEW SPLS220N2×32	SPLS220N2×32-MH
NEW SPLS220N2×34	SPLS220N2×34-MH
NEW SPLS220N2×36	SPLS220N2×36-MH
NEW SPLS310N2×22	SPLS310N2×22-MH
NEW SPLS310N2×24	SPLS310N2×24-MH
NEW SPLS310N2×27	SPLS310N2×27-MH
NEW SPLS310N2×30	SPLS310N2×30-MH
NEW SPLS310N2×32	SPLS310N2×32-MH
NEW SPLS310N2×41	SPLS310N2×41-MH
NEW SPLS310N2×46	SPLS310N2×46-MH

Limit switch specifications

- AC30V Below 1A
- DC30V Below 1A



**SPLS38N2×17**

PQL type with LS **RoHS**

S.I. Model	Metric Model
PQLLS25N	225PQLLS
PQLLS50N	450PQLLS
PQLLS100N4	900PQL4LS
PQLLS140N	1400PQLLS
PQLLS200N4	1800PQL4LS
PQLLS280N	2800PQLLS
PQLLS420N	4200PQLLS

PCL type with LS **RoHS**

S.I. Model	Metric Model
PCLLS25N×10D	225PCLLS
PCLLS50N×10D	450PCLLS
PCLLS50N×12D	500PCLLS
PCLLS100N×15D	900PCLLS
PCLLS140N×15D	1400PCLLS
PCLLS200N×19D	1800PCLLS

TiQL type with LS **RoHS**

Model	Metric Model
TiQLLS180N	1800TiQLLS
TiQLLS180N	1800TiQLLS
TiEQLLS360N	3600TiEQLLS

QSPCA type with LS **RoHS**

Model
QSPCAMS6N
QSPCAMS12N
QSPCALS30N
QSPCALS70N

RSP2/-MH type with LS **RoHS**

Model (Body Size × Width)	
RSPMS2/RSPLS2	RSPLS2-MH
NEW RSPMS8N2×8	-
NEW RSPMS8N2×10	-
NEW RSPLS19N2×8	RSPLS19N2×8-MH
NEW RSPLS19N2×10	RSPLS19N2×10-MH
NEW RSPLS19N2×13	RSPLS19N2×13-MH
NEW RSPLS38N2×10	RSPLS38N2×10-MH
NEW RSPLS38N2×12	RSPLS38N2×12-MH
NEW RSPLS38N2×13	RSPLS38N2×13-MH
NEW RSPLS38N2×14	RSPLS38N2×14-MH
NEW RSPLS38N2×16	RSPLS38N2×16-MH
NEW RSPLS38N2×17	RSPLS38N2×17-MH
NEW RSPLS67N2×14	RSPLS67N2×14-MH
NEW RSPLS67N2×16	RSPLS67N2×16-MH
NEW RSPLS67N2×17	RSPLS67N2×17-MH
NEW RSPLS67N2×18	RSPLS67N2×18-MH
NEW RSPLS67N2×19	RSPLS67N2×19-MH
NEW RSPLS120N2×17	RSPLS120N2×17-MH
NEW RSPLS120N2×19	RSPLS120N2×19-MH
NEW RSPLS120N2×22	RSPLS120N2×22-MH
NEW RSPLS160N2×19	RSPLS160N2×19-MH
NEW RSPLS160N2×22	RSPLS160N2×22-MH
NEW RSPLS160N2×24	RSPLS160N2×24-MH
NEW RSPLS220N2×22	RSPLS220N2×22-MH
NEW RSPLS220N2×24	RSPLS220N2×24-MH
NEW RSPLS220N2×27	RSPLS220N2×27-MH
NEW RSPLS310N2×24	RSPLS310N2×24-MH
NEW RSPLS310N2×27	RSPLS310N2×27-MH
NEW RSPLS310N2×30	RSPLS310N2×30-MH

SP2-N/-MH type with LS **RoHS**

Model (Body Size × Width)	
SPLS2-N	RSPLS2-N-MH
NEW SPLS19N2-1×10N	SPLS19N2-1×10N-MH
NEW SPLS19N2-3×10N	SPLS19N2-3×10N-MH
NEW SPLS19N2-4×10N	SPLS19N2-4×10N-MH
NEW SPLS19N2-5×10N	SPLS19N2-5×10N-MH
NEW SPLS19N2-8×10N	SPLS19N2-8×10N-MH
NEW SPLS19N2-9×10N	SPLS19N2-9×10N-MH
NEW SPLS38N2-14N	SPLS38N2-14N-MH

**Note**

1. Refer to base model series for torque ranges and wrench specs.
2. Female connector for LS cable is sold separately. Part# WA5219K.
3. Standard curl cord can be extended to about 2m in full extension.
4. The curl cord length of SPLS19N2-8×140N is about 5m in full extension.

# FH256MC

Radio Frequency Torque Wrench System



QLFH100N4



QLFH25N5



T-FH256MC

T-FHLS256



R-FH256



SB-FH256



I/O-FH256



FH-COD



FH-MHD



FH-PCV

- Wireless error-proofing, Pokayoke, system
- FHSS technology with universal 2.4GHz frequency band
- Wrench ID transfer functions to establish bolt tightening traceability
- Easily change frequency with wireless setting box, SB-FH256

## FH Torque Wrench Examples

### QLFH FH transmitter mounted on QL

S.I. Model
QLFH25N5
QLFH50N
QLFH100N4
QLFH140N
QLFH200N4

### SPFH FH transmitter mounted on SP

Model
SPFH38N2x14
SPFH38N2x27

### QSPCAFH FH transmitter mounted on QSPCA

Model
QSPCAFH30N
QSPCAFH70N

## Transmitter RoHS

Model	Description	Dimension [mm]
T-FH256MC	Transmitter for FH256MC	W36 × D80 × H18
T-FHLS256	Transmitter for LS type wrench	W32.4 × D56 × H22.3

**Note** T-FHLS256 is a wireless transmitter module to be installed on LS type torque wrenches.

## Receiver RoHS

All kinds of frequency groups (256 kinds) can be set in one receiver.

Model	Specification
R-FH256	Output: No-Voltage contact output (1a), RS232C Size: W150 × D210 × H51 (mm), Weight 1.7kg Power: AC100V-240V, 47-63Hz

**Standard Accessories** Dipole antenna

## Setting Box RoHS

Wireless setting device for FH transmitter and receiver

Model	Specification
SB-FH256	Input: RS232C, Power: DC9V

**Standard Accessories** Dipole antenna

## Multi I/O Box RoHS

Manage 4 tightening signals from receiver and output to external device

Model	Applicable Model	Specification
I/O-FH256	R-FH256	Output: No-Voltage contact output (1a) × 4, Power: AC100-240V

## Antenna Extension Cord

Extends antenna from R-FH256 receiver to improve communication conditions

Model	Applicable Model	Specification
FH-COD	R-FH256	Cable Length: approx. 9.5m

## Magnetic Antenna Holder

Use this to fix the position of extended antenna

Model	Applicable Model	Specification
FH-MHD	R-FH256	Cable Length: approx. 1.5m

## Protective Cover

Put it on the transmitter (T-FH256MC and T-FHLS256) to protect from physical damage.

Model	Applicable Model	Specification
FH-PCV	T-FH256MC	Material: Silicon Resin
FHLS-PCV	T-FHLS256	

**Note**  
 1. Transmission distance 10-20 meters  
 2. Refer to base model series for torque ranges and wrench specs.  
 3. Refer to condition of wireless equipment in each country.

# FMA

\*the United States and Canada Only

Radio Frequency Torque Wrench System



R-FMA

- 900 MHz frequency wireless error-proofing torque system
- FHSS Technology decreases interference and increases signal capacity
- Transmission Distance 10-20 Meters/30-60 Feet
- Easily change frequency with wireless setting box, SB-FMA

## Transmitter, Receiver, and Setting Box

Model	Description	Specifications
T-FMA	Transmitter for R-FMA	900MHz (902.5 - 927.5MHz) 250kHz interval, 80CH, approx. 10 - 20m / 30 - 60 feet operating distance
R-FMA	Receiver for T-FMA	
SB-FMA	Setting box	

**Note**  
 1. Radio frequency communication errors may be caused by noise or a shield placed between the transmitter and receiver. In addition, radio waves reflected by metal, concrete, etc. may interfere with radio waves directly sent to the antenna of the receiver and dead point occurs, resulting in communications errors.  
 2. Available only in the United States and Canada.



# BL Battery Less Wireless Torque Wrench



QLBLA25N5/QLBLE25N5



QLBLA100N4/QLBLE100N4



T-BLA/T-BLE



T-BLA



T-BLE



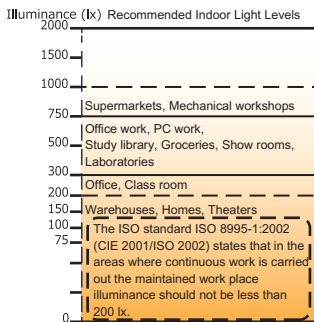
R-BLA



R-BLE



BA-8



- Radio frequency torque wrench system with solar power generation
- No battery replacement
- Chargeable under level of illuminance 200lx.
- Great for the environment

## QLBLA \*QL with T-BLA

S.I. Model
QLBLA25N5
QLBLA50N
QLBLA100N4
QLBLA140N
QLBLA200N4

Note Available in USA and Canada only

## QLBLE \*QL with T-BLE

S.I. Model
QLBLE25N5
QLBLE50N
QLBLE100N4
QLBLE140N
QLBLE200N4

Note 1. Available in EU and China only  
2. As for China, soon-to-be-released. Contact Tohnichi.

## SPBLA \*SP with T-BLA

Model
SPBLA38N2×14
SPBLA38N2×27

Note Available in USA and Canada only

## SPBLE \*SP with T-BLE

Model
SPBLE38N2×14
SPBLE38N2×27

Note 1. Available in EU and China only  
2. As for China, soon-to-be-released. Contact Tohnichi.

## Transmitter

Model	Description	Dimension [mm]
T-BLA	BLA Transmitter for USA and Canada	W34.4 × D73 × H23.2mm
T-BLE	BLE Transmitter for EU and China	

Note 1. T-BLA/BLE can be installed on LS type torque wrench.  
2. LED on the side of transmitter to check communication status  
3. As for T-BLE for China, soon-to-be-released. Contact Tohnichi.

## Receiver

Model	Description	Dimension [mm]
R-BLA	BLA Receiver for USA and Canada	W121 × D174 × H46mm
R-BLE	BLE Receiver for EU and China	

Note 1. Simultaneous reception from multiple torque wrenches cannot be done.  
2. It transmits relay signal up to 4 torque wrenches.  
3. As for R-BLE for China, soon-to-be-released. Contact Tohnichi.

Standard Accessory Dipole Antenna

## AC Adaptor for R-BLA and R-BLE

Model	Description	Cable length
BA-8	AC adaptor / AC100V-240V	approx. 2m

## Specifications of T-BLA/BLE and R-BLA/BLE

Approved Market	USA and Canada		EU and China	
	Transmitter	Receiver	Transmitter	Receiver
Model	T-BLA	R-BLA	T-BLE	R-BLE
Frequency	902.875MHz		868.3MHz	
Modulation Method	FSK		ASK	
Modulation Speed	125kbps			
ID	8 digits ID /Non-modifiable			
Input/Output	-	Output: Relay ×4, RS232C Input: Reset-in, LS-in	-	Output: Relay ×4, RS232C Input: Reset-in, LS-in
Power Supply	Solar cell	DC24V/18 ~ 36V Power consumption: Less than 5W	Solar cell	DC24V/18 ~ 36V Power consumption: Less than 5W
Antenna	Whip antenna	Dipole antenna	Helix antenna	Dipole antenna
Operating Temperature [°C]	0 ~ 40			
Communication Distance	10 ~ 20m			
Acquisition of License	FCC/USA, IC/Canada		CE/EU, CMIIT/China	

## Conditions of Wireless Equipment Certification Acquisition

Country	Authority	Acquisition Condition
Japan	TELEC	FH256MC, FHLSL, FHS, FMA, BL, FD, CEM3-G-BT, ST2-BT, ST3-G-BT, STC2-G-BT
United States	FCC	FH256MC, FHLSL, BLA, FMA, FD, CEM3-G-BT, ST2-BT, ST3-G-BT, STC2-G-BT
Canada	IC	FH256MC, FHLSL, BLA, FMA, FD, CEM3-G-BT, ST3-G-BT, STC2-G-BT
EU	CE	FH256MC, FHLSL, BLE, *FD, CEM3-G-BT, ST3-G-BT, STC2-G-BT
China	SRRC	FH256MC, FHLSL, FHS, *BLE, *FD, CEM3-G-BT
Thailand	NTC	FH256MC, FHLSL, FD, CEM3-G-BT, ST2-BT, ST3-G-BT, STC2-G-BT
Malaysia	SIRIM	FH256MC, FHLSL, FD
Indonesia	SDPPI	FH256MC, FHLSL, FD
South Korea	KCC	FH256MC, *FHLSL, *FD
Taiwan	NCC	FH256MC, FHLSL, FD
Russia	FSB	FH256MC, *FD, CEM3-G-BT
India	WPC	FH256MC
South Africa	ICASA	FH256MC

Note 1. Contact Tohnichi for condition of certification acquisition for other countries.  
2. \*soon-to-be certified

# Tightening Data Management System

## Wired transfer of actual applied torque Ideal for tightening torque traceability system

Tohnichi Head Size	Model	Torque Range [N·m]	Torque Range [kgf·cm/kgf·m]		Torque Range [lbf·in/lbf·ft]		Overall Length [mm]
		Min.-Max.	Min.-Max.	Min.-Max.	Min.-Max.	Min.-Max.	
10D	CSPD25N3×10D	5-25	kgf·cm	kgf·m	lbf·in	lbf·ft	195
	CSPD50N3×12D		50-250	0.5-2.5	44.3-221.2	3.69-18.45	215
12D	CSPD50N3×15D	10-50	100-500	1-5	88.5-442.5	7.38-36.9	220
	CSPD100N3×15D		200-1000	2-10	177.0-885.0	14.76-73.8	290
15D	CSPD140N3×15D	30-140	300-1400	3-14	265.5-1239.1	22.14-103.32	350
	CSPD200N3×19D	40-200	400-2000	4-20	354.0-1770.1	29.52-147.6	430
19D	CSPD280N3×22D	40-280	400-2800	4-28	354.0-2478.2	29.52-206.64	627
	CSPD420N×22D	60-420	600-4200	6-42	531.1-3717.3	44.28-309.9	920

**Note**

1. Initial torque setting is required. Specify required set torque when you order.
2. Display, CD5, is required. CD5's max torque display is 25000.
3. Cable between CSPD and CD5 is selectable between 1m and 4m.
4. Interchangeable head is sold separately.

### Display

Model	Description	Dimension [mm]
CD5	Display	W150 × D190 × H94

**Note** Refer to page 64 for more information.

### Cable

Model	Description	Plug
383	CD5 - PC	D-SUB Pin Female

## Outline

Wired system features highly reliable transmitter mounted on a click torque wrench that captures actual applied torque data. CD-5 display shows actual tightening torque and judgment is made whether or not the torque is within the programmed hi/lo parameters. Connect to PLC and PC software to store and control data for increased tightening reliability.

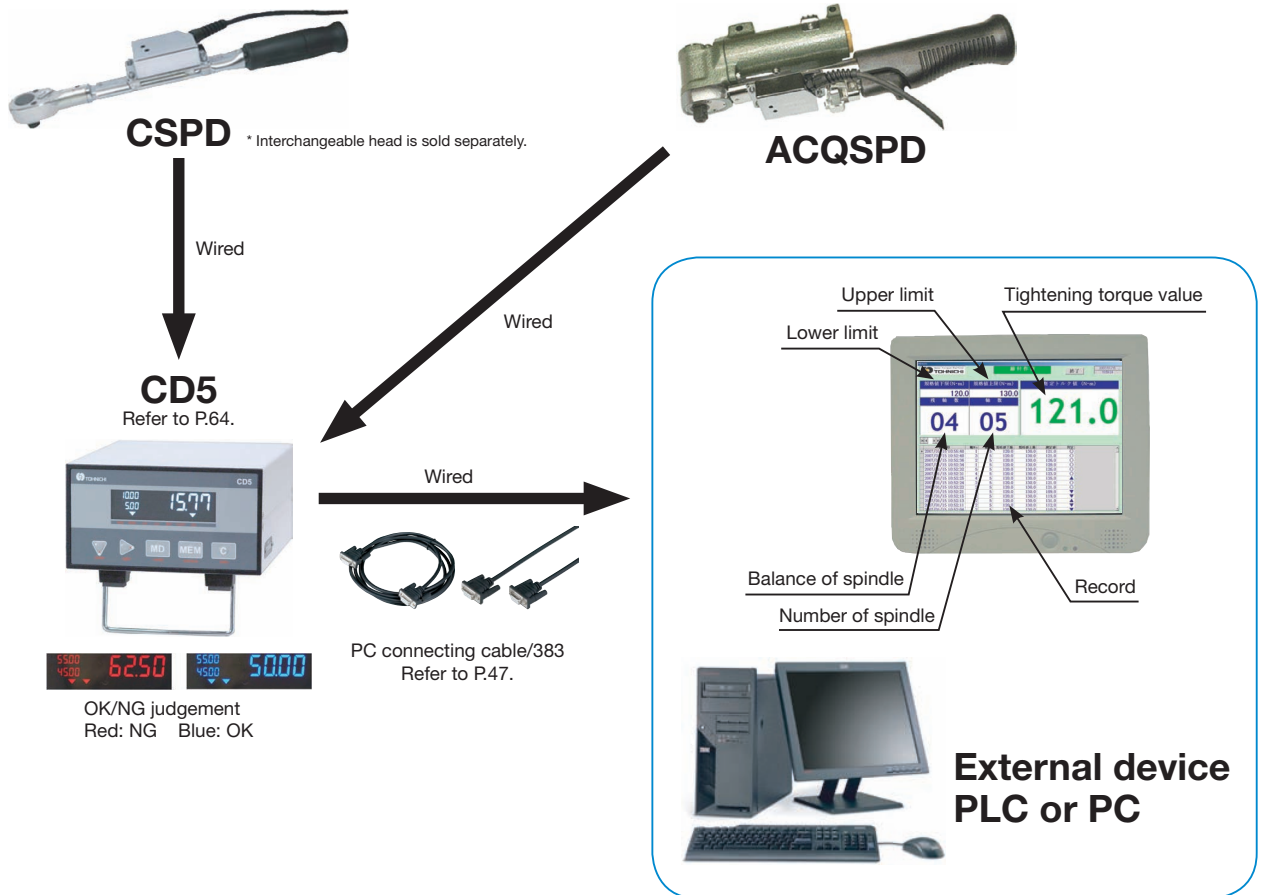
## System

Wired Data Transfer Torque Wrench  
Model: CSPD with QH head

Wired transfer of actual tightening torque

Wired Data Transfer Semi-Automatic Airtork  
Model: ACQSPD

Wired transfer of actual tightening torque  
with operation of provisional tightening



# Tightening Data Management System

## Wireless transfer of actual applied torque Ideal for tightening torque traceability system

Model		Torque Range [N-m]		Torque Range [kgf-cm/kgf-m]				Torque Range [lbf-in/lbf-ft]				Overall Length [mm]	Weight [kg]	Interchangeable Head
FD	FDD	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit			
CSPFD25N3-10N×10D	CSPFDD25N3-10N×10D	2-10		kgf-cm	kgf-cm	kgf-m	kgf-m	lbf-in	lbf-in	lbf-ft	lbf-ft	193	0.32	QH10D
CSPFD25N3×10D	CSPFDD25N3×10D	5-25	0.1	20-100	1	0.2-1	0.01	20-85	0.5	1.5-7.5	0.1			
CSPFD50N3×12D	CSPFDD50N3×12D	10-50	0.2	100-500	2	1-5	0.02	100-400	2	7.5-36		214	0.46	QH12D
CSPFD50N3×15D	CSPFDD50N3×15D											217		QH15D
CSPFD100N3×15D	CSPFDD100N3×15D	20-100	0.5	200-1000	5	2-10	0.05	200-850	5	15-75	0.2	290	0.65	
CSPFD140N3×15D	CSPFDD140N3×15D	30-140		-	-	3-14		-	-	25-100	0.5	349	0.77	
CSPFD200N3×19D	CSPFDD200N3×19D	40-200	1	-	-	4-20	0.1	-	-	30-150	1	429	1.2	QH19D
CSPFD280N3×22D	CSPFDD280N3×22D	40-280		-	-	4-28		-	-	30-200		627	1.65	QH22D

- Note**
- FD and FDD are available on request.
  - FDD comes with double tightening detection function.
  - Interchangeable head is sold separately.
  - Refer to page 31 for condition of wireless equipment in each country.
  - Transmission distance 10-20 meters



### Receiver

Model	Description	Dimension [mm]
R-FHD256	Receiver for FD/FDD	W110 × D48 × H150

- Note** Power cable is 1.4m.  
**Standard Accessories** Dipole Antenna, RS232C

### Protective Cover

Model	Applicable Model	Specification
FD-PCV	FD, FDD	Material: Silicon Resin

### FD/FDD Transmitter Specifications

Model	FD	FDD
Double Tightening Detection Angle Range		0 - 360°
LED	Blue: OK judgment for tightening torque Red: NG judgment for tightening torque Red flashing: Transmitting error	Blue: OK judgment for tightening torque and double tightening Red: NG judgment for tightening torque and double tightening Red flashing: Transmitting error
LCD Display	Tightening torque-3 digits, Torque unit, Battery level/4 levels	Tightening torque/angle convertible 3-digits, Torque unit, Battery level/4 levels
Operation Key	POWER switch, TEST switch, SET switch	
Operating Time	24 hrs	12 hrs
Other Functions	Auto zero, Auto power off/0-99 mins.	

### Setting Box

Model	Description	Dimension [mm]
SB-FH256	Setting of FD/FDD transmitter & receiver	W160 × D120 × H35

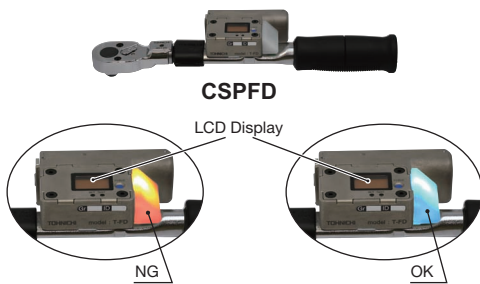
- Note**
- It is applicable to existing products.
  - There are several versions in wireless communication. Contact Tohnichi as regards the versions.

## Outline

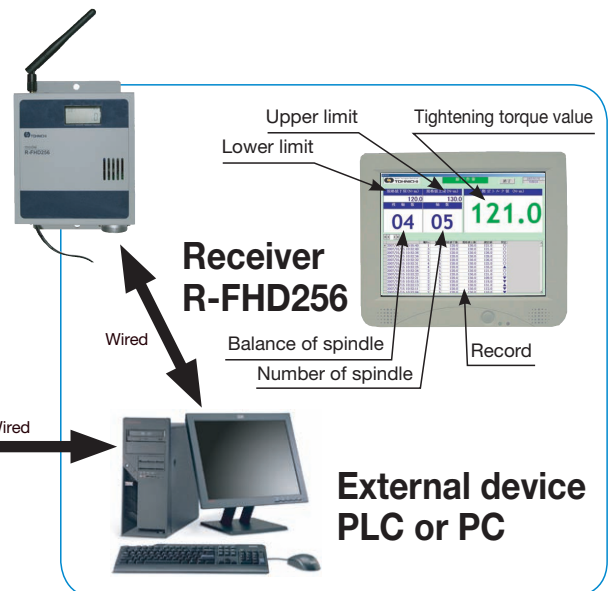
FD/FDD transmitter on click torque wrench captures actual applied torque and transmits data to receiver, R-FHD256. Connection to PLC and PC software allows for management of fastener count, serial number, torque ID and judgment parameters.

## System

Wireless Data Transfer Torque Wrench  
Model: CSPFD

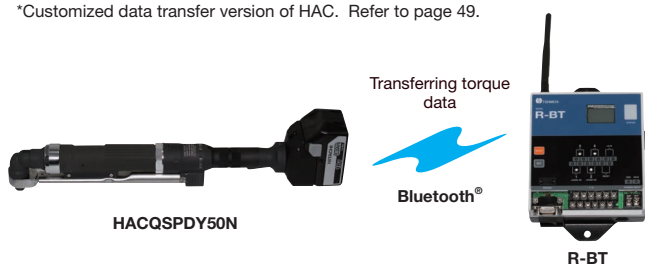


Wireless (Duplex communication)



Related Product  
Wireless Data Transfer Semi-Automatic Torque Wrench  
Model: HACQSPDY50N

\*Customized data transfer version of HAC. Refer to page 49.



# Tightening Data Management System

Wireless Digital Torque Wrench  
Model: CEM3-G-BTD/Duplex communication

## Ideal for managing tightening data in cell-production or sub-assembly lines

### Merit

- Preventing tightening errors such as missed tightening and over torque by setting upper/lower limit on a digital torque wrench
- Traceable for product claims
- Managing actual applied torque value used in the assembly lines
- Reducing potential costs associated the additional checks and reworks

### Outline

"CEM3-G-BTD" provides duplex wireless transfer of data between the wrench and PC. "CEM3-G-BTD + Management software" adds additional duplex functionality by sending set torque value, fastener quantity, and judgments to the wrench for various tightening applications. One digital torque wrench can replace several manual preset click torque wrenches with the additional benefit of storing the actual applied torque. Upper/Lower limit can be set on a digital torque wrench from PC with a duplex communication. As a result, reducing operative cost and time becomes possible.

### System

Instantly send tightened torque data back to PC

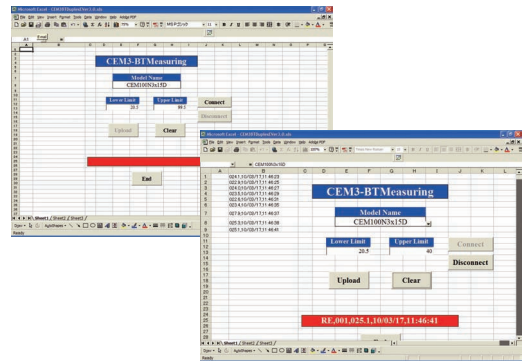
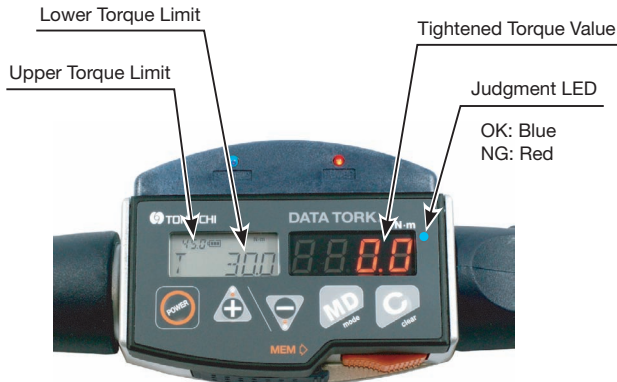


Wireless Digital Torque Wrench  
CEM3-G-BTD

Upper/Lower limit can be set wirelessly from PC to torque wrench.



Duplex communication



RoHS

Bluetooth® Specification	
Communication Method	Bluetooth®
Radio Frequency Range	2.4GHz
Communication Distance	approx. 10m
Continuous Use	approx. 8 hours

Tohnichi Head Size	Model		Torque Range [N·m]		Overall Length [mm]	Weight [kg]
	Simplex Communication	Duplex communication	Min.-Max.	1 digit		
8D	CEM10N3×8D-G-BTS	CEM10N3×8D-G-BTD	2-10	0.01	212	0.54
10D	CEM20N3×10D-G-BTS	CEM20N3×10D-G-BTD	4-20	0.02	214	0.55
12D	CEM50N3×12D-G-BTS	CEM50N3×12D-G-BTD	10-50	0.05	282	0.66
15D	CEM100N3×15D-G-BTS	CEM100N3×15D-G-BTD	20-100	0.1	384	0.71
19D	CEM200N3×19D-G-BTS	CEM200N3×19D-G-BTD	40-200	0.2	475	0.86
22D	CEM360N3×22D-G-BTS	CEM360N3×22D-G-BTD	72-360	0.4	713	1.21
22D	CEM500N3×22D-G-BTS	CEM500N3×22D-G-BTD	100-500	0.5	949	4.08
32D	CEM850N3×32D-G-BTS	CEM850N3×32D-G-BTD	170-850	1	1387	5.22

Accuracy ±1%

Note

1. Overall length does not include interchangeable head.
2. Refer to pages 42-45 for details with interchangeable heads.
3. PH (Pipe wrench head) is not applicable due to difference of effective length.
4. Bluetooth® adapter (optional) is necessary if your PC is not compatible.
5. Consult Tohnichi for management software (optional) for data setting and processing.
6. CEM3-G-BT models have two types.  
Simplex communication (BTS): CEM3-G-BT → Transfer measurement data to PC  
Duplex communication (BTD): Set torque and upper/lower limits in PC → CEM3-G-BT → Transfer measurement data to PC
7. Standard CEM3-G is unable to be modified into CEM3-G-BT.
8. Refer to page 31 for condition of wireless equipment in each country.

Standard Accessories Battery pack/BP-5, Quick charger/BC-3-G, QH interchangeable head (P.44)

## Handy Terminal

Compact data collection device for CEM3-G-BT



- Upload & download torque measuring information
- Guides user through torque assembly & quality inspection processes
- Statistics and charting capabilities
- Contact Tohnichi for lithium battery shipping specifications.

# Tightening Data Management System

Wireless Digital Torque Wrench  
 Models: HT-S5 & CEM3-G-BTS/Simplex communication  
 Software: TDMS

Ideal for tightening torque inspection.

The inspection data management becomes economically and easily possible with Excel®.

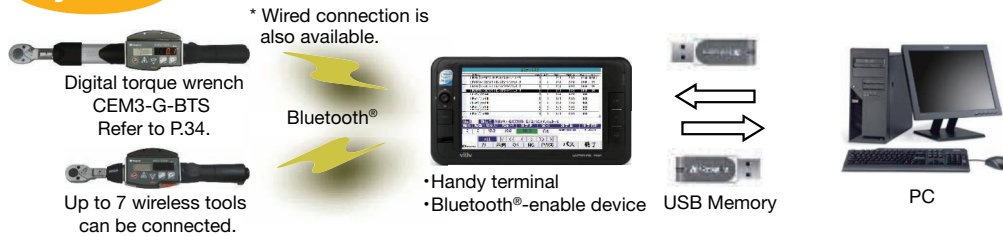
## Merit

- Reduced overtime due to early detection such as overtorque and loosening torque.
- Monitored data can be used for proof in protection against product liability.
- The degree of wear and the tendency of the tools can be predicted.
- Preventing defects in a large quantity of products.

## Outline

"CEM3-G-BTS" provides wireless transfer of data from the wrench to PC as it is being applied or collected. All data can be managed in a master data file consisting of Excel® and torque data can be easily monitored and stored. In order to maintain high quality, it is important to establish standard values, and then track and manage with statistical processing. Tightening work can be conducted with portion master file which can be controlled by Excel®. [N], [X-bar], [σ], [cp], and [cpk] are automatically calculated and stored in an Excel® file.

## System



### [Output Excel® Data Example]

- A data of [N], [X-bar], [σ], [cp], and [cpk] is monitored in Excel® file.

Count for Item	Item Name	Sample Master	Portion Name	Number of Spindle	TI Low	TI High	N	Max	Min	R	Xbar	Sigma (n-1)	Sigma (n)	Cp	Cpk
1	RH Mount BKTXLH E/G Mount Insulator	1		15.0	20.0	4	19.4	16.5	2.9	17.7	1.22474487	1.06066017	0.68041382	0.62598071	
8	RH Mount BKTXRH E/G Mount Insulator	1		10.0	15.0	4	21.6	13.6	8	17.55	3.38772293	2.93385412	0.24598627	-0.250906	
9	Fr Hubnuts LH	2		12.0	17.0	8	21.0	13.5	7.5	18.1	2.21881883	2.07364414	0.37591405	0.13532906	
10	Fr Hubnuts RH	2		12.0	17.0	5	18.5	14.1	2.4	15.48	0.91760558	0.82073138	0.90816071	0.216171	

- More detailed information available.

Data List for Portion	Item Name	Portion Name	Number of Spindle	Spindle No.	TI Low	TI High	N	Max	Min	R	Xbar	Sigma (n-1)	Sigma (n)	Cp	Cpk
Sample Master	Fr Hubnuts LH	2	ALL	12.0	17.0	8	21.0	13.5	7.5	18.1	2.218818828	2.073644135	0.375914045	0.135329056	
Spindle No.	Measured Torque	Judge	Date	Time											
1	15.6	OK	16/Oct/2012	17:23:20											
1	21.0	NG(H)	16/Oct/2012	17:37:02											
1	15.7	OK	16/Oct/2012	17:37:43											
1	13.5	OK	16/Oct/2012	17:38:11											
2	14.7	OK	16/Oct/2012	17:30:22											
2	15.2	OK	16/Oct/2012	17:37:06											
2	16.4	OK	16/Oct/2012	17:37:45											
2	16.7	OK	16/Oct/2012	17:38:13											

Note  
 [Excel®] is a trademark registration of Microsoft Co., Ltd.  
 [Bluetooth®] is a trademark registration of Bluetooth SIG, Inc.

Model	Description	Language
TDMS	Software only	Japanese
TDMS-E		English
TDMS-C		Chinese
TDMSHT	Software + Handy Terminal/HT-S5	Japanese
TDMSHT-E		English
TDMSHT-C		Chinese

- Note
1. Software installation is allowed on a single PC at one time.
  2. Applicable digital torque wrench is CEM3-G-BTS. Refer to page 34.

System Requirements		
Operation System		Microsoft Windows XP (SP3) Microsoft Windows Vista 32bit (SP1) Microsoft Windows 7 32bit version
Recommended Hardware	CPU speed	300MHz
	CPU	Intel Pentium/Celeron, AMD K6/Athron/Duron
	RAM	126MB
	Hard Disk Capacity	2.1GB
	Display	Super VGA 800 × 600
	Drive	CD-ROM or DVD drive
	Communication	Bluetooth® (2.0+EDR) SSP profile compliant or SSP profile compliant module
USB	USB2.0 × 1	

# CEM3-G

DATA TORQ/  
Digital Torque  
Wrench

Direction



CEM100N3x15D-G



Inspection

Digital

Interchangeable

Direct Reading

Re-Chargeable

RoHS

- Dual LED & LCD displays for optimal viewing
- 999 memory storage capacity
- For inspection and tightening



CEM20N3x10D-G



CEM850N3x32D-G

## Common Specifications

Display	7 segments LED 4 lines 10mm (Torque value)
	14 segments LCD 3 lines 7mm (Counter)
	7 segments LCD 4 lines 3mm (Clock)
	Battery life indicator (4 steps)
Number of Data Memory	Judgment LED RED/BLUE
	999 (M-2 mode: 99 data)
Communication	RS232C (2400-19200bps)
Functions	Serial output corresponding to a USB connector
Power Supply	Ni-MH rechargeable battery
Continuous Use	approx. 20 hrs with fully charged (8 hours by 1 hour recharging)
Recharging Time	approx. 3.5 hours
Operating Temperature [°C]	0-40
Basic Functions	Peak Hold, Auto memory & resetting, Tightening completion buzzer, Judgment of measured data, Auto zero setting, Auto off (3 minutes), Clock

Model	Torque Range										Hand Force [N]	Overall Length [mm]	Weight [kg]
	N-m		kgf-cm		kgf-m		lbf-in		lbf-ft				
	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit			
CEM10N3x8D-G	2-10	0.01	20-100	0.1	0.200-1.000	0.001	20.0-90.0	0.1	1.50-7.30	0.01	48.1	212	0.46
CEM20N3x10D-G	4-20	0.02	40-200	0.2	0.400-2.000	0.002	36.0-180.0	0.2	3.00-14.50	0.02	92.2	214	0.47
CEM50N3x12D-G	10-50	0.05	100-500	0.5	1.000-5.000	0.005	100.0-440.0	0.5	7.50-36.00	0.05	196.9	282	0.58
CEM100N3x15D-G	20-100	0.1	200-1000	1	2.00-10.00	0.01	200-880	1	15.0-73.0	0.1	275.5	384	0.63
CEM200N3x19D-G	40-200	0.2	400-2000	2	4.00-20.00	0.02	360-1700	2	30.0-150.0	0.2	428.3	475	0.78
CEM360N3x22D-G	72-360	0.4	720-3600	4	7.2-36.00	0.04	650-3100	4	52.0-260.0	0.4	498.6	713	1.13
CEM500N3x22D-G	100-500	0.5	1000-5000	5	10.00-50.00	0.05	890-4400	5	73.0-360.0	0.5	549.5	949	4.00
CEM850N3x32D-G	170-850	1	-	-	17.0-85.0	0.1	-	-	124-620	1	608	1387	5.14

Accuracy ±1%

- Note**
1. Overall length does not include interchangeable head.
  2. For interchangeable head, refer to page 42-45.
  3. For infrared data transfer, use with R-DT999. Refer to page 64.
  4. PH Pipe wrench head type interchangeable head is not available for this model.
  5. CEM500N3x22D-G and CEM850N3x32D-G have knurled handles.
  6. For USB data transfer, use optional connecting cable, No.584. Refer to page 47.

- Standard Accessories**
1. Battery pack/BP-5
  2. QH interchangeable head. Refer to page 44.
  3. Quick battery charger/BC-3-G (100-240V).

## CEM3-P

RoHS

- Programmable version of CEM3-G with data management software that links work name with test results.

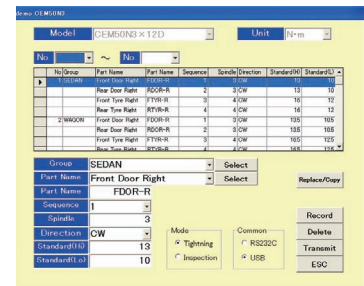
Torque Accuracy	±1%
Portion Registration Memory	Max. 100 parts (Part name, number of screws, tightening direction, high/low torque, measuring order)
Measurement Data Storage	Up to 3,000 screw data (vary depending on parts registered), measurement part name, measured value, pass/fail judgment, measurement time and date)



CEM50N3x12D-P



Display part  
Left: Part name, Right: Torque value



CEM3-P application software

Model
CEM10N3x8D-P
CEM20N3x10D-P
CEM50N3x12D-P

Model
CEM100N3x15D-P
CEM200N3x19D-P
CEM360N3x22D-P

Model
CEM500N3x22D-P
CEM850N3x32D-P

### Battery Pack (P.47)

Model
BP-5

### Quick Battery Charger (P.47)

Model	Description
BC-3-G	100V-240V

### Printer (P.65)

Model
EPP16M3

### Connecting Cable (P.47)

Part #	Applicable Model
575	CEM3-G, CEM3-P, R-DT999 → PC, EPP16M3
584	CEM3-G, CEM3-P, R-DT999G → PC

### Data Filing System (P.64)

Model	Media
DFS	CD-ROM

## Handy Terminal

Compact data collection device for CEM3-G



- Upload & download torque measuring information
- Guides user through torque assembly & quality inspection processes
- Statistics and charting capabilities
- Contact Tohnichi for lithium battery shipping specifications.

# CTB2-G Digital Retightening Torque Wrench

Inspection

Digital

Interchangeable

Signal

Re-Chargeable

RoHS

Direction



CTB100N2×15D-G



CTB850N2×32D-G

- Detects movement of fastener for more accurate testing
- Software converts measured torque to initial tightening torque value.

Accuracy ±1%

Model	Torque Range										Hand Force [N]	Overall Length [mm]	Weight [kg]
	N-m		kgf-cm		kgf-m		lbf-in		lbf-ft				
	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit			
CTB10N2×8D-G	2-10	0.01	20-100	0.1	0.2-1	0.001	20-90	0.1	1.5-7.3	0.01	48.1	212	0.46
CTB20N2×10D-G	4-20	0.02	40-200	0.2	0.4-2	0.002	36-180	0.2	3-14.5	0.02	92.2	214	0.47
CTB50N2×12D-G	10-50	0.05	100-500	0.5	1-5	0.005	100-440	0.5	7.5-36	0.05	196.9	282	0.58
CTB100N2×15D-G	20-100	0.1	200-1000	1	2-10	0.01	200-880	1	15-73	0.1	275.5	384	0.63
CTB200N2×19D-G	40-200	0.2	400-2000	2	4-20	0.02	360-1700	2	30-150	0.2	428.3	475	0.78
CTB360N2×22D-G	72-360	0.4	720-3600	4	7.2-36	0.04	650-3100	4	52-260	0.4	498.6	713	1.13
CTB500N2×22D-G	100-500	0.5	1000-5000	5	10-50	0.05	890-4400	5	73-360	0.5	549.5	949	4.00
CTB850N2×32D-G	170-850	1	-	-	17-85	0.1	-	-	124-620	1	608	1387	5.14

- Note**
1. Overall length does not include interchangeable head.
  2. For interchangeable head, refer to page 42-45.
  3. For infrared data transfer, use with R-DT999. Refer to page 64.
  4. PH type interchangeable head is not available for this model.

- Standard Accessories**
1. Battery pack/BP-5
  2. QH interchangeable head (P.44).
  3. Quick battery charger/BC-3-G, 100-240V

## Common Specifications

Data Memory	999 data (T-point torque)
Arithmetic Function	Sampling, Maximum, Minimum, Means
Measurement Mode	Peak/Run
Data Output	RS232C I/F, USB serial output
Zero Adjustment	Auto zero function (C key)
Other Function	Auto power off (3 min./10 min./30 min./non)
Power Source	Ni-MH Nickel metal-hydrate battery
Continuous Use	approx. 20 hours (8 hours by 1 hour charging)
Battery Charge	approx. 3.5 hours
Operating Temperature [°C]	0-40

### Battery Pack (P.47)

Model
BP-5

### Printer (P.65)

Model
EPP16M3

### Quick Battery Charger (P.47)

Model	Description
BC-3-G	100-240V

### Connecting Cable (P.47)

Part #	Applicable Model
575	CTB2-G → PC, EPP16M3
584	CTB2-G, R-DT999G → PC

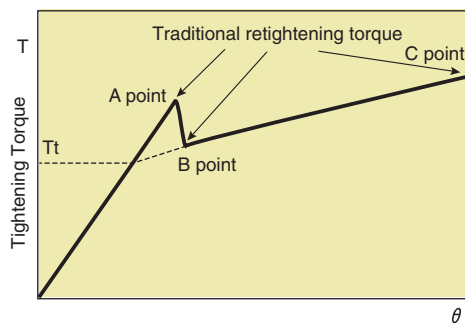
### Data Filing System (P.64)

Model	Media
DFS	CD-ROM

## Advantages of the New Retightening Method: T-point Method

- Anyone can measure the tightening torque easily.
- Requires less time to perform the measurement.
- Dispersion of data is small (Figure-3).
- No individual interpretation or performance variable is involved in measuring the torque (Figure-3).
- Internal software converts measured torque to initial tightening torque value (Figure-3).

Figure-1 Traditional retightening torque method



## Retightening Torque Method

Retightening torque method aims to measure the torque at which a tightened bolt start to rotate again as further torque is applied. The retightening measured values are classified as one of these three kinds:

- The torque which overcome the static friction of the bolt (A point).
- The torque at which the bolt starts on turn continuously (B point).
- The maximum torque at this inspection (C point).

## Proposal of T-point method (Figure-2)

Retightening torque first starts with the rotation of the head only, then the screw starts to rotate. Shifting from static friction to dynamic friction, the friction whip settles and the torque starts to increase at the steady pace again. T-point method figures TT as retightening torque value.

Figure-2 New retightening torque method by CTB2-G

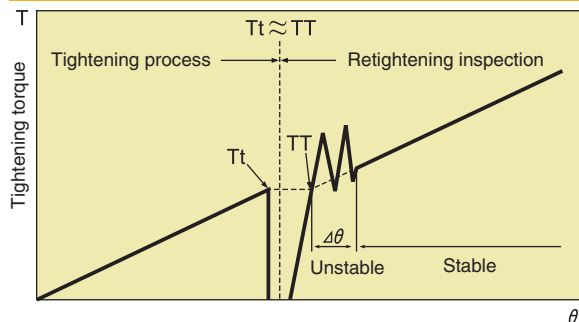
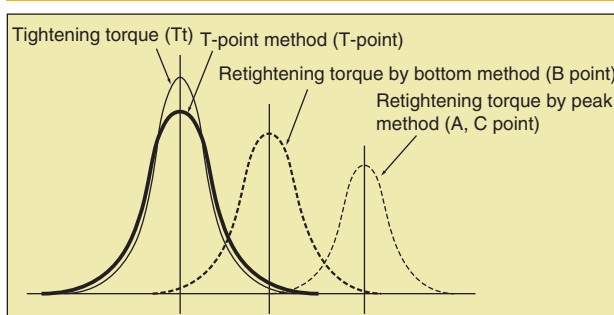


Figure-3 Distribution of retightening torque



Refer to Tohnichi Torque Handbook Vol. 8 on page 42 to 43 for the details.

# DB/DBE/DBR

Inspection

Dial Indicating

Direct Reading

RoHS

Direction

Dial Indicating Torque Wrench



DB12N4



DB100N



DBE700N



Memory Pointer, Red color point

## DB Optional Accessories



846

Carrying Case (P.46)

Part #	Applicable Model Dimension [mm]	Weight [kg]
846	DB100N-S, CDB100N×15D-S or less H170 × W500 × D100	1.0
847	DB280N-S, CDB280N×22D-S or less H170 × W740 × D100	1.6

- Memory pointer for easy torque reading
- Ideal for torque measuring and quality check applications

Accuracy ±3%

S.I. Model	Torque Range [N·m/kN·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·in/lbf·ft]		Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			
DB1.5N4-S	0.2-1.5	0.02	15DB4-S	2-15	0.2	DB131-2AS	0-13	0.2			
DB3N4-S	0.3-3	0.05	30DB4-S	3-30	0.5	DB261-2AS	0-26				
DB6N4-S	0.6-6	0.1	60DB4-S	6-60	1	DB401-2AS	0-40		205	6.35	0.4
DB12N4-S	1-12	0.2	120DB4-S	10-120	2	DB751-2AS	0-75	1			
DB25N-1/4-S			230DB3-1/4-S			DB1501-2AS					
DB25N-S	3-25		230DB3-S	30-250		DB1501-3AS	0-150	2	245		
		0.5			5	DB3001-3AS	0-300	5			0.6
DB50N-S	5-50		450DB3-S	50-500			lbf·ft	lbf·ft	320		
						DB25F-3AS	0-25	0.5		9.5	
							lbf·in	lbf·in			
DB100N-3/8-S			900DB3-3/8-S			DB6001-3AS	0-600	10			
						DB50F-3AS	0-50	0.5			
	10-100	1		100-1000	10	DB6001-4AS	0-600	10	400		0.7
DB100N-S			900DB3-S			DB50F-4AS	0-50	0.5			
							lbf·ft	lbf·ft			
DB200N-S	20-200	2	1800DB3-S	200-2000	20	DB100F-4AS	0-100	1	500	12.7	
				kgf·m	kgf·m						1.0
						DB175F-4AS	0-175	2	580		
DB280N-1/2-S	30-280		2800DB3-1/2-S	3-28					690		1.65
DB280N-S		5	2800DB3-S		0.5	DB250F-6AS	0-250				
DB420N-S	40-420		4200DB2-S	4-42		DB350F-6AS	0-350	5	890	19.0	2.5
DBE560N-S	50-560		5600DBE2-S	5-56					1100		4.0
DBE700N-S	70-700		7000DBE2-S	7-70		DB500F-6AS	0-500	10	1260		5.5
DBE850N-S	100-850	10	8500DBE2-S	10-85	1				1360		6.1
DBE1000N-S	100-1000		10000DBE2-S	10-100		DB800F-8AS	0-800		1490		6.4
DBE1400N-S	200-1400		14000DBE2-S	20-140		DB1000F-8AS	0-1000	10	1740	25.4	8.6
DBE2100N-S	200-2100	20	21000DBE2-S	20-210	2	DB1500F-8AS	0-1500		2140		12.8
DBE2800N-S	300-2800	50	28000DBE2-S	30-280		DB2000F-12AS	0-2000		2380		16.8
			kN·m	kN·m							38.1
DBR4500N-S	0.5-4.5	0.05	45000DBR-S	50-450	5	DB3000F-12AS	0-3000	50	1285		26.5
DBR6000N-S	0.6-6	0.1	60000DBR-S	60-600					1585	44.5	27.5

### Note

1. "Without memory pointer" models are available. Remove "-S" from the model name when ordering. Ex. DB100N
2. DBR models require winch or mechanical loading device.
3. DBR Models are supplied upon request.
4. For models having over 25.4mm square drive, use with a through-hole socket.
5. Accuracy of American models is warranted from 20% of max. torque.



# CDB-S

Interchangeable Head Type Dial Indicating Torque Wrench

Direction



CDB14N4x8D-S



CDB100Nx15D-S

Inspection Dial Indicating Interchangeable Direct Reading Memory Pointer RoHS

- Interchangeable head version of DB
- Ideal for torque measuring and quality inspections

Accuracy ±3%

Tohnichi Head Size	S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm/kgf-m]		American Model	Torque Range [lbf-in/lbf-ft]		Overall Length [mm]	Weight [kg]
		Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		
8D	CDB7N4x8D-S	0.7-7	0.1	70CDB4-S	7-70	1	70CDB4-A-S	6-60	1	215	0.45
	CDB14N4x8D-S	2-14	0.2	140CDB4-S	20-140	2	140CDB4-A-S	20-120	2		
10D	CDB25Nx10D-S	3-25	0.5	250CDB-S	30-250	5	250CDB-A-S	30-220	5	255	0.48
12D	CDB50Nx12D-S	5-50		500CDB-S	50-500		500CDB-A-S	40-430		330	
15D	CDB100Nx15D-S	10-100	1	1000CDB-S	100-1000	10	1000CDB-A-S	7-70	1	415	0.76
19D	CDB200Nx19D-S	20-200	2	2000CDB-S	200-2000	20	2000CDB-A-S	14-140	2	525	1.0
22D	CDB300Nx22D-S	30-300	5	3000CDB-S	3-30	0.5	3000CDB-A-S	20-220	5	720	1.65
	CDB420Nx22D-S	40-420		4200CDB-S	4-42		4200CDB-A-S	30-300		920	

- Note
1. Overall length does not include interchangeable head.
  2. PH (Pipe wrench head) type interchangeable head is not available.
  3. Interchangeable heads are optional.

# SCDB-S

European Style Interchangeable Head Type Dial Indicating Torque Wrench

Direction



SCDB50N-S

Inspection Dial Indicating Interchangeable Direct Reading Memory Pointer RoHS

- Specialized version of DB
- Accepts DIN interchangeable head connection

Accuracy ±3%

S.I. Model	Torque Range [N-m]		Head Size [mm]	Overall Length [mm]	Weight [kg]
	Min.-Max.	Grad.			
SCDB25N-9x12-S	3-25	0.5	9x12	271	0.48
SCDB50N-9x12-S	5-50		9x12	342	0.53
SCDB100N-9x12-S	10-100	1	9x12	422	0.76
SCDB200N-14x18-S	20-200	2	14x18	535	1

- Note
1. Overall length does not include interchangeable head.
  2. Applicable to European style head. Tohnichi's interchangeable heads are not available for SCDB-S.

# T-S

T-Handle Dial Indicating Torque Wrench

Direction



T90N-S

Inspection Dial Indicating Direct Reading Memory Pointer RoHS

- Dual handle for increased stability
- Memory pointer for easy reading

Accuracy ±3%

S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm/kgf-m]		American Model	Torque Range [lbf-in/lbf-ft]		Overall Length [mm]	Neck Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.				
T23N-S	3-23	0.5	230T-S	30-230	5	T200I-3AS	20-200	2	205	71	9.5	0.41
T45N-S	5-45		450T-S	50-450		T400I-3AS	50-400	5	261	82		0.53
T90N-S	10-90	1	900T-S	100-900	10	T65F-4AS	10-65	1	376	102.5	12.7	0.8
T180N-S	20-180	2	1800T-S	200-1800	20	T130F-4AS	20-130	2	656	118.5		1.2
T700N-S	70-700	10	7000T-S	7-70	1	7000T-A-S	50-500	5	1300		19.0	4
T1000N-S	100-1000		10000T-S	10-100		10000T-A-S	50-700		1630			4.8
T1400N-S	200-1400	20	14000T-S	20-140	2	14000T-A-S	100-1000	10	1880		25.4	6.2
T2100N-S	200-2100		21000T-S	20-210		21000T-A-S	200-1500	2500	10			
T2800N-S	300-2800	50	28000T-S	30-280	5	28000T-A-S	200-2000	20	2960		38.1	15.5
T4200N-S	400-4200		42000T-S	40-420		42000T-A-S	400-3000	3660	21.5			

- Note
1. T700N-S to T4200N-S models are supplied upon request.
  2. For models having over 25.4mm square drive, use with a through-hole socket.

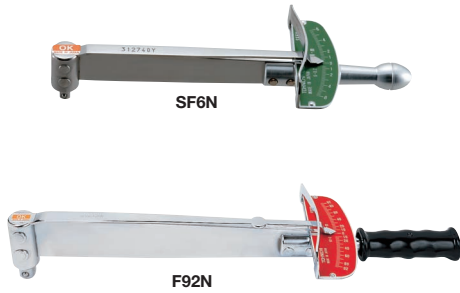
Torque Wrench for Quality Inspection



# SF/F/FR

Beam Type Torque Wrench

Direction



**Inspection** **Beam** **Direct Reading** **RoHS**

- Direct reading torque wrench with scale plate
- For measuring and tightening applications

Accuracy ±3%

S.I. Model	Torque Range [cN-m/N-m]		Metric Model	Torque Range [kgf-cm/kgf-m]		American Model	Torque Range [lbf-in/lbf-ft]		Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			
SF40CN	8-40		4SF	kgf-cm		4SF-A	lbf-in		115		0.04
SF70CN	10-70	2	7SF	kgf-cm	0.8-4	7SF-A	lbf-in	0.2	135		0.05
SF1.5N	0.2-1.5	0.05	15SF	kgf-cm	2-15	15SF-A	lbf-in	0.5	145	6.35	0.07
SF3N	0.5-3	0.1	30SF	kgf-cm	5-30	30SF-A	lbf-in	1	175		0.09
SF6N	0.6-6	0.2	60SF	kgf-cm	6-60	60SF-A	lbf-in	2	205		0.2
SF12N	2-12	0.5	120SF	kgf-cm	20-120	120SF-A	lbf-in	5	235		0.25
F23N	3-23		230F	kgf-cm	30-230	230F-A	lbf-in		295		0.4
F46N	5-46	1	460F	kgf-cm	50-460	460F-A	lbf-in	10	355	9.5	0.6
F92N	10-92	2	920F	kgf-cm	100-920	920F-A	lbf-in	2	400		0.95
F130N	20-130		1300F	kgf-cm	200-1300	1300F-A	lbf-in		445	12.7	1.2
F190N	30-190	5	1900F	kgf-cm	300-1900	1900F-A	lbf-in	5	490		1.5
F280N	50-280		2800F	kgf-cm	5-28	2800F-A	lbf-in		565		2.2
F420N	70-420	10	4200F	kgf-cm	7-42	4200F-A	lbf-in	10	825	19.0	3.5
F560N	100-560		5600F	kgf-cm	10-56	5600F-A	lbf-in		945		4.0
F700N	100-700	20	7000F	kgf-cm	10-70	7000F-A	lbf-in	20	1175		6.0
F850N	100-850		8500F	kgf-cm	10-85	8500F-A	lbf-in		1410		7.8
F1000N	100-1000	50	10000F	kgf-cm	10-100	10000F-A	lbf-in	50	1640		8.8
FR1050N	100-1050		10500FR	kgf-cm	10-105	10500FR-A	lbf-in		835	25.4	8
FR1400N	200-1400	100	14000FR	kgf-cm	20-140	14000FR-A	lbf-in	100	981		11.5
FR2100N	300-2100		21000FR	kgf-cm	30-210	21000FR-A	lbf-in		1148		14.5
FR2800N	300-2800	50	28000FR	kgf-cm	30-280	28000FR-A	lbf-in	50	1292		20
FR4200N	400-4200		42000FR	kgf-cm	40-420	42000FR-A	lbf-in		1460	38.1	28
FR6000N	600-6000	100	60000FR	kgf-cm	60-600	60000FR-A	lbf-in	1624		30	

Note

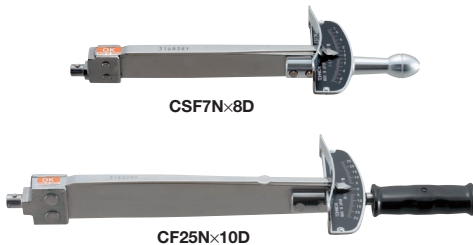
1. FR models are supplied upon request.
2. FR models require winch or mechanical loading device.
3. For models having over 25.4mm square drive, use with a through-hole socket.
4. Accuracy of American models is warranted from 20% of max. torque.

Torque Wrench for Quality Inspection

# CSF/CF

Interchangeable Head Type Beam Type Torque Wrench

Direction



**Inspection** **Beam** **Interchangeable** **Direct Reading** **RoHS**

- Interchangeable head version of SF/F
- For measuring and tightening applications

Accuracy ±3%

Tohnichi Head Size	S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm/kgf-m]		American Model	Torque Range [lbf-in/lbf-ft]		Overall Length [mm]	Weight [kg]
		Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		
8D	CSF7N×8D	1-7	0.2	70CSF	kgf-cm	kgf-cm	70CSF-A	lbf-in	lbf-in	220	0.2
	CSF14N×8D	2-14	0.5	140CSF	kgf-cm	kgf-cm		10-70	2		
10D	CF25N×10D	5-25	1	250CF	kgf-cm	kgf-cm	250CF-A	lbf-in	lbf-in	320	0.4
12D	CF50N×12D	10-50	2	500CF	kgf-cm	kgf-cm	500CF-A	lbf-in	lbf-in	380	0.6
15D	CF100N×15D	10-100		1000CF	kgf-cm	kgf-cm		10-100	2		
19D	CF150N×19D	20-150	5	1500CF	kgf-cm	kgf-cm	1500CF-A	lbf-in	lbf-in	480	1.3
22D	CF230N×22D	30-230		2300CF	kgf-cm	kgf-cm		3-23	0.5		
32D	CF420N×22D	70-420	10	4200CF	kgf-cm	kgf-cm	4200CF-A	lbf-in	lbf-in	725	3.1
	CF850N×32D	100-850	20	8500CF	kgf-cm	kgf-cm		20-160	5		

Note

1. Overall length does not include interchangeable head.
2. PH (Pipe wrench head) type interchangeable head is not available.
3. Interchangeable heads are optional.

# QF/QFR

Ratchet Head Beam Type Torque Wrench

Direction



**Inspection** **Beam** **Ratchet Head** **Direct Reading** **RoHS**

- Fixed ratchet head flat beam style
- Ideal for working in narrow spaces

Accuracy ±3%

S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm/kgf-m]		American Model	Torque Range [lbf-in/lbf-ft]		Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			
QF60N	6-60	1	600QF	kgf-cm	kgf-cm	600QF-A	lbf-in	lbf-in	455	9.5	0.8
QF120N	10-120	2	1200QF	kgf-cm	kgf-cm		0-520	10			
QF220N	30-220	5	2200QF	kgf-cm	kgf-cm	2200QF-A	lbf-in	lbf-in	580	12.7	1.8
QF320N	40-320	10	3200QF	kgf-cm	kgf-cm		6-86	2			
QF420N	70-420		4200QF	kgf-cm	kgf-cm	4200QF-A	lbf-in	lbf-in	825	19.0	3.4
QF560N	100-560	5600QF	kgf-cm	kgf-cm	40-230		5	950			
QF700N	100-700	20	7000QF	kgf-cm	kgf-cm	7000QF-A	lbf-in	lbf-in	1170	6.5	8.5
QF850N	100-850		8500QF	kgf-cm	kgf-cm		50-500	10			
QFR1050N	100-1050	50	10500QFR	kgf-cm	kgf-cm	10500QFR-A	lbf-in	lbf-in	845	25.4	8.5
QFR1400N	200-1400		14000QFR	kgf-cm	kgf-cm		60-600	20			
QFR2100N	300-2100	100	21000QFR	kgf-cm	kgf-cm	21000QFR-A	lbf-in	lbf-in	1158	38.1	15.5
QFR2800N	300-2800		28000QFR	kgf-cm	kgf-cm		100-750	20			
QFR4200N	400-4200	50	42000QFR	kgf-cm	kgf-cm	42000QFR-A	lbf-in	lbf-in	1473	38.1	30
QFR6000N	600-6000		60000QFR	kgf-cm	kgf-cm		300-3000	50			

Note

1. QFR models are supplied upon request.
2. QFR models require winch or mechanical loading device.
3. For models having over 25.4mm square drive, use with a through-hole socket.

# Interchangeable Socket

RoHS

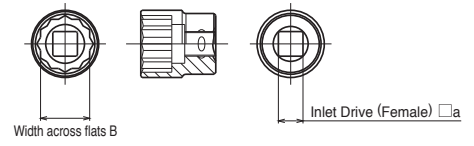
## SOCKET FOR HAND TOOL

		From Torque Tool			
Inlet Drive (Female)		6.35	9.5	12.7	19.0
Width Across Flats (B)		2H	3H	4H	6H
From Bolt	8	201			
	10	202	210		
	12	203	211		
	13	204	212		
	14		213	220	
	16		216	227	
	17		214	221	
	18		217	228	
	19		215	222	
	21			229	237
	22			223	230
	24			224	231
	27			225	232
	30			226	233
	32				234
	34				236
	36				235
	41				
46					
50					
55					



SOCKET

## SOCKET FOR HAND TOOL



### How to Order (Hand Tools) SOCKET

Indicate model name and Part #

[Ex.] SOCKET **2H-10** **202**  
 Socket Inlet sign | Purpose sign | Width across flats | Part #

### ADAPTER

Indicate model name and Part #

[Ex.] ADAPTER **2H-3** **270**  
 Inlet Sign (Female) | Purpose sign | Inlet sign (Male) | Part #

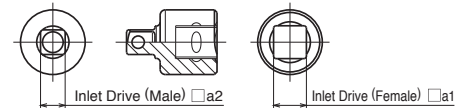
## ADAPTER FOR HAND TOOL

		From Torque Tool			
Inlet Drive (Female)		6.35	9.5	12.7	19.0
Inlet Drive (Male)		2H	3H	4H	6H
To Socket	6.3 (2)		271		
	9.5 (3)	270		273	
	12.7 (4)	277	272		275
	19 (6)			274	
	25.4 (8)				276



ADAPTER

## ADAPTER FOR HAND TOOL



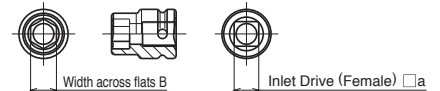
## SOCKET FOR PNEUMATIC TOOL

		From Torque Tool		
Inlet Drive (Female)		9.5	12.7	25.4
Width Across Flats (B)		3P	4P	8P
From Bolt	10	250		
	12	251		
	13	252		
	14	253	260	
	16	255	264	
	17	254	261	
	18		265	
	19		262	
	21		266	
	22		263	
	32			303
	34			304
	36			305
	41			306
	46			307
50			308	
55			309	



SOCKET

## SOCKET FOR PNEUMATIC TOOL



### How to Order (Air Tools) SOCKET

Indicate model name and Part #

[Ex.] SOCKET **3P-10** **250**  
 Socket Inlet sign | Purpose sign | Width across flats | Part #

### ADAPTER

Indicate model name and Part #

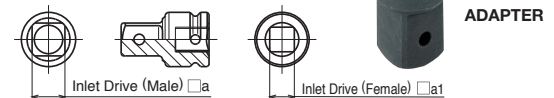
[Ex.] ADAPTER **3P-4** **290**  
 Inlet Sign (Female) | Purpose sign | Inlet sign (Male) | Part #

Note O-ring and pin are included.

## ADAPTER FOR PNEUMATIC TOOL

		From Torque Tool			
Inlet Drive (Female)		9.5	12.7	19.0	25.4
Inlet Drive (Male)		3P	4P	6P	8P
To Socket	9.5 (3)		291		
	12.7 (4)	290		293	
	19 (6)		292		295
	25.4 (8)			294	

## ADAPTER FOR PNEUMATIC TOOL

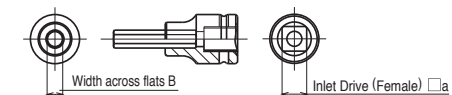


ADAPTER

## SOCKET FOR POWER AND HAND TOOL

		From Torque Tool			
Inlet Drive (Female)		6.35	9.5	12.7	19.0
Width Across Flats (B)		2C	3C	4C	6C
From Bolt	2.5	430			
	3	431	440		
	4	432	441		
	5		442		
	6		443	450	
	8			451	
	10			452	
	12			453	
	14			454	460
	17				461
	19				462

## SOCKET FOR HEX HEAD CAP SCREWS



Note 1. O-ring and pin are included.  
 2. 430, 431, 432 are not through hole type.

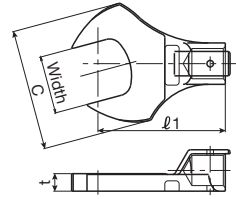
# Interchangeable Head

**SH**

Open Spanner Head

RoHS

The SH type spanner heads suit for the place where sockets can not be used, for flare nuts in piping and for work in narrow places.



SH15Dx19

Tohnichi Head Size	Model (Body Size × Width)	Allowable Torque		Outside Width C [mm]	Thickness t [mm]				
		[N·m]	[kgf·cm]						
8D	SH8D×5.5	1.5	15	13	3				
	SH8D×6	2.5	25	15	3.5				
	SH8D×7	3.5	35	17	4				
	SH8D×8	7	70	20	4.5				
	SH8D×10	14	140	25	5.5				
	SH8D×11			27					
	SH8D×12				6.5				
	SH8D×13			29					
	SH8D×14	15	150	31					
	SH8D×16			32					
	SH8D×17			35					
	SH8D×19			36					
	SH8D×21			37					
	SH8D×22			38					
10D	SH10D×7	20	200	28	6.5				
	SH10D×8								
	SH10D×10								
	SH10D×11								
	SH10D×12								
	SH10D×13								
	SH10D×14								
	SH10D×16								
	SH10D×17								
	SH10D×18								
12D	SH10D×19	25	250	39	10				
	SH10D×21								
	SH10D×22								
	SH10D×24								
	SH12D×8					7	70	20	5
	SH12D×10					12	120	24	6.5
	SH12D×11					20.5	205	28	
	SH12D×12					29.5	295	31	
	SH12D×13							32	
	SH12D×14					59	590	38	8
SH12D×16	40	10							
SH12D×17			11						
SH12D×18									
SH12D×19	70	700	41						
SH12D×21			43						
SH12D×22			48	13					
SH12D×24			52						
15D	SH15D×12	59	590	38	8				
	SH15D×13								
	SH15D×14								
	SH15D×16								
	SH15D×17								
	SH15D×18								
	SH15D×19								
	SH15D×21								
	SH15D×22								
	19D					SH19D×17	200	2000	60
SH19D×18									
SH19D×19									
SH19D×21									
SH19D×22									
SH19D×24									
SH19D×27									
SH19D×30									
SH19D×32									
SH19D×34									
SH19D×36									
SH19D×41									
SH22D×19		280	2800	63	15				
SH22D×22									
SH22D×24									
SH22D×27									
SH22D×30									
SH22D×32									
SH22D×34									
SH22D×36									
SH22D×41									
SH22D×46									
SH22D×50									
SH22D×55									
SH27D×22	255					2550	65	14	
SH27D×24									
SH27D×27									
SH27D×30									
SH27D×32									
SH27D×34									
SH27D×36									
SH27D×41									
SH27D×46									
SH27D×50									
SH32D×27		850	8500	105	18				
SH32D×30									
SH32D×32									
SH32D×34									
SH32D×36									
SH32D×41									
SH32D×46									
SH32D×50									
SH32D×55									
SH32D×60									

Tohnichi Head Size	Model (Body Size × Width)	Allowable Torque		Outside Width C [mm]	Thickness t [mm]
		[N·m]	[kgf·cm]		
15D	SH15D×24	140	1400	60	12
	SH15D×26				
	SH15D×27				
	SH15D×30				
	SH15D×32				
	SH15D×36				
19D	SH19D×17	180	1800	54	13
	SH19D×18				
	SH19D×19				
	SH19D×21				
	SH19D×22				
	SH19D×24				
	SH19D×27				
	SH19D×30				
	SH19D×32				
	SH19D×34				
22D	SH19D×36	200	2000	76	11
	SH19D×41				
	SH22D×19				
	SH22D×22				
	SH22D×24				
	SH22D×27				
	SH22D×30				
	SH22D×32				
	SH22D×34				
	SH22D×36				
27D	SH22D×41	420	4200	85	15
	SH22D×46				
	SH22D×50				
	SH22D×55				
	SH27D×22				
	SH27D×24				
	SH27D×27				
	SH27D×30				
	SH27D×32				
	SH27D×34				
32D	SH27D×36	750	7500	103	20
	SH27D×41				
	SH27D×46				
	SH27D×50				
	SH32D×27				
	SH32D×30				
	SH32D×32				
	SH32D×34				
	SH32D×36				
	SH32D×41				
32D	SH32D×46	1200	12000	120	29
	SH32D×50				
	SH32D×55				
	SH32D×60				

## Inch Size Models

Commonly used in the airline industry and for specific American product installation and maintenance.

Tohnichi Head Size	Model (Body Size × Inner Width [in])	Inner Width [mm]	Allowable Torque		Outside Width C [mm]	Thickness t [mm]
			N·m [lbf·in]	mm [in]		
8D	SH8D×1/4	6.35	2.5 [22]	15 [0.59]	3.5 [0.14]	
	SH8D×5/16	7.94	7 [61]	20 [0.79]	4.5 [0.18]	
	SH8D×3/8	9.53	14 [123]	25 [0.98]		
	SH8D×7/16	11.11		27 [1.06]	5.5 [0.22]	
	SH8D×1/2	12.7	15 [132]			
	SH8D×9/16	14.29		29 [1.14]	6.5 [0.26]	
10D	SH10D×1/4	6.35				
	SH10D×5/16	7.94	20 [177]	28 [1.10]		
	SH10D×3/8	9.53			6.5 [0.26]	
	SH10D×7/16	11.11				
	SH10D×1/2	12.7	25 [221]	32 [1.26]		
	SH10D×9/16	14.29		39 [1.54]		
12D	SH12D×3/8	9.53	12 [106]	24 [0.94]	5 [0.20]	
	SH12D×7/16	11.11	20.5 [181]	31 [1.22]		
	SH12D×1/2	12.7	29.5 [261]	32 [1.26]	6.5 [0.26]	
	SH12D×9/16	14.29				
	SH12D×5/8	15.88	59 [522]	40 [1.57]	10 [0.39]	
	SH12D×11/16	17.46	70 [620]	41 [1.61]	11 [0.43]	
15D	SH15D×1/2	12.7		38 [1.50]	8 [0.31]	
	SH15D×9/16	14.29	59 [522]			
	SH15D×5/8	15.88				
	SH15D×11/16	17.46		51 [2.01]	13 [0.51]	
	SH15D×3/4	19.05				
	SH15D×13/16	20.64	140 [1239]			
	SH15D×7/8	22.23				
	SH15D×15/16	23.81				
	SH15D×1	25.40		60 [2.36]	12 [0.47]	
	SH15D×1-1/16	26.99				

Tohnichi Head Size	Model (Body Size × Inner Width [in])	Inner Width [mm]	Allowable Torque		Outside Width C [mm]	Thickness t [mm]
			N·m [lbf·in]	mm [in]		
15D	SH15D×1-1/8	28.58				
	SH15D×1-3/16	30.16			60 [2.36]	
	SH15D×1-1/4	31.75				
	SH15D×1-5/16	33.34	140 [1239]		66 [2.59]	12 [0.47]
	SH15D×1-3/8	34.93				
	SH15D×1-7/16	36.51				
19D	SH15D×1-1/2	38.10			69 [2.72]	
	SH19D×15/16	23.81				
	SH19D×1	25.4			60 [2.36]	15 [0.59]
	SH19D×1-1/16	26.99				
	SH19D×1-1/8	28.58				
	SH19D×1-3/16	30.16	200 [1947]		72 [2.83]	
19D	SH19D×1-1/4	31.75				
	SH19D×1-5/16	33.34				11 [0.43]
	SH19D×1-3/8	34.93			76 [2.99]	
	SH19D×1-7/16	36.51				
	SH19D×1-1/2	38.1				

## The Relationship between Interchangeable Heads and Torque Wrenches

Tohnichi's interchangeable head wrenches have specific diameter round ends that fit into corresponding head base openings. Head and wrench model names include the diameter sizes so heads can be matched to wrenches that will accept those heads.

For example: SH15D×17 will fit on CL100N×15D

A variety of different head types (SH, RH, QH, RQH, FH, DH, AH and SH-N) can be used on one wrench or different types of wrenches such as CL (for tightening) and CEM3 (for inspection) can use the same head that has the corresponding diameter size.



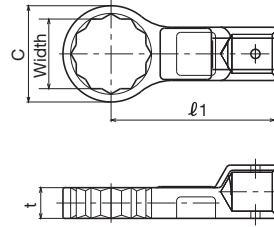
## RH

### Ring Head

RoHS

The RH type ring heads guarantee the safe work as the axes of bolt and RH ring head are always aligned and prevent the heads will drop.

Note: RH8D×5.5 to RH8D×7 are hex shape.



RH15D×17

Tohnichi Head Size	Model (Body Size × Width)	Allowable Torque		Outside Width C [mm]	Thickness t [mm]
		[N·m]	[kgf·cm]		
8D	RH8D×5.5	1.5	15	10.5	5
	RH8D×6	2.4	24	11	
	RH8D×7	3.6	36	12	
	RH8D×8	7.2	72	13.5	6
	RH8D×10	12.2	122	15.5	
	RH8D×11			17	
	RH8D×12	15	140	18	7
	RH8D×13			19	
	RH10D×8	7.2	72	12.5	6
	RH10D×10	12.2	122	15.5	7
RH10D×11	20	200	17		
RH10D×12			18		
RH10D×13			19		
RH10D×14			20		
RH10D×16			22		
RH10D×17	25	250	24	8	
RH10D×18			25		
RH10D×19			26		
RH10D×21			28		
RH10D×22			29		
RH12D×8	7.2	72	15	5	
RH12D×10	12.2	122	16		
RH12D×11	20	200	18	5.5	
RH12D×12			20		
RH12D×13	29.5	295	21	6.5	
RH12D×14	59	590	20	10	
RH12D×16			24		
RH12D×17			25		
RH12D×18			26	12	
RH12D×19	70	700	26		
RH12D×21			29		
RH12D×22			30	13	
RH15D×12			19	7	
RH15D×13	29.5	295	19		
RH15D×14			22		
RH15D×16	59	590	25	8	
RH15D×17			26		
RH15D×18	100	1000	26	10	
RH15D×19			28		
RH15D×21			31		
RH15D×22	140	1400	34	13	
RH15D×24			37		
RH15D×27			41		
RH15D×30			41		

Tohnichi Head Size	Model (Body Size × Width)	Allowable Torque		Outside Width C [mm]	Thickness t [mm]
		[N·m]	[kgf·cm]		
19D	RH19D×14	59	590	22.5	8
	RH19D×17			27	10
	RH19D×18	100	1000	28	11
	RH19D×19			29	
	RH19D×21	166	1660	32	13
	RH19D×22			35	
	RH19D×24			39	
	RH19D×27			41	
	RH19D×30	200	2000	44	15
	RH19D×32			47	
RH19D×34			49		
RH19D×36			55		
RH19D×41			62		
RH22D×19	166	1660	30	14	
RH22D×22	255	2550	34		
RH22D×24	490	4900	37	15	
RH22D×27	490	4900	41		
RH22D×30			44		
RH22D×32			45		
RH22D×34	500	5000	49	17	
RH22D×36			51		
RH22D×41			57		
RH22D×46			62		
RH27D×22	255	2550	38	14	
RH27D×24	350	3500	42	15	
RH27D×27	490	4900	46	16	
RH27D×30	670	6700	48	19	
RH27D×32	750	7500	48	20	
RH27D×34	670	6700	51	21	
RH27D×36			52	22	
RH27D×41			58	24	
RH27D×46	750	7500	64	26	
RH27D×50			69	26	
RH32D×27	490	4900	43	16	
RH32D×30	670	6700	46.5	18	
RH32D×32	860	8600	49	18	
RH32D×34			52		
RH32D×36			53		
RH32D×41			59	24	
RH32D×46			65		
RH32D×50	1200	12000	69	27	
RH32D×55			75		
RH32D×60			80	29	

## Inch Size Models

Commonly used in the airline industry and for specific American product installation and maintenance.

Tohnichi Head Size	Model (Body Size × Inner Width [in])	Inner Width [mm]	Allowable Torque		Outside Width C [mm]	Thickness t [mm]
			N·m [lbf·in]	mm [in]		
8D	RH8D×1/4	6.35	3.6 [31]	11 [0.43]	5 [0.20]	
	RH8D×5/16	7.94	7.2 [63]	13.5 [0.53]	6 [0.24]	
	RH8D×3/8	9.53	12.2 [108]	15 [0.59]		
	RH8D×7/16	11.11	15 [132]	17 [0.67]	7 [0.28]	
10D	RH10D×1/4	6.35	7.2 [64]	11 [0.43]		
	RH10D×5/16	7.94	7.2 [64]	12.5 [0.49]	6 [0.24]	
	RH10D×3/8	9.53	12.2 [108]	15.5 [0.61]	7 [0.28]	
	RH10D×7/16	11.11		17 [0.67]		
	RH10D×1/2	12.7	25 [221]	19 [0.75]	8 [0.31]	
	RH10D×9/16	14.29		20 [0.79]		
12D	RH12D×3/8	9.53	12.2 [108]	16 [0.63]	5 [0.20]	
	RH12D×7/16	11.11	20 [177]	18 [0.71]	5.5 [0.22]	
	RH12D×1/2	12.7	29.5 [261]	21 [0.83]	6.5 [0.26]	
	RH12D×9/16	14.29		20 [0.79]		
RH12D×5/8	15.88	59 [522]	24 [0.94]	10 [0.39]		

Tohnichi Head Size	Model (Body Size × Inner Width [in])	Inner Width [mm]	Allowable Torque		Outside Width C [mm]	Thickness t [mm]
			N·m [lbf·in]	mm [in]		
15D	RH15D×1/2	12.7	29.5 [261]	19 [0.81]	7 [0.28]	
	RH15D×9/16	14.29		22 [0.87]		
	RH15D×5/8	15.88	59 [522]	25 [0.98]	8 [0.31]	
	RH15D×11/16	17.46	100 [885]	26 [1.06]	10 [0.39]	
	RH15D×3/4	19.05	140 [1239]	28 [1.10]	13 [0.51]	

Accessories



## The Relationship between Interchangeable Heads and Torque Wrenches

Tohnichi's interchangeable head wrenches have specific diameter round ends that fit into corresponding head base openings. Head and wrench model names include the diameter sizes so heads can be matched to wrenches that will accept those heads.

For example: SH15D×17 will fit on CL100N×15D

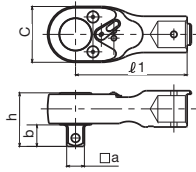
A variety of different head types (SH, RH, QH, RQH, FH, DH, AH and SH-N) can be used on one wrench or different types of wrenches such as CL (for tightening) and CEM3 (for inspection) can use the same head that has the corresponding diameter size.



## QH

### Ratchet Head

RoHS



QH15D

As the QH type ratchet heads need only small swing for tightening, they suit for operations in narrow spaces.

Tohnichi Head Size	Model	Dimensions			
		Sq. Drive a [mm]	Outside Width c [mm]	h [mm]	b [mm]
8D	QH8D	6.35	23	17.5	7.5
10D	QH10D-1/4		26	18.5	
	QH10D	9.53	32	22	11
12D	QH12D		25.6	30.5	
15D	QH15D-3/8	12.7	37.5	33.5	14
	QH15D		40	38.4	15.4
19D	QH19D	19.05	51	41.5	15.5
22D	QH22D-1/2		46.5	43.3	23.5
	QH22D	25.4	70	49.7	21.5
27D	QH27D		74	55.7	26.5
32D	QH32D				

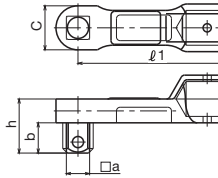
**Note**

- For the model having 25.4mm square drive, use a through-hole socket.  
QH15D-3/8 Tmax 100N·m  
QH22D-1/2 Tmax 280N·m
- Ratchet protective cover is available. Refer to page 46.

## DH

### Square Drive Head

RoHS



DH15D

The DH square drive heads are the standard interchangeable head. They are useful when tightening a large number of matching screws with a common torque wrench. It is recommended to keep one set. They are used with sockets.

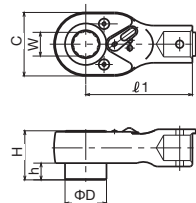
Tohnichi Head Size	Model	Dimensions			
		Sq. Drive a [mm]	Outside Width c [mm]	h [mm]	b [mm]
10D	DH10D	9.53	18	22.5	13
12D	DH12D		22	23	
15D	DH15D	12.7	22	29.5	16.5
19D	DH19D		24	34	
22D	DH22D	19.05	34	43.3	23.5
27D	DH27D		42	44.5	
32D	DH32D	25.4	50	58.5	30.25

**Note** DH32D is a through hole type.

## RQH

### Female Ratchet Head

RoHS



RQH15D×17

As the RQH type ratchet heads need only small swing for tightening, they suit for operations in narrow and low ceiling spaces.

Tohnichi Head Size	Model (Body Size × Width)	Dimensions			
		D [mm]	Outside Width C [mm]	H [mm]	h [mm]
12D	RQH12D×12	20.5	32	24.1	
	RQH12D×14				
15D	RQH15D×14	24.5	37.5	29	10
	RQH15D×17				
19D	RQH19D×17	31	45	28	
19D	RQH19D×19	31	45	28	
	RQH19D×22				
22D	RQH22D×22	35.2	51	35	
	RQH22D×24				

## Ratchet Protective Cover for QH/RQH

Fit on your Tohnichi Ratchet Head to protect your work

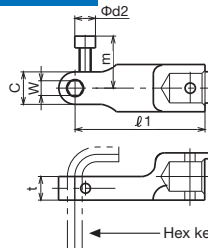


Part #	Applicable Interchangeable Head
870	QH8D
871	QH10D
872	QH12D/RQH12D
874	QH15D/RQH15D
875	QH19D
876	RQH19D
878	QH22D/RQH22D

## HH

### Hex Head

RoHS



HH10D×6

HH hex-head is for hexagon socket head bolts. A hex key can be inserted.

The HH hex-head is for hex. socket head cap screws.

Tohnichi Head Size	Model (Body Size × Width)	Dimensions			
		Outside Width C [mm]	t [mm]	m [mm]	φd2 [mm]
8D	HH8D	12	14.5	-	-
	HH10D×5	11			
10D	HH10D×6	12	8		
	HH10D×8	15			
12D	HH12D×5	11		19	7
	HH12D×6	14	10		
	HH12D×8	15			
15D	HH15D×10	17			
	HH15D×8	14			
15D	HH15D×10	17		21	
	HH15D×12	20			
15D	HH15D×14	21.5			
	HH19D×10	17	13		8.5
19D	HH19D×12	21.5			
	HH19D×14	23		23	
19D	HH19D×17	27			
	HH19D×19	29			
22D	HH22D×12	19.5			
	HH22D×14	27			
22D	HH22D×17	30	17	26	10
	HH22D×19	32			
	HH22D×22	35			

**Note**

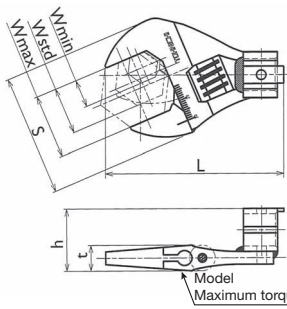
- To be used with hex. key inserted.
- HH8D is not used with hex. key but interchangeable bit.
- Insertion of HH10D×5 and HH10D×6 are hexagon. Others are double hexagon.



HH8D

Bits are sold separately. Refer to page 11.

## AH/AH2 Adjustable Open End Head RoHS



AH15D2x30

AH is easy and convenient to use for applications that require different size bolt heads. Available currently only for the 15mm diameter root shaped Tohnichi torque wrenches.

Tohnichi Head Size	Model (Body Size × Width)	Allowable Torque		Inner Width Min.-Standard-Max. [mm]	Dimensions			
		[N·m]	[kgf·cm]		S [mm]	L [mm]	t [mm]	h [mm]
10D	AH10Dx13	25	250	3-8-13	36	57	9	23
	AH10Dx26			7-17-26	49	62	11	25
	AH12Dx13	30	300	3-8-13	36	66	9	23
12D	AH12Dx26	50	500	7-17-26	49	71	11	26
	AH12Dx36			8-22-36	65	78	13	27
	AH15D2x26	10-18-26	50	77	11	31		
15D	AH15D2x30	100	1000	13-22-30	60	84	12	32
	AH15D2x36	140	1400	13-24-36	65	87	13	33

**Note** Use with a click type torque wrench.

## PH Pipe Wrench Head RoHS



PH15Dx350

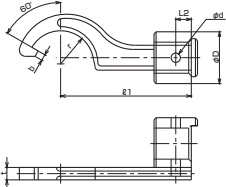
The PH heads suit for use with pipes and plumbing applications.

Tohnichi Head Size	Model (Body Size × Width)	Pipe Wrench Head Max. Length [mm]	Applicable Pipe Diameter [mm]	Standard Pipe Diameter [mm]	Recommendable Torque Wrench
15D	PH15Dx350	350	13-38	25.5	CSP
19D	PH19Dx350				
22D	PH22Dx350				
	PH22Dx450	450	26-52	39	

**Note**

- PH can be used with CSP model (P19) only.
- When ordering with CSP, please specify PH model name and required set torque.
- In case of using graduated torque wrench, order PHL models.

## FH Hook Head RoHS

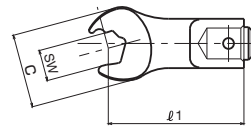


FH

The FH hook heads are ideal for use with bearing locknut applications.

Tohnichi Head Size	Model (Body Size × Width)	Applicable Size of Nut Outside Diameter [mm]	Nominal Size of Screw	Dimensions								
				r [mm]	b [mm]	t [mm]	H [mm]	D [mm]	L2 [mm]	d [mm]		
15D	FH15Dx30	30-38	M20	16								
	FH15Dx38	38-45	M25	20	3	6	30					
	FH15Dx45	45-52	M30	24				25	7.5		4.5	
	FH15Dx52	52-58	M35	27	60	3.5	7	30.5				
19D	FH15Dx58	58-65	M40	31				31				
	FH19Dx65	65-75	M45, M50	35.5		4.5	8	35.5	29	9.5		
22D	FH22Dx75	75-85	M60, M65	39				38.5				
	FH22Dx85	85-98	M70, M75	45.5	45	5	10	40	32	11	5.5	

## SH-N Open End Head with Notch RoHS



SH-N models (except for SH10D-5x10N)



SH10D-5x10N



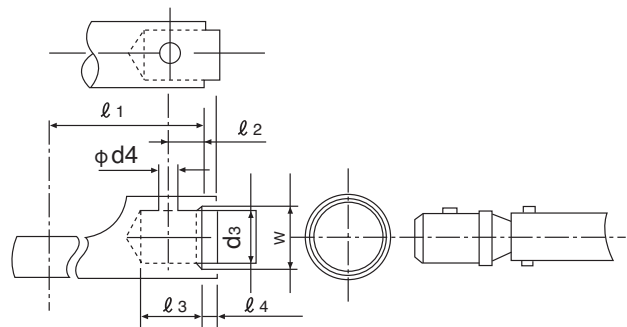
SH10D-1x10N

The notch creates speed in the tightening process by grasping the side of the fastener without removing the wrench. Ideal for brake line assembly.

Tohnichi Head Size	Model (Body Size × Width)	Allowable Torque		Dimensions				
		[N·m]	[kgf·cm]	Outside Width C [mm]	Thickness H [mm], t [mm], h [mm]			
10D	SH10D-1x10N	22.5	225	24	18.75	12	6	
	SH10D-3x10N				20.25	15	7.5	
	SH10D-5x10N				24.5	-	-	
	SH10D-4x10N	17.75	10		5			
	SH10D-9x10N	22.5	225		18.75	10	6	
	SH10Dx11N	18.8	12		6			
	SH10Dx12N	25	250		32	16	6.5	3.25
	SH12Dx11N				30	19	7.5	-
	SH12D-1x12N					21	12	6
	SH12D-3x12N	30	300		32	22.5	15	7.5
12D	SH12D-5x12N				26	15	-	
	SH12D-4x12N				20	10	5	
	SH12D-1x14N				21	12	6	
	SH12D-3x14N	40	400	35	22.5	15	7.5	
	SH12D-5x14N				26	15	-	
	SH12D-4x14N				20	10	5	
	SH12D-1x17N				21	12	6	
	SH12D-3x17N	50	500	38	22.5	15	7.5	
15D	SH12D-5x17N				26	15	-	
	SH12D-4x17N				20	10	5	

## Common Dimensions for Interchangeable Head

Model	Dimensions [mm]						
	l1	l2	l3	l4	d3	d4	W
SH8D, RH, QH, HH	35	4	10	2	8	3.0	9
SH10D, RH, QH, HH, DH, SH-N	44	5	12	2.5	10	3.5	12
SH12D, RH, QH, HH, DH, RQH	53	6	14	3	12	3.5	14
SH15D, RH, QH, HH, DH, RQH, FH	63	7.5	17	3	15	4.5	17
SH19D, RH, QH, HH, DH, RQH, FH	80	9.5	21	3	19	4.5	21
SH22D, RH, QH, HH, DH, RQH, FH	100	11	24	3.5	22	5.5	24
SH27D, RH, QH, DH	125	13.5	29	5	27	6.5	30
SH32D, RH, QH, DH	160	16	34	7	32	6.5	35



**Note** When requesting a special head that is used with various types of torque wrench, it is strictly required to follow the "l1" dimension to keep torque accuracy. Any deviation from the "l1" dimension affects torque accuracy.



# Auxiliary Equipment

To facilitate effective and convenient use of Tohnichi products, a number of auxiliary parts and special tools are available (Some torque tools are provided with the necessary auxiliary parts). We are ready to manufacture custom-made parts and tools to meet your requirements.

## For Torque Wrench

### QH/QL/PQL/QSP PROTECTIVE HEAD COVER

Fit on your Tohnichi Ratchet Head to protect your work



Part #	Applicable Interchangeable Head & Model	
870	QH8D	QL-PQL2N-15N/-MH, QSP1.5N4-12N4
871	QH10D	QL-PQL-QSP25N/-MH
872	QH12D/RQH12D	QL-PQL-QSP50N/-MH
873	-	QL-PQL-QSP100N4/-MH
874	QH15D/RQH15D	QL-PQL-QSP140N/-MH
875	QH19D	QL-PQL-QSP200N4/-MH
876	RQH19D	-
877	-	QL-PQL-QSP280N4/-MH
878	QH22D/RQH22D	QL-PQL-QSP420N

### TiQLE ADJUSTING TOOL FOR TiQLE

For previous large QLE and current TiQLE models



Part #	Applicable Model
301	TIEQLE750N-TIEQLE1400N

### SP THRUSTRING TOOL FOR SP

This tool is used to set the torque of preset types SP, RSP, QSP and CSP torque wrenches.



Part #	Tool #	Applicable Model
310	A-1	QSP/CSP1.5N-6N
311	A-2	SP2N-SP19N, QSP/CSP12N, QSP/CSP25N
312	A-3	SP38N, SP67N, QSP/CSP50N-140N
313	A-4	SP120N-SP310N, QSP200N-QSP280N
314	A-5	QSP/CSP420N, BQSP/BCSP400N
315	A-6	SP420N, SP560N

### QSP3 ADJUSTING TOOLS FOR QSP3



Part #	Dimensions [mm]	Applicable Model
931	2.5 × 1.5 × 6	QSP/CSP25N3, QSP1.5N4-12N4 SP2N2-19N2, SP19N2-N BQSP/BCSP10N-20N CSP1.5N4-CSP12N4
930	4 × 2.5 × 8	QSP/CSP50N3-QSP/CSP280N3 QSP100N4, QSP200N4, SP38N2-N BQSP/BCSP40N-300N SP/RSP38N2-310N2

### DB TOOL SET FOR DB

This set of pliers is used to adjust the torque for dial type torque wrenches and torque checkers.



Part #	Applicable Model
316	DB, DBE, CDB-S, T-S, DOT

### CARRYING CASE



842



846

Part #	Dimensions [mm]	Weight [kg]
842	QL50N/-MH, MTQL40N/70N, QL100N4-MH, CL50N×12D/-MH, CL50N×15D/-MH, CL100N×15D-MH H60 × W400 × D70	0.25
843	QL140N/-MH, MTQL140N, QL200N4/-MH, CL140N×15D/-MH, CL200N×19D/-MH H60 × W520 × D80	0.36
846	QL140N/-MH and below, MTQL and below, CL200N×19D/-MH and below H170 × W500 × D100	1.0
847	QL280N/-MH and below, CL280N×22D/-MH and below H170 × W740 × D100	1.6

## For Torque Screwdriver

### LTD, RTD ADJUSTING TOOL FOR LTD/RTD

This tool is used to adjust the torque of LTD and RTD torque screwdrivers.



Part #	Applicable Model
51	LTD/RTD15CN, LTD/RTD30CN
46	LTD/RTD60CN
47	LTD/RTD260CN
48	LTD/RTD500CN
49	LTD/RTD1000CN
1046	LTD/RTD120CN

### LTD TIGHTENING TOOL FOR LTD

This tool makes tightening with large LTD much easier.



Part #	Applicable Model
31	LTD/RTD/NTD/RNTD500CN FTD400CN
32	LTD/NTD1000CN FTD8N, FTD16N
40	LTD2000CN

### LTD/RTD/MNTD HOOK SPANNER

This tool makes it easier to set the torque for mid. to large capacity torque screwdrivers.



Part #	Applicable Model
52	LTD/RTD260CN, MNTD120CN
53	LTD/RTD500CN, MNTD260CN
54	LTD1000CN, MNTD500CN
55	LTD2000CN

### NTD/RNTD ADJUSTING BAR FOR NTD/RNTD

This tool is used to set the torque of preset types NTD and RNTD screwdrivers.



Part #	Applicable Model
42	NTD/RNTD15CN-120CN
43	NTD/RNTD260CN, RNTDZ260CN
44	NTD/RNTD500CN-1000CN, RNTDZ500CN

### TORQUE SCREWDRIVER ADAPTER

This accessory is used with TME2 and TM torque meters to check UNITORK and torque screwdrivers.



Part #	Applicable Model
30	LTD/RTD/NTD/RNTD FTD50CN-FTD400CN

### Lubricant for repairing torque products EVERTORQUE

Model	Part #
EVERTORQUE	830



RoHS

### Applicable Models and Parts



	Applicable Model	Applicable Part
Click Type Torque Wrench	QL, QE2, CL, CLE2, PQL, PCL, YCL etc.	Thrusting; Steel Ball Scale Piece, Adjusting Screw; Thread
	WQL	Thrusting; Steel Ball Scale Piece, Adjusting Screw; Thread Screw Knob, Protector; Joint
	MPQL	Thrusting; Steel Ball Scale Piece, Adjusting Screw; Thread Ratchet, Marker Pipe; Joint
Click Type Torque Screwdriver	RTD, RNTD	Main Shaft, Toggle Sheet; Serration
	RTD, LTD, BMLD	Case, Adjusting Piece; Thread








# Connecting Cable

\* The cable length is 2m.

## ■ EPP16M3 Printer Connecting Cable



Part #	Applicable Model	Figure	Plug
383	DOT3-G (P.54), LC3-G (P.56), TDT3-G (P.53), TME2 (P.59), CD5 (P.64)		D-SUB 9 Pin Female
575	CEM3-G/CEM3-P (P.36), CTA2-G (P.24), R-DT999 (P.64), CTB2-G (P.37)		D-SUB 9 Pin Female

## ■ PC Connecting Cable




Part #	Applicable Model	Figure	Plug
575	CEM3-G/CEM3-P (P.36), CTA2-G (P.24), R-DT999 (P.64), CTB2-G (P.37)		D-SUB 9 Pin Female
584	CEM3-G/CEM3-P (P.36), CTA2-G (P.24), R-DT999 (P.64), CTB2-G (P.37)		USB A type
585	CPT-G (P.23)		D-SUB 9 Pin Female
383	DOT3-G (P.54), LC3-G (P.56), TDT3-G (P.53), TME2 (P.59), CD5 (P.64)		D-SUB 9 Pin Female
384	STC2-G (P.10), ST3-G (P.56), ATGE-G (P.57), BTGE-G (P.58)		USB A type
385	LC3-G (P.56), TDT3-G (P.53)		USB A type

# Quick Charger, Battery Pack, AC Adapter




## ■ Quick Charger



Model	Applicable Model	Figure
<b>RoHS</b> BC-3-G	CEM3-G/CEM3-P (P.36), CTA2-G (P.24) CTB2-G (P.37) (100-240V)	
<b>RoHS</b> BC-4-2	ST3-G (P.56)	

## ■ Battery Pack

Model	Applicable Model	Figure
BP-5	CEM3-G/CEM3-P (P.36) CTA2-G (P.24), CTB2-G (P.37)	
BP-7	STC2-G (P.10)	
<b>RoHS</b> BP-100-3	DOT3-G (P.54), LC3-G (P.56), TDT3-G (P.53), TME2 (P.59), CD5 (P.64)	

## ■ AC Adapter

Model	Applicable Model	Figure
<b>RoHS</b> BA-6	DOT3-G (P.54), LC3-G (P.56), TDT3-G (P.53), CD5 (P.64)	
<b>RoHS</b> BA-5	ATGE-G (P.57), BTGE-G (P.58)	
<b>NEW</b> BA-8	R-BT (P.49), R-BLA (P.31), R-BLE (P.31)	

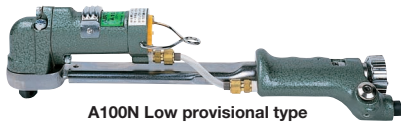
Model	Applicable Model	Figure
<b>RoHS</b> BA-4	TME2 (P.59)	
BA-7	STC2-G (P.10)	



# A/AC2

Semi-Automatic Airtork

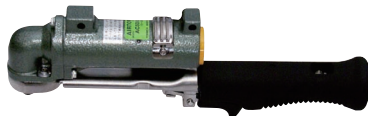
Direction



A100N Low provisional type



A180N Low provisional type



AC50N2 High provisional type



ACLS100N2 High provisional with limit switch type

Assembly

Angle

Pneumatic

Graduation

Push button

RoHS

- Pneumatic motor mounted on torque wrench
- After provisional tightening by an air motor at high speed, final tightening is performed manually.
- A: Low provisional torque type
- AC: High provisional torque type

Accuracy ±3%

S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm]		American Model	Torque Range [lbf-in/lbf-ft]		Max. Provisional Tightening Torque [N-m]	Free Speed [r.p.m]	Air Pressure [MPa]	Hose Dia. [mm]	Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.							
A10N	3-10	0.1	A100	30-100	1	A100-A	30-90	1	1.8	750			278	9.5	1.0
A25N	5-25	0.25	A225	50-250	2.5	A225-A	50-200	2.5							
A50N	10-50	0.5	A450	100-500	5	A450-A	100-400	5							
A100N	20-100	1	A900	200-1000	10	A900-A	15-65	1	2.5	800		φ5	340	12.7	1.43
A180N	40-180	2	A1800	400-1800	20	A1800-A	30-130	2							
AC25N2	5-25	0.25	AC250M2	50-250	2.5	AC200I2-3/8	50-200	2.5	11	1000			293	9.5	1.0
AC50N2	10-50	0.5	AC500M2	100-500	5	AC400I2-3/8	100-400	5							
-	-	-	-	-	-	AC800I2-3/8	200-800	10							
-	-	-	-	-	-	AC75F2-3/8	15-75	1	17.5	900		φ6	334	12.7	2.0
AC100N2	20-100	1	AC1000M2	200-1000	10	-	-	-							
AC180N	40-180	2	A1800C	400-1800	20	AC130F-4A	30-130	2	19	800			489	12.7	3.3

Note  
 1. Rated voltage of the limit switch is AC/DC 30V, below 1A.  
 2. Use pneumatic sockets only.  
 3. S.Q. Drive Through Hole

# ALS/ACLS2

- A/AC style with limit switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

Accuracy ±3%

S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm]		American Model	Torque Range [lbf-in]		Max. Provisional Tightening Torque [N-m]	Free Speed [r.p.m]	Air Pressure [MPa]	Hose Dia. [mm]	Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.							
ALS10N	3-10	0.1	A100LS	30-100	1	-	-	-	1.8	750			278	9.5	1.2
ALS25N	5-25	0.25	A225LS	50-225	2.5	-	-	-							
ALS50N	10-50	0.5	A450LS	100-500	5	-	-	-							
ACLS25N2	5-25	0.25	ACLS250M2	50-250	2.5	-	-	-	11	1000	0.6		293	1.2	
ACLS50N2	10-50	0.5	ACLS500M2	100-500	5	-	-	-							
ACLS100N2	20-100	1	ACLS1000M2	200-1000	10	-	-	-							
ACLS180N	40-180	2	A1800CLS	400-1800	20	-	-	-	19	800		φ6	489	12.7	3.5

Assembly

Pistol

Pneumatic

Graduation

Trigger

RoHS

- High speed and high accuracy tightening
- Easy torque adjustment by scale with key

Accuracy ±5%

S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm]		American Model	Torque Range [lbf-in]		Free Speed [r.p.m]	Air Pressure [MPa]	Hose Dia. [mm]	Standard Accessory Bit ⊕	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.					
AUR5N	2-5	0.1	AU50R	20-50	1	AU50R-A	15-45	1	2100	0.5	φ10	#3	1.5
AUR12.5N	5-12.5	0.25	AU125R	50-125	2.5	AU125R-A	37.5-112.5	2.5	800				
AUR25N	10-25	0.5	AU250R	100-250	5	AU250R-A	75-225	5	400				

Note  
 1. AUR5N has #3 bit, 6.35 HEX, with a double bit. Any other bits are available in the local market.  
 2. AUR12.5N and AUR25N have a fixed 9.53mm square drive. Use pneumatic sockets only.

Standard Accessories  
 1. Torque adjusting key  
 2. Supportive Handle for AUR25N/AURLS25N  
 3. W12 Open ended spanner for AUR25N/AURLS25N

# AURLS

- AUR style with limit switch output
- Wired Error-Proofing, Pokayoke, system for assembly processes

Accuracy ±5%

S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm]		American Model	Torque Range [lbf-in]		Free Speed [r.p.m]	Air Pressure [MPa]	Hose Dia. [mm]	Standard Accessory Bit ⊕	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.					
AURLS5N	2-5	0.1	AU50RLS	20-50	1	AU50RLS-A	15-45	1	2100	0.5	φ10	#3	1.5
AURLS12.5N	5-12.5	0.25	AU125RLS	50-125	2.5	AU125RLS-A	37.5-112.5	2.5	800				
AURLS25N	10-25	0.5	AU250RLS	100-250	5	AU250RLS-A	75-225	5	400				

POKA Patrol, Count Checker

# CNA-4mk3

Refer to page 28.



\* Sold Separately



AUR12.5N

# HAC

Battery Operated Semi-Automatic Torque Wrench

Direction

NEW



HAC50N

## Battery Reference

For battery and charger, Hitachi Koki UC18 series are available commercially.



Battery Charger

BC18YSL3



Battery

BP1825

BP1850

Note

1. Guideline tightening No. is 1500 operations for BP1825 and 3000 operation for BP1850.
2. The guideline is in case of middle joint. It is subject to change due to joint coefficient.

Assembly Angle Electric Re-Chargeable Graduation Push button

- More reasonable and accurate than electric hand nutrunner
- Provisional tightening by electric motor and final tightening by hand. Two in one function.
- Pokayoke function is equipped as standard.
- Capable of calibrating by torque wrench tester

Accuracy ±3%

S.I. Model	Torque Range [N·m]		Max. Provisional Tightening torque	Free Speed [r.p.m.]	Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.					
NEW HAC25N	5-25	0.25	4	1000	406	9.53	1.5
NEW HAC50N			11				
NEW HAC100N	10-50	0.5	17.5	1000	491	12.7	2.4
NEW HAC140N	20-100	1			557		2.8
NEW HAC200N	30-140	2	30	580	670		3.6
	40-200						

- Note
1. Provisional torque is easily changed in 3 levels.
  2. Battery charger, Battery, Balancer, Receiver/R-BT, and Adapter/BA-8 are optional.
  3. Refer to page 31 for condition of wireless equipment in each country.
- Standard Accessories
1. Hex bit W=4/Adjusting tool



HAC with balancer

R-BT

## Balancer

Model	Applicable model
343	HAC25N, 50N
344	HAC100N, 140N, 200N

## Bluetooth® Receiver

Model	Version
R-BT	V3.0

- Note
1. It is receivable up to 4 pcs of HAC.
  2. Supplied with DC24V input terminal
  3. Communication distance is approx. 10m.

## R-BT AC Adapter

Model
BA-8

- Note
1. AC100-240V is applicable.



BA-8

# HAT

HANDYTORK/  
Battery Operated Torque Screwdriver

Direction



HAT

HATR



HAT25N

## HAT Optional Accessories



Battery

BP-12

Model	Description
BP-12	DC 12V



Battery Charger

BC-1

Part #	Model
820	BC-1 (AC100V)

Assembly Pistol Re-Chargeable Graduation Trigger

- Easy calibration check with standard torque wrench tester
- Available with reverse and as FH version

Accuracy ±5%

S.I. Model	Torque Range [N·m]		Free Speed [r.p.m.]	Voltage DC [V]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.				
HAT25N	10-25	0.5	700	12	9.5	1.8
HATR25N			140			

- Note
1. Torque accuracy is based upon static torque measured by torque wrench tester.
  2. HATR/HATRFH has a reverse mode function.
  3. HATFH/HATRFH is error-proofing (Pokayoke) type, and it can be used only with R-FH256 receiver (sold separately) as count verification system.
  4. Use pneumatic sockets only.
  5. HAT battery and battery charger are optional.
  6. It is designed for 100V usage only.

- Standard Accessories
1. W4 hex key
  2. Supportive handle for HAT25N, HATR25N, HATFH25N, HATRFH25N

# HATFH

- Wireless error-proofing, Pokayoke, system for HAT
- Tightening completion signal output to eliminate missed tightening



Accuracy ±5%

S.I. Model	Torque Range [N·m]		Free Speed [r.p.m.]	Voltage DC [V]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.				
HATFH25N	10-25	0.5	700	12	9.5	1.8
HATRFH25N			140			

## Receiver

### R-FH256

Refer to page 28 and 30 for Pokayoke system configuration.

\*Sold separately



## POKA Patrol, Count Checker

### CNA-4mk3

Refer to page 28.



\* Sold Separately



# DU Fully-Automatic Electric Torque Screwdriver

Direction **NEW**



DU250CN



DU-COUNTER



Cable for DU/Counter

## Cable for DU and DU-COUNTER

Part #	Applicable Model	Length [m]
516	DU and DU-COUNTER	2
517		5

Assembly Straight Electric Graduation Push button RoHS

- Easy torque set with external scale
- Brushless motor : high durability and low noise
- Ideal for torque traceability
- Control the number of tightening to eliminate missed tightening

Accuracy ±5%

S.I. Model	Torque Range [cN·m]		Free Speed [r.p.m]		Applicable Screw size (Ref.)		Overall Length [mm]	Weight [kg]
	Min.-Max.	Grad.	High	Low	Standard	High-strength		
<b>NEW</b> DU30CN	cN-m 10-30	cN-m 0.5	1500	1050	M2 (M2.2)	(M1.8) M2	281	0.6
<b>NEW</b> DU60CN	20-60	1			M2.5, M3	(M2.2) M2.5		
<b>NEW</b> DU100CN	40-100	2	1400	980	(M3.5)	M3 (M3.5)		
<b>NEW</b> DU250CN	100-250	5	1200	840	M4 (M4.5)	M4	305	0.82

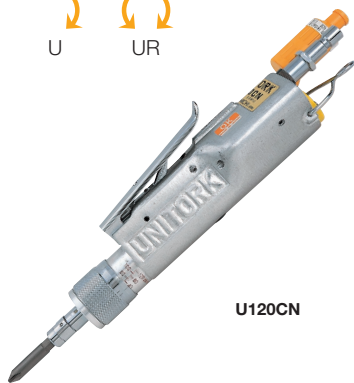
- Note**
1. Cable and DU-Counter are required and sold separately.
  2. TCF is available as a checker. Refer to page 60.
  3. Counterclockwise rotation has no torque control. It is loosening purpose only.

## DU-COUNTER Specifications

Model	DU-COUNTER
Counter Display	2 digits 7 segments
Judgement	Blue/Red
Number of Tightening	1-99
Judgement Mode	Preset, Automatic judgment - 0-99 seconds/per sec.
Output	OK/NG output, Relay contact: DC30V 1A, AC125V 0.3A
Input	RESET input
Timer Function	Double tightening prevention/1-99 sec. Auto-reset/0-60 sec. Interval warning/0-99 sec.
Power Source	AC100V-240V±10% 50/60Hz 3.6A MAX
Output Voltage	DC36V 13.4A MAX
Dimension	W159.2 × D220 × H83
Weight[kg]	1.3
Operating Temperature [°C]	0-40
Accessories	AC cable
Applicable Model	DU30/60/100/250CN

# U/UR UNITORK/Straight & Pistol Type Pneumatic Torque Screwdriver

Direction



U120CN

Assembly Straight/Pistol Pneumatic Graduation Trigger/Lever RoHS

- Accurate and stable tightening for small size screws
- Lever activated

Accuracy ±5%

S.I. Model	Torque Range [cN·m]		Metric Model	Torque Range [kgf·cm]		American Model	Torque Range [lbf·in]		Free Speed [r.p.m]	Air Pressure [MPa]	Hose in Dia. [mm]	Weight [kg]	Standard Accessory Bit Ⓢ
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.					
U30CN	cN-m 10-30	cN-m 0.5	U3	kgf-cm 1-3	kgf-cm 0.05	U3-A	lbf-in 1-3	lbf-in 0.05	1600	0.4		0.32	#0
U60CN	20-60	1	U6	2-6	0.1	U6-A	2-5	0.1	1700	0.5	φ5	0.42	#1
U120CN	40-120	2	U12	4-12	0.2	U12-A	4-10	0.2	1400			0.48	#2
U250CN	100-250	5	U25	10-25	0.5	U25-A	8-22	0.5	1200	0.6		0.75	
U500CN	200-500	10	U50-2	20-50	1.0	U50-2-A	15-45	1.0	950	0.5	φ6	1.35	#3
U1000CN	400-1000		U100	40-100		U100-A	30-90		700	0.6		2.0	
ULR120CN	40-120	2	U12LR	4-12	0.2	U12LR-A	4-10	0.2	1300	0.5	φ5	0.56	#2
ULR250CN	100-250	5	U25LR	10-25	0.5	U25LR-A	8-22	0.5	1000			0.95	
UR500CN	200-500	10	U50R	20-50	1.0	U50R-A	15-45	1.0	950	0.6	φ6	1.45	#3

- Note**
1. U1000CN has a fixed square drive (9.53mm). Use socket bits or bit holders for this model.
  2. U500CN, 1000CN, and UR500CN are pistol type with trigger mechanism.
  3. Standard bits available in the local market can be used.
  4. Counterclockwise rotation has no torque control and it is loosening purpose only.

- Standard Accessories**
1. One Touch Joint #130 for U30CN-250CN, ULR120CN, and ULR250CN.
  2. Bit holder for U1000CN

## U/UR Optional Accessories



One Touch Joint (Female)  
Joint to connect UNITORK to air hoses

Part #	Applicable Model	Size
130	U30CN-U250CN	PF 1/4 Female
131		PF 1/4 Male
132		φ8 Hose Joint



Torque-fix  
For torque adjustment

Part #	Applicable Model
145	U30CN-U120CN
146	U250CN
147	U500CN, UR500CN



Hand Cover  
For hand slip protection

Part #	Applicable Model
150	U30CN-U120CN
151	U250CN



Tool Kit  
Tools for disassembly/assembly for UNITORK

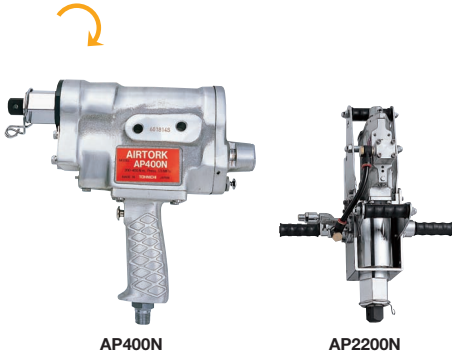
Part #	Applicable Model
160	U30CN-U250CN
161	U250CN
162	U500CN, UR500CN
163	U1000CN

# AP

Fully-Automatic Airtork

Assembly Pistol Pneumatic Graduation Trigger/Lever RoHS

Direction



- For large bolt tightening
- Automatic shut off at final torque set

Accuracy ±5%

S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-m]		American Model	Torque Range [lbf-ft]		Free Speed [r.p.m]	Air Pressure [MPa]	Hose Dia. [mm]	Overall Length [mm]	Square Drive [mm]	Reaction Arm (Sold Separately)	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.							
AP220N	100-220	10	AP22	10-22	1	AP160F	80-160	5	277			275	19.0	SA400N/UA450N	4.7
AP400N	200-400	20	AP40	20-40	2	AP300F	150-300	10	175			364	25.4	SA700N/UA900N	6.7
AP700N	300-700	50	AP70	30-70	5	AP500F	220-500	25	79	0.5	φ12	375	31.75	SA1200N/UA1800N	8.1
AP1200N	600-1200	100	AP120	60-120	10	AP900F	450-900	50	46			508	31.75	UA3000N	15
AP2200N	1000-2200		AP220	110-220		AP1600F	800-1600		19.2			541	38.1	UA4500N	22
AP4000N	2000-4000		AP400	200-400		AP3000F	1500-3000		12						

- Note
1. Reaction arm, such as UA or SA, must be used when operating AP models in order to absorb reaction force.
  2. Use pneumatic sockets only.
  3. S.Q. Drive Through Hole

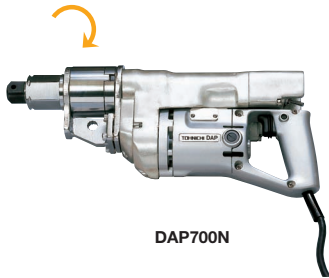
Standard Accessories W5 hex key

# DAP

Fully-Automatic Electric Torque Wrench

Assembly Pistol Electric Power Graduation Trigger

Direction



DAP700N

- Electric version of AP

Accuracy ±5%

S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-m]		Free Speed [r.p.m]	Voltage AC [V]	Overall Length [mm]	Square Drive [mm]	Reaction Arm (Sold Separately)	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.						
DAP220N	100-220	10	DAP22	10-22	1	314	AC100V ±10%	318	19.0	SA400N/UA450N	5.4
DAP400N	200-400	20	DAP40	20-40	2	199		400	25.4	SA700N/UA900N	8.2
DAP700N	300-700	50	DAP70	30-70	5	90	50/60Hz	418		SA1200N/UA1800N	9.4
DAP1200N	600-1200	100	DAP120	60-120	10	53					

- Note
1. DAP has 2 types, A-type for clockwise tightening, and B-type for clockwise tightening + reverse mode. Torque control is available only for clockwise direction for both type.
  2. Power cable is 2.5m length.
  3. Reaction arm is optional.
  4. Reaction arm is a must for using this model.
  5. Reaction arm, such as UA or SA, must be used when operating DAP models in order to absorb reaction force.
  6. Use pneumatic sockets only.
  7. S.Q. Drive Through Hole
  8. It is designed for 100V usage only.

Standard Accessories W5 hex key

## AP/DAP Optional Accessories

### SA

Shell Arm Light Weight Reaction Arm

RoHS



Model	Standard Socket Length [mm]
SA400N	50
SA700N	62
SA1200N	62

### UA

Universal Arm Heavy Duty Reaction Arm

RoHS



Model	Weight [kg]
UA450N	1.2
UA900N	2.6
UA1800N	4
UA3000N	7.2
UA4500N	10.9
UA9000N	18
UA18000N	30

## DECA 10:1 Ratio Torque Multiplier

RoHS

- Multiplied torque output by 10
- Ideal for applying high torque values with less force



DECA900N



Universal Arm

Accuracy ±5%

Model	Output Torque			Torque Ratio	Dimension [mm]				Weight [kg]	Applicable Universal Arm
	[N-m]		[kgf-m]		Overall Length	Dia.	Output Sq. Drive	Input Sq. Drive		
	Min.-Max.	Min.-Max.	Min.-Max.							
DECA450N	90-450	9-45	65-325	10:1	195	52	19.0	9.5	2	UA450N
DECA900N	180-900	18-90	130-650		541	63	25.4	12.7	3.4	UA900N
DECA1800N	360-1800	36-180	260-1300		270	78	31.75	19.0	5.7	UA1800N
DECA3000N	600-3000	60-300	434-2170		324	95	38.1	25.4	10	UA3000N
DECA4500N	900-4500	90-450	650-3250		367	110	50.8	31.75	12.5	UA4500N
DECA9000N	1800-9000	180-900	1300-6500		464	140	63.5	31.75	34	UA9000N
DECA18000N	3600-18000	360-1800	2600-13000		540	172	63.5	31.75	60	UA18000N

- Note
1. Universal Arm is optional.
  2. DECA9000N and DECA18000N are supplied upon request.
  3. S.Q. Drive Through Hole

Standard Accessories

1. Metal Case for DECA450N-DECA900N only
2. Portable Handle for DECA4500N-DECA9000N only
3. Metal Case Caster for DECA18000N only



# ME/MC

Multiple Unit/  
Pneumatic  
Straight Style

Direction



ME126N

MC400N-TC

Automatic Straight Pneumatic Graduation Master Valve Operation RoHS

- Several units used simultaneously with loader
- Fully automatic tightening for complex bolt configurations

Accuracy ±5%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm/kgf·m]		American Model	Torque Range [lbf·in/lbf·ft]		Free Speed [r.p.m]	Air Pressure [Mpa]	Hose Dia. [mm]	Overall Length [mm]	Square Drive [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.						
ME25N	10-25		M250E2	100-250	5	M250E2-A	90-220	5	1050			420.6 (457.6)	9.5	4.7
ME45N	20-45	0.5	M450E2	200-450		M450E2-A	200-400		540			424 (461)		5.3
ME80N	35-80	1	M800E2	350-800	10	M800E2-A	310-700	10	310	0.4	φ7.5		12.7	
ME126N	50-126	2	M1260E2	500-1260	20	M1260E2-A	35-90	2	200					5.7
MC220N	100-220		M22C	10-22	1	M22C-A	80-160	10	277			287.5	19.0	4.6
MC400N	200-400		M40C	20-40		M40C-A	150-300		175					
MC700N	300-700	20	M70C	30-70	2	M70C-A	220-500	20	79	0.5	φ8	376	25.4	6.7
MC1200N	600-1200	50	M120C	60-120	5	M120C-A	450-900	50	46			388		8.1
MC2200N	1000-2200		M220C	100-220		M220C-A	700-1600		19.2			491	31.75	17
MC4000N	2000-4000	100	M400C	200-400	10	M400C-A	1500-3000	100	12			522	38.1	24

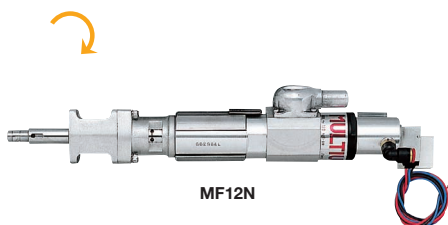
- Note
1. Overall length in ( ) is the length with TC sensor.
  2. Auto-reverse/auto-reset functions.
  3. For designing a multi-spindle system, check the PCD, minimum distance between the spindles.
  4. Add "-TC" for sensor-equipped version.
  5. For first-time user, consult Tohnichi for assistance.

Standard Accessories Torque adjusting bar

# MG/MF

Multiple Unit/  
Pneumatic Straight  
Style

Direction



MF12N

Automatic Straight Pneumatic Graduation Master Valve Operation RoHS

- Several units used simultaneously with loader
- Fully automatic tightening for complex bolt configurations

Accuracy ±5%

S.I. Model	Torque Range [cN·m/N·m]		Metric Model	Torque Range [kgf·cm]		American Model	Torque Range [lbf·in]		Free Speed [r.p.m]	Air Pressure [Mpa]	Hose Dia. [mm]	Overall Length [mm]	Bit Holder [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.						
MG120CN	40-120	1	M12G	4-12	0.1	M12G-A	4-10	0.2	720			287-		0.68
MG250CN	100-250	2.5	M25G	10-25	0.25	M25G-A	8-22	0.5	350		φ5	279	6.35	
MF6N	3-6	0.1	M60F	30-60	1	M60F-A	25-50	1	1000	0.4		411-	Hex	2.0
MF12N	6-12	0.2	M120F	60-120	2	M120F-A	50-100	2	500		φ6	403		

- Note
1. MG/MF is 6.35 HEX bit holder type.
  2. For designing a multi-spindle system, check the PCD, minimum distance between the spindles.
  3. For first-time user, consult Tohnichi for assistance.

Standard Accessories Torque adjusting key

## Optional Accessories for Multiple Unit

Handle Valve, Supportive Handle



Part #	Type	Air Outlet	Overall Length [mm]	Application
188	Handle Valve	3/8	135	For Direct Connection
189	Handle Valve	1/8		Master Valve
187	Handle Assist	-	125	-

Switch Handle, Switch



Part #	Type	Application
331	Start Switch Handle	Multiple Unit Start Switch
332	Reset Switch Handle	Reset Switch
333	Quick Reverse Handle	Emergency Reset Switch

Slide Drive for ME, DCME



Model
FDME25N
FDME80N
FDME126N
FDME400N
FDME1200N

Torque Sensor



Model	Applicable Model
TC-ME2	ME
TC-MCA	MC220N, MC400N
TC-MCB-2	MC700N
TC-MCB	MC1200N

Master Valve



Part #	Application	Air Outlet × Air Supply × Number of Branch (ΦD) × (Φd) × (n)
195	MF	1/2 × 1/4 × 4
196	ME	1/2 × 1/4 × 6
197		3/4 × 3/8 × 2
198	MC	1 × 3/8 × 4
199		1 × 3/8 × 6

Slide Drive for MC



Model
FDMC400N
FDMC1200N

## Related Products

Daily inspection/calibration devices for power torque tools



ST20N3-G

Torque checking for multi-spindle nut runners (P.56)



ST1000N3-G



TCF20N

Fixed typed torque sensor to calibrate power tools (P.60)



TCR18N

Rotary type torque sensor capable of measuring rotating objects (P.60)



CD5

Display of torque value measured by strain gauge sensor (P.64)

# TDT3-G

Digital Torque Screwdriver Tester

Calibration

Digital

Manual Rotary

Direct Reading

Loading Device

RoHS

Direction



TDT600CN3-G with loading device (Model: STA)



- Ideal for testing click and indicating type torque screwdrivers
- Newly added judgment function and USB output
- Multiple units of measure through keypad setup
- Optional TDTLA3 for testing small torque wrenches and LTA for indicating type torque screwdrivers

Accuracy  $\pm 1\% + 1\text{digit}$

Model	Torque Range								Inlet Drive [mm]	Dimensions [mm]			Weight [kg]
	cN-m		kgf-cm		ozf-in		lbf-in			Overall Length	Width	Height	
	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit					
TDT600CN3-G	2-60	0.005	0.2-6	0.0005	3-80	0.005	0.2-5	0.0005	6.35 Hex (Male)	230	220	225	11
TDT600CN3-G	20-600	0.05	2-60	0.005	30-800	0.05	2-50	0.005	with a groove (0.7mm)				

**Note**  
1. Loading device keeps stable measuring conditions to avoid reading errors.  
2. Max 1,000 measured data can be stored.

**Standard Accessories**  
1. AC Adapter/BA-6, 2. Loading Device/STA

## TDT3-G Optional Accessories

Connecting Cable (P.47)

Part #	Applicable Model
383	TDT3-G → PC, EPP16M3
385	TDT3-G → PC

Battery Pack (P.47)

Model
BP-100-3

Loading Device

Model
TDTLA3
LTA
STA

As for TDTLA3, TDT600CN3-G measures 2-60 cN-m and TDT600CN3-G measures 20-600cN-m range of torque wrenches. LTA is for direct reading torque drivers such as FTD and STC. STA is for tightening torque driver such as RTD and LTD.

Printer (P.65)

Model
EPP16M3

Data Filing System (P.64)

Model	Media
DFS	CD-ROM

Hex Adapter

Part #	Description
480	1/4-5.5-8-12
481	1/4-6-10-13
482	1/4-7-11-14
483	1/4-16-19-22
484	1/4-17-21-24

Loading Device Connecting Adapter for TDT/TDT2-G

Part #	Description
485	TDTLA3 to TDT, TDT2-G
486	STA, LTA to TDT, TDT2-G

TDT600CN3-G with loading device (Model: TDTLA3) \* Sold separately

TDT600CN3-G with loading device (Model: LTA) \* Sold separately

## Calibration Kit for TDT3-G

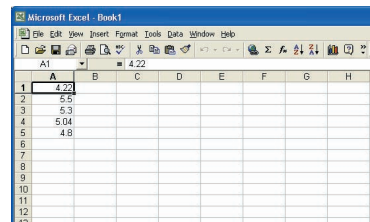


\* Sold separately. Refer to page 61.

## Excel Receiver Software

The Excel Receiver software allows for the transfer of collected torque data from various Tohnichi digital torque equipment into a Microsoft Excel worksheet. Tohnichi also provides customized software upon request.

Excel Receiver is compatible with the following equipment:



CEM100N3x15D-G

CEM3-G: ExRcv for CEM



CTB100N2x15D-G

CTB2-G: ExRcv for CTB



ExRcv

PRO TORK™

CPT-G: ExRcv for CPT



TDT600CN3-G

TDT600CN3-G+TDTLA3

TDT3-G: ExRcv for TDT



DOTE100N3-G

DOTE3-G: ExRcv for DOTE



LC200N3-G

LC3-G: ExRcv for LC



ST50N3-3/8-G

ST100N3-G-BT

ST3-G: ExRcv for ST



ATGE5CN-G

BTGE200CN-G

ATGE-G/BTGE-G: ExRcv for ABTGE



2TME500CN2

TME2: ExRcv for TME



CD5

CD5: ExRcv for CD



STC200CN2-G

STC2-G: ExRcv for STC2-G



# DOT E3-G

Digital Torque Wrench Tester

Direction



DOTE100N3-G



Calibration Digital Manual Handle Direct Reading RoHS

- Multiple units of measure through keypad setup
- "Loading system" stabilizes wrench during calibration procedure for optimal results.
- RS232C output
- Max. 99 measured data can be stored.

Accuracy ±1%+1digit

Model	Torque Range												Torque Wrench Max. Effective Length [mm]	Inlet Drive [mm]	Weight [kg]	
	cN-m		N-m		kgf-cm		kgf-m		lbf-in		lbf-ft					
	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit				
DOTE20N3-G	200.0-2000.0	0.5	2.000-20.000	0.005	20.00-200.00	0.05	-	-	18.00-180.00	0.05	-	-			9.5	
DOTE50N3-G	-	-	5.00-50.00	0.01	50.0-500.0	0.1	-	-	44.0-440.0	0.1	3.60-36.00	0.01	410		11	
DOTE100N3-G	-	-	10.00-100.00	0.02	100.0-1000.0	0.2	-	-	88.0-880.0	0.2	7.30-73.00	0.02			12.7	
DOTE200N3-G	-	-	20.00-200.00	0.05	200.0-2000.0	0.5	-	-	170.0-1700.0	0.5	15.00-150.00	0.05	660		13	
DOTE500N3-G	-	-	50.0-500.0	0.1	-	-	5.00-50.00	0.01	440-4400	1	36.0-360.0	0.1	1020		19.0	24
DOTE1000N3-G	-	-	100.0-1000.0	0.2	-	-	10.00-100.00	0.02	880-8800	2	73.0-730.0	0.2	1650		25.4	45

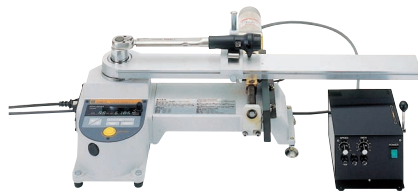
- Note
1. Auto-zero adjustment function.
  2. Statistical function includes the number of sampling, max/min/mean values.

## DOT E3-G-MD

RoHS

DOT E3-G with Motor Driven Loading Device

Model
DOTE20N3-G-MD
DOTE50N3-G-MD
DOTE100N3-G-MD
DOTE200N3-G-MD
DOTE500N3-G-MD
DOTE1000N3-G-MD



DOTE100N3-G-MD

## DOT E3-G Standard Accessories

Model	Down Adapter (Female)		Hex Adapter (Male)		AC Adapter (Power Supply)
	Part #	[mm]	[mm]	[mm]	
DOTE20N3-G	296/DA3-2 (P.65)	6.35	10, 13, 19		BA-6 (AC100-240V±10%)
DOTE50N3-G			12, 14, 17		
DOTE100N3-G	277 (P.41)	9.5	17, 22, 27/19, 24, 30		
	297/DA4-3 (P.65)		22, 27, 29/30, 32, 36		
DOTE200N3-G	-	-	34, 41/46, 50		
DOTE500N3-G	-	-			
DOTE1000N3-G	299/DA8-6 (P.65)	19.0			

## DOT E3-G Optional Accessories

Hex Adapter

Part #	Size [mm]
285	3/8-7-8-9
286	1/2-16-18-21
287	1/2-17-22-27
288	1/2-19-24-30

Connecting Cable (P.47)

Part #	Applicable Model
383	DOTE3-G → PC, EPP16M3 (D-SUB 9 Pin Female)

- Note
1. ( ) shows pin shape of the connecting cables.
  2. Contact Tohnichi for other types of connecting cables.

Battery Pack (P.47)

Model
BP-100-3

Printer (P.65)

Model
EPP16M3

Data Filing System (P.64)

Model	Media
DFS	CD-ROM

# DOT

Analog Torque Wrench Tester

Direction



DOT100N

Calibration Dial Indicating Manual Handle Direct Reading RoHS

- Dial indicating
- For clockwise testing
- Mechanical loading device

Accuracy ±2%

S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm]		American Model	Torque Range [lbf-in/lbf-ft]		Torque Wrench Max. Effective Length [mm]	Inlet Drive [mm]	Weight [kg]	Standard Accessory	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.				Down Adapter (Female) [mm]	Hex Adapter (Male) [mm]
							lbf-in	lbf-ft					
DOT35N	5-35.0	0.1	350DOT	50-350	1	DOT300I	50-300	1		9.5	8	#296 (6.3)	10, 13, 19
DOT50N	5-50.0	0.2	500DOT	50-500	2	DOT430I	50-430	2	410			#277 (6.4), #297 (9.5)	12, 14, 17
DOT100N	10-100.0	0.5	1000DOT	100-1000	5	DOT1000I	100-1000	5		12.7			
							lbf-ft	lbf-ft					
DOT300N	30-300	1	3000DOT	300-3000	10	DOT200F	20-200	1	660	19	10	-	17, 22, 27, 19, 24, 30
DOT700N	70-700	2	7000DOT	700-7000	20	DOT500F	50-500	2	1260		25	-	22, 27, 29, 30, 32, 36

Note Measurement for clockwise direction only.

## DOT-MD

DOT with Motor Driven Loading Device

S.I. Model	Metric Model	American Model
DOT35N-MD	350DOT-MD	DOT300I-MD
DOT50N-MD	500DOT-MD	DOT430I-MD
DOT100N-MD	1000DOT-MD	DOT1000I-MD
DOT300N-MD	3000DOT-MD	DOT200F-MD
DOT700N-MD	7000DOT-MD	DOT500F-MD

## Calibration Kit for DOTE3-G/DOT



\* Sold separately. Refer to page 61.



# TF Fully Automatic Digital Torque Wrench Tester

Direction



TF2000N

## TF Standard Accessories

Hex Adapter, Ratchet Adapter, and Down Adapter

Model	Hex Adapter Dimensions [mm]	Ratchet Adapter Model	Down Adapter Model
TF200N	<input type="checkbox"/> 12.7-17, 22, 27 <input type="checkbox"/> 12.7-19, 24, 30 <input type="checkbox"/> 9.53-10, 13, 19 <input type="checkbox"/> 9.53-12, 14, 17	RA3mk2 RA4mk2	DA3-2 DA4-3
	<input type="checkbox"/> 19.05-W22, 27, 29 <input type="checkbox"/> 19.05-W30, 32, 36 <input type="checkbox"/> 9.53-W10, 13, 19 <input type="checkbox"/> 9.53-W12, 14, 17		DA3-2 DA6-4
TF1000N	<input type="checkbox"/> 25.4-36, 46 <input type="checkbox"/> 25.4-41, 51 <input type="checkbox"/> 12.7-17, 22, 27 <input type="checkbox"/> 12.7-19, 24, 30 <input type="checkbox"/> 9.53-10, 13, 19 <input type="checkbox"/> 9.53-12, 14, 17	RA3mk2 RA4mk2 RA8mk2	DA3-2 DA4-3 DA8-6
	<input type="checkbox"/> 25.4-36, 46 <input type="checkbox"/> 25.4-41, 50 <input type="checkbox"/> 19.05-22, 27, 29 <input type="checkbox"/> 19.05-30, 32, 36 <input type="checkbox"/> 9.53-10, 13, 19 <input type="checkbox"/> 9.53-12, 14, 17		DA3-2 DA4-3 DA8-6
TF2000N	<input type="checkbox"/> 38.1-W36, 46 <input type="checkbox"/> 38.1-W41, 50 <input type="checkbox"/> 25.4-W36, 46 <input type="checkbox"/> 25.4-W41, 50 <input type="checkbox"/> 19.05-W22, 27, 29 <input type="checkbox"/> 19.05-W30, 32, 36	RA6mk2 RA8mk2 RA12	DA6-4 DA8-6 DA12-8
	<input type="checkbox"/> 38.1-W36, 46 <input type="checkbox"/> 38.1-W41, 50 <input type="checkbox"/> 25.4-W36, 46 <input type="checkbox"/> 25.4-W41, 50 <input type="checkbox"/> 19.05-W22, 27, 29 <input type="checkbox"/> 19.05-W30, 32, 36		DA6-4 DA8-6 DA12-8

Note Refer to page 65.

## Calibration Kit for TF



\* Sold separately. Refer to page 61.

Calibration Digital Electric Power Direct Reading Fully Automatic

- Tool Management System with computer
- Ideal for Calibration Labs
- Fully automatic testing, judging, and data processing

Accuracy ±1%+1digit

Model	CH	Torque Range									
		[N-m]		[kgf-cm]		[kgf-m]		[lbf-in]		[lbf-ft]	
		Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit
TF200N	1	5-200	0.05	50-2000	0.5	0.5-20	0.005	50-1700	0.5	5-140	0.05
	2	0.5-20	0.005	5-200	0.05	0.05-2	0.0005	5-170	0.05	0.5-14	0.005
TF500N	1	20-500	0.2	200-5000	2	2-50	0.02	200-4500	2	20-370	0.2
	2	2-50	0.02	20-500	0.2	0.2-5	0.002	20-450	0.2	2-37	0.02
TF1000N	1	25-1000	0.25	250-10000	2.5	2.5-100	0.025	250-8500	2.5	25-700	0.25
	2	5-200	0.05	50-2000	0.5	0.5-20	0.005	50-1700	0.5	5-140	0.05
TF2000N	1	100-2100	1	1000-21000	10	10-210	0.1	1000-18000	10	100-1500	1
	2	20-500	0.2	200-5000	2	2-50	0.02	200-4500	2	20-370	0.2
TF3000N	1	200-3000	1	2000-30000	10	20-300	0.1	2000-25000	10	200-2000	1
	2	100-2100	1	1000-21000	10	10-210	0.1	1000-18000	10	100-1500	1
	3	20-500	0.2	200-5000	2	2-50	0.02	200-4500	2	20-370	0.2

Standard Accessories 2m x 2P Flat Type Plug

## TF Specifications and Dimension

Model	CH	Torque Wrench Max. Effective Length [mm]	Inlet Drive [mm]	Dimensions [mm]			Weight [kg]
				Overall Length	Width	Height	
TF200N	1	1550	12.7	1860	550	930	240
	2	1480	9.53				
TF500N	1	1550	19.05	1860	550	930	315
	2	1480	9.53				
TF1000N	1	1650	25.4	2160	550	930	380
	2	1550	12.7				
	3	1480	9.53				
TF2000N	1	2150	25.4	2660	550	930	415
	2	1550	19.05				
	3	1480	9.53				
TF3000N	1	2650	38.1	3160	550	930	450
	2	2150	25.4				
	3	1550	19.05				

TF: The tester performs automatic measurement and judgment.

3 Types of Measurement:

- (1) Click type torque wrench measurement
- (2) Direct type reading torque wrench measurement
- (3) Manual measurement: free set measurement points, number of counts, and accuracy when checking unregistered wrenches, or single-value preset torque wrenches.

# TCC2-G Digital Torque Wrench Tester

Direction



## TCC2-G Standard Accessories

Model	Hex Adapter	DOWN ADAPTER	Others
TCC100N2-G	<input type="checkbox"/> 12.7-W10, 13, 19 <input type="checkbox"/> 12.7-W12, 14, 17	DA3-2 DA4-3	(1) Cradle for PC display (2) AC adapter for PC display (3) Power cable
TCC100N2-D-G		DA4-3	
TCC500N2-G	<input type="checkbox"/> 12.7-W10, 13, 19 <input type="checkbox"/> 12.7-W12, 14, 17 <input type="checkbox"/> 19.05-W17, 22, 27 <input type="checkbox"/> 19.05-W19, 24, 30	DA4-3 DA6-4	(1) Cradle for PC display (2) AC adapter for PC display (3) Power cable
	TCC1000N2-G	<input type="checkbox"/> 19.05-W17, 22, 27 <input type="checkbox"/> 19.05-W19, 24, 30 <input type="checkbox"/> 25.4-W36, 46 <input type="checkbox"/> 25.4-W41, 50	

Note Refer to page 65.

Calibration Digital Manual Handle Direct Reading

- Torque calibrator with data management software with wide torque range
- Calibration, adjustment, and data management for torque wrenches
- Multiple measuring unit
- Slate PC controller

Accuracy ±1%+1digit

Model	CH	Torque Range [N-m]		Torque Range [kgf-cm]		Torque Range [lbf-in]		Torque Wrench Max. Effective Length [mm]	Inlet Drive [mm]	Dimensions [mm]			Weight [kg]
		Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit			Overall Length	Width	Height	
TCC100N2-G	1	4-100	0.01	40-1000	0.1	35.5-885	0.1	575	12.7	714	388	375	35
	2	1-25	0.002	10-250	0.02	9-220	0.02	482	9.53				
TCC100N2-D-G	1	4-100	0.01	40-1000	0.1	35.5-885	0.1	575	12.7	714	388	375	35
	2	20-600 cN-m	0.05 cN-m	2-60	0.005	2-50	0.005	482	6.35				
TCC500N2-G	1	20-500	0.05	200-5000	0.5	180-4400	0.5	1035	19.05	1206	502	430	75
	2	4-100	0.01	40-1000	0.1	36-880	0.1	769	12.7				
TCC1000N2-G	1	50-1000	0.1	500-10000	1	445-8800	1	1700	25.4	1906	574	526	115
	2	20-500	0.05	200-5000	0.5	180-4400	0.5	1212	19.05				

## TCC2-G Specifications

Display	10 inch slate PC
Tool Management Function	Torque wrench/driver registration date, measurement date memory (model, serial number, measurement point, measurement count, accuracy level, channel, measurer, past record) Maximum data amount (1000pcs worth) is based on testing torque wrenches of single force direction. When testing bi-direction torque wrenches such as BQSP, it will be less than 1000pcs
Measurement Mode	Click mode / direct reading mode / manual mode
Zero Adjustment	Automatic (press C key)
Operating Temperature	[°C] 0 ~ 40
Power	[V] 100 ~ 240V 50/60Hz

## Calibration Kit for TCC2-G

\* Sold separately. Refer to page 61.



# LC3-G Torque Wrench Line Checker

Direction



CE

## LC3-G Standard Accessories

### Hexagon Head Adapter

Part #	Applicable Model	Square Drive [mm]	Hex Size (Male) [mm]
282	LC20N3-G	9.5	8, 10, 12, 13, 14, 17
280	LC200N3-G	12.7	8, 10, 12, 13, 14, 17, 19, 22

### Socket Adapter (P.41)

Part #	Applicable Model	Inlet Drive [mm]	Hex Size (Male) [mm]
1282	LC20N3-G	6.35	9.5
1280	LC200N3-G	9.5	12.7
274	LC1000N3-G	12.7	19.0
276	LC1400N3-G	19.0	25.4

## Calibration Kit for LC3-G/ST3-G

\* Sold separately. Refer to page 61.

Checking

Digital

Manual Loading

Direct Reading

RoHS

- For daily inspections of torque wrenches
- Newly added judgment function and USB output
- Multiple units of measure through keypad setup

Accuracy ±1%+1digit

Description	Mode	Torque Range												Inlet Drive [mm]	Weight [kg]
		cN.m		N.m		kgf.cm		kgf.m		lbf.in		lbf.ft			
		Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit		
LC20N3-G	Run	50.0-2000.0	0.2	0.500-20.000	0.002	5.00-200.00	0.02	-	-	5.00-174.00	0.02	-	-	9.5	
	Peak	50.0-99.8	1	0.500-0.998	0.002	5.00-9.98	-	-	5.00-9.98	-	-	-	-		
		100-999	1	1.00-9.99	0.01	10.0-99.9	0.1	-	-	10.0-99.9	0.1	-	-		
LC200N3-G	Run	-	-	5.00-200.00	0.02	50.0-2000.0	0.2	-	-	50.0-1740.0	0.2	4.00-140.00	0.02	10.5	
	Peak	-	-	5.00-9.98	0.02	50.0-99.8	-	-	50.0-99.8	-	-	4.00-9.98	-		
		-	-	10.0-99.9	0.1	100-999	1	-	-	100-999	1	10.0-99.9	0.1		
LC1000N3-G	Run	-	-	50.0-1000.0	0.1	-	-	5.00-100.00	0.01	500-8800	1	36.8-735.0	0.1	19.0	34
	Peak	-	-	50.0-99.9	0.1	-	-	5.00-9.99	-	-	-	36.8-99.9	-		
		-	-	100-1000	1	-	-	10.0-100.0	0.1	1000-8800	10	100-735	1		
LC1400N3-G	Run	-	-	100.0-1400.0	0.2	-	-	10.00-140.00	0.02	900-12000	2	75.0-1000.0	0.2	25.4	39
	Peak	-	-	100-999	1	-	-	10.0-99.9	0.1	900-998	2	75.0-99.8	-		
		-	-	1000-1400	10	-	-	100-140	1	1000-9990	10	100-1000	1		

**Note** 1. Dimensions: L278mm × W160mm × H167mm (LC20N3-G, LC200N3-G)  
L500mm × W290mm × H186mm (LC1000N3-G)  
L500mm × W313mm × H186mm (LC1400N3-G)  
2. TCL, calibration kit is optional.  
3. Max. 1000 measured data can be stored.

**Standard Accessories** AC Adapter/BA-6, AC100-240V±10%

## LC3-G Optional Accessories

### Socket Adapter (P.41)

Part #	Applicable model	Square Drive [mm]	Hex Size (Male) [mm]
270	LC20N3-G	6.35	9.5
272	LC200N3-G	9.5	12.7

### Connecting Cable (P.47)

Part #	Applicable Model
383	LC3-G → PC, EPP16M3
385	LC3-G → PC

**Note** Contact Tohnichi for other connector shapes.

### Printer (P.65)

Model
EPP16M3

### Data Filing System (P.64)

Model	Media
DFS	CD-ROM

### Battery Pack (P.47)

Model
BP-100-3

# ST3-G SPINTORK/Rotary Peak Torque Meter

## ST3-G-BT

Direction



CE

## ST3-G/ST3-G-BT Optional Accessories

### Extension Bar

Part #	Applicable Model
283	ST10N3-G/-BT
281	ST20N3-G/-BT, ST50N3-3/8-G/-BT
247	ST50N3-1/2-G/-BT, ST100N3-G/-BT, ST200N3-G/-BT
248	ST500N3-G/-BT
249	ST1000N3-G/-BT

Checking

Digital

Re-Chargeable

Direct Reading

RoHS

- Ideal for checking nutrunner torque output and angle
- Data output through USB (ST3-G) and Bluetooth® (ST3-G-BT)
- Tightening torque value can be detected by every 1° degree in Bluetooth® version.

## ST3-G/ST3-G-BT Specifications

Torque Accuracy	+/- 1% +1digit
Angle Range	0 to 999°
Angle 1 digit	1°
Angle Accuracy	+/- 2° +1digit
Measuring Direction	Bi-direction
Display	7 segment LCD: Unit, Battery life, Direction Counter value: 3 digits (3mm height) Torque and angle value: 3 digits (7mm height)
Measuring Mode	PEAK/RUN
Data Memory	999
Data Output	USB / Bluetooth® -BT models
Continuous Duty	10 hours / 5 to 8 hours -BT models
Power	Built-in Ni-MH (Nickel hydrogen) battery pack
Operating Temperature [°C]	0-40
BT Communication Distance	10m
Other Functions	Auto Memory/Reset (0.5-5 seconds variable), Auto Power Off (3/10/30 mins, Non), Display of remaining battery level (4 levels)

Accuracy ±1%+1digit

Model		Torque Range												Overall Length [mm]	Inlet/Outlet Drive [mm]	Weight [kg]		
		N.m		cN.m		kgf.cm		kgf.m		ozf.in		lbf.in					lbf.ft	
		Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit				Min.-Max.	1digit
Standard Version	Bluetooth® Version	2-10	0.01	200-1000	1	20-100	0.1	0.2-1	0.001	285-1400	1	18-88	0.1	1.5-7.3	0.01	75	6.35	
ST10N3-G	ST10N3-G-BT	2-10	0.01	200-1000	1	20-100	0.1	0.2-1	0.001	285-1400	1	18-88	0.1	1.5-7.3	0.01	75	6.35	
ST15N3-6.35-G	ST15N3-6.35-G-BT	4-15	0.02	400-1500	2	40-150	0.2	0.4-1.5	0.002	570-2100	2	36-131	0.2	3-11	0.02	106.5	Hex 6.35	
ST20N3-G	ST20N3-G-BT	4-20	0.02	400-2000	2	40-200	0.2	0.4-2	0.002	570-2800	2	36-175	0.2	3-14.5	0.02	106.5	Hex 6.35	
ST50N3-3/8-G	ST50N3-3/8-G-BT	10-50	0.05	1000-5000	5	100-500	0.5	1-5	0.005	1420-7000	5	90-440	0.5	7.5-36.5	0.05	75	9.53	
ST500N3-1/2-G	ST500N3-1/2-G-BT	100-500	0.5	1000-5000	5	100-500	0.5	1-5	0.005	1420-7000	5	90-440	0.5	7.5-36.5	0.05	75	9.53	
ST100N3-G	ST100N3-G-BT	20-100	0.1	-	-	200-1000	1	2-10	0.01	-	-	180-880	1	15-73	0.1	75	12.7	
ST200N3-G	ST200N3-G-BT	40-200	0.2	-	-	400-2000	2	4-20	0.02	-	-	360-1750	2	30-145	0.2	75	19.05	
ST500N3-G	ST500N3-G-BT	100-500	0.5	-	-	1000-5000	5	10-50	0.05	-	-	900-4400	5	75-365	0.5	120	19.05	
ST1000N3-G	ST1000N3-G-BT	200-1000	1	-	-	-	-	20-100	0.1	-	-	150-735	1	135	0.1	135	25.4	

**Note** 1. Not for use with impact wrenches.  
2. Graph of angle and torque can be created in Bluetooth® version.  
3. Data output of Bluetooth® version is through Bluetooth® only.  
4. Refer to page 31 for condition of wireless equipment in each country for Bluetooth® version.

**Standard Accessories** 1. Quick Battery Charger/BC-4-2 2. CD-ROM (USB Driver) 3. USB Connecting Cable/384 4. Carrying Case

# ATG/BTG

Analog Torque Gauge

Dial Indicating

3-jaw Chuck

Direct Reading

RoHS

Direction



ATG6CN



BTG36CN

- Compact portable handheld design
- Top and side scales for easy reading
- Three fingered keyless chuck

Accuracy ±2%

S.I. Model	Torque Range [cN-m]		Metric Model	Torque Range [gf-cm/kgf-cm]		American Model	Torque Range [ozf-in/lbf-in]		Chuck Grip [mm]	Dimensions [mm]		Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		Overall Length	Outside Diameter	
ATG045CN	0.05-0.45	0.01	45ATG	5-45	1	ATG06Z	0.06-0.6	0.01	φ1-φ6.5	99	43.5	0.18
ATG09CN-S	0.1-0.9	0.02	90ATG-S	10-90	2	ATG1.5Z-S	0.2-1.5	0.02				
ATG1.5CN-S	0.2-1.5		150ATG-S	20-150		ATG2.4Z-S	0.3-2.4	0.05				
ATG3CN-S	0.3-3	0.05	300ATG-S	30-300	5	ATG4.5Z-S	0.5-4.5	0.1				
ATG6CN-S	0.6-6	0.1	600ATG-S	60-600	10	ATG9Z-S	1-9	0.2				
ATG12CN-S	1-12	0.2	1200ATG-S	100-1200	20	ATG18Z-S	2-18	0.5				
ATG24CN-S	3-24	0.5	2400ATG-S	300-2400	50	ATG36Z-S	4-36	0.5	φ1-φ8.5	135	64.2	0.52
-	-	-	-	-	-	BTG60Z-S	6-60	1				
-	-	-	-	-	-	BTG120Z-S	10-120	2				
BTG15CN-S	2-15	0.2	1.5BTG-S	0.2-1.5	0.02	1.5BTG-A-S	0.1-1.5	0.02				
BTG24CN-S	3-24	0.5	2.4BTG-S	0.3-2.4	0.05	2.4BTG-A-S	0.3-2.4	0.02				
BTG36CN-S	4-36		3.6BTG-S	0.4-3.6		3.6BTG-A-S	0.4-3.6	0.05				
BTG60CN-S	6-60	1	6BTG-S	0.6-6	0.1	6BTG-A-S	0.6-6	0.1				
BTG90CN-S	10-90		9BTG-S	1-9		9BTG-A-S	1-9	0.1				
BTG150CN-S	20-150		15BTG-S	2-15		15BTG-A-S	2-15	0.2				

- Note**
1. ATG045CN, 45ATG and ATG06Z are provided without side or top memory pointer.
  2. \*Without memory pointer\* models are available. Remove "S" from the model name when ordering.  
Ex. ATG09CN, BTG15CN
  3. Aluminum case and steel chuck are standard for ATG models. Plastic case and chuck can be ordered separately.

## ATG Optional Accessories

Part #	Description
322	Plastic Case and Chuck

# ATGE-G

Digital Torque Gauge

Digital

3-jaw Chuck

Direct Reading

Battery

RoHS

Direction



ATGE5CN-G



- Digital torque gauge with pull out display
- For measurement, inspection and tightening of low torque range
- 3 way configuration; hand-held, table top or as a torque meter with testing fixture

Accuracy ±2%+1digit

Model	Torque Range								Chuck Grip [mm]	Dimensions [mm]		Weight [kg]
	[cN-m]		[mN-m]		[gf-cm]		[ozf-in]			Overall Length	Outside Diameter	
	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit				
ATGE05CN-G	0.1-0.5	0.001	1-5	0.01	10-50	0.1	0.15-0.7	0.001	φ1-6.5	120	67	0.305
ATGE1CN-G	0.2-1	0.001	2-10	0.01	20-100	0.1	0.3-1.4	0.001				
ATGE2CN-G	0.4-2	0.002	4-20	0.02	40-200	0.2	0.6-2.8	0.002				
ATGE5CN-G	1-5	0.005	10-50	0.05	100-500	0.5	1.5-7	0.005				
ATGE10CN-G	2-10	0.01	20-100	0.1	200-1000	1	3-14	0.01				
ATGE20CN-G	4-20	0.02	40-200	0.2	400-2000	2	6-28	0.02				

**Note** Aluminum case and steel chuck are standard for ATGE-G models. Plastic case and chuck/322 (page 59) is sold separately.

**Standard Accessories** Carrying case

## ATGE-G Common Specifications

Direction	CW/CCW
Display	7 segment LCD display, Counter 3 digits (character height 3mm), Torque value: 4 digits (character height 7mm) Torque unit, Battery indicator, Direction
Mode	PEAK/RUN
Data Memory	999 readings
Statistic Processing	Sample size, Max. value, Min. value, Mean value
Data Output	USB output (USB mini B connector)
Power	Coin-type lithium battery (CR2450)
Continuous in Use	approx. 10 hours when using coin battery
Other Functions	Auto power off (3 min.), Auto memory reset (0.5-5) seconds variable, Auto zero adjustment, Residual battery indicator (4 steps), Buzzer ON/OFF, Unit Conversion
Operating Temperature [°C]	0-40
Standard Options	Carrying case

## ◆ Calibration Kit for ATG/BTG/ATGE-G/BTGE-G

\* Sold separately. Refer to page 61.



# BTGE-G

Digital Torque Gauge

Direction



CE



BTGE200CN-G

- Digital**
- 3-jaw Chuck**
- Direct Reading**
- Battery**
- RoHS**

- Multiple units of measure through keypad setup
- For measurement, inspection and tightening of low torque ranges
- Flip-up display can be adjusted for optimal reading

Accuracy  $\pm 2\% + 1$  digit

Model	Torque Range								Chuck Grip [mm]	Dimensions [mm]		Weight [kg]
	[cN·m]		[kgf·cm]		[ozf·in]		[lbf·in]			Overall Length	Outside Diameter	
	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit				
BTGE10CN-G	2-10	0.01	0.2-1	0.001	3-14	0.01	0.2-0.88	0.001	φ1-φ8.5	130	75	0.65
BTGE20CN-G	4-20	0.02	0.4-2	0.002	6-28	0.02	0.4-1.7	0.002				
BTGE50CN-G	10-50	0.05	1-5	0.005	15-70	0.05	1-4.4	0.005				
BTGE100CN-G	20-100	0.1	2-10	0.01	30-140	0.1	2-8.8	0.01				
BTGE200CN-G	40-200	0.2	4-20	0.02	60-280	0.2	4-17	0.02				

- Note**
1. Can be used for checking accuracy of torque screwdrivers.
  2. Max 999 readings can be saved with statistical function max/min/mean values.

## BTGE-G Optional Accessories

### Connecting Cable (P.47)

Part #	Applicable Model
384	BTGE-G (USB mini B) → PC (USB A)

### Measurement Board

Model
809



### Battery Pack

Model
BP-C1

## ATG/BTGE-G/ATGE-G/BTGE-G Optional Accessories

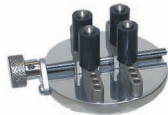


No.808

### ATGE-G/BTGE-G Measurement stand

To firmly fix ATGE-G/BTGE-G to use as table top configuration

Part #	Applicable Model
808	ATGE-G
809	BTGE-G



No.800

### Table attachment

4 poles are designed to clamp objects of any shape (Chucking diameter  $\phi 10$ - $\phi 58$ )

Part #	Applicable Model
800	ATGE-G/BTGE-G



No.806

### Calibration adapter for ATGE-G/BTGE-G

Adapter for calibration devices, ATGTCL/BTGTCL, to mount on ATGE-G/BTGE-G

Part #	Applicable Model
806	ATGE-G
807	BTGE-G



BA-5

### Adapter for USB connector

External power supply adapter for ATGE-G/BTGE-G with using USB connecting cable.

Part #	Applicable Model
BA-5	ATGE-G/BTGE-G



No.384

### USB connecting cable

Cable for external USB data output or connecting BA-5

Part #	Applicable Model
384	ATGE-G/BTGE-G



No.322

### Plastic chuck

Plastic chuck for fragile objects

Part #	Applicable Model
322	ATG/ATGE-G



BP-C1

### Battery pack

Part #	Applicable Model
BP-C1	BTGE-G



ATGE-G with table attachment and measurement stand



AMRD torque checking with ATGE-G and measurement stand, #808.



BMRD torque checking with BTGE-G and measurement stand, #809.



BTGE-G with table attachment and measurement stand

# TME2

Digital Torque Meter

Digital

Pole Clamping

Direct Reading

RoHS

Direction



2TME500CN2



- Ideal for testing torque on bottle caps
- Up to 99 measured data can be stored.

Accuracy ±1%+1digit

S.I. Model	Torque Range [cN-m]		Metric Model	Torque Range [gf-cm/kgf-cm]		American Model	Torque Range [ozf-in/lbf-in]		Chuck Size [mm]	Dimensions [mm]			Weight [kg]
	Min.-Max.	1 digit		Min.-Max.	1 digit		Min.-Max.	1 digit		Overall Length	Width	Height	
3TME10CN2	2.00-10.00	0.01	3TME10CN2-M	200-1000	1	3TME10CN2-Z	2.80-14.00	0.01	φ14-φ110	252	158	185	3.5
3TME20CN2	4.00-20.00	0.02	3TME20CN2-M	400-2000	2	3TME20CN2-Z	5.60-28.00	0.02					
3TME50CN2	10.00-50.00	0.05	3TME50CN2-M	1000-5000	5	3TME50CN2-Z	14.00-70.00	0.05					
3TME100CN2	20.0-100.0	0.1	3TME100CN2-M	2.00-10.00	0.01	3TME100CN2-Z	28.00-140.0	0.1	φ18-φ190	331	223	283	12
2TME200CN2	40.0-200.0	0.2	2TME200CN2-M	4.00-20.00	0.02	2TME200CN2-I	3.50-17.00	0.02					
2TME500CN2	100.0-500.0	0.5	2TME500CN2-M	10.00-50.00	0.05	2TME500CN2-I	8.80-44.00	0.05					
2TME1000CN2	200-1000	1	2TME1000CN2-M	20.0-100.0	0.1	2TME1000CN2-I	17.6-88.00	0.1					
2TME2000CN2	400-2000	2	2TME2000CN2-M	40.0-200.0	0.2	2TME2000CN2-I	35.0-175.0	0.2					

- Note**
1. Can be used for checking accuracy of torque screwdrivers.
  2. Max. 99 measured data can be stored.
  3. TMTCL, calibration kit is optional.
  4. Statistical Data: Hi, Lo, Sample, Ave., Range Variation, and Standard Deviation

- Standard Accessories**
1. AC Adapter/BA-4
  2. Rubber Nail
  3. Supportive Plate for 2TME2

## TME2 Optional Accessories

Connecting Cable (P.47)

Part #	Applicable Model
383	TME2 → PC, EPP16M3

Printer (P.65)

Model
EPP16M3

Data Filing System (P.64)

Model	Media
DFS	CD-ROM

Battery Pack (P.47)

Model
BP-100-3

# TM

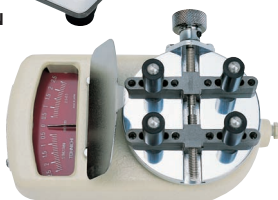
Analog Torque Meter

Direction



2TM400CN

5TM2.5MN



Pole Clamping Direct Reading RoHS

- Dial indicating
- Wide variety of torque testing ranges

Accuracy ±2%

S.I. Model	Torque Range [mN-m/cN-m]		American/Metric Model	American Torque Range [lbf-in]		Metric Torque Range [kgf-cm/gf-cm]		Dimensions [mm]				Weight [kg]	
	Standard	With Memory Pointer		Min.-Max.	Grad.	Min.-Max.	Grad.	Min.-Max.	Grad.	Overall Length	Width		Height
4TM10MN	4TM10MN-S	1-10	0.2	4-TM100-A-S	0.01-0.086	0.002	10-100	2	252	158	109.5	φ14-φ110	3
4TM15MN	4TM15MN-S	1.5-15	0.5	4-TM150-A-S	0.02-0.13	0.005	15-150	5					
4TM25MN	4TM25MN-S	2.5-25	1	4-TM250-A-S	0.025-0.215	0.01	25-250	10					
4TM50MN	4TM50MN-S	5-50	1	4-TM500-A-S	0.05-0.43	0.01	50-500	10	331	223	133.5	φ18-φ190	10.5
4TM75MN	4TM75MN-S	8-75	2	4-TM750-A-S	0.08-0.65	0.02	80-750	20					
3TM10CN	3TM10CN-S	1-10	0.2	3-TM1-A-S	0.1-0.86	0.02	0.1-1	0.02					
3TM15CN	3TM15CN-S	1.5-15	0.5	3-TM1.5-A-S	0.15-1.3	0.05	0.15-1.5	0.05					
3TM25CN	3TM25CN-S	2.5-25	1	3-TM2.5-A-S	0.25-2.15	0.1	0.25-2.5	0.1					
3TM50CN	3TM50CN-S	5-50	1	3-TM5-A-S	0.5-4.3	0.1	0.5-5	0.1					
3TM75CN	3TM75CN-S	8-75	2	3-TM7.5-A-S	0.8-6.5	0.2	0.8-7.5	0.2					
2TM100CN	2TM100CN-S	10-100	2	2-TM10-A-S	1-8.6	0.2	1-10	0.2					
2TM150CN	2TM150CN-S	20-150	5	2-TM15-A-S	2-13	0.5	2-15	0.5					
2TM200CN	2TM200CN-S	30-200	5	2-TM20-A-S	3-17	1	3-20	1					
2TM300CN	2TM300CN-S	30-300	5	2-TM30-A-S	3-26	1	3-30	1					
2TM400CN	2TM400CN-S	40-400	10	2-TM40-A-S	3.5-35	1	4-40	1					
2TM500CN	2TM500CN-S	50-500	10	2-TM50-A-S	4-43	1	5-50	1					
2TM600CN	2TM600CN-S	60-600	10	2-TM60-A-S	5-50	1	6-60	1					
2TM750CN	2TM750CN-S	80-750	10	2-TM75-A-S	7-65	1	8-75	1					

**Note** "-S" models are provided with a memory pointer.

## ◆ Calibration Kit for TME2/TM



\* Sold separately. Refer to page 61.

## Low Capacity, below 7.5 mN-m, Torque Meter

Accuracy ±2%

S.I. Model	Torque Range [mN-m]		Metric Model	Torque Range [gf-cm]		American Model	Torque Range [ozf-in]		Dimensions [mm]				Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.	Overall Length	Width	Height	Chuck Size	
5TM1MN	0.2-1	0.05	5-TM10	2-10	0.5	5-TM015Z	0.02-0.15	0.005	122	76.5	59	φ6-φ58	0.3
5TM1.5MN	0.2-1.5	0.1	5-TM15	2-15	1	5-TM020Z	0.04-0.2	0.01					
5TM2.5MN	0.5-2.5	0.1	5-TM25	5-25	1	5-TM035Z	0.05-0.35	0.01					
5TM5MN	1-5	0.2	5-TM50	10-50	2	5-TM070Z	0.3-0.7	0.02					
5TM7.5MN	1-7.5	0.2	5-TM75	10-75	2	5-TM1Z	0.2-1	0.05					

- Note**
1. 5TM models are supplied without memory pointer.
  2. When calibrating the 5TM models, ask Tohnichi for assistance.



# TCF

Fixed Type Torque Sensor

Voltage Output

Fixed

RoHS

- Requires CD5 to display torque reading



CD5

\*Display is sold separately.



TCF20N

S.I. Model	Torque Range [N-m]	Metric Model	Torque Range [kgf-cm]	American Model	Torque Range [lbf-in/lbf-ft]	Inlet Drive [mm]	Dimensions		Weight [kg]
	Min.-Max.		Min.-Max.		Min.-Max.		Height [mm]	Diameter [mm]	
TCF02N	0.02-0.2	TCF1.8	0.18-1.8	TCF1.8I	lbf-in	6.35	56	45	0.45
TCF04N	0.04-0.4				0.18-1.8				
TCF1N	0.1-1	TCF18	1.8-18	TCF18I	lbf-in	9.5	66	70	0.6
TCF2N	0.2-2				1.8-18				
TCF4N	0.4-4	TCF180	18-180	TCF180I	lbf-in	12.7	100	105	2.5
TCF10N	1-10				18-180				
TCF20N	2-20	TCF1800	180-1800	TCF1800I	lbf-in	19.0	135	140	6
TCF40N	4-40				180-1800				
TCF100N	10-100	TCF18000	1800-18000	TCF18000I	lbf-ft	25.4	180	178	12
TCF200N	20-200				1800-18000				
TCF400N	40-400								
TCF1000N	100-1000								
TCF2000N	200-2000								

Note 1. T.C.L., calibration kit is optional.  
2. Display, CD5, is sold separately.

Standard Accessories Connecting Cable

## TCF Optional Accessories

TP, Test Piece: Torque measurement for power torque tools

Model	Torque Range			Applicable TCF Model	Inlet		Dimensions		Weight [kg]
	S.I. [N-m]	Metric [kgf-cm]	American [lbf-in/lbf-ft]		Width Across Flats [mm]	Nominal Size of Screw	Diameter [mm]	Height [mm]	
	Min.-Max.	Min.-Max.	Min.-Max.						
TP2.5N	0.25-2.5	2.5-25	2-22	TCF02N-TCF4N	8	M4	18	58	0.08
TP18N	1.8-18	18-180	16-160	TCF10N, TCF20N	13	M6	35	83.5	0.27
TP180N	18-180	180-1800	30-130	TCF40N-TCF200N	24		65	148	1.9
TP1800N	180-1800	1800-18000	130-1300	TCF400N-TCF2000N	50		140	297.5	16.8

Note 1. Adapter 4H-3 (#273) is necessary for TCF40N.  
2. Adapter 8P-6 (#295) is necessary for TCF400N.

DTF, Drill Chuck: Torque measurement for axial work pieces

Model	Applicable TCF Models	Chuck Size [mm]	Square Drive [mm]	Dimensions	
				Diameter [mm]	Height [mm]
DTF5-3	TCF02N-TCF4N	Max. φ5	6.35	33	65
DTF5-2	TCF10N-TCF40N		9.5		61

TTF/ATF, Table and fixture: Ideal for testing torque on bottle caps

Model	Applicable TCF	Chuck Size [mm]	Table Dia. [mm]
TTF7	TCF02N-TCF4N	φ10-70	φ70
TTF11	TCF10N-TCF20N	φ14-110	φ110
TTF19	TCF2N-TCF4N	φ18-190	φ180

Note ATF attachment is required to fix TTF table.

# TCR

Rotary Type Torque Sensor

Voltage Output

Rotary

RoHS

- Captures directly applied torque
- Requires CD5 to display torque reading



CD5

\*Display is sold separately.



TCR18N

S.I. Model	Torque Range [N-m]	Metric Model	Torque Range [kgf-cm]	American Model	Torque Range [lbf-in/lbf-ft]	Allowable Rotation [r.p.m]	Square Drive [mm]	Height [mm]	Width [mm]	Weight [kg]
	Min.-Max.		Min.-Max.		Min.-Max.					
TCR18N	1.8-18	TCR180	18-180	TCR180-A	16-160	2000	9.5	91	76	0.9
TCR180N	18-180	TCR1800	180-1800	TCR1800-A	13-130					
TCR700N	70-700	TCR7000	700-7000	TCR7000-A	50-500	1000	19.0	118.5	95	2.0
TCR1800N	180-1800	TCR18000	1800-18000	TCR18000-A	130-1300					

Note 1. T.C.L., calibration kit is optional.  
2. Display, CD5, is sold separately.

Standard Accessories Connecting Cable

## ◆ Calibration Kit for TCF/TCR



\* Sold separately. Refer to page 61.

# Calibration Kit

## ◆ Calibration Kit for DOTE3-G/DOT RoHS

Model	Description				
	Calibration Lever	Stand	Reaction Unit	Scale Holder	Applicable Model
DOTCL36N	KL-DOTCL36N	KS-DOTCL	RU-DOTCL100N	WT0.5	DOT35N
DOTCL100N	KL-DOTCL100N				DOT50N
DOTCL200N	KL-DOTCL200N				DOT200N3-G
DOTCL360N	KL-DOTCL360N		RU-DOTCL360N	WT1	DOT100N
DOTCL700N	KL-DOTCL700N				DOT100N3-G
DOTCL1000N	KL-DOTCL1000N				DOT200N3-G
		RU-DOTCL700N	WT5	DOT300N	
				DOT500N3-G	
				DOT700N	
				DOT1000N3-G	

## ◆ Calibration Kit for TF RoHS

Model	Description			
	Calibration Lever, Adapter	Stand	Wire	Applicable Model
TFTCL200N	Lever × 2	1 Set	Wire × 4	TF200N
TFTCL500N	Adapter × 2			TF500N
TFTCL1000N	Lever × 3		Wire × 6	TF1000N
TFTCL2000N	Adapter × 2			TF2000N
	Lever × 3			
TFTCL3000N	Adapter × 1			TF3000N

Note Supplied upon request.

## ◆ Calibration Kit for TCC2-G RoHS

Model	Description				Optional Item Weight	Applicable Model
	Calibration Lever	Stand	Wire	Scale Holder		
TCCTCL100N2			Wire × 2	100g × 1,	1kg × 1, 2kg × 2,	TCC100N2-G
TCCTCL100N2-D			Wire × 3	1kg × 1	5kg × 3, Weight Set	TCC100N2-D-G
TCCTCL500N2	Lever × 2	1 Set	Wire × 4	500g × 1 1kg × 1	1kg × 1, 2kg × 2, 5kg × 9, Weight Set	TCC500N2-G
TCCTCL1000N2			Wire × 2	1kg × 1, 5kg × 1	1kg × 1, 2kg × 2, 5kg × 13, Weight Set	TCC1000N2-G

Note Contact Tohnichi in case you have DOTCL.

## ◆ Calibration Kit for TDT3-G RoHS

Model	Description	Applicable Model
TDTCL60CN	Calibration Lever × 1, Wire × 1, Calibration Roller × 1, Scale Pan (100g) × 1, Scale Holder (1kg) × 1,	TDT60CN3-G
TDTCL600CN	Calibration Lever × 1, Wire × 1, Calibration Roller × 1, Scale Pan (100g) × 1, Scale Holder (1kg) × 1,	TDT600CN3-G

## ◆ Calibration Kit for ATG/BTG/ATGE-G/BTGE-G RoHS

Model	Description	Applicable Model
ATGTCL24CN	Main Unit, Calibration Pulley × 2, Wire × 2, Scale Pan (5g, 100g)	ATG/ATGE-G
BTGTCL150CN	Main Unit, Calibration Pulley × 2, Wire × 3, Scale Pan (5g, 100g)	BTG/BTGE-G

Note Adapter (#807) is required when calibrating BTGE models.

## ◆ Calibration Kit for TME2/TM RoHS

Model	Description	Applicable Model
2TMTCL	Wire × 1, Roller × 1, Frame × 1, Bolt × 2, Scale Holder (1kg) × 1, Scale Pan (100g) × 1	2TM/2TME2
3TMTCL	Wire × 1, Roller × 1, Frame × 1, Bolt × 2, Scale Pan (5g × 1, 100g × 1)	3TM/4TM/3TME2

## ◆ Calibration Kit for LC3-G/ST3-G/TCF/TCR RoHS

Model	Description	Applicable Model
TCL50N	Calibration Lever, Wire, Scale Holder (1kg), Scale Pan (100g)	TCF10N-TCF40N, TCR18N LC20N3-G, ST10N3-G-ST50N3-1/2-G
TCL200N	Calibration Lever, Wire, Scale Holder (1kg)	TCF100N-TCF200N, TCR180N LC200N3-G, ST100N3-G-ST200N3-G
TCL800N	Calibration Lever, Wire, Scale Holder (10kg)	TCF400N, TCR700N, ST500N3-G
TCL1000N	Calibration Lever, Wire, Scale Holder (5kg)	TCF1000N, ST1000N3-G, LC1000N3-G
TCL2000N	Calibration Lever, Wire, Scale Holder (10kg)	TCF2000N, TCR1800N, LC1400N3-G

Note 1. TCL1000N and TCL2000N are supplied upon request.  
2. #271 is required when calibrating ST10N2.



DOTCL100N



TFTCL2000N



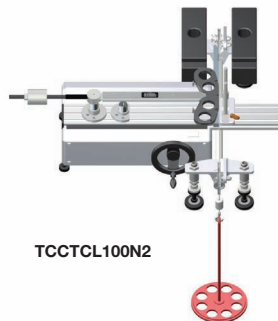
TDTCL600CN



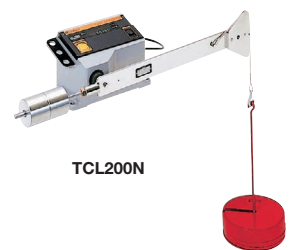
ATGTCL24CN



2TMTCL



TCCTCL100N2



TCL200N

## ◆ Weight RoHS

Model	Weight
WP-TCL5	5kg
WP-TCL2	2kg
WP-TCL1	1kg
WS-TCL2	Weight Set (2kg)

Note 1. A dead weight is available for sale.  
2. Calibration certificate for dead weight is available on request, charged option.



# BTM/ B-BTM

Bolt Tension Meter

**Dial Indicating    Hydraulic    Bourdon Type**

- Bourdon type hydraulic bolt tension meter
- Measure bolt tension to determine optimal torque

Accuracy ±3%



BTM400K



B-BTM13K

S.I. Model	Axial Tension Range [kN]		Metric Model	Axial Tension Range [ton]		American Model	Axial Tension Range [lbf]		Applicable Nominal Diameter of Bolts (Minimum Length) [mm]	Dimensions			Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.		Overall Length [mm]	Overall Thickness [mm]	Overall Height [mm]	
BTM400K	100-400	5	40BTM-2	10-40	0.5	40BTM-2-A	23000-90000	1000	Hexagon Bolt M16 (70), M20 (75)	260	64	280	12.6
									M22 (80), M24 (85) Torsia Bolt M16 (65), M20 (70) M22 (75), M24 (80)				
B-BTM13K	1.2-13	0.2	1.3B-BTM	0.12-1.3	0.02	1.3B-BTM-A	300-2800	50	Standard Bolt M5 (20), M6 (21) M7 (22), M8 (23)	106	78	217	7.7
B-BTM40K	4-40	0.5	4B-BTM	0.4-4	0.05	4B-BTM-A	1000-9000	100	Standard Bolt M10 (29), M12 (31) M14 (32)	134	82	241	9.8
B-BTM130K	12-130	2	13B-BTM	1.2-13	0.2	13B-BTM-A	3000-28000	500	Standard Bolt M16 (41), M18 (43) M20 (44), M24 (47)	186	106	287	17.5
B-BTM400K	40-400	5	40B-BTM	4-40	0.5	40B-BTM-A	1000-90000	1000	Standard Bolt M27 (72), M30 (74) M36 (79), M42 (84)	280	126	369	31.0

**Note** 1. BTM400K comes with a plate and bushing for torsia bolt M20 and M22. Other plates and bushings are optional.  
2. "Hexagon Bolt" in the above list stands for the high-tensile hexagon bolt for friction bonding.

**Standard Accessories** Plate, Bushing, Spanner for plate, Bolt for plate, Storage Case, Calibration Certificate

## BTM Optional Accessories

Bushing for Hexagon Bolt

Part #	Applicable Nominal Diameter of Bolts
650	M16
651	M20
652	M22
653	M24

Bushing for Torsia Bolt

Part #	Applicable Nominal Diameter of Bolts
665	M16
666	M20
667	M22
668	M24

Plate for Torsia Bolt/Hexagon Bolt

Part #	Applicable Nominal Diameter of Bolts
669	M16
670	M20
671	M22
672	M24

## Fcon Bolt Tension Stabilization

RoHS

- Creates consistent bolt tension
- Applied to fasteners and nuts
- Acquisition of patent in EU.

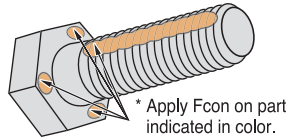


Fcon

Model
Fcon

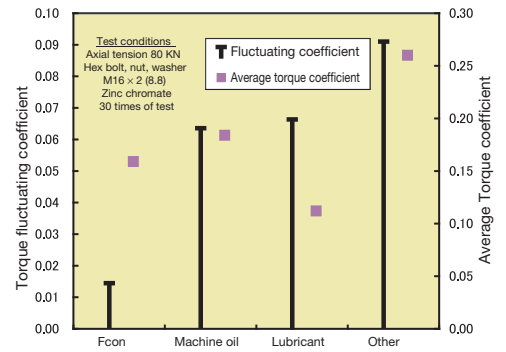
Sales Unit: 10pcs/case  
Content: 90g/bottle

**How to apply Fcon on the bolt** (in case of M10 bolt)  
Follow the illustration below. Apply some along the screw thread (2 mm width more or less), and on the bearing surface at 3 different spots evenly. Use appropriate amount depending on the size of the bolt.



\* Apply Fcon on part indicated in color.

## Axial Tension Stability Characteristics

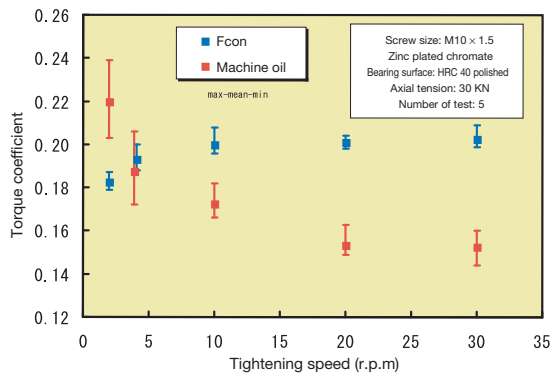


Characteristic of axial tension stabilization  
Torque coefficient calculated by formula  $K = t/(d \times f)$

T = tightening torque, d = nominal size of screw, F = axial tension

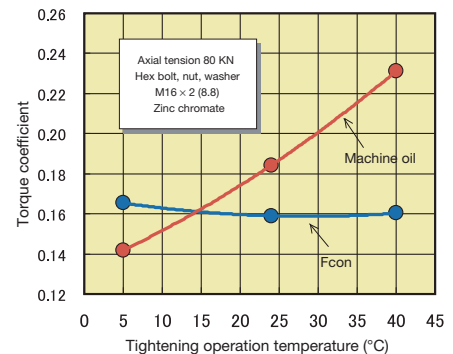
Torque fluctuating coefficient = torque coefficient standard deviation/average torque coefficient

## Influence of Tightening Speed



Influence of tightening speed on torque coefficient

## Influence of Temperature



Influence of temperature on torque coefficient



# TT2000

Ultrasonic Tension Meter



TT2000

**Digital** **Direct Reading**

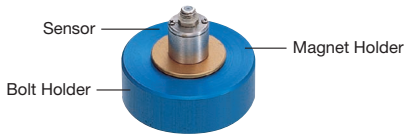
- Non-destructive axial bolt tension tester
- Input information regarding fastener & materials
- Sound wave lengths are measured and compared.

Model
TT2000
TT2000C
TT2000M

## TT2000 Specifications

Measuring Range	5-10,000mm (Steel material)
Applicable Length of Bolt	50-9,000mm
Applicable Nominal Diameter of Bolt	φ6mm dia or more (Applicable for less than φ6mm dia. with an optional sensor)
Ultrasonic Wave Frequency	0.5-15 MHz
Time Axis Resolution	5ns
Result of Measurement	Bolt initial length (mm), Stress (Mpa), Elongation (mm), Propagation rate (μs)
Measuring Resolution	Depends on bolt diameter and length [Ex.] Based on the first echo measurement (steel material) Bolt diameter φ10, Bolt tightening length 50mm ±approx. 1.47kN Bolt diameter φ20, Bolt tightening length 100mm ± approx. 2.94kN
Memory Capacity of Data	2,000pcs. or time pass measurement 300 items (Max. 50 kinds of different bolts can be registered)
Bolt Temperature Correction	Manual input by key, Auto temperature input *1
Display	Color TFT6.4 type (640 × 480dots)
External Output	8 bits serial interface (RS232C) *2 Composite output (NTSC), Alarm output (photo coupler), Encoder input *3
Power Supply	AC85-130V, AC185-265V (50/60Hz) or DC12V *4
Optional Battery	Portable: 2.5h use for 1.5h Charge Built-in case: 8h use for 4.5h charge
Operating Temperature [°C]	0-45
Dimensions	Body: H160 × W246 × D60mm Body + Built-in battery: H160 × W246 × D246mm
Weight	Body: 1.2kg Body + built-in battery: 4.9kg

- Note**
1. Optional thermometer can be connected to TT2000C and TT2000M for auto temperature adjustment. Input temperature range is from -40°C to 200°C. Measurement over 60°C requires a sensor specially designed for high temperature.
  2. RS232C connector is available only with TT2000C and TT2000M.
  3. Composite output, alarm output and encoder input are available only when using a multi connector box (TT2000M) or optional built-in battery case.
  4. DC12V can be used only when using the optional portable battery or the built-in battery case.
  5. Certificate of calibration is available on request, charged option.



## Axial Tension Calibrator

Model
AFC-20G

## TT2000 Optional Accessories

Model Name
RS232C Junction Cable A
Portable Battery Cable
RS232C Junction Cable B
Battery Built-in Body
Handy Type Cover
Portable Type Cover
TT2000 Carrying Case
Portable Battery Pack
Light Shielding Hood
Carrying Case for Body with Battery Built-in Body

## Ultrasonic Sensor

Part #	Name	Applicable Bolts
606	5C4.8N	More than M6, L1 < approx. 80mm
607	5C6.4N	More than M8, L1 < approx. 50cm
608	5C12.7N	More than M14, L1 < approx. 2m
609	5C19.1N	More than M20, L1 < approx. 4m

- Note**
1. L1 is standard bolt length with material in SCM, S-C, SS for ultrasonic wave reflection measurement n=1.
  2. Ultrasonic wave sensor is consisting of 3 parts, Sensor, Magnet Holder and Bolt Holder.
  3. Standard 5C6.4N does not include bolt holder.
  4. 5C6.4N=[5: Frequency (MHZ)]  
[C: Oscillator Material (C: piezoelectric ceramics)]  
[6.4: Oscillator Diameter, mm]  
[N: Perpendicular (Normal)]

## Features of ultrasonic wave sensor

1. The magnetic holder provides stabilized force through the sensor, which provides high repeatability measurement.
2. The bolt holder gives same position of the sensor to support more accurate measurement.



# CD5

## Compact Display



CD5



- Digital**
- Sensor Contacts**
- Direct Reading**
- Comparator**
- Judgment**

- Digital display for Tohnichi's torque sensor, strain gauge, products
- Adapted the Black Mask LCD making 3 different colored displays
- OK or NG judgment capability with upper or lower limit setting function

Model
CD5

### CD5 Optional Accessories

#### Printer

Model
EPP16M3

#### Data Filing System

Model	Media
DFS	CD-ROM

#### Connecting Cable (P.47)

Part #	Applicable Model	Plug
383	CD5 → PC, EPP16M3	D-SUB 9 Pin Female

### CD5 Specifications

Display	Negative type liquid crystal
Resolution	±1/5000 (±1.0 to ±3.0mV/V) ±1/2000 (±0.5 to ±1.0mV/V) 1/2000 (+0.1 to +3.0mV/V)
Input Voltage	±3.0mV/V
Accuracy	Nonlinearity ±0.05% F.S. Zero point drift ±0.1μV/°C (TYP.) Gain drift ±0.01%/°C (TYP.)
Calibration Methods	Equivalent input calibration Calibration by actual weight Calibration using sensor-equipped torque wrench
Data Memory	1000 readings
External Input	RESET/COMP/CLEAR/CHSW
Communication	RS232C compliant, Analog output, HI, OK, LO relay output
Power	AC100-240V±10%
Operating Temperature [°C]	0-40
Dimension	150W × 190D × 94H
Weight	approx. 1.8 kg

# R-DT999

## Data Tank

- Auxiliary**
- Infrared Input**
- RS232C Data Output**

- Infrared data collector for torque equipment
- 999 data storage
- External keypad setup functions



R-DT999

Model
R-DT999

### R-DT999 Optional Accessories

#### Printer

Model
EPP16M3

#### Data Filing System

Model	Media
DFS	CD-ROM

#### Connecting Cable (P.47)

Part #	Applicable Model	Plug
575	R-DT999 → PC, EPP16M3	D-SUB 9 Pin Female
584	R-DT999 → PC	USB A Type

**Note** Contact Tohnichi for other types of connector shapes.

### R-DT999 Specifications

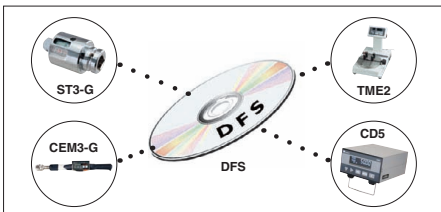
Data Input	Infrared data input (Tohnichi format only)
Display	6 digits, 14segments LCD 4 digits, 7segments LCD 4 digits, 7segments LED
Applicable Model	CEM3-G, CEM2, ST, ST2, STC, CTA, CTB
Data Output	RS232C compliance, USB connector serial output (*USB 1.1)
Power	DC5V 2A
Dimensions	W80 × D125 × H32mm
Standard Accessories	AC adapter (100-240V±10%)
Operating Temperature [°C]	0-40
Weight	205g (body only)

# DFS

## Data Filing System/ CD-ROM

- Auxiliary**
- CD**

- Data processing software
- Statistics, Standard deviation, Cp values, Charts



Maximum value, minimum value, data range, mean value, standard deviation and Cp value are calculated to make a histogram on the display.

Model	Media
DFS	CD-ROM

#### Connecting Cable to PC (P.47)

Part #	Applicable Model	Plug
575	CEM3-G, CTA2-G, CTB2-G, R-DT999 → PC, EPP16M3	D-SUB 9 Pin Female
584	CEM3-G, CTA2-G, CTB2-G, R-DT999 → PC	USB A Type
383	DOT3-G, LC3-G, TME2, TDT3-G → PC, EPP16M3	D-SUB 9 Pin Female
384	ST3-G, ATGE-G, BTGE-G → PC	USB A Type

**Note** Contact Tohnichi for other types of connector shapes.

# EPP16M3 Printer



EPP16M3

Auxiliary **RS232C Data Input**

- Printer for digital torque equipment
- Terminal Line Dot printing

Model
EPP16M3

## EPP16M3 Optional Accessories

### Roll Paper

Part #	Description
1408	Roll Paper

## EPP16M3 Specifications

Printed Method	Thermal Line Dot
Total Dot	384 dots
Dots per inch	203 dpi (8dot/mm)
Printing Capacity	32
Number of Dots for Character	12 × 24
Character Size [mm]	1.5 × 3.0
Paper Width/Print Span [mm]	58 / 48
Thermal Paper Outer Diameter [mm]	φ50
Max Printing Speed [mm/sec]	80
Power AC [V]	100 - 240V ± 10% 50/60Hz
Operating Temperature [°C]	0 - 40
Humidity [%RH]	Under 85 (No condensation)
Weight [kg]	approx. 0.27

## Connecting Cable

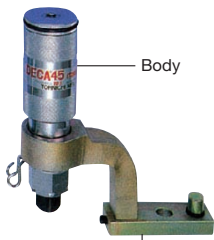
Part #	Applicable Model	Plug
383	NOTE3-G, LC3-G, TDT3-G, TME2_CD5	D-SUB 9 Pin Female
575	CEM3-G/CEM3-P, CTA2-G, R-DT999, CTB2-G	

# DECA 10:1 Ratio Torque Multiplier



DECA900N

Body + Universal Arm



Universal Arm

Auxiliary **Straight Rotary RoHS**

- Multiplied torque output increases by 10 times
- Ideal for applying high torque values with less force

Model	Output Torque			Torque Ratio	Dimension [mm]			Weight [kg]	Applicable Universal Arm	
	[N-m]	[kgf-m]	[lbf-ft]		Overall Length	Output Sq. Drive	Input Sq. Drive			
	Min.-Max.	Min.-Max.	Min.-Max.		Dia.					
DECA450N	90-450	9-45	65-325	10:1	195	52	19.0	9.5	2	UA450N
DECA900N	180-900	18-90	130-650		541	63			3.4	UA900N
DECA1800N	360-1800	36-180	260-1300		270	78	25.4	12.7	5.7	UA1800N
DECA3000N	600-3000	60-300	434-2170		324	95	31.75		10	UA3000N
DECA4500N	900-4500	90-450	650-3250		367	110	38.1		12.5	UA4500N
DECA9000N	1800-9000	180-900	1300-6500		464	140	50.8		34	UA9000N
DECA18000N	3600-18000	360-1800	2600-13000		540	172	63.5	25.4	60	UA18000N

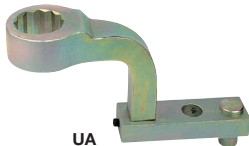
Note 1. Universal Arm is optional.  
2. DECA9000N and DECA18000N are supplied on request.

Standard Accessories 1. Metal Case (for DECA450N-DECA900N only)  
2. Portable Handle (for DECA4500N-DECA9000N only)  
3. Metal Case Caster (for DECA18000N only)

## AP/DAP Optional Accessories



SA



UA

# SA Shell Arm

• Light weight reaction arm

Model	Standard Socket Length [mm]	Max. Torque [N-m]
SA400N	50	400
SA700N	62	700
SA1200N	62	1200

# UA Universal Arm

• Heavy duty reaction arm

Model	Max. Torque [N-m]	Weight [kg]
UA450N	450	1.2
UA900N	900	2.6
UA1800N	1800	4
UA3000N	3000	7.2
UA4500N	4500	10.9
UA9000N	9000	18
UA18000N	18000	30

Note UA4500N/9000N/18000N are supplied on request.

## Adapter for Torque Wrench Tester



Down Adapter



Ratchet Adapter

# DA Down Adapter for Torque Wrench Testers

• Compact adapter to reduce the size of square drive

Model	Part #	Dimensions [mm]				Capacity [N-m]	Weight [g]
		Square Drive (Male)	Square Drive (Female)	Height	Outside Dia.		
DA3-2	296	9.5	6.35	12	13	14	5
DA4-3	297	12.7	9.5	15	18	70	11
DA6-4	298	19.0	12.7	19	28	220	34
DA8-6	299	25.4	19.0	26	35	750	66
DA12-8	300	38.1	25.4	44	55	2100	320

# RA2 Ratchet Adapter for Torque Wrench Testers

• Rotates wrench to proper testing position on tester  
• Gear action 3.75

Model	Dimensions [mm]				Capacity [N-m]	Weight [kg]
	Sq. Drive (Male)	Sq. Drive (Female)	Height	Outside Dia.		
RA3mk2	9.5	9.5	37.3	55	70	0.28
RA4mk2	12.7	12.7	52.5	70	220	0.6
RA6mk2	19	19	69.3	115	850	2.3
RA8mk2	25.4	25.4	92.8	161	2100	6.3
RA12	38.1	38.1	111	234	3000	12.6

# EVERTORQUE

Lubricant for repair

RoHS



- For repairs of torque wrenches and torque screwdrivers

Model	Part #
EVERTORQUE	830

## Evertorque Application List

	Applicable Model	Applicable Part
Click Type Torque Wrench	QL/QLE/CLE/PQL/PCL/YCL	Thrusting; Steel Ball, Scale Piece, Adjusting Screw; Thread
	WQL	Thrusting; Steel Ball, Scale Piece, Adjusting Screw; Thread, Knob, Protector; Joint
Click Type Torque Screwdriver	MPQL	Thrusting; Steel Ball, Scale Piece, Adjusting Screw; Thread, Ratchet, Marker Pipe; Joint
	RTD, RNTD	Main Shaft, Toggle Sheet; Serration
Semi-Automatic Airtork	RTD, LTD, BMLD	Case, Adjusting Piece; Serration
	A/AC	Thrusting; Steel Ball, Scale Piece, Adjusting Screw; Thread
Fully-Automatic Airtork	AP, AS	Reduction Clutch; Clutch
	DAP	
Fully-Automatic Electric Nutrunner	MC, ME, DCME	



# Torque Settings for Torque Screwdrivers

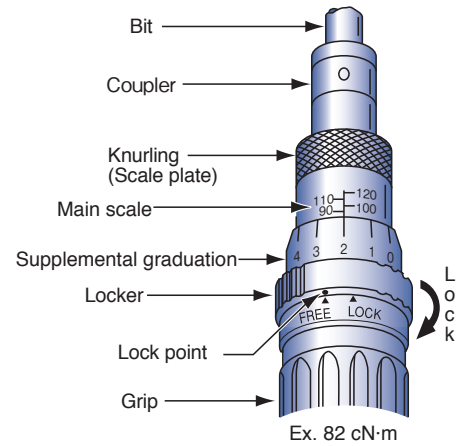
## ■ LTD, RTD, MLD

### Method of setting torque, Adjustable type:

1. Turn the locker of the main unit clockwise to release the lock.
2. Holding the main scale knurling part with the fingers of your right hand, turn the grip with the fingers of your left hand to set the torque value.

\* Setting the torque set values:

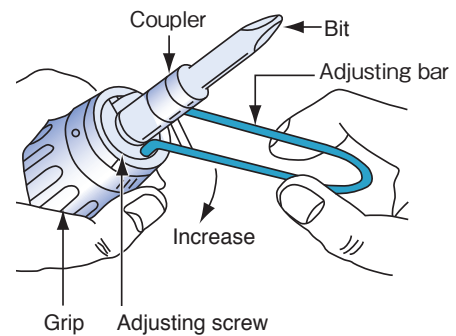
- (1) Turn the grip to match the top end of the supplemental graduation with the main scale.
- (2) Match the supplemental graduation line with the main scale vertical line (See the figure below).
3. After setting the torque, turn the main unit locker counterclockwise to lock it.



## ■ NTD, RNTD

### Method of setting torque, Preset type:

1. Holding the grip with your left hand, insert the adjusting tool bar into the grooves of the adjustment screw and turn to adjust. Turn clockwise to increase the torque value.
2. Insert with the exclusive bit into the loading device of the Torque Driver Tester (TDT) and fix it.
3. Turn the loading device clockwise to measure the torque value.
4. Continue to repeat procedures 1-3 until the torque is matched.



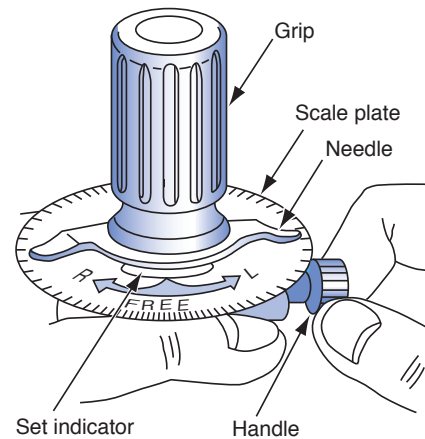
## ■ FTD50-400CN

### Method of preloading the FTD

The preload function is a function that uses the handle to apply a preloading torque close to that of the measuring point to minimize the twisting angle during measurement.

In the FTD series torque screwdrivers, a preload function is provided to prevent your wrist from becoming strained and the torque scale from becoming difficult to read when operating close to the maximum torque.

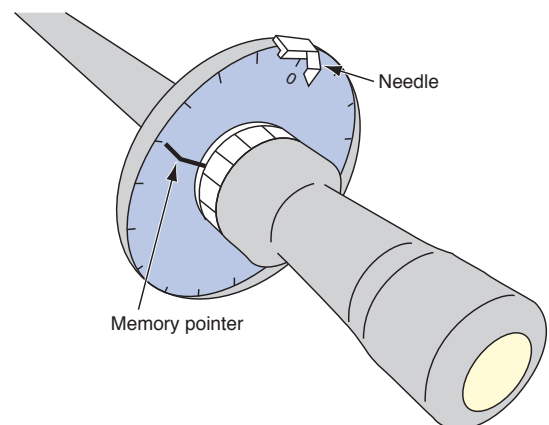
1. Holding the FTD screwdriver with your left hand, turn the preload handle in the counterclockwise direction using the fingers of your right hand (in case of clockwise measuring).
2. After some slipping turns, the needle will begin to move, and it will be easy to set an optional torque value.
3. If you do not wish to use the preload function, turn the preload handle until there is no tension and the central set indicator (red mark) points to the FREE mark.



## ■ FTD-S

### Method of setting the FTD-S indicator and memory pointer

1. Make sure the indicator is pointing to zero by matching the scale. If not, adjust to zero by lightly pushing down on the scale and rotating it.
2. Turn the memory pointer in the direction opposite to the measuring direction until it matches the main indicator.
3. Carry out torque measurement or torque tightening.

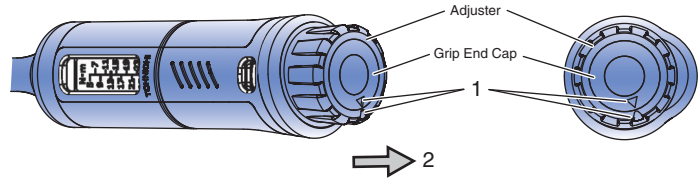


# Torque Settings for Torque Wrenches

## Adjustable type

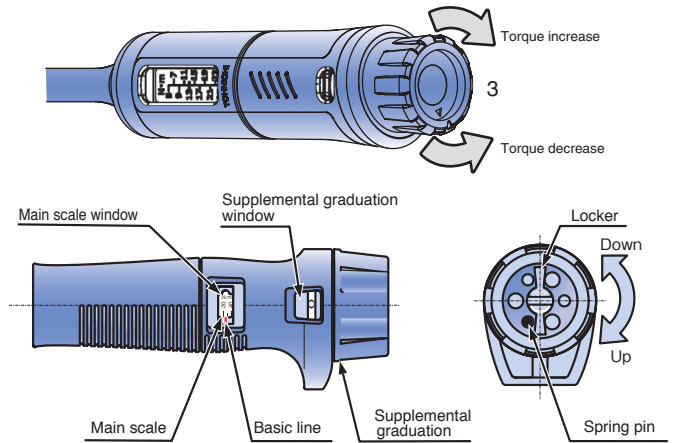
### ● QL, QL5/CL, CL5

1. Turn the adjuster and match up the ▲mark of the adjuster and ▼mark of grip-end cap.
2. Pull the adjuster.
3. Pull the adjuster and turn it to set a torque.



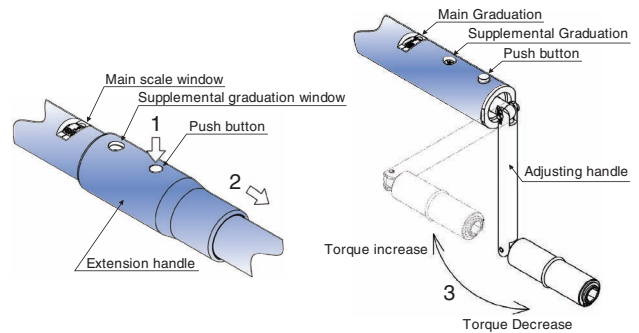
### ● QL, CL, YCL, A, etc.

1. Release the locker and turn it counterclockwise.
2. Set the torque by turning the supplemental graduation, confirming the value of the main scale.
3. Turn the locker clockwise to lock it. Change the locker pin location if the pin is contacted when locking.



### ● QLE2, CLE2, DQLE2, and PHLE2

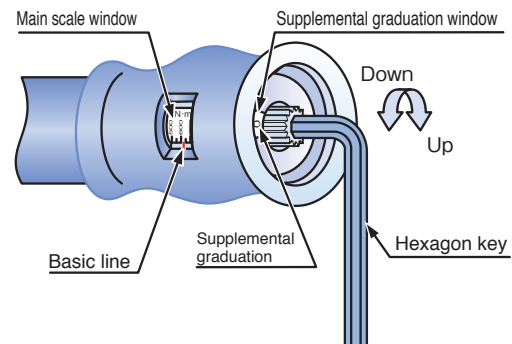
1. Press the push button
2. Remove the extension handle
3. Turning the adjusting handle clockwise to increase the set torque and counterclockwise to reduce it.



## Pre-lock and preset types

### ● PQL, PCL, AC2, QSP3, etc.

1. Insert the provided hexagon key into the adjusting hexagonal hole.
2. Turn the hexagon key to set the torque, confirming the value on the main scale and supplemental graduation.
3. No locking mechanism is needed for PQL models (An adjusting tool for QSP3 is optional).

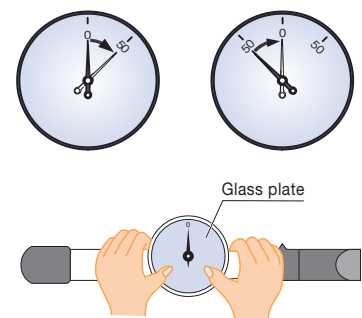


Model	Adjusting hexagon hole mm size across flats
PQL6N4-PQL25N	2.5
PQL50N-200N4	4
AC25N2-100N2	

## Dial Indication types

### ● DB, CDB, T

1. For measurement  
The scale on the dial gauge can be rotated. Press the dial case from above and turn the pointer to correctly match "0".
2. Presetting exclusively for tightening  
Alternatively, the desired torque can be preset on the dial beforehand and then the bolt can be tightened until the pointer shows "0".



# Torque Conversion List

kgf·cm  N·m

1 kgf·cm = 0.0980665 N·m  
1 kgf·m = 9.80665 N·m

N·m  kgf·cm

1 N·m = 10.1972 kgf·cm  
1 N·m = 0.101972 kgf·m

kgf·cm	N·m									
	0	1	2	3	4	5	6	7	8	9
10	0.981	1.08	1.18	1.27	1.37	1.47	1.57	1.67	1.77	1.86
20	1.96	2.06	2.16	2.26	2.35	2.45	2.55	2.65	2.75	2.84
30	2.94	3.04	3.14	3.24	3.33	3.43	3.53	3.63	3.73	3.82
40	3.92	4.02	4.12	4.22	4.31	4.41	4.51	4.61	4.71	4.81
50	4.90	5.00	5.10	5.20	5.30	5.39	5.49	5.59	5.69	5.79
60	5.88	5.98	6.08	6.18	6.28	6.37	6.47	6.57	6.67	6.77
70	6.86	6.96	7.06	7.16	7.26	7.35	7.45	7.55	7.65	7.75
80	7.85	7.94	8.04	8.14	8.24	8.34	8.43	8.53	8.63	8.73
90	8.83	8.92	9.02	9.12	9.22	9.32	9.41	9.51	9.61	9.71
100	9.81	9.90	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7

N·m	kgf·cm									
	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
1	10.2	11.2	12.2	13.3	14.3	15.3	16.3	17.3	18.4	19.4
2	20.4	21.4	22.4	23.5	24.5	25.5	26.5	27.5	28.6	29.6
3	30.6	31.6	32.6	33.7	34.7	35.7	36.7	37.7	38.7	39.8
4	40.8	41.8	42.8	43.8	44.9	45.9	46.9	47.9	48.9	50.0
5	51.0	52.0	53.0	54.0	55.1	56.1	57.1	58.1	59.1	60.2
6	61.2	62.2	63.2	64.2	65.3	66.3	67.3	68.3	69.3	70.4
7	71.4	72.4	73.4	74.4	75.5	76.5	77.5	78.5	79.5	80.6
8	81.6	82.6	83.6	84.6	85.7	86.7	87.7	88.7	89.7	90.8
9	91.8	92.8	93.8	94.8	95.9	96.9	97.9	98.9	99.9	101
10	102	103	104	105	106	107	108	109	110	111

kgf·cm	N·m									
	0	10	20	30	40	50	60	70	80	90
100	9.81	10.8	11.8	12.7	13.7	14.7	15.7	16.7	17.7	18.6
200	19.6	20.6	21.6	22.6	23.5	24.5	25.5	26.5	27.5	28.4
300	29.4	30.4	31.4	32.4	33.3	34.3	35.3	36.3	37.3	38.2
400	39.2	40.2	41.2	42.2	43.1	44.1	45.1	46.1	47.1	48.1
500	49.0	50.0	51.0	52.0	53.0	53.9	54.9	55.9	56.9	57.9
600	58.8	59.8	60.8	61.8	62.8	63.7	64.7	65.7	66.7	67.7
700	68.6	69.6	70.6	71.6	72.6	73.5	74.5	75.5	76.5	77.5
800	78.5	79.4	80.4	81.4	82.4	83.4	84.3	85.3	86.3	87.3
900	88.3	89.2	90.2	91.2	92.2	93.2	94.1	95.1	96.1	97.1
1000	98.1	99.0	100	101	102	103	104	105	106	107

N·m	kgf·m									
	0	1	2	3	4	5	6	7	8	9
10	1.02	1.12	1.22	1.33	1.43	1.53	1.63	1.73	1.84	1.94
20	2.04	2.14	2.24	2.35	2.45	2.55	2.65	2.75	2.86	2.96
30	3.06	3.16	3.26	3.37	3.47	3.57	3.67	3.77	3.87	3.98
40	4.08	4.18	4.28	4.38	4.49	4.59	4.69	4.79	4.89	5.00
50	5.10	5.20	5.30	5.40	5.51	5.61	5.71	5.81	5.91	6.02
60	6.12	6.22	6.32	6.42	6.53	6.63	6.73	6.83	6.93	7.04
70	7.14	7.24	7.34	7.44	7.55	7.65	7.75	7.85	7.95	8.06
80	8.16	8.26	8.36	8.46	8.57	8.67	8.77	8.87	8.97	9.08
90	9.18	9.28	9.38	9.48	9.59	9.69	9.79	9.89	9.99	10.1
100	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11.0	11.1

kgf·m	N·m									
	0	1	2	3	4	5	6	7	8	9
10	98.1	108	118	127	137	147	157	167	177	186
20	196	206	216	226	235	245	255	265	275	284
30	294	304	314	324	333	343	353	363	373	382
40	392	402	412	422	431	441	451	461	471	481
50	490	500	510	520	530	539	549	559	569	579
60	588	598	608	618	628	637	647	657	667	677
70	686	696	706	716	726	735	745	755	765	775
80	785	794	804	814	824	834	843	853	863	873
90	883	892	902	912	922	932	941	951	961	971
100	981	990	1000	1010	1020	1030	1040	1050	1060	1070

N·m	kgf·m									
	0	10	20	30	40	50	60	70	80	90
100	10.2	11.2	12.2	13.3	14.3	15.3	16.3	17.3	18.4	19.4
200	20.4	21.4	22.4	23.5	24.5	25.5	26.5	27.5	28.6	29.6
300	30.6	31.6	32.6	33.7	34.7	35.7	36.7	37.7	38.7	39.8
400	40.8	41.8	42.8	43.8	44.9	45.9	46.9	47.9	48.9	50.0
500	51.0	52.0	53.0	54.0	55.1	56.1	57.1	58.1	59.1	60.2
600	61.2	62.2	63.2	64.2	65.3	66.3	67.3	68.3	69.3	70.4
700	71.4	72.4	73.4	74.4	75.5	76.5	77.5	78.5	79.5	80.6
800	81.6	82.6	83.6	84.6	85.7	86.7	87.7	88.7	89.7	90.8
900	91.8	92.8	93.8	94.8	95.9	96.9	97.9	98.9	99.9	101
1000	102	103	104	105	106	107	108	109	110	111

## Unit of Torque and Conversion Values

	S.I. unit system			Metric unit system			American unit system		
	mN·m	cN·m	N·m	gf·cm	kgf·cm	kgf·m	ozf·in	lbf·in	lbf·ft
1 mN·m =	1	0.10	0.001	10.2	0.0102	0.000102	0.142	0.00885	0.000738
1 cN·m =	10	1	0.01	102	0.102	0.00102	1.42	0.0885	0.00738
1 N·m =	1000	100	1	10200	10.2	0.102	142	8.85	0.738
1 gf·cm =	0.0981	0.00981	0.0000981	1	0.001	0.00001	0.0139	0.000868	0.0000723
1 kgf·cm =	98.1	9.81	0.0981	1000	1	0.01	13.9	0.868	0.0723
1 kgf·m =	9810	981	9.81	100000	100	1	1390	86.8	7.23
1 ozf·in =	7.06	0.706	0.00706	72.0	0.072	0.00072	1	0.0625	0.00521
1 lbf·in =	113	11.3	0.113	1150	1.15	0.0115	16	1	0.0833
1 lbf·ft =	1360	136	1.36	13800	13.8	0.138	192	12	1
Country/Region	Japan, China, Europe			Asia			U.S.A., Aircraft industry		

1 [N·m] = 10.1972 [kgf·cm] ≈ 10.20 [kgf·cm]      1 [kgf·cm] = 0.0980665 [N·m] ≈ 0.0981 [N·m]

**Conversion example:** T = 25.0 [kgf·cm] = 25.0 × 0.0980665 = 2.4516625 [N·m] ≈ 2.45 [N·m]

### JCSS/Japan Calibration Service System

Tohnichi Mfg. Co. Ltd's torque standards calibration laboratory is now an authorized calibration service provider of JCSS/Japan Calibration Service System under Japanese measurement law. Registration number: JCSS0281 Based on this, Tohnichi has launched a JCSS calibration service for DOTE3-G torque wrench testers from 10 N·m to 1000 N·m as a validated JCSS system and an uncertainty certificate service for outside of the above stated torque range. Tohnichi issued JCSS calibration certificate is recognized internationally based on MRA/Mutual Recognition Arrangement of ILAC/International Laboratory Accreditation Cooperation and APLAC/Asia Pacific Laboratory Accreditation Cooperation by IAJapan/International Accreditation Japan.

# Standard Tightening Torque

Standard tightening torque [N·m]

Reference value

Nominal diameter	T [N·m]	0.5T series [N·m]	1.8T series [N·m]	2.4T series [N·m]
M1	0.0195	0.0098	0.035	0.047
(M1.1)	0.027	0.0135	0.049	0.065
M1.2	0.037	0.0185	0.066	0.088
(M1.4)	0.058	0.029	0.104	0.140
M1.6	0.086	0.043	0.156	0.206
(M1.8)	0.128	0.064	0.23	0.305
M2	0.176	0.088	0.315	0.42
(M2.2)	0.23	0.116	0.41	0.55
M2.5	0.36	0.18	0.65	0.86
M3	0.63	0.315	1.14	1.50
(M3.5)	1	0.5	1.8	2.40
M4	1.5	0.75	2.7	3.6
(M4.5)	2.15	1.08	3.9	5.2
M5	3	1.5	5.4	7.2
M6	5.2	2.6	9.2	12.2
(M7)	8.4	4.2	15	20.0
M8	12.5	6.2	22	29.5
M10	24.5	12.5	44	59
M12	42	21	76	100
(M14)	68	34	122	166
M16	106	53	190	255
M18	146	73	270	350
M20	204	102	370	490
(M22)	282	140	500	670
M24	360	180	650	860
(M27)	520	260	940	1240
M30	700	350	1260	1700
(M33)	960	480	1750	2300
M36	1240	620	2250	3000
(M39)	1600	800	2900	3800
M42	2000	1000	3600	4800
(M45)	2500	1260	4500	6000
M48	2950	1500	5300	7000
(M52)	3800	1900	6800	9200
M56	4800	2400	8600	11600
(M60)	5900	2950	10600	14000
M64	7200	3600	13000	17500
(M68)	8800	4400	16000	21000

Standard bolt stress: 210 [N/mm<sup>2</sup>] Stress area of bolt (JIS B 1082)

Standard tightening torque [kgf·cm]

Reference value

Nominal diameter	T [kgf·cm]	0.5T series [kgf·cm]	1.8T series [kgf·cm]	2.4T series [kgf·cm]
M1	0.199	0.100	0.357	0.479
(M1.1)	0.275	0.138	0.500	0.663
M1.2	0.377	0.189	0.673	0.897
(M1.4)	0.591	0.296	1.06	1.43
M1.6	0.877	0.438	1.59	2.10
(M1.8)	1.31	0.653	2.35	3.11
M2	1.79	0.897	3.21	4.28
(M2.2)	2.35	1.17	4.18	5.61
M2.5	3.67	1.84	6.63	8.77
M3	6.42	3.21	11.6	15.3
(M3.5)	10.2	5.1	18.4	24.5
M4	15.3	7.6	27.5	36.7
(M4.5)	21.9	11.0	39.8	53.0
M5	29.4	14.7	53.0	70.6
M6	53.0	26.5	93.8	124
(M7)	85.7	42.8	153	204
M8	127	63.2	224	301
M10	250	127	449	602
M12	428	214	775	1020
(M14)	693	347	1240	1690
M16	1080	540	1940	2600
M18	1490	744	2750	3570
M20	2080	1040	3770	5000
(M22)	2880	1430	5100	6830
M24	3670	1840	6630	8770
(M27)	5300	2650	9590	12600
M30	7140	3570	12800	17300
(M33)	9790	4890	17800	23500
M36	12600	6320	22900	30600
(M39)	16300	8160	29600	38700
M42	20400	10200	36700	48900
(M45)	25500	12800	45900	61200
M48	30100	15300	54000	71400
(M52)	38700	19400	69300	93800
M56	48900	24500	87700	118000
(M60)	60200	30100	108000	143000
M64	73400	36700	133000	178000
(M68)	89700	44900	163000	214000

Note: Conversion values rolled up to effective 3-digits.

## ■ Screws and Applicable “T” Series

	Standard T series	0.5T series	1.8T series	2.4T series
Applicable screws (Strengths) (Material)	4.6-6.8 SS, SC, SUS	- Brass, Copper, Aluminum	8.8-12.9 SCr, SNC, SCM	10.9-12.9 SCr, SNC, SCM, SNCM
Axial tension standard value [N/mm <sup>2</sup> ] Min - Max	210 300-160	105 150-80	380 540-290	500 710-380
Application	To be applied to ordinary screws, unless otherwise specified	Male and female screws with copper, aluminum or plastic, for die-cast plastic products	Durable screw joints made of special steel including those affected by additional dynamic loads (Friction clamping)	
Applicable products	Ordinary products	Electronic products	Vehicles, Engines	Construction products

\* The maximum to the minimum of the axial stress is considered as the dispersion of the torque coefficient.  
Example: max = 210 × (0.2/0.14) = 300 [N/mm<sup>2</sup>]  
Torque coefficient: 0.14/Min. - 0.2/Avg. - 0.26/Max.

## ■ Calibration Certificate ■

- Torque wrenches are measuring instruments. The calibration certificate is the document which certifies the accuracy of the torque products, which are traceable to Japanese national standards. Please keep the calibration certificate for future use.
- Accuracy % is calculated on each indicated value. Accuracy stated as “+/- a percentage + 1 digit” indicates that digital display will round up to next digit in resolution if value falls between digits.
- Tohnichi’s torque products provided with a calibration certificate can be used immediately at ISO9000 facilities without the need for further acceptance inspection or any additional certifications.
- The calibration certificate is effective for 1 year from the date of first use within 3 years from the date of inspection. Please fill in the date in the calibration certificate when first used.
- Tohnichi’s manual torque tools are normally guaranteed to 100,000 tightening cycles or 1 year. For click type torque wrenches, it can be also used up to 1,000,000 tightening cycles if the function is properly maintained and adjusted at every 100,000 cycles.

## ■ RoHS/Restriction of Hazardous Substances Directive ■

Following RoHS, which restricts the use of certain hazardous materials in product manufacturing, Tohnichi has expanded its efforts in environmentally friendly procurement. Starting with our Product Catalog 2011 edition, the **RoHS** mark is shown on all applicable models conforming to the RoHS directive. For details, please contact Tohnichi.



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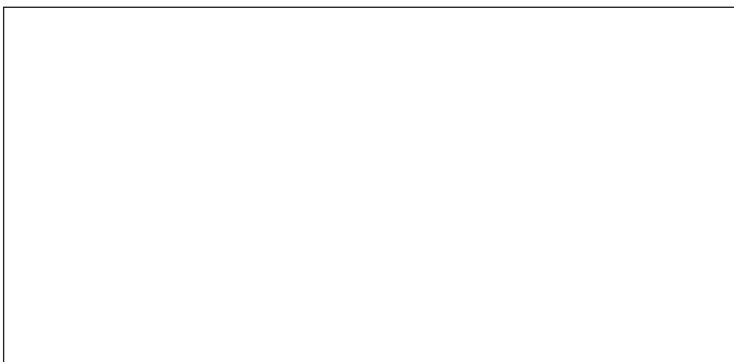
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