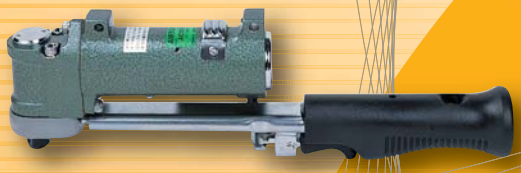
TOHNICHI

TORQUE PRODUCTS 2013

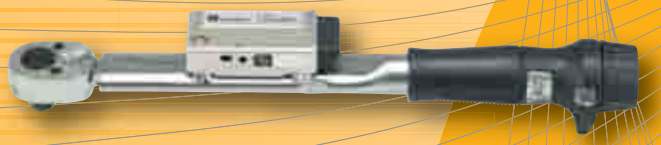
Torque Screwdriver RTD

Dial Indicating Torque Wrench DB-S

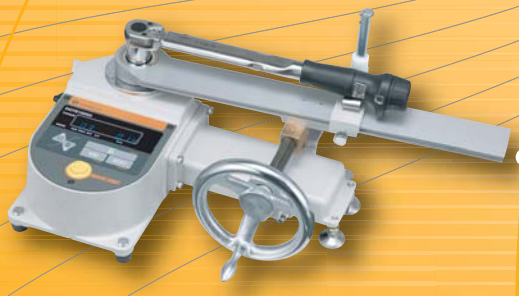
Digital Torque and Angle Wrench CTA2



Semi-Automatic Airtork AC



Torque Verification Wrench QLFH



Digital Torque Wrench Tester DOTE3-G

Torque Wrench Line Checker LC3-G

Digital Torque Screwdriver STC2-G

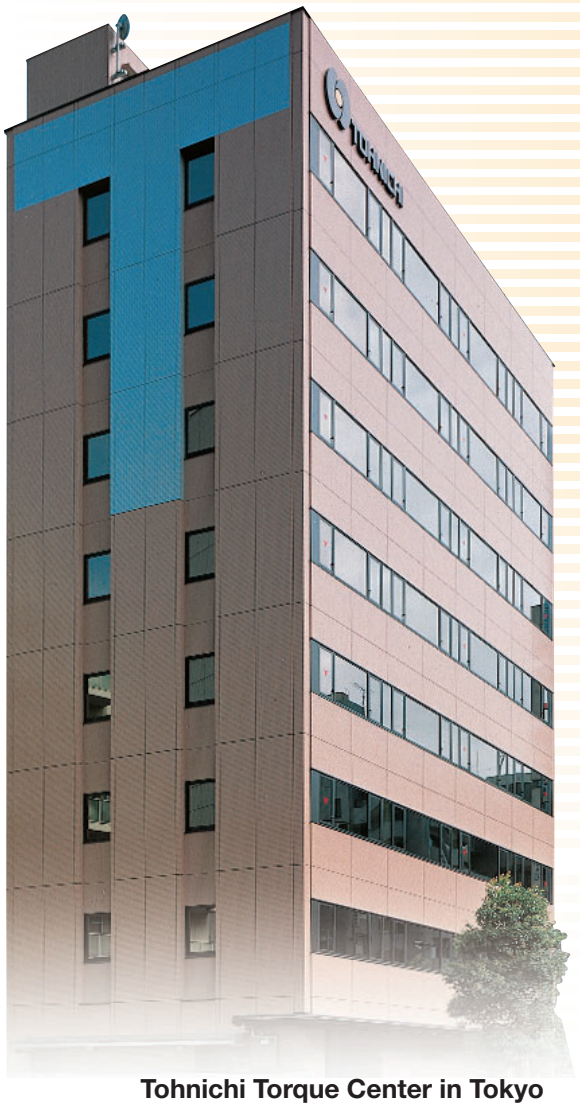
Your Torque Partner TOHNICHI

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

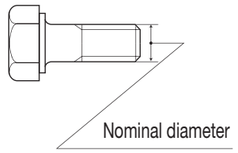
Our customers can attend workshops, covering a global training, general repair and adjustment on torque products.

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

Contents

How to Select Torque Products (by Model)

Select the correct Tohnichi product for an application.



TORQUE PRODUCTS

TORQUE WRENCH
Nominal diameter
M4-M40

FOR TIGHTENING
Tightening bolts at a given torque

QL

Standard model for tightening P.12

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

SP

Preset type open end head P.20

SP-MH

RSP

Preset type ring head P.20

FOR INSPECTION
Inspecting the torque of tightened bolts

DB/CDB

Standard model for inspection P.38

SF/F/QF/CF

Beam type P.40

CEM3-G/CTB2-G

Digital type P.36

For calibrating torque wrenches

DOTE3-G P.54

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

ST2/TCF/TCR
P.56 P.61

TORQUE SCREWDRIVER
Nominal diameter
M1.6-M6

FOR TIGHTENING
Tightening screws at a given torque

RTD/LTD/AMRD/AMLD

Rotary slip torque screwdriver (Over-torque prevention) P.6

Tightening at one particular torque only

RNTD/NTD

Preset version of RTD P.7

FOR INSPECTION
Inspecting the torque of tightened screws

FTD-S/FTD

Direct reading type P.9

STC2-G NEW

Digital type P.10

TORQUE GAUGE/ TORQUE METER
Measuring torque for special products

FOR MEASURING VERY SMALL TORQUE
Inspecting small torque ranging from 0.05cN·m-150cN·m

ATG/BTG
with 3-jaw chuck

P.58

ATGE-G

Digital type P.58

BTGE-G

Digital type P.59

FOR MEASURING CAP OPENING TORQUE
For checking torque on bottle caps, starting torque test, and twisting torque, etc.

TM

Analog type P.60

TME2

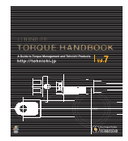
Digital type P.60

Example

CL 100 N × 15D

- 15D — Size of interchangeable head * Interchangeable head type only
- N — Unit (N = N·m, CN = cN·m, MN = mN·m)
- 100 — Torque range (Maximum torque in S.I. unit)
- CL — Model

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



From Torque Control to Tightening Assurance System

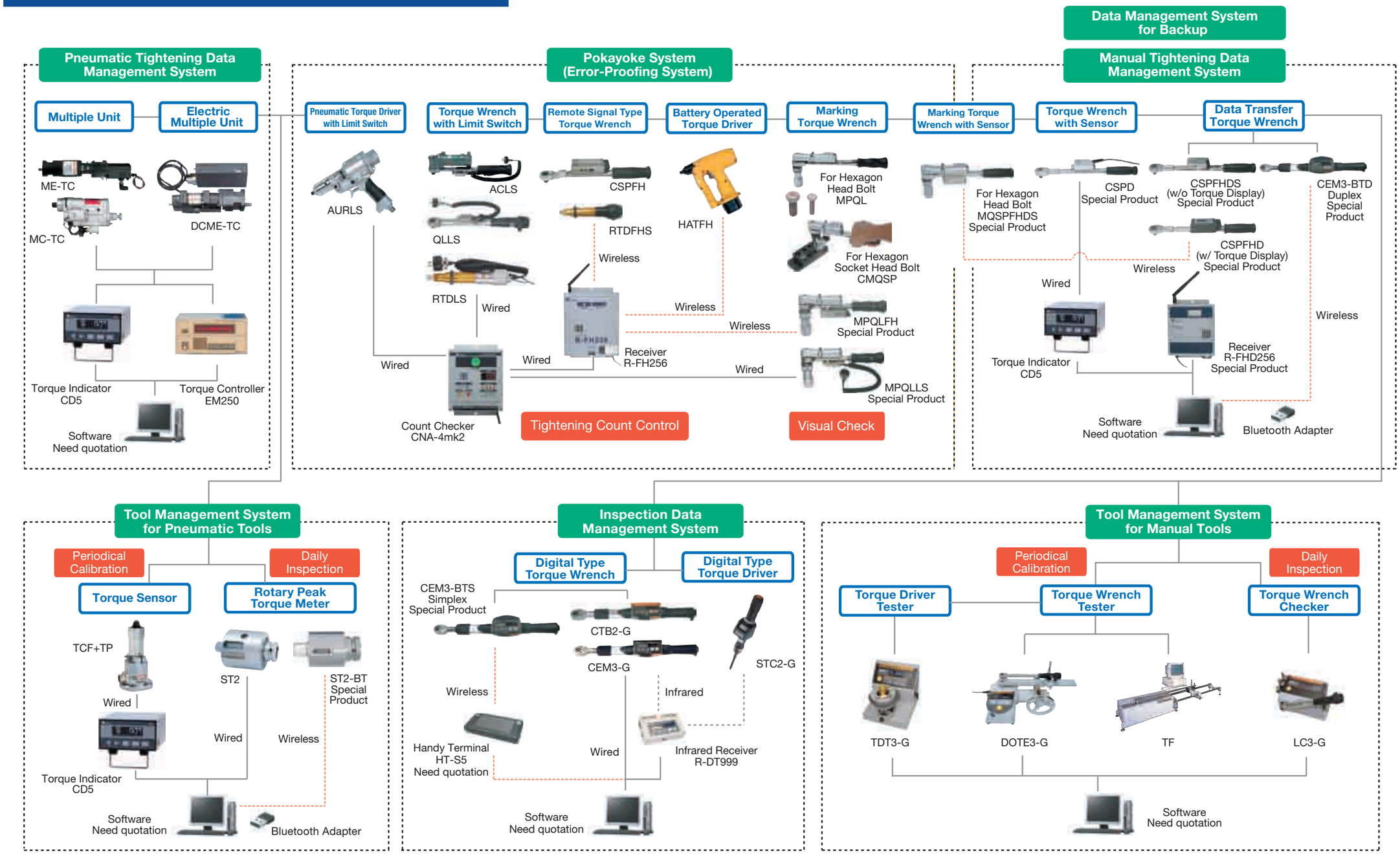
Tohnichi's Torque Assurance System advises the users how to tighten bolts properly and how to eliminate various mistakes which occur during bolt tightening operations.

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.

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

1. **MAN** (Tightening operator human error)
   - · Missed tightening
   - · Improper tightening tool usage
2. **METHOD** (Improper tightening specification)
   - · Wrong tightening value specification
   - · Wrong tightening procedure
   - · Wrong tightening tool selection
3. **MACHINE** (Improper tightening equipment)
   - · Inaccuracy
   - · Mechanical failure
4. **MATERIAL** (Improper screw joint material)
   - · Part out of tolerance
   - · Defective part material
   - · Insufficient screw part lubricant

TOHNICHI TIGHTENING ASSURANCE SYSTEM



RTD

Rotary Slip Adjustable Torque Screwdriver

Direction

RTD60CN

RTD120CN (with Resin Grip)

Assembly **Adjustable** **Rotary Slip** **Graduation** RoHS

- Ratcheting mechanism prevents over torque.
- Torque value 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.		
							ozf·in	ozf·in		
-	-	-	-	-	-	RTD24Z	6-24	0.2	100	50
-	-	-	-	-	-	RTD50Z	15-50	0.5		
-	-	-	-	-	-	RTD100Z	20-100	1	110	80
							lbf·in	lbf·in		
RTD15CN	2-15	0.1	1.5RTD	0.2-1.5	0.01	1.5RTD-A	0.2-1.5	0.01	100	50
RTD30CN	4-30	0.2	3RTD	0.4-3	0.02	3RTD-A	0.4-3	0.02		
RTD60CN	10-60	0.5	6RTD	1-6	0.05	6RTD-A	1-6	0.05	110	80
RTD120CN	20-120	1	12RTD	2-12	0.1	12RTD-A	2-12	0.1	130	160
RTD260CN	60-260	2	26RTD	6-26	0.2	26RTD-A	6-26	0.2	150	270
RTD500CN	100-500	5	50RTD	10-50	0.5	50RTD-A	10-50	0.5	155	320

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

Standard Accessories
1. Preset hook spanner (for RTD260CN and RTD500CN only)
2. Resin grip (for RTD120CN and RTD260CN only)

LTD

Adjustable Torque Screwdriver

Direction

LTD60CN

LTD120CN (with Resin Grip)

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

- Clicks at set torque value
- Torque value 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.		
							ozf·in	ozf·in		
-	-	-	-	-	-	LTD24Z	6-24	0.2	100	50
-	-	-	-	-	-	LTD50Z	15-50	0.5		
-	-	-	-	-	-	LTD100Z	20-100	1	110	80
							lbf·in	lbf·in		
LTD15CN	2-15	0.1	1.5LTD	0.2-1.5	0.01	1.5LTD-A	0.2-1.5	0.01	100	50
LTD30CN	4-30	0.2	3LTD	0.4-3	0.02	3LTD-A	0.4-3	0.02		
LTD60CN	10-60	0.5	6LTD	1-6	0.05	6LTD-A	1-6	0.05	110	80
							lbf·in	lbf·in		
LTD120CN	20-120	1	12LTD	2-12	0.1	12LTD-A	2-12	0.1	130	160
LTD260CN	60-260	2	26LTD	6-26	0.2	26LTD-A	6-26	0.2	150	270
LTD500CN	100-500		50LTD	10-50		50LTD-A	10-50	0.5	155	320
LTD1000CN	200-1000	5	100LTD	20-100	0.5	100LTD-A	20-90		185	580
LTD2000CN	300-2000		200LTD	30-200		200LTD-A	30-180	0.5	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 supplied from only Tohnichi.

Standard Accessories
1. Preset hook spanner (for LTD260CN-LTD2000CN only)
2. LTD2000CN comes with an auxiliary tightening tool.
3. Resin grip (for LTD120CN and LTD260CN only)

RTDLS/RNTDLS

Direction

Rotary Slip type Torque Screwdriver with Limit Switch

RTDLS

RNTDLS

Assembly **Rotary Slip** RoHS

- RTD/RNTD style with Limit Switch output
- Ideal for torque verification (Pokayoke) 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	12RTDLS-A	2-12	0.1	184	340
RTDLS260CN	60-260	2	26RTDLS	6-26	0.2	26RTDLS-A	6-26	0.2	201	450
RTDLS500CN	100-500	5	50RTDLS	10-50	0.5	50RTDLS-A	10-50	0.5	212	540
RNTDLS120CN	40-120		RNTDLS120CN	4-12		RNTDLS120CN	4-10		166	320
RNTDLS260CN	100-260	-	RNTDLS260CN	10-26	-	RNTDLS260CN	10-22	-	167	390
RNTDLS500CN	200-500		RNTDLS500CN	20-50		RNTDLS500CN	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.
   Please specify required torque when you order. (Ex. RNTDLS120CN x 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-4mk2

* Sold separately

RNTD

Rotary Slip Preset Torque Screwdriver

Direction

RNTD60CN

RNTD120CN (with Resin Grip)

Assembly | Preset | Rotary Slip | RoHS

- Preset version of RTD
- No external scale, Torque value set using tester

Accuracy ±3%

Model	Torque Range [cN·m] Min.-Max.	Torque Range [kgf·cm] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Weight [g]
RNTD15CN	5-15	0.5-1.5	0.5-1.3		
RNTD30CN	10-30	1-3	1-2.5	95	71
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. Please specify required set torque when you order. (Ex. RNTD120CN x 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 only)
2. Auxiliary tightening bar (for RNTD500CN only)

NTD

Preset Torque Screwdriver

Direction

NTD60CN

NTD120CN (with Resin Grip)

Assembly | Preset | RoHS

- Preset version of LTD
- No external scale, Torque value set using tester

Accuracy ±3%

Model	Torque Range [cN·m] Min.-Max.	Torque Range [kgf·cm] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Weight [g]
NTD15CN	5-15	0.5-15	0.5-1.3		
NTD30CN	10-30	1-3	1-2.5	95	70
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. Please specify required set torque when you order. (Ex. NTD120CN x 100cN·m)
2. Torque adjusting bar is sold separately. Refer to page 46.

Standard Accessories

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

RTDZ/RNTDZ

Direction

Rotary Slip Adjustable/Preset Insulated Torque Screwdriver

RTDZ260CN

RNTDZ500CN

Assembly | 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] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm] Min.-Max.	Grad.	Torque Range [lbf·in] Min.-Max.	Grad.	Overall Length [mm]	Weight [g]
RTDZ260CN	60-260	2	26RTDLS	6-26	0.2	-	-	150	220
RTDZ500CN	100-500	5	50RTDLS	10-50	0.5	-	-	183	380
RNTDZ260CN	100-260	-	-	10-26	-	10-22	-	123	240
RNTDZ500CN	200-500	-	-	20-50	-	20-40	-	138	340

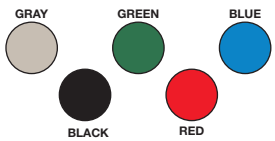
Note

1. RNTDZ models are required a torque driver tester for torque setting. Please specify required torque when you order. (Ex. RNTDZ260CN x 200cN·m)
2. Torque adjusting bar is sold separately. Refer to page 7.
3. Bits are sold separately. Refer to page 11.
4. Bits are not insulation coating.

SPECIAL TOOLS FOR TORQUE SCREWDRIVER

RESIN GRIP (for 120CN, 260CN)

ORANGE



For 120CN

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

For 260CN

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

Resin Grip Dimensions

	120CN RTD LTD	120CN RNTD NTD	260CN RTD LTD	260CN RNTD NTD
Hexagon width across flats Maximum value [mm]	33		41	
Hexagon width across corner Maximum value [mm]	35		44	
Length [mm]	67	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
40	LTD2000CN
1031	RTDLS500CN RNTDSL500CN

PRESET HOOK SPANNER (for RTD/LTD)

- Make easier for middle and large torque setting

Part #	Applicable Model
52	LTD/RTD260CN
53	LTD/RTD500CN
54	LTD1000CN
55	LTD2000CN

TORQUE ADJUSTING BAR (for RNTD/NTD)

- Used for torque setting of preset torque screwdriver

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

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 special size bits.

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	Weight	Standard Accessory Bit	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.	[mm]	[g]	⊕	⊖ Thickness x Width
	cN·m	cN·m		gf·cm	gf·cm		ozf·in	ozf·in				
AMRD1CN	0.3-1	0.01	100AMRD	30-100	1	-	-	-	93	26	# 0	0.15 x 1 0.2 x 1.5 0.3 x 2
AMRD2CN	0.5-2	0.025	200AMRD	50-200	2.5	AMRD3Z	1-3	0.05				
AMRD4CN	1-4	0.05	400AMRD	100-400	5	AMRD6Z	2-6	0.1				
AMRD8CN	2-8	0.1	800AMRD	200-800	10	AMRD12Z	3-12	0.2				
				kgf·cm	kgf·cm		lbf·in	lbf·in				
BMRD15CN2	2-15	0.1	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.

AMLD/BMLD

Direction

Adjustable Torque Screwdriver for Small Screws

AMLD4CN

BMLD30CN2

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

- Low torque version of LTD
- AMLD includes special size bits.

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	Weight	Standard Accessory Bit	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.	[mm]	[g]	⊕	⊖ Thickness x Width
	cN·m	cN·m		gf·cm	gf·cm		ozf·in	ozf·in				
AMLD1CN	0.3-1	0.01	100AMLD	30-100	1	-	-	-	83	26	# 0	0.15 x 1 0.2 x 1.5 0.3 x 2
AMLD2CN	0.5-2	0.025	200AMLD	50-200	2.5	AMLD3Z	1-3	0.05				
AMLD4CN	1-4	0.05	400AMLD	100-400	5	AMLD6Z	2-6	0.1				
AMLD8CN	2-8	0.1	800AMLD	200-800	10	AMLD12Z	3-12	0.2				
				kgf·cm	kgf·cm		lbf·in	lbf·in				
BMLD15CN2	2-15	0.1	1.5BMLD2	0.2-1.5	0.01	1.5BMLD2-A	0.2-1.5	0.005	116	50	-	-
BMLD30CN2	4-30	0.2	3BMLD2	0.4-3	0.02	3BMLD2-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.

- Six models of ATGE-G cover a torque capacity from 0.1 cN·m to 20 cN·m.
- Five models of BTGE-G cover a torque capacity from 2 to 20 cN·m.
- #808 (for ATGE-G) and #809 (for BTGE-G) Measurement Board (Optional Accessory shown at the right)

Torque checking figure for AMRD torque screwdriver for small screws with ATGE-G and optional ATGE-G Measurement board

Torque checking figure for BMRD torque screwdriver for small screws with BTGE-G

Torque Driver Tester for Calibration and Adjustments

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

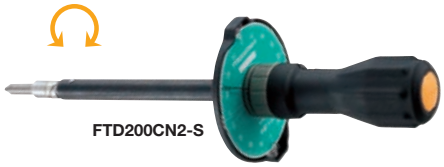
- TDT60CN3-G (2-60 c·Nm)
- TDT600CN3-G (20-600 c·Nm)

Calibration figure for torque screwdriver RTD left and FTD right with TDT3-G

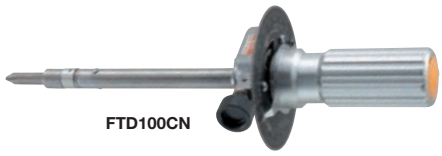
FTD

Dial Indicating Torque Screwdriver with Memory Pointer

Direction



FTD200CN2-S



FTD100CN

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	Weight	Standard Accessory Bit	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.	[mm]	[g]	⊕	⊖ Thickness x Width
	cN·m	cN·m		gf·cm	gf·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	272	370		
FTD100CN2-S	10-100	2	10FTD2-S	1-10	0.2	10FTD2-A-S	1-10	0.2				
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 x 8
FTD16N2-S	3-16	0.5	160FTD2-S	30-160	5	160FTD2-A-S	20-140	5		930		
	cN·m	cN·m										
FTD50CN	10-50	1	5FTD	1-5	0.1	5FTD-A	1-5	0.1	215	285	# 1	0.7 x 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 x 7
FTD400CN	80-400	10	40FTD	8-40	1.0	40FTD-A	5-40	1		410		

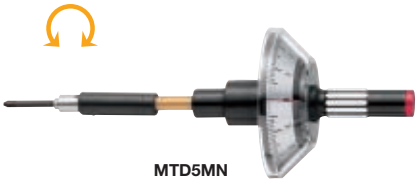
Note FTD8N2-S, FTD16N2-S: Square drive type (6.35mm).

Standard Accessories Auxiliary tightening bar (for FTD8N2-S and FTD16N2-S only)

MTD

Micro Dial Indicating Torque Screwdriver

Direction



MTD5MN

Inspection **Dial Indicating** **Direct Reading** RoHS

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

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	Weight	Standard Accessory Bit	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.	[mm]	[g]	⊕	⊖ Thickness x Width
MTD1MN	0.1-1	0.02	10MTD	1-10	0.2	-	-	-	110	22		
MTD2MN	0.3-2	0.05	20MTD	3-20	0.5	-	-	-	100	21	# 0	0.15 x 1
MTD5MN	0.5-5	0.1	50MTD	5-50	1	MTD07Z	0.1-0.7	0.02				0.2 x 15
MTD10MN	1-10	0.2	100MTD	10-100	2	MTD1.4Z	0.2-1.4	0.02	132	23		0.3 x 2

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

STC2-G

Digital Torque Screwdriver

Direction

NEW

STC200CN2-G

Assembly | Inspection | Digital | Bit | Direct Reading | Rechargeable

RoHS

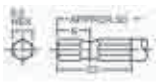
- Ideal for tightening and inspection operation
- 1000 data memory storage and USB output function
- LED (White, Blue, and Yellow/Red) indicator

Accuracy ±1%

Model	Torque Range [cN·m] Min.-Max.	1digit	[kgf·cm] Min.-Max.	1digit	[lbf·in] Min.-Max.	1digit	[ozf·in] Min.-Max.	1digit	Overall Length [mm]	Weight [g]
STC50CN2-G	10-50	0.05	1-5	0.005	1-4.4	0.005	15-17	0.05		
STC200CN2-G	40-200	0.2	4-20	0.02	4-17	0.02	-	-	230	325
STC400CN2-G	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

Standard Accessories PC connecting cable, AC adapter (BA-7), and Battery pack (BP-7)



White LED light
(Approaching 80% of target torque)

Blue LED light
(Achieved target torque)

Yellow & Red flashing LED light
(Over torque Warning!!)

Display can be turned upside down with keypad operation.

[EX.] Additional STC2-G Use: Confirm torque screwdriver setting value

STC2-G

■ STC2-G Optional Accessories

AC Adapter (P.47)

Model	Applicable Model
BA-7	STC2-G

Battery Pack (P.47)

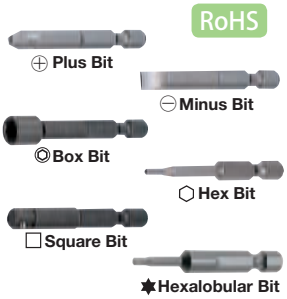
Model	Applicable Model
BP-7	STC2-G

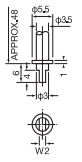
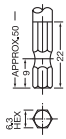
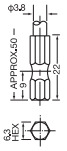
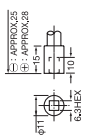
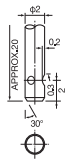
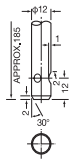
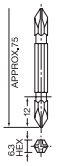
PC Connecting Cable (P.47)

Model	Applicable Model
384	STC2-G (P.10), ST2 (P.56), ATGE-G (P.58), BTGE-G (P.59)

Interchangeable Bit

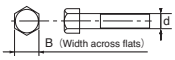
RoHS



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

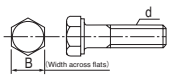
	Sign	Size		Screw	Tohnichi Original Bit	Common (Standard)		Tohnichi Original Bit	Tohnichi Original Bit	Tohnichi Original Bit	Common (Standard)
From Bolt	Plus	0	#0 (S-0)	See Table A	104		109		115		
		1	#1 (H-1)	See Table A		85	106	84	116		
		2	#2 (H-2)	See Table A		86	107	80			
		3	#3 (H-3)	See Table A		87		81		35	700
		4	#4 (H-4)	See Table A						36	
	Minus	10	0.15 x 1						111		
		11	0.2 x 1.5						112		
		12	0.3 x 2						113		
		13	0.4 x 2.4		105						
		14	0.6 x 3.8				108				
		15	0.7 x 7			88					
		16	0.9 x 7			89					
		17	1 x 10							37	
		18	1 x 12							38	
		19	1.2 x 17							39	
		20	1.6 x 10					82			
		21	1.2 x 8					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					
		W 10	10	M6		94					
	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)		90				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	M2.5 / M4			472				

Bolt Head Shape (Ref.)

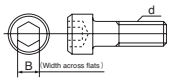


Nominal Size of Screw (d)	Hex head Bolt (B)	Small Hex Head Bolt (B)	High Strength Hex Bolt for Friction Grip Joint (B)	Hex Socket Head Cap Screw (B)	Hex Socket Set Screw (B)
M2.5	4.5	-	-	2	1.27
M3	5.5	-	-	2.5	1.5
(M3.5)	6	-	-	-	-
M4	7	-	-	3	2
(M4.5)	8	-	-	-	-
M5	8	-	-	4	2.5
M6	10	-	-	5	3
(M7)	11	-	-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

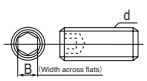
Hex Bolt



Cap Screw



Set Screw



How to order:

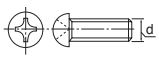
Indicate the model name and catalog No.

(EXAMPLE) MODEL NAME CATALOG No.

⊕BIT A - 0 104

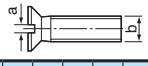
Root Shape Sign — Point Shape Sign

⊕Size of Bits



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

Flat Head Screw



Nominal Size (a)	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	

QL/QLE

Ratchet Head Type Adjustable Torque Wrench

Direction

Assembly | Adjustable | Ratchet Head | Graduation | RoHS

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

QL100N4

NEW

QL5N-MH

Refer to QL-MH section.

QLE750N

Accuracy ±3%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
Small types of QL torque wrench are moved to QL-MH section. (T-max 15N·m/150kgf·cm/100lbf·in or less)											
				kgf·cm	kgf·cm		lbf·in	lbf·in			
QL25N-1/4	5-25	0.25	225QL3-1/4	50-250	2.5	QL200I-2A	50-200	2.5	230	6.35	0.25
QL25N			225QL3			QL200I-3A					
QL50N	10-50	0.5	450QL3	100-500	5	QL400I-3A	100-400	5	260		0.45
-	-	-	-	-	-	QL750I-3A	150-750	10		9.53	
							lbf·ft	lbf·ft	335		0.69
QL100N4-3/8	20-100		900QL4-3/8	200-1000		QL75F-3A	15-75	1			
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
				kgf·m	kgf·m						
QL280N-1/2	40-280	2	2800QL3-1/2	4-28		QL200F-4A	30-200	2	695		2.0
QL280N			2800QL3		0.2	-	-				
QL420N	60-420		4200QL2	6-42		QL300F-6A	60-300		995	19.05	3.4
QLE550N	100-550		5500QLE	10-55		QL400F-6A	100-400		1195		5.1
QLE750N	100-750	5	7500QLE	10-75	0.5	QL600F-6A	100-600	5	1370		7.1
QLE1000N	100-1000		10000QLE	10-100		QL700F-8A	100-700		1540		9.5
QLE1400N	200-1400	10	14000QLE	20-140	1	QL1000F-8A	150-1000	10	1795	25.4	13.1
QLE2100N	500-2100	20	21000QLE	50-210	2	QL1500F-8A	600-1500	20	1950		20.0

Note

1. For the model having 25.4mm square drive, use a through-hole socket.
2. QL420N and QLE550N-QLE2100N have knurled handles.

QL/QL-MH Optional Accessories

842

846

Carrying Case (P.46)

Part #	Applicable Model Dimension [mm]
842	QL50N, QL50N-MH, QL100N4-MH (H60 x W400 x D70)
843	QL140N, QL140N-MH, QL200N4, QL200N4-MH (H60 x W520 x D80)
846	QL140N, QL140N-MH and below (H170 x W500 x D100)
847	QL280N, QL280N-MH and below (H170 x W740 x D100)

QLE Optional Accessories

Adjusting Tool for QLE (P.46)

Part #	Applicable Model
301	QLE550N-2100N

QLLS

RoHS

- QL style with Limit Switch output
- Ideal for torque verification (Pokayoke) assembly processes

QLLS100N4

S.I. Model	Metric Model
QLMS15N-MH	150QLMS-MH
QLLS25N	225QL3LS
QLLS50N	450QL3LS
QLLS100N4	900QL4LS
QLLS140N	1400QL3LS
QLLS200N4	1800QL4LS
QLLS280N	2800QL3LS
QLLS420N	4200QL2LS

POKA Patrol (Count Checker)

CNA-4mk2

* Sold separately

QL-MH

Ratchet Head Type Adjustable Torque Wrench with Metal Handle

Direction

Assembly | Adjustable | Ratchet Head | Graduation | RoHS

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

QL100N4-MH

NEW

QL5N-MH

Accuracy ±3%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
NEW			NEW	kgf·cm	kgf·cm	NEW	lbf·in	lbf·in			
QL2N-MH	0.4-2.0	0.02	20QL-MH	4-20	0.2	QL15I-2A-MH	3-15	0.1	160		0.16
NEW			NEW			NEW				6.35	
QL5N-MH	1-5	0.05	50QL-MH	10-50	0.5	QL30I-2A-MH	6-30	0.2			
NEW			NEW			NEW					
QL10N-MH	2-10	0.1	100QL-MH	20-100	1	QL50I-2A-MH	10-50	0.5	195		0.19
NEW			NEW			NEW					
QL15N-MH	3-15		150QL-MH	30-150		QL100I-2A-MH	20-100	1			
QL25N-MH	5-25	0.25	225QL-MH	50-250	2.5	-	-	-	230	9.53	0.25
QL50N-MH	10-50	0.5	450QL-MH	100-500	5	-	-	-	260		0.45
QL100N4-MH	20-100	1	900QL4-MH	200-1000	10	-	-	-	335		0.69
QL140N-MH	30-140		1400QL-MH	300-1400		-	-	-	400	12.7	0.88
QL200N4-MH	40-200		1800QL4-MH	400-2000	20	-	-	-	490		1.4
		2		kgf·m	kgf·m						
QL280N-MH	40-280		2800QL-MH	4-28	0.2	-	-	-	695	19.05	1.9

CL/CLE

Interchangeable Head Type Adjustable Torque Wrench

Direction

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

- Heads types can be easily exchanged.
- Torque value easily set with external scale and knob

CL100Nx15D

NEW

CL5Nx8D-MH

Refer to CL-MH section.

CLE850Nx32D

Accuracy ±3%

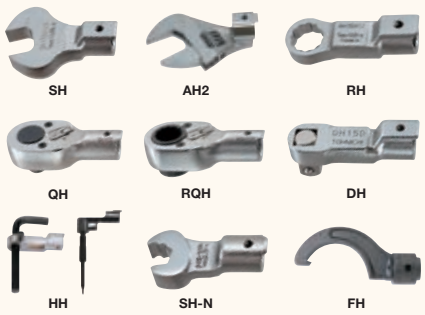
Tohnichi Head Size	S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Weight [kg]
Small types of CL torque wrench are moved to CL-MH section. (T-max·15N·m/150kgf·cm/100lbf·in or less)											
					kgf·cm	kgf·cm		lbf·in	lbf·in		
10D	CL25Nx10D	5-25	0.25	225CL3	50-250	2.5	225CL3-A	50-200	2.5	200	0.22
12D	CL50Nx12D	10-50	0.5	450CL3	100-500	5	450CL3-A	100-400	5	230	0.37
	CL50Nx15D			500CL3			500CL3-A	100-450		235	
15D								lbf·ft	lbf·ft		
	CL100Nx15D	20-100	1	900CL3	200-1000	10	900CL3-A	15-75	1	310	0.52
	CL140Nx15D	30-140		1400CL3	300-1400		1400CL3-A	30-100	1	370	0.67
19D	CL200Nx19D	40-200		1800CL3	400-2000	20	1800CL3-A	30-150		455	1.2
					kgf·m	kgf·m			2		
22D	CL280Nx22D	40-280	2	2800CL3	4-28	0.2	2800CL3-A	30-200		655	1.8
	CL420Nx22D	60-420		4200CL2	6-42		4200CL2-A	60-300		940	3.1
27D	CLE550Nx27D	100-550		5500CLE	10-55		5500CLE-A	100-400		1140	4.7
	CLE750Nx27D	100-750	5	7500CLE	10-75	0.5	7500CLE-A	100-550	5	1310	7.0
32D	CLE850Nx32D	200-850		8500CLE	20-85		8500CLE-A	150-600		1315	6.5
	CLE1200Nx32D	300-1200	10	12000CLE	30-120	1	12000CLE-A	200-860	10	1460	8.5

Note

1. Overall length does not include interchangeable head. Interchangeable heads are optional.
2. PH (Pipe wrench head) type interchangeable head is not available for this model.
3. CL420N and CLE550N-CLE1200N have knurled handles.

Standard Accessories Adjusting tool (for CLE550N-CLE1200N)

Interchangeable Head



CL/CL-MH Optional Accessories

842

846

Carrying Case (P.46)

Part #	Applicable Model Dimension [mm]
842	CL50Nx(12D/15D), CL50Nx(12D/15D)-MH, CL100Nx15D-MH (H60 x W400 x D70)
843	CL140Nx15D(-MH), CL200Nx19D(-MH) (H60 x W520 x D80)
846	CL200Nx19D, CL200Nx19D and below (H170 x W500 x D100)
847	CL280Nx22D, CL280Nx22D-MH and below (H170 x W740 x D100)

CLE Optional Accessories

Adjusting Tool for CLE (P.46)

Part #	Applicable Model
301	CLE550N-1200N

CLLS

RoHS

- CL style with Limit Switch output
- Ideal for torque verification (Pokayoke) assembly processes

S.I. Model	Metric Model
CLMS15N-MH	150CLMS-MH
CLLS25Nx10D	225CL3LS
CLLS50Nx12D	450CL3LS
CLLS50Nx15D	500CL3LS
CLLS100Nx15D	900CL3LS
CLLS140Nx15D	1400CL3LS
CLLS200Nx19D	1800CL3LS
CLLS280Nx22D	2800CL3LS
CLLS420Nx22D	4200CL2LS

POKA Patrol (Count Checker)

CNA-4mk2

* Sold separately

CL-MH

Interchangeable Head Type Adjustable Torque Wrench with Metal Handle

Direction

CL100Nx15D-MH

NEW

CL5Nx8D-MH

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

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

Accuracy ±3%

Tohnichi Head Size	S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Weight [kg]
	NEW			NEW	kgf·cm	kgf·cm	NEW	lbf·in	lbf·in		
	CL2Nx8D-MH	0.4-2	0.02	20CL-MH	4-20	0.2	CL15Ix80-MH	3-15	0.1	140	0.13
	NEW			NEW			NEW				
8D	CL5Nx8D-MH	1-5	0.05	50CL-MH	10-50	0.5	CL30Ix8D-MH	6-30	0.2		
	NEW			NEW			NEW				
	CL10Nx8D-MH	2-10	0.1	100CL-MH	20-100	1	CL50Ix8D-MH	10-50	0.5	175	0.16
	NEW			NEW			NEW				
	CL15Nx8D-MH	3-15		150CL-MH	30-150		CL100Ix8D-MH	20-100	1		
10D	CL25Nx10D-MH	5-25	0.25	225CL-MH	50-250	2.5	-	-	-	200	0.22
12D	CL50Nx12D-MH	10-50	0.5	450CL-MH	100-500	5	-	-	-	230	0.37
	CL50Nx15D-MH			500CL-MH			-	-	-	235	
15D	CL100Nx15D-MH	20-100	1	900CL-MH	200-1000	10	-	-	-	310	0.52
	CL140Nx15D-MH	30-140		1400CL-MH	300-1400		-	-	-	370	0.67
19D	CL200Nx19D-MH	40-200	2	1800CL-MH	400-2000	20	-	-	-	455	1.2
					kgf·m	kgf·m					
22D	CL280Nx22D-MH	40-280		2800CL-MH	4-28	0.2	-	-	-	655	1.6

Note

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

DQL/DQLE

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

DQLE750N

Accuracy ±3%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
				kgf·cm	kgf·cm						
DQL200N4	40-200		1800DQL4	400-2000	20	1800DQL4-A	30-150		490	12.7	1.4
		2		kgf·m	kgf·m			2			
DQL280N	40-280		2800DQL3	4-28	0.2	2800DQL3-A	30-200		695		2.0
DQLE550N	100-550		5500DQLE	10-55		5500DQLE-A	100-400		1195	19.0	5.1
DQLE750N	100-750	5	7500DQLE	15-75	0.5	7500DQLE-A	150-600	5	1370		7.1
DQLE1000N	200-1000		10000DQLE	20-100		10000DQLE-A	200-700		1540	25.4	9.5

Note
1. DQL200N4 and DQL280N have resin grips.
2. For the model having 25.4mm square drive, use a through-hole socket.
3. DQLE550N-DQLE1000N have knurled handles.

Standard Accessories: Adjusting tool (for DQLE550-DQLE1000N)

DQL200N4 Optional Accessories

Carrying Case (P.46)

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

DQLE Optional Accessories

Adjusting Tool for DQLE (P.46)

Part #	Applicable Model
301	DQLE550N-1000N

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] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·m] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
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 x W400 x D70)	0.25
843	MTQL140N (H60 x W520 x D80)	0.36
846	MTQL140N and below (H170 x W500 x D100)	1.0

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

Note
1. Ring head wrench (shown in the photo) is not included.
2. Max. clamp width for interchangeable tool is approx. 21mm.
3. Min. interchangeable hex wrench key size is 5mm.

Standard Accessories
1. Carrying case
2. Hex key wrench (for torque adjustment)

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] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
				kgf·cm	kgf·cm			
TiQL180N	40-180	2	1800TiQL	40-1800	20	494	12.7	0.9
TiLQL180N			1800TiLQL			594		1.0
				kgf·m	kgf·m			
TiEQL360N	80-360		3600TiEQL	8-36	0.2	987	19.0	2.4
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 marking 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
- Ideal for torque verification (Pokayoke) assembly processes

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

POKA Patrol (Count Checker)

CNA-4mk2

* Sold separately

PHL/PHLE

Direction

Pipe-Wrench Head Type Adjustable Torque Wrench

PHL140N

Assembly **Adjustable** **Graduation** **Pipe-Wrench Head** RoHS

- Ideal for use with pipes and plumbing applications

Accuracy ±5%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Grippable Pipe Dia. [mm]	Overall Length [mm]	Weight [kg]
				kgf·cm	kgf·cm		lbf·in	lbf·in			
PHL50N	10-50	0.5	500PHL3	100-500	5	450PHL3-A	100-400	5		335	1.46
							lbf·ft	lbf·ft			
PHL100N	20-100	1	900PHL3	200-900	10	900PHL3-A	15-75	1	13-38	410	1.61
PHL140N	30-140		1400PHL3	400-1400		1400PHL3-A	30-100			470	1.76
PHL200N	40-200		1800PHL3	400-1800	20	1800PHL3-A	30-150			550	2.3
		2		kgf·m	kgf·m			2			
PHL280N	40-280		2800PHL3	4-28	0.2	2800PHL3-A	30-200			765	2.92
PHL420N	60-420	3	4200PHL	6-42		4200PHL-A	60-300			1080	4.83
PHLE850N	200-850	5	8500PHLE	20-85	0.5	8500PHLE-A	150-600	5	26-52	1600	9.63
PHLE1300N	300-1300	10	13000PHLE	30-130	1	13000PHLE-A	300-900	10		1745	11.63

Note 1. E Models have extension bar handle.
2. PHLE850N and PHLE1300N have knurled handles.

Standard Accessories Adjusting tool (for PHLE850N, PHLE1300N)

PHLE Optional Accessories

Adjusting Tool for PHLE (P.46)

Part #	Applicable Model
301	PHLE850N, 1300N

QRSP

Direction

Open Ring Head Type Preset Torque Wrench

QRSP38Nx17

Assembly **Preset** **Open Ratchet Head** RoHS

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

Accuracy ±3%

Model	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm] Min.-Max.	Overall Length [mm]	Weight [kg]
QRSP38Nx17	10-45	100-450	300	0.4
QRSP38Nx19			305	
QRSP38Nx21				
QRSP38Nx24			310	0.43

Note A torque wrench tester is necessary for torque setting. Please specify required set torque when you order. (Ex. QRSP38Nx17 x 25N·m)

QRSP Optional Accessories

Thrustring Tool for QRSP (P.46)

Part #	Tool #	Applicable Model
312	A-3	QRSP38N

QRSPLS

RoHS

- QRSP style with Limit Switch output
- Ideal for torque verification (Pokayoke) assembly processes

Model	Weight [kg]
QRSPLS38Nx17	0.4
QRSPLS38Nx19	
QRSPLS38Nx21	
QRSPLS38Nx24	0.43

POKA Patrol (Count Checker)

CNA-4mk2

* Sold separately

PQL

Ratchet Head Type Pre-Lock Torque Wrench

Direction

Assembly **Pre-Lock** **Ratchet Head** **Graduation** RoHS

- External scale but requires hex key to set

PQL100N4

Accuracy ±3%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
NEW			NEW	kgf·cm	kgf·cm	NEW	lbf·in	lbf·in			
PQL10N	2-10	0.1	100PQL	20-100	1	PQL50I-2A	10-50	0.5	190	6.35	0.19
NEW			NEW			NEW					
PQL15N	3-15		150PQL	30-150		PQL100I-2A	20-100	1			
PQL25N	5-25	0.25	225PQL	50-250	2.5	225PQL4-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	30-130	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)

PQL Optional Accessories

842

846

Carrying Case (P.46)

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

PQLLS

RoHS

- PQL style with Limit Switch output
- Ideal for torque verification (Pokayoke) 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-4mk2

* 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] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
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 [N·m] Min.-Max.	Torque Range [kgf·cm] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
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

1. A torque wrench tester is necessary for torque adjustment. Please specify required set torque when you order. (Ex. QSPZ100N4 x 80N·m)
2. Adjusting tools for QSPZ are sold separately.
3. Sockets are sold separately. Refer to page 41.
4. Sockets are not insulation coating.

PCL

Interchangeable Head Type Pre-Lock Torque Wrench

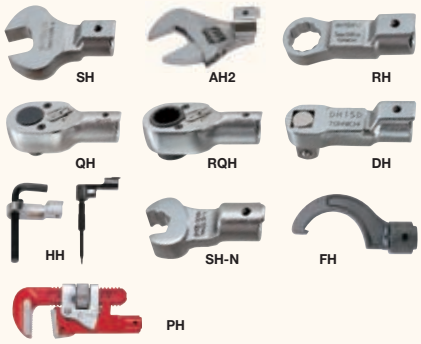
Direction

Assembly **Pre-Lock** **Interchangeable** **Graduation** RoHS

- Interchangeable head version of PQL
- External scale but requires hex key to set

PCL100Nx15D

Interchangeable Head



Accuracy ±3%

Tohnichi Head Size	S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Weight [kg]
								lbf·in	lbf·in		
8D	NEW PCL10Nx8D	2-10	0.1	NEW 100PCL	20-100	1	NEW PCL50lx8D	10-50	0.5	170	0.16
	NEW PCL15Nx8D	3-15		NEW 150PCL	30-150		NEW PCL100lx8D	20-100	1		
10D	PCL25Nx10D	5-25	0.25	225PCL	50-250	2.5	225PCL-A	50-200	2.5	195	0.22
12D	PCL50Nx12D	10-50	0.5	450PCL	100-500	5	450PCL-A	100-400	5	220	0.32
	PCL50Nx15D	10-50		500PCL	100-500		500PCL-A	100-450		225	
15D								lbf·ft	lbf·ft		
	PCL100Nx15D	20-100	1	900PCL	200-1000	10	900PCL4-A	15-75	1	295	0.48
	PCL140Nx15D	30-140		1400PCL	300-1400		1400PCL-A	30-100		355	0.63
19D	PCL200Nx19D	40-200	2	1800PCL	400-2000	20	1800PCL-A	30-150	2	435	1.3

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

Standard Accessories Hex key (for torque adjustment)

PCLLS

RoHS

- PCL style with Limit Switch output
- Ideal for torque verification (Pokayoke) assembly processes

S.I. Model	Metric Model
PCLLS25Nx10D	225PCLLS
PCLLS50Nx12D	450PCLLS
PCLLS50Nx15D	500PCLLS
PCLLS100Nx15D	900PCLLS
PCLLS140Nx15D	1400PCLLS
PCLLS200Nx19D	1800PCLLS

POKA Patrol (Count Checker)

CNA-4mk2

* Sold separately

SCL

European Style Interchangeable Head Type Adjustable Torque Wrench

Direction

SCL50N-9x12

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

- Specialized version of CL
- Accepts DIN interchangeable head connection

Accuracy ±3%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Head Size [mm]	Overall Length [mm]	Weight [kg]
SCL25N-9x12	5-25	0.25	9x12	215	0.22
SCL50N-9x12	10-50	0.5	9x12	239	0.37
SCL100N-9x12	20-100	1	9x12	313	0.52
SCL200N-14x18	40-200	2	14x18	464	1.2

Note
1. Overall length does not include interchangeable head.
2. Applicable to European style head only. Tohnichi's interchangeable heads are not available for this model.

SCSP

European Style Interchangeable Head Type Preset Torque Wrench

Direction

SCSP50N-9x12

Assembly **Interchangeable** **Preset** RoHS

- Accepts DIN interchangeable head connection
- Specialized version of CSP

Accuracy ±3%

Model	Torque Range [N·m] Min.-Max.	[kgf·cm] Min.-Max.	Head Size [mm]	Overall Length [mm]	Weight [kg]
SCSP25N-9x12	5-25	50-250	9x12	204	0.15
SCSP50N-9x12	10-50	100-500	9x12	230	0.3
SCSP100N-9x12	20-100	200-1000	9x12	302	0.45
SCSP200N-14x18	40-200	400-2000	14x18	434	1

Note
1. Overall length does not include interchangeable head.
2. Applicable to European style head only. Tohnichi's interchangeable heads are not available for this model.

QSP

Ratchet Head Type Preset Torque Wrench

Direction

Assembly | Preset | Ratchet Head | RoHS

- No external scale, Torque value set using key & tester
- Ideal for mass production application

QSP100N4

Accuracy ±3%

Model	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm/kgf·m] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
		kgf·cm				
QSP1.5N4	0.3-1.5	3-15	3-13	165	6.35	0.16
QSP3N4	0.6-3	6-30	6-25			
QSP6N4	1-6	10-60	10-50			0.19
QSP12N4	2-12	20-120	20-100	175		0.25
QSP25N3-1/4	5-25	50-250	50-200	215		0.25
QSP25N3						
QSP50N3	10-50	100-500	100-400	240	9.53	0.4
QSP100N4-3/8	20-100	200-1000	200-850	315		0.65
QSP100N4						
QSP140N3	30-140	300-1400	300-1000	380		0.7
QSP200N4	40-200	400-2000	350-1600	465	12.7	1.2
		kgf·m				
QSP280N3-1/2	40-280	4-28	350-2500	665		1.8
QSP280N3					19.05	
QSP420N	60-420	6-42	600-3600	970		3.1

Note

1. Adjusting tools for QSP and QSP3/QSP4 are different (see Optional Accessories). Adjusting tools are sold separately.
2. A torque wrench tester is necessary for torque setting. Please specify required set torque when you order. (Ex. QSP100N4 x 80N·m)
3. QSP200N4-QSP420N have knurled handles.

QSP Optional Accessories

Thrustring 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

Adjusting Tool (P.46)

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

314

QSPLS

RoHS

- QSP style with Limit Switch output
- Ideal for torque verification (Pokayoke) assembly processes

Refer to page 29.

QSP-MH

Ratchet Head Type Preset Torque Wrench with Metal Handle

Direction

Assembly | Preset | Ratchet Head | RoHS

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

QSP100N4-MH

Accuracy ±3%

Model	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
QSP25N3-MH	5-25	50-250	50-200	215	9.5	0.25
QSP50N3-MH	10-50	100-500	100-400	240		0.4
QSP100N4-MH	20-100	200-1000	200-850	315	12.7	0.65
QSP140N3-MH	30-140	300-1400	300-1000	380		0.7

Note

1. A torque wrench tester is necessary for torque adjustment. Please specify required set torque when you order. (Ex. QSP100N4-MH x 80N·m)
2. Adjusting tools for QSP-MH are sold separately.
3. Sockets are sold separately. Refer to page 41.

BQSP5

Bi-Directional Type Preset Torque Wrench

Direction

Assembly | Preset | Ratchet Head | Bi-Directional | RoHS

- Click for both CW & CCW applications
- Specialized version of QSP

BQSP100N5

Accuracy ±3%

Model	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm/kgf·m] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
		kgf·cm				
BQSP25N5	5-25	50-250	50-200	214	9.5	0.20
BQSP50N5	10-50	100-500	100-400	242		0.40
BQSP100N5	20-100	200-1000	200-850	314	12.7	0.63
BQSP140N5	30-140	300-1400	300-1000	379		0.73
BQSP200N5	40-200	400-2000	350-1600	462		1.3
		kgf·m				
BQSP280N5	40-280	4-28	350-2500	665	19.0	2.4
BQSP420N5	60-420	6-42	600-3600	971		3.7

Note

1. Initial torque setting is required at our factory. Please specify required set toque when you order (Ex. BQSP50N5 x 30N·m)
2. BQSP25N5-BQSP140N5 have resin grips.
3. BQSP200N5-BQSP420N5 have knurled handles.
4. Adjusting tools for BQSP5 are sold separately.
5. Sockets are sold separately. Refer to page 41.

BQSP5 Optional Accessories

Adjusting Tool (P.46)

Part #	Applicable Model
931	BQSP25N5
930	BQSP50N5-BQSP280N5
314	BQSP420N5

314

CSP

Interchangeable Head Type Preset Torque Wrench

Direction

Assembly **Preset** **Interchangeable** RoHS

- Interchangeable head version of QSP
- No external scale, Torque value set using key & tester

CSP100N3×15D

Accuracy ±3%

Tohnichi Head Size	Model	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm/kgf·m] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Weight [kg]
			kgf·cm			
8D	CSP1.5N4x8D	0.3-1.5	3-15	3-13	130	0.2
	CSP3N4x8D	0.6-3	6-30	6-25		
	CSP6N4x8D	1-6	10-60	10-50	165	
	CSP12N4x8D	2-12	20-120	20-100		
10D	CSP25N3x10D	5-25	50-250	50-200	195	
12D	CSP50N3x12D	10-50	100-500	100-400	215	0.3
	CSP50N3x15D	10-50	100-500	100-400	220	
15D	CSP100N3x15D	20-100	200-1000	200-850	290	0.45
	CSP140N3x15D	30-140	300-1400	300-1000	350	0.55
19D	CSP200N3x19D	40-200	400-2000	350-1600	430	1.0
			kgf·m			
22D	CSP280N3x22D	40-280	4-28	350-2500	625	1.4
	CSP420Nx22D	60-420	6-42	600-3600	920	2.7

Note

1. Overall length does not include interchangeable head.
2. Adjusting tools for CSP and CSP3/CSP4 are different. (see Optional Accessories)
3. Interchangeable heads are optional.
4. A torque wrench tester is necessary for torque setting. Please specify required set torque when you order. (Ex. CSP100N3x15D x 80N·m)
5. CSP200N3x19D-CSP420Nx22D have knurled handles.

CSP Optional Accessories

Thrustring Tool (P.46)

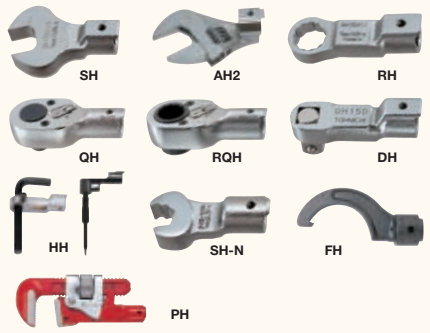
Part #	Tool #	Applicable Model
310	A-1	1.5N-6N
311	A-2	12N, 25N
312	A-3	50N-140N
313	A-4	200N-280N
314	A-5	420N

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



CSPLS

RoHS

- CSP style with Limit Switch output
- Ideal for torque verification (Pokayoke) assembly processes

Model
CSPMS12N4x8D
CSPLS25N3x10D
CSPLS50N3x12D
CSPLS50N3x15D
CSPLS100N3x15D
CSPLS140N3x15D
CSPLS200N3x19D
CSPLS280N3x22D
CSPLS420Nx22D

POKA Patrol (Count Checker)

CNA-4mk2

* Sold separately

CSP-MH

Interchangeable Head Type Preset Torque Wrench with Metal Handle

Direction

Assembly **Interchangeable** **Preset** RoHS

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

CSP100N3x15D-MH

Accuracy ±3%

Model	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Weight [kg]
CSP25N3x10D-MH	5-25	50-250	50-200	195	0.2
CSP50N3x12D-MH	10-50	100-500	100-400	215	0.3
CSP50N3x15D-MH				220	
CSP100N3x15D-MH	20-100	200-1000	200-850	290	0.45
CSP140N3x15D-MH	30-140	300-1400	300-1000	350	0.55

Note

1. A torque wrench tester is necessary for torque adjustment. Please 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.

BCSP5

Bi-Directional Interchangeable Head Type Preset Torque Wrench

Direction

Assembly **Preset** **Interchangeable** **Bi-Directional** RoHS

- Click for both CW & CCW applications
- Specialized version of CSP

BCSP100N5x15D

Accuracy ±3%

Tohnichi Head Size	Model	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm/kgf·m] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Weight [kg]
			kgf·cm			
10D	BCSP25N5x10D	5-25	50-250	50-200	195	0.20
12D	BCSP50N5x12D	10-50	100-500	100-400	215	0.23
	BCSP50N5x15D				220	
15D	BCSP100N5x15D	20-100	200-1000	200-850	290	0.57
	BCSP140N5x15D	30-140	300-1400	300-1000	350	0.62
19D	BCSP200N5x19D	40-200	400-2000	350-1600	430	1.2
			kgf·m			
22D	BCSP280N5x22D	40-280	4-28	350-2500	625	2.0
	BCSP420N5x22D	60-420	6-42	600-3600	920	3.7

Note

1. Initial torque setting is required at our factory. Please specify required set toque when you order (Ex. BCSP100N5x15D x 80N·m)
2. Overall length does not included interchangeable head. Interchangeable heads are optional.
3. BCSP25N5x10D-BQSP140N5x15D have resin grips.
4. BCSP200N5x19D-BCSP420N5x22D have knurled handles.
5. Adjusting tools for BCSP5 are sold separately.
6. Sockets are sold separately. Refer to page 41.

BCSP5 Optional Accessories

Adjusting Tool (P.46)

Part #	Applicable Model
931	BCSP25N5
930	BCSP50N5-BCSP280N5
314	BCSP420N5

SP/SP-MH/RSP

Assembly | Preset | Open End Spanner ·····SP, SP-MH | Ring Head ·····RSP

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

RoHS

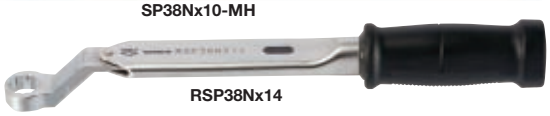
Direction

Open End/Ring Head Type Preset Torque Wrench

SP38Nx10

RoHS

SP38Nx10-MH



RSP38Nx14

Accuracy ±3%

Model (Body Size x Width)		Torque Range [N·m]	Torque Range [kgf·cm]	Head Dimension O.W. x Thickness	Overall Length	Weight
SP	SP-MH	Min.-Max.	Min.-Max.	[mm]	[mm]	[kg]
SP2Nx5.5	-	0.4-2	4-20	23x5	180	0.15
SP2Nx7	-					
SP2Nx8	-					
SP2Nx10	-					
SP2Nx12	-			25x5.5	185	
SP2Nx13	-			28x6	190	
SP2Nx17	-			29x8	195	
SP2Nx19	-					
SP8Nx7	-	1.5-8	15-80	23x5	180	0.2
SP8Nx8	-					
SP8Nx9	-					
SP8Nx10	-					
SP8Nx12	-			25x5.5	185	
SP8Nx13	-			29x8	195	
SP8Nx19	-			34x8		
SP8Nx24	-			40x8	200	
SP8Nx27	-					
SP19Nx10	SP19Nx10-MH	3.5-19	35-190	27x6.5	210 (206)	0.2
SP19Nx11	SP19Nx11-MH					
SP19Nx12	SP19Nx12-MH			30x6.5		
SP19Nx13	SP19Nx13-MH					
SP19Nx14	SP19Nx14-MH			31x8	220 (216)	
SP19Nx17	SP19Nx17-MH			33x8		
SP19Nx19	SP19Nx19-MH			35x8		
SP19Nx21	SP19Nx21-MH			24x12	215 (211)	
SP19N-1x10	SP19N-1x10-MH			24x20		
SP19N-2x10	SP19N-2x10-MH			24x15		
SP19N-3x10	SP19N-3x10-MH					
SP38Nx8	SP38Nx8-MH	8-38	80-380	31x8	250 (245)	0.35
SP38Nx9	SP38Nx9-MH				255 (250)	
SP38Nx10	SP38Nx10-MH			35x8	250 (245)	
SP38Nx11	SP38Nx11-MH					
SP38Nx12	SP38Nx12-MH				255 (250)	
SP38Nx13	SP38Nx13-MH			38x8		
SP38Nx14	SP38Nx14-MH					
SP38Nx16	SP38Nx16-MH			41x8	270 (265)	
SP38Nx17	SP38Nx17-MH			43x8		
SP38Nx19	SP38Nx19-MH			45x8		
SP38Nx22	SP38Nx22-MH			24x12	250 (245)	
SP38Nx24	SP38Nx24-MH			25x20		
SP38Nx27	SP38Nx27-MH			24x15		
SP38N-1x10	SP38N-1x10-MH					
SP38N-2x10	SP38N-2x10-MH					
SP38N-3x10	SP38N-3x10-MH					
SP67Nx14	-	13-67	130-670	45x10	320	0.5
SP67Nx16	-					
SP67Nx17	-					
SP67Nx18	-					
SP67Nx19	-					
SP67Nx21	-				325	
SP67Nx22	-			46x11		
SP67Nx24	-			50x11	330	
SP67Nx27	-					
SP67Nx29	-			52x11		
SP67Nx30	-			54x11	335	
SP67Nx32	-			57x11		
SP67Nx33.3	-					
SP120Nx14	-	24-120	240-1200	45x11	390	0.75
SP120Nx17	-					
SP120Nx18	-			51x11	395	
SP120Nx19	-					
SP120Nx21	-					
SP120Nx22	-					
SP120Nx23	-					
SP120Nx24	-					
SP120Nx27	-			53x15	400	
SP120Nx30	-			56x15		
SP160Nx19	-	30-160	300-1600	52x13	440	0.95
SP160Nx21	-					
SP160Nx22	-					
SP160Nx24	-			56x13		
SP160Nx26	-				445	
SP160Nx27	-					
SP160Nx41	-			70x15	455	
SP220Nx19	-	45-220	450-2200	60x15	580	1.4
SP220Nx22	-					

Accuracy ±3%

Model (Body Size x Width)		Torque Range [N·m]	Torque Range [kgf·cm]	Head Dimension O.W. x Thickness	Overall Length	Weight
SP	SP-MH	Min.-Max.	Min.-Max.	[mm]	[mm]	[kg]
SP220Nx24	-	45-220	450-2200	65x15	580	1.4
SP220Nx27	-					
SP220Nx29	-					
SP220Nx30	-			63x15	585	
SP220Nx32	-			65x15		
SP220Nx34	-			67x15	590	
SP220Nx36	-			72x15		
SP310Nx22	-	65-310	650-3100	60x16	640	1.6
SP310Nx24	-			62x16		
SP310Nx27	-			66x16	645	
SP310Nx30	-			72x16		
SP310Nx32	-					
SP310Nx41	-			81x15	665	
SP310Nx46	-			86x15		
SP420Nx27	-	90-420	900-4200	78x18	840	3.3
SP420Nx30	-					
SP420Nx32	-					
SP420Nx34	-					
SP420Nx35	-					
SP420Nx36	-					
SP560Nx30	-	130-560	1300-5600	81x19	995	4
SP560Nx32	-			83x19		
SP560Nx36	-			87x19	1000	
SP560Nx46	-			97x19	1005	4.5
SP560Nx55	-			104x19	1010	

Accuracy ±3%

Model	Torque Range [N·m]	Torque Range [kgf·cm]	Head Dimension O.W. x Thickness	Overall Length	Weight
(Body Size x Width)	Min.-Max.	Min.-Max.	[mm]	[mm]	[kg]
RSP8Nx8	2-7.2	20-72	15x6	200	0.15
RSP8Nx10	2-9.0	20-90	17.5x7	205	
RSP19Nx8	4-14.1	40-141	15x6	230	0.2
RSP19Nx10	4-12.2	40-122	17.5x7		
RSP19Nx13	4-21	40-210	22x7	235	
RSP38Nx10	9-24.2	90-242	17.5x7	275	0.35
RSP38Nx12	9-29.5	90-295	20.5x8		
RSP38Nx13			21.5x8		
RSP38Nx14	9-42	90-420	23.5x9		
RSP38Nx16			26x9	280	
RSP38Nx17			27.5x9		
RSP67Nx14	14-59	140-590	25x10	350	0.45
RSP67Nx16			27x10		
RSP67Nx17	14-73	140-730	29x12		
RSP67Nx18			29.5x12		
RSP67Nx19			30x12		
RSP120Nx17	25-100	250-1000	29.5x12	420	0.8
RSP120Nx18			30.5x12		
RSP120Nx19	25-127	250-1270	32x13		
RSP120Nx21			35x13		
RSP120Nx22			35.5x13		
RSP160Nx19	32-170	320-1700	33x13	470	0.9
RSP160Nx21			35x13		
RSP160Nx22			35x15.5		
RSP160Nx24			39x15.5	475	
RSP220Nx22	48-230	480-2300	38.5x13	615	1.35
RSP220Nx24			40x13		
RSP220Nx27			45x13	620	
RSP310Nx24	68-255	680-2550	42x15	680	1.6
RSP310Nx27	68-320	680-3200	45x15		
RSP310Nx30			50x15	685	

Note

1. The value shown in ( ) in the "Overall Length" shows the length of SP-MH models.
2. Due to a variety of SP/RSP models, please specify required inner width, model name and set torque when you order. (Ex. RSP38Nx10 x 16N·m)

SP(-MH)/RSP Optional Accessories

Thrustring Tool (P.46)

Part #	Tool #	Applicable Model
311	A-2	2N-19N
312	A-3	38N, 67N
313	A-4	120N-310N
315	A-6	420N, 560N

SP-H

Torque Wrench for Piping Work

Direction

SP38Nx19H

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 x Width)	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm] Min.-Max.	Minimum Piping Pitch [mm]	Head Dimension (O.W. x Thickness) [mm]	Overall Length [mm]	Weight [kg]
SP38Nx14H	8-25	80-250	26	26.3x8	248	0.35
SP38Nx19H	8-39	80-390	35	33.1x8	249	
SP67Nx27H	13-67	130-670	46	43.6x11	321	0.5
SP120Nx32H	24-120	240-1200	54	51.6x15	392	0.75

Note
1. Confirm the minimum piping pitch before you order.
2. A torque wrench tester is necessary for torque setting. Please specify required set torque when you order. (Ex. SP38Nx14H x 25N·m)

Thrustring Tool (P.46)

Part #	Tool #	Applicable Model
312	A-3	38N, 67N
313	A-4	120N

SP-N/SP-N-MH

Direction

Notched Head Type Preset Torque Wrench

SP19N-1x10N

SP19N-1x10N-MH

Assembly **Preset** **Notched Head** RoHS

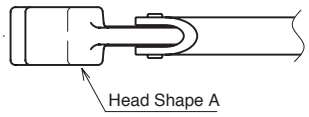
- Notch creates speed in tightening process.
- Ideal for brake lines

Accuracy ±3%

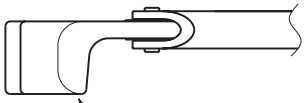
Model (Body Size x Width) SP-N	Model (Body Size x Width) SP-N-MH	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm] Min.-Max.	Head Dimension O.W. x Thickness [mm]	Head Dimension Head Shape	Overall Length [mm]	Weight [kg]
SP19N-1x10N	SP19N-1x10N-MH			24x12			
SP19N-3x10N	SP19N-3x10N-MH			24x15	A		
SP19N-4x10N	SP19N-4x10N-MH	3.5-19	35-190	24x10		215 (211)	0.2
SP19N-5x10N	SP19N-5x10N-MH			24x15	B		
SP19N-9x10N	SP19N-9x10N-MH			24.5x10	A		
SP38Nx14N	SP38Nx14N-MH	8-38	80-380	35x8		253.5 (248.5)	0.35

Note A torque wrench tester is necessary for torque setting. Please specify required set torque when you order. (Ex. SP19N-1x10N x 15N·m)

SPLS-N/SPLS-N-MH



Head Shape A



Head Shape B

- SP-N style with Limit Switch output
- Ideal for torque verification (Pokayoke) assembly processes

Accuracy ±3%

Model (Body Size x Width) SP-N	Model (Body Size x Width) SP-N-MH	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm] Min.-Max.	Head Dimension O.W. x Thickness [mm]	Head Dimension Head Shape	Overall Length [mm]	Weight [kg]
SPLS19N-1x10N	SPLS19N-1x10N-MH			24x12			
SPLS19N-3x10N	SPLS19N-3x10N-MH			24x15	A		
SPLS19N-4x10N	SPLS19N-4x10N-MH	3.5-19	35-190	24x10		215 (211)	0.2
SPLS19N-5x10N	SPLS19N-5x10N-MH			24x15	B		
SPLS19N-8x10N	SPLS19N-8x10N-MH			24x12			
SPLS19N-9x10N	SPLS19N-9x10N-MH			24.5x10	A		

Note SPLS19N-8x10N has a long cord.

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 x Width)	Torque Range [cN·m] Min.-Max.	Head Dimension [mm]	Overall Length [mm]	Weight [kg]
NSP100CNx8	50-100	16x4	128	0.33

Note A torque wrench tester is necessary for torque setting. Please specify required set torque when you order.

NSP Optional Accessories

Thrustring Tool (P.46)

Part #	Applicable Model
310	NSP100CNx8

QSPCA Slip Type Torque Wrench

Direction

QSPCA6N

QSPCA30N

QSPCA70N

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 Min.-Max. [N·m]	Torque Range Min.-Max. [kgf·cm]	Torque Range Min.-Max. [lbf·in]	Overall Length [mm]	Square Drive [mm]	Weight [kg]	Accuracy [%]
QSPCA6N	2-6	20-60	20-50	197	6.35	0.33	±6%
QSPCA12N	4-12	40-120	40-100				±4%
QSPCAMS6N	2-6	20-60	20-50			0.45	±6%
QSPCAMS12N	4-12	40-120	40-100				
QSPCA30N	10-30	100-300	90-270	267	9.53	0.64	
QSPCA70N	20-70	200-700	180-620	346		1.24	±4%
QSPCALS30N	10-30	100-300	90-270	267		0.81	
QSPCALS70N	20-70	200-700	180-620	346		1.41	

Note

1. A torque wrench tester is necessary for torque adjustment. Please 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. QSPCAMS/QSPCALS can not be mounted a T-FH256MC(-LS) wireless transmitter.
7. QSPCA70N and QSPCALS70N have knurled handles.

QSPCA Optional Accessories

931
930

Adjusting Tool (P.46)

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

QSPCAMS/ QSPCALS

- QSPCA style with Limit Switch output
- Ideal for torque verification (Pokayoke) assembly processes

RoHS

QSPCAMS6N

QSPCAMS12N

QSPCALS30N

QSPCALS70N

POKA Patrol (Count Checker)

CNA-4mk2

* Sold separately

QSPCAFH

- QSPCA style with wireless error-proofing (Pokayoke) torque system

RoHS

Model
QSPCAFH30N
QSPFAFH70N

QSPCAFH30N

QSPCAFH70N

YCL2 Two Step Motion Torque Wrench

Direction

NEW

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
- Heads types can be easily exchanged.

Accuracy ±3%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Max Hand Force [N]	Effective Legthe [mm]	Overall Length [mm]	Weight [kg]
							lbf·in	lbf·in				
YCL10N2x10D	5-10	0.10	100YCL2	50-100	1	YCL100I	50-100	1	46.5	215	245	0.35
YCL20N2x10D	10-20	0.20	200YCL2	100-200	2	YCL200I	100-200	2	93			
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			
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			
							lbf·ft	lbf·ft				
YCL140N2x15D	70-140	0.50	1400YCL2	700-1400	5	YCL100F	45-100	0.5	368.4	380	414	1.05
YCL180N2x19D	90-180		1800YCL2	900-1800		-	-	-	310	579	607	1.75
-	-	-	-	-	-	YCL150F	80-150	0.5				

Note Not for inspection purposes

CPT-G

Direction

PRO TORK (Digital Torque Wrench for Tightening)

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

PRO TORK™

CPT50x12D-G

CPT100x15D-G

"Torque Wrench Only" Models

Accuracy ±3%

Model	Torque Range										Overall Length	Weight
	[N·m]		[kgf·cm]		[kgf·m]		[lbf·in]		[bf·ft]			
	Min.-Max.	Grad.	Min.-Max.	Grad.	Min.-Max.	Grad.	Min.-Max.	Grad.	Min.-Max.	Grad.	[mm]	[kg]
CPT20x10D-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
CPT50x12D-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
CPT100x15D-G	20-100	0.1	200-1000	1	2-10	0.01	200-880	1	15-73	0.1	384.5	0.85
CPT200x19D-G	40-200	0.2	400-2000	2	4-20	0.02	360-1700	0.2	30-150	0.2	475.5	1.37
CPT280x22D-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, or Product Box.
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. Approx. 230 different types of interchangeable heads are available and sold separately. Refer to Tohnichi's Torque Handbook or Product Catalog for additional information.

"Set" Models (including Accessories)

Model	Standard Accessory				
	Ratchet Head		Battery	Storage Case	Product Box
	Model	Sq. Drive [mm]			
CPT20x10D-G-SET	TQH10D	9.5			
CPT50x12D-G-SET	TQH12D		AA Alkaline	Small	Small
CPT100x15D-G-SET	TQH15D	12.7	Battery		
CPT200x19D-G-SET	TQH19D		(2pcs)	Large	Large
CPT280x22D-G-SET	TQH22D	19.0			

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 x 2pcs
Continuous Use	Approx. 40 hours
Temperature in Use	0-40 Celsius below 85%RH (no condensation)

How to Order:

[Ex. 1] CPT100x15D-G-SET
* "Set" model version (with standard accessories)

[EX. 2] CPT200x19D-G
* "Torque Wrench Only" version (without standard accessories)

CPT-G Optional Accessories

844

Storage Case (For "Set" model only)

Part #	Applicable Model Dimension [mm]	Weight [kg]
844	CPT20x10D-G to CPT100x15D-G (H170 x W500 x D100)	1.0
845	CPT200x19D-G, CPT280x22D-G (H170 x W740 x 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	Media
EXCEL RECEIVER	CD-ROM

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 Digital Torque and Angle Wrench

Direction

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%

S.I. Model	Torque Range [N-m]		Metric Model	Torque Range [kgf-cm/kgf-m]		American Model	Torque Range [lbf-in/lbf-ft]		Angle Measuring Range		Angle Accuracy	Overall Length [mm]	Weight [kg]
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.	Min.-Max.	Grad.			
				kgf·cm	kgf·cm		lbf·in	lbf·in					
CTA50N2x12D	(2.5) 10-50	0.05	CTA50N2x12D-M	(25) 100-500	0.5	CTA50N2x12D-I	(25) 100-450	0.5				282	0.58
CTA100N2x15D	(5) 20-100	0.1	CTA100N2x15D-M	(50) 200-1000	1	CTA100N2x15D-I	(50) 200-900	1			±2°+1digit (Angular velocity is 30°/s - 180°/s when the bolt turned to 90°)	384	0.63
							lbf·ft	lbf·ft					
-	-	-	-	-	-	CTA100N2x15D-F	(3.8) 15-75	0.1	0-999°	1°		384	0.63
CTA200N2x19D	(10) 40-200	0.2	CTA200N2x19D-M	(100) 400-2000	2	CTA200N2x19D-F	(7.6) 30-150	0.2				475	0.78
CTA360N2x22D	(18) 72-360	0.4	CTA360N2x22D-M	(180) 720-3600	4	CTA360N2x22D-F	(13) 52-260	0.4				713	1.13
				kgf·m	kgf·m								
CTA500N2x22D	(25) 100-500	0.5	CTA500N2x22D-M	(2.5) 10-50	0.05	CTA500N2x22D-F	(18) 72-360	0.5				949	4.00
CTA850N2x32D	(43) 170-850	1	CTA850N2x32D-M	(4.3) 17-85	0.1	CTA850N2x32D-F	(31) 124-620	1				1387	5.14

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. CTA500N2x22D and CTA850N2x32D have knurled handles.

Standard Accessories Battery pack (BP-5), QH interchangeable head, Quick battery charger (BP-3-100/BP-3-200), Application PC software

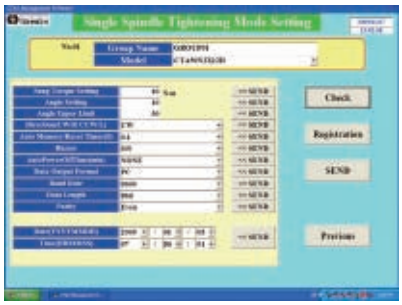
CTA2, Single Spindle Mode and Production Mode

CTA2 Features 2 Modes: Single Spindle and Production Modes

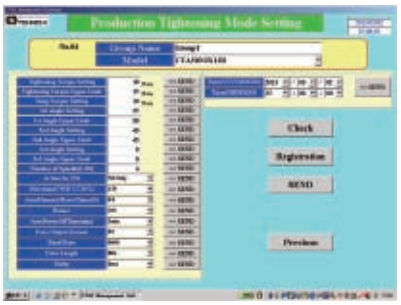
Single Spindle Tightening Mode: For angle method tightening of a single bolt tightening with snug torque, tightening angle and tightening angle upper limit settings.

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 Mode Setting Display



Production Mode Setting

Main Menu

Production Mode Data Display

CTA2 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
Temperature in Use	0-40 Celsius no condensation

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

CTA2 Optional Accessories

Battery Pack (P.47)

Model
BP-5

Quick Battery Charger (P.47)

Model	Voltage
BC-3-G	100-240V

Printer (P.67)

Model
EPP16M2

Connecting Cable (P.47)

Part #	Applicable Model
(379)	CTA2 → EPP16M2
(575)	CTA2 → PC (D-SUB 9PIN FEMALE)
(584)	CTA2 → PC (USB A)

Note

1. ( ) shows pin shape of the connecting cable.
2. Consult Tohnichi for other types of connecting cables.

DWQL Analog Torque with Digital Angle Module

NEW

DWQL100N

Assembly | Digital | Ratchet Head | Graduation | Signal | 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 will be calculated and shown even when ratcheting feature is used.
- Convert Tohnichi LS type torque wrenches to angle by using M-DW module.

Accuracy ±3%

S.I. Model	Torque Range [N·m]		Angle Range [°]		Angle Accuracy	Overall Length [mm]	Weight [kg]
	Min.-Max.	Grad.	Min.-Max.	Grad.			
DWQL50N	(5) 10-50	0.5	0-999°	1	±2°+1digit (Angular velocity is 30°/s-180°/s when the bolt is turned to 90°.)	260	0.57
DWQL100N	(10) 20-100	1				335	0.81
DWQL140N	(25) 30-140	2				400	1.00
DWQL200N	(30) 40-200					490	1.52
DWQL280N	(30) 40-280					695	2.12
DWQL420N	(40) 60-420					995	3.52

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 will not exceed max torque of the tool.

* M-DW shows 20° from snug torque.

M-DW NEW

LS type torque wrench can be converted to Angle torque wrench by installing M-DW.

Digital Angle Module

Model	Description
M-DW	Angle module for LS type wrench

Note
1. M-DW can be installed on LS type torque wrench except for the following models: QSPCALS, ALS, ACLS, MS type torque wrench, SPLS8N, and RSPLS8N.
2. Operate within torque range of installed torque wrench.
3. Includes Angle calibration certificate.

M-DW Specifications

Range of Angle	0-999°
1digit	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
Environment	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.

(1) Remove Limit Switch.

* M-DW module comes with Calibration certificate.

(2) Put M-DW on LS type torque wrench.

Torque wrench with Limit Switch

(3) Torque wrench with Digital Angle Module

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

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]		Square Drive [mm]	Overall Length [mm]	Angle Scale	
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.			Max.	Grad.
				kgf·cm	kgf·cm		lbf·in	lbf·in				
WQL50N	(5) 10-50	0.5	450WQL3	(50) 100-500	0.5	450WQL3-A	(40) 100-400	5	9.5	260		
							lbf·ft	lbf·ft				
WQL100N4	(10) 20-100	1	900WQL4	(100) 200-1000	1	900WQL4-A	(7) 15-75	1	12.7	345	360°	2°
WQL200N4	(30) 40-200	2	1800WQL4	(300) 400-2000	2	1800WQL4-A	(20) 30-150	2		495		
				kgf·m	kgf·m							
WQL280N	(30) 40-280		2800WQL3	(3) 4-28	0.2	2800WQL3-A	(20) 30-200	2	19.0	695		
WQL420N	(40) 60-420		4200WQL2	(4) 6-42		4200WQL2-A	(30) 60-300	3		975		

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

MPQL100N4

Marked bolts

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] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Weight [kg]
				kgf·cm	kgf·cm		lbf·in	lbf·in		
MPQL50N	10-50	0.5	450MPQL	100-500	5	450MPQL-A	100-400	5	274	0.7
							lbf·ft	lbf·ft		
MPQL100N4	20-100	1	900MPQL4	200-1000	10	900MPQL4-A	15-75	1	388	0.95
MPQL140N	30-140		1400MPQL	400-1400		1400MPQL-A	30-100		443	1.1
MPQL200N4	40-200		1800MPQL4	400-2000	20	1800MPQL4-A	30-130	2	500	1.8
		2		kgf·m	kgf·m					
MQL280N	40-280		2800MQL3	4-28	0.2	2800MQL3-A	60-300	3	467	2.6

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

MQSP100N

Assembly | Preset | Ratchet Head | Quick Drying Ink | RoHS

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

Accuracy ±3%

Model	Torque Range [cN·m] Min.-Max.	[kgf·cm] Min.-Max.	[lbf·in] Min.-Max.	Overall Length [mm]	Weight [g]
MQSP50N	10-50	100-500	100-400	240	0.7
MQSP100N	20-100	200-1000	100-750	315	1.0
MQSP140N	30-140	400-1400	300-1000	380	1.1
MQSP200N	40-200	400-2000	350-1600	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. Please specify required set torque when you order. (Ex. MQSP50N x 30N·m)
3. Adjusting tools for MQSP are sold separately.
4. MQSP200N has knurled handles.

CMQSP

Marking Torque Wrench

Direction

CMQSP-M8

Marked bolt head

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] Min.-Max.	Width Across Flat Min.-Max.	Overall Length [mm]	Weight [kg]
CMQSP-M6	5-25	5	241	0.85
CMQSP-M8	10-50	6	241	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. Please specify required set torque when you order. (Ex. CMQSP-M10 x 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	DOTE200N3-G, 500N3-G
814	CMQSP-M12 Adapter	

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 and 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

No.1700
No.1701
No.1702
No.1703
No.1712
No.1713
No.1714

No.1704
No.1705
No.1706
No.1707
No.1709
No.1710
No.1715
No.1716
No.1717

No.1720
No.1721
No.1722
No.1723

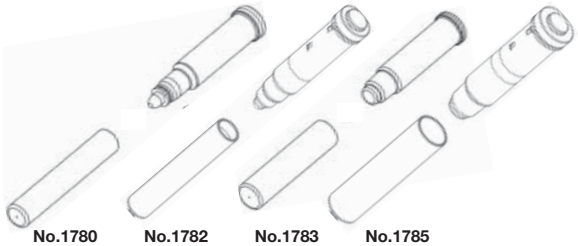
Socket

	Model	Part #	Width Across Flat [mm]	Length H [mm]	Outside Width φd [mm]	Applicable Torque T-max [N·m]	Applicable Model
Revised	Socket 4MH-10	1700	10	100	17.5	25	MQSP/MPQL 50N-200N4
Revised	Socket 4MH-12	1701	12		20.5	35	
Revised	Socket 4MH-13	1702	13		21.5	40	
Revised	Socket 4MH-14	1703	14		22.5	60	
Revised	Socket 4MH-16	1704	16		25	70	
Revised	Socket 4MH-17	1705	17		28	110	
Revised	Socket 4MH-18	1706	18	105	29	120	
Revised	Socket 4MH-19	1707	19		30	170	
	Socket 4MH-22	1709	22		30	190	
	Socket 4MH-24	1710	24		32.8	200	
	Socket 6MH-22	1720	22		32	255	MQL280N
	Socket 6MH-24	1721	24	110	34.5	255	
	Socket 6MH-27	1722	27		38.5	255	
	Socket 6MH-30	1723	30		42	280	

Inch Size Socket

	Model	Part #	Width AcrossFlat [inch]	Width AcrossFlat [mm]	Tmax [lbf·in] (N·m)	Length H [mm]	Outside Width φd [mm]	Applicable Model
Revised	Socket 4MH-7/16	1712	7/16	11.113	300(35)	100	20	MQSP/MPQL 50N-200N4
Revised	Socket 4MH-1/2	1713	1/2	12.7	400(45)		21	
Revised	Socket 4MH-9/16	1714	9/16	14.288	700(80)		23	
Revised	Socket 4MH-5/8	1715	5/8	15.875	800(90)		25.5	
Revised	Socket 4MH-11/16	1716	11/16	17.463	1000(120)	105	28.5	
Revised	Socket 4MH-3/4	1717	3/4	19.05	1500(170)		30	

Note Refill Ink and solvent are classified as hazardous material in Aviation law.

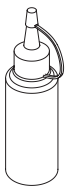


No.1780 No.1782 No.1783 No.1785

Marker Head

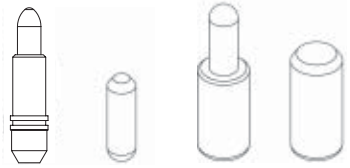
Model	Part #	Color
Marker Head MK53RB	1780	Red, Blue
Marker Head MK53WY	1782	White, Yellow
Marker Head MK93RB	1783	Red, Blue
Marker Head MK93WY	1785	White, Yellow

Note
1. Use MK53 in case of using the W10-W16 sockets.
2. MK53 types have 5mm marking diameter.
   MK93 types have 9mm marking diameter.
3. Select a proper marking color for adapting to your bolt surface type.
   · Alkaline blackening (black finishing) → White, Yellow
   · Chromate coating, Trivalent chrome, Stainless steel → Blue, Red, White, Yellow.
4. Marker heads are not filled the ink.
   Select your necessary ink at the same time.



No.776
No.777
No.794

No.1770
No.1771



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

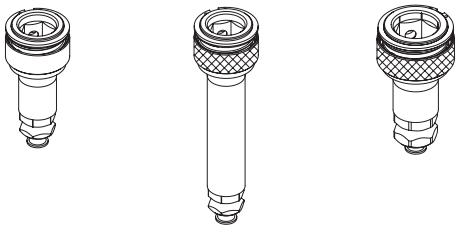
Refill Ink and Solvent

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.

Replacement Tips

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



No.1749 No.1748 No.1752

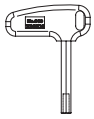
Extension Bar

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

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

No.817
No.818



No.930

MQSP Adjusting Tool

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

Error Proofing (Pokayoke) System

LS
(Wired)

Examples) QL/QLE (P.12), CL/CLE (P.13), TiQL/TiQLE (P.15), PQL (P.16), QRSP (P.15), PCL (P.17), QSP (P.18), QSPCA (P.22), CSP (P.19), SP/SP-MH/RSP (P.20), SP-N/SP-N-MH (P.21), AUR (P.48), A/AC (P.50)

QLLS100N4

QSPCAMS12N

SPLS38Nx17

Wired

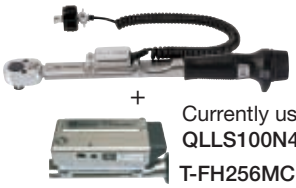
CNA-4mk2
(Count Checker)

Control the number of tightening to eliminate missed tightening

RTDLS120CN

ACLS100N

FH
(Wireless)



\+

Currently using
QLLS100N4
T-FH256MC-LS

Modified to...

Wired

QLFH100N4

QSPCAFH30N

Wireless

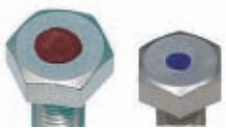
R-FH256
Receiver

HATFH

Examples) FH transmitter (P.30) mounted on torque wrench such as QL
Equipped with FH functions such as HATFH (P.48)

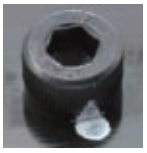
Marking

MPQL100N4



Visually check the bolt marked to recognize torque tightening completion

CMQSP-M8



Torque Wrench with Limit Switch

- Various styles of torque wrenches with limit switch output
- Limit switch counts the number of "Clicks".
- Tool is connected to PLC or Tohnichi's Count Checker (CNA-4mk2)
- Can be upgraded into wireless output system (FH256MC)
- Ideal for torque verification assembly processes.

QLLS100N4

Limit switch specifications
AC30V Below 1A
DC30V Below 1A

SPLS38Nx17

QL style with LS RoHS

S.I. Model	Metric Model
QLMS15N-MH	150QLMS-MH
QLLS25N	225QL3LS
QLLS50N	450QL3LS
QLLS100N4	900QL4LS
QLLS140N	1400QL3LS
QLLS200N4	1800QL4LS
QLLS280N	2800QL3LS
QLLS420N	4200QL2LS

QSP style with LS RoHS

Model
QSPMS12N4
QSPLS25N3
QSPLS50N3
QSPLS100N4
QSPLS140N3
QSPLS200N4
QSPLS280N3
QSPLS420N

PQL style with LS RoHS

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

CL style with LS RoHS

S.I. Model	Metric Model
CLMS15N-MH	150CLMS-MH
CLLS25Nx10D	225CL3LS
CLLS50Nx12D	450CL3LS
CLLS50Nx15D	500CL3LS
CLLS100Nx15D	900CL3LS
CLLS140Nx15D	1400CL3LS
CLLS200Nx19D	1800CL3LS
CLLS280Nx22D	2800CL3LS
CLLS420Nx22D	4200CL2LS

CSP style with LS RoHS

Model
CSPMS12N4x8D
CSPLS25N3x10D
CSPLS50N3x12D
CSPLS50N3x15D
CSPLS100N3x15D
CSPLS140N3x15D
CSPLS200N3x19D
CSPLS280N3x22D
CSPLS420Nx22D

PCL style with LS RoHS

S.I. Model	Metric Model
PCLLS25Nx10D	225PCLLS
PCLLS50Nx10D	450PCLLS
PCLLS50Nx12D	500PCLLS
PCLLS100Nx15D	900PCLLS
PCLLS140Nx15D	1400PCLLS
PCLLS200Nx19D	1800PCLLS

TiQL style with LS RoHS

Model	Metric Model
TiQLLS180N	1800TiQLLS
TiLQLLS180N	1800TiLQLLS
TiEQLLS360N	3600TiEQLLS

QRSP style with LS RoHS

Model
QRSPLS38Nx17
QRSPLS38Nx19
QRSPLS38Nx21
QRSPLS38Nx24

QSPCA style with LS RoHS

Model
QSPCAMS6N
QSPCAMS12N
QSPCALS30N
QSPCALS70N

SP, SP-MH style with LS RoHS

Model (Body Size x Width)	
SP	SP-MH
SPLS8Nx7	-
SPLS8Nx8	-
SPLS8Nx9	-
SPLS8Nx10	-
SPLS8Nx12	-
SPLS19Nx10	SPLS19Nx10-MH
SPLS19Nx11	SPLS19Nx11-MH
SPLS19Nx12	SPLS19Nx12-MH
SPLS19Nx13	SPLS19Nx13-MH
SPLS19Nx14	SPLS19Nx14-MH
SPLS19Nx17	SPLS19Nx17-MH
SPLS19Nx19	SPLS19Nx19-MH
SPLS19Nx21	SPLS19Nx21-MH
SPLS19N-1x10	SPLS19N-1x10-MH
SPLS19N-2x10	SPLS19N-2x10-MH
SPLS19N-3x10	SPLS19N-3x10-MH
SPLS38Nx8	SPLS38Nx8-MH
SPLS38Nx9	SPLS38Nx9-MH
SPLS38Nx10	SPLS38Nx10-MH
SPLS38Nx11	SPLS38Nx11-MH
SPLS38Nx12	SPLS38Nx12-MH
SPLS38Nx13	SPLS38Nx13-MH
SPLS38Nx14	SPLS38Nx14-MH
SPLS38Nx16	SPLS38Nx16-MH
SPLS38Nx17	SPLS38Nx17-MH
SPLS38Nx19	SPLS38Nx19-MH
SPLS38Nx22	SPLS38Nx22-MH
SPLS38Nx24	SPLS38Nx24-MH
SPLS38Nx27	SPLS38Nx27-MH
SPLS38N-1x10	SPLS38N-1x10-MH
SPLS38N-2x10	SPLS38N-2x10-MH
SPLS38N-3x10	SPLS38N-3x10-MH
SPLS67Nx14	-
SPLS67Nx16	-
SPLS67Nx17	-
SPLS67Nx18	-
SPLS67Nx19	-
SPLS67Nx21	-

SP, SP-MH style with LS RoHS

Model (Body Size x Width)
SP
SPLS67Nx22
SPLS67Nx24
SPLS67Nx27
SPLS67Nx29
SPLS67Nx30
SPLS67Nx32
SPLS67Nx33.3
SPLS120Nx14
SPLS120Nx17
SPLS120Nx18
SPLS120Nx19
SPLS120Nx21
SPLS120Nx22
SPLS120Nx23
SPLS120Nx24
SPLS160Nx19
SPLS160Nx21
SPLS160Nx22
SPLS160Nx24
SPLS160Nx26
SPLS160Nx27
SPLS220Nx19
SPLS220Nx22
SPLS220Nx24
SPLS220Nx27
SPLS220Nx29
SPLS220Nx30
SPLS220Nx32
SPLS220Nx34
SPLS220Nx36
SPLS310Nx22
SPLS310Nx24
SPLS310Nx27
SPLS310Nx30
SPLS310Nx32
SPLS310Nx41
SPLS310Nx46

RSP style with LS RoHS

Model
(Body Size x Width)
RSPLS8Nx8
RSPLS8Nx10
RSPLS19Nx8
RSPLS19Nx10
RSPLS19Nx13
RSPLS38Nx10
RSPLS38Nx12
RSPLS38Nx13
RSPLS38Nx14
RSPLS38Nx17
RSPLS67Nx14
RSPLS67Nx17
RSPLS67Nx19
RSPLS120Nx17
RSPLS120Nx19
RSPLS120Nx22
RSPLS160Nx19
RSPLS160Nx22
RSPLS160Nx24
RSPLS220Nx22
RSPLS220Nx24
RSPLS220Nx27
RSPLS310Nx24
RSPLS310Nx27
RSPLS310Nx30

SP-N, SP-N-MH style with LS RoHS

Model (Body Size x Width)	
SPLS-N	SPLS-N-MH
SPLS19N-1x10N	SPLS19N-1x10N-MH
SPLS19N-3x10N	SPLS19N-3x10N-MH
SPLS19N-4x10N	SPLS19N-4x10N-MH
SPLS19N-5x10N	SPLS19N-5x10N-MH
SPLS19N-8x10N	SPLS19N-8x10N-MH
SPLS19N-9x10N	SPLS19N-9x10N-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 SPLS19N-8x10N is about 5m in full extension.

FH256MC

Radio Frequency Torque Wrench System

- Wireless error-proofing (Pokayoke) torque 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 (optional)

QLFH100N4

FH Torque Wrench Examples

QLFH FH transmitter mounted on QL

S.I. Model
QLFH25N
QLFH50N
QLFH100N4
QLFH140N
QLFH200N4

SPFH FH transmitter mounted on SP

Model
SPFH38Nx14
SPFH38Nx27

QSPCAFH FH transmitter mounted on QSPCA

Model
QSPCAFH30N
QSPCAFH70N

T-FH256MC

Transmitter RoHS

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

Model	Description
T-FH256MC	Transmitter for FH256MC
T-FH256MC-LS	Transmitter for LS type wrench

Note T-FH256MC-LS is a wireless transmitter module to install on LS version torque wrenches.

R-FH256

SB-FH256

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 x D210 x 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

I/O-FH256

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) x 4, Power: AC100-240V

FH-COD

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

FH-MHD

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

FH-PCV

Protective Cover

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

Model	Applicable Model	Specification
FH-PCV	T-FH256MC/T-FH256MC-LS	Material: Silicon resin

Note
1. Transmission distance 10-20 meters
2. Refer to base model series for torque ranges and wrench specs.

CNA-4mk2

POKA Patrol
(Count Checker)

Assembly | Digital | Relay Counter | Judgment | RoHS

- Torque tightening verification counter
- Manages signals from LS or FH torque wrenches.
- Up to 4 wrenches can be controlled as one time. (in succession)

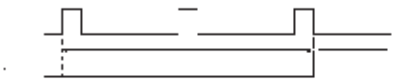
CNA-4mk2

Model
CNA-4mk2

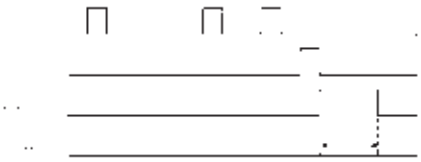
Count Display	2 digits, 7 segments, LED
Judgments	Dome shaped lamp (OK/NG)
Work No. Selection Display	ϕ5 LED orange x 4
Torque Wrench No. Selection Display	ϕ5 LED green x 4
Count Input	4 cable terminal or 4 wireless input with R-FH256
Maximum Preset Counter	99
Work Setting Availability	4 sets
Judgment Setting	Presetting, Manual completed signal or Automatic Judgment timer (1-300 seconds)
Judgment Output	OK: Green lamp, NG: Red lamp + buzzer (4 patterns) by relay setting (relay output: DC 30V 1 A, AC 125V, 0.3A)
Mode Exchange Setting	Normal mode Multi mode (maximum 4 torque wrenches can be set)
Timer Function Setting	Double count prevention timer (0.1-10 seconds by 0.1 second) Automatic resetting timer (0 - 60 seconds by 1 second) Interval warning timer (0-99 seconds by 1 second)
Each Setting	Key entering
Operating Temparature	0 to 40 °C
Power Supply	AC 100V - 240V 50/60Hz
Size and Weight	W150 mm x D 210 mm x H51 mm, 1.5 kg

Various Timer Functions

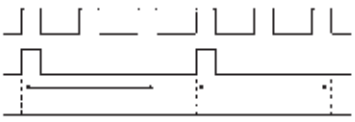
Automatic judgment timer (1 to 300 by 1 sec.)
Automatic judgment timer starts after input of first signal, and judges OK/NG as the timer reaches set time.
Ex. Tightening number 3 pcs., Automatic judgment timer 6 sec.



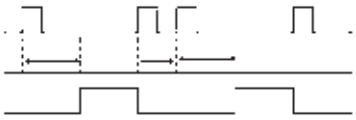
Automatic reset timer (0-60 sec. by sec.)
Automatic reset timer resets judgment at the set timing. If several torque wrenches are selected, it goes on to the next torque wrench.
Ex. Tightening number 3 pcs., Automatic reset timer 2 sec.



Double count prevention timer (0.1 to 10 sec. by 0.1 sec.)
Double count prevention timer prevents from counting unintentional extra operation by connected torque wrenches.
Ex. Double count prevention timer 0.5 sec.

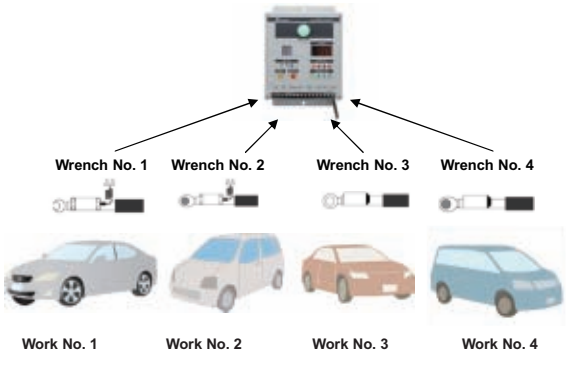


Interval warning timer (0 to 99 sec. by 1 sec.)
Interval warning timer gives warming by buzzer and warning light if operator does not go on to the next bolt within the set time.
Ex. Tightening number 3 pcs., Interval warning timer 5 sec.

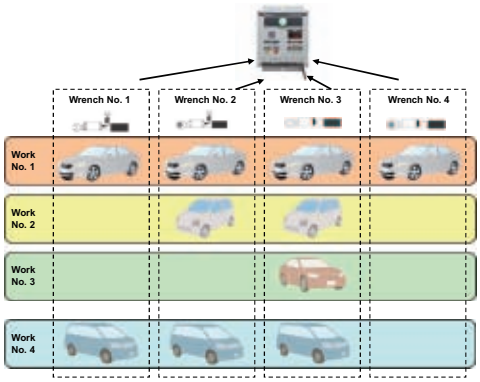


Application Example

Application 1
One designated in 4 different torque wrenches is used for 4 types of work.
Note: Can not be operated at the same time.



Application 2
Max. 4 different torque wrenches can be set on 4 types of work.
Note: Can not be operated at the same time.
Count setting can be done for each torque wrench.



Tightening Data Management System

Wired Data Transfer Torque Wrench
Model: CSPD

Wired Data Transfer Semi-Automatic Airtork
Model: ACQSPD

Wired transfer of actual applied torque for complete verification of “click” wrench tightening

Model	Description	Figure	Display
CSPD	Wired Data Transfer Torque Wrench (Special Product)		 CD5 Refer to P.66.
ACQSPD	Wired Data Transfer Semi-Automatic Airtork (Special Product)		

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

CSPD

Wired

CD5
Refer to P.66.

OK/NG judgement
Red: NG Blue: OK

Wired

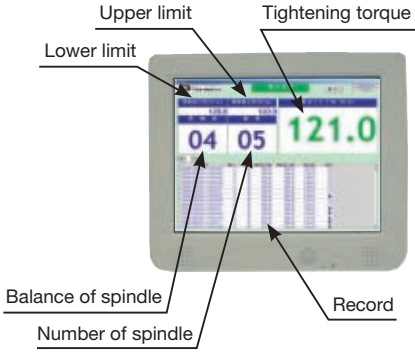
383 (P.47)

Wired Data Transfer Semi-Automatic Airtork
Model: ACQSPD

Wired transfer of actual tightening torque with operation of provisional tightening

ACQSPD

Wired



External device
PLC or PC

Tightening Data Management System

Wireless Data Transfer Torque Wrench
Model: FHD, FHDS

Wireless Data Transfer Semi-Automatic Airtork
Model: ACQSPFHDS

Wireless transfer of actual applied torque for complete verification of “click” wrench tightening

Model	Description	Figure	Receiver
FHDS	Wireless Data Transfer Torque Wrench (Special Product)		 Receiver R-FHD256
FHD	Wireless Data Transfer Torque Wrench (Special Product)		
ACQSPFHDS	Wireless Data Transfer Semi-Automatic Airtork (Special Product)		

Outline

FHD system features highly reliable FHSS transmitter mounted on a click torque wrench that captures actual applied torque data. R-FHD256 receiver accepts signal and confirms back to wrench with “Answerback” system. Connection to PLC and PC software allows for management of fastener count, serial number, torque ID, and judgment parameters.

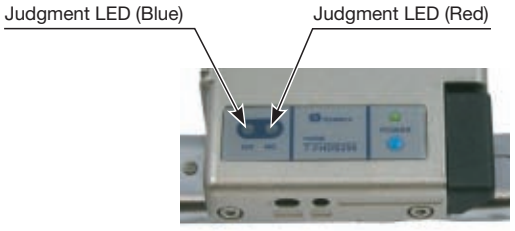
System

Wireless Data Transfer Torque Wrench
Model: CSPFHDS with QH head

Simplified small case version with extended battery life

CSPFHDS

WITHOUT Torque Display

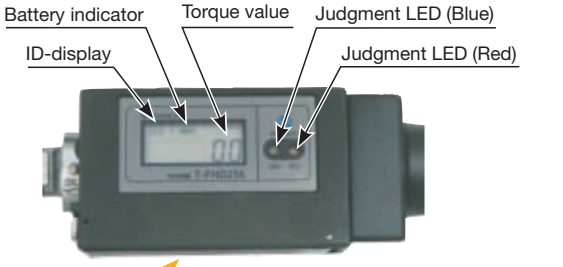


Wireless Data Transfer Torque Wrench
Model: CSPFHD with QH head

LCD transmitter display shows data for convenient user confirmation

CSPFHD

WITH Torque Display



Duplex communication (Wireless)

Duplex communication (Wireless)

Wireless Data Transfer Semi-Automatic Airtork
Model: ACQSPFHDS

Semi-Automatic Pneumatic version for quick rundown and final click torque confirmation with torque data transfer

ACQSPFHDS

Duplex communication (Wireless)

Receiver R-FHD256

External device PLC or PC

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-BT

Duplex communication

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

RoHS

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

Accuracy ±1%

Tohnichi Head Size	Model		Torque Range [N·m]		Overall Length	Weight
	Simplex Communication	Duplex communication	Min.-Max.	Grad.	[mm]	[kg]
8D	CEM10N3X8D-G-BTS	CEM10N3X8D-G-BTD	2-10	0.01	212	0.54
10D	CEM20N3X10D-G-BTS	CEM20N3X10D-G-BTD	4-20	0.02	214	0.55
12D	CEM50N3X12D-G-BTS	CEM50N3X12D-G-BTD	10-50	0.05	282	0.66
15D	CEM100N3X15D-G-BTS	CEM100N3X15D-G-BTD	20-100	0.1	384	0.71
19D	CEM200N3X19D-G-BTS	CEM200N3X19D-G-BTD	40-200	0.2	475	0.86
22D	CEM360N3X22D-G-BTS	CEM360N3X22D-G-BTD	72-360	0.4	713	1.21
	CEM500N3X22D-G-BTS	CEM500N3X22D-G-BTD	100-500	0.5	949	4.08
32D	CEM8500N3X32D-G-BTS	CEM8500N3X32D-G-BTD	170-850	1	1387	5.22

Handy Terminal

HT-S5

Compact data collection device for CEM3-BT
- Upload & download torque measuring information
- Guides user through torque assembly & quality inspection processes
- Statistics and charting capabilities

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-BT models have two types.
   Simplex communication (BTS): CEM3-BT → Transfer measurement data to PC
   Duplex communication (BTD): Set torque and upper/lower limits in PC → CEM3-BT → Transfer measurement data to PC
7. Standard CEM3 is unable to modify into CEM3-BT.

Standard Accessories Battery pack, Quick charger, QH interchangeable head

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®.

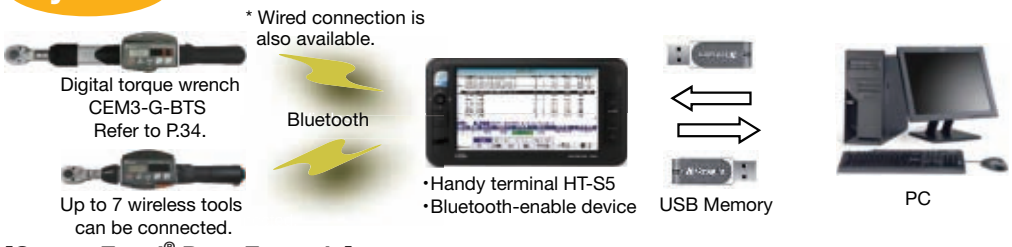
Merit

- 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.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Count for Item												
2													
3	Item Name												
4	Sample Master												
5													
6	Portion Name	Number of Spindle	TI Low	TI High	N	Max	Min	R	Xbar	Sigma (n-1)	Sigma (n)	Cp	Cpk
7	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	16.1	2.21681883	2.07364414	0.37591405	0.13532906
10	Fr Hubnuts RH	2	12.0	17.0	5	16.5	14.1	2.4	15.48	0.91760558	0.82073138	0.90816071	0.216171

- More detailed information available.

	A	B	C	D	E	F	G	H	I
1	Data List for Portion								
2									
3	Item Name	Sample Master							
4	Portion Name	Fr Hubnuts LH							
5	Number of Spindle	2							
6	Spindle No.	ALL							
7	TI Low	12.0							
8	TI High	17.0							
9									
10	N	Max	Min	R	Xbar	Sigma (n-1)	Sigma (n)	Cp	Cpk
11	8	21.0	13.5	7.5	16.1	2.216818828	2.073644135	0.375914045	0.136329056
12									
13	Spindle No.	Mesured Torque	Judge	Date	Time				
14	1	15.6	OK	16/Oct/2012	17:23:20				
15	1	21.0	NG(H)	16/Oct/2012	17:37:02				
16	1	15.7	OK	16/Oct/2012	17:37:43				
17	1	13.5	OK	16/Oct/2012	17:38:11				
18	2	14.7	OK	16/Oct/2012	17:30:22				
19	2	15.2	OK	16/Oct/2012	17:37:08				
20	2	16.4	OK	16/Oct/2012	17:37:45				
21	2	16.7	OK	16/Oct/2012	17:38:13				

Model	Description	Language
NEW TDMS	Software only	Japanese
NEW TDMS-E		English
NEW TDMS-C		Chinese
NEW TDMSHT	Software + Handy Terminal/HT-S5	Japanese
NEW TDMSHT-E		English
NEW 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 from CEM10N3X8D-G to CEM360N3X22D-G. Please refer to P.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 x 600
	Drive	CD-ROM or DVD drive
	Communication	Bluetoothr (2.0+EDR) SSP profile compliant or SSP profile compliant module
	USB	USB2.0 x 1

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

CEM3-G

DATA TORK (Digital Torque Wrench)

Direction

Inspection | Digital | Interchangeable | Direct Reading | Re-Chargeable | RoHS

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

CEM100N3×15D-G

CEM20N3×10D-G

CEM850N3×32D-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) Judgment LED RED/BLUE
Number of Data Memory	999 (M-2 mode: 99 data)
Communication Functions	RS232C (2400-19200bps)
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
Operation Temperature	0-40 Celsius no condensation
Basic Functions	Peak Hold, Auto memory & resetting, Tightening completion buzzer, Judgment of measured data, Auto zero setting, Auto off (3 minutes), Clock

Accuracy ±1%

Model	Torque Range N·m Min.-Max.	1digit	kgf·cm Min.-Max.	1digit	kgf·m Min.-Max.	1digit	lbf·in Min.-Max.	1digit	lbf·ft Min.-Max.	1digit	Hand Force [N]	Overall Length [mm]	Weight [kg]
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

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 66).
4. PH (Pipe wrench head) type interchangeable head is not available for this model.
5. CEM500N3x22D-G and CEM850N3x32D-G have knurled handles.

Standard Accessories

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

CEM3-P

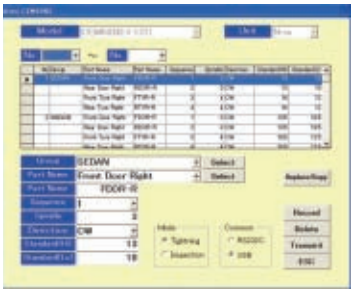
RoHS

- Programmable version of CEM3 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)

CEM50N3×12D-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

Handy Terminal

HT-S5

Compact data collection device for CEM3-G
- Upload & download torque measuring information
- Guides user through torque assembly & quality inspection processes
- Statistics and charting capabilities

Battery Pack (P.47)

Model
BP-5

Quick Battery Charger (P.47)

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

Printer (P.67)

Model
EPP16M2

Connecting Cable (P.47)

Part #	Applicable Model
379	CEM2, CEM3, R-DT999 → EPP16M2
575	CEM2, CEM3, R-DT999 → PC (D-sub 9 Pin Female)
584	CEM3, R-DT999 → PC (USB A type)

Data Filing System (P.66)

Model	Media
DFS	CD-ROM

CTB2-G Digital Retightening Torque Wrench

Direction

CTB100N2x15D-G

CTB850N2x32D-G

Inspection | Digital | Interchangeable | Signal | Re-Chargeable | RoHS

- 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			
CTB10N2x8D-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
CTB20N2x10D-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
CTB50N2x12D-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
CTB100N2x15D-G	20-100	0.1	200-1000	1	2-10	0.01	200-880	1	15-73	0.1	275.5	384	0.63
CTB200N2x19D-G	40-200	0.2	400-2000	2	4-20	0.02	360-1700	2	30-150	0.2	428.3	475	0.78
CTB360N2x22D-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
CTB500N2x22D-G	100-500	0.5	1000-5000	5	10-50	0.05	890-4400	5	73-360	0.5	549.5	949	4.00
CTB850N2x32D-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 66).
4. PH (Pipe wrench head) type interchangeable head is not available for this model.

Standard Accessories

1. Battery pack (BP-5)
2. QH interchangeable head (Refer to page 44).
3. Quick battery charger BC-3-G (100V-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-hydride battery
Continuous Use	Approx. 20 hours (8 hours by 1 hour charging)
Battery Charge	Approx. 3.5 hours
Operating Condition	0-40 Celsius

Battery Pack (P.47)

Model
BP-5

Quick Battery Charger (P.47)

Model	Description
BC-3-G	100-240V

Printer (P.67)

Model
EPP16M2

Connecting Cable (P.47)

Part #	Applicable Model
379	CTB2-G → EPP16M2
575	CTB2-G → PC (D-SUB 9 Pin Female)
584	CTB2-G → PC (USB A type)

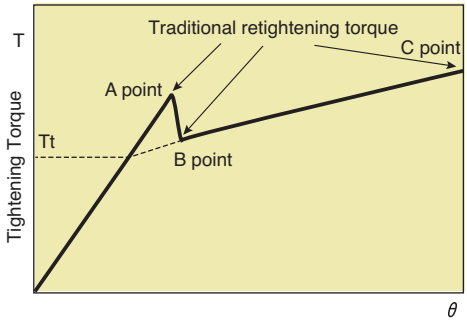
Data Filing System (P.66)

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

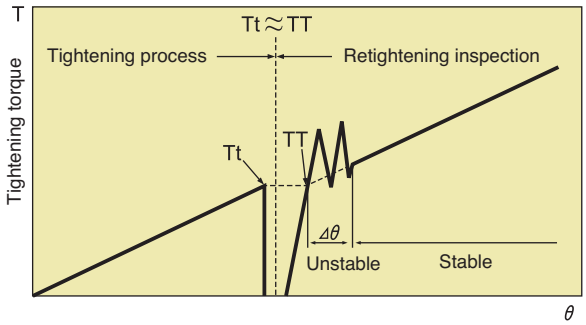
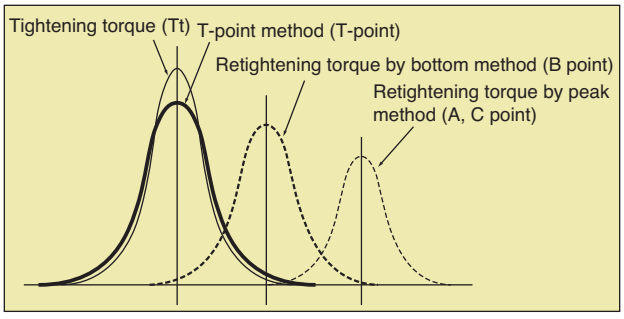


Figure-3 Distribution of retightening torque



Refer to Tohnichi Torque Handbook Vol. 7 on page 42 to 43 for the details.

DB/DBE/DBR

Direction Dial Indicating Torque Wrench

DB12N4

DB100N

DBE700N

Memory Pointer
(Red needle)

Inspection | Dial Indicating | Direct Reading | RoHS

- 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] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
				kgf·cm	kgf·cm		lbf·in	lbf·in			
DB1.5N4-S	0.2-1.5	0.02	15DB4-S	2-15	0.2	DB13I-2AS	0-13	0.2			
DB3N4-S	0.3-3	0.05	30DB4-S	3-30	0.5	DB26I-2AS	0-26	0.5	205	6.35	0.4
DB6N4-S	0.6-6	0.1	60DB4-S	6-60	1	DB40I-2AS	0-40				
DB12N4-S	1-12	0.2	120DB4-S	10-120	2	DB75I-2AS	0-75	1			
DB25N-1/4-S	3-25	0.5	230DB3-1/4-S	30-250	5	DB150I-2AS	0-150	2	245	9.5	0.6
DB25N-S			230DB3-S			DB150I-3AS					
DB50N-S	5-50		450DB3-S	50-500		DB300I-3AS	0-300	5	320		
DB100N-3/8-S	10-100	1	900DB3-3/8-S	100-1000	10	DB600I-3AS	0-600	10	400	12.7	0.7
DB100N-S			900DB3-S			DB600I-4AS					
							lbf·ft	lbf·ft			
-	-	-	-	-	-	DB25F-3AS	0-25	0.5	320	9.5	0.6
-	-	-	-	-	-	DB50F-3AS	0-50		400		0.7
-	-	-	-	-	-	DB50F-4AS					
DB200N-S	20-200	2	1800DB3-S	200-2000	20	DB100F-4AS	0-100	1	500		
				kgf·m	kgf·m					12.7	1.0
-	-	-	-	-	-	DB175F-4AS	0-175	2	540		
DB280N-1/2-S	30-280	5	2800DB3-1/2-S	3-28	0.5	-	-	-	690	19.0	1.65
DB280N-S			2800DB3-S			DB250F-6AS	0-250	5			
DB420N-S	40-420		4200DB2-S	4-42		DB350F-6AS	0-350		890		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	20	10000DBE2-S	10-100	2	DB800F-8AS	0-800	10	1490	25.4	6.4
DBE1400N-S	200-1400		14000DBE2-S	20-140		DB1000F-8AS	0-1000		1740		8.6
DBE2100N-S	200-2100		21000DBE2-S	20-210		DB1500F-8AS	0-1500	20	2140		12.8
DBE2800N-S	300-2800	50	28000DBE2-S	30-280		DB2000F-12AS	0-2000		2380		16.8
	kN·m	kN·m			5					38.1	
DBR4500N-S	0.5-4.5	0.05	45000DBR-S	50-450		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.

DB Optional Accessories

(846)

Carrying Case (P.46)

Part #	Applicable Model Dimension [mm]	Weight [kg]
(846)	DB100N-S, CDB100Nx15D-S or less (H170 x W500 x D100)	1.0
(847)	DB280N-S, CDB280Nx22D-S or less (H170 x W740 x D100)	1.6

CDB-S

Direction

Interchangeable Head Type Dial Indicating Torque Wrench

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%

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	Weight	Tohnichi Head Size
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.	[mm]	[kg]	
				kgf·cm	kgf·cm		lbf·in	lbf·in			
CDB7N4x8D-S	0.7-7	0.1	70CDB4-S	7-70	1	70CDB4-A-S	6-60	1	215	0.45	8D
CDB14N4x8D-S	2-14	0.2	140CDB4-S	20-140	2	140CDB4-A-S	20-120	2			
CDB25Nx10D-S	3-25	0.5	250CDB-S	30-250	5	250CDB-A-S	30-220	5	255	0.48	10D
CDB50Nx12D-S	5-50		500CDB-S	50-500		500CDB-A-S	40-430		330	0.53	12D
							lbf·ft	lbf·ft			
CDB100Nx15D-S	10-100	1	1000CDB-S	100-1000	10	1000CDB-A-S	7-70	1	415	0.76	15D
CDB200Nx19D-S	20-200	2	2000CDB-S	200-2000	20	2000CDB-A-S	14-140	2	525	1.0	19D
				kgf·m	kgf·m						
CDB300Nx22D-S	30-300	5	3000CDB-S	3-30	0.5	3000CDB-A-S	20-220	5	720	1.65	22D
CDB420Nx22D-S	40-420		4200CDB-S	4-42		4200CDB-A-S	30-300		920	2.7	

Note

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

SCDB-S

Direction

European Style Interchangeable Head Type Dial Indicating Torque Wrench

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	Overall Length	Weight
	Min.-Max.	Grad.	[mm]	[mm]	[kg]
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 this model.

T-S

Direction

T-Handle Dial Indicating Torque Wrench

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	Neck Length	Square Drive	Weight
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.	[mm]	[mm]	[mm]	[kg]
				kgf·cm	kgf·cm		lbf·in	lbf·in				
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
							lbf·ft	lbf·ft				
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
				kgf·m	kgf·m							
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	20	2500			10
T2800N-S	300-2800	50	28000T-S	30-280	5	28000T-A-S	200-2000		2960		38.1	15.5
T4200N-S	400-4200		42000T-S	40-420		42000T-A-S	400-3000	50	3660			21.5

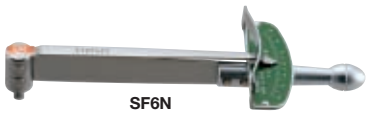
Note

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.

SF/F/FR

Beam Type Torque Wrench

Direction



SF6N

F92N

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] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
	cN·m	cN·m		kgf·cm	kgf·cm		lbf·in	lbf·in			
SF40CN	8-40	2	4SF	0.8-4	0.2	4SF-A	0-3.4	0.2	115		0.04
SF70CN	10-70		7SF	1-7		7SF-A	0-6		135		0.05
	N·m	N·m									
SF1.5N	0.2-1.5	0.05	15SF	2-15	0.5	15SF-A	0-13	0.5	145	6.35	0.07
SF3N	0.5-3	0.1	30SF	5-30	1	30SF-A	0-26	1	175		0.09
SF6N	0.6-6	0.2	60SF	6-60	2	60SF-A	0-50	2	205		0.2
SF12N	2-12	0.5	120SF	20-120	5	120SF-A	0-100	5	235		0.25
F23N	3-23		230F	30-230		230F-A	0-200		295	9.5	0.4
F46N	5-46	1	460F	50-460	10	460F-A	0-400	10	355		0.6
							lbf·ft	lbf·ft			
F92N	10-92	2	920F	100-920	20	920F-A	10-66	2	400		0.95
F130N	20-130		1300F	200-1300		1300F-A	10-95		445	12.7	1.2
F190N	30-190	5	1900F	300-1900	50	1900F-A	25-135	5	490		1.5
				kgf·m	kgf·m						
F280N	50-280		2800F	5-28	0.5	2800F-A	30-200		565		2.2
F420N	70-420		4200F	7-42	1	4200F-A	30-300		825		3.5
		10		kgf·cm	kgf·cm					19.0	
F560N	100-560		5600F	1000-5600	100	5600F-A	50-400	10	945		4.0
F700N	100-700		7000F	1000-7000		7000F-A	50-500		1175		6.0
				kgf·m	kgf·m						
F850N	100-850		8500F	10-85		8500F-A	60-600		1410		7.8
F1000N	100-1000	20	10000F	10-100	2	10000F-A	70-700	20	1640		8.8
FR1050N	100-1050		10500FR	10-105		10500FR-A	100-750		835	25.4	8
FR1400N	200-1400		14000FR	20-140		14000FR-A	100-1000		981		11.5
FR2100N	300-2100	50	21000FR	30-210	5	21000FR-A	200-1500		1148		14.5
FR2800N	300-2800		28000FR	30-280		28000FR-A	200-2000	50	1292		20
FR4200N	400-4200	100	42000FR	40-420	10	42000FR-A	300-3000		1460	38.1	28
FR6000N	600-6000		60000FR	60-600		60000FR-A	400-4300		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.

CSF/CF

Interchangeable Head Type Beam Type Torque Wrench

Direction

CSF7Nx8D

CF25Nx10D

Inspection | Beam | Interchangeable | Direct Reading | RoHS

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

Accuracy ±3%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Tohnichi Head Size	Weight [kg]
	N·m	N·m		kgf·cm	kgf·cm		lbf·in	lbf·in			
CSF7Nx8D	1-7	0.2	70CSF	10-70	2	70CSF-A	10-60	2	220	8D	0.2
CSF14Nx8D	2-14	0.5	140CSF	20-140	5	140CSF-A	20-120	5	250		0.25
CF25Nx10D	5-25	1	250CF	50-250	10	250CF-A	40-220	10	320	10D	0.4
CF50Nx12D	10-50		500CF	100-500		500CF-A	80-420	20	380	12D	0.6
		2			20		lbf·ft	lbf·ft			
CF100Nx15D	10-100		1000CF	100-1000		1000CF-A	6-70	2	435	15D	1.0
CF150Nx19D	20-150		1500CF	200-1500	50	1500CF-A	15-110		480	19D	1.3
		5		kgf·m	kgf·m			5			
CF230Nx22D	30-230		2300CF	3-23	0.5	2300CF-A	20-160		530	22D	1.6
CF420Nx22D	70-420	10	4200CF	7-42	1	4200CF-A	30-300		725		3.1
CF850Nx32D	100-850	20	8500CF	42-85	2	8500CF-A	60-600	20	1260	32D	7.1

Note

1. Overall length does not include interchangeable head.
2. Interchangeable heads are optional.

QF/QFR

Ratchet Head Beam Type Torque Wrench

Direction

QF120N

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] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
				kgf·cm	kgf·cm		lbf·in	lbf·in			
QF60N	6-60	1	600QF	60-600	10	600QF-A	0-520	10	455	9.5	0.8
							lbf·ft	lbf·ft			
QF120N	10-120	2	1200QF	100-1200	20	1200QF-A	6-86	2	515	12.7	1.2
QF220N	30-220	5	2200QF	300-2200	50	2200QF-A	25-160		580		1.8
				kgf·m	kgf·m			5			
QF320N	40-320		3200QF	6-32		3200QF-A	40-230		655		2.6
QF420N	70-420	10	4200QF	7-42	1	4200QF-A	30-300		825	19.0	3.4
QF560N	100-560		5600QF	10-56		5600QF-A	50-400	10	950		4.3
QF700N	100-700		7000QF	10-70		7000QF-A	50-500		1170		6.5
QF850N	100-850		8500QF	10-85		8500QF-A	60-600		1400		8.5
QFR1050N	100-1050	20	10500QFR	10-105	2	10500QFR-A	100-750	20	845	25.4	8.5
QFR1400N	200-1400		14000QFR	20-140		14000QFR-A	100-1000		992		12.5
QFR2100N	300-2100	50	21000QFR	30-210	5	21000QFR-A	200-1500		1158		15.5
QFR2800N	300-2800		28000QFR	30-280		28000QFR-A	200-2000	50	1305		21
QFR4200N	400-4200	100	42000QFR	40-420	10	42000QFR-A	300-3000		1473	38.1	30
QFR6000N	600-6000		60000QFR	60-600		60000QFR-A	400-4300		1624		32

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.

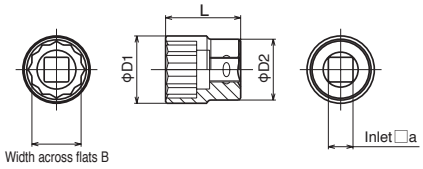
Interchangeable Socket RoHS

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

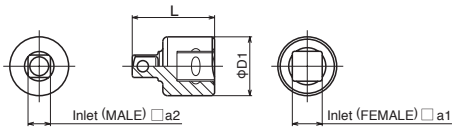
Inlet Sign (Female) / Purpose sign / Inlet sign (Male) / Part #

ADAPTER FOR HAND TOOL

	From Torque Tool			
Inlet Drive (Female)	6.35	9.5	12.7	19.0
Square Size (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

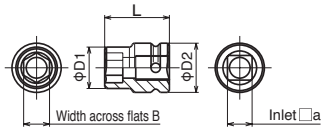


SOCKET FOR PNEUMATIC TOOL

	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 #

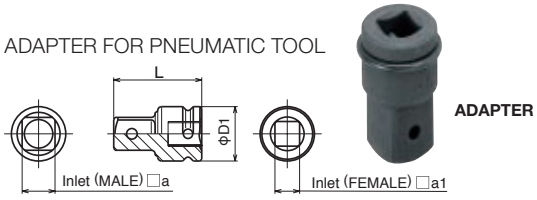
[Ex.] ADAPTER 3P-4□□ 290

Inlet Sign (Female) / Purpose sign / Inlet sign (Male) / Part #

ADAPTER FOR PNEUMATIC TOOL

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

ADAPTER FOR PNEUMATIC TOOL

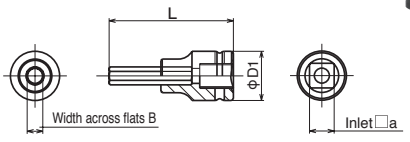


ADAPTER

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



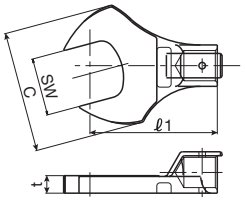
Note O-ring and pin are not included.

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 x Width)	Allowable Torque [N·m]	Allowable Torque [kgf·cm]	Outside Width C [mm]	Thickness t [mm]
	SH8Dx5.5	1.5	15	13	3
	SH8Dx6	2.5	25	15	3.5
	SH8Dx7	3.5	35	17	4
	SH8Dx8	7	70	20	4.5
	SH8Dx10	14		25	
	SH8Dx11			27	5.5
	SH8Dx12				
8D	SH8Dx13			29	
	SH8Dx14				
	SH8Dx16	15	140	31	
	SH8Dx17			32	
	SH8Dx19			35	6.5
	SH8Dx21			36	
	SH8Dx22			37	
	SH8Dx24			38	
	SH10Dx7				
	SH10Dx8	20	200	28	
	SH10Dx10				
	SH10Dx11				
	SH10Dx12				
	SH10Dx13			32	
	SH10Dx14				
10D	SH10Dx16				6.5
	SH10Dx17	25	250		
	SH10Dx18			39	
	SH10Dx19				
	SH10Dx21				
	SH10Dx22				
	SH10Dx24			43	
	SH12Dx8	7	70	20	5
	SH12Dx10	12	120	24	
	SH12Dx11	20.5	205	28	5.5
	SH12Dx12	29.5	295	31	6.5
	SH12Dx13			32	
	SH12Dx14	59	590	38	8
	SH12Dx16			40	10
12D	SH12Dx17				
	SH12Dx18			41	11
	SH12Dx19	70	700		
	SH12Dx21			43	
	SH12Dx22				13
	SH12Dx24			48	
	SH12Dx27			52	
	SH15Dx12				
	SH15Dx13	59	590	38	8
	SH15Dx14				
	SH15Dx16				
15D	SH15Dx17				
	SH15Dx18				
	SH15Dx19	140	1400	51	13
	SH15Dx21				
	SH15Dx22				

Tohnichi Head Size	Model (Body Size x Width)	Allowable Torque [N·m]	Allowable Torque [kgf·cm]	Outside Width C [mm]	Thickness t [mm]
	SH15Dx24				
	SH15Dx26				
15D	SH15Dx27	140	1400	60	12
	SH15Dx30				
	SH15Dx32				
	SH15Dx36			68	
	SH19Dx17				
	SH19Dx18	200	2000		
	SH19Dx19			54	13
	SH19Dx21	180	1800		
	SH19Dx22				
	SH19Dx24	200	2000	60	15
19D	SH19Dx27				
	SH19Dx30	180	1800		
	SH19Dx32				
	SH19Dx34	200	2000	76	11
	SH19Dx36				
	SH19Dx41	180	1800		
	SH22Dx19				
	SH22Dx22	280	2800	63	
	SH22Dx24	500	5000		
	SH22Dx27			78	
	SH22Dx30	420	4200		
22D	SH22Dx32				15
	SH22Dx34	500	5000		
	SH22Dx36	420	4200	85	
	SH22Dx41	280	2800		
	SH22Dx46				
	SH22Dx50	500	5000	103	
	SH22Dx55			108	
	SH27Dx22	255	2550	65	14
	SH27Dx24	350	3500	72	15
	SH27Dx27	490	4900	82	16
	SH27Dx30	670	6700	88	19
	SH27Dx32	750	7500	92	
27D	SH27Dx34	670	6700	90	20
	SH27Dx36			94	21
	SH27Dx41	750	7500	98	22
	SH27Dx46			100	24
	SH27Dx50			103	26
	SH32Dx27				
	SH32Dx30	850	8500	105	18
	SH32Dx32				
	SH32Dx34				
	SH32Dx36				
32D	SH32Dx41			110	24
	SH32Dx46	1200	12000		
	SH32Dx50				
	SH32Dx55			120	29
	SH32Dx60				

Inch Size Models

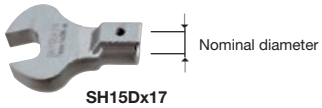
Commonly used in the airline industry and for specific American product installation and maintenance.

Tohnichi Head Size	Model (Body Size x Inner Width [in])	Inner Width [mm]	Allowable Torque [N·m]	Allowable Torque [lbf·in]	Outside Width C [mm]	Outside Width C [in]	Thickness t [mm]	Thickness t [in]
	SH10Dx1/4	6.35						
	SH10Dx5/16	7.94	20	177	28	1.10		
10D	SH10Dx3/8	9.53					6.5	0.26
	SH10Dx7/16	11.11			32	1.26		
	SH10Dx1/2	12.7	25	221				
	SH10Dx9/16	14.29			39	1.54		
	SH12Dx3/8	9.53	12	106	24	0.94	5	0.20
	SH12Dx7/16	11.11	20.5	181	31	1.22	6.5	0.26
12D	SH12Dx1/2	12.7	29.5	261	32	1.26		
	SH12Dx9/16	14.29	59	522	40	1.57	10	0.39
	SH12Dx5/8	15.88						
	SH12Dx11/16	17.46	70	620	41	1.61	11	0.43
	SH15Dx1/2	12.7	59	522	38	1.50	8	0.31
	SH15Dx9/16	14.29						
	SH15Dx5/8	15.88						
	SH15Dx11/16	17.46			51	2.01	13	0.51
	SH15Dx3/4	19.05						
	SH15Dx13/16	20.64						
	SH15Dx7/8	22.23						
	SH15Dx15/16	23.81						
15D	SH15Dx1	25.40						
	SH15Dx1-1/16	26.99	140	1239	60	2.36		
	SH15Dx1-1/8	28.58						
	SH15Dx1-3/16	30.16					12	0.47
	SH15Dx1-1/4	31.75						
	SH15Dx1-5/16	33.34			66	2.59		
	SH15Dx1-3/8	34.93						
	SH15Dx1-7/16	36.51			69	2.72		
	SH15Dx1-1/2	38.10						

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: SH15Dx17 will fit on CL100Nx15D
A variety of different head types (SH, RH, QH, RQH, FH, DH, AH and SP-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.

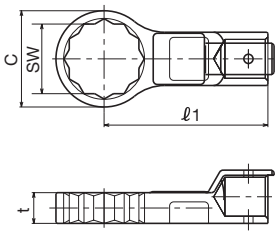
CL100Nx15D



SH15Dx17

RH Ring Head

RoHS



RH15Dx17

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: RH8Dx5.5 to RH8Dx7 are hex shape.

Tohnichi Head Size	Model (Body Size x Width)	Allowable Torque [N·m]	Allowable Torque [kgf·cm]	Outside Width C [mm]	Thickness t [mm]
8D	RH8Dx5.5	1.5	15	10.5	5
	RH8Dx6	2.4	24	11	
	RH8Dx7	3.6	36	12	6
	RH8Dx8	7.2	72	13.5	
	RH8Dx10	12.2	122	15.5	
	RH8Dx11			17	7
	RH8Dx12	15	140	18	
	RH8Dx13			19	
10D	RH10Dx8	7.2	72	12.5	6
	RH10Dx10	12.2	122	15.5	7
	RH10Dx11	20	200	17	
	RH10Dx12			18	
	RH10Dx13			19	
	RH10Dx14			20	
	RH10Dx16			22	8
	RH10Dx17	25	250	24	
	RH10Dx18			25	
	RH10Dx19			26	
	RH10Dx21			28	
	RH10Dx22			29	
12D	RH12Dx8	7.2	72	15	5
	RH12Dx10	12.2	122	16	
	RH12Dx11	20	200	18	5.5
	RH12Dx12	29.5	295	20	6.5
	RH12Dx13			21	
	RH12Dx14	59	590	20	10
	RH12Dx16			24	
	RH12Dx17			25	
	RH12Dx18			26	12
	RH12Dx19	70	700		
	RH12Dx21			29	13
	RH12Dx22			30	
15D	RH15Dx12	29.5	295	19	7
	RH15Dx13			20.5	
	RH15Dx14	59	590	22	8
	RH15Dx16			25	
	RH15Dx17	100	1000	26	10
	RH15Dx18			27	
	RH15Dx19			28	
	RH15Dx21			31	
	RH15Dx22	140	1400		13
	RH15Dx24			34	
	RH15Dx27			37	
	RH15Dx30			41	

Tohnichi Head Size	Model (Body Size x Width)	Allowable Torque [N·m]	Allowable Torque [kgf·cm]	Outside Width C [mm]	Thickness t [mm]
19D	RH19Dx14	59	590	22.5	8
	RH19Dx17	100	1000	27	10
	RH19Dx18			28	11
	RH19Dx19	166	1660	29	
	RH19Dx21			32	13
	RH19Dx22				
	RH19Dx24			35	
	RH19Dx27			39	
	RH19Dx30	200	2000	41	
	RH19Dx32			44	15
	RH19Dx34			47	
	RH19Dx36			49	
	RH19Dx41			55	
22D	RH22Dx19	166	1660	30	14
	RH22Dx22	255	2550	34	
	RH22Dx24			37	15
	RH22Dx27	490	4900	41	
	RH22Dx30	500	5000	44	
	RH22Dx32			45	
	RH22Dx34			49	17
	RH22Dx36			51	
	RH22Dx41			57	
	RH22Dx46			62	
27D	RH27Dx22	255	2550	38	14
	RH27Dx24	350	3500		15
	RH27Dx27	490	4900	42	16
	RH27Dx30	670	6700	46	19
	RH27Dx32	750	7500	48	20
	RH27Dx34	670	6700	51	
	RH27Dx36	750	7500	52	21
	RH27Dx41			58	22
	RH27Dx46			64	24
	RH27Dx50			69	26
32D	RH32Dx27	490	4900	43	16
	RH32Dx30	670	6700	46.5	
	RH32Dx32	860	8600	49	18
	RH32Dx34			52	
	RH32Dx36	1200	12000	53	
	RH32Dx41			59	24
	RH32Dx46			65	
	RH32Dx50			69	27
	RH32Dx55			75	29
	RH32Dx60			80	

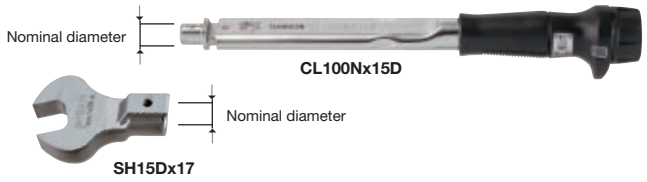
Inch Size Models

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

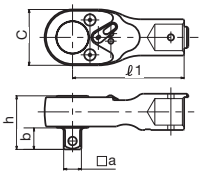
Tohnichi Head Size	Model (Body Size x Inner Width [in])	Allowable Torque [N·m]	Allowable Torque [lbf·in]	Outside Width C [mm]	Outside Width C [in]	Thickness t [mm]	Thickness t [in]
10D	RH10Dx1/4	7.2	64	11	0.43	6	0.24
	RH10Dx5/16			12.5	0.49		
	RH10Dx3/8	12.2	108	15.5	0.61	7	0.28
	RH10Dx7/16			17	0.67		
	RH10Dx1/2	25	221	19	0.75	8	0.31
	RH10Dx9/16			20	0.79		
12D	RH12Dx3/8	12.2	108	16	0.63	5	0.20
	RH12Dx7/16	20	177	18	0.71	5.5	0.22
	RH12Dx1/2	29.5	261	21	0.83	6.5	0.26
	RH12Dx9/16	59	522	20	0.79	10	0.39
	RH12Dx5/8			24	0.94		
15D	RH15Dx1/2	29.5	261	20.5	0.81	7	0.28
	RH15Dx9/16	59	522	22	0.87	8	0.31
	RH15Dx5/8			25	0.98		
	RH15Dx11/16	100	885	27	1.06	10	0.39
	RH15Dx3/4	140	1239	28	1.10	13	0.51

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: SH15Dx17 will fit on CL100Nx15D
A variety of different head types (SH, RH, QH, RQH, FH, DH, AH and SP-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



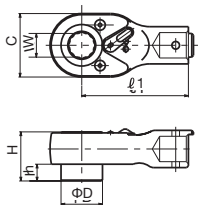
QH15D

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			22	
12D	QH12D	9.53	32	25.6	11
15D	QH15D-3/8		37.5	30.5	
	QH15D			33.5	14
19D	QH19D	12.7	40	38.4	15.4
22D	QH22D-1/2		51	41.5	15.5
	QH22D	19.05		46.5	20.5
27D	QH27D		70	49.7	21.5
32D	QH32D	25.4	74	55.7	26.5

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

RQH Female Ratchet Head RoHS

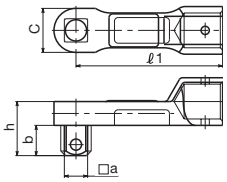


RQH15Dx17

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 x Width)	Dimensions			
		D [mm]	Outside Width C [mm]	H [mm]	h [mm]
12D	RQH12Dx12	20.5	32	24.1	
	RQH12Dx14				
15D	RQH15Dx14	24.5	37.5	29	
	RQH15Dx17				
	RQH19Dx17				10
19D	RQH19Dx19	31	45	28	
	RQH19Dx22				
22D	RQH22Dx22	35.2	51	35	
	RQH22Dx24				

DH Square Drive Head RoHS

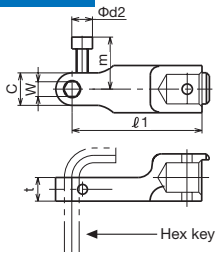


DH15D

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			23	
15D	DH15D	12.7	22	29.5	16.5
19D	DH19D		24		
22D	DH22D	19.05	34	43.3	23.5
27D	DH27D		42	44.5	
32D	DH32D	25.4	50	58.5	30.25

HH Hex Head RoHS



Hex key (Sold separately)

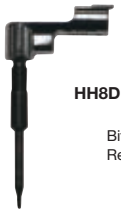
HH10Dx6

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 x Width)	Dimensions			
		Outside Width C [mm]	t [mm]	m [mm]	φd2 b [mm]
8D	HH8D	12	14.5	-	-
	HH10Dx5	11			
10D	HH10Dx6	12	8		
	HH10Dx8	15			
	HH12Dx5	11		19	7
12D	HH12Dx6	14	10		
	HH12Dx8	15			
	HH12Dx10	17			
	HH15Dx8	14			
15D	HH15Dx10	17		21	
	HH15Dx12	20			
	HH15Dx14	21.5			
	HH19Dx10	17	13		8.5
	HH19Dx12	21.5			
19D	HH19Dx14	23		23	
	HH19Dx17	27			
	HH19Dx19	29			
	HH22Dx12	19.5			
	HH22Dx14	27			
22D	HH22Dx17	30	17	26	10
	HH22Dx19	32			
	HH22Dx22	35			

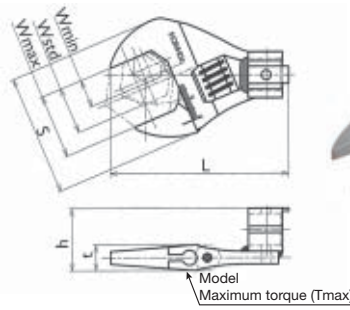
Note
1. To be used with hex. key inserted.
2. HH8D is not used with hex. key but interchangeable bit.



HH8D

Bits are sold separately.
Refer to page 11.

AH2 Adjustable Open End Head RoHS



AH15D2x30

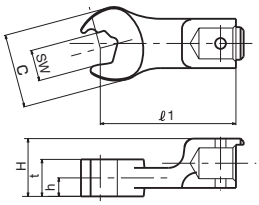
AH is easy and convenient to use for applications that require different size bolt heads. Available currently only for the 15mm diameter root shaped Tohnichi torque wrenches.

Tohnichi Head Size	Model (Body Size x Width)	Allowable Torque [N-m]	Allowable Torque [kgf-cm]	Inner Width Min.-Standard-Max. [mm]	Dimensions S [mm]	Dimensions L [mm]	Dimensions t [mm]	Dimensions h [mm]
	AH15D2x26	50	500	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 (for tightening).

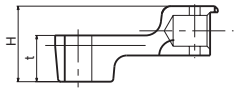
Model	Recommendable Torque Wrench
AH15D2x26	CL50Nx15D (-MH)
AH15D2x30	CL100Nx15D (-MH)
AH15D2x36	CL140Nx15D (-MH)

SH-N Open End Head with Notch RoHS



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

SH10D-1x10N



SH10D-5x10N

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 x Width)	Allowable Torque [N-m]	Allowable Torque [kgf-cm]	Dimensions Outside Width C [mm]	Dimensions Thickness H [mm]	Dimensions Thickness t [mm]	Dimensions Thickness h [mm]
	SH10D-1x10N	22.5	225	24	18.75	12	6
	SH10D-3x10N				20.25	15	7.5
	SH10D-5x10N	19	190		24.5		-
10D	SH10D-4x10N	22.5	225		17.75	10	5
	SH10D-9x10N				18.75		6
	SH10Dx11N				18.8	12	
	SH10Dx12N	25	250	32	16	6.5	3.25

PH Pipe Wrench Head RoHS

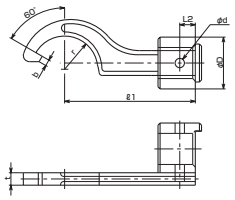
PH15Dx350

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

Tohnichi Head Size	Model (Body Size x 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
1. When ordering with CSP, please specify PH model name and required set torque.
2. In case of using graduated torque wrench, order PHL models.

FH Hook Head RoHS



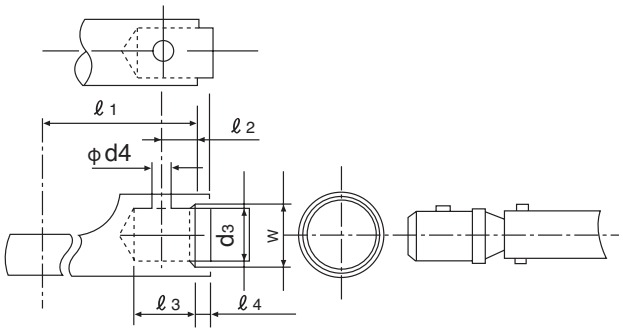
FH

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

Tohnichi Head Size	Model (Body Size x Width)	Applicable Size of Nut Outside Diameter [mm]	Nominal Size of Screw	Dimensions r [mm]	Dimensions Θ' [mm]	Dimensions b [mm]	Dimensions t [mm]	Dimensions H [mm]	Dimensions D [mm]	Dimensions L2 [mm]	Dimensions d [mm]
	FH15Dx30	30-38	M20	16		3	6	30			
	FH15Dx38	38-45	M25	20							
15D	FH15Dx45	45-52	M30	24		3.5	7	30.5	25	7.5	4.5
	FH15Dx52	52-58	M35	27	60						
	FH15Dx58	58-65	M40	31		4.5		31			
19D	FH19Dx65	65-75	M45, M50	35.5			8	35.5	29	9.5	
	FH22Dx75	75-85	M60, M65	39		5		38.5	32	11	5.5
22D	FH22Dx85	85-98	M70, M75	45.5	45		10	40			

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 special heads that will be used with torque wrenches that have an external scale or digital display, you must strictly follow the "L1" dimension in order to keep torque values accurate. Any deviation from the "L1" dimension will affect the torque.

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.

Special Tools for Torque Wrench

QLE ADJUSTING TOOL FOR QLE

This tool is used to set the torque of the large QLE adjustable wrenches.

Part #	Applicable Model
301	QLE550N-QLE2100N DQLE550N-DQLE1000N CLE550N-CLE1200N TiEQLE750N-TiEQLE1400N PHLE850N, PHLE1300N

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-QSP/CSP6N
311	A-2	SP2N-SP19N, QSP/CSP12N, QSP/CSP25N, BQSP/BCSP25N
312	A-3	SP38N, SP67N, QSP/CSP50N- QSP/CSP140N, BQSP/BCSP50N- BQSP/BCSP140N
313	A-4	SP120N-SP310N, QSP200N-QSP280N BQSP200N, BQSP/BCSP280N
314	A-5	QSP/CSP420N, BQSP/BCSP420N
315	A-6	SP420N, SP560N

QSP3 ADJUSTING TOOLS FOR QSP3

Part #	Dimensions [mm]	Applicable Model
931	2.5 x 1.5 x 6	QSP/CSP25N3, QSP1.5N4-12N4 BQSP/BCSP25N3, CSP1.5N4-CSP12N4
930	4 x 2.5 x 8	QSP/CSP50N3-QSP/CSP280N3 BQSP100N4, BQSP200N4 QSP100N4, QSP200N4 BQSP/BCSP50N3-BQSP/BCSP280N3

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, QL50N-MH, MTQL40N, MTQL70N, QL100N4-MH CL50N (x12D/15D), CL50N (x12D/15D)-MH, CL100Nx15D-MH (H60 x W400 x D70)	0.25
843	QL140N, QL140N-MH, MTQL140N, QL200N4, QL200N4-MH CL140Nx15D, CL140Nx15D-MH, CL200Nx19D, CL200Nx19D-MH (H60 x W520 x D80)	0.36
846	QL140N and below, QL140N-MH and below, MTQL140N and below, CL200Nx19D, CL200Nx19D-MH and below (H170 x W500 x D100)	1.0
847	QL280N, QL280N-MH and below CL280Nx22D, CL280Nx22D-MH and below (H170 x W740 x D100)	1.6

Special Tools 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 PRESET HOOK SPANNER FOR LTD/RTD

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

Part #	Applicable Model
52	LTD/RTD260CN
53	LTD/RTD500CN
54	LTD1000CN
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-NTD/RNTD120CN
43	NTD/RNTD260CN
44	NTD/RNTD500CN-NTD/RNTD1000CN

TORQUE SCREWDRIVER ADAPTER

This accessory is used with TME2 and TM torque meters to test 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

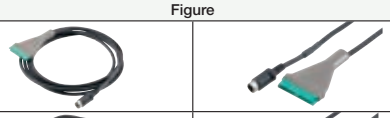
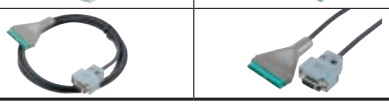
Applicable Models and Parts

	Applicable Model	Applicable Part
Click Type Torque Wrench	QL, QLE, CL, CLE, PQL, PCL, YCL etc.	Thrustring; Steel Ball Scale Piece, Adjusting Screw; Thread
	WQL	Thrustring; Steel Ball Scale Piece, Adjusting Screw; Thread Screw Knob, Protector; Joint
	MPQL	Thrustring; 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

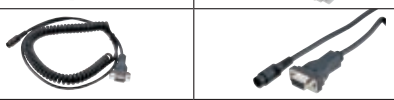
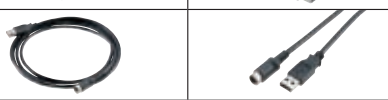
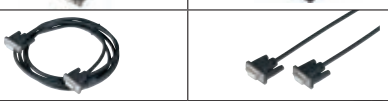
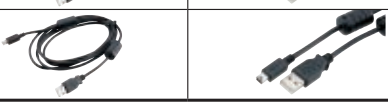
Connecting Cable

* The cable length is 2m.

EPP16M2 Printer Connecting Cable

Part #	Applicable Model	Figure
379	CEM3-G/CEM3-P (P.36), CTA2 (P.24), R-DT999 (P.66), CTB2-G (P.37)	
380	TCC	
382	DOTE3-G (P.54), LC3-G (P.56), TDT3-G (P.57), TME2 (P.60), CD5 (P.66)	

PC Connecting Cable

Part #	Applicable Model	Figure	Plug
561	TCC		D-SUB 9 Pin Female
575	CEM3-G/CEM3-P (P.36), CTA2 (P.24), R-DT999 (P.66), CTB2-G (P.37)		D-SUB 9 Pin Female
584	CEM3-G/CEM3-P (P.36), CTA2 (P.24), R-DT999 (P.66), CTB2-G (P.37)		USB A type
585	CPT-G (P.23)		D-SUB 9 Pin Female
383	DOTE3-G (P.54), LC3-G (P.56), TDT3-G (P.57), TME2 (P.60), CD5 (P.66)		D-SUB 9 Pin Female
384	STC2-G (P.10), ST2 (P.56), ATGE-G (P.58), BTGE-G (P.59)		USB A type
385	LC3-G (P.56), TDT3-G (P.57)		USB B type

Quick Charger, Battery Pack, AC Adapter

Quick Charger

Model	Applicable Model	Figure
RoHS BC-3-G	CEM3-G/CEM3-P (P.36), CTA2 (P.24) CTB2-G (P.37) (100-120V)	
RoHS BC-4-2	ST2 (P.56)	

Battery Pack

Model	Applicable Model	Figure
BP-5	CEM3-G/CEM3-P (P.36) CTA2 (P.24), CTB2-G (P.37)	
NEW BP-7	STC2-G (P.10)	
RoHS BP-100-3	DOTE3-G (P.54), LC3-G (P.56), TDT3-G (P.57), TME2 (P.60), CD5 (P.66)	

AC Adapter

Model	Applicable Model	Figure
RoHS BA-6	DOTE3-G (P.54), LC3-G (P.56), TDT3-G (P.57), CD5 (P.66)	
RoHS BA-5	ATGE-G (P.58), BTGE-G (P.59)	

Model	Applicable Model	Figure
RoHS BA-4	TME2 (P.60)	
NEW BA-7	STC2-G (P.10)	

AUR

UNITORK (Pistol Type Pneumatic Torque Screwdriver)

Direction

AUR12.5N

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	Air Pressure	Hose in Dia.	Standard Accessory	Weight
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.	[r.p.m]	[MPa]	[mm]	Bit ⊕	[kg]
AUR5N	2-5	0.1	AU50R	20-50	1	AU50R-A	15-45	1	2100			#3	1.5
AUR12.5N	5-12.5	0.25	AU125R	50-125	2.5	AU125R-A	37.5-112.5	2.5	800	0.5	φ10	-	1.7
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 AUR(LS) 25N)
3. W12 Open ended spanner (for AUR(LS) 25N)

AURLS

- AUR style with limit switch output
- Ideal for torque verification (Pokayoke) 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	Air Pressure	Hose in Dia.	Standard Accessory	Weight
	Min.-Max.	Grad.		Min.-Max.	Grad.		Min.-Max.	Grad.	[r.p.m]	[MPa]	[mm]	Bit ⊕	[kg]
AURLS5N	2-5	0.1	AU50RLS	20-50	1	AU50RLS-A	15-45	1	2100			#3	1.5
AURLS12.5N	5-12.5	0.25	AU125RLS	50-125	2.5	AU125RLS-A	37.5-112.5	2.5	800	0.5	φ10	-	1.7
AURLS25N	10-25	0.5	AU250RLS	100-250	5	AU250RLS-A	75-225	5	400			-	

POKA Patrol (Count Checker)

CNA-4mk2

* Sold Separately

HAT

HANDYTORK (Battery Operated Torque Screwdriver)

Direction

HAT HATR

HAT25N

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	Voltage	Square Drive	Weight
	Min.-Max.	Grad.	[r.p.m.]	DC [V]	[mm]	[kg]
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.

Standard Accessories

1. W4 hex key
2. Supportive handle (for HAT25N, HATR25N, HATFH25N, HATRFH25N)

HATFH

COLOR UNIVERSAL DESIGN

- Wireless error-proofing (Pokayoke) version of HAT
- Tightening completion signal output to eliminate missed tightening

Accuracy ±5%

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

POKA Patrol (Count Checker)

CNA-4mk2

* Sold Separately

HAT Optional Accessories

Battery

BP-12

Model	Description
BP-12	DC 12V

Battery Charger

BC-1

Part #	Model
820	BC-1 (AC100V)

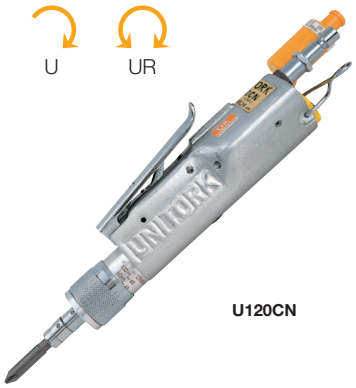
U/UR

UNITORK (Straight & Pistol Type Pneumatic Torque Screwdriver)

Assembly | Straight/Pistol | Pneumatic | Graduation | Trigger/Lever | RoHS

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

Direction



U120CN

Accuracy ±5%

S.I. Model	Torque Range [cN·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm] Min.-Max.	Grad.	American Model	Torque Range [lbf·in] Min.-Max.	Grad.	Free Speed [r.p.m]	Air Pressure [MPa]	Hose in Dia. [mm]	Weight [kg]	Standard Accessory Bit ⊕
	cN·m	cN·m		kgf·cm	kgf·cm		lbf·in	lbf·in					
U30CN	10-30	0.5	U3	1-3	0.05	U3-A	1-3	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	0.6	φ6	0.95	
UR500CN	200-500	10	U50R	20-50	1.0	U50R-A	15-45	1.0	950			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.

Standard Accessories

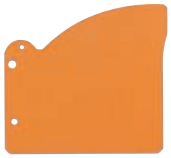
1. One Touch Joint #130 (For U30CN-U250CN, ULR120CN and ULR250CN)
2. Bit holder (For U1000CN only)

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



Hand Cover

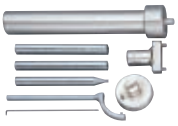
For hand slip protection

Part #	Applicable Model
150	U30CN-U120CN
151	U250CN

Torque-fix

For torque adjustment

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



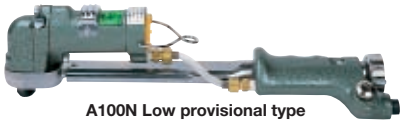
Tool Kit

Tools for disassembly/assembly for UNITORK

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

A/AC Semi-Automatic Airtork

Direction



A100N Low provisional type

A180N Low provisional type

AC100N High provisional type

ACLS100N 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 torque set 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.							
							lbf·in	lbf·in							
A10N	3-10	0.1	A100	30-100	1	A100-A	30-90	1							
A25N	5-25	0.25	A225	50-250	2.5	A225-A	50-200	2.5	1.8	750			256	9.5	1.0
A50N	10-50	0.5	A450	100-500	5	A450-A	100-400	5							
							lbf·ft	lbf·ft							
A100N	20-100	1	A900	200-1000	10	A900-A	15-65	1	2.5	800		ϕ5	339	12.7	1.5
A180N	40-180	2	A1800	400-1800	20	A1800-A	30-130	2	5				489		2.6
							lbf·in	lbf·in			0.6				
AC25N	5-25	0.25	A225C7	50-250	2.5	AC200I-3A	50-200	2.5	11	1000			293	9.5	1.0
AC50N	10-50	0.5	A450C7	100-500	5	AC400I-3A	100-400	5							1.5
AC100N	20-100	1	A900C7	200-1000	10	AC750I-3A	200-800	10							
							lbf·ft	lbf·ft	17.5	900		ϕ6	335	12.7	2.0
-	-	-	-	-	-	AC75F-3A	15-75	1							
AC180N	40-180	2	A1800C	400-1800	20	AC130F-4A	30-130	2	19	800			489		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/ACLS

- A/AC style with limit switch output
- Ideal for torque verification (Pokayoke) assembly processes

Accuracy ±3%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm]		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.							
ALS10N	3-10	0.1	A100LS	30-100	1							1.2
ALS25N	5-25	0.25	A225LS	50-225	2.5	1.8	750			256		
ALS50N	10-50	0.5	A450LS	100-500	5				ϕ5		9.5	1.7
ACLS25N	5-25	0.25	A225C7LS	50-250	2.5	11	1000	0.6		293		1.0
ACLS50N	10-50	0.5	A450C7LS	100-500	5							1.5
ACLS100N	20-100	1	A900C7LS	200-1000	10	17.5	900		ϕ6	335	12.7	2.0
ACLS180N	40-180	2	A1800CLS	400-1800	20	19	800			489		3.3

AS Fully-Automatic Airtork

Direction

AS12N

ASH80N

Assembly **Angle** **Pneumatic** **Graduation/Preset** **Lever** RoHS

- Pneumatic right angle style
- Speed tightening with shut off at final torque set
- ASH: High air pressure, ASL: Low air pressure

Accuracy ±5%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·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.						
AS12N	6-12	0.2	A120S	60-120	2	1000	0.5		359	9.5	1.9
ASH40N	20-40		A400SH	200-400		2000			477		2.6
ASH60N	30-60		A600SH	300-600		1330	0.6		484		2.8
ASH80N	40-80		A800SH	400-800		1000			592	12.7	3.2
ASH120N	60-120	Preset	A1200SH	600-1200	Preset	640		ϕ12	662		4.1
ASL30N	15-30	Type	A300SL	150-300	Type	1700			477	9.5	2.6
ASL45N	22.5-45		A450SL	225-450		1130	0.45		484		2.8
ASL60N	30-60		A600SL	300-600		850			592	12.7	3.2
ASL90N	45-90		A900SL	450-900		540			662		4.1

Note
1. AS12N is Adjustable style having a graduated scale.
2. Other AS models are Preset style. Please specify the required set torque when ordering. (Ex. ASH40N x 30N·m)
3. Use pneumatic sockets only.
4. S.Q. Drive Through Hole

Standard Accessories
1. Torque adjustment key
2. Spanner

AS optional Accessories

Spanner (for disassembly/assembly)

Part #	Applicable Model
(170)	AS

Torque Adjustment Key

Part #	Applicable Model
(140)	AS

AP

Fully-Automatic Airtork

Direction

AP400N

AP2200N

Assembly | **Pistol** | **Pneumatic** | **Graduation** | **Trigger/Lever** | RoHS

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

Accuracy ±5%

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

Note

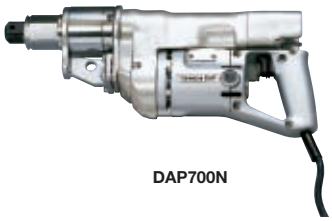
1. Reaction arm, such as UA or SA, must be used when operating AP models in order to absorb reaction force.
2. Use pneumatic sockets only.
3. S.Q. Drive Through Hole

Standard Accessories W5 hex key

DAP

Fully-Automatic Electric Torque Wrench

Direction



DAP700N

Assembly | **Pistol** | **Electric Power** | **Graduation** | **Trigger**

- Electric version of AP

Accuracy ±5%

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

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

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	-

DECA

10:1 Ratio
Torque Multiplier

RoHS

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

DECA900N

Body + Universal Arm

Accuracy ±5%

Model	Output Torque [N·m] Min.-Max.	[kgf·m] Min.-Max.	[lbf·ft] Min.-Max.	Torque Ratio	Dimension [mm] Overall Length	Dia.	Output Sq. Drive	Input Sq. Drive	Weight [kg]	Applicable Universal Arm
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			5.7	UA1800N
DECA3000N	600-3000	60-300	434-2170		324	95	31.75	19.0	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	25.4	34	UA9000N
DECA18000N	3600-18000	360-1800	2600-13000		540	172	63.5		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

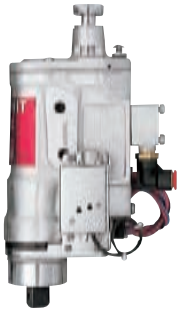
Multiple Unit (Pneumatic Straight Style)

Direction

Automatic **Straight** **Pneumatic** **Graduation** **Master Valve Operation** RoHS

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

ME126N



MC400N-TC

Accuracy ±5%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Free Speed [r.p.m]	Air Pressure [Mpa]	Hose Dia. [mm]	Overall Length [mm]	Square Drive [mm]	Weight [kg]
				kgf·cm	kgf·cm		lbf·in	lbf·in						
ME25N	10-25	0.5	M250E2	100-250	5	M250E2-A	90-220	5	1050	0.4	φ7.5	420.6 (457.6)	12.7	5.3
ME45N	20-45		M450E2	200-450		M450E2-A	200-400		540			424		
ME80N	35-80	1	M800E2	350-800	10	M800E2-A	310-700	10	310					
							lbf·ft	lbf·ft				(461)		
ME126N	50-126	2	M1260E2	500-1260	20	M1260E2-A	35-90	2	200					5.7
				kgf·m	kgf·m									
MC220N	100-220	10	M22C	10-22	1	M22C-A	80-160	10	277	0.5	φ8	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			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	100	M220C	100-220	10	M220C-A	700-1600	100	19.2			491	31.75	17
MC4000N	2000-4000		M400C	200-400		M400C-A	1500-3000		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, please 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

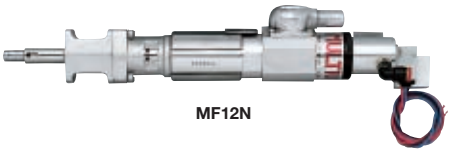
MG/MF

Multiple Unit (Pneumatic Straight Style)

Direction

Automatic **Straight** **Pneumatic** **Graduation** **Master Valve Operation** RoHS

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



MF12N

Accuracy ±5%

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

AME

Multiple Unit (Pneumatic Right Angle Style)

Direction

Automatic **Angle** **Pneumatic** **Graduation** **Master Valve Operation** RoHS

- Ideal for automated tightening applications

AME35N

Accuracy ±5%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm] Min.-Max.	Grad.	Free Speed [r.p.m]	Air Pressure [Mpa]	Hose Dia. [mm]	Overall Length [mm]	Square Drive [mm]	Weight [kg]
AME25N	10-25	0.5	AM250E2	100-250	5	1200	0.5	φ7.5	369 (407)	12.7	2.6
AME35N	15-35		AM350E2	150-350		800			376 (414)		2.7
AME50N	20-50	1	AM500E2	200-500	10	600			484 (522)		2.9
AME70N	30-70		AM700E2	300-700		380			554 (592)		3.6

Note

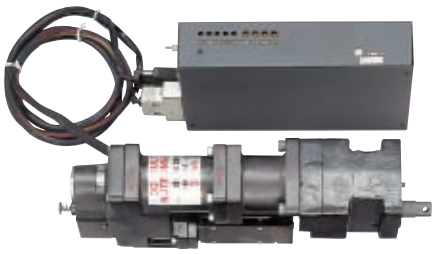
1. Auto-reverse/auto-reset functions.
2. For designing a multi-spindle system, please check the PCD, minimum distance between the spindles.
3. Add "–TC" for sensor-equipped version.
4. For first-time user, consult Tohnichi for assistance.

Standard Accessories Torque adjusting bar

DCME

Direction

Multiple Unit (Electric Straight Style)



DCME25N

Automatic | **Straight** | **Electric Power** | **Graduation** | **Switch Signal**

- Electric version of ME
- Built-in brushless motor allows for noiseless fastening.

Accuracy ±5%

S.I. Model	Torque Range [N·m]		Metric Model	Torque Range [kgf·cm]		Free Speed	Voltage	Overall Length	Square Drive	Weight
	Min.-Max.	Grad.		Min.-Max.	Grad.	[r.p.m]	[AC V]	[mm]	[mm]	[kg]
DCME25N	10-25	0.5	DCM250E	100-250	5	1050	Single	302 (339)	9.5	5
DCME45N	20-45	1	DCM450E	200-450	10	540	Phase 200			5.5
DCME80N	36-80	2	DCM800E	350-800	20	310	50/60Hz	305 (342)	12.7	
DCME125N	50-125	5	DCM1250E	500-1250	50	200	(100)			6.0

Note

1. For designing a multi-spindle system, check the PCD, minimum distance between the spindles.
2. Please specify the electric voltage.
3. Add "–TC" for sensor-equipped version.
4. For first-time user, consult Tohnichi for assistance.

Standard Accessories

1. Driver Unit (DR-DCME)
2. W5 hex key

Power Supply (Sold separately)

Model	Powr Source AC (V)	
PS-DCME	AC200V (AC100V)	DC140V AC15V

Note Specify the voltage when ordering

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	125	Master Valve
187	Handle Assist	-		-

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

Master Valve

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

Slide Drive (for ME, DCME)

Model
FDME25N
FDME80N
FDME126N
FDME400N
FDME1200N

Slide Drive (for MC)

Model
FDMC400N
FDMC1200N

Torque Sensor

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

Related Products

Daily inspection/calibration devices for power torque tools

ST50N2

ST1000N2

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

TCF20N

Fixed typed torque sensor to calibrate power tools (P.61)

TCR18N

Rotary type torque sensor capable of measuring rotating objects (P.61)

CD5

Display of torque value measured by strain gauge sensor (P.66)

DOTE3-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

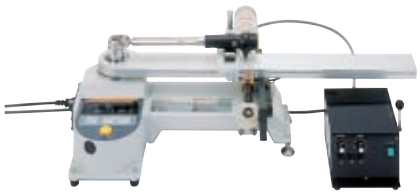
Model	Torque Range												Torque Wrench Max. Effective Length [mm]	Inlet Drive [mm]	Weight [kg]
	cN·m		N·m		kgf·cm		kgf·m		lbf·in		lbf·ft				
	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit			
DOTE20N3-G	200.0-2000.0	0.5	2.000-20.000	0.005	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.

DOTE3-G-MD RoHS

DOTE3-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

DOTE3-G Standard Accessories

Model	Down Adapter (Female)		Hex Adapter (Male)	AC Adapter (Power supply)
	Part #	[mm]	[mm]	
DOTE20N3-G	296 (DA3-2)	6.3	10, 13, 19 12, 14, 17	BA-6 (AC100-240V±10%)
DOTE50N3-G				
DOTE100N3-G	277	6.4		
	297 (DA4-3)	9.5		
DOTE200N3-G	-	-	17, 22, 27/19, 24, 30	
DOTE500N3-G	-	-	22, 27, 29/30, 32, 36	
DOTE1000N3-G	299 (DA8-6)	19.0	34, 41/46, 50	

DOTE3-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 Models
(382)	DOTE3-G → EPP16M2
(383)	DOTE3-G → PC (D-SUB 9 Pin Female)

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

Battery Pack (P.47)

Model
BP-100-3

Printer (P.67)

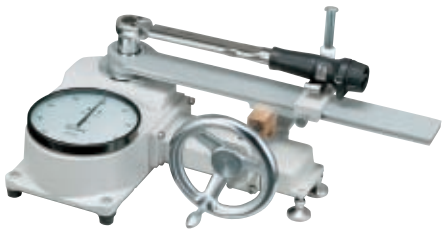
Model
EPP16M2

Data Filing System (P.66)

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·in					
DOT35N	5-35.0	0.1	350D0T	50-350	1	DOT300I	30-300	1		9.5		#296 (6.3)	10, 13, 19
DOT50N	5-50.0	0.2	500D0T	50-500	2	DOT430I	40-430	2	410		8		
DOT100N	10-100.0	0.5	1000D0T	100-1000	5	DOT1000I	100-1000	5		12.7		#277 (6.4), #297 (9.5)	12, 14, 17
							lbf·ft	lbf·ft					
DOT300N	30-300	1	3000D0T	300-3000	10	DOT200F	20-200	1	660	19	10	-	17, 22, 27 19, 24, 30
DOT700N	70-700	2	7000D0T	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

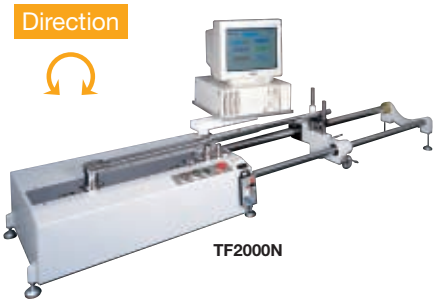
S.I. Model	Metric Model	American Model
DOT35N-MD	350DOT-MD	DOT300I-MD
DOT50N-MD	5000DOT-MD	DOT430I-MD
DOT100N-MD	1000DOT-MD	DOT1000I-MD
DOT300N-MD	3000DOT-MD	DOT200F-MD
DOT700N-MD	7000DOT-MD	DOT500F-MD

◆ Calibration Kit for DOTE3-G/DOT

* Sold separately. Refer to page 62.

TF Fully Automatic Digital Torque Wrench Tester

Direction



TF2000N

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]		[ozf·in]		[lbf·in]		[lbf·ft]	
		Min.-Max.	Grad.	Min.-Max.	Grad.	Min.-Max.	Grad.	Min.-Max.	1 digt	Min.-Max.	Grad.	Min.-Max.	Grad.
TF200N	1	5-200	0.05	50-2000	0.5	0.5-20	0.005	700-28000	5	50-1700	0.5	5-140	0.05
	2	0.5-20	0.005	5-200	0.05	0.05-2	0.0005	70-2800	0.5	5-170	0.05	0.5-14	0.005
TF500N	1	20-500	0.2	200-5000	2	2-50	0.02	3000-70000	20	200-4500	2	20-370	0.2
	2	2-50	0.02	20-500	0.2	0.2-5	0.002	300-7000	2	20-450	0.2	2-37	0.02
TF1000N	1	25-1000	0.25	250-10000	2.5	2.5-100	0.025	3500-140000	25	250-8500	2.5	25-700	0.25
	2	5-200	0.05	50-2000	0.5	0.5-20	0.005	700-28000	5	50-1700	0.5	5-140	0.05
	3	0.5-20	0.005	5-200	0.05	0.05-2	0.0005	70-2800	0.5	5-170	0.05	0.5-14	0.005
TF2000N	1	100-2100	1	1000-21000	10	10-210	0.1	15000-290000	100	1000-18000	10	100-1500	1
	2	20-500	0.2	200-5000	2	2-50	0.02	3000-70000	20	200-4500	2	20-370	0.2
	3	2-50	0.02	20-500	0.2	0.2-5	0.002	300-7000	2	20-450	0.2	2-37	0.02
TF3000N	1	200-3000	1	2000-30000	10	20-300	0.1	28000-420000	100	2000-25000	10	200-2000	1
	2	100-2100	1	1000-21000	10	10-210	0.1	15000-290000	100	1000-18000	10	100-1500	1
	3	20-500	0.2	200-5000	2	2-50	0.02	3000-70000	20	200-4500	2	20-370	0.2

Standard Accessories 2m x 2P Flat Type Plug

TF Standard Accessories

Hex Adapter, Ratchet Adapter, and Down Adapter

Model	Hex Adapter Dimensions [mm]	Ratchet Adapter Model	Down Adapter Model
TF200N	□12.7-17, 22, 27 □12.7-19, 24, 30 □9.5-10, 13, 19 □9.5-12, 14, 17	RA3mk2 RA4mk2	DA3-2 DA4-3
TF500N	□19.0-22, 27, 29 □19.0-30, 32, 36 □9.5-10, 13, 19 □9.5-12, 14, 17		DA3-2 DA6-4
TF1000N	□25.4-36, 46 □25.4-41, 51 □12.7-17, 22, 27 □12.7-19, 24, 30 □9.5-10, 13, 19 □9.5-12, 14, 17	RA3mk2 RA4mk2 RA8mk2	DA3-2 DA4-3 DA8-6
TF2000N	□25.4-36, 46 □25.4-41, 51 □19.0-22, 27, 29 □19.0-30, 32, 36 □9.5-10, 13, 19 □9.5-12, 14, 17	RA3mk2 RA6mk2 RA8mk2	
TF3000N	□38.1-41, 50 □25.4-36, 46 □25.4-41, 51 □19.0-22, 27, 29 □19.0-30, 32, 36	RA6mk2 RA8mk2 RA12	DA6-4 DA8-6 DA12-8

Note Refer to page 67.

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	9.5				
TF500N	1	1550	19				315
	2	1480	9.5				
TF1000N	1	1650	25.4	2160			380
	2	1550	12.7				
	3	1480	9.5				
TF2000N	1	2150	25.4	2660			415
	2	1550	19				
	3	1480	9.5				
TF3000N	1	2650	38.1	3160			450
	2	2150	25.4				
	3	1550	19				

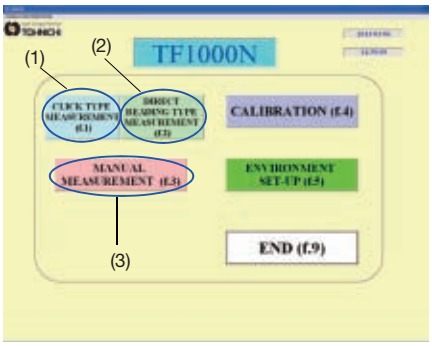
◆ Calibration Kit for TF

* Sold separately. Refer to page 62.

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.



Main Menu Display

Display of Measuring
* [Ex] QL200N on 200N·m torque value

[Customized software is available upon request]

- Tracking a full record from receipt of products to disposal
- Periodical inspection and interval management
- Number of repairing and interval management
- System of issuing calibration certificate
- Accuracy management by serial numbers and more...

LC3-G Torque Wrench Line Checker

Direction

LC200N3-G

LC1000N3-G

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 cN·m Min.-Max.	cN·m 1 digit	N·m Min.-Max.	N·m 1 digit	kgf·cm Min.-Max.	kgf·cm 1 digit	kgf·m Min.-Max.	kgf·m 1 digit	lbf·in Min.-Max.	lbf·in 1 digit	lbf·ft Min.-Max.	lbf·ft 1 digit	Inlet Drive [mm]	Weight [kg]
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	10.5
	Peak	50.0-99.8	0.2	0.500-0.998	0.002	5.00-9.98	0.02	-	-	5.00-9.98	0.02	-	-		
		100-999	1	1.00-9.99	0.01	10.0-99.9	0.1	-	-	10.0-99.9	0.1	-	-		
		1000-2000	10	10.0-20.0	0.1	10-200	1	-	-	100-174	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	12.7	
	Peak	-	-	5.00-9.98	0.02	50.0-99.8	0.2	-	-	50.0-99.8	0.2	4.00-9.98	0.02		
		-	-	10.0-99.9	0.1	100-999	1	-	-	100-999	1	10.0-99.9	0.1		
		-	-	100-200	1	1000-2000	10	-	-	1000-1740	10	100-140	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	0.01	500-999	1	36.8-99.9	0.1		
		-	-	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	0.2		
		-	-	1000-1400	10	-	-	100-140	1	1000-9990	10	100-1000	1		
		-	-	-	-	-	-	-	-	10000-12000	100	-	-		

Note
1. Dimensions: L278mm x W160mm x H167mm (LC20N3-G, LC200N3-G)
   L500mm x W290mm x H186mm (LC1000N3-G)
   L500mm x W313mm x H186mm (LC1400N3-G)
2. Calibration kits (TCL models) are optional. Refer to page 62.
3. Max. 1000 measured data can be stored.

Standard Accessories AC Adapter (BA-6): AC100-240V±10%

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]
270	LC20N3-G	6.35	9.5
272	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/ST2

* Sold separately.
Refer to page 62.

LC3-G Optional Accessories

Connecting Cable (P.47)

Part #	Applicable Models
382	LC3-G → EPP16M2
383	LC3-G → PC (D-SUB 9 Pin Female)
385	LC3-G → PC (USB B Type)

Note
1. ( ) shows shape of the connecting plug.
2. Consult Tohnichi for other types of connector shapes.

Battery Pack (P.47)

Model
BP-100-3

Printer (P.67)

Model
EPP16M2

Data Filing System (P.66)

Model	Media
DFS	CD-ROM

ST2 SPINTORK (Rotary Peak Torque Meter)

Direction

ST50N2 ST1000N2

Checking | Digital | Re-Chargeable | Direct Reading | RoHS

- Compact handheld cordless sensor
- Ideal for nutrunner torque output
- Use right between bolt and wrench

Accuracy ±1%+1digit

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Square Drive [mm]	Weight [kg]
				kgf·cm	kgf·cm		lbf·in	lbf·in			
ST10N2	2-10	0.01	ST100M2	20-100	0.1	ST90i2	20-90	0.1		6.35	
ST20N2	4-20	0.02	ST200M2	40-200	0.2	ST180i2	40-180	0.2		9.5	
ST50N2	10-50	0.05	ST500M2	100-500	0.5	ST450i2	100-450	0.5	75		0.25
ST100N2	20-100	0.1	ST1000M2	200-1000	1	ST900i2	200-900	1		12.7	
							lbf·ft	lbf·ft			
ST200N2	40-200	0.2	ST2000M2	400-2000	2	ST150F2	30-150	0.2			
ST500N2	100-500	0.5	ST5000M2	1000-5000	5	ST360F2	72-360	0.5	120	19.0	
				kgf·m	kgf·m						1.3
ST1000N2	200-1000	1	ST10000M2	20-100	0.1	ST700F2	140-700	1	135	25.4	

Note Not for use with impact wrenches.

Standard Accessories 1. Quick Battery Charger (BC-4-2) 2. Battery Pack (built-in) 3. CD-ROM (USB Driver)
4. USB Connecting Cable 5. Carrying Case

ST2 Optional Accessories

Connecting Cable (P.47)

Part #	Applicable Models
379	R-DT999 → EPP16M2
384	ST2 (USB mini B) → PC (USB A)

Infrared Receiver (P.66)

Model
R-DT999

Extension Bar

Part #	Applicable Models
283	ST10N2, ST100M2, ST90i2
281	ST20N2, ST200M2, ST180i2
247	ST50N2, ST500M2, ST450i2
	ST100N2, ST1000M2, ST900i2
	ST200N2, ST2000M2, ST150F2
248	ST500N2, ST5000M2, ST30F2
249	ST1000N2, ST10000M2, ST700F2

ST2 Common Specifications

Accuracy	±1%+1digit
Direction	Right and left
Display	7 segment LCD; Unit, Bettey life, Direction Counter value: 3 digits (character height: 3mm) Torque value: 4 digits (character height: 7mm)
Measurement Mode	PEAK (holding of maximum value)/RUN (continuous measurement)
Data Memory	999
Arithmetic Function	Number of samples, maximum, minimum, and average values
Data Output	Infrared output, USB output (Communication mode can be switched by key operation.)
Power	Ni-MH (Nickel hydrogen) battery pack
Continuous Operating Hours/Charging Time	Approx. 10 hours/approx. 2 hours
Charger	Input: AC 100V to 240V ±10% (in accordance with PSE, CE-compliant)
Other Functions	Auto Power OFF: 3 minutes, Auto Zero, Battery indicator in 4 steps, Auto Memory Reset: 0.5 to 5 seconds variable
Operating Temperature Range	0 to 40°C

TDT3-G Digital Torque Screwdriver Tester

Direction

TDT600CN3-G with loading device (Model: STA)

Calibration | Digital | Manual Rotary | Direct Reading | Loading Device | RoHS

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

Accuracy ±1%+1digit

Model	Torque Range								Inlet Drive	Dimensions [mm]			Weight
	cN·m		kgf·cm		ozf·in		lbf·in			Overall Length	Width	Height	
	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit	Min.-Max.	1digit	[mm]				[kg]
TDT60CN3-G	2-60	0.005	0.2-6	0.0005	3-80	0.005	0.2-5	0.005	6.35 Hex (Male)	230	220	225	11
TDT600CN3-G	20-600	0.05	2-60	0.005	30-800	0.05	2-50	0.05	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)

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 62.

■ TDT3-G Optional Accessories

Connecting Cable (P.47)

Part #	Applicable Models
382	TDT3-G → EPP16M2
383	TDT3-G → PC (D-SUB 9 Pin Female)
385	TDT3-G → PC (USB B type)

Note
1. ( ) shows shape of the connecting plug.
2. Consult Tohnichi for other types of connector shapes.

Battery Pack (P.47)

Model
BP-100-3

Loading Device for TDT3-G

Model
TDTLA3
LTA

TDT60CN3-G measures 2-60cN·m range of torque wrenches.
TDT600CN3-G measures 20-600cN·m range of torque wrenches.
Loading device for indicating torque screwdrivers such as FTD, STC .

Printer (P.67)

Model
EPP16M2

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

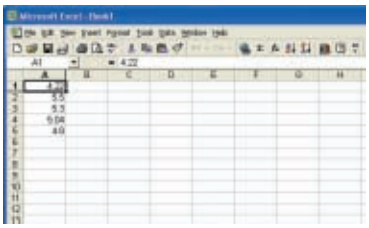
TDT3 Loading Device Connecting Adapter for TDT

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

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:



ExRcv

CEM100N3×15D-G

CEM3-G: ExRcv for CEM

CTB100N2x15D-G

CTB2-G: ExRcv for CTB

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

ST50N2 ST1000N2

ST2: 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

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] Min.-Max.	Grad.	Metric Model	Torque Range [gf·cm/kgf·cm] Min.-Max.	Grad.	American Model	Torque Range [ozf·in/lbf·in] Min.-Max.	Grad.	Chuck Grip [mm]	Dimensions [mm] Overall Length	Outside Diameter	Weight [kg]
				gf·cm	gf·cm		ozf·in	ozf·in				
ATG045CN	0.05-0.45	0.01	45ATG	5-45	1	ATG06Z	0.06-0.6	0.01				
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	φ1-φ6.5	99	43.5	0.18
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				
-	-	-	-	-	-	BTG60Z-S	6-60	1				
-	-	-	-	-	-	BTG120Z-S	10-120	2				
				kgf·cm	kgf·cm		lbf·in	lbf·in				
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	φ1-φ8.5	135	64.2	0.52
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	2	15BTG-S	2-15	0.2	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

CE

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 [cN·m] Min.-Max.	1 digit	[mN·m] Min.-Max.	1 digit	[gf·cm] Min.-Max.	1 digit	[ozf·in] Min.-Max.	1 digit	Chuck Grip [mm]	Dimensions [mm] Overall Length	Outside Diameter	Weight [kg]
ATGE05CN-G	0.1-0.5	0.001	1-5	0.01	10-50	0.1	0.15-0.7	0.001				
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	φ1-6.5	120	67	0.305
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 can be ordered separately.

Standard Accessories: Coin-type lithium battery (built-in the body), 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 Prosessing	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	0 to 40°C non condensing
Standard Options	Coin battery (built in), Carrying case

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

* Sold separately. Refer to page 62.

BTGE-G

Digital Torque Gauge

Direction

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

BTGE200CN-G

Accuracy ±2%+1digit

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 Models
384	BTGE-G (USB mini B) → PC (USB A)

Measurement Board

Model
809

Battery Pack

BP-C1

Model
BP-C1

ATG/BTG/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 Models
808	ATGE-G
809	BTGE-G

No.800

Table attachment

4 poles are designed to clamp objects of any shape (Chucking diameter φ10-φ58)

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

No.384

USB connecting cable

Cable for external USB data output or connecting BA-5

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

No.322

Plastic chuck

Plastic chuck for fragile objects

Part #	Applicable Models
322	ATG/ATGE-G

BP-C1

Battery pack

Part #	Applicable Models
BP-C1	BTGE-G

ATGE-G with table attachment and measurment stand

BTGE-G with table attachment and measurment stand

TME2 Digital Torque Meter

Direction

2TME500CN2

Digital **Pole Clamping** **Direct Reading** RoHS

- 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] Min.-Max.	Grad.	Metric Model	Torque Range [gf·cm/kgf·cm] Min.-Max.	Grad.	American Model	Torque Range [ozf·in/lbf·in] Min.-Max.	Grad.	Chuck Size [mm]	Dimensions [mm] Overall Length	Width	Height	Weight [kg]
				gf·cm	gf·cm		ozf·in	ozf·in					
3TME10CN2	2.00-10.00	0.01	3TME10CN2-M	200-1000	1	3TME10CN2-Z	2.80-14.00	0.01					
3TME20CN2	4.00-20.00	0.02	3TME20CN2-M	400-2000	2	3TME20CN2-Z	5.60-28.00	0.02					
3TME50CN2	10.00-50.000	0.05	3TME50CN2-M	1000-5000	5	3TME50CN2-Z	14.00-70.00	0.05	φ14-φ110	252	158	185	3.5
				kgf·cm	kgf·cm								
3TME100CN2	20.0-100.0	0.1	3TME100CN2-M	2.00-10.00	0.01	3TME100CN2-Z	28.00-140.0	0.1					
							lbf·in	lbf·in					
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	φ18-φ190	331	223	283	12
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. Calibration kits (TMTCL models) are optional. Refer to page 60.
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 only)

TME2 Optional Accessories

Connecting Cable (P.47)

Part #	Applicable Models
(382)	TME2 → EPP16M2
(383)	TME2 → PC (D-SUB 9 Pin Female)

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

Printer (P.67)

Model
EPP16M2

Data Filing System (P.66)

Model	Media
DFS	CD-ROM

Battery Pack (P.47)

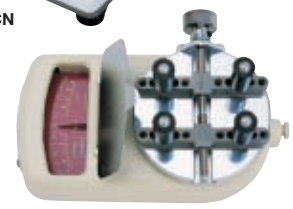
Model
BP-100-3

TM Analog Torque Meter

Direction

COLOR UNIVERSAL DESIGN

2TM400CN



5TM2.5MN

Pole Clamping **Direct Reading** RoHS

- Dial indicating
- Wide variety of torque testing ranges

Accuracy ±2%

S.I. Model Standard	S.I. Model With Memory Pointer	Torque Range [mN·m/cN·m] Min.-Max.	Grad.	American/Metric Model	American Torque Range [lbf·in] Min.-Max.	Grad.	Metric Torque Range [kgf·cm/gf·cm] Min.-Max.	Grad.	Dimensions [mm] Overall Length	Width	Height	Chuck Size	Weight [kg]
		mN·m	mN·m				gf·cm	gf·cm					
4TM10MN	4TM10MN-S	1-10	0.2	4-TM100-A-S	0.01-0.086	0.002	10-100	2					
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		4-TM250-A-S	0.025-0.215		25-250						
4TM50MN	4TM50MN-S	5-50	1	4-TM500-A-S	0.05-0.43	0.01	50-500	10					
4TM75MN	4TM75MN-S	8-75	2	4-TM750-A-S	0.08-0.65	0.02	80-750	20					
		cN·m	cN·m				kgf·cm	kgf·cm	252	158	109.5	φ14-φ110	3
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		3-TM2.5-A-S	0.25-2.15		0.25-2.5						
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		2-TM15-A-S	2-13		2-15						
2TM200CN	2TM200CN-S	30-200		2-TM20-A-S	3-17		3-20						
2TM300CN	2TM300CN-S	30-300	5	2-TM30-A-S	3-26	0.5	3-30	0.5	331	223	133.5	φ18-φ190	10.5
2TM400CN	2TM400CN-S	40-400		2-TM40-A-S	3.5-35		4-40						
2TM500CN	2TM500CN-S	50-500		2-TM50-A-S	4-43		5-50						
2TM600CN	2TM600CN-S	60-600	10	2-TM60-A-S	5-50	1	6-60	1					
2TM750CN	2TM750CN-S	80-750		2-TM75-A-S	7-65		8-75						

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

Low Capacity (below 7.5 mN·m) Torque Meter

Accuracy ±2%

S.I. Model	Torque Range [mN·m] Min.-Max.	Grad.	Metric Model	Torque Range [gf·cm] Min.-Max.	Grad.	American Model	Torque Range [ozf·in] Min.-Max.	Grad.	Dimensions [mm] Overall Length	Width	Height	Chuck Size	Weight [kg]
5TM1MN	0.2-1	0.05	5-OT10	2-10	0.5	5TM0.15Z	0.02-0.15	0.005					
5TM1.5MN	0.2-1.5		5-OT15	2-15		5TM0.2Z	0.04-0.2	0.01					
5TM2.5MN	0.5-2.5	0.1	5-OT25	5-25	1	5TM0.35Z	0.05-0.35		122	76.5	59	φ6-φ58	0.3
5TM5MN	1-5	0.2	5-OT50	10-50	2	5TM0.7Z	0.3-0.7	0.02					
5TM7.5MN	1-7.5		5-OT75	10-75		5TM1Z	0.2-1	0.05					

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

Calibration Kit for TME2/TM

* Sold separately. Refer to page 62.

TCF Fixed Type Torque Sensor

CD5

TCF20N

Display (Sold separately)

Voltage Output **Fixed** RoHS

- Requires CD5 to display torque reading

S.I. Model	Torque Range [N·m] Min.-Max.	Metric Model	Torque Range [kgf·cm] Min.-Max.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Inlet Drive [mm]	Dimensions Height [mm]	Dimensions Diamater [mm]	Weight [kg]
					lbf·in				
TCF02N	0.02-0.2	TCF1.8	0.18-1.8	TCF1.8I	0.18-1.8		56		0.45
TCF04N	0.04-0.4	-	-	TCF3.5I	0.35-3.5				
TCF1N	0.1-1			TCF9I	0.9-9.0	6.35		45	
TCF2N	0.2-2	TCF18	1.8-18	TCF18I	1.8-18		62.5		0.5
TCF4N	0.4-4	-	-	TCF35I	3.5-35				
TCF10N	1-10			TCF90I	9.0-90				
TCF20N	2-20	TCF180	18-180	TCF180I	18-180	9.5	66	70	0.6
TCF40N	4-40			TCF350I	38-350				
		-	-		lbf·ft				
TCF100N	10-100			TCF75F	7.5-75	12.7	100	105	2.5
TCF200N	20-200	TCF1800	180-1800	TCF150F	15-150				
TCF400N	40-400	-	-	TCF300F	30-300	19.0	135	140	6
TCF1000N	100-1000			TCF750F	75-750	25.4	180	178	12
TCF2000N	200-2000	TCF18000	1800-18000	TCF1500F	150-1500				

Note
1. Calibration kits (TCL models) are optional. Refer to page 62.
2. Display (CD5) is sold separately.

Standard Accessories Connecting Cable

Attachment for TCF (Sold separately)

TP (Test Piece): Torque measurement for power torque tools

TP18N+TCF20N

Model	Torque Range S.I. [N·m] Min.-Max.	Torque Range Metric [kgf·cm] Min.-Max.	Torque Range American [lbf·in/lbf·ft] Min.-Max.	Applicable TCF Model	Inlet Width Across Flats [mm]	Inlet Nominal Size of Screw	Dimensions Diameter [mm]	Dimensions Height [mm]	Weight [kg]
			lbf·in						
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
			lbf·ft						
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

DTF5-2+TCF20N

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

TTF/ATF: Table/Fixture: Ideal for testing torque on bottle caps

TTF11+ATF18+TCF20N

Model TTF	Model ATF	Applicable TCF	Chuck Size [mm]	Table Dia. [mm]
TTF7	ATF1.8-2	TCF02N-TCF4N	φ10-70	φ70
TTF11			φ14-110	φ110
	ATF18	TCF10N-TCF20N		
TTF19	ATF1.8-2	TCF2N-TCF4N	φ18-190	φ180
	ATF18	TCF10N-TCF20N		

Note ATF attachment is required to fix TTF table.

TCR Rotary Type Torque Sensor

CD5

TCR18N

Display (Sold separately)

Voltage Output **Rotary** RoHS

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

S.I. Model	Torque Range [N·m] Min.-Max.	Metric Model	Torque Range [kgf·cm] Min.-Max.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Allowable Rotation [r.p.m]	Square Drive [mm]	Height [mm]	Width [mm]	Weight [kg]
					lbf.in					
TCR18N	1.8-18	TCR180	18-180	TCR180-A	16-160		9.5	91	76	0.9
					lbf.ft	2000				
TCR180N	18-180	TCR1800	180-1800	TCR1800-A	13-130		12.7	104	83	1.3
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		25.4	138.5	110	3.6

Note
1. Calibration kits (TCL models) are optional. Refer to page 62.
2. Display (CD5) is sold separately.

Standard Accessories Connecting Cable

◆ Calibration Kit for TCF/TCR

* Sold separately.
Refer to page 62.

Calibration Kit

◆ Calibration Kit for DOTE3-G/DOT RoHS

Model	Description				
	Calibration Lever	Stand	Reaction Unit	Scale Holder	Applicable Models
DOTCL36N	KL-DOTCL36N	KS-DOTCL	RU-DOTCL100N	WT0.5	DOT35N DOT50N DOTE20N3-G DOTE50N3-G
DOTCL100N	KL-DOTCL100N			WT1	DOT100N DOTE100N3-G
DOTCL200N	KL-DOTCL200N		RU-DOTCL360N		DOTE200N3-G
DOTCL360N	KL-DOTCL360N			WT5	DOT300N
DOTCL700N	KL-DOTCL700N		RU-DOTCL700N		DOTE500N3-G DOT700N
DOTCL1000N	KL-DOTCL1000N				DOTE1000N3-G

◆ Calibration Kit for TF RoHS

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

Note Supplied upon request.

◆ Calibration Kit for TCC RoHS

Model	Description				Optional Item	Applicable Models
	Calibration Lever	Stand	Wire	Scale Holder	Weight	
TCCTCL100N	Lever x 2	1 Set	Wire x 2	100g x 1,	1kg x 1, 2kg x 2,	TCC100N
TCCTCL100N-D			Wire x 3	1kg x 1	5kg x 3, Weight Set	TCC100N-D
TCCTCL500N			Wire x 4	500g x 1 1kg x 1 5kg x 1	1kg x 1, 2kg x 2, 5kg x 9, Weight Set	TCC500N
TCCTCL1000N			Wire x 2	1kg x 1 5kg x 1	1kg x 1, 2kg x 2, 5kg x 13, Weight Set	TCC1000N

Note Consult Tohnichi in case you have DOTCL.

◆ Calibration Kit for TDT3-G RoHS

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

RoHS

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

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

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

◆ Calibration Kit for TME2/TM RoHS

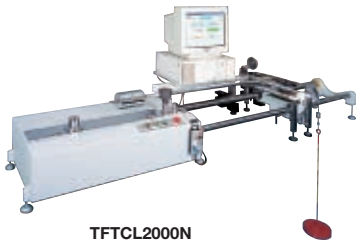
Model	Description	Applicable Models
2TMTCL	Wire x 1, Roller x 1, Frame x 1, Bolt x 2, Scale Holder (1kg) x 1, Scale Pan (100g) x 1	2TM/2TME2
3TMTCL	Wire x 1, Roller x 1, Frame x 1, Bolt x 2, Scale Pan (5g x 1, 100g x 1)	3TM/4TM/3TME2

◆ Calibration Kit for LC2-G/ST2/TCF/TCR RoHS

Model	Description	Applicable Models
TCL50N	Calibration Lever, Wire, Scale Holder (1kg), Scale Pan (100g)	TCF10N-TCF40N, TCR18N LC20N3-G, ST10N2-ST50N2
TCL200N	Calibration Lever, Wire, Scale Holder (1kg)	TCF100N-TCF200N, TCR180N LC200N3-G, ST100N2-ST200N2
TCL800N	Calibration Lever, Wire, Scale Holder (10kg)	TCF400N, TCR700N, ST500N2
TCL1000N	Calibration Lever, Wire, Scale Holder (5kg)	TCF1000N, ST1000N2, 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.

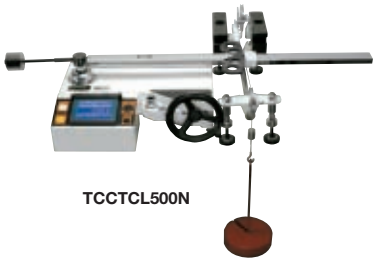

DOTCL100N


TFTCL2000N


TDTCL600CN


ATGTCL24CN


2TMTCL


TCCTCL500N


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.

BTM/ B-BTM

Bolt Tension Meter

Dial Indicating **Hydraulic** **Bourdon Type**

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

BTM400K

B-BTM13K

Accuracy ±3%

S.I. Model	Axial Tension Range [kN] Min.-Max.	Grad.	Metric Model	Axial Tension Range [ton] Min.-Max.	Grad.	American Model	Axial Tension Range [lbf] Min.-Max.	Grad.	Applicable Nominal Diameter of Bolts (Minimum Length) [mm]	Dimensions Overall Length [mm]	Overall Thickness [mm]	Overall Height [mm]	Weight [kg]
BTM400K	100-400	5	40BTM-2	10-40	0.5	40BTM-2-A	23000-90000	1000	Hexagon Bolt M16 (70), M20 (75) M22 (80), M24 (85) Torsia Bolt M16 (65), M20 (70) M22 (75), M24 (80)	260	64	280	12.6
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

- Creates consistent bolt tension
- Applied to fasteners and nuts

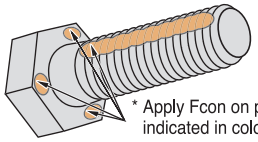
RoHS

Fcon

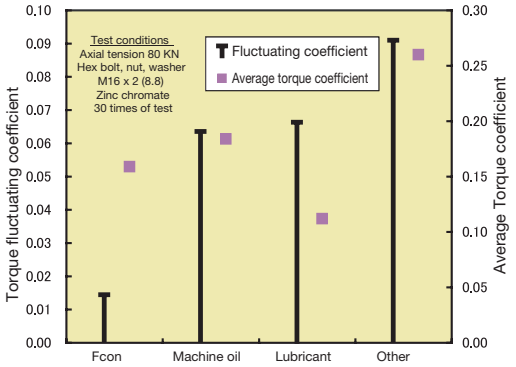
Model
Fcon

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.



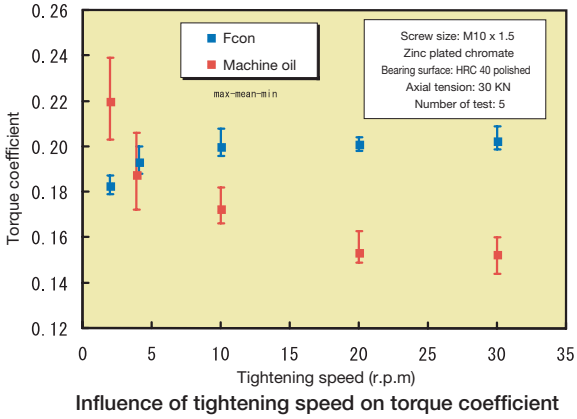
Axial Tension Stability Characteristics



Characteristic of axial tension stabilization

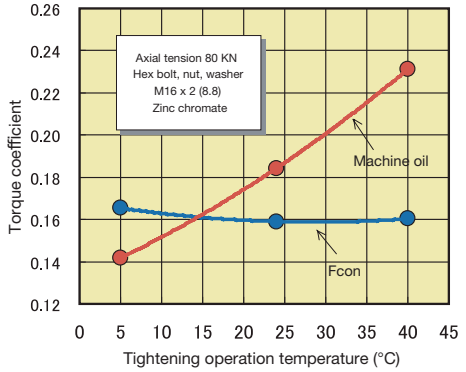
Torque coefficient calculated by formula K = t/(d x f)
T = tightening torque, d = nominal size of screw,
F = axial tension
Torque fluctuating coefficient =
torque coefficient standard deviation/average torque coefficient

Influence of Tightening Speed



Influence of tightening speed on torque coefficient

Influence of Temperature



Influence of temperature on torque coefficient

TT2000 Ultrasonic Tension Meter

Digital **Direct Reading**

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

TT2000

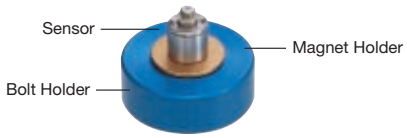
Model
TT2000
TT2000C
TT2000M

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
Temperature of Use	0-45 Celsius
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.



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

Axial Tension Calibrator

Model
AFC-20G

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.

FP Force Pen

CD5

Display (Sold separately)

Voltage Output **Pen**

- Pen style force sensor
- Compact, lightweight, user friendly operation
- Requires CD5 Compact Display

Model	Measurement Range [N]	Rated Output	Accuracy	Allowable Overload	Display (Option)	Weight [g]
FP1	±0.1-1	1mV/V	±1% F.S.	150%	CD42	80
FP2	±0.2-2					
FP4	±0.4-4					
FP10	±1-10					
FP20	±2-20					
FP40	±4-40					

Note
1. CD5 (Display) is optional.
2. FP models are supplied upon request.

Standard Accessories Standard Attachment

FG Force Grip

FG100

CD5

Display (Sold separately)

Voltage Output **Grip**

- Grip style force sensor
- For large product testing
- Requires CD5 Compact Display

Model	Measurement Range [N]	Rated Output	Accuracy	Allowable Overload	Display (Option)	Weight [g]
FG40	±4-40	2mV/V	±1% F.S.	150%	CD42	580
FG100	±10-100					
FG200	±20-200					
FG400	±40-400					

Note
1. CD5 (Display) is optional.
2. FG models are supplied upon request.

Standard Accessories Standard Attachment

CD5

Compact Display

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

CD5

Model
CD5

CD5 Optional Accessories

Printer

Model
EPP16M2

Data Filing System

Model	Media
DFS	CD-ROM

Connecting Cable

Part #	Applicable Models
(382)	CD5 → EPP16M2
(383)	CD5 → PC (D-sub 9 pin female)

Note
1. ( ) shows shape of the connecting plug.
2. Consult Tohnichi for other types of connector shapes.

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	Nonlinerity ±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%
Temperature in Use	0 to 40 no condensation
Dimension	150W x 190D x 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
EPP16M2

Data Filing System

Model	Media
DFS	CD-ROM

Connecting Cable

Part #	Applicable Models
(379)	CEM2, CEM3, R-DT999 → EPP16M2
(575)	CEM2, CEM3, R-DT999 → PC (D-SUB 10 Pin Female)
(584)	R-DT999 → PC (USB A type)

Note
1. ( ) shows shape of the connecting plug.
2. Consult Tohnichi for other types of connector shapes.

R-DT999 Specifications

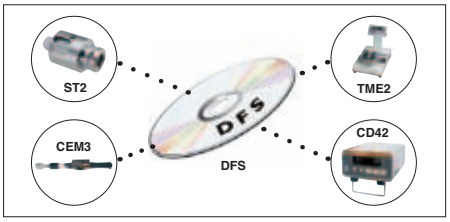
Data Input	Infrared data input (Tohnichi format only)
Display	6 digits, 14segments LCD 4 digits, 7segments LCD 4 digits, 7segments LED
Applicable Models	CEM3, CEM2, ST, ST2, STC, CTA, CTB
Data Output	RS232C compliance, USB connector serial output (*USB 1.1)
Power	DC5V 2A
Dimensions	W80 x D125 x H32mm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

Part #	Applicable Models
(575)	CEM2, CEM3, CTA2, R-DT999 → PC (D-Sub 9 Pin Female)
(561)	DOTE, LC, TDT, TME, TCC → PC (D-Sub 9 Pin Female)
(579)	CTB → PC (D-Sub 9 Pin Female)
(584)	CEM3, CTA2, R-DT999 → PC (USB A type)
(383)	DOTE3-G, LC2-G, TDT3-G, TME2 → PC (D-Sub 9 Pin Female)

Note
1. ( ) shows shape of the connecting plug.
2. Consult Tohnichi for other types of connector shapes.
3. In case of using with CEM3 models, change its setting into the"CEM2" communication mode.

EPP16M2 Printer

Auxiliary | RS232C Data Input

- Printer for digital torque equipment
- Compact dot matrix

Model
EPP16M2

EPP16N2

EPP16M2 Specifications

Printing Method	Mechanical dot matrix printer
Printing Speed	2.5 line/s
Line Space	3 dot line base
Number of Printed Digits	Standard letter 16 (letter/line)
Character Size	2.6mm (H) x 1.7mm (W)
Paper	57.5 mm width roll paper
Ink Ribbon	Ribbon cassette type
Dimension	Body 155mm x 145mm x 48mm (W, D, H)
Weight	Approx. 400g (body only)
Environmental Condition	Operating temperature +5-45 Celsius (no condensation) Storage temperature -10-+70 Celsius (excluding the paper)
Input Signal	Based on RS232C
Standard Accessories	AC adapter, Roll paper
Power	AC100V-240V 50/60Hz

EPP16M2 Optional Accessories

Roll Paper

Part #	Description
(408)	Roll Paper

Ribbon Cassette

Part #	Description
(409)	Ribbon Cassette

Connecting Cable

Part #	Applicable Models
(379)	CEM2, CEM3-G, CTA2, CTB2-G, R-DT999 → EPP16M2
(380)	DOTE, LC, TDT, TME, TCC → EPP16M2
(381)	EPP16M Cord → EPP16M2
(382)	DOTE3-G, LC2-G, TDT3-G, TME2, CD5 → EPP16M2

Note: (381) is a conversion cable in order for EPP16M (conventional model) cable to be used with EPP16M2.

DECA 10:1 Ratio Torque Multiplier

Auxiliary | Straight | Rotary | RoHS

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

DECA900N

Accuracy ±5%

Model	Output Torque [N·m] Min.-Max.	Output Torque [kgf·m] Min.-Max.	Output Torque [lbf·ft] Min.-Max.	Torque Ratio	Dimension [mm] Overall Length	Dia.	Output Sq. Drive	Input Sq. Drive	Weight [kg]	Applicable Universal Arm
DECA450N	90-450	9-45	65-325		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			5.7	UA1800N
DECA3000N	600-3000	60-300	434-2170	10:1	324	95	31.75	19.0	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	25.4	34	UA9000N
DECA18000N	3600-18000	360-1800	2600-13000		540	172	63.5		60	UA18000N

Note:
1. Universal Arm is optional.
2. DECA9000N and DECA18000N are supplied upon 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 — RoHS

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 — RoHS

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	-

Adapter for Torque Wrench Tester

Down Adapter

Ratchet Adapter

DA Down Adapter for Torque Wrench Testers
RoHS

- Compact adapter to reduce the size of square drive

Model	Part #	Dimensions [mm] Square Drive (Male)	Square Drive (Female)	Height	Outside Dia.	Capacity [N·m]	Weight [g]
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
RoHS

- Rotates wrench to proper testing position on tester (Gear action 3.75 degrees)

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

EVERTORQUE

Lubricant for repairing torque products — 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	Thrustring; Steel Ball, Scale Piece, Adjusting Screw; Thread
	WQL	Thrustring; Steel Ball, Scale Piece, Adjusting Screw; Thread, Knob, Protector; Joint
	MPQL	Thrustring; 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; Serration
Semi-Automatic Airtork	A/AC	Thrustring; Steel Ball, Scale Piece, Adjusting Screw; Thread
Fully-Automatic Airtork	AP, AS	Reduction Clutch; Clutch
Fully-Automatic Electric Nutrunner	DAP	
Multiple Unit	MC, ME, DCME	

Torque Settings for Torque Screwdrivers

■ LTD, RTD, MLD

Method of setting torque (Adjustable type):

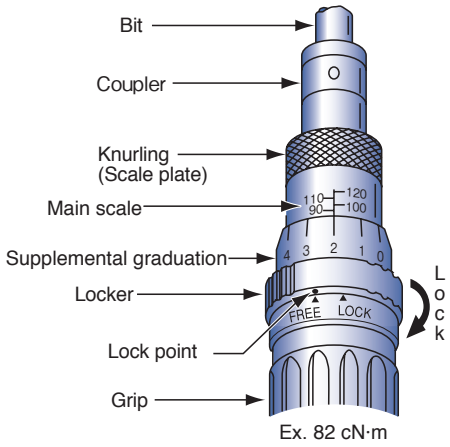
1. Turn the locker of the main unit clockwise to release the lock.
2. Holding the main scale knurling part with the fingers of your right hand, turn the grip with the fingers of your left hand to set the torque value.

* 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).

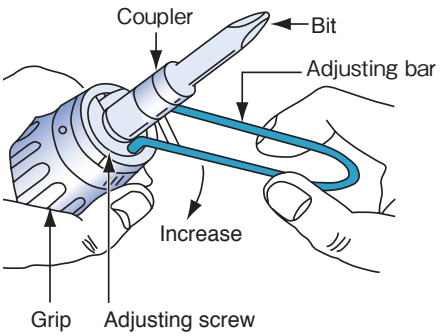
3. After setting the torque, turn the main unit locker counterclockwise to lock it.



■ 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.



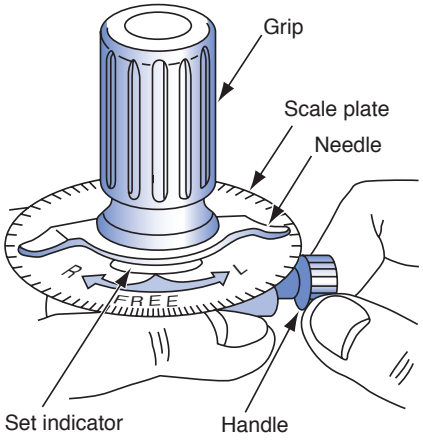
■ FTD50-400CN

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.

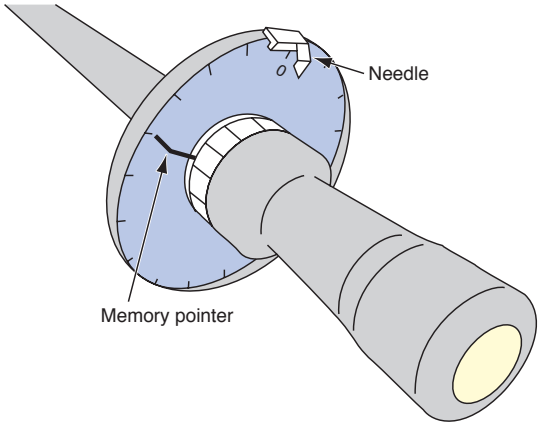
1. Holding the FTD screwdriver with your left hand, turn the preload handle in the counterclockwise direction using the fingers of your right hand (in case of clockwise measuring).
2. After some slipping turns, the needle will begin to move, and it will be easy to set an optional torque value.
3. If 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.

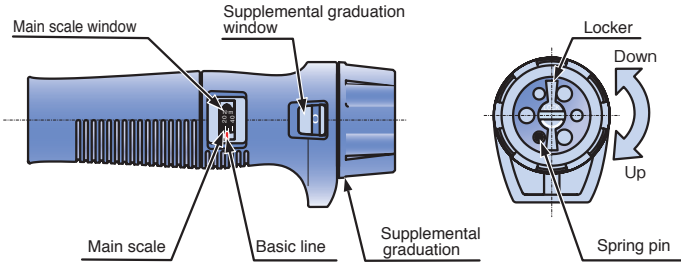


Torque Settings for Torque Wrenches

■ Adjustable type

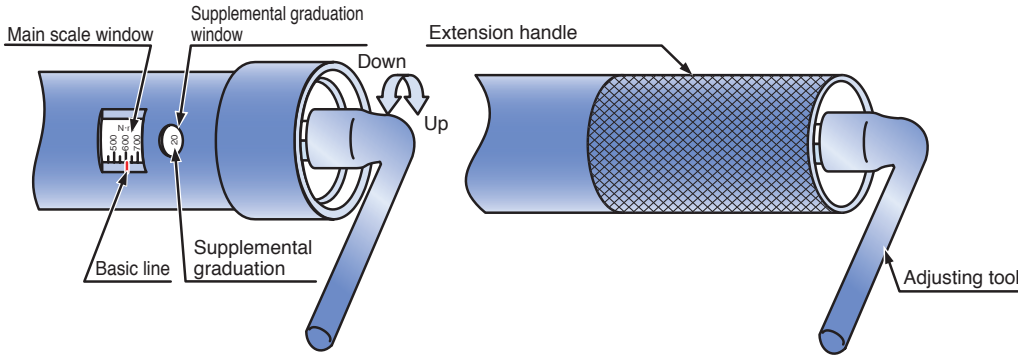
● QL, CL, YCL, A, etc.

1. Release the locker (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.)



● QLE, CLE, DQLE, etc.

1. Insert the adjusting tool supplied as a standard accessory.
2. Set the torque by turning the supplemental graduation with the adjusting tool, confirming the value on the main scale.
3. No locking mechanism is needed for QLE models.

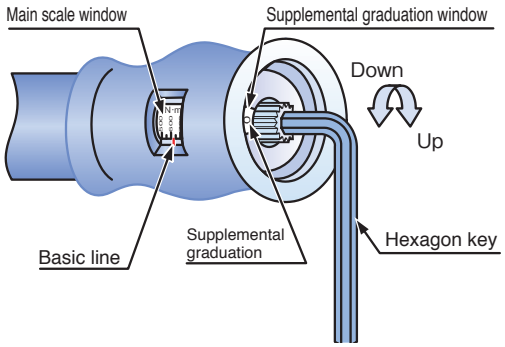


■ Pre-lock and preset types

● PQL, PCL, AC, 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).

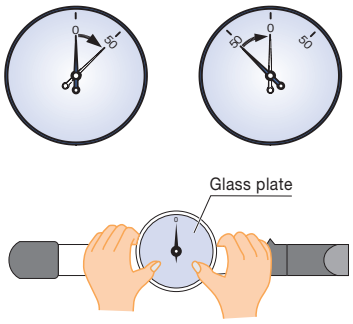
Model	Adjusting hexagon hole mm size across flats
PQL6N4-PQL25N	2.5
PQL50N-200N4	4
AC25N-100N	



■ 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

	N·m									
kgf·cm	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

	kgf·cm									
N·m	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

	N·m									
kgf·cm	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

	kgf·m									
N·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

	N·m									
kgf·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

	kgf·m									
N·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 x 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 mutual recognition arrangement (MAR) of ILAC (International Laboratory Accreditation Cooperation) and APLAC (Asia Pacific Laboratory Accreditation Cooperation) by IAJapan.

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^2] 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^2] 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^2]
Torque coefficient: 0.14 (minimum) - 0.2 (average) - 0.26 (maximum)

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 3 years from the date of inspection or 1 year from the date of first use. Therefore, 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.

Restriction of Hazardous Substances Directive (RoHS)

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.

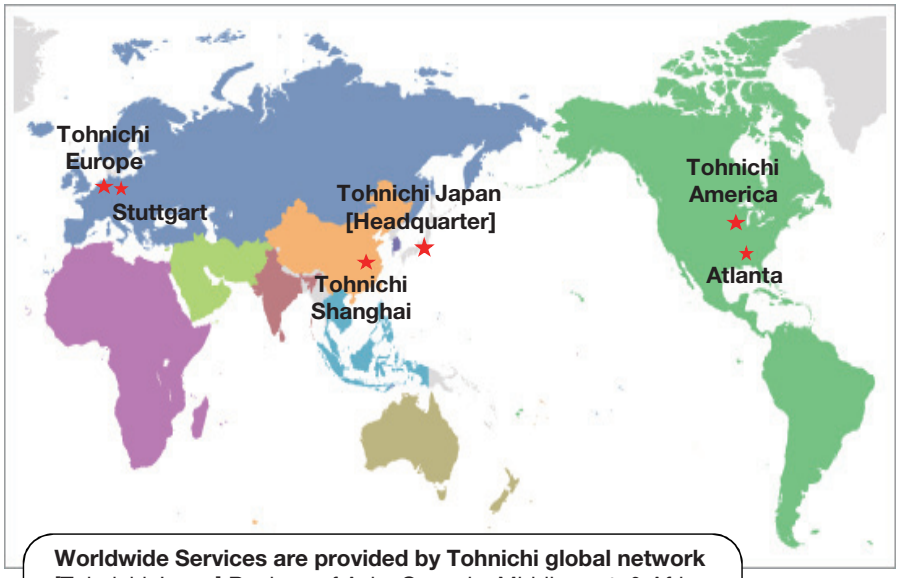
Tohnichi's Worldwide Services System

Torque equipment must have durability, ease-of-use, and even more importantly, high accuracy.
To insure high accuracy, torque products should be properly used and maintained throughout the lifetime of the equipment.
Tohnichi has created an international service network to provide customers with a variety of after sales services.

1. Tohnichi's International Service Network

As a world leading torque equipment brand, Tohnichi has developed sales and service agents.
Our agencies operate in 50 countries or regions through hundreds of dealers supplying products and also repair services to customers around a world.

[Tohnichi Web Homepage]
http://tohnichi.jp/english/index.html

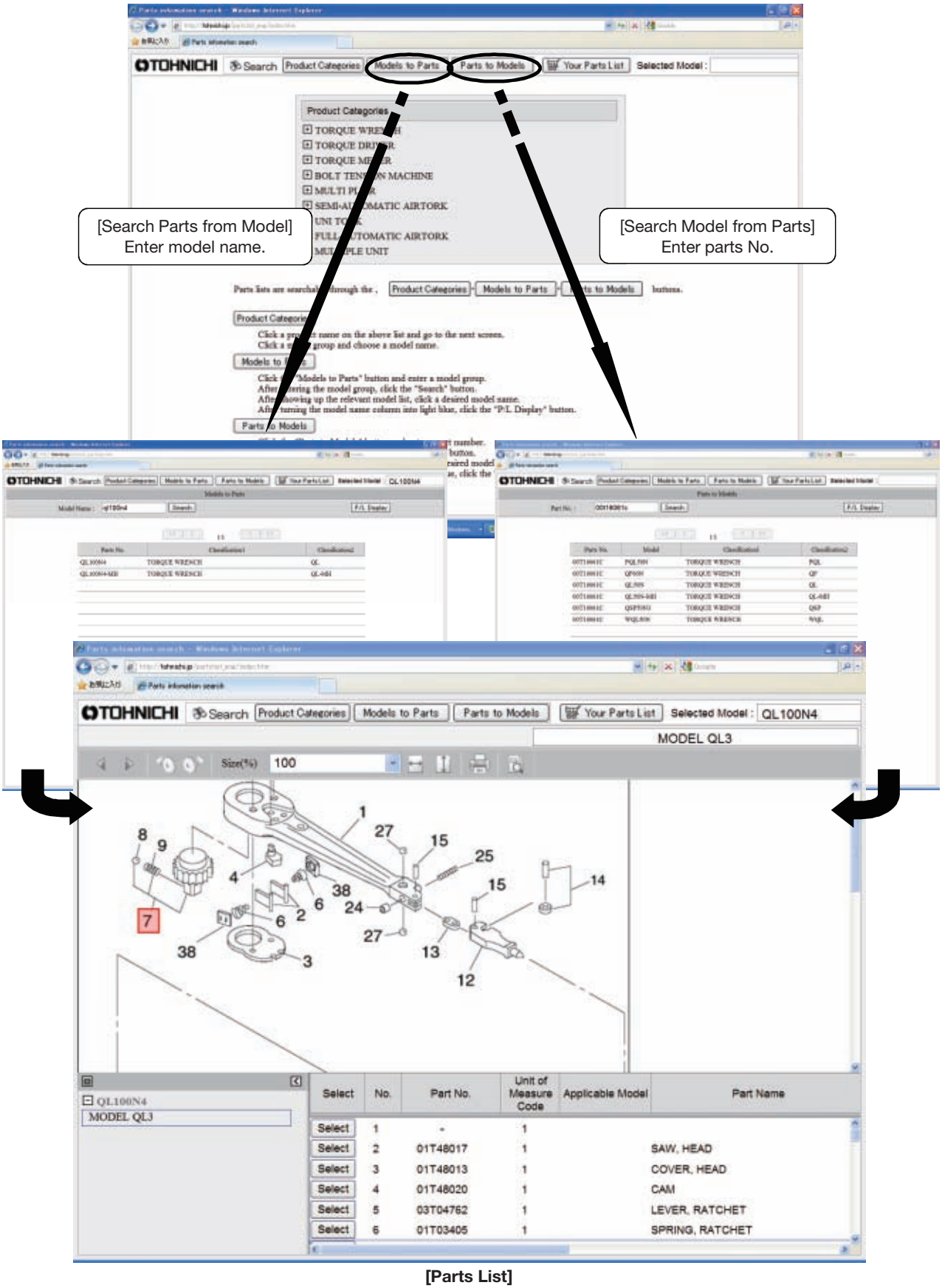


Worldwide Services are provided by Tohnichi global network
[Tohnichi Japan] Regions of Asia, Oceania, Middle east, & Africa
[Tohnichi Shanghai] China
[Tohnichi America] Regions of North and South America, Canada
[Tohnichi Europe] Regions of Europe and Russia

2. Tohnichi Web Parts List/Parts Supplies

Detailed parts information is available through Tohnichi's website.
Search by Model or Part name.
View detailed tool diagrams: click and select parts to create a convenient list for parts ordering (Your Parts List).

[Parts List Top Page]



[Parts List]

Your Torque Partner

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