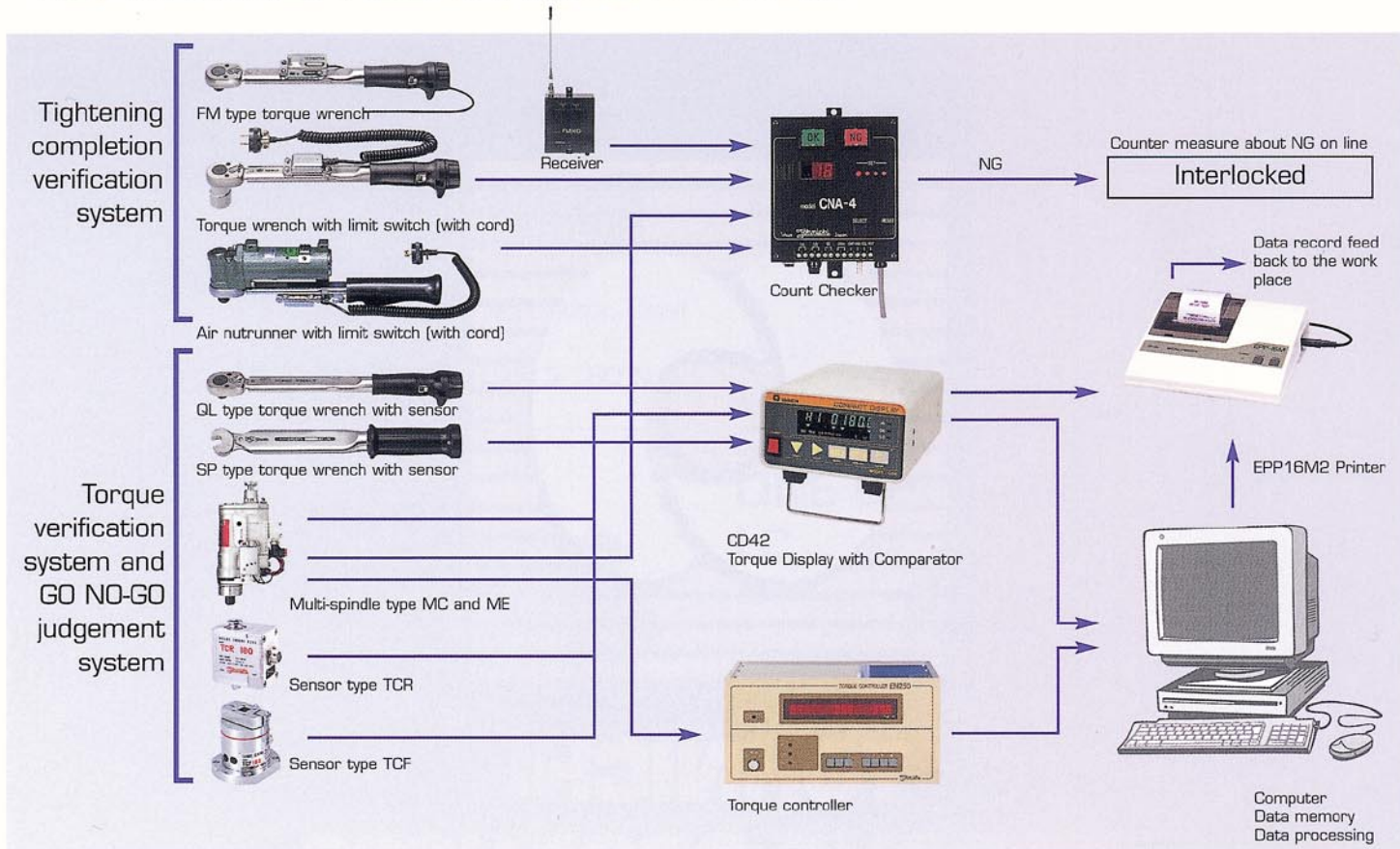


TIGHTENING ASSURANCE SYSTEM



TORQUE DRIVERS



RTD model

6 models 2-500 cN.m

Tohnichi supplies a wide variety of torque drivers. The most common model is the RTD type. This is a click-type driver with adjustable scale. Variations on the RTD are the LTD* (slip-type with adjustable scale), NTD* (pre-set slip-type) and RNTD* (pre-set click-type).

DRIVERS FOR FINE SCREWS

Further on Tohnichi produces another type of torque driver for fine screws (M1, M2) with adjustable scale. The AMLD and the BMLD are slip-type drivers.



AMLD model

6 models 0.3-8 cN.m



BMLD model

2 models 2-30 cN.m

DIGITAL TORQUE DRIVER

The STC is a digital torque driver with adjustable angle for torque check, data processing and quality control.

STC model 3 models
10-400 cN.m

*see catalogue for exact torque range



They are also available as click-type drivers AMRD and BMRD.

TORQUE WRENCHES DB/DBE/DBR



Dial indicating type. Suitable for easy and accurate torque measurements in various inspection and tightening applications.

19 models 0.2-6000 N.m

CEM2



A new type of microprocessor controlled torque wrench with digital read-out, designed especially for research and development, quality control and various torque assembly processes. Interchangeable head type. Battery operated.

8 models 1.8-850 N.m

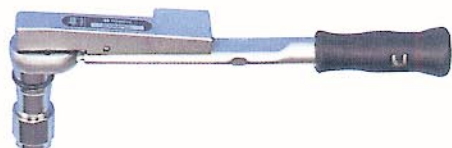
SP/RSP/NSP



Spanner and ring head, preset type. For single purpose application.

126 models 0.4-560 N.m

MPQL MARKING WRENCH



Fixed ratchet head. Pre-lock type torque wrench with marking unit inside. Approximate 6000 cycles of marking available.

5 models 10-280 N.m

QLE



Fixed ratchet head with adjustable scale.

0.5-2100 N.m 16 models

SCL



Interchangeable DIN head with adjustable scale. Multi purpose type.

5-200 N.m 4 models

SDB



Interchangeable DIN head and dial indicating torque wrench.

3-200 N.m 4 models

DIGITAL ANGLE WRENCH CTA/CTAE



Torque and angle can be set and verified on display. Buzzer and light indicate when tightening is completed.

10-850 N.m 6 models

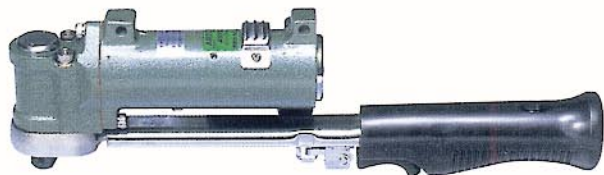
DIGITAL RETIGHTENING WRENCH - CTB/CTBE



Verifies visually the original tightened torque. Built-in angle and torque sensor display appropriate tightening.

4-850 N.m 7 models

AIRTOOLS AC



After provisional tightening by an air motor, final torque is performed manually.

16 models 3-180 N.m

AP



Applicable for large bolts. Fully automatic with adjustable scale.

6 models 100-4000 N.m

FM-SYSTEM



FM-wave remote signaling type. Wireless system eliminates missed tightening.



FM receiver

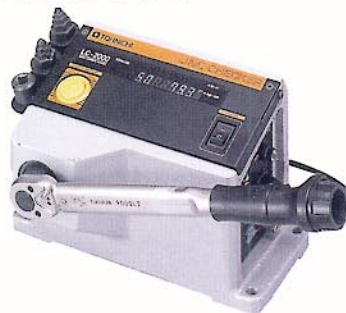
TORQUE GAUGE ATG/BTG

This hand held analog type torque gauge is ideal for low range torque measurement and torque tool inspection.



0.05-150 cN.m
13 models

LINE CHECKER LC



Digital torque wrench checker for line inspections. Clockwise measurements only.

0.5-200 N.m **2 models**

TORQUE DRIVER TESTER TDT



Digital torque driver tester. Both clockwise and counterclockwise loading.

2-600 cN.m **2 models**

TORQUE METER TME

Digital torque meter stores peak torque up to 50 measurements. Display panel adjustable for easy reading. Data may be transferred to PC or printer.



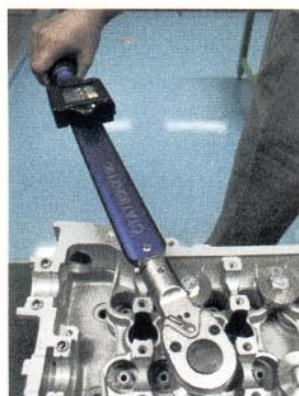
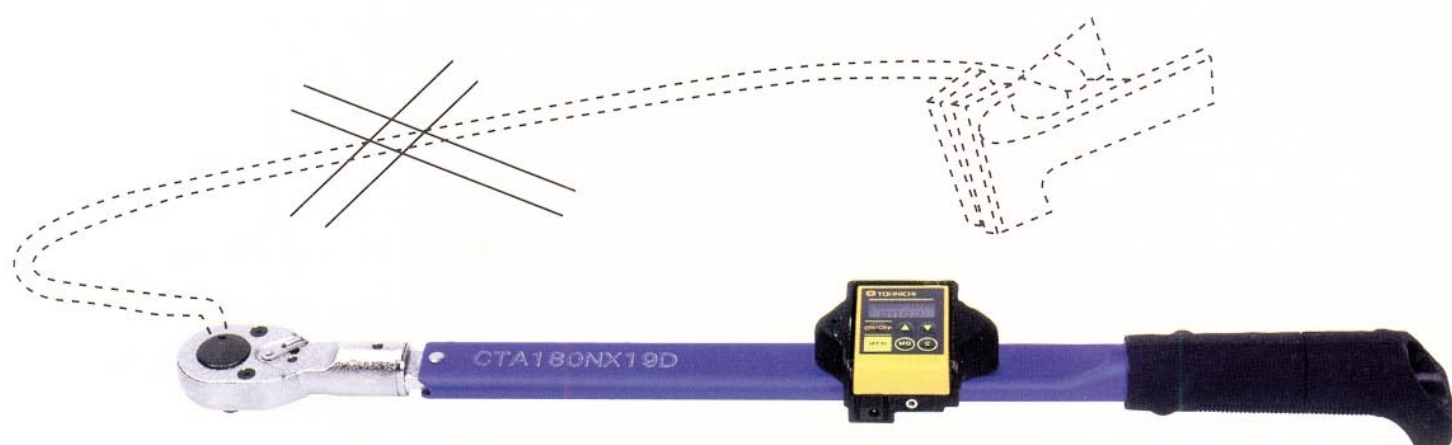
1.8-1800 cN.m **8 models**

Digital Torque and Angle Wrench

MODEL CTA

PAT.P

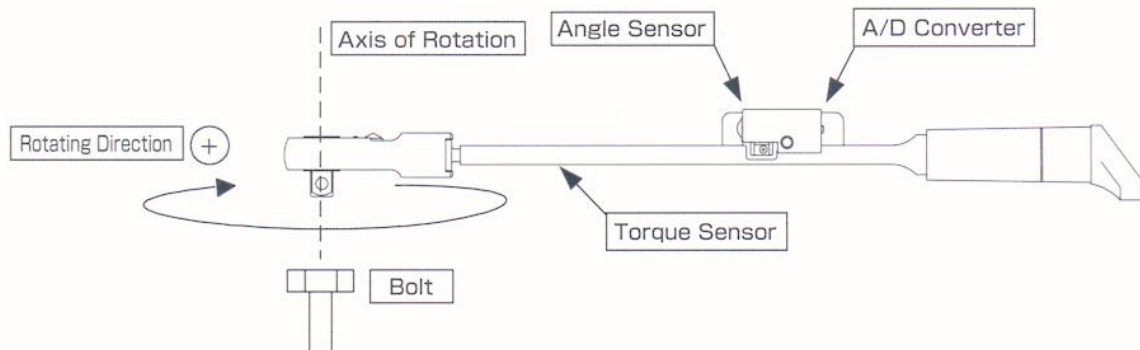
Without arm model



Without Arm Model

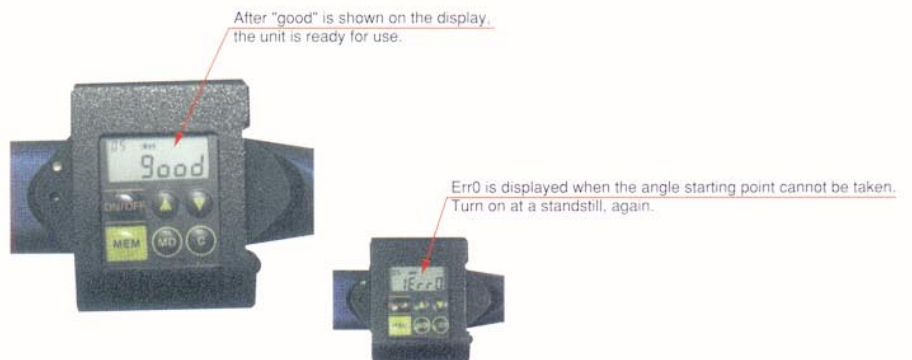
The principle of angle measurement

When rotating a screw or bolt, angular velocity is detected from the angle sensor built in the torque wrench. Digital conversion of the angular velocity is carried out, and an angle value is computed by integration operation.



"0" Degree

The angle is computed from the voltage output of angular velocity. Place the CTA model on a flat surface, turn on the power key and leave at a standstill for more than 2 seconds for automatic zero adjust.



Features

1. With gyro sensor for angle controlled bolting, much more improvement in work can be achieved.
2. Primary bolting, snug torque, primary angle, secondary angle and a number of bolting can be set up, including a Yes-No decision function.



Correspondence at only NG can be chosen. Transmission from P/C of setting data.

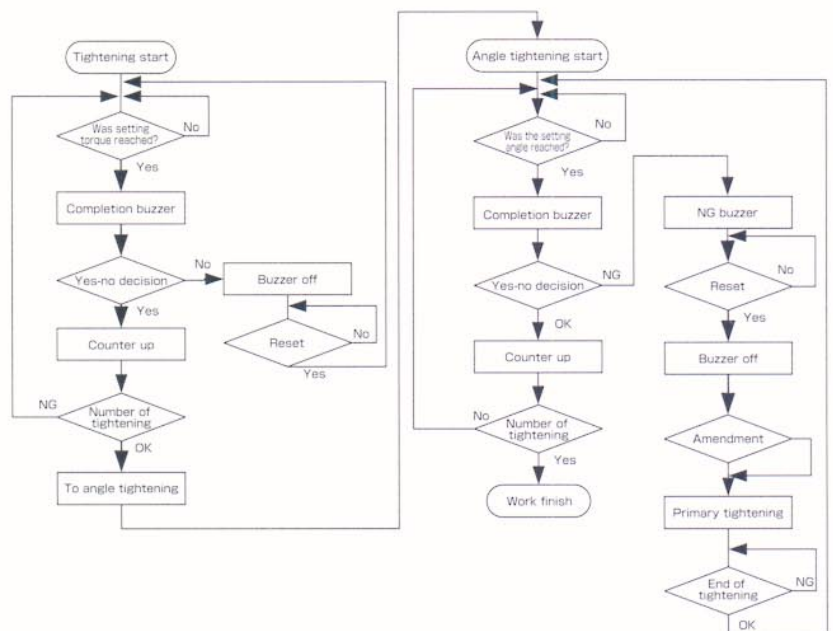
Example 1, for product line

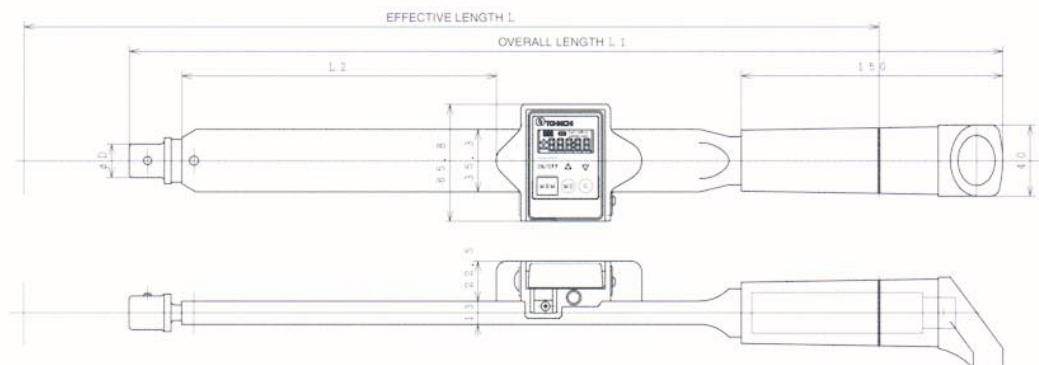
Number of bolting	10	
Process 1	Primary bolting	35N.m
Process 2	Snug torque	35N.m
	Desired angle	90 degree

Example 2, for backup of nut-runner

Number of bolting	1	
Process 1	Snug torque	35N.m
	Desired angle	90 degree

3. Torque value of last tightening can be performed.





Model	Angle Display Range (°)		Angle Accuracy	Effective Length mm	Overall Length mm	Weight Approx. kg	Accessory	Interchangeable Head	Capacity N.m			Capacity kgf.cm		Capacity Imperial	
	Min.~Max.	1 digit							Min.	Max.	1 digit	Min.~Max.	1 digit	Min.~Max.	1 digit
CTA50×12D			±2°+1 digit	319	360	0.7	QH12D	12D	10~	50	0.05	100~	500	100 l~450 l	0.5
CTA100×15D	0~999	1	Angular velocity is 30°/s~180°/s when the bolt is turned to 90°	409	433	0.8	QH15D	15D	20~	100	0.1	200~	1000	200 l~900 l	1
CTA200×19D				489	500	1.1	QH19D	19D	40~	200	0.2	400~	2000	30 f~150 f	0.1
CTA360×22D				749	743	1.6	QH22D	22D	72~	360	0.4	720~	3600	52 f~260 f	0.2

Note 1 : AC adapter is included for charging the unit.

Note 2 : When ordering, please specify desired scale, S.I., Metric or Imperial.

Specification

Measurement Direction	Clockwise Only
Display	LCD Display, Counter : 3mm and Angle/Torque : 7mm
Contents of work	Primary tightening, Snug torque, Primary Angle, Secondary Angle Numbers and Yes-no judgment.
Data Memory	Total 2,000 memory
Yes-no Judgment	Available on each set
Measurement method	PEAK / RUN on both angle and torque measurement
Data Output	RS232C, I/F infrared ray
Zero Adjustment	Auto zero function on both angle and torque measurement
Other Function	Auto-power off, and auto-memory, Battery Check
Power Source	Ni-Cd battery
Continuous Use	8 hours
Battery Charge	1 hour
Operating Condition	0~40℃

Optional Accessories

BP-3	Battery Pack
QC-1	AC adapter, 110V
QC-2	AC adapter, 220V
EPP16M2	Printer
R-DT100-3	Interface Data Transfer by Infrared
DFS	Data Processing Software

Connecting Cable

378	CTA/CTB → EPP16M2
576	CTA/CTB → 25pins Male
577	CTA/CTB → 25pins Female
578	CTA/CTB → 9pins Male
579	CTA/CTB → 9pins Female

4. Data Management

- A data of one process, primary bolting, primary angle, secondary angle and final tightening value can be managed
- Total 2000 data memory
- Data output, via RS232C or infrared ray
- Can be transferred by FM wave (produced in order)



5. Display of a work situation

- Completed work is announced with a sound and a lamp.
- The work under process is displayed.
- An output of a work end signal is possible (produced in order)



6. Lightweight

Aluminum is used for the body. The display unit has a protection cover.

Retightening Torque Wrench

MODEL CTB

PAT.P

Digital Torque Wrench for Retightening Torque Method



Buzzer sound and lamp lighting tell work-end,
and the value of the torque can be checked.

Overview of the Retightening Torque Method

Retightening torque method requires that additional torque be applied using a torque wrench in order to determine just how much torque is required for that fastener in the tightening direction

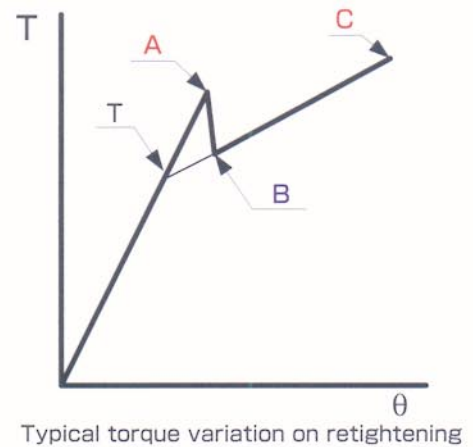
In general, fasteners have three torque points,

Torque which overcomes the static friction, **A-point**

Torque which the fastener restarts continuous rotation, **B-point**

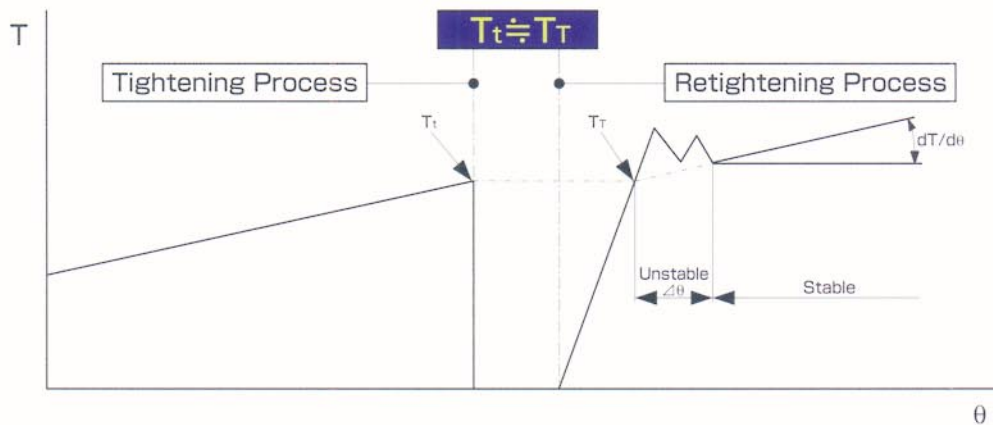
Maximum torque applied in this measurement, **C-point**

These methods are used respectively depending upon the required accuracy for application.



Suggestion on New Retightening Method

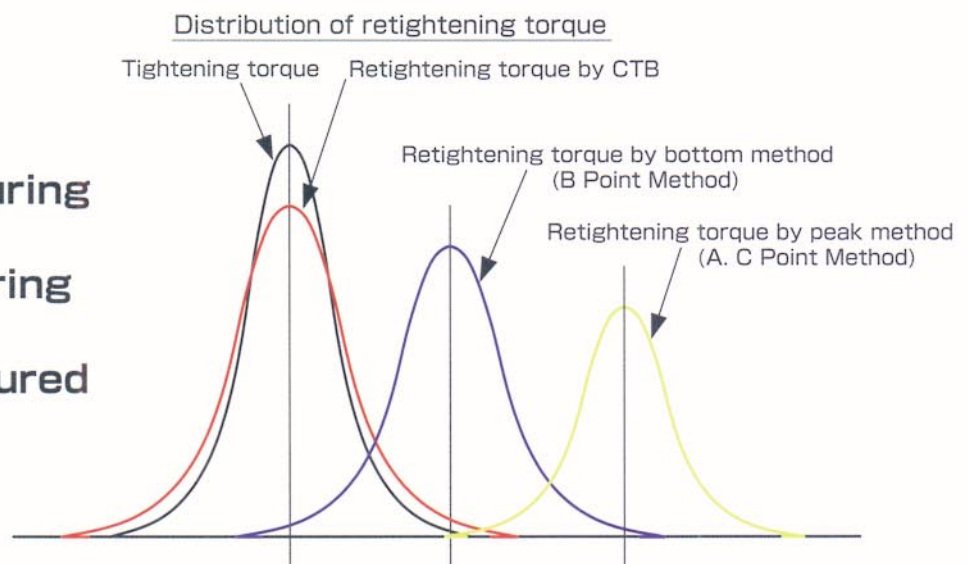
At first, to the rotation of the head part and then to that of the threaded part, shifted from static friction to dynamic friction, friction whip phenomenon soon disappear, and retightening torque line becomes a stable straight line. This line is basically an extension of the torque-angle line when originally tightening the fastener.

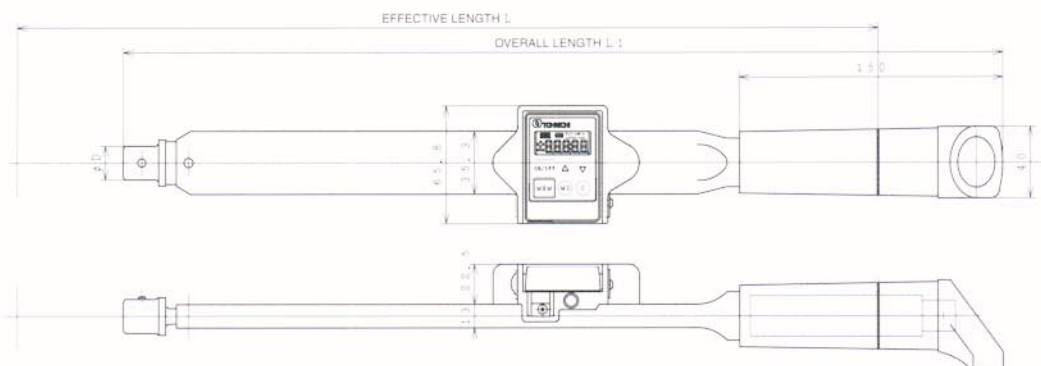


Torque on tester (T_T) which is the intersection point of torque-torsion angle line of measuring instrument and extended line of stable retightening torque line can be calculated from retightening torque within stable range, unstable angle ($\angle \theta$), gradient of torque-angle ($dT/d\theta$). This T-point torque (T_T) is quite close to the applied torque (T_t). This T-point torque is relatively stable, and shows the small measurement error (approx. $\pm 5\%$) against the applied torque (T_t). This method can easily be executed by an electronic technique using the measuring angle and torque and then calculate by a computer.

Features

- **Easy measuring tightened torque.**
- **No individual measuring torque.**
- **Shorten the measuring time.**
- **Dispersion of measured data is small.**





Model	Accuracy	Effective Length mm	Overall Length mm	Weight Approx. kg	Accessory	Interchangeable Head	Capacity N.m		Capacity kgf.cm		Capacity Imperial	
							Min.~Max.	1 digit	Min.~Max.	1 digit	Min.~Max.	1 digit
CTB20×10D	±1%+1digit	231	295	0.6	QH10D	10D	4~20	0.02	40~200	0.2	36 l~180 l	0.2
CTB50×12D		319	360	0.7	QH12D	12D	10~50	0.05	100~500	0.5	100 l~450 l	0.5
CTB100×15D		409	433	0.8	QH15D	15D	20~100	0.1	200~1000	1	200 l~900 l	1
CTB200×19D		489	500	1.1	QH19D	19D	40~200	0.2	400~2000	2	30 f~150 f	0.2
CTB360×22D		749	743	1.6	QH22D	22D	72~360	0.4	720~3600	4	52 f~260 f	0.4
CTB500×22D		917	919	3.5			100~500	0.5	1000~5000	5	72 f~360 f	0.5
CTB850×32D		1370	1355	4.9	QH32D	32D	170~850	1	1700~8500	10	124 f~620 f	1

Note 1 : AC adapter is included for charging the unit.

Note 2 : When ordering, please specify desired scale, S.I., Metric or Imperial.

Specification

Measurement Direction	Clockwise Only
Display	LCD Display, Counter : 3mm and Torque : 7mm
Data Memory	50 data
Arithmetic Function	Sampling, Maximum, Minimum and Means
Measurement method	PEAK / RUN
Data Output	RS232C, I.F infrared ray
Zero Adjustment	Auto zero
Other Function	Auto-power off, and auto-memory, Battery Check
Power Source	Ni-Cd battery
Continuous Use	8 hours
Battery Charge	1 hour
Operating Condition	0~40℃

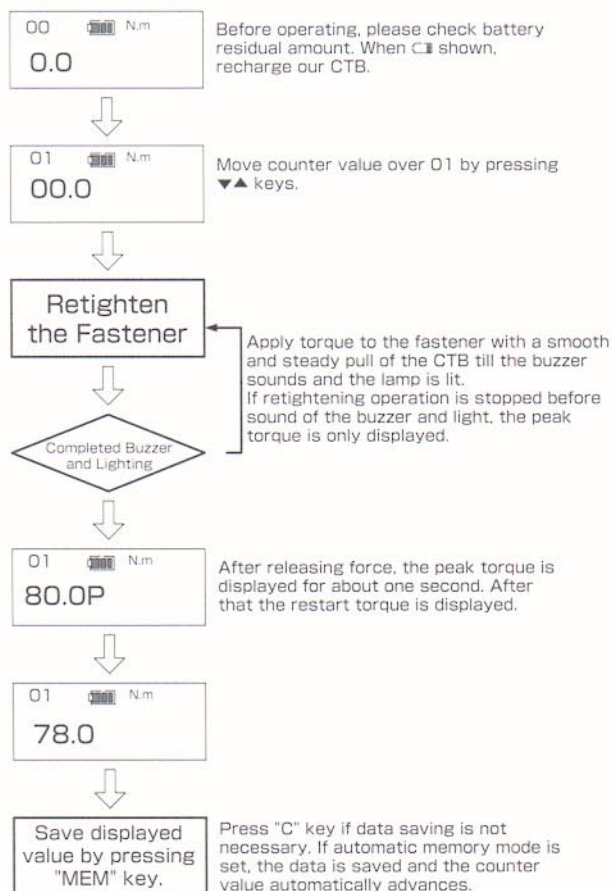
Optional Accessories

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Operation



Completed Lamp

Peak Torque, shown for one second



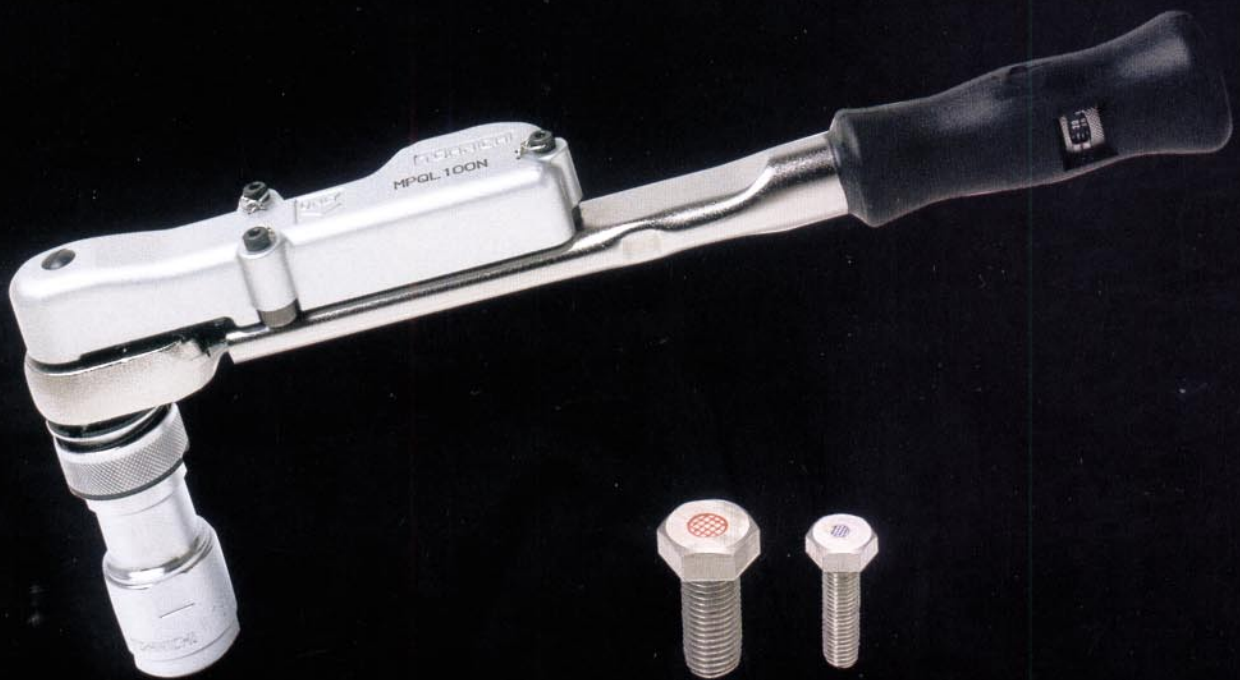
Number

Value

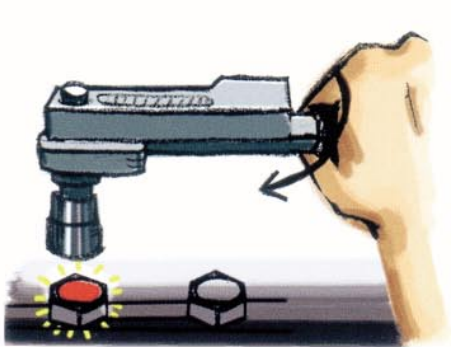


Marking Torque Wrench

MODEL MPQL



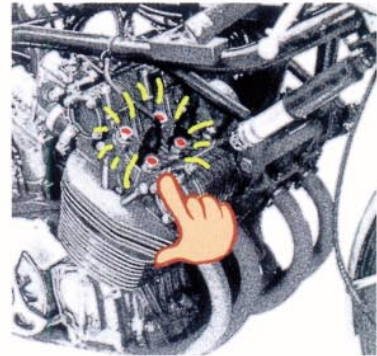
Eliminate "Miss



Marking on the bolt head by tightening



Tightening and checking each bolt head



Clear mark on the head of bolt allows for visual verification of missed tightening.

Features

- ◎The marking is engaged as the torque set is achieved
- ◎Quick drying ink prevents dripping and keeps the mark on the head of the bolt
- ◎Various marker head

Select in 4 color, Red, Blue, Yellow and White in 2 different size, 5mm and 9mm

Felt 9mm Yellow
(ϕ 9)

Felt 5mm Yellow
(ϕ 5)

Felt 9mm White
(ϕ 9)

Felt 5mm White
(ϕ 5)

Rubber 9mm Blue
(ϕ 9)

Rubber 5mm Blue
(ϕ 5)

Rubber 9mm Red
(ϕ 9)

Rubber 5mm Red
(ϕ 5)

Note) Marker cartridge of White and Yellow are not filled the ink.
Order refill ink.

◎Easy to replace the marker cartridge

With one refilling,

approximately, 3,000 cycles of marking is available for MK52 type

approximately, 6,000 cycles of marking is available for MK92 type

(As for refill ink, refer to the picture on the right)

Missed Tightening"



Replace a marker when ink doesn't stick well



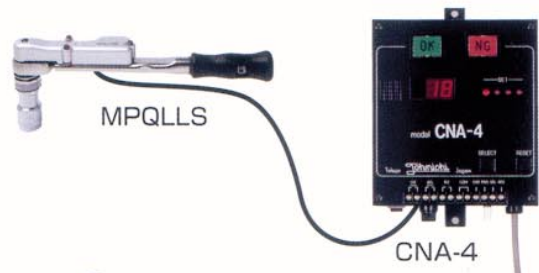
Refill ink to empty marker cartridge

Optional system

Eliminating missed tightening by using CCD camera and personal computer.



Combination with LS wrench and CNA-4 enable to check the number of completion of bolt tightened.



How to order

EX 1)

Bolt size : M14, across the with : 21, T=68N.m, marker dia : 5mm, color : Blue

21×MPQL100N-MK52B+781

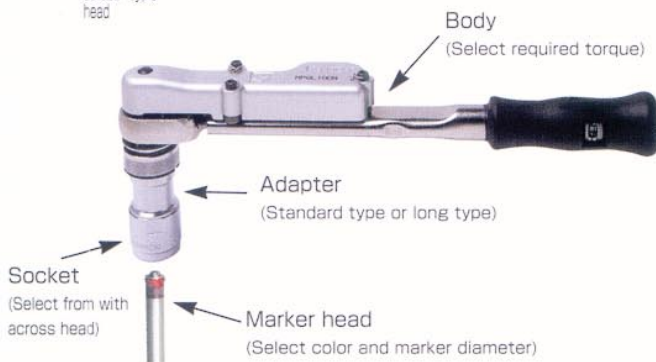
With across head Model Marker head Refill ink

EX 2)

Bolt size : M20, across the with : 30, T=204N.m, marker dia. : 9mm, color : Yellow

30L×MPQL280N-MK92+783

With Long across type Model Marker head Refill ink



Component

MARKING TORQUE WRENCH

MODEL	CAPACITY N · m MIN. ~ MAX.
MPQL50N	10 ~ 50
MPQL100N	20 ~ 100
MPQL140N	40 ~ 140
MPQL200N	40 ~ 200
MPQL280N	40 ~ 280

SOCKET

WIDTH	No.	ADAPTING MODEL
12	701	MPQL50N MPQL100N MPQL140N MPQL200N
13	702	
14	703	
16	704	
17	705	
18	706	
19	707	
21	708	
22	709	
24	710	
27	711	MQL280N
22	720	
24	721	
27	722	
30	723	

SOCKET ADAPTER

CATALOG NO.	DIMENSION mm.
748	12.7
749	
751	
752	19

Note: 749 and 752 are standard type.
748 and 751 are long type.
Long type is longer 100mm than Standard type.

MARKER CARTRIDGE

MODEL	CATALOG NO.	COLOR
MARKER MK52R	780	RED
MARKER MK52B	781	BLUE
MARKER MK52	782	(Empty)
MARKER MK92R	783	RED
MARKER MK92B	784	BLUE
MARKER MK92	785	(Empty)

Note1: MK92 doesn't fit with the socket, opposite size 12-16mm.
Note2: 780, 781, 783 and 784 are rubber tip.
782 and 785 are felt tip.

SPARE INK

COLOR	CATALOG NO.	Net, ml
RED	770	60
BLUE	771	60
WHITE	406	55
YELLOW	772	55
Solvent for R/B	790	60
Solvent for W/Y	791	55

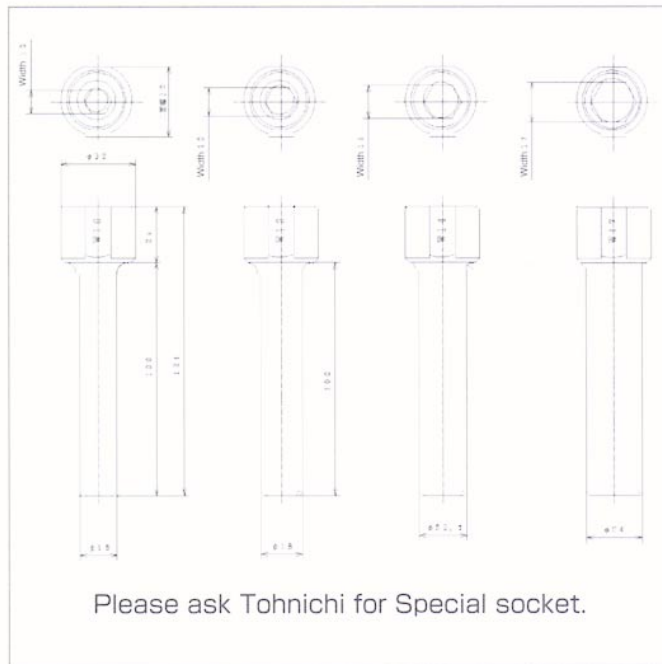
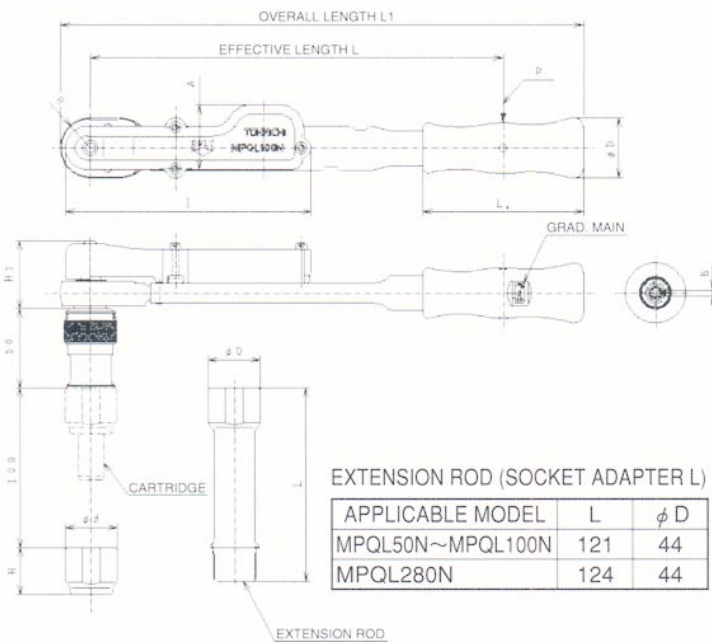
Note: Yellow and white color ink should be used with felt tip.

■ Specification

MPQL, body

Accuracy $\pm 3\%$

MODEL	CAPACITY [N·m]		SQUARE DRIVE (mm)	Socket (mm)			MAX. HAND POWER [N]	Dimension (mm)									WEIGHT Approx. (kg)
	MIN.~MAX.	GRADUATION		Width Across Head	Height	Diameter		EFFECTIVE LENGTH	OVERALL LENGTH	HEAD		BODY					
										R	H1	I	A	D	B	L4	
MPQL50N	10~50	0.5	12.7	12	26	32	274	182.5	246	16	40.3	121	40.6	36	4	95	0.7
				13	27												
				14													
				16	29												
MPQL100N	20~100	1	19.05	17		38	388	257.5	326	18.75	42	153	37.7			100	0.95
				18													
				19													
				21	30												
MPQL140N	30~140		19.05	22	31	34	443	316	385								1.1
				24	32												
				27	34												
MPQL200N	40~200	2	19.05	22	34	44	541	369.5	469	22.5	44	183	45.2	44.2			1.8
				24	35												
				27	37												
MQL280N	40~280			30	38		467	600	691		49			51.5	-	150	2.63



Drehmoment- schlüssel (Übersicht)

Drehmoment-
schlüssel



Knickschlüssel



Schleppzeiger-Drehmomentschlüssel

Artikel	Drehmoment Nm	Abtrieb Zoll	Länge mm
DB-1.5N	0,2-1,5	1/4	230
DB-3N	0,3-3,0	1/4	230
DB-6N	0,6-6,0	1/4	230
DB-12N	1 - 12	1/4	230
DB-25N	3 - 25	3/8	245
DB-50N	5 - 50	3/8	320
DB-100N	10 - 100	1/2	400
DB-200N	20 - 200	1/2	500
DB-280N	30 - 280	3/4	690
DB-420N	40 - 420	3/4	890
DBE-560N	50 - 560	3/4	1100
DBE-700N	70 - 700	3/4	1260
DBE-850N	100 - 850	1	1360
DBE-1000N	100 - 1000	1	1490
DBE-1400N	200 - 1400	1	1740
DBE-2100N	200 - 2100	1	2140
DBE-2800N	300 - 2800	1 1/2	2380
DBR-4500N	500 - 4500	1 1/2	1285
DBR-6000N	600 - 6000	1 3/4	1585



Pre-Lock Drehmomentschlüssel

Artikel	Drehmoment Nm	Abtrieb Zoll	Länge mm
PQL-25N	5 - 25	3/8	215
PQL-45N	10 - 50	3/8	250
PQL-90N	20 - 100	1/2	325
PQL-140N	30 - 140	1/2	385
PQL-180N	40 - 200	1/2	470



Preset-Drehmomentschlüssel

Artikel	Drehmoment Nm	Abtrieb Zoll	Länge mm
QSP-1.5N	0,5-1,3	1/4	165
QSP-3N	1,0-3,0	1/4	165
QSP-6N	2 - 6	1/4	165
QSP-12N	4 - 12	1/4	175
QSP-25N	5 - 25	3/8	215
QSP-50N	10 - 50	3/8	250
QSP-100N	20 - 100	1/2	330
QSP-140N	30 - 140	1/2	385
QSP-200N	40 - 200	1/2	470
QSP-280N	40 - 280	3/4	670
QSP-420N	60 - 420	3/4	970



Einstellbarer Drehmomentschlüssel

Artikel	Drehmoment Nm	Abtrieb Zoll	Länge mm
QL-1.5N	0,5-1,5	1/4	175
QL-3N	1,0-3,0	1/4	175
QL-6N	2 - 6	1/4	175
QL-12N	4 - 12	1/4	185
QL-25N	5 - 25	3/8	220
QL-50N	10 - 50	3/8	260
QL-100N	20 - 100	1/2	340
QL-140N	30 - 140	1/2	400
QL-200N	40 - 200	1/2	495
QL-280N	40 - 280	3/4	695
QL-420N	60 - 420	3/4	975
QLE-550N	100 - 550	3/4	1190
QLE-750N	100 - 750	3/4	1365
QLE-1000N	100 - 1000	1	1535
QLE-1400N	200 - 1400	1	1794
QLE-2100N	500 - 2100	1	1950

Seit über 50 Jahren stellt Tohnichi Drehmomentschlüssel und Messtechnik her und ist damit einer der ältesten Hersteller auf diesem Gebiet. Nutzen Sie diese Erfahrung und die umfangreiche Auswahl an hochwertigen Produkten.

