TOHNICHI

TORQUE PRODUCTS

REFERENCE GUIDE

ISO 9001
TOHNICHI MFG.CO.,LTD. KOFU PLANT
JQA-1536

ISO 14001
TOHNICHI MFG.CO.,LTD. KOFU PLANT

Your Torque Partner TOHNICHI

Your Torque Partner

By offering a broad range of specialty torque tools and equipment along with technical services, Tohnichi has improved the reliability of our customers' products in transportation, information technology, and many other fields that affect our daily lives.

TORQUE CENTER

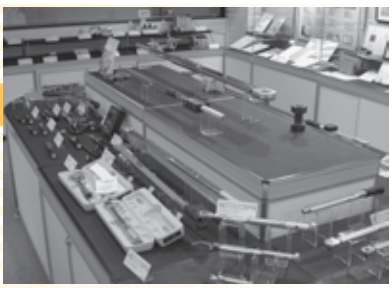
A wide variety of demonstrations available; measurement of bolt-tightening force, precise measurement of torque, verification of tightening reliability including pokayoke (error-proofing) system, processing of tightening data, and others.

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's available on the torque market and what will be coming up soon.



Lecture room

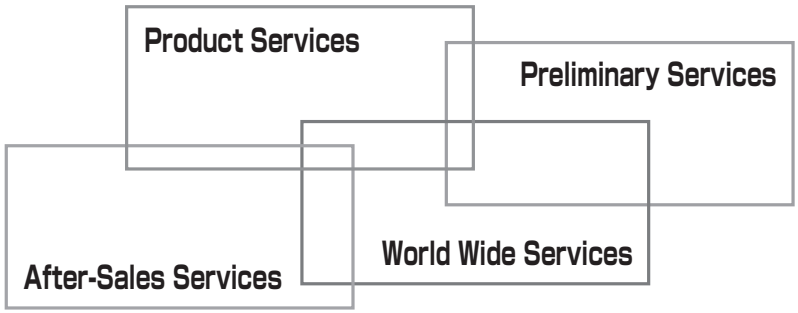
Various courses of torque engineering seminars are available.

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 and Tohnichi Europe in Belgium.

TOHNICHI SERVICE SYSTEM



Product Services

- Research and Development
- Studies on Screw-Tightening Reliability
- Studies on Durability
- Studies on Torque-Measurement

Preliminary Services

- Open Technical Laboratory and Showroom
- Torque Engineering Seminars
- Identifying Solutions
- Internet and Telephone Consulting
- Technical Reference Materials on Torque Control
- Assistance for ISO 9000 Certification

After-Sales Services

- Testing and Repair Services
- Issuing of Calibration Certificates
- Parts Supplies
- Workshops for Repair and Adjustment

World Wide Services

- Tohnichi's International Service Network
- The World's Premier Brand
- English Service
- Overseas Seminars

Calibration Certificate

- Torque wrenches are measuring instruments. The calibration certificate is the document which certifies the accuracy of the torque wrenches, which are traceable to Japanese national standards. Please keep the calibration certificate for future use.
- Accuracy % is calculated on each scale reading or preset value. Only if marked "F.S." then calculation is based on the full scale value.
- Tohnichi torque wrenches with a calibration certificate can immediately be used even at ISO9000 plants without acceptance inspection and request of certificate.
- The calibration certificate is effective for 3 years from the date of inspection or 1 year from the date first used. Therefore, please fill the date in the calibration certificate when first used.
- Manual torque tools are normally guaranteed to 100,000 cycles or 1 year. It can be also used up to 1,000,000 cycles if the function is properly maintained and adjusted at every 100,000 cycles.

HOW TO SELECT TOHNICHI TORQUE PRODUCTS

● POWER TORQUE TOOLS

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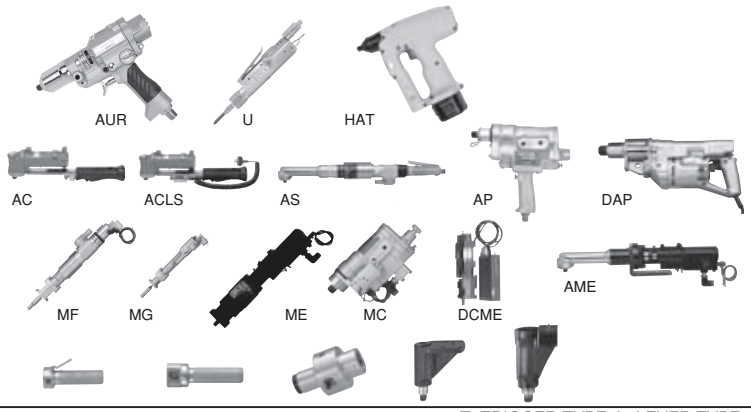
POWER TORQUE SCREWDRIVER		AUR	AIR	◯	T	◯			4
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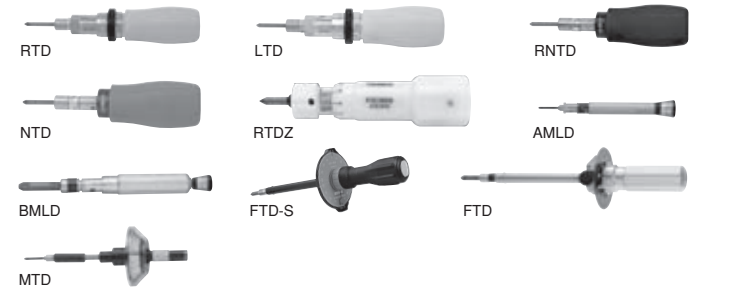
TORQUE SCREWDRIVER		RTD, LTD						◯	9
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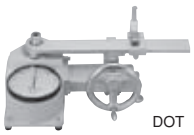
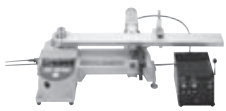
	 DOT	DOT			○		33
	 DOT(E)-MD	DOT(E)-MD			○	○	33
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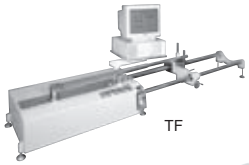
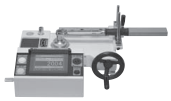
	 TF	TF				○	34
	 TCC	TCC				○	34
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	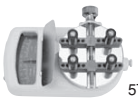 5TM	ATG/BTG			○		37
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	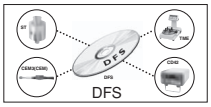 DFS	DFS	SIMPLIFIED DATA FILING SYSTEMS				41
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OK
MADE IN JAPAN

This seal indicates that the tool has passed a quality inspection check.

C O N T E N T S

POWER TORQUE SCREWDRIVER

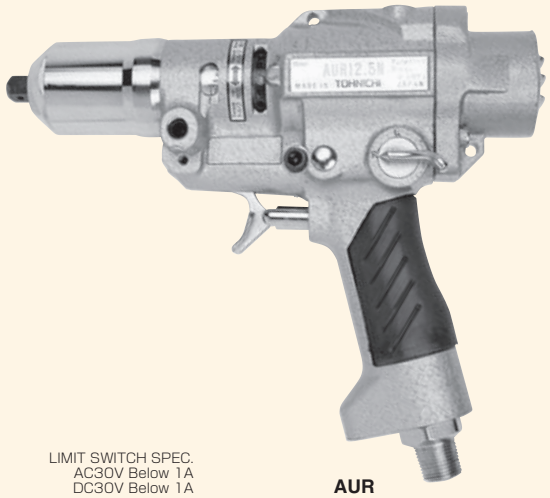
AUR UNI-SCREWDRIVER

DIRECTION

Pneumatic
Pistol
Trigger
With graduation

Pneumatic Pistol Style

- High Speed and High Accuracy Tightening
- Easy Torque Adjustment by Scale with Key



LIMIT SWITCH SPEC.
AC30V Below 1A
DC30V Below 1A

AUR

Accuracy ±5%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	FREE SPEED r.p.m.	AIR PRESSURE MPa	HOSE IN DIA. mm	BIT ⊕	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m							kgf·cm	kgf·cm
AUR5N	2~ 5	0.1	2100			#3	1.5	AU50R	20~ 50	1.0
AUR12.5N	5~12.5	0.25	800					AU125R	50~125	2.5
	N·m	N·m				—	1.7			
AUR25N	10~25	0.5	400	0.5	φ10			AU250R	100~250	5.0
	N·m	N·m								
AURLS5N	2~ 5	0.1	2100			#3	1.5	AU50RLS	20~ 50	1.0
AURLS12.5N	5~12.5	0.25	800					AU125RLS	50~125	2.5
	N·m	N·m				—	1.7			
AURLS25N	10~25	0.5	400					AU250RLS	100~250	5.0

Note 1 : AUR12.5N, AUR25N, AURLS12.5N, AURLS25N have a fixed square drive (9.5mm).
Note 2 : Double ended bit, #3 bit(Hex. 6.35mm) is standard accesory for AUR5N.
Note 3 : LS-Type has a added feature of a limit switch that eliminates missed tightening by connecting to CNA-4mk2 count checker.

U/UR UNI-SCREWDRIVER

DIRECTION U DIRECTION UR

Pneumatic
Straight
Pistol
Lever
With graduation

Pneumatic Straight and Pistol Style

- Accurate and Stable Tightening for Small Size Screws
- Lever Activated

U

Accuracy ±5%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	FREE SPEED r.p.m.	AIR PRESSURE MPa	HOSE IN DIA. mm	BIT ⊕	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	cN·m								kgf·cm	
U30CN	10~ 30	0.5	1600	0.4	φ5	#0	0.32	U3	1~ 3	0.05
U60CN	20~ 60	1	1700	0.5		#1	0.42	U6	2~ 6	0.1
U120CN	40~ 120	2	1400			#2	0.48	U12	4~ 12	0.2
U250CN	100~ 250	5	1200	0.6			0.75	U25	10~ 25	0.5
U500CN	200~ 500	10	950	0.5	φ6	#3	1.35	U50-2	20~ 50	1.0
U1000CN	400~1000		700	0.6			2.0	U100	40~100	
ULR120CN	40~ 120	2	1300	0.5	φ5		0.56	U12LR	4~ 12	0.2
ULR250CN	100~ 250	5	1000			#2	0.95	U25LR	10~ 25	0.5
				0.6	φ6					
UR500CN	200~ 500	10	950			#3	1.45	U50R	20~ 50	1.0

Note 1 : U1000CN has a fixed square drive (9.5mm).
Use a Socket Bit or a Bit Holder for U1000CN.
Note 2 : UR type has reverse mode
Accessories : One touch female joints are available for U30CN to U250CN, ULR120CN and ULR250CN.
Pit holder is available for U1000N.

HAT TORQUE DRIVER (FULLY AUTOMATIC)

Battery
Pistol
Trigger
With graduation

DIRECTION HAT DIRECTION HATR

Battery Driven Pistol Style

- Easy Calibration Check with Standard Torque Wrench Tester
- Available with Reverse and as FM Version

HAT

Battery charger BC-1 (100V)

Battery BP-9 (DC9.6V) BP-12 (DC12V)

Accuracy ±5%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	FREE SPEED r.p.m.	VOLTAGE DC (V)	SQUARE DRIVE mm	WEIGHT Approx. kg
	N·m	N·m				
HAT5N	2~ 5	0.1	1350	9.6		
HAT12.5N	5~12.5	0.25	1200			
HAT25N	10~25	0.5	700	12		
HATFM5N	2~ 5	0.1	1350	9.6		
HATFM12.5N	5~12.5	0.25	1200			
HATFM25N	10~25	0.5	700	12	□9.5	1.8
HATR5N	2~ 5	0.1	280	9.6		
HATR12.5N	5~12.5	0.25	250			
HATR25N	10~25	0.5	140	12		
HATRFM5N	2~ 5	0.1	280	9.6		
HATRFM12.5N	5~12.5	0.25	250			
HATRFM25N	10~25	0.5	140	12		

Note 1 : FM-Type has an added feature of a FM receiver that eliminates missed tightening by connecting to CNA-4mk2, count checker.
Note 2 : HAT25N, HATFM25N, HATR25N and HATRFM25N with support handle as accessory.
Note 3 : A battery is included. Battery Charger is an optional accessory.
Note 4 : R type has reverse mode.
Note 5 : BP-9 for 5N, 12.5N models.
BP-12 for 25N models.

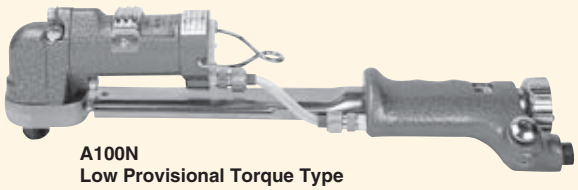
A/AC AIRTORK (SEMI-AUTOMATIC)

DIRECTION

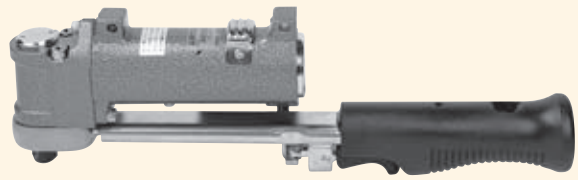
Pneumatic
Angle
Lever
With graduation

Pneumatic Motor Mounted on Torque Wrench

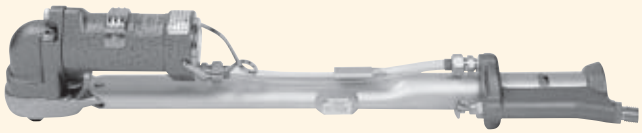
- Speed of Motor and Accuracy of Click Wrench
- Final Torque is Applied by Hand Force



A100N
Low Provisional Torque Type



AC100N
High Provisional Torque Type



A180N
Low Provisional Torque Type

ACLS100N
High Provisional with Limit Switch type

Female connector for LS cord is available as an optional accessory (WA5219K)

LIMIT SWITCH SPEC.
AC30V Below 1A
DC30V Below 1A

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	MAX. PROVISIONAL TIGHTENING TORQUE	FREE ROTATION r.p.m.	AIR PRESSURE MPa	HOSE IN DIA. mm	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m	N·m								kgf·cm	kgf·cm
A10N	3~ 10	0.1								A100	30~ 100	1
A25N	5~ 25	0.25	1.8	750			256	9.5	1.0	A225	50~ 225	2.5
A50N	10~ 50	0.5								A450	100~ 450	5
A100N	20~100	1	2.5	800		φ5	338.8	12.7	1.43	A900	200~ 900	10
A180N	40~180	2	5				489		2.0	A1800	400~1800	20
AC25N	5~ 25	0.25	11	1000			293	9.5	1.3	A225C7	50~ 225	2.5
AC50N	10~ 50	0.5								A450C7	100~ 450	5
AC100N	20~100	1	17.5	900	0.6	φ6	335.3	12.7	1.8	A900C7	200~ 900	10
AC180N	40~180	2	19	800			489		2.7	A1800C	400~1800	20
ALS10N	3~ 10	0.1								A100LS	30~ 100	1
ALS25N	5~ 25	0.25	1.8	750			256		1.2	A225LS	50~ 225	2.5
ALS50N	10~ 50	0.5				φ5		9.5		A450LS	100~ 450	5
ACLS25N	5~ 25	0.25	11	1000			293		1.5	A225C7LS	50~ 225	2.5
ACLS50N	10~ 50	0.5								A450C7LS	100~ 450	5
ACLS100N	20~100	1	17.5	900		φ6	335.3	12.7	2	A900C7LS	200~ 900	10
ACLS180N	40~180	2	19	800			489		2.9	A1800CLS	400~1800	20

Note : Accuracy can be measured by torque wrench tester.

AS AIRTORK (FULLY AUTOMATIC)

Pneumatic
Angle
Lever
Single purpose

DIRECTION

Pneumatic Right Angle Nutrunner

- Speed Tightening with Shut Off at Final Torque Set
- Lever Activated

AS12N

ASH80N

Accuracy ±5%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	FREE SPEED r.p.m.	AIR PRESSURE MPa	HOSE IN DIA. mm	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m								kgf·cm	kgf·cm
AS12N	6 ~ 12	0.2	1000	0.5		359	9.5	1.9	A120S	60~ 120	2
ASH40N	20 ~ 40		2000			477		2.6	A400SH	200~ 400	
ASH60N	30 ~ 60		1330	0.6		484		2.8	A600SH	300~ 600	
ASH80N	40 ~ 80		1000			592	12.7	3.2	A800SH	400~ 800	
ASH120N	60 ~120	Single	640		φ12	662		4.1	A1200SH	600~1200	Preset
ASL30N	15 ~ 30	purpose	1700			477	9.5	2.6	A300SL	150~ 300	
ASL45N	22.5~ 45		1130	0.45		484		2.8	A450SL	225~ 450	
ASL60N	30 ~ 60		850			592	12.7	3.2	A600SL	300~ 600	
ASL90N	45 ~ 90		540			662		4.1	A900SL	450~ 900	

When Ordering : Please specify model name and required torque value.
Example : ASH40N×30N·m／A400SH×300kgf·cm
Note 1 : If torque set value is not specified when ordering, set torque on tester.
Note 2 : Model AS12N has torque graduation. Set required torque by using torque graduation.
Note 3 : ASH models for high pressure, and ASL models for low pressure.
Accessories : Graduation set stick, Torque adjusting stick (ASH40N~120N, ASL30N~90N)
Spanner (ASH40N~120N, ASLS30N~90N)

POWER TORQUE WRENCH

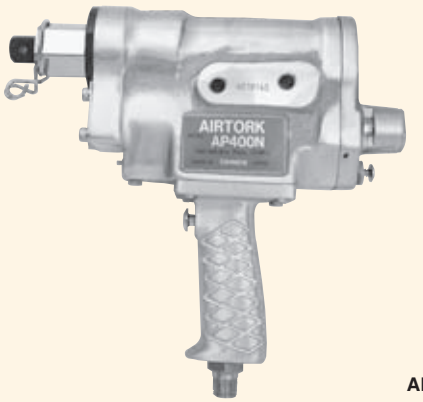
AP AIRTORK (FULLY AUTOMATIC)

DIRECTION

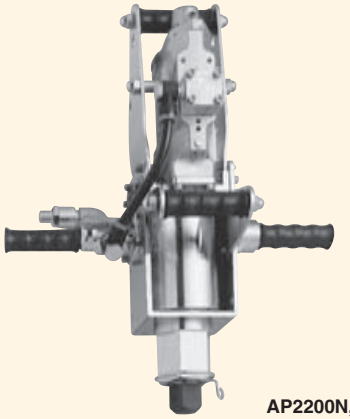
Pneumatic
Pistol
Trigger
With graduation

Pneumatic Pistol Style

- For Large Bolt Tightening
- Automatic Shut Off at Final Torque Set



AP220N～AP1200N



AP2200N, AP4000N

UNIVERSAL REACTION ARM (OPTIONAL)

Accuracy ±5%

MODEL	CAPACITY MIN.～MAX.	CAPACITY GRAD.	FREE SPEED r.p.m.	AIR PRESSURE MPa	HOSE IN DIA. mm	OVERALL LENGTH mm	SQUARE DRIVE mm	REACITON ARM (Option)	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.～MAX.	CAPACITY GRAD.
	N·m	N·m									kgf·m	kgf·m
AP220N	100～ 220	10	277	0.5	φ12	275.5	19.0	SA400N UA450N	4.7	AP22	10～ 22	1
AP400N	200～ 400		175							AP40	20～ 40	
AP700N	300～ 700	20	79			364	25.4	SA700N UA900N	6.7	AP70	30～ 70	2
AP1200N	600～1200	50	46			375.5		SA1200N UA1800N	8.1	AP120	60～120	5
AP2200N	1000～2200	100	19.2			508	31.75	UA3000N	15	AP220	110～220	10
AP4000N	2000～4000		12			541	38.1	UA4500N	22	AP400	200～400	

Note : Reaction arm is sold separately.
Reaction arm is necessary to use these models.
Accessories : W5 Hex wrench

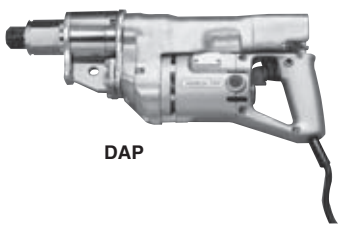
DAP ELECTRIC TORQUE WRENCH

DIRECTION

Electric power
Pistol
Switch
With graduation

Electric Pistol Style

- Electric Version of AP



DAP

Accuracy ±5%

MODEL	CAPACITY MIN.～MAX.	CAPACITY GRAD.	FREE SPEED r.p.m.	VOLTAGE AC (V)	OVERALL LENGTH mm	SQUARE DRIVE mm	REACITON ARM (Option)	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.～MAX.	CAPACITY GRAD.
	N·m	N·m								kgf·m	kgf·m
DAP220N	100～ 220	10	314	AC 100V ±10% 50/60 HZ	318	19.0	SA400N UA450N	5.4	DAP22	10～ 22	1
DAP400N	200～ 400		199						DAP40	20～ 40	
DAP700N	300～ 700	20	90		400	25.4	SA700N UA900N	8.2	DAP70	30～ 70	2
DAP1200N	600～1200	50	53		418		SA1200N UA1800N	9.4	DAP120	60～120	5

Note 1 : A type and B type are available on DAP.
A type is clockwise rotation only. B type is bidirectional rotation, but torque control is available for clockwise only.
Note 2 : Cord length is 2.5m. If you need to use an extension cord, make sure the cross section area is no more than 2.0mm² and the length does not exceed 30m.
Note 3 : Reaction arm is sold separately.
Note 4 : Reaction arm is necessary to use these models.
Accessories : W5 Hex wrench

SA REACTION ARM (ACCESSORY)

Light Weight Reaction Arm

- Controls Kick Back
- Required to Use with AP, DAP, DECA

MODEL	CAPACITY S.I.	CAPACITY Metric	STANDARDS SOCKETS LENGTH
SA400N	400N·m	40kgf·m	50
SA700N	700N·m	70kgf·m	62
SA1200N	1200N·m	120kgf·m	62

UA UNIVERSAL REACTION ARM (ACCESSORY)

Heavy Duty Reaction Arm

- Controls Kick Back
- Required to Use with AP, DAP, DECA

MODEL	WEIGHT Approx. kg
UA450N	1.2
UA900N	2.6
UA1800N	4
UA3000N	7.2
UA4500N	10.9
UA9000N	18
UA18000N	——

Note : UA9000N, UA18000N are available on request.

MG/ME/MF/MC MULTI-SPINDLE NUTRUNNER

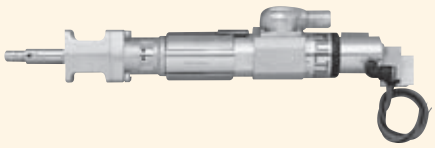
DIRECTION

Straight
Pneumatic
Multiple Unit
Master valve
With graduation

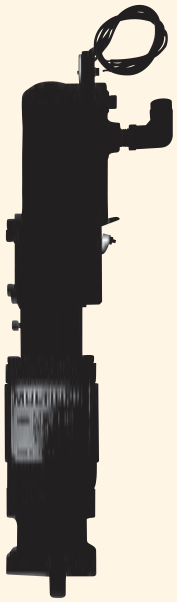
Pneumatic Straight Style

- Several Units Used Simultaneously with Loader
- Fully Automatic Tightening for Complex Bolt Configurations

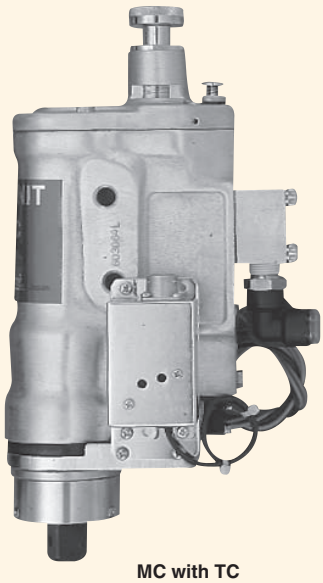
MG



MF



ME



MC with TC

Accuracy ±5%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	FREE SPEED r.p.m.	AIR PRESSURE MPa	HOSE IN DIA. mm	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	cN·m	cN·m								kgf·cm	kgf·cm
MG60CN	20~ 60	0.5	1370						M6G	2~ 6	0.05
MG120CN	40~ 120	1	720		φ5	268		0.68	M12G	4~ 12	0.1
MG250CN	100~ 250	2.5	350	0.4			6.35		M25G	10~ 25	0.25
	N·m	N·m					Hex				
MF6N	3~ 6	0.1	1000		φ6	411.1		2.0	M60F	30~ 60	1
MF12N	6~ 12	0.2	500						M120F	60~ 120	2
	N·m	N·m								kgf·cm	kgf·cm
ME25N	10~ 25	0.5	1050			420.6 (457.6)	9.5	4.7	M250E2	100~ 250	5
ME45N	20~ 45		540	0.4	φ7.5	423.6 (460.6)	12.7	5.3	M450E2	200~ 450	
ME80N	35~ 80	1	310						M800E2	350~ 800	10
ME126N	50~ 126	2	200					5.7	M1260E2	500~1260	20
										kgf·m	kgf·m
MC220N	100~ 220	10	277			287.5	19.0	4.6	M22C	10~ 22	1
MC400N	200~ 400		175						M40C	20~ 40	
MC700N	300~ 700	20	79	0.5	φ8	376	25.4	6.7	M70C	30~ 70	2
MC1200N	600~1200	50	46			387.5		8.1	M120C	60~ 120	5
MC2200N	1000~2200	100	19.2			490.5	31.75	17	M220C	100~ 220	10
MC4000N	2000~4000		12			522	38.1	24	M400C	200~ 400	

Note 1 : Overall Length in parenthesis is with TC Sensor.
When ordering the Nutrunner with TC Sensor, Please add "TC" at the end.
Example : MF25N with Sensor - ME25N-TC

Note 2 : MG and MF models have 6.35 hex. bit holder.

Accessories : Dial setting stick

DCME ELECTRIC NUTRUNNER

Electric power
Multiple Unit
Switch
With graduation

DIRECTION

Electric Straight Style

- Electric Version of ME
- Built-In Brushless Motor Allows for Noiseless Fastening

DCME

Accuracy ±5%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	FREE SPEED r.p.m.	VOLTAGE AC (V)	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m							kgf·cm	kgf·cm
DCME25N	10~ 25	0.5	1050	SINGLE PHASE 200 50/60Hz (100)	302.4 (339.4)	9.5	5	DCM250E	100~ 250	5
DCME45N	20~ 45	1	540		305.4 (342.4)	12.7	5.5	DCM450E	200~ 450	10
DCME80N	30~ 80	2	310					DCM800E	350~ 800	20
DCME125N	50~125	5	200				6	DCM1250E	500~1250	50

Note : Overall Length in parenthesis is with TC Sensor.
When ordering the Nutrunner with TC Sensor, please add "TC" at the end.
Example : DCME25N with Sensor - DCME25N-TC
DCM250E with Sensor - DCM250E-TC

Accessories : W5 Hex wrench
Driver (DR-DCME)

AME ANGLE NUTRUNNER

Pneumatic
Multiple Unit
Master valve
With graduation

DIRECTION

Electric Right Angle Nutrunner

- Electric Version of ME
- Ideal for Automated Tightening Applications

AME

Accuracy ±5%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	FREE SPEED r.p.m.	AIR PRESSURE MPa	HOSE IN DIA. mm	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m								kgf·cm	kgf·cm
AME25N	10~25	0.5	1200	0.5	φ7.5	369.1 (407.1)	9.5	2.6	AM250E2	100~250	5
AME35N	15~35		800			375.6 (413.6)		2.7	AM350E2	150~350	
AME50N	20~50	1	600			483.6 (521.6)	12.7	2.9	AM500E2	200~500	10
AME70N	30~70		380			554.1 (592.1)		3.6	AM700E2	300~700	

Note : Overall Length in parenthesis is with TC Sensor.
When ordering the Nutrunner with TC Sensor, please add "TC" at the end.
Example : AME25N with Sensor - AME25N-TC
AM250E2 with Sensor - AM250E2-TC

Accessories : Dial setting stick

AUXILIARY TOOLS

OPTIONAL PARTS FOR AIR POWERED TOOLS

To facilitate effective and convenient use of Tohnichi products, an array of auxiliary parts and special tools have been prepared. (Some torque tools come with auxiliary parts as standard.) Custom-made parts and tools are supplied on request.

Lubricant Grease for Torque Tools — EVER TORQUE

Used for torque products maintenance

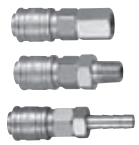
MODEL	CATALOG NO.
EVER TORQUE	830

Example

	APPLICABLE MODEL	APPLICABLE POINT
Semi-Auto AIRTORK	A/AC	Thrust Ring, Steel Ball Scale Piece, Adjusting Screw
Full-Auto AIRTORK	AP, AS	Reduction Gear Clutch
Electric TORQUE WRENCH	DAP	
Moltiple Unit	MC, ME, DCME	

U TYPE — ONE TOUCH JOINT (FEMALE)

Joints to connect Uni-Screwdrivers to Air Hoses.



CATALOG NO.	APPLICABLE MODEL	SIZE
130	U30CN~ U250CN	1/4PF. Female Thread
131		1/4PF. Male Thread
132		φ8mm Tapered Connection

U TYPE — HANDCOVER

Hand slip protection for Uni-Screwdrivers

CATALOG NO.	APPLICABLE MODEL
150	U30CN~U120CN
151	U250CN

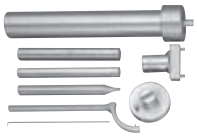
U TYPE — TORQUE-FIX TOOL

Tool for Torque Adjustment.

CATALOG NO.	APPLICABLE MODEL
145	U30CN~U120CN
146	U250CN
147	U500CN、UR500CN

U TYPE — TOOL KIT

Tool Kit for disassembly and assembly.



CATALOG NO.	APPLICABLE MODEL
160	U30CN~U250CN
161	U250CN
162	U500CN、UR500CN
163	U1000CN

AS TYPE — TORQUE ADJUSTING KEY

This key presets required torque.

CATALOG NO.	APPLICABLE MODEL
140	AS

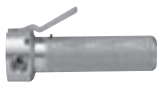
AS TYPE — SPANNER

Spanner for AS Models to disassemble and assemble.

CATALOG NO.	APPLICABLE MODEL
170	AS

OPTIONAL PARTS ON MODEL M

HANDLE VALVE



NAME	CATALOG NO.	EXHAUST OUTLET	OVERALL LENGTH	
Handle Valve	188	3/8	135	For Direct Connection
Handle Valve	189	1/8	125	Master Valve
Handle Assist	187	—	125	

SWITCH HANDLE

NAME	CATALOG NO.	
Start Switch Handle	331	Operating Switch
Reset Switch	332	Switch for Release
Quick Release Switch	333	Operating Switch for Quick Release

MASTER VALVE

APPLICABLE MODEL	CATALOG NO.	EXHAUST PORT × SUPPLY × NUMBER OF PORTS
M-G	193	3/8×1/8×4
	194	3/4×1/8×6
M-F	195	1/2×1/4×4
M-E	196	1/2×1/4×6
M-C	197	3/4×3/8×2
	198	1×3/8×4
	199	1 1/2×3/8×6

SLIDE DRIVE (For ME, DCME)

MODEL
FDME25N
FDME80N
FDME126N

SLIDE DRIVE (For MC)

MODEL
FDMC400N
FDMC1200N

TORQUE SENSOR FOR MULTIPLE UNITS

MODEL	APPLICABLE MODEL
TC-ME	ME
TC-MCA	MC220N,MC400N
TC-MCB-2	MC700N
TC-MCB	MC1200N

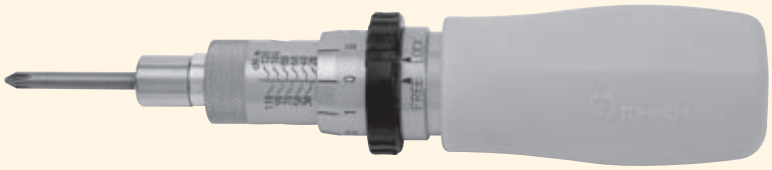
RTD TORQUE DRIVER

DIRECTION

Rotary slip clutch
Adjustable type
With graduation

Rotary Slip Adjustable Style

- Ratcheting Mechanism Prevents Over torque
- Torque Value Easily Set with External Scale



RTD120CN (with Resin Grip)

RTD60CN

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	WEIGHT Approx. g	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	cN·m	cN·m				kgf·cm	kgf·cm
RTD15CN	2~ 15	0.1	100	50	1.5RTD	0.2~ 1.5	0.01
RTD30CN	4~ 30	0.2			3RTD	0.4~ 3	0.02
RTD60CN	10~ 60	0.5	110	80	6RTD	1 ~ 6	0.05
RTD120CN	20~120	1	130	155	12RTD	2 ~12	0.1
RTD260CN	60~260	2	150	265	26RTD	6 ~26	0.2
RTD500CN	100~500	2.5	155	320	50RTD	10 ~50	0.25

Note 1 : Bits are optional. Select required bits from the table on page 31.
Note 2 : Handle bar for RTD500CN (50RTD) is optional.
Note 3 : Locking function is available for RTD15CN to 500CN
Accessories : Preset hook spanner for RTD260CN and RTD500CN
Resin Grip for 120CN, 260CN only (Orange color).

LTD TORQUE DRIVER

DIRECTION

Non-rotary slip clutch
Adjustable type
With graduation

Non-Rotary Adjustable Style

- Clicks at Set Torque Value
- Torque Value Easily Set with External Scale

LTD120CN (with Resin Grip)

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	WEIGHT Approx. g	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	cN·m	cN·m				kgf·cm	kgf·cm
LTD15CN	2~ 15	0.1	100	50	1.5LTD	0.2~ 1.5	0.01
LTD30CN	4~ 30	0.2			3LTD	0.4~ 3	0.02
LTD60CN	10~ 60	0.5	110	80	6LTD	1 ~ 6	0.05
LTD120CN	20~ 120	1	130	155	12LTD	2 ~ 12	0.1
LTD260CN	60~ 260	2	150	265	26LTD	6 ~ 26	0.2
LTD500CN	100~ 500	2.5	155	320	50LTD	10 ~ 50	0.25
LTD1000CN	200~1000	5	185	580	100LTD	20 ~100	0.5
LTD2000CN	300~2000		255	1150	200LTD	30 ~200	

Note 1 : Bits are optional. Select required bits from the table on page 31.
Note 2 : Handle bar for LTD500CN (50LTD) and LTD1000CN (100LTD) are optional.
Note 3 : Locking function is available for LTD15CN to 500CN
Accessories : Preset hook spanner for LTD260CN to 2000CN.
Auxiliary tool for LTD2000CN
Resin Grip for 120CN, 260CN only (Gray color).

RTDZ INSULATED TORQUE DRIVER

Insulated body
Adjustable type
With graduation

DIRECTION

Rotary Slip Adjustable Insulated Style

- Insulated Casing Prevents Electric Shocks
- Ideal for Electrical Applications

RTDZ

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	GRIP DIA. φmm	WEIGHT Approx. g	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	cN·m	cN·m					kgf·cm	kgf·cm
RTDZ260CN	60~260	2	146	42	260	26RTDZ	6~26	0.2
RTDZ500CN	100~500	2.5	183	50	380	50RTDZ	10~50	0.25

Note 1 : Bits are optional. Select required bits from the table on page 31.
Note 2 : Bits are not insulated.

Specification of Resin Grip for Torque driver

Model	RTD120N	LTD120CN	NTD120CN	RNTD120CN	RTD260CN	LTD260CN	NTD260CN	RNTD260CN
Width Across Flat Max (mm)	33				41			
Width Across Corner Max (mm)	35				44			
Length (mm)	67		67		81		68	
Whole Driver length after Grip attached (mm)	130		110		150		110	
Standard Color	Orange	Grey	Green	Black	Orange	Grey	Green	Black
Option Color	Orange/Grey/Black/Green/Red/Blue				Orange/Grey		Black/Green/Red/Blue	
Catalog No.	850,851,852,853,854,855				856,857		858,859,860,861	

TORQUE SCREWDRIVER

AMLD/BMLD TORQUE DRIVER

Non-rotary slip clutch
Adjustable type
With graduation

DIRECTION

Non-Rotary Adjustable Style

- Low Torque Version of LTD
- AMLD includes Special Size Bits

AMLD

BMLD

Accuracy ±3%

MODEL	CAPACITY MIN. ~ MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	ACCESSORIES BITS ⊕	ACCESSORIES BITS ⊖ thickness × Width	WEIGHT Approx. g	MODEL Metric	CAPACITY MIN. ~ MAX.	CAPACITY GRAD.
	cN·m	cN·m						gf·cm	gf·cm
AMLD1CN	0.3~ 1	0.01			0.15×1		100AMLD	30~100	1
AMLD2CN	0.5~ 2	0.025	82.5	#0	0.2 ×1.5	26	200AMLD	50~200	2.5
AMLD4CN	1 ~ 4	0.05			0.3 ×2		400AMLD	100~400	5
AMLD8CN	2 ~ 8						800AMLD	200~800	10
		0.1						kgf·cm	kgf·cm
BMLD15CN2	2 ~15		114	–	–	50	1.5BMLD2	0.2~1.5	0.01
BMLD30CN2	4 ~30	0.2					3BMLD2	0.4~3	0.02

Note 1 : Bits for BMLD models are sold separately. Refer to Page 31.

AMRD/BMRD TORQUE DRIVER

Rotary slip clutch
Adjustable type
With graduation

DIRECTION

Rotary Slip Adjustable Style

- Low Torque Version of RTD
- AMRD includes Special Size Bits

AMRD

BMRD

Accuracy ±3%

MODEL	CAPACITY MIN. ~ MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	ACCESSORIES BITS ⊕	ACCESSORIES BITS ⊖ thickness × Width	WEIGHT Approx. g
	cN·m	cN·m				
AMRD1CN	0.3~ 1	0.01			0.15×1	
AMRD2CN	0.5~ 2	0.025	82.5	#0	0.2 ×1.5	26
AMRD4CN	1 ~ 4	0.05			0.3 ×2	
AMRD8CN	2 ~ 8					
		0.1				
BMRD15CN2	2 ~15		114	–	–	50
BMRD30CN2	4 ~30	0.2				

Note 1 : Bits fo BMRD models are sold separately. Refer to Page 31.
Note 2 : Metric models are available upon request.

NTD TORQUE DRIVER

DIRECTION

Non-rotary slip clutch
Single purpose
Without graduation

Non-Rotary Preset Style

- Preset Version of LTD
- No External Scale, Torque Value Set Using Tester

NTD120CN (with Resin Grip)

CAUTION : Use a torque driver tester for setting torque, or request torque setting when ordering.

Accuracy ±3%

MODEL	CAPACITY MIN. ~ MAX.	OVERALL LENGTH mm	WEIGHT Approx. g	CAPACITY MIN. ~ MAX.
	cN·m			kgf·cm
NTD15CN	5~ 15			0.5~ 1.5
NTD30CN	10~ 30	95	70	1 ~ 3
NTD60CN	20~ 60			2 ~ 6
NTD120CN	40~ 120	110	145	4 ~ 12
NTD260CN	100~ 260		220	10 ~ 26
NTD500CN	200~ 500	120	270	20 ~ 50
NTD1000CN	400~1000	155	550	40 ~100

Note 1 : Bits are sold separately. Select required bits from the table on Page 31.
Note 2 : Torque adjusting bar is optinal. Select bars from the table on Page 26.
Note 3 : T-bar is standard accessory for NTD500CN and NTD1000CN
Accessories : Resin Grip for 120CN, 260CN only (Green color).
Handle bar for 500CN, 1000CN.

RNTD TORQUE DRIVER

DIRECTION

Rotary slip clutch
Single purpose
Without graduation

Rotary Slip Preset Style

- Preset Version of RTD
- No External Scale, Torque Value Set Using Tester

RNTD120CN (with Resin Grip)

CAUTION : Use a torque driver tester for setting torque, or request torque setting when ordering.

Accuracy ±3%

MODEL	CAPACITY MIN. ~ MAX.	OVERALL LENGTH mm	WEIGHT Approx. g	CAPACITY MIN. ~ MAX.
	cN·m			kgf·cm
RNTD15CN	5~ 15			0.5~ 1.5
RNTD30CN	10~ 30	95	70	1 ~ 3
RNTD60CN	20~ 60			2 ~ 6
RNTD120CN	40~ 120	110	145	4 ~12
RNTD260CN	100~ 260		220	10 ~26
RNTD500CN	200~ 500	120	270	20 ~50

Note 1 : Bits are sold separately. Select required bits from the table on Page 31.
Note 2 : Torque adjusting bar is optinal. Select bars from the table on Page 26.
Note 3 : T-bar is standard accessory for RNTD500CN
Accessories : Resin Grip for 120CN, 260CN only (Black color).
Handle bar for 500CN, 1000CN.

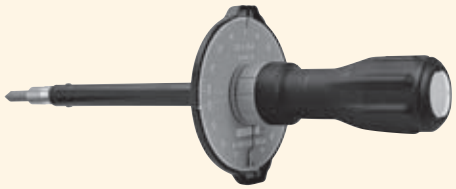
FTD-S/FTD TORQUE DRIVER

DIRECTION

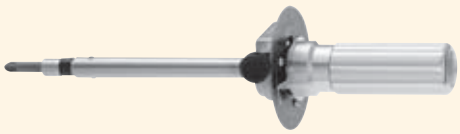
Dial
Direct reading

Dial Indicating Torque Style

- Ideal for Measuring Torque
- FTD-S with Memory Pointer; FTD with Preset Knob



FTD-S



FTD

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	BITS ⊕	BITS ⊖ Thickness x Width	WEIGHT Approx. g	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	cN·m	cN·m						gf·cm	gf·cm
FTD2CN-S	0.3~ 2	0.05					02FTD2-S	30~200	5
FTD5CN-S	0.5~ 5	0.1	152			140	05FTD2-S	50~500	10
								kgf·cm	kgf·cm
FTD10CN-S	1 ~ 10	0.2			Bits are options Choose from bit table, page 31.		1FTD2-S	0.1~ 1	0.02
FTD20CN-S	3 ~ 20	0.5					2FTD2-S	0.3~ 2	0.05
FTD50CN2-S	5 ~ 50	1					5FTD2-S	0.5~ 5	0.1
FTD100CN2-S	10 ~100	2	272			370	10FTD2-S	1 ~ 10	0.2
FTD200CN2-S	30 ~200	5					20FTD2-S	3 ~ 20	0.5
FTD400CN2-S	50 ~400	10					40FTD2-S	5 ~ 40	1
	N·m	N·m							
FTD8N2-S	1~ 8	0.2	340	#3	1.2×8	670	80FTD2-S	10 ~ 80	2
FTD16N2-S	3~16	0.5				700	160FTD2-S	30 ~160	5
	cN·m	cN·m						kgf·cm	kgf·cm
FTD50CN	10~ 50	1	215	#1	0.7×7	285	5FTD	1 ~ 5	0.1
FTD100CN	20~100	2				290	10FTD	2 ~ 10	0.2
FTD200CN	40~200	5	270	#2	0.9×7	390	20FTD	4 ~ 20	0.5
FTD400CN	80~400	10				410	40FTD	8 ~ 40	1

Note 1 : FTD8N2-S, FTD16N2-S, FTD8N and FTD16N have (6.35mm) square drive.
Note 2 : -S models have a memory pointer as standard.
Note 3 : Handle bar is standard accessory for FTD8N2-S and FTD16N2-S.

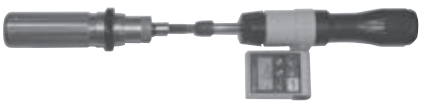
STC Digital Torque Driver

Digital display
Direct reading
With ratchet gear

DIRECTION

Digital Torque Screwdriver

- Ideal for Measuring Torque
- Used to Check Torque Drivers



STC

Inspection of Torque Drivers

STC

Accuracy ±1%+1digit

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	WEIGHT Approx. g	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	cN·m	cN·m				kgf·cm	kgf·cm
STC50CN	10~ 50	0.05			5STC	1~ 5	0.005
STC200CN	40~200	0.2	201	420	20STC	4~20	0.02
STC400CN	80~400	0.5			40STC	8~40	0.05

Note : Bits are sold separately. Select required bits from the table on Page 31.

STC OPTIONAL EQUIPMENT

INFRARED RECEIVER·····P.41

MODEL
R-DT999

PRINTER·····P.41

MODEL
EPP16M2

Note : R-DT999, infrared receiver is required for data output.

CONNECTING CABLE

MODEL	DESCRIPTION
379	R-DT999 → EPP16M2
575	CEM2, CEM3, R-DT999 → PC (D-SUB 9Pins Female)
584	R-DT999 → PC (USB A type)

SOFTWARE·····P.41

MODEL	DESCRIPTION
DFS	DATA PROCESSING SOFTWARE

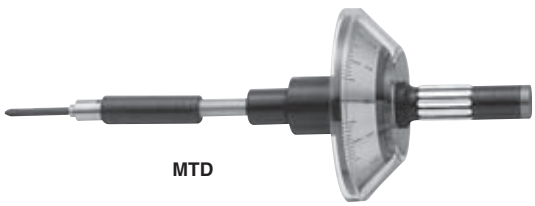
MTD TORQUE DRIVER

Dial
Direct reading

DIRECTION

Micro Dial Indicating Style

- Low Torque Capacity Version of FTD
- Requires Special Size Bits



MTD

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	ACCESSORIES BITS ⊕	ACCESSORIES BITS ⊖ Thickness x Width	WEIGHT Approx. g	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	mN·m	mN·m						gf·cm	gf·cm
MTD1MN	0.1~ 1	0.02	109.5		0.15×1	22	10MTD	1~ 10	0.2
MTD2MN	0.3~ 2	0.05	99.5	#0	0.2 ×1.5	21	20MTD	3~ 20	0.5
MTD5MN	0.5~ 5	0.1			0.3 ×2		50MTD	5~ 50	1
MTD10MN	1 ~10	0.2	132			23	100MTD	10~100	2

Note : MTD models need Tohnichi original bits. Refer to Page 31.

TORQUE WRENCH

QL/QLE TORQUE WRENCH

DIRECTION

Adjustable type
With graduation
With ratchet head

Basic Adjustable Click Style

- Torque Value Easily Set with External Scale and Knob
- Resin Grip

QL

QLE

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m					kgf·cm	kgf·cm
QL1.5N4	0.3~1.5	0.01	160	6.35	0.16	15QL4	3~ 15	0.1
QL3N4	0.6~ 3	0.02				30QL4	6~ 30	0.2
QL6N4	1~ 6	0.05	195		0.19	60QL4	10~ 60	0.5
QL12N4	2~ 12	0.1				120QL4	20~ 120	1
QL25N	5~ 25	0.25	230	9.5	0.25	225QL3	50~ 250	2.5
QL50N	10~ 50	0.5	260		0.45	450QL3	100~ 500	5
QL100N4	20~ 100	1	335		0.69	900QL4	200~1000	10
QL140N	30~ 140		400	12.7	0.88	1400QL3	300~1400	
QL200N4	40~ 200		490		1.4	1800QL4	400~2000	20
							kgf·m	kgf·m
QL280N	40~ 280	2	695	19.0	2.0	2800QL3	4~ 28	0.2
QL420N	60~ 420		995		3.4	4200QL2	6~ 42	
QLE550N	100~ 550		1195		5.1	5500QLE	10~ 55	
QLE750N	100~ 750	5	1370		7.1	7500QLE	10~ 75	0.5
QLE1000N	100~1000		1540		9.5	10000QLE	10~100	
QLE1400N	200~1400	10	1795	25.4	13.1	14000QLE	20~140	1
QLE2100N	500~2100	20	1950		20	21000QLE	50~210	2

Note 1 : QL25N (225QL3)~QL280N (2800QL3) models are with resin grip.
Note 2 : Other models are with knurled handle.
Note 3 : E-type models are with an extension bar handle.

QL-MH TORQUE WRENCH

Adjustable type
With graduation
With ratchet head

DIRECTION

Adjustable Click Style

- Knurled Metal Handle Version of QL
- Ideal for Oily Working Conditions

QL-MH

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m					kgf·cm	kgf·cm
QL25N-MH	5~ 25	0.25	230	9.5	0.25	225QL-MH	50~ 250	2.5
QL50N-MH	10~ 50	0.5	260		0.45	450QL-MH	100~ 500	5
QL100N4-MH	20~100	1	335		0.69	900QL4-MH	200~1000	10
QL140N-MH	30~140		400	12.7	0.79	1400QL-MH	300~1400	
QL200N4-MH	40~200		490		1.4	1800QL4-MH	400~2000	20
		2					kgf·m	kgf·m
QL280N-MH	40~280		695	19.0	2.0	2800QL-MH	4~ 28	0.2

PQL TORQUE WRENCH

Pre-lock
With graduation
With ratchet head

DIRECTION

Adjustable Prelock Click Style

- External Scale but Requires Hex Key to Set

PQL

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m					kgf·cm	kgf·cm
NEW PQL6N4	1~ 6	0.05	190	6.35	0.19	NEW 60PQL4	10~ 60	1
NEW PQL12N4	2~ 12	0.1				NEW 120PQL4	20~ 120	2
PQL25N	5~ 25	0.25	220	9.5	0.25	225PQL	50~ 250	2.5
PQL50N	10~ 50	0.5	250		0.4	450PQL	100~ 500	5
PQL100N4	20~100	1	320		0.65	900PQL4	200~1000	10
PQL140N	30~140		385	12.7	0.75	1400PQL	300~1400	
PQL200N4	40~200	2	470		1.4	1800PQL4	400~2000	20

Note : Torque set is by hex wrench key.
Accessories : Hex wrench key

TiQL/TiLQL/TiEQL(E) TiQLLS/TiLQLLS/TiEQLLS

TORQUE WRENCH

Pre-lock
With graduation
With ratchet head

DIRECTION

Ultra Light Weight Titanium Style

- 50% Lighter than Standard Wrenches
- Ideal for Working Overhead

TiQL

TiEQLE

Accuracy ±3%

MODEL	CAPACITY		OVERALL LENGTH	SQUARE DRIVE	WEIGHT Approx.	MODEL Metric	CAPACITY	
	MIN.~MAX.	GRAD.	mm	mm	kg		MIN.~MAX.	GRAD.
	N·m	N·m					kgf·cm	kgf·cm
TiQL180N	40~ 180	2	494	12.7	0.9	1800TiQL	400~1800	20
TiQLLS180N						1800TiQLLS		
TiLQL180N			594		1	1800TiLQL		
TiLQLLS180N						1800TiLQLLS		
							kgf·m	kgf·m
TiQL360N	80~ 360		987	19.0	2.4	3600TiQL	8~ 36	0.2
TiEQL360N						3600TiEQL		
TiEQLLS360N						3600TiEQLLS		
TiEQLE750N	100~ 750	5	1370		4.5	7500TiEQLE	10~ 75	0.5
TiEQLE1400N	200~1400	10	1794	25.4	7.5	14000TiEQLE	20~140	1

Note 1 : The titanium is about 1/2 the weight of steel.
Accessories : Hex wrench key, color band (except TiELQE750N, 1400N)
Torque adjusting handle (TiEQLE750N~1400N)

DQL/DQLE

TORQUE WRENCH

Adjustable type
With graduation
With ratchet head

DIRECTION

Dual Drive Adjustable Click Style

- For Bi-Directional Tightening
- Ideal for Tightening Large Vehicle Tires

DQL

DQLE

Accuracy ±3%

MODEL	CAPACITY		OVERALL LENGTH	SQUARE DRIVE	WEIGHT Approx.	MODEL Metric	CAPACITY	
	MIN.~MAX.	GRAD.	mm	mm	kg		MIN.~MAX.	GRAD.
	N·m	N·m					kgf·cm	kgf·cm
DQL200N4	40~ 200	2	495	12.7	1.4	1800DQL4	400~2000	20
							kgf·m	kgf·m
DQL280N	40~ 280		695	19.0	1.8	2800DQL2	4~ 28	0.2
DQLE550N	100~ 550	5	1190		5.1	5500DQLE	10~ 55	0.5
DQLE750N	100~ 750		1365		7.1	7500DQLE	10~ 75	
DQLE1000N	100~1000		1535	25.4	9.5	10000DQLE	10~100	

Note : E-type models are with an extension bar handle.
Accessories : Torque adjusting tool for DQLE550N to 1000N

MTQL

TORQUE WRENCH

Adjustable type
With graduation
With ratchet head

DIRECTION

Wide Capacity Adjustable Style

- Wide Range 5-140NM
- Ideal for Motorcycle & Motorbike Maintenance

MTQL

Accuracy ±5%

MODEL	CAPACITY		OVERALL LENGTH	SQUARE DRIVE	WEIGHT Approx.	MODEL Metric	CAPACITY	
	MIN.~MAX.	GRAD.	mm	mm	kg		MIN.~MAX.	GRAD.
	N·m	N·m					kgf·m	kgf·m
MTQL40N	5~ 40	0.5	245	9.5	0.42	400MTQL	0.5~ 4	0.05
MTQL70N	10~ 70	1	283		0.47	700MTQL	1~ 7	0.1
MTQL140N	20~140		400	12.7	0.77	1400MTQL	2~14	

Accessories : Carrying case.

PQLZ

INSULATED TORQUE WRENCH

Pre-lock
Insulated body
With graduation

DIRECTION

Prelock Adjustable Insulated Style

- Insulated Casing Prevents Electrical Shocks
- Specialized Version of PQL

PQLZ

Accuracy ±3%

MODEL	CAPACITY		OVERALL LENGTH	SQUARE DRIVE	WEIGHT Approx.	MODEL Metric	CAPACITY	
	MIN.~MAX.	GRAD.	mm	mm	kg		MIN.~MAX.	GRAD.
	N·m	N·m					kgf·cm	kgf·cm
PQLZ25N	5~ 25	0.25	227	9.5	0.28	225PQLZ	50~250	2.5
PQLZ100N4	20~100	1	340	12.7	0.8	900PQLZ4	200~1000	10

TORQUE WRENCH

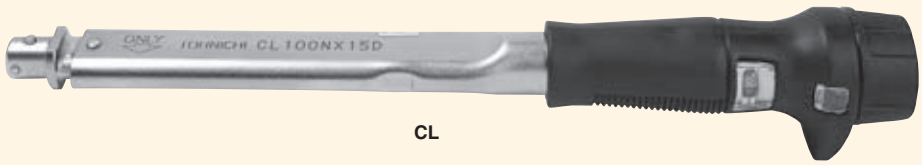
CL/CLE TORQUE WRENCH

DIRECTION

Adjustable type
Interchangeable head
With graduation

Interchangeable Head Adjustable Style

- Heads Types Can be Easily Exchanged
- Torque Value Easily Set with External Scale and Knob



CL

CLE

10 series of interchangeable heads with 257 models (P27 to 29)

SH AH RH QH RQH DH HH SH-N FH

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	GRAD.	OVERALL LENGTH mm	TOHNICHI HEAD SIZE	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	GRAD.
	N·m	N·m					kgf·cm	kgf·cm
CL1.5N4×8D	0.3~ 1.5	0.01	140	8D	0.13	15CL4	3~ 15	0.1
CL3N4×8D	0.6~ 3	0.02				30CL4	6~ 30	0.2
CL6N4×8D	1 ~ 6	0.05	175			60CL4	10~ 60	0.5
CL12N4×8D	2 ~ 12	0.1			0.16	120CL4	20~ 120	1
CL25N×10D	5 ~ 25	0.25	205	10D	0.22	225CL3	50~ 250	2.5
CL50N×12D	10 ~ 50	0.5	230	12D	0.40	450CL3	100~ 500	5
CL50N×15D	10 ~ 50		235	15D		500CL3	100~ 500	
CL100N×15D	20 ~ 100	1	310		0.60	900CL3	200~1000	10
CL140N×15D	30 ~ 140		370		0.72	1400CL3	300~1400	
CL200N×19D	40 ~ 200		455	19D	1.3	1800CL3	400~2000	20
							kgf·m	kgf·m
CL280N×22D	40 ~ 280	2	655	22D	1.8	2800CL3	4~ 28	0.2
CL420N×22D	60 ~ 420		940		3.1	4200CL2	6~ 42	
CLE550N×27D	100 ~ 550		1140	27D	4.7	5500CLE	10~ 55	
CLE750N×27D	100 ~ 750	5	1310		6.5	7500CLE	10~ 75	0.5
CLE850N×32D	200 ~ 850		1315	32D		8500CLE	20~ 85	
CLE1200N×32D	300 ~1200	10	1480		8.5	12000CLE	30~ 120	1

Note 1 : CL25N (225CL3)~CL280N (2800CL3) models are with resin grip.
Other models are knurled handle.
E-type models are with an extension bar handle.
Note 2 : Interchangeable heads are sold separately. See page 27-29.
Note 3 : PH interchangeable heads can not be used with this series.

CL-MH TORQUE WRENCH

DIRECTION

Adjustable type
Interchangeable head
With graduation

Interchangeable Head Adjustable Style

- Knurled Metal Handle Version of CL
- Ideal for Oily Working Conditions

CL-MH

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	GRAD.	OVERALL LENGTH mm	TOHNICHI HEAD SIZE	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	GRAD.
	N·m	N·m					kgf·cm	kgf·cm
CL25N×10D-MH	5~ 25	0.25	200	10D	0.22	225CL-MH	50~ 250	2.5
CL50N×12D-MH	10~ 50	0.5	235	12D	0.37	450CL-MH	100~ 500	5
CL50N×15D-MH	10~ 50			15D		500CL-MH	100~ 500	
CL100N×15D-MH	20~100	1	310		0.52	900CL-MH	200~1000	10
CL140N×15D-MH	30~140		370		0.67	1400CL-MH	300~1400	
CL200N×19D-MH	40~200		455	19D	1.2	1800CL-MH	400~2000	20
		2					kgf·m	kgf·m
CL280N×22D-MH	40~280		655	22D	1.6	2800CL-MH	4~ 28	0.2

Note 1 : Overall length is without head.
Note 2 : Interchangeable heads are sold separately. See page 27-29.
Note 3 : PH interchangeable heads can not be used with this series.

PCL TORQUE WRENCH

Pre-lock
Interchangeable head
With graduation

DIRECTION

Interchangeable Head Prelock Style

- Interchangeable Head Version of PQL
- External Scale but Requires Hex Key to Set

PCL

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	GRAD.	OVERALL LENGTH mm	TOHNICHI HEAD SIZE	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	GRAD.
	N·m	N·m					kgf·cm	kgf·cm
NEW PCL6N4×8D	1~ 6	0.05	170	8D	0.16	NEW 60PCL4	10~ 60	1
NEW PCL12N4×8D	2~ 12	0.1				NEW 120PCL4	20~ 120	2
PCL25N×10D	5~ 25	0.25	200	10D	0.22	225PCL	50~ 250	2.5
PCL50N×12D	10~ 50	0.5	220	12D	0.32	450PCL	100~ 500	5
PCL50N×15D	10~ 50		225	15D		500PCL	100~ 500	
PCL100N×15D	20~100	1	295		0.53	900PCL	200~1000	10
PCL140N×15D	40~140		355		0.63	1400PCL	300~1400	
PCL200N×19D	40~200	2	435	19D	1.1	1800PCL	400~2000	20

Note 1 : Overall length is without head.
Note 2 : Interchangeable heads are sold separately. See page 27-29.
Note 3 : PH interchangeable heads can not be used with this series.
Accessories : Hex Wrench key

YCL TORQUE WRENCH

DIRECTION

Adjustable type
Interchangeable head
With graduation

Over Torque Prevention Adjustable Style

- Interchangeable Head; Adjustable Style
- Primary Click Followed by Break and Secondary Click

YCL

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	TOHNICHI HEAD SIZE	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m					kgf·cm	kgf·cm
YCL12N×10D	5～ 12	0.1	225	10D	0.32	120YCL	50～ 120	1
YCL23N×10D	10～ 23	0.2				230YCL	100～ 230	2
YCL45N×12D	20～ 45	0.25	272	12D	0.5	450YCL	200～ 450	2.5
YCL70N×12D	30～ 70	0.5				700YCL	300～ 700	5
YCL90N×15D	40～ 90	0.25	366	15D	1	900YCL	400～ 900	2.5
YCL140N×15D	60～140	0.5				1400YCL	600～1400	5
YCL180N×19D	80～180		570	19D	1.7	1800YCL	800～1800	

Note 1 : Overall length is without head.
Note 2 : Interchangeable heads are sold separately. See page 27-29.
Note 3 : PH interchangeable heads can not be used with this series.

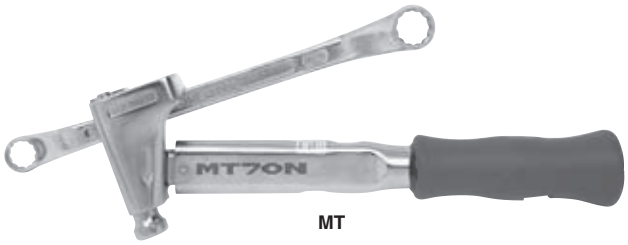
MT70N MOTO TORK

Pre-lock
Interchangeable head
With graduation

DIRECTION

Prelock Adjustable Specialty Torque Wrench

- Converts Basic Hand Tools into Torque Wrenches
- Ideal for Motorcycle Maintenance.



MT

Accuracy ±5%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m			Metric	kgf·m	kgf·m
MT70N	10～70	0.2	300	0.65	MT-7	1.0～7.0	0.02

Note 1 : Overall length is without head.
Note 2 : Ring-head wrench (shown above) is not attached.
Note 3 : With carrying case, scale and hex key wrench.
Note 4 : Max. clamp width for interchangeable tool is approx. 21mm.
Note 5 : Min. interchangeable Hex wrench key size is 5mm

PHL/PHLE PIPE HEAD WRENCH

Adjustable type
With graduation

DIRECTION

Adjustable Pipe Head Torque Wrench

- Ideal for Use with Pipes and Plumbing Applications

PHL

Accuracy ±5%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	PIPE WRENCH NOMINAL SIZE	GRIPPABLE PIPE DAMETER mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m						kgf·cm	kgf·cm
PHL50N	10～ 50	0.5	335	350	13～38	1.46	500PHL3	100～ 500	5
PHL100N	20～ 100	1	410			1.61	900PHL3	200～1000	10
PHL140N	40～ 140		470			1.76	1400PHL3	400～1400	
PHL200N	40～ 200	2	550			2.3	1800PHL3	400～2000	20
								kgf·m	kgf·m
PHL280N	40～ 280		765			2.92	2800PHL3	4～ 28	0.2
PHL420N	60～ 420	3	1080	450	26～52	4.83	4200PHL2	6～ 42	0.3
PHLE850N	200～ 850	5	1600			9.63	8500PHLE	20～ 85	0.5
PHLE1300N	300～1300	10	1745			11.63	13000PHLE	30～ 130	1

Note 1 : E-type models are with an extension bar handle.

SCL TORQUE WRENCH

Adjustable type
Interchangeable head
With graduation

DIRECTION

Adjustable Torque Wrench with European Connector

- Special Version of CL
- Accepts Standardized Heads for European Market

SCL

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	HEAD SIZE mm	EFFECTIVE LENGTH mm	OVERALL LENGTH mm	WEIGHT Approx. kg
	N·m	N·m				
SCL25N-9×12	5～ 25	0.25	9×12	175	208	0.22
SCL50N-9×12	10～ 50	0.5	9×12	195	239	0.37
SCL100N-9×12	20～100	1	9×12	270	314	0.52
SCL200N-14×18	40～200	2	14×18	420	464	1.2

Note 1 : Overall length is without head.
Note 2 : Applicable to DIN standard heads, not suitable with Tohnichi standard heads.

TORQUE WRENCH

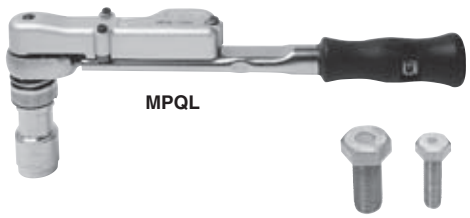
MPQL/MQL MARKING TORQUE WRENCH

Pre-lock
With ratchet head
With graduation

DIRECTION

Prelock Style Marking Torque Wrench

- Mechanism Marks Bolt as Torque is Achieved
- Requires Special Socket, Marker, and Ink



MPQL

※Marked bolts

Accuracy ±3%

MODEL	CAPACITY		OVERALL LENGTH	SQUARE DRIVE	WEIGHT Approx.	MODEL Metric	CAPACITY	
	MIN.～MAX.	GRAD.	mm	mm	kg		MIN.～MAX.	GRAD.
	N·m	N·m					kgf·cm	kgf·cm
MPQL50N	10～ 50	0.5	245		0.7	450MPQL4	100～ 500	5
MPQL100N4	20～100	1	325	12.7	0.95	900MPQL	200～1000	10
MPQL140N	30～140		385		1.1	1400MPQL	300～1400	
MPQL200N4	40～200		470		1.8	1800MPQL4	400～2000	20
							kgf·m	kgf·m
MQL280N	40～280	2	675	19.0	2.6	2800MQL	4～ 28	0.2

Note 1 : Two different size sockets, standard type and long type are available. See the combination table.
Note 2 : These sockets are designed especially for the MPQL and standard sockets cannot be used.
Note 3 : To avoid confusion, please contact Tohnichi for sales assistance.

COMPOSITION	STANDARD TYPE	LONG TYPE
BODY	1	1
Socket	1	1
Socket Adapter Standard Type	1	–
Socket Adapter Long Type	–	1
Marker	1	1

For Example : 21 × MPQL100N-MK52B
24L × 900MPQL-MK52 + 772

SOCKET

MODEL	WIDTH	CATALOG NO.	ADAPTING MODEL
SOCKET 4MH-12	12	701	MPQL50N MPQL100N4 MPQL140N MPQL200N4
SOCKET 4MH-13	13	702	
SOCKET 4MH-14	14	703	
SOCKET 4MH-16	16	704	
SOCKET 4MH-17	17	705	
SOCKET 4MH-18	18	706	
SOCKET 4MH-19	19	707	
SOCKET 4MH-21	21	708	
SOCKET 4MH-22	22	709	
SOCKET 4MH-24	24	710	
SOCKET 4MH-27	27	711	
SOCKET 6MH-22	22	720	MQL280N
SOCKET 6MH-24	24	721	
SOCKET 6MH-27	27	722	
SOCKET 6MH-30	30	723	

SOCKET ADAPTER

MODEL	CATALOG NO.	ADAPTING MODEL
ADAPTER 17L	748	MPQL 50～200N4
ADAPTER 17S	749	
ADAPTER 21L	751	MQL 280N
ADAPTER 21S	752	

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

Note 1 : MK92 cannot be used with the socket size 12 - 16mm.
Note 2 : 780, 781, 783 and 784 are rubber tip.
782 and 785 are felt tip.

SPARE INK, SOLVENT

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

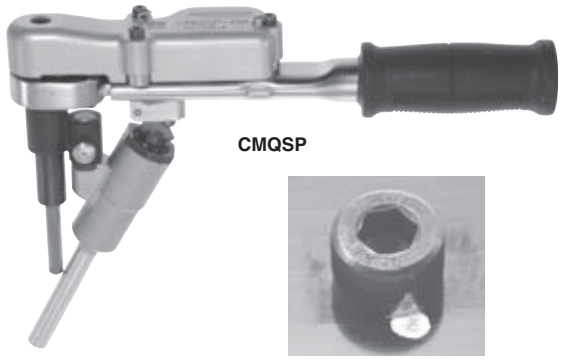
CMQSP MARKING TORQUE WRENCH

Single purpose
With ratchet
With graduation

DIRECTION

Preset Style Marking Torque Wrench for Hex Screws

- Mechanism Marks Side of Bolt and Work Piece



CMQSP

Marked bolt head

Note : This torque wrench has to be set with torque wrench tester
Please specify setting torque unless you have torque wrench tester

Refill ink and Solvent for Marking wrench

Description	Catalog no.	Color
Refill ink W	406	White
Solvent	791	For White and Yellow

Note : Ink and solvent are optional. They can be purchased only together with main body.

Accuracy ±3%

Model name	Capacity of setting torque (N.m) MIN. ～ MAX.	Hex Key size Width across flat mm	Total Length mm	Weight kg
	N·m			
CMQSP-M6	5～ 25	5	241	0.85
CMQSP-M8	10～ 50	6		
CMQSP-M10	20～100	8	320	1.13
CMQSP-M12	30～140	10	380	1.23

OPTION

Description	Catalog no.
Marker Head for CMQSP	792
CMQSP-M6 Bit	724
CMQSP-M8 Bit	725
CMQSP-M10 Bit	726
CMQSP-M12 Bit	727

CMQSP ADJUSTING ADAPTER

DESCRIPTION	CATALOG NO.	APPLICABLE TESTER
CMQSP-M6 ADAPTER	811	DOTE20N, DOTE36N, DOTE100N
CMQSP-M8 ADAPTER	812	
CMQSP-M10 ADAPTER	813	DOTE200N, DOTE360N
CMQSP-M12 ADAPTER	814	

CMQSP ADJUSTING PAUL HOLDER

DESCRIPTION	CATALOG NO.	APPLICABLE TESTER
CMQSP-M6, M8 PAUL HOLDER	815	DOTE20N, DOTE36N, DOTE100N
CMQSP-M10, M12 PAUL HOLDER	816	DOTE200N, DOTE360N

Note : For torque adjustment, a torque wrench tester and CMQSP adapters are required.

QLLS/CLLS/PQLLS TiQLLS/TiLQLLS/TiEQLLS/PCLLS

TORQUE WRENCH

DIRECTION

With limit switch
Adjustable type
With graduation

Various Torque Wrench Styles with Limit Switch Output

- Limit Switch Counts Number of "Clicks"
- Ideal for Torque Verification Assembly Processes

QLLS

LIMIT SWITCH SPEC.
AC30V Below 1A
DC30V Below 1A

MODEL	MODEL
TiQLLS180N	PCLLS25N×10D
TiLQLLS180N	PCLLS50N×12D
TiEQLLS360N	PCLLS50N×15D
	PCLLS100N×15D
	PCLLS140N×15D
	PCLLS200N×19D

Optional Accessories : WA5219K, Female Connector

Accuracy ±3%

MODEL		MODEL		MODEL	
S.I.	Metric	S.I.	Metric	S.I.	Metric
QLMS12N4	120QL4MS	CLMS12N4×8D	120CL4MS	PQLLS25N	225PQLLS
QLLS25N	225QL3LS	CLLS25N×10D	225CL3LS	PQLLS50N	450PQLLS
QLLS50N	450QL3LS	CLLS50N×12D	450CL3LS	PQLLS100N4	900PQL4LS
QLLS100N4	900QL4LS	CLLS50N×15D	500CL3LS	PQLLS140N	1400PQLLS
QLLS140N	1400QL3LS	CLLS100N×15D	900CL3LS	PQLLS200N4	1800PQL4LS
QLLS200N4	1800QL4LS	CLLS140N×15D	1400CL3LS		
QLLS280N	2800QL3LS	CLLS200N×19D	1800CL3LS		
QLLS420N	4200QL2LS	CLLS280N×22D	2800CL3LS		
		CLLS420N×22D	4200CL2LS		

Note 1 : For specifications, refer to QL, CL and PQL model series information.
Note 2 : Limit switch can be installed on other click type torque wrenches.
Note 3 : For use with CNA-4mk2 count checker.

FM96MC

RADIO FREQUENCY TORQUE SYSTEM

Wireless

FM Transmitting Torque Wrench & FM Receiver

- Various Style Wrenches with FM Transmitter Module
- Wireless Version for Torque Verification

QLFMMC

ex : QLFM100N
: SPFM38N×14

R-FM96D

FM transmitter can be installed on all LS type torque wrenches, such as QLLS.

MODEL	DESCRIPTION
F-FM96MC	Transmitter

Accuracy ±3%

MODEL	DESCRIPTION	ACCESSORIES
R-FM96D	FM96D receiver Output 1a (DC30V 1A, AC125V 0.5A) Dimension : W150×D210×H51mm Weight : Approx.1.7 kgs Power supply: AC100-115V 50/60Hz	Antenna

Note 1 : For specifications of torque wrenches, refer to standard models.
Note 2 : Use torque wrench tester for presetting SPFM/RSPFM/QSPFM and CSPFM wrenches.
Otherwise, ask for torque setting when purchasing.
Note 3 : Totally, 192 channels.
Note 4 : If CNA-4mk2 counter is connected to receiver, CNA-4mk2 makes torque verification system more effective.
Note 5 : Power source AC220V is available upon request.

OPTIONAL ACCESSORIES FOR FM PRODUCTS

MODEL	DESCRIPTION
FM-ANT	Whip Antenna
FM-CNT	Diverge Connector for Antenna
FM-COD	Extension Wire for Antenna
FM-BCY	Battery Checker

CNA-4mk2

POKA PATROL

Torque Verification Counter

- Manages Signals from LS or FM Torque Wrenches
- Special Version with FM Receiver Available

CNA-4mk2

CE

COUNT DISPLAY	2 digit, 7 segment LED
OK, NG CONFORMITY	Domed shape lamp (OK: Green/ NG: Red)
COUNT ENTERING PORT	Max. 4
PRESET MAX VALUE	99 (Free setting by Key entering)
SELECT FUNCTION	Max. 4 Work piece (Free setting by Key entering)
OK, NG JUDGMENT	Judge by Preset value or End signal
	Automatically judgment timer (1～300 sec.)
OK, NG OUTPUT	OK: Green lamp
	NG: Red lamp + Buzzer (4 perttern)
	OK and NG respectively relay contacts
	(Relay output rating: DC30V 1A, AC125V 0.5A)
MODE EXCHANGE	Normal mode (same as the previous model)
	Multiple mode (Max. 4 pcs torque wrench usable)
POWER SUPPLY	AC100V -220V 50/60HZ

Note 1 : Count contact Max. 4 (LS or FM total)
Note 2 : FM receiver board is optional accessory
Note 3 : Automatic Judgment Timer, Automatic Reset Timer, Double count elimination Timer can be set by key operation.

TORQUE WRENCH

QSP TORQUE WRENCH

DIRECTION

Single purpose
With ratchet head
Without graduation

Preset with Fixed Ratchet Head Style

- No External Scale, Torque Value Set Using Key & Tester
- Ideal for Mass Production Application

QSP

CAUTION : Use a torque wrench tester for setting torque. Otherwise, ask for torque setting when purchasing.

Accuracy ±3%

MODEL	CAPACITY MIN. ～ MAX.	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	CAPACITY MIN. ~ MAX.
	N·m				kgf·cm
QSP1.5N4	0.3～ 1.5	150	6.35	0.16	3～ 15
QSP3N4	0.6～ 3				6～ 30
QSP6N4	1 ～ 6	185		0.19	10～ 60
QSP12N4	2 ～ 12				20～ 120
QSP25N3	5 ～ 25	210	9.5	0.2	50～ 250
QSP50N3	10 ～ 50	245		0.4	100～ 500
QSP100N4	20 ～100	315	12.7	0.65	200～1000
QSP140N3	30 ～140	380		0.7	300～1400
QSP200N4	40 ～200	460		1.2	400～2000
					kgf·m
QSP280N3	40 ～280	665	19.0	1.8	4～28
QSP420N	60 ～420	970		3.1	6～42

Optional Accessories : Adjusting keys for QSP, QSP3, QSP4 are different.
Refer to page 26.

Note 1 : Please specify model name and required set torque when ordering.
Example QSP50N3×40N·m
QSP50N3×400kgf·cm

CSP TORQUE WRENCH

DIRECTION

Single purpose
Interchangeable head
Without graduation

Interchangeable Head Preset Style

- Interchangeable Head Version of QSP
- No External Scale, Torque Value Set Using Key & Tester

CSP

CAUTION : Use a torque wrench tester for setting torque. Otherwise, ask for torque setting when ordering.

Accuracy ±3%

MODEL	CAPACITY MIN. ～ MAX.	OVERALL LENGTH mm	TOHNICHI HEAD SIZE	WEIGHT Approx. kg	CAPACITY MIN. ~ MAX.
	N·m				kgf·cm
CSP1.5N4×8D	0.3～ 1.5	130	8D	0.13	3～ 15
CSP3N4×8D	0.6～ 3				6～ 30
CSP6N4×8D	1 ～ 6	165		0.16	10～ 60
CSP12N4×8D	2 ～ 12				20～ 120
CSP25N3×10D	5 ～ 25	190	10D	0.15	50～ 250
CSP50N3×12D	10 ～ 50	215	12D	0.3	100～ 500
CSP50N3×15D	10 ～ 50	220	15D		100～ 500
CSP100N3×15D	20 ～100	290		0.45	200～1000
CSP140N3×15D	30 ～140	350		0.55	300～1400
CSP200N3×19D	40 ～200	425	19D	1	400～2000
					kgf·m
CSP280N3×22D	40 ～280	620	22D	1.4	4～28
CSP420N×22D	60 ～420	920		2.7	6～42

Note 1 : Overall length is without head.
Note 2 : Interchangeable heads are sold separately. See page 27-29.
Note 3 : Please specify model name and required set torque when ordering.
Example CSP50N3×15D×40N·m
CSP50N3×15D×400kgf·cm

QRSP TORQUE WRENCH

DIRECTION

Single purpose
Without graduation

Open Ratcheting Ring Head Preset Style

- Ring Head Opens to Allow Fitting on Tubes or Pipes

QRSP

CAUTION : Use a torque wrench tester for setting torque, or request torque setting when ordering.

Accuracy ±3%

MODEL	CAPACITY MIN. ～ MAX.	OVERALL LENGTH mm	WEIGHT Approx. kg	CAPACITY MIN. ~ MAX.
	N·m			kgf·cm
QRSP38N×17	10～45	300.5	0.4	100～450
QRSP38N×19		303		
QRSP38N×21		306.5		
QRSP38N×24		312	0.43	

Note 1 : Please specify model name and required set torque when ordering.
Example QRSP38N×17×40N·m
QRSP38N×17×400kgf·cm

BQSP TORQUE WRENCH

Single purpose | With ratchet head
Bi-directional | Without graduation

DIRECTION

Bi-Directional Preset Style

- Clicks for Both CW & CCW Applications
- Specialty Version of QSP

BQSP

CAUTION : Use a torque wrench tester for setting torque. Otherwise, ask for torque setting when ordering.

Accuracy ±3%

MODEL	CAPACITY MIN. ～ MAX.	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	CAPACITY MIN. ~ MAX.
	N·m				kgf·cm
BQSP25N3	5～ 25	208	9.5	0.20	50～ 250
BQSP50N3	10～ 50	241		0.40	100～ 500
BQSP100N4	20～100	322	12.7	0.63	200～1000
BQSP140N3	40～140	380		0.73	300～1400
BQSP200N4	40～200	462		1.3	400～2000
					kgf·m
BQSP280N3	40～280	662	19.0	2.4	4～28
BQSP420N	60～420	971		3.7	6～42

Note 1 : Please specify model name and required set torque when ordering.
Example BQSP50N3×40N·m
BQSP50N3×400kgf·cm
Note 2 : BQSP25N3 to 140N3 are with resin grips.
The others are with knurled metal handle.

BCSP TORQUE WRENCH

Single purpose | Interchangeable head
Bi-directional | Without graduation

DIRECTION

Interchangeable Head Preset Style

- Clicks for Both CW & CCW Applications
- Specialty Version of CSP

BCSP

CAUTION : Use a torque wrench tester for setting torque. Otherwise, ask for torque setting when ordering.

Accuracy ±3%

MODEL	CAPACITY MIN. ～ MAX.	OVERALL LENGTH mm	TOHNICHI HEAD SIZE	WEIGHT Approx. kg	CAPACITY MIN. ~ MAX.
	N·m				kgf·cm
BCSP25N3×10D	5～ 25	189	10D	0.20	50～ 250
BCSP50N3×12D	10～ 50	215	12D	0.23	100～ 500
BCSP50N3×15D	10～ 50	218			100～ 500
BCSP100N3×15D	20～100	291	15D	0.62	200～1000
BCSP140N3×15D	30～140	349		0.57	300～1400
BCSP200N3×19D	40～200	424	19D	1.2	400～2000
					kgf·m
BCSP280N3×22D	40～280	622	22D	2.0	4～28
BCSP420N×22D	60～420	918		3.7	6～42

Note 1 : Overall length is without head.
Note 2 : Interchangeable heads are optional. See page 27-29.
Note 3 : Please specify model name and required set torque when ordering.
Example BCSP50N3×15D×40N·m
BCSP50N3×15D×400kgf·cm
Note 4 : BCSP25N3 to 140N3 are with resin grips.
The others are with knurled metal handle.

SCSP TORQUE WRENCH

Single purpose
Interchangeable head
Without graduation

DIRECTION

Preset Torque Wrench with European Connector

- Special Version of CSP
- Accepts Standardized Heads for European Market

SCSP

CAUTION : Use a torque wrench tester for setting torque, or request torque setting when ordering.

Accuracy ±3%

MODEL	CAPACITY MIN. ～ MAX.	HEAD SIZE mm	EFFECTIVE LENGTH mm	OVERALL LENGTH mm	WEIGHT Approx. kg	CAPACITY MIN. ～ MAX.
	N·m					kgf·cm
SCSP25N-9×12	5～ 25	9×12	175	203	0.15	50～ 250
SCSP50N-9×12	10～ 50	9×12	194	230	0.3	100～ 500
SCSP100N-9×12	20～100	9×12	266.5	302	0.45	200～1000
SCSP200N-14×18	40～200	14×18	420	441	1	400～2000

Note 1 : Overall length is without head.
Note 2 : For DIN standard heads, not suitable with Tohnichi standard head.
Note 3 : Please specify model name and required set torque when ordering.
Example SCSP50N-9×12×40N·m
SCSP50N-9×12×400kgf·cm

TORQUE WRENCH

SP/RSP TORQUE WRENCH

DIRECTION

Single purpose
Without graduation

Open End or Ring Head Type Preset Style

- Various Sizes of Open End or Ring Heads Fixed on Wrench
- Ideal for Specific Bolt Size Application

SP Spanner head, preset type

RSP Ring head, preset type

CAUTION : Use a torque wrench tester for setting torque, or request torque setting when ordering.

Accuracy ±3%

No.	MODEL (Body Size× Inner Width)	CAPACITY MIN.~MAX.	CAPACITY MIN.~MAX.	JIS	HEAD Outside Width ×Thickness	OVERALL LENGTH	WEIGHT APPROX.
		N·m	kgf·cm		mm	mm	kg
1	SP2N×5.5	0.4~ 2	4~ 20		23 × 5	180	0.15
2	SP2N×7						
3	SP8N×7	1.5~ 8	15~ 80				
4	SP2N×8	0.4~ 2	4~ 20				
5	SP8N×8	1.5~ 8	15~ 80				
6	RSP8N×8	2 ~ 7.2	20~ 90	®	15 × 6	205	
7	RSP19N×8	4 ~ 14.1	40~ 210			230	0.2
8	SP38N×8	8 ~ 38	80~ 380		31 × 8	250	0.35
9	SP8N×9	1.5~ 8	15~ 80		23 × 5	180	0.15
10	SP38N×9	8 ~ 38	80~ 380		31 × 8	255	0.35
11	SP2N×10	0.4~ 2	4~ 20		23 × 5	180	0.15
12	SP8N×10	1.5~ 8	15~ 80	10			
13	RSP8N×10	2 ~ 9	20~ 90	®	17.5× 7	205	
14	SP19N×10	3.5~ 19	35~ 190	10F	27 × 6.5	210	
15	RSP19N×10	4 ~ 12.2	40~ 210	®	17.5× 7	230	
16	SP19N-1×10				24 ×12		0.2
17	SP19N-2×10	3.5~ 19	35~ 190		24 ×20	215	
18	SP19N-3×10				24 ×15		
19	SP38N×10	8 ~ 38	80~ 380		31 × 8	255	
20	RSP38N×10	9 ~ 24.2	90~ 420	®	17.5× 7	275	
21	SP38N-1×10				24 ×12		0.35
22	SP38N-2×10	8 ~ 38	80~ 380		25 ×20	250	
23	SP38N-3×10				24 ×15		
24	SP2N×12	0.4~ 2	4~ 20		25 × 5.5	180	0.15
25	SP8N×12	1.5~ 8	15~ 80				
26	SP19N×12	3.5~ 19	35~ 190	12	30 × 6.5	210	0.2
27	SP38N×12	8 ~ 38	80~ 380	12FF	35 × 8	255	0.35
28	RSP38N×12	9 ~ 29.5	90~ 420	®	20.5× 8	275	
29	SP2N×13	0.4~ 2	4~ 20		25 × 5.5	185	0.15
30	SP19N×13	3.5~ 19	35~ 190	13	30 × 6.5	210	0.2
31	RSP19N×13	4 ~ 21	40~ 210	®	22 × 7	235	
32	SP38N×13	8 ~ 38	80~ 380	13F	35 × 8	255	0.35
33	RSP38N×13	9 ~ 29.5	90~ 420	®	21.5× 8	275	
34	SP19N×14	3.5~ 19	35~ 190		30 × 6.5	210	0.2
35	SP38N×14	8 ~ 38	80~ 380	14	35 × 8	255	0.35
36	RSP38N×14	9 ~ 42	90~ 420	®	23.5× 9	275	
37	SP67N×14	13 ~ 67	130~ 670	14FF	45 ×10	320	0.5
38	RSP67N×14	14 ~ 50	140~ 730	®	25 ×10	350	0.45
39	SP120N×14	24 ~120	240~1200		45 ×11	390	0.75
40	SP38N×16	8 ~ 38	80~ 380		38 × 8	255	0.35
41	RSP38N×16	9 ~ 42	90~ 420	®	26 × 9	280	
42	SP67N×16	13 ~ 67	130~ 670	16F	45 ×10	320	0.5
43	RSP67N×16	14 ~ 50	140~ 730	®	27 ×10	350	0.45
44	SP2N×17	0.4~ 2	4~ 20		28 × 6.5	190	0.15
45	SP19N×17	3.5~ 19	35~ 190		31 × 8	220	0.2
46	SP38N×17	8 ~ 38	80~ 380	17	38 × 8	255	0.35
47	RSP38N×17	9 ~ 42	90~ 420	®	27.5× 9	280	
48	SP67N×17	13 ~ 67	130~ 670	17F	45 ×10	320	0.5
49	RSP67N×17	14 ~ 73	140~ 730	®	29 ×12	350	0.45
50	SP120N×17	24 ~120	240~1200	17FF	45 ×11	390	0.75
51	RSP120N×17	25 ~100	250~1270	®	29.5×12	420	0.8
52	SP67N×18	13 ~ 67	130~ 670		45 ×10	320	0.5
53	RSP67N×18	14 ~ 73	140~ 730	®	29.5×12	350	0.45

Accuracy ±3%

No.	MODEL (Body Size× Inner Width)	CAPACITY MIN.~MAX.	CAPACITY MIN.~MAX.	JIS	HEAD Outside Width ×Thickness	OVERALL LENGTH	WEIGHT APPROX.
		N·m	kgf·cm		mm	mm	kg
54	SP120N×18	24 ~120	240~1200	18F	51 ×11	395	0.75
55	RSP120N×18	25 ~100	250~1270	®	30.5×12	420	0.8
56	SP2N×19	0.4~ 2	4~ 20		29 × 8	195	0.15
57	SP8N×19	1.5~ 8	15~ 80				
58	SP38N×19	8 ~ 38	80~ 380		38 × 8	255	0.35
59	SP67N×19	13 ~ 67	130~ 670	19	45 ×10	320	0.5
60	RSP67N×19	14 ~ 73	140~ 730	®	30 ×12	350	0.45
61	SP120N×19	24 ~120	240~1200	19F	51 ×11	395	0.75
62	RSP120N×19	25 ~127	250~1270	®	32 ×13	420	0.8
63	SP160N×19	30 ~160	300~1600		52 ×13	445	0.95
64	RSP160N×19	32 ~170	320~1700	®	33 ×13	470	0.9
65	SP220N×19	45 ~220	450~2200	19FF	60 ×15	580	1.4
66	SP19N×21	3.5~ 19	35~ 190		35 × 8	220	0.2
67	SP67N×21	13 ~ 67	130~ 670		45 ×10	325	0.5
68	SP120N×21	24 ~120	240~1200		51 ×11	395	0.75
69	RSP120N×21	25 ~127	250~1270	®	35 ×13	420	0.8
70	SP160N×21	30 ~160	300~1600		52 ×13	445	0.95
71	RSP160N×21	32 ~170	320~1700	®	35 ×13	470	0.9
72	SP38N×22	8 ~ 38	80~ 380		41 × 8	270	0.35
73	SP67N×22	13 ~ 67	130~ 670		45 ×10	325	0.5
74	SP120N×22	24 ~120	240~1200	22	51 ×11	395	0.75
75	RSP120N×22	25 ~127	250~1270	®	35.5×13	420	0.8
76	SP160N×22	30 ~160	300~1600		56 ×13	445	0.95
77	RSP160N×22	32 ~170	320~1700	®	35 ×15.5	470	0.9
78	SP220N×22	45 ~220	450~2200	22F	60 ×15	580	1.4
79	RSP220N×22	48 ~230	480~2300	®	38.5×13	615	1.35
80	SP310N×22	65 ~310	650~3100	22FF	60 ×16	640	1.6
81	SP120N×23	24 ~120	240~1200		51 ×11	395	0.75
82	SP8N×24	1.5~ 8	15~ 80		34 × 8	195	0.15
83	SP38N×24	8 ~ 38	80~ 380		43 × 8	270	0.35
84	SP67N×24	13 ~ 67	130~ 670		46 ×11	330	0.5
85	SP120N×24	24 ~120	240~1200		51 ×11	395	0.75
86	SP160N×24	30 ~160	300~1600	24	56 ×13	445	0.95
87	RSP160N×24	32 ~170	320~1700	®	39 ×15.5	475	0.9
88	SP220N×24	45 ~220	450~2200		65 ×15	580	1.4
89	RSP220N×24	48 ~230	480~2300	®	40 ×13	615	1.35
90	SP310N×24	65 ~310	650~3100	24F	62 ×16	640	1.6
91	RSP310N×24	68 ~255	680~3200	®	42 ×15	680	
92	SP160N×26	30 ~160	300~1600		56 ×13	445	0.95
93	SP8N×27	1.5~ 8	15~ 80		40 × 8	200	0.15
94	SP38N×27	8 ~ 38	80~ 380		45 × 8	270	0.35
95	SP67N×27	13 ~ 67	130~ 670		50 ×11	330	0.5
96	SP120N×27	24 ~120	240~1200		53 ×15	400	0.75
97	SP160N×27	30 ~160	300~1600		56 ×13	445	0.95
98	SP220N×27	45 ~220	450~2200	27	65 ×15	580	1.4
99	RSP220N×27	48 ~230	480~2300	®	45 ×13	620	1.35
100	SP310N×27	65 ~310	650~3100		66 ×16	645	1.6
101	RSP310N×27	68 ~320	680~3200	®	45 ×15	680	
102	SP420N×27	90 ~420	900~4200	27F	78 ×18	840	3.3
103	SP67N×29	13 ~ 67	130~ 670		50 ×11	330	0.5
104	SP220N×29	45 ~220	450~2200		65 ×15	585	1.4
105	SP67N×30	13 ~ 67	130~ 670		52 ×11	335	0.5
106	SP120N×30	24 ~120	240~1200		56 ×15	400	0.75
107	SP220N×30	45 ~220	450~2200		63 ×15	585	1.4
108	SP310N×30	65 ~310	650~3100	30	72 ×16	645	1.6
109	RSP310N×30	68 ~320	680~3200	®	50 ×15	685	
110	SP420N×30	90 ~420	900~4200		78 ×18	840	3.3
111	SP560N×30	130 ~560	1300~5600	30F	81 ×19	995	4
112	SP67N×32	13 ~ 67	130~ 670		54 ×11	335	0.5
113	SP220N×32	45 ~220	450~2200		65 ×15	585	1.4
114	SP310N×32	65 ~310	650~3100		72 ×16	645	1.6
115	SP420N×32	90 ~420	900~4200	32	78 ×18	840	3.3
116	SP560N×32	130 ~560	1300~5600		83 ×19	995	4
117	SP67N×33.3	13 ~ 67	130~ 670		57 ×11	335	0.5
118	SP220N×34	45 ~220	450~2200		67 ×15	590	1.4
119	SP420N×34	90 ~420	900~4200		78 ×18	840	3.3
120	SP420N×35		900~4200				
121	SP220N×36	45 ~220	450~2200		72 ×15	590	1.4
122	SP420N×36	90 ~420	900~4200		78 ×18	840	3.3
123	SP560N×36	130 ~560	1300~5600	36	87 ×19	1000	4
124	SP160N×41	30 ~160	300~1600		70 ×15	455	0.95
125	SP310N×41	65 ~310	650~3100		81 ×15	665	1.6
126	SP310N×46				86 ×15		
127	SP560N×46	130 ~560	1300~5600		97 ×19	1005	4.5
128	SP560N×55				104 ×19	1010	

Note 1 : Tolerance of width accross flat is based upon JIS B4650.
Note 2 : Please specify model name and required set torque when ordering.
Example SP38N×10×30N·m
SP38N×10×300kgf·cm
Note 3 : ®=Ring

QSPLS/CSPLS QRSPLS/SPLS/RSPLS

With limit switch | Single purpose

TORQUE WRENCH

DIRECTION

Various Styles of Preset Torque Wrenches with Limit Switch Output

- Limit Switch Counts Number of "Clicks"
- Ideal for Torque Verification Assembly Processes

SPLS

LIMIT SWITCH SPEC.
AC30V Below 1A
DC30V Below 1A

CAUTION : Use a torque wrench tester for setting torque, or request torque setting when ordering.

Accuracy ±3%

MODEL
QSPMS12N4
QSPLS25N3
QSPLS50N3
QSPLS100N4
QSPLS140N3
QSPLS200N4
QSPLS280N3
QSPLS420N

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

MODEL (BODY SIZE × WIDTH)
QRSPLS38N×17
QRSPLS38N×19
QRSPLS38N×21
QRSPLS38N×24

MODEL (BODY SIZE × WIDTH)
SPLS8N×7
SPLS8N×8
SPLS8N×9
SPLS8N×10
SPLS8N×12
SPLS19N×10
SPLS19N×12
SPLS19N×13
SPLS19N×14
SPLS19N×17
SPLS19N×21
SPLS19N-1×10
SPLS19N-2×10
SPLS19N-3×10
SPLS38N×8
SPLS38N×9
SPLS38N×10
SPLS38N×12
SPLS38N×13
SPLS38N×14
SPLS38N×16
SPLS38N×17
SPLS38N×19
SPLS38N×22
SPLS38N×24
SPLS38N×27
SPLS38N-1×10
SPLS38N-2×10
SPLS38N-3×10
SPLS67N×14
SPLS67N×16
SPLS67N×17
SPLS67N×18
SPLS67N×19
SPLS67N×21
SPLS67N×22
SPLS67N×24
SPLS67N×27
SPLS67N×29
SPLS67N×30
SPLS67N×32
SPLS67N×33.3

MODEL (BODY SIZE × WIDTH)
SPLS120N×14
SPLS120N×17
SPLS120N×18
SPLS120N×19
SPLS120N×21
SPLS120N×22
SPLS120N×23
SPLS120N×24
SPLS160N×19
SPLS160N×21
SPLS160N×22
SPLS160N×24
SPLS160N×26
SPLS160N×27
SPLS220N×19
SPLS220N×22
SPLS220N×24
SPLS220N×27
SPLS220N×29
SPLS220N×30
SPLS220N×32
SPLS220N×34
SPLS220N×36
SPLS310N×22
SPLS310N×24
SPLS310N×27
SPLS310N×30
SPLS310N×32
SPLS310N×41
SPLS310N×46

MODEL (BODY SIZE × WIDTH)
RSPLS8N×8
RSPLS8N×10
RSPLS19N×8
RSPLS19N×10
RSPLS19N×13
RSPLS38N×10
RSPLS38N×12
RSPLS38N×13
RSPLS38N×14
RSPLS38N×17
RSPLS67N×14
RSPLS67N×17
RSPLS67N×19
RSPLS120N×17
RSPLS120N×19
RSPLS120N×22
RSPLS160N×19
RSPLS160N×22
RSPLS160N×24
RSPLS220N×22
RSPLS220N×24
RSPLS220N×27
RSPLS310N×24
RSPLS310N×27
RSPLS310N×30

Note 1 : For specifications, refer to QSP, CSP, QRSP, SP and RSP model series information.
Note 2 : Limit switch can be installed on other click type torque wrenches.
Note 3 : Connecting to CNA-4mk2, Tohnichi Count Checker, tightening verification system can be more effective.
Note 4 : Please specify model name and required set torque when ordering.
Example QSPLS50N×40N·m
QSPLS50N×400kgf·cm
Optional Accessories : WA5219K, Female Connector

SP-N TORQUE WRENCH

Without graduation | Single purpose

DIRECTION

Notched Head Preset Style

- Notch Creates Speed in Tightening
- Ideal for Brake Lines

SP-N

LIMIT SWITCH SPEC.
AC30V Below 1A
DC30V Below 1A

CAUTION : Use a torque wrench tester for setting torque, or request torque setting when ordering.

Accuracy ±3%

MODEL (BODY SIZE × WIDTH)	CAPACITY MIN. ~ MAX.	HEAD O.W. × THICKNESS	OVERALL LENGTH	WEIGHT Approx.	CAPACITY MIN. ~ MAX.
	N·m	mm	mm	kg	kgf·cm
SP19N-1×10N	3.5~19	24×12	215	0.2	35~190
SP19N-3×10N		24×15			
SP19N-4×10N		24×10			
SP19N-5×10N		24×15			
SP19N-9×10N		24.5×10 (4/6)			
SP38N×14N	8 ~ 3.8	35× 8	253.5	0.35	80~380
SPLS19N-1×10N	3.5~19	24×12	215	0.3	35~190
SPLS19N-3×10N		24×15			
SPLS19N-4×10N		24×10			
SPLS19N-5×10N		24×15			
SPLS19N-8×10N		24×12			
SPLS19N-9×10N		24.5×10 (4/6)			

Note 1 : SPLS19N-8×10N model is with a long cord.
Note 2 : Please specify model name and required set torque when ordering.
Example SPLS19N-1×10×10N·m
SPLS19N-1×10×100kgf·cm

TORQUE WRENCH

DB/DBE/DBR TORQUE WRENCH

DIRECTION

Direct reading
For inspection
Dial

Dial Indicating Style

- Memory Pointer for Easy Torque Reading
- Ideal for Torque Measuring and Quality Check Applications

DB12N4

DB100N

DBE700N

Note 1 : DBR models are supplied on request.
Note 2 : Without memory pointer models are available.
Remove "-S" from model name, for example DB100N.
Note 3 : E-type models are with an extension bar handle.

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m					kgf·cm	kgf·cm
DB1.5N4-S	0.2~ 1.5	0.02				15DB4-S	2~ 15	0.2
DB3N4-S	0.3~ 3	0.05	205	6.35	0.4	30DB4-S	3~ 30	0.5
DB6N4-S	0.6~ 6	0.1				60DB4-S	6~ 60	1
DB12N4-S	1 ~ 12	0.2				120DB4-S	10~ 120	2
DB25N-S	3 ~ 25	0.5	245	9.5		230DB3-S	30~ 230	5
DB50N-S	5 ~ 50		320		0.6	450DB3-S	50~ 450	
DB100N-S	10 ~ 100	1	400	12.7	0.7	900DB3-S	100~ 900	10
DB200N-S	20 ~ 200	2	500		1	1800DB3-S	200~1800	20
							kgf·m	kgf·m
DB280N-S	30 ~ 280	5	690	19.0	1.65	2800DB3-S	3~ 28	0.5
DB420N-S	40 ~ 420		890		2.5	4200DB2-S	4~ 42	
DBE560N-S	50 ~ 560		1100		4	5600DBE2-S	5~ 56	
DBE700N-S	70 ~ 700	10	1260		5.5	7000DBE2-S	7~ 70	1
DBE850N-S	100 ~ 850		1360		6.1	8500DBE2-S	10~ 85	
DBE1000N-S	100 ~1000		1490	25.4	6.4	10000DBE2-S	10~ 100	
DBE1400N-S	200 ~1400	20	1740		8.6	14000DBE2-S	20~ 140	2
DBE2100N-S	200 ~2100		2140		12.8	21000DBE2-S	20~ 210	
DBE2800N-S	300 ~2800	50	2385	38.1	16.8	28000DBE2-S	30~ 280	5
DBR4500N-S	500 ~4500		1285		24.5	45000DBR-S	50~ 450	
DBR6000N-S	600 ~6000		1585	44.5	25.5	60000DBR-S	60~ 600	

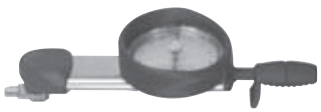
CDB-S TORQUE WRENCH

DIRECTION

Direct reading
For inspection
Dial
Interchangeable head

Interchangeable Head Dial Indicating Style

- Interchangeable Head Version of DB
- Calibrated Especially for Interchangeable Head Usage



CDB14N4×8D-S

CDB100N×15D-S

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	TOHNICHI HEAD SIZE	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m					kgf·cm	kgf·cm
CDB7N4×8D-S	0.7~ 7	0.1	215	8D	0.45	70CDB4-S	7~ 70	1
CDB14N4×8D-S	2 ~ 14	0.2				140CDB4-S	20~ 140	2
CDB25N×10D-S	3 ~ 25	0.5	255	10D	0.48	250CDB-S	30~ 250	5
CDB50N×12D-S	5 ~ 50		330	12D	0.53	500CDB-S	50~ 500	
CDB100N×15D-S	10 ~100	1	415	15D	0.76	1000CDB-S	100~1000	10
CDB200N×19D-S	20 ~200	2	525	19D	1	2000CDB-S	200~2000	20
							kgf·m	kgf·m
CDB300N×22D-S	30 ~300	5	720	22D	1.65	3000CDB-S	3~ 30	0.5
CDB420N×22D-S	40 ~420		920		2.7	4200CDB-S	4~ 42	

Note 1 : Overall length is without head.
Note 2 : Interchangeable heads are sold separately. See page 27-29.
Note 3 : PH interchangeable heads can not be used with this series.

T-S TORQUE WRENCH

DIRECTION

Direct reading
For inspection
Dial

T-Handle Dial Indicating Style

- Dual Handle for Increased Stability
- Memory Pointer for Easy Reading

Two-hand operating style

T-S

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	NECK LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m						kgf·cm	kgf·cm
T23N-S	3~ 23	0.5	205	71	9.5	0.41	230T-S	30~ 230	5
T45N-S	5~ 45		261	82		0.53	450T-S	50~ 450	
T90N-S	10~ 90	1	376	102.5	12.7	0.8	900T-S	100~ 900	10
T180N-S	20~ 180	2	656	118.5		1.2	1800T-S	200~1800	20
								kgf·m	kgf·m
T700N-S	70~ 700	10	1300		19.0	4	7000T-S	7~ 70	1
T1000N-S	100~1000		1630			4.8	10000T-S	10~ 100	
T1400N-S	200~1400	20	1880		25.4	6.2	14000T-S	20~ 140	2
T2100N-S	200~2100		2500			10	21000T-S	20~ 210	
T2800N-S	300~2800	50	2960		38.1	15.5	28000T-S	30~ 280	5
T4200N-S	400~4200		3660			21.5	42000T-S	40~ 420	

Note 1 : T700N-S ~ T4200N-S models are supplied on request.
Note 2 : Without memory pointer models are available.
Remove "-S" from model name for example T90N.

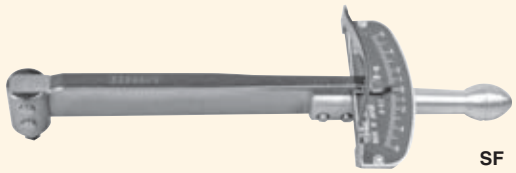
SF/F/FR TORQUE WRENCH

DIRECTION

Direct reading
For inspection
Beam

Flat Beam Style

- Scale Plate with Pointer
- For Measuring and Tightening Applications



SF

F

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	cN·m	cN·m					kgf·cm	kgf·cm
SF40CN	8 ~ 40	2	110		0.04	4SF	0.8~ 4	0.2
SF70CN	10 ~ 70		135		0.05	7SF	1 ~ 7	
	N·m	N·m						
SF1.5N	0.2~ 1.5	0.05	145	6.35	0.07	15SF	2 ~ 15	0.5
SF3N	0.5~ 3	0.1	175		0.09	30SF	5 ~ 30	1
SF6N	0.6~ 6	0.2	205		0.2	60SF	6 ~ 60	2
SF12N	2 ~ 12	0.5	235		0.25	120SF	20 ~ 120	5
F23N	3 ~ 23		295	9.5	0.4	230F	30 ~ 230	
F46N	5 ~ 46	1	355		0.6	460F	50 ~ 460	10
F92N	10 ~ 92	2	400		0.95	920F	100 ~ 920	20
F130N	20 ~ 130		445	12.7	1.2	1300F	200 ~1300	
F190N	30 ~ 190		490		1.5	1900F	300 ~1900	50
		5					kgf·m	kgf·m
F280N	50 ~ 280		565		2.2	2800F	5 ~ 28	0.5
F420N	70 ~ 420	10	825	19.0	3.5	4200F	7 ~ 42	1
							kgf·cm	kgf·cm
F560N	100 ~ 560		945		4.0	5600F	1000 ~5600	100
F700N	100 ~ 700		1175		6.0	7000F	1000 ~7000	
							kgf·m	kgf·m
F850N	100 ~ 850		1410		7.8	8500F	10 ~ 85	
F1000N	100 ~1000	20	1640	25.4	8.8	10000F	10 ~ 100	2
FR1050N	100 ~1050		835		8	10500FR	10 ~ 105	
FR1400N	200 ~1400		981		11.5	14000FR	20 ~ 140	
FR2100N	300 ~2100	50	1148		14.5	21000FR	30 ~ 210	5
FR2800N	300 ~2800		1292		20	28000FR	30 ~ 280	
FR4200N	400 ~4200	100	1460	38.1	28	42000FR	40 ~ 420	10
FR6000N	600 ~6000		1624		30	60000FR	60 ~ 600	

Note 1 : FR models are supplied on request.
Note 2 : FR require a winch or mechanical device for loading.

CSF/CF TORQUE WRENCH

Direct reading
For inspection
Beam
Interchangeable head

DIRECTION

Interchangeable Head Flat Beam Style

- Interchangeable Head Version of SF/F
- For Measuring and Tightening Applications

CSF

CF

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	TOHNICHI HEAD SIZE	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m					kgf·cm	kgf·cm
CSF7N×8D	1~ 7	0.2	215	8D	0.2	70CSF	10~ 70	2
CSF14N×8D	2~ 14	0.5	240		0.25	140CSF	20~ 140	5
CF25N×10D	5~ 25	1	320	10D	0.4	250CF	50~ 250	10
CF50N×12D	10~ 50	2	380	12D	0.6	500CF	100~ 500	
CF100N×15D	10~100		430	15D	1.0	1000CF	100~1000	20
CF150N×19D	20~150		480	19D	1.3	1500CF	200~1500	
		5					kgf·m	kgf·m
CF230N×22D	30~230		525	22D	1.6	2300CF	3~ 23	0.5
CF420N×22D	70~420	10	715		3.1	4200CF	7~ 42	1
CF850N×32D	100~850	20	1260	32D	7.1	8500CF	10~ 85	2

Note 1 : Overall length is without head.
Note 2 : Interchangeable heads are sold separately. See page 27-29.
Note 3 : PH interchangeable heads can not be used with this series.

QF/QFR TORQUE WRENCH

Direct reading
For inspection
Beam
With ratchet head

DIRECTION

Fixed Ratchet Head Flat Beam Style

- Ideal for Working in Narrow Spaces

QF

Accuracy ±3%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	SQUARE DRIVE mm	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m					kgf·cm	kgf·cm
QF60N	6~ 60	1	455	9.5	0.8	600QF	60~ 600	10
QF120N	10~ 120	2	515	12.7	1.2	1200QF	100~1200	20
QF220N	30~ 220	5	580		1.8	2200QF	300~2200	50
QF320N	40~ 320		655		2.6	3200QF	400~3200	
							kgf·m	kgf·m
QF420N	70~ 420		825	19.0	3.4	4200QF	7~ 42	0.5
QF560N	100~ 560	10	950		4.3	5600QF	10~ 56	1
QF700N	100~ 700		1170		6.5	7000QF	10~ 70	
QF850N	100~ 850		1400		8.5	8500QF	10~ 85	
QFR1050N	100~1050	20	845	25.4		10500QFR	10~ 105	2
QFR1400N	200~1400		992		12.5	14000QFR	20~ 140	
QFR2100N	300~2100	50	1158		15.5	21000QFR	30~ 210	5
QFR2800N	300~2800		1305		21	28000QFR	30~ 280	
QFR4200N	400~4200	100	1473	38.1	30	42000QFR	40~ 420	10
QFR6000N	600~6000		1624		32	60000QFR	60~ 600	

Note 1 : QFR is a made-to-order item.
Note 2 : QFR require a winch or mechanical device for loading.

TORQUE WRENCH

CEM3/CEM3-P DATA TORK

DIRECTION — Digital display / Interchangeable head / Battery

Digital Torque Wrench

- Dual LED & LCD Displays
- 999 Data Memory Storage
- For Tightening and Inspection

CEM100N3×15D

CE

CEM3

Accuracy ±1%+1digit

MODEL	CAPACITY		-M (Metric Model) CAPACITY		OVERALL LENGTH	TOHNICHI HEAD SIZE	WEIGHT Approx.
	MIN.～MAX.	1digit	MIN.～MAX.	1digit	mm		kg
	N·m	N·m	kgf·cm	kgf·cm			
CEM10N3×8D	2～ 10	0.01	20～ 100	0.1	212	8D	0.46
CEM20N3×10D	4～ 20	0.02	40～ 200	0.2	214	10D	0.47
CEM50N3×12D	10～ 50	0.05	100～ 500	0.5	282	12D	0.58
CEM100N3×15D	20～100	0.1	200～1000	1	384	15D	0.63
CEM200N3×19D	40～200	0.2	400～2000	2	475	19D	0.78
CEM360N3×22D	70～360	0.4	720～3600	4	713	22D	1.13
			kgf·m	kgf·m			
CEM500N3×22D	100～500	0.5	10～ 50	0.05	949	22D	4
CEM850N3×32D	170～850	1	17～ 85	0.1	1387	32D	5.14

Note 1 : Metric model is named "-M", e.g. CEM10N3×8D-M for 20-100kgf·cm
Note 2 : Includes QH head and battery charger

DISPLAY (Torque value) (Counter)	7 segments LED 4 lines 14 segments LCD 6 lines, 7 segments LCD 4 lines
DIGIT HEIGHT (Torque value) (Counter)	10mm for LED 14 segments 7mm, 7 segments 3mm for LCD
NUMBER OF DATA MEMORY	999 (99 for CEM2 mode)
BASIC FUNCTION	Peak hold Peak data Memory Run Mode Auto Memory & Resetting Auto Zero setting Auto Off (3 min) Over Torque Alarm Clock
COMMUNICATION FUNCTIONS	RS232C (2400-19200bps) Serial output corresponding to a USB connecter
BATTERY LIFE INDICATOR	Available
POWER SUPPLY	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 degree

CEM3-P

CEM3 Programmable Version

NEW

MODEL	MODEL	MODEL
CEM10N3×8D-P	CEM100N3×15D-P	CEM500N3×22D-P
CEM20N3×10D-P	CEM200N3×19D-P	CEM850N3×32D-P
CEM50N3×12D-P	CEM360N3×22D-P	

ID Management Capabilities including Measured Part Information and Judgement Results.

Accuracy	±1% + 1 digit
PART INFORMATION MEMORY	100 Data Maximum (Part Name, Screw, Direction, Upper/Lower Limit, Sequence)
NO. OF DATA MEMORY	3000 Data Maximum (Measured Part, Measured Value, Judgement Result, Measured Date)

Note : CEM3-P models are made-to-order items.

CEM3/CEM3-P OPTION

BATTERY PACK

MODEL
BP-5

PRINTER……P.41

MODEL
EPP16M2

SOFTWARE

MODEL
EXCEL RECEIVER

BATTERY CHARGER

MODEL	DESCRIPTION	MODEL	DESCRIPTION
BC-3-100	100V	BC-3-200	220V

CONNECTING CABLE

MODEL	DESCRIPTION
(379)	CEM2, CEM3, R-DT999→EPP16M2
(575)	CEM2, CEM3, R-DT999→PC (D-SUB 9 pins Female)
(584)	CEM3, R-DT999→PC (USB A Connector)

CTB DIGITAL TORQUE WRENCH

DIRECTION — Digital display / Interchangeable head / Battery

Digital Retightening Torque Wrench

- Detects Movement of Bolt for Accurate Testing
- Software Converts Measured Torque to Initial Tightening Torque Value

CTB

CTBE

Accuracy ±1%+1digit

MODEL	EFFECTIVE LENGTH	OVERALL LENGTH	WEIGHT Approx.	TOHNICHI HEAD SIZE	CAPACITY N.M MIN.-MAX.	N.M 1 DIGIT	KGF.CM MIN.-MAX.	KGF.CM 1 DIGIT	LBF.IN MIN.-MAX.	LBF.IN 1 DIGIT	LBF.FT MIN.-MAX.	LBF.FT 1 DIGIT
	mm	mm	kg	SIZE								
CTB20×10D	231	295	0.6	10D	4～ 20	0.02	40～ 200	0.2	36～180	0.2		
CTB50×12D	319	360	0.7	12D	10～ 50	0.05	100～ 500	0.5	100～450	0.5		
CTB100×15D	409	433	0.8	15D	20～100	0.1	200～1000	1	200～900	1		
CTB200×19D	489	500	1.1	19D	40～200	0.2	400～2000	2			15～75	0.1
CTB360×22D	749	743	1.6	22D	72～360	0.4	720～3600	4			30～150	0.2
CTBE500×22D	917	912	3.5	22D	100～500	0.5	100～5000	5			52～260	0.4
CTBE850×32D	1370	1383	4.9	32D	170～850	1	1700～8500	10			72～360	0.5
											124～620	1

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℃

Note 1 : Overall length is without head.
Note 2 : QH head is provided. Other interchangeable heads are sold separately.
Note 3 : PH interchangeable heads can not be used with this series.
Note 4 : AC adapter is included for charging the unit.
Note 5 : For data transfer by infrared, use R-DT999, Data Tank. See page 41.

CTA/CTB OPTION

BATTERY PACK

MODEL
BP-3

PRINTER……P.41

MODEL
EPP16M2

SOFTWARE……P.41

MODEL
DFS

AC ADAPTER

MODEL	DESCRIPTION	MODEL	DESCRIPTION
QC-1	AC adapter, 110V	QC-2	AC adapter, 220V

CONNECTING CABLE

MODEL	DESCRIPTION
(378)	CTA/CTB to EPP16M2
(579)	CTA/CTB to PC, D-SUB 9 pins Female

Note 6 : Please specify desired unit, S.I., Metric or Imperial, when ordering.
Note 7 : Statistic data processing can be done by DFS.

CTA/CTA-P DIGITAL TORQUE AND ANGLE WRENCH

DIRECTION

Digital display
Interchangeable head
Battery

- Snug and Angle Setting Functions
- Buzzer/Light Alerts to Snug Torque and Angle Completion
- Angle Mode is Automatic Once Snug Torque is achieved.

CTA

CTAE

CTA Accuracy ±1%+1digit **CTA-P**

MODEL	ANGLE MEASURING RANGE MIN.-MAX.	ANGLE MEASURING RANGE 1 DIGIT	ANGLE ACCURACY	OVERALL LENGTH mm	WEIGHT Approx. kg	TOHNICHI HEAD SIZE	CAPACITY N.M MIN.-MAX.	CAPACITY N.M 1 DIGIT	CAPACITY KGF.CM MIN.-MAX.	CAPACITY KGF.CM 1 DIGIT	CAPACITY LBF.IN MIN.-MAX.	CAPACITY LBF.IN 1 DIGIT	CAPACITY LBF.FT MIN.-MAX.	CAPACITY LBF.FT 1 DIGIT	MODEL
CTA50×12D				360	0.7	12D	(2.5) 10~50	0.05	100~500	0.5	100~450	0.5			CTA50×12D-P
CTA100×15D			±2°+1digit	433	0.8	15D	(5) 20~100	0.1	200~1000	1	200~900	1			CTA100×15D-P
CTA200×19D	0~999°	1°	Angular Velocity is 30°/s ~180°/s when the bolt is turned to 90°	500	1.1	19D	(10) 40~200	0.2	400~2000	2			15~75	0.1	CTA200×19D-P
CTA360×22D				743	1.6	22D	(18) 72~360	0.4	720~3600	4			30~150	0.2	CTA360×22D-P
CTAE500×22D				912	3.5	22D	(25)100~500	0.5	100~5000	5			52~260	0.4	CTAE500×22D-P
CTAE850×32D				1383	4.9	32D	(43)170~850	1	1700~8500	10			72~360	0.5	CTAE850×32D-P
													124~620	1	

CTA SPECIFICATIONS

MEASUREMENT DIRECTION	Clockwise Only
DISPLAY	LCD Display, Counter : 3mm and Angle/Torque : 7mm
DATA MEMORY	TORQUE and ANGLE
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℃

CTA-P SPECIFICATIONS

MEASUREMENT DIRECTION	Clockwise Only
DISPLAY	LCD Display, Counter : 3mm and Angle/Torque : 7mm
DATA MEMORY	Tightening Torque, primary Angle, Secondary Angle, tertiary Angle and final Torque.
MEASUREMENT METHOD	PEAK/RUN on both angle and torque value
DATA OUTPUT	RS232C, I/F infrared ray
ZERO ADJUSTMENT	Auto zero function on both angle and torque measurement
OTHER FUNCTION	Auto-power off,battery check
POWER SOURCE	Ni-Cd battery
CONTINUOUS USE	8 hours
BATTERY CHARGE	1 hour
OPERATING CONDITION	0~40℃

Note 1 : The number in parenthesis is the possible lowest setting snug torque value, not guaranteed its accuracy.
Note 2 : Overall length is without head.
Note 3 : QH head is provided. Other interchangeable heads are sold separately.
Note 4 : PH interchangeable heads can not be used with this series.
Note 5 : Refer page 24 for CTA optional accessories.
Note 6 : Please specify desired scale, S.I., Metric or Imperial, when ordering.
Note 7 : CTA-P model is for multiple use. Please contact us for information in advance.

BATTERY PACK

MODEL
BP-3

PRINTER

MODEL
EPP16M2

CONNECTING CABLE

MODEL	DESCRIPTION
378	CTA/CTA-P/CTB to EPP16M2
579	CTA/CTB to PC (D-SUB 9 pins Female)
583	CTA-P to PC (D-SUB 9 pins Female)

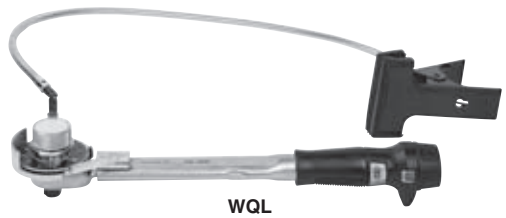
WQL TORQUE WRENCH

Adjustable type
With graduation
With ratchet head

DIRECTION

Analog Torque and Angle Style

- Includes Built-In Protractor with Flexible Arm
- Specialized Version of QL



WQL

Accuracy ±3%

MODEL	Angle Scale MAX. READING	Angle Scale GRAD.	CAPACITY MIN. ~ MAX.	CAPACITY GRAD.	OVERALL LENGTH mm	SQUARE DRIVE mm	MODEL Metric	CAPACITY MIN. ~ MAX.	CAPACITY GRAD.
			N·m	N·m				kgf·cm	kgf·cm
WQL50N			(5) 10~ 50	0.5	260	9.5	450WQL3	(50)100~ 500	5
WQL100N4			(10) 20~100	1	345	12.7	900WQL4	(100)200~1000	10
WQL200N4	360°	2°	(30) 40~200		495		1800WQL4	(300)400~2000	20
				2				kgf·m	kgf·m
WQL280N			(30) 40~280		695	19.0	2800WQL3	(3) 4~ 28	0.2
WQL420N			(40) 60~420	3	975		4200WQL2	(4) 6~ 42	0.3

Note 1 : The number in parenthesis is the possible lowest setting snug torque value, not guaranteed 3% accuracy.

SCDB-S TORQUE WRENCH

Direct reading
For inspection
Dial
Interchangeable head

DIRECTION

Dial Indicating Type with European Connector

- Special Version of DB
- Accepts Standardized Heads for European Market

SCDB

Accuracy ±3%

MODEL	CAPACITY MIN. ~ MAX.	CAPACITY GRAD.	HEAD SIZE mm	EFFECTIVE LENGTH mm	OVERALL LENGTH mm	WEIGHT Approx. kg
	N·m	N·m				
SCDB25N-9×12-S	3~ 25	0.5	9×12	260	271	0.48
SCDB50N-9×12-S	5~ 50		9×12	300	342	0.53
SCDB100N-9×12-S	10~100	1	9×12	370	422	0.76
SCDB200N-14×18-S	20~200	2	14×18	490	535	1

Note 1 : Overall length is without head.
Note 2 : For DIN standard head, not suitable with Tohnichi standard head.

AUXILIARY TOOLS

To facilitate the proper use of Tohnichi products, we have prepared a number of auxiliary parts and special tools. (Some tools are already provided with the necessary auxiliary parts.) We are ready to manufacture custom-made parts and tools to meet your requirements. Please contact us.

SPECIAL TOOL FOR TORQUE WRENCHES

QLE ADJUSTING TOOL

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

CATALOG NO.	APPLICABLE MODEL
301	QLE550N～2100N DQLE550N～1000H CLE550N～1200N TiEQLE750N～1400N

SP THRUSTRING TOOL

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

CATALOG NO.	TOOL No.	APPLICABLE MODEL
310	A-1	QSP1.5N～QSP6N/CSP
311	A-2	SP2N～SP19N QSP12N/CSP, QSP25N BQSP25N/BCSP
312	A-3	SP38N,SP67N, QSP50N～140N BQSP50N～BQSP140N/BCSP
313	A-4	SP120N～SP310N, QSP200N～280N BQSP200N4,BQSP280N/BCSP
314	A-5	QSP420N/CSP BQSP420N/BCSP
315	A-6	SP420N,SP560N

QSP3 ADJUSTING TOOL

CATALOG NO.	POINT SHAPE HEX×BORE×DEPTH	APPLICABLE MODEL
931	2.5×1.5×6	QSP25N3/CSP3,QSP1.5N4～12N4 BQSP25N3/BCSP3,CSP1.5N4～12N4
930	4×2.5×8	QSP50N3～280N3/CSP3 BQSP50N3～280N3/BCSP3

DB ADJUSTING SET

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

CATALOG NO.	APPLICABLE MODEL
316	DB,DBE,DOT

CARRYING CASE

One torque wrench and sockets can be stored.

840

CATALOG NO.	DIMENSION (mm)	WEIGHT APPROX.(kg)	APPLICABLE MODEL
840	H91×W429×D120	0.5	QL100N4～QL140N PQL100N4～PQL140N MTQL70N,MTQL140N DB25N～DB100N 5 pcs. of sockets(below W19)
842	H60×W400×D70	0.25	QL50N,QL50N-MH CL50N×12D,CL50N×15D CL50N×12D-MH,CL50N×15D-MH MTQL40N～70N,CL100N-MH PQL50N,QL100N4-MH
843	H80×W520×D80	0.36	QL200N4,QL200N4-MH,DQL200N4

SPECIAL TOOL FOR TORQUE DRIVERS

LTD,RTD ADJUSTING TOOL

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

CATALOG NO.	APPLICABLE MODEL
51	LTD15CN,30CN/RTD
46	LTD60,120CN/RTD
47	LTD260CN/RTD
48	LTD500CN/RTD
49	LTD1000CN

LTD AUXILIARY TIGHTENING TOOL

This tool makes tightening with the large LTD tool much easier.

CATALOG NO.	APPLICABLE MODEL
31	LTD500CN/RTD/NTD/RNTD FTD400CN
32	LTD1000CN/NTD FTD8N,16N
40	LTD2000CN

LTD,RTD PRESET HOOK SPANNER

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

CATALOG NO.	APPLICABLE MODEL
52	LTD/RTD260CN
53	LTD/RTD500CN
54	LTD1000CN
55	LTD2000CN

NTD,RNTD TORQUE ADJUSTING BAR

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

CATALOG NO.	APPLICABLE MODEL
42	NTD15CN～120CN/RNTD
43	NTD260CN/RNTD
44	NTD500CN～1000CN/RNTD

TORQUE DRIVER ADAPTER

This accessory is used with TME and TM torque meters to test UNI - TORKS and torque drivers.

CATALOG NO.	APPLICABLE MODEL
30	LTD/RTD/NTD/RNTD FTD50CN～400CN

EVERTORQUE

LUBRICANT FOR REPAIRING TORQUE PRODUCTS

MODEL	CATALOG NO.
EVERTORQUE	830

APPLICABLE MODEL FOR EVERTORQUE

	APPLICABLE MODEL	APPLICABLE POINT
CLICK TYPE TORQUE WRENCH (WITH MEMORY POINTER)	QL/QLE,CL/CLE PQL,PCL,YCL	THRUST RING : STEEL BALL SCALE PIECE, ADJUSTING SCREW : SCREW
	WQL	THRUST RING : STEEL BALL SCALE PIECE, ADJUSTING SCREW : SCREW KNOB, PROTECTOR : JOINT POINT
	MPQL	THRUST RING : STEEL BALL SCALE PIECE, ADJUSTING SCREW : SCREW RATCHET, MARKER PIPE : JOINT POINT
CLICK TYPE TORQUE DRIVER	RTD,RNTD	MAIN SHAFT, TOGGLE SHEET : SERRATION PART
	RTD,LTD,BMLD	CASE, SCALE PIECE : SCREW

SH OPEN SPANNER HEAD

MODEL (Head Size × Width)	ALLOWABLE TORQUE	OUTSIDE WIDTH mm	THICKNESS mm	APPLICABLE MODEL	ALLOWABLE TORQUE
	N·m				kgf·cm
SH8D×5.5	1.5	13	3		15
SH8D×6	2.5	15	3.5		25
SH8D×7	3.5	17	4		35
SH8D×8	7	20	4.5		70
SH8D×10		25	5.5	CL1.5N(4),CL3N(4),CL6N(4)	
SH8D×11		27		CL12N(4),CSP1.5N(4)	
SH8D×12				CSP3N(4),CSP6N(4)	
SH8D×13		29		CSP12N(4),PCL6N4	
SH8D×14				PCL12N4,CSF7N,CSF14N	
SH8D×16	14	31		CDB7N-S,CDB14N-S	140
SH8D×17		32		CEM9N2,CEM10N3	
SH8D×19		35			
SH8D×21		36			
SH8D×22		37			
SH8D×24		38			
SH10D×7					
SH10D×8	20	28			200
SH10D×10					
SH10D×11			6.5	CL25N,YCL12N,PCL25N	
SH10D×12				CSP25N,YCL23N	
SH10D×13		32		CF25N	
SH10D×14				CDB25N-S	
SH10D×16				CEM18N2	
SH10D×17	22.5			CEM20N3,BCSP25N3	225
SH10D×18		39		CTB20	
SH10D×19					
SH10D×21					
SH10D×22					
SH10D×24		43			
SH12D×8	7	20	5		70
SH12D×10	11.8	24			118
SH12D×11	20.5	28	5.5		205
SH12D×12	29.5	31	6.5		295
SH12D×13		32		CTA50,CTB50	
SH12D×14	59	38	8	CL50N,YCL45N	590
SH12D×16		40	10	CEM45N2,CSP50N,YCL70N	
SH12D×17				PCL50N,CF50N,CDB50N-S	
SH12D×18		41	11	CEM50N3	
SH12D×19	70				700
SH12D×21		43	13		
SH12D×22					
SH12D×24		48			
SH12D×27		52			
SH15D×12					
SH15D×13	59	38	8		590
SH15D×14					
SH15D×16				CTA100,CTB100	
SH15D×17				CL100N,CL50N,PCL100N	
SH15D×18		51	13	PCL50N,CL140N,YCL90N	
SH15D×19				PCL140N,CSP100N,CSP50N	
SH15D×21				CSP140N,YCL140N	
SH15D×22	140			CF100N,CEM90N2	1400
SH15D×24				CDB100N-S	
SH15D×26		60	12	CEM100N3	
SH15D×27					
SH15D×30		62			
SH15D×32					
SH19D×17					
SH19D×18	200				2000
SH19D×19		54	13		
SH19D×21	180			CTA200,CTB200	1800
SH19D×22				CL200N,YCL180N,PCL200N	
SH19D×24	200			CSP200N	
SH19D×27		60	15	CF150N,CEM180N2	2000
SH19D×30	180			CDB200N-S	1800
SH19D×32				CEM200N3	
SH19D×34	200	75	11		2000
SH19D×36					
SH19D×41	180				1800
SH22D×19	280				kgf·m
SH22D×22		63		CTA360,CTB360	28
SH22D×24	500			CL280N,CL420N	50
SH22D×27				CSP280N,CSP420N	
SH22D×30	420	70	15	CF230N,CEM360N2	42
SH22D×32				CEM500N2	
SH22D×34	500			CDB300N-S,CDB420N-S	50
SH22D×36	420	85		CTAE500,CTBE500	42
SH22D×41	280			CEM360N3,CEM500N3	28
SH22D×46					

MODEL (Head Size × Width)	ALLOWABLE TORQUE	OUTSIDE WIDTH mm	THICKNESS mm	APPLICABLE MODEL	ALLOWABLE TORQUE
	N·m				kgf·m
SH27D×22	255	65	14		25.5
SH27D×24	350	72	15		35
SH27D×27	490	82	16		49
SH27D×30	670	88	19		67
SH27D×32	750	92	20	CLE550N	75
SH27D×34	670	90		CLE750N	67
SH27D×36		94	21		
SH27D×41	750	98	22		75
SH27D×46		100	24		
SH27D×50		103	26		
SH32D×27					
SH32D×30	850	105	18		85
SH32D×32				CTAE850,CTBE850	
SH32D×34				CLE850N	
SH32D×36		110	24	CLE1200N	
SH32D×41				CF850N,CEM850N2	
SH32D×46	1200			CEM850N3	120
SH32D×50		120	29		
SH32D×55					
SH32D×60					

SH-N NOTCHED OPEN HEAD

NEW

MODEL	ALLOWABLE TORQUE (N·m)	OUTSIDE WIDTH (mm)	THICKNESS (mm)	HEAD SHAPE	APPLICABLE MODEL
SH10D-1×10N	22.5	24	12	A	CL25N,YCL12N,PCL25N, YCL23N,CF25N,CDB25N-S, CEM18N2,CEM20N3, CSP25N,CTB20,BCSP25N3
SH10D-3×10N			15		
SH10D-5×10N	19			B	
SH10D-4×10N	22.5		10	A	
SH10D-9×10N					

Shape A

Shape B

AH ADJUSTABLE HEAD

NEW

MODEL	INNER WIDTH(mm) MIN.	STANDARD	MAX.	ALLOWABLE TORQUE N·m	APPLICABLE MODEL
AH15D×24	10	17	24	50	CL50N×15D (-MH)
AH15D×30	13	22	30	100	CL100N×15D (-MH)
AH15D×36	13	24	36	140	CL140N×15D (-MH)

Note 1 : The accuracy for standard inner width is 5% when connecting with applicable Tohnichi torque wrenches.

Note 2 : SH or RH models are recommendable when tightening bolts or nuts of identical inner width.

INTERCHANGEABLE HEAD

RH RING HEAD

Note : RH8D×5.5 to RH8D×7 are Hexagon.

MODEL (Head Size × Width)	ALLOWABLE TORQUE	OUTSIDE WIDTH mm	THICKNESS mm	APPLICABLE MODEL	ALLOWABLE TORQUE
	N·m				kgf·cm
RH8D×5.5	1.5	10.5	5	PCL6N4,PCL12N4,CL6N(4)	15
RH8D×6	2.4	11		CSP6N(4),CSF7N,CL1.5N(4)	24
RH8D×7	3.6	12	6	CSP1.5N(4),CL12N(4)	36
RH8D×8	7.2	13.5		CSP12N(4),CSF14N,CL3N(4)	72
RH8D×10	12.2	15.5	7	CSP3N(4),CDB7N-S	122
RH8D×11		17		CDB14N-S,CEM9N2	
RH8D×12	14	19		CEM10N3	140
RH8D×13					
RH10D×8	7.2	12.5	6		72
RH10D×10	12.2	15.5	7		122
RH10D×11	20	17	8	CL25N,YCL12N,PCL25N	200
RH10D×12		18		CSP25N,YCL23N	
RH10D×13		19		CF25N	
RH10D×14		20		CDB25N-S	
RH10D×16		22		CEM18N2	
RH10D×17	25	24		CEM20N3	250
RH10D×18		25		BCSP25N	
RH10D×19		26		CTB20	
RH10D×21		28			
RH10D×22		29			
RH12D×8	7.2	15	5		72
RH12D×10	12.2	16			122
RH12D×11	20	18	5.5		200
RH12D×12	29.5	20	6.5	CTA50,CTB50	295
RH12D×13		21		CL50N,YCL45N	
RH12D×14	59	20	10	CEM45N2,CSP50N,YCL70N	590
RH12D×16		24		PCL50N,CF50N,CDB50N-S	
RH12D×17		25	12	CEM50N3	
RH12D×18	70	26			700
RH12D×19		26			
RH12D×21		29	13		
RH12D×22		30			
RH15D×12	29.5	19	7		295
RH15D×13		20.5		CTA100,CTB100	
RH15D×14	59	22	8	CL100N,CL50N,PCL100N	590
RH15D×16		25		PCL50N,CL140N,YCL90N	
RH15D×17	100	26	10	PCL140N,CSP100N,CSP50N	1000
RH15D×18		27		CSP140N,YCL140N	
RH15D×19		28		CF100N,CEM90N2	
RH15D×21		31	13	CDB100N-S	
RH15D×22	140			CEM100N3	1400
RH15D×24		34			
RH15D×27		37			
RH15D×30		41			
RH19D×14	59	22.5	8		590
RH19D×17	100	27	10		1000
RH19D×18		28	11		
RH19D×19	166	29	13	CTA200,CTB200	1660
RH19D×21		32		CL200N,YCL180N,PCL200N	
RH19D×22				CSP200N	
RH19D×24		35		CF150N,CEM180N2	
RH19D×27		39	15	CDB200N-S	
RH19D×30	200	41		CEM200N3	2000
RH19D×32		44			
RH19D×34		47			
RH19D×36		49			
RH19D×41		55			
					kgf·m
RH22D×19	166	30	14		6.6
RH22D×22	255	34		CTA360,CTB360	25.5
RH22D×24		37	15	CL280N,CL420N	
RH22D×27	490	41	17	CSP280N,CSP420N	49
RH22D×30		44		CF230N,CEM360N2	
RH22D×32		45		CEM500N2	
RH22D×34	500	49		CDB300N-S,CDB-420N-S	50
RH22D×36		51		CTB500	
RH22D×41		57		CEM360N3, CEM500N3	
RH22D×46		62			
RH27D×22	255	38	14		25.5
RH27D×24	350		15		35
RH27D×27	490	42	16		49
RH27D×30	670	46	19		67
RH27D×32	750	48	20	CLE550N	75
RH27D×34	670	51		CLE750N	67
RH27D×36		52	21		
RH27D×41	750	58	22		75
RH27D×46		64	24		
RH27D×50		69	26		
RH32D×27	490	43	16		49
RH32D×30	670	46.5	18		67
RH32D×32	860	49		CTAE850,CTBE850	86
RH32D×34		52		CLE850N	
RH32D×36		53	24	CLE1200N	
RH32D×41		59		CF850N,CEM850N2	
RH32D×46	1200	65		CEM850N3	120
RH32D×50		69	27		
RH32D×55		75	29		
RH32D×60		80			

QH REVERSIBLE RATCHET HEAD

MODEL	SQUARE DRIVE (mm)	APPLICABLE MODEL
		PCL6N4,PCL12N4,CL6N(4),CSP6N(4),CSF7N,CL1.5N(4)
QH8D	6.35	CSP1.5N(4),CL12N(4),CSP12N(4),CSF14N,CL3N(4),CSP3N(4)
		CDB7N-S,CDB14N-S,CEM9N2,CEM10N3
		CL25N,YCL12N,PCL25N
QH10D		CSP25N,YCL23N
		CF25N,CDB25N-S,CEM18N2,CEM20N3
	9.5	CTA50,CTB50
QH12D		CL50N,YCL45N
		CEM45N2,CSP50N,YCL70N
		PCL50N×12D,CF50N,CDB50N-S,CEM50N3
		CTA100,CTB100
QH15D		CL100N,CL50N,PCL100N,PCL50N,CL140N,YCL90N
		PCL140N,CSP100N,CSP50N,CSP140N,YCL140N
	12.7	CF100N,CEM90N2,CDB100N-S,CEM100N3
		CTA200,CTB200
QH19D		CL200N,YCL180N,PCL200N,CSP200N
		CF150N,CEM180N2
		CDB200N-S,CEM200N3
		CTA360,CTB360,CTB500
QH22D		CL280N,CL420N,CDB300N-S,CDB420N-S
	19.0	CSP280N,CSP420N,CF420N
		CF230N,CEM360N2,CEM500N2,CEM360N3,CEM500N3
QH27D		CLE550N
		CLE750N
		CLE850N,CTAE850,CTBE850
QH32D	25.4	CLE1200N
		CF850N,CEM850N2,CEM850N3

RQH REVERSIBLE FEMALE RATCHET HEAD

MODEL (Head Size × Width)	APPLICABLE MODEL
RQH12D×12	CTA50,CTB50 CL50N,YCL45N
RQH12D×14	CEM45N2,CSP50N,YCL70N PCL50N×12D,CF50N,CDB50N-S,CEM50N3
RQH15D×14	CTA100,CTB100 CL100N,CL50N,PCL100N,PCL50N,CL140N,YCL90N
RQH15D×17	PCL140N,CSP100N,CSP50N,CSP140N,YCL140N CF100N,CEM90N2,CDB100N-S,CEM100N3
RQH19D×17	CTA200,CTB200
RQH19D×19	CL200N,YCL180N,PCL200N,CSP200N CF150N,CEM180N2
RQH19D×22	CDB200N-S,CEM200N3
RQH22D×22	CTA360,CTB360,CTAE500,CTBE500 CL280N,CL420N,CDB300N-S,CDB420N-S
RQH22D×24	CSP280N,CSP420N,CF420N CF230N,CEM360N2,CEM500N2 CEM360N3,CEM500N3

DH SQUARE DRIVE HEAD

MODEL	SQUARE DRIVE (mm)	APPLICABLE MODEL
DH10D	9.5	CL25N,YCL12N,PCL25N CSP25N,YCL23N CF25N,CDB25N-S,CEM18N2,CEM20N3
DH12D	9.5	CTA50,CTB50 CL50N,YCL45N CEM45N2,CSP50N,YCL70N PCL50N×12D,CF50N,CDB50N-S,CEM50N3
DH15D	12.7	CTA100,CTB100 CL100N,CL50N,PCL100N,PCL50N,CL140N,YCL90N PCL140N,CSP100N,CSP50N,CSP140N,YCL140N CF100N,CEM90N2,CDB100N-S,CEM100N3
DH19D	12.7	CTA200,CTB200 CL200N,YCL180N,PCL200N,CSP200N CF150N,CEM180N2 CDB200N-S,CEM200N3
DH22D	19.0	CTA360,CTB360,CTAE500,CTBE500 CL280N,CL420N,CDB300N-S,CDB420N-S CSP280N,CSP420N,CF420N CF230N,CEM360N2,CEM500N2 CEM360N3,CEM500N3

HH HEX HEAD

HH8D

HH8D is available only 6.35 hex bit.

MODEL (Head Size × Width)	APPLICABLE MODEL
HH8D	PCL6N4,PCL12N4,CL6N(4),CSP6N(4),CSF7N,CL1.5N(4) CSP1.5N(4),CL12N(4),CSP12N(4),CSF14N,CL3N(4),CSP3N(4) CDB7N-S,CDB14N-S,CEM9N2,CEM10N3
HH10D×5	CL25N,YCL12N,PCL22.5N
HH10D×6	CSP25N,YCL23N
HH10D×8	CF25N,CDB25N-S,CEM18N2,CEM20N3
HH12D×5	CTA50,CTB50
HH12D×6	CL50N,YCL45N
HH12D×8	CEM45N2,CSP50N,YCL70N
HH12D×10	PCL50N×12D,CF50N,CDB50N-S,CEM50N3
HH15D×8	CTA100,CTB100
HH15D×10	CL100N,CL50N,PCL100N,PCL50N,CL140N,YCL90N
HH15D×12	PCL140N,CSP100N,CSP50N,CSP140N,YCL140N
HH15D×14	CF100N,CEM90N2,CDB100N-S,CEM100N3
HH19D×10	CTA200,CTB200
HH19D×12	CL200N,YCL180N,PCL200N,CSP200N
HH19D×14	CF150N,CEM180N2
HH19D×17	CDB200N-S,CEM200N3
HH19D×19	
HH22D×12	CTA360,CTB360,CTAE500,CTBE500
HH22D×14	CL280N,CL420N,CDB300N-S,CDB420N-S
HH22D×17	CSP280N,CSP420N,CF420N
HH22D×19	CF230N,CEM360N2,CEM500N2
HH22D×22	CEM360N3,CEM500N3

Note 1 : Insert hex wrench to use.
Note 2 : HH8D is for Hexagon Bits, not for Hexagon Socket Screw key.

PH PIPE WRENCH HEAD

MODEL (Head Size × Width)	PIPE WRENCH NOMINAL SIZE	GRIPPABLE PIPE DAMETER mm	GRIPPABLE TUBE DIA METER (mm)	APPLICABLE MODEL
PH15D×350	350	13～38	25.5	CSP50N,CSP100N,CSP140N
PH19D×350	350			CSP200N
PH22D×350	350			CSP280N,CSP420N
PH22D×450	450	26～52	39	CSP280N,CSP420N
PH32D×450	450			

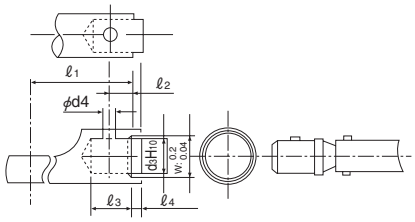
Note 1 : When you use with CSP, order with PH for torque set.
Note 2 : If you need a wrench with a scale type, order PHL model.

FH HOOK HEAD

MODEL	OUT DIA. OF ADAPTING MODEL	NOMINAL SIZE	APPLICABLE MODEL
FH15D×30	30～38	M20	CL100N,CL50N,PCL100N,PCL50N,CL140N, YCL140N,YCL90N,PCL140N, CSP140N,CSP100N,CSP50N,CF100N, CEM90N2,CDB100N-S,CTA100,CTB100 CEM100N3
FH15D×38	38～45	M25	
FH15D×45	45～52	M30	
FH15D×52	52～58	M35	
FH15D×58	58～65	M40	
FH19D×65	65～75	M45,M50	CL200N,YCL180N,PCL200N,CSP200N,CF150N, CEM180N2,CDB200N-S,CTA200,CTB200,CEM200N3
FH22D×75	75～85	M60,M65	CL280N,CL420N,CSP280N,CSP420N,CF230N, CEM360N2,CEM500N2,CDB300N-S,CDB420N-S
FH22D×85	85～98	M70,M75	CTB360,CTAE500,CTBE500 CEM360N3,CEM500N3

INTERCHANGEABLE HEAD COMMON DIMENSION

MODEL	ℓ1	ℓ2	ℓ3	ℓ4	d3	d4	W
SH8D,RH,QH,HH	35	4	10	2	8	3.0	9
SH10D,RH,QH,HH,DH	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
SH32D,RH,QH	160	16	34	7	32	6.5	35



Caution : You must strictly observe the dimension "ℓ1" when you order special heads for CL, CSP, CF, YCL, CDB, CEM, CTA and CTB type tools. If the "ℓ1" length is not correct, you will not be able to obtain correct torque values.

INTERCHANGEABLE BIT

BIT POWER/HAND TORQUE TOOLS

How to select bits

After determining the torque driver, select a bit according to the following instructions:

1. Select root shape from adapting models.
2. Check the screw head (plus, minus, hexagon socket head, cap screw or set screw).
   See Table A and B.
3. Major screws are shown in Table A and B.

⊕ PHILLIPS

⊖ SLOTTED

◎ BOX

⬡ HEX

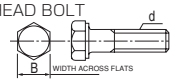
☐ SQ. DR

✸ HEXALOBULAR

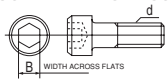
Head shape of bolts (reference)

Table A

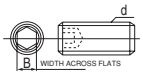
■ HEX HEAD BOLT



■ HEX SOCKET HEAD CAP SCREW



■ HEX SOCKET SET SCREW



NOMINAL SIZE (d)	OPPOSITE SIZE OF HEX BOLT (B)	OPPOSITE SIZE OF SOCKET HEAD BOLT (B)	OPPOSITE SIZE OF SET SCREW (B)
M 2.5	5.0	2	1.27
M 3	5.5	2.5	1.5
(M 3.5)	6	—	—
M 4	7	3	2
(M 4.5)	8	—	—
M 5		4	2.5
M 6	10	5	3
(M 7)	11	—	—
M 8	13	6	4
M10	16 | 17	8	5
REF JIS	JISB 1180	JISB 1176	JISB 1177

■SIZE OF (+) BIT

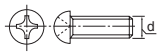


Table B

NO. OF CROSS NOMINAL SIZE OF SCREW (d)	HOLE	REMARKS
M1.6,M2	#0 (S-0)	PAN HEAD, FLAT HEAD, OVAL HEAD AND
(M2),(M2.2),M2.5,(M3)	#1 (H-1)	BINDING HEAD MACHINE SCREW
M3,(M3.5),M4,(M4.5),M5	#2 (H-2)	M3, #1 is binding head machine screw only.
M6,M8	#3 (H-3)	M2, #1 is not adapted in ISO

How to order :

Indicate the model name and catalog No.

(EXAMPLE) MODEL NAME ⊕BIT A - 0 CATALOG NO. 104

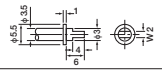
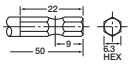
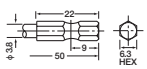
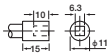
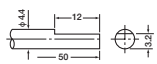
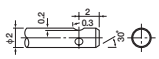
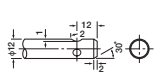
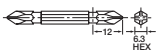
Root Shape Sign — A

Point Shape Sign — 0

POINT SHAPE									
PLUS		MINUS		SQUARE		BOX		HEX	
SIGN	SIZE	SIGN	SIZE	SIGN	SIZE	SIGN	SIZE	SIGN	SIZE
0	#0 (S-0)	10	0.15× 1	□2	□6.35(1/4)	W 5.5	5.5	W1.27	1.27
1	#1 (H-1)	11	0.2 × 1.5	□3	□9.5 (3/8)	W 6	6	W1.5	1.5
2	#2 (H-2)	12	0.3 × 2			W 7	7	W2	2
3	#3 (H-3)	13	0.4 × 2.4			W 8	8	W2.5	2.5
4	#4 (H-4)	14	0.6 × 3.8			W10	10	W3	3
		15	0.7 × 7					W4	4
		16	0.9 × 7					W5	5
		17	1 ×10					W6	6
		18	1 ×12					W8	8
		19	1.2 ×17						
		20	1.6 ×10						
		21	1.2 × 8						

POINT SHAPE HEXALOBULAR			
SIGN	FLAT HEAD	SOCKET HEAD	SET SCREW
T5	M2		M2.5
T6	M2		M3
T7			M3.5
T8	M2.5	M2.5	M4
T9			M4.5
T10	M3	M3	M5
T15	M3.5	M3.5	
T20	M4	M4／M4.5	M6

BIT POWER/HAND TORQUE TOOLS

SIGN	ROOT DIMENSION	TIP SIZE	BIT NAME	CATALOG NO.	APPLICABLE MODEL
A		⊕ #0	⊕ Bit A-0	104	U30CN
		⊖ 0.4×2.4	⊖ Bit A-13	105	
B		⊕ #1	⊕ Bit B-1	85	U60CN～U1000CN UR500CN ULR120CN～ULR250CN MG60CN～MG250CN MF6N～MF12N LTD15CN～LTD1000CN RTD15CN～RTD500CN BMLD15CN2～BMLD30CN2 BMRD15CN2～BMRD30CN2 NTD15CN～NTD1000CN RNTD15CN～RNTD500CN FTD50CN～FTD400CN FTD2CN-S～FTD400CN2-S STC50CN～STC400CN RTDZ260CN～RTDZ500CN
		⊕ #2	⊕ Bit B-2	86	
		⊕ #3	⊕ Bit B-3	87	
		⊖ 0.7×7	⊖ Bit B-15	88	
		⊖ 0.9×7	⊖ Bit B-16	89	
		□ 6.35	SQ. DR bit B-□2	90	
		◎ 5.5	Box bit B-W5.5	91	
		◎ 6	Box bit B-W6	95	
		◎ 7	Box bit B-W7	92	
		◎ 8	Box bit B-W8	93	
		◎ 10	Box bit B-W10	94	
		⬡ 1.27	Hex bit B-W1.27	56	
		⬡ 1.5	Hex bit B-W1.5	57	
		⬡ 2	Hex bit B-W2	58	
		⬡ 2.5	Hex bit B-W2.5	59	
		⬡ 3	Hex bit B-W3	60	
		⬡ 4	Hex bit B-W4	61	
		⬡ 5	Hex bit B-W5	62	
		⬡ 6	Hex bit B-W6	63	
		⬡ 8	Hex bit B-W8	64	
C		⊕ #0	⊕ Bit C-0	109	
		⊕ #1	⊕ Bit C-1	106	
		⊕ #2	⊕ Bit C-2	107	
		⊖ 0.6×3.8	⊖ Bit C-14	108	
		✸ T5	Hexalobular bit T5	470	
		✸ T6	Hexalobular bit T6	471	
		✸ T8	Hexalobular bit T8	472	
D		⊕ #1	⊕ Bit D-1	84	FTD8N2-S～FTD16N2-S (FTD8N～FTD16N)
		⊕ #2	⊕ Bit D-2	80	
		⊕ #3	⊕ Bit D-3	81	
		⊖ 1.6×10	⊖ Bit D-20	82	
		⊖ 1.2×8	⊖ Bit D-21	83	
E		⊕ #1	⊕ Bit E-1	70	(02FTD～2FTD)
		⊖ 0.6×3.8	⊖ Bit E-14	71	
F		⊕ #0	⊕ Bit F-0	115	AMLD1CN～AMLD8CN AMRD1CN～AMRD8CN MTD1MN～MTD10MN
		⊕ #1	⊕ Bit F-1	116	
		⊖ 0.15×1	⊖ Bit F-10	111	
		⊖ 0.2×1.5	⊖ Bit F-11	112	
		⊖ 0.3×2	⊖ Bit F-12	113	
G		⊕ #3	⊕ Bit G-3	35	LTD2000CN
		⊕ #4	⊕ Bit G-4	36	
		⊖ 1×10	⊖ Bit G-17	37	
		⊖ 1×12	⊖ Bit G-18	38	
		⊖ 1.2×17	⊖ Bit G-19	39	
		□ 6.35	SQ. DR bit G-□2	33	
		□ 9.53	SQ. DR bit G-□3	34	
H		⊕ #3	⊕ Bit H-3	700	AUR5N

⊕ PHILLIPS ⊖ SLOTTED
◎ BOX ⬡ HEX
□ SQ. DR ✸ HEXALOBULAR

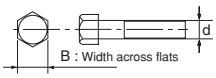
SOCKET OR ADAPTER

SOCKET POWER/HAND TORQUE TOOLS

FOR POWER TOOLS　　FOR HAND TOOLS

A power hand torque tool normally tightens bolts by using a socket. Select a socket that matches the torque tool. Dimensions of the power torque tool square drives are given in the specification column on each page. Major screw head widths are given below in table E.

Width across flats of bolt. (Ref.)



Width across flats of bolt　　table E

NOMINAL SCREW (d)	HEX HEAD BOLT (B)	SMALL HEX HEAD BOLT (B)	HIGH STRENGTH HEX BOLT FOR FRICTION GRIP JOINTS (B)	HEX SOCKET HEAD CAP SCREW (B)	HEX SOCKET SET SCREW (B)
M 2.5	4.5	–	–	2	1.27
M 3	5.5	–	–	2.5	1.5
(M 3.5)	6	–	–	–	–
M 4	7	–	–	3	2
(M 4.5)	8	–	–	–	–
M 5	8	–	–	4	2.5
M 6	10	–	–	5	3
(M 7)	11	–	–	–	–
M 8	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	–
Ref. JIS	JISB1180	JISB1180	JISB1186	JISB1176	JISB1177

How to order :

Indicate model name and catalog No.

(EXAMPLE)　MODEL NAME　SOCKET 3P-10　　CATALOG NO.　250

Socket Inlet Sign | Width Across Flats

Purpose Sign

SIGN	INLET□	SIGN	PURPOSE
2	□6.3 (1/4")	P	for power tool
3	□9.5 (3/8")	H	for hand tool
4	□12.7 (1/2")	C	for power tool & hand tool
6	□19 (3/4")		
8	□25.4 (1")		

How to order :

Indicate model name and catalog No.

(EXAMPLE)　MODEL NAME　ADAPTER 3P-4　　CATALOG NO.　290

Inlet Sign (Female) | Outlet Sign (Male)

Purpose Sign

SOCKET FOR POWER TORQUE TOOL

MODEL	CATALOG NO.	DIMENSION mm INLET (FEMALE)	DIMENSION mm WIDTH ACROSS FLATS
Socket 3P-10	250	9.5	10
Socket 3P-12	251		12
Socket 3P-13	252		13
Socket 3P-14	253		14
Socket 3P-16	255		16
Socket 3P-17	254		17
Socket 4P-14	260	12.7	14
Socket 4P-16	264		16
Socket 4P-17	261		17
Socket 4P-18	265		18
Socket 4P-19	262		19
Socket 4P-21	266		21
Socket 4P-22	263		22

Note 1 : O-ring and pin are not included. If these parts are required, user must supply them.

ADAPTER FOR POWER TORQUE TOOL

MODEL	CATALOG NO.	DIMENSION mm INLET (FEMALE)	DIMENSION mm OUTLET (MALE)
Adapter 3P-4	290	9.5	12.7
Adapter 4P-3	291	12.7	9.5
Adapter 4P-6	292		19
Adapter 6P-4	293	19.0	12.7
Adapter 6P-8	294		25.4
Adapter 8P-6	295	25.4	19

Note 1 : O-ring and pin are not included. If these parts are required, user must supply them.

SOCKET FOR HAND TORQUE TOOL

MODEL	CATALOG NO.	DIMENSION mm INLET (FEMALE)	DIMENSION mm WIDTH ACROSS FLATS
Socket 2H-8	201	6.35	8
Socket 2H-10	202		10
Socket 2H-12	203		12
Socket 2H-13	204		13
Socket 3H-10	210	9.5	10
Socket 3H-12	211		12
Socket 3H-13	212		13
Socket 3H-14	213		14
Socket 3H-16	216		16
Socket 3H-17	214		17
Socket 3H-18	217		18
Socket 3H-19	215		19
Socket 4H-14	220	12.7	14
Socket 4H-16	227		16
Socket 4H-17	221		17
Socket 4H-18	228		18
Socket 4H-19	222		19
Socket 4H-21	229		21
Socket 4H-22	223		22
Socket 4H-24	224		24
Socket 4H-27	225		27
Socket 4H-30	226		30
Socket 6H-21	237	19.0	21
Socket 6H-22	230		22
Socket 6H-24	231		24
Socket 6H-27	232		27
Socket 6H-30	233		30
Socket 6H-32	234		32
Socket 6H-34	236		34
Socket 6H-36	235		36
Socket 8H-32	240	25.4	32
Socket 8H-34	246		34
Socket 8H-36	241		36
Socket 8H-41	242		41
Socket 8H-46	243		46
Socket 8H-50	244		50
Socket 8H-55	245		55

Note 1 : For sockets with square drive sizes of 6.3 and 9.5, the opposite ends are single hex. For all other sqaure drive sizes, it is double hex.

Note 2 : Please use catalog No. when ordering.

ADAPTER FOR HAND TORQUE TOOL

MODEL	CATALOG NO.	DIMENSION mm INLET (FEMALE)	DIMENSION mm OUTLET (MALE)
Adapter 2H-3	270	6.35	9.5
Adapter 3H-2	271	9.5	6.3
Adapter 3H-4	272		12.7
Adapter 4H-3	273	12.7	9.5
Adapter 4H-6	274		19
Adapter 6H-4	275	19.0	12.7
Adapter 6H-8	276		25.4

POWER AND HAND TORQUE TOOL

MODEL	CATALOG NO.	DIMENSION mm INLET (FEMALE)	DIMENSION mm WIDTH ACROSS FLATS
Socket 2C-2.5	430	6.35	2.5
Socket 2C-3	431		3
Socket 2C-4	432		4
Socket 3C-3	440	9.5	3
Socket 3C-4	441		4
Socket 3C-5	442		5
Socket 3C-6	443		6
Socket 4C-6	450	12.7	6
Socket 4C-8	451		8
Socket 4C-10	452		10
Socket 4C-12	453		12
Socket 4C-14	454		14
Socket 6C-14	460	19.0	14
Socket 6C-17	461		17
Socket 6C-19	462		19

Note 1 : For hex socket cap screws.

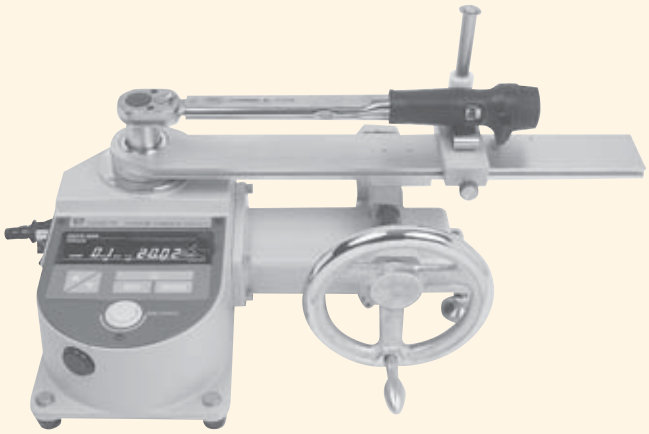
DOTE TORQUE WRENCH TESTER

DIRECTION

Manual | Fixed type | Digital tester

Digital Version

- Data Processing Capabilities
- RS232 Output
- Mechanical Loading Device



DOTE

Accuracy ±1%+1digit

MODEL	CAPACITY MIN.~MAX.	CAPACITY 1digit	MAX. EFFECTIVE LENGTH mm	INLET DRIVE mm	Dimension mm OVERALL LENGTH	Dimension mm OVERALL WIDTH	Dimension mm OVERALL HEIGHT	WEIGHT Approx. kg	STANDARD ADAPTER SQUARE	STANDARD ADAPTER HEX	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY 1digit
DOTE20N	N·m 2 ~ 20	N·m 0.005	400	9.5	500	257	222	11	6.35	10·13·19 12·14·17	200DOTE2	kgf·cm 20~ 200	kgf·cm 0.05
DOTE36N	3.6~ 36	0.01									360DOTE2	36~ 360	0.1
DOTE100N	10 ~ 100	0.02		12.7					6.35, 9.53		1000DOTE2	100~1000	0.2
DOTE200N	20 ~ 200	0.05	660		780	317	270	13	—	17·22·27 19·24·30	2000DOTE2	200~2000	0.5
DOTE360N	36 ~ 360	0.1		19.0					12.7		3600DOTE2	kgf·m 3.6~ 36	kgf·m 0.01
DOTE700N	70 ~ 700	0.2	1260		1380	388	272	25	—	22·27·29 30·32·36	7000DOTE2	7 ~ 70	0.02
DOTE1000N	100 ~1000		1650	25.4	1780	584	343	45	19.05	34·41 46·50	10000DOTE2	10 ~100	

Note : DOTE inspection equipment is an optional accessory.
Total 99 data memory.

DOTE OPTION

ADAPTER

CATALOG NO.	SPEC
285	3/8·7·8·9
286	1/2·16·18·21
287	1/2·17·22·27
288	1/2·19·24·30

PRINTER·····P.41

MODEL
EPP16M2

CONNECTING CABLE

CATALOG NO.	DESCRIPTION
380	DOTE to EPP16M2
561	DOTE to PC (D-SUB 9 pins Female)

SOFTWARE·····P.41

MODEL	DESCRIPTION
DFS	DATA PROCESSING SOFTWARE

BATTERY PACK

MODEL
BP-100

DOT TORQUE WRENCH TESTER

DIRECTION

Manual | Analog type | Fixed type

Analog Version

- Dial Indicating
- For Clockwise Testing
- Mechanical Loading Device

DOT

Accuracy ±2%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	MAX. EFFECTIVE LENGTH mm	INLET DRIVE mm	Dimension mm OVERALL LENGTH	Dimension mm OVERALL WIDTH	Dimension mm OVERALL HEIGHT	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m								kgf·cm	kgf·cm
DOT35N	5~ 35	0.1		9.5					350DOT	50~ 350	1
DOT50N	5~ 50	0.2	400		487	257	222	8	500DOT	50~ 500	2
DOT100N	10~100	0.5		12.7					1000DOT	100~1000	5
DOT300N	30~300	1	660	19.0	765	317	270	10	3000DOT	300~3000	10
DOT700N	70~700	2	1260		1365	388	272	25	7000DOT	700~7000	20

Note 1 : DOT inspection equipment is an optional accessory.

DA DOWN ADAPTER

- Reduces Square Drive Size
- For use with Torque Wrench Testers

MODEL	CATALOG NO.	Dimension mm EXTERNAL DRIVE	Dimension mm INTERNAL DRIVE	Dimension mm HEIGHT	Dimension mm DIAMETER	ALLOWABLE TORQUE N·m	WEIGHT Approx. 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

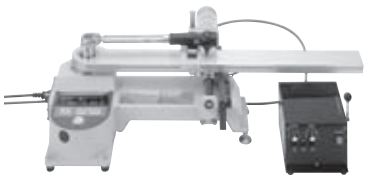
DOT(E)-MD TORQUE WRENCH TESTER

Lever | Motor drive loading | Fixed type

DIRECTION DOTE-MD | DIRECTION DOT-MD

Motor Driven Loading Device Version

- Electric Motor Pulls Wrench for Testing
- Consistent Smooth Testing Motion



DOT (E)-MD

Accuracy ±2%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	MAX. EFFECTIVE LENGTH mm	INLET DRIVE mm	Dimension mm OVERALL LENGTH	Dimension mm OVERALL WIDTH	Dimension mm OVERALL HEIGHT	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	N·m	N·m								kgf·cm	kgf·cm
DOT35N-MD	5~ 35	0.1		9.5					350DOT-MD	50~ 350	1
DOT50N-MD	5~ 50	0.2	400		487	257	193	8	500DOT-MD	50~ 500	2
DOT100N-MD	10~100	0.5		12.7					1000DOT-MD	100~1000	5
DOT300N-MD	30~300	1	660	19.0	765	317	221	10	3000DOT-MD	300~3000	10
DOT700N-MD	70~700	2	1260		1365	388	243	25	7000DOT-MD	700~7000	20

Accuracy ±1%+1digit

MODEL	CAPACITY MIN.~MAX.	CAPACITY 1digit	MAX. EFFECTIVE LENGTH mm	INLET DRIVE mm	Dimension mm OVERALL LENGTH	Dimension mm OVERALL WIDTH	Dimension mm OVERALL HEIGHT	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY 1digit
DOTE20N-MD	N·m 2 ~ 20	N·m 0.005	400	9.5	500	257	222	11	200DOTE2-MD	kgf·cm 20 ~ 200	kgf·cm 0.05
DOTE36N-MD	3.6~ 36	0.01							360DOTE2-MD	36 ~ 360	0.1
DOTE100N-MD	10 ~ 100	0.02		12.7					1000DOTE2-MD	100 ~1000	0.2
DOTE200N-MD	20 ~ 200	0.05	660		780	317	270	13	2000DOTE2-MD	200 ~2000	0.5
DOTE360N-MD	36 ~ 360	0.1		19.0					3600DOTE2-MD	kgf·m 3.6~ 36	kgf·m 0.01
DOTE700N-MD	70 ~ 700	0.2	1260		1380	388	272	25	7000DOTE2-MD	7 ~ 70	0.02
DOTE1000N-MD	100 ~1000		1650	25.4	1780	584	343	45	10000DOTE2-MD	10 ~100	

Note : Motor assembly can be supplied separately upon request.

TORQUE WRENCH TESTER

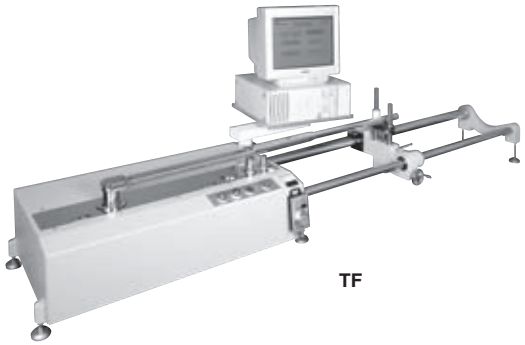
TF TORQUE WRENCH TESTER

DIRECTION

Fully automatic
Digital tester
Fixed type

Tool Management System

- Fully Automatic Testing and Pulling
- Data Processing
- Includes Computer



TF

Accuracy ±1%+1digit

MODEL	CH	CAPACITY 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	TORQUE WRENCH MAX. EFFECTIVE LENGTH	DIMENSION mm OVERALL LENGTH	OVERALL WIDTH	OVERALL HEIGHT	BODY WEIGHT Approx. kg
TF200N	1	5 ~ 200	0.05	50~ 2000	0.5	0.5 ~ 20	0.005	50~ 1700	0.5	5~ 140	0.05	1/2	570	1860			240
	2	0.5~ 20	0.005	5~ 200	0.05	0.05~ 2	0.0005	5~ 170	0.05	0.5~ 14	0.005	3/8					
TF500N	1	20 ~ 500	0.2	200~ 5000	2	2 ~ 50	0.02	200~ 4500	2	20~ 370	0.2	3/4	1020				
	2	2 ~ 50	0.02	20~ 500	0.2	0.2 ~ 5	0.002	20~ 450	0.2	2~ 37	0.02	3/8					
TF1000N	1	25 ~1000	0.25	250~10000	2.5	2.5 ~100	0.025	250~ 8500	2.5	25~ 700	0.25	1	1550	2160			250
	2	5 ~ 200	0.05	50~ 2000	0.5	0.5 ~ 20	0.005	50~ 1700	0.5	5~ 140	0.05	1/2			550	940	
	3	0.5~ 20	0.005	5~ 200	0.05	0.05~ 2	0.0005	5~ 170	0.05	0.5~ 14	0.005	3/8					
TF2000N	1	100 ~2100	1	1000~21000	10	10 ~210	0.1	1000~18000	10	100~1500	1	1	2000	2660			315
	2	20 ~ 500	0.2	200~ 5000	2	2 ~ 50	0.02	200~ 4500	2	20~ 370	0.2	3/4					
	3	2 ~ 50	0.02	20~ 500	0.2	0.2 ~ 5	0.002	20~ 450	0.2	2~ 37	0.02	3/8					
TF3000N	1	200 ~3000	1	2000~30000	10	20 ~300	0.1	2000~25000	10	200~2000	1	1 1/2	2240	3160			380
	2	100 ~2100	1	1000~21000	10	10 ~210	0.1	1000~18000	10	100~1500	1	1					
	3	20 ~ 500	0.2	200~ 5000	2	2 ~ 50	0.02	200~ 4500	2	20~ 370	0.2	3/4					

Note 1 : Unit conversion for N.m /kgf.cm/ kgf.m/ lbf.in/ lbf.ft are available.
Note 2 : TF inspection equipment is an optional accessory.

TCC TORQUE WRENCH TESTER

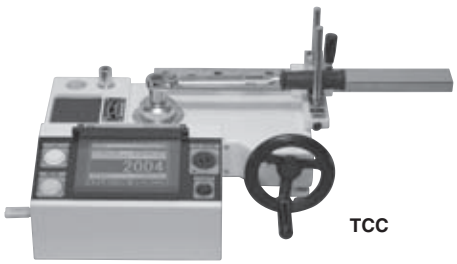
NEW

DIRECTION

Manual
Digital tester
Fixed type

Torque Calibrator & Controller

- Two Sensors for Wide Torque Capacity
- Installed Tool Management Software
- Touch Screen Display



TCC

Accuracy ±1%+1digit

MODEL	CH	TORQUE CAPACITY MIN-MAX	1DIGIT	MAX EFFECTIVE LENGTH mm	SQUARE DRIVE	TOTAL LENGTH mm	WIDTH mm	HEIGHT mm	WEIGHT kg
TCC100N	1	4~100N·m	0.02	440	12.7	670	370	330	26
	2	1~25N·m	0.005		9.53				
TCC100N-D	1	4~100N·m	0.02	440	12.7				
	2	20~500cN·m	0.1cN·m		6.53				
TCC500N	1	20~500N·m	0.1	1030	19.05	1165	560	395	53
	2	4~100N·m	0.02		12.7				
TCC1000N	1	50~1000N·m	0.2	1700	25.4	1885	780	510	135
	2	20~500N·m	0.1		19.05				

Note 1 : "-D" model is for driver application.

OPTIONAL ACCESSORIES

Calibration Kit
Printer EPP16M2
Printer connecting cable (No.380)
PC connecting cable (No.561)
Motordrive

DISPLAY	5.7 inch STN LCD 320×240 dots 2 colors (Blue, White) CFL Back light
SWITCH	Touch Panel
DATA MEMORY	1. Click direct reading mode Max. 2730 data with 1 measurement point×3 times Max. 1488 data with 3 measurement point×3 times Max. 780 data with 5 measurement point×5 times Max. 2340 data with 1 measurement point×5 times Max. 1170 data with 3 measurement point×5 times Max. 762 data with 3 measurement point×10 times 2. Manual mode 200 data
TORQUE WRENCH / DRIVER REGISTRATION	Torque wrench / driver registration Max. 1000 (Model name, serial number, Measuring point, Number of Measuring, accuracy, Measuring Channel, Inspector name, old measuring record) In case of Single loading direction
MEASURING MODE	Click(signal) mode / Direct reading mode / Manual mode
CHANNEL EXCHANGE	2 channel exchange switch
OK, NG JUDGMENT	Accuracy setting (1-99%), OK, NG
STATISTICALLY PROCESSING	Number of sample, Max. value, Min. value, Average (available with Manual mode)
ZERO SETTING	Automatic (Auto zero switch)
INTERFACE	Serial interface (RS-232) USB-interface (USB memory stick)
RESET	Manual button / Auto reset (0,1-5 sec)
OTHER FUNCTION	M button function (Data zoomed in display) Limit Switch work confirming lamp
OPERATION TEMPERATURE	0-40 degree
POWER SUPPLY	AC100V-240V 50/60Hz

ACCESSORIES

MODEL	HEX WIDTH ACROSS FLAT ADAPTER	DOWN ADAPTER	RATCHET ADAPTER	OTHERS
TCC100N	□12.7-10 · 13 · 19	DA3-2 DA4-3	RA3 RA4	Power cable Aplication software CD PC connection cable (No.561) USB memory stick
TCC100N-D	□12.7-12 · 14 · 17	DA4-3	RA4	
TCC500N	□12.7-10 · 13 · 19 □12.7-12 · 14 · 17	DA4-3	RA4	
	□19.05-17 · 22 · 27 □19.05-19 · 24 · 30	DA6-4	RA6	
TCC1000N	□19.05-17 · 22 · 27 □19.05-19 · 24 · 30	DA6-4	RA6	
	□25.4-36 · 46 □24.5-41 · 50	DA8-6	RA8	

LC TORQUE WRENCH LINE CHECKER

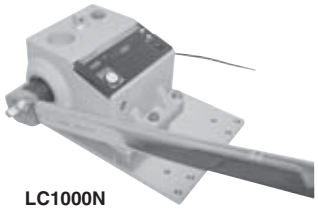
Manual
Digital tester
Fixed type

DIRECTION

Tester for Assembly Line

- Suitable for Use Near the Assembly Line
- For Daily Inspections of Torque Wrenches

LC200N



LC1000N

Accuracy±1%+1digit

MODEL	CAPACITY MIN.~MAX.	CAPACITY 1digit	INLET SQUARE DRIVE mm	Dimension mm OVERALL LENGTH	Dimension mm OVERALL WIDTH	Dimension mm OVERALL HEIGHT	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY 1digit
	N·m	N·m	9.5						kgf·cm	kgf·cm
LC20N	0.5~ 20	0.005		278	160	169	10.5	LC200	5~ 200	0.05
	N·m	N·m	12.7						kgf·cm	kgf·cm
LC200N	5 ~ 200	0.05						LC2000	50~2000	0.5
NEW	N·m	N·m	25.4	500	230	185	34	NEW	kgf·m	kgf·m
LC1000N	50 ~1000	0.2						LC10000	5~ 100	0.02

Note 1 : Total 50 data memory.
Note 2 : LC inspection equipment is an optional accessory

LC OPTION

PRINTER…… P.41

MODEL
EPP16M2

CONNECTING CABLE

CATALOG NO.	DESCRIPTION
380	LC to EPP16M2
561	LC to PC (D-SUB 9 pins Female)

SOFTWARE

MODEL	DESCRIPTION
DFS	DATA PROCESSING SOFTWARE

ADAPTER	
SQUARE	HEX
6.35	8,10,12,13,14,17
9.53	8,10,12,13,14,17,19,22

ADAPTER SET FOR LC

CATALOG NO.	APPLICABLE MODEL
282	LC20N
280	LC200N

BATTERY PACK

MODEL
BP-100

TDT TORQUE DRIVER TESTER

Manual
Digital tester
Fixed type

DIRECTION

Digital Torque Screwdriver Tester

- Ideal for Testing Click and Dial Indicating Drivers
- Optional TDTLA for Testing Small Wrenches

TDT

TDT (with TDTLA)

Accuracy±1%+1digit

MODEL	CAPACITY MIN.~MAX.	CAPACITY 1digit	INLET SQUARE DRIVE mm	Dimension mm OVERALL LENGTH	Dimension mm OVERALL WIDTH	Dimension mm OVERALL HEIGHT	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY 1digit
TDT60CN	cN·m	cN·m	Hex Size 6.35mm (Male) with a groove (0.7mm).	220	220	220	13.5		kgf·cm	kgf·cm
	2~ 60	0.02						TDT6	0.2~ 6	0.002
TDT600CN	cN·m	cN·m							kgf·cm	kgf·cm
	20~600	0.2						TDT60	2 ~60	0.02

Note 1 : Total 99 data memory.
Note 2 : TDT inspection equipment is an optional accessory.
Note 3 : Small size torque wrenches can be measured on TDT w/ loading device.

TDT OPTION

PRINTER…… P.41

MODEL
EPP16M2

CONNECTING CABLE

CATALOG NO.	DESCRIPTION
380	TDT to EPP16M2
561	TDT to PC (D-SUB 9 pins Female)

SOFTWARE

MODEL	DESCRIPTION
DFS	DATA PROCESSING SOFTWARE

LOADING DEVICE

MODEL
TDTLA

BATTERY PACK

MODEL
BP-100

ST ROTARY PEAK TORQUE METER

Manual
Digital tester
Battery

DIRECTION

Spin Torque

- Compact Handheld Cordless Sensor
- Ideal for Checking Nutrunner Torque Output
- Use Right between Bolt and Wrench

ST24N

ST480N

Accuracy F.S.±1%+1digit

MODEL	CAPACITY MIN.~MAX.	CAPACITY 1digit	SQUARE DRIVE mm	Dimension mm OVERALL LENGTH	Dimension mm MAX DIAMENTER	WEIGHT Approx. g	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY 1digit
	N·m	N·m						kgf·cm	kgf·cm
ST12N	1.2~ 12	0.05	9.5				ST120	12 ~ 120	0.5
ST24N	2.4~ 24	0.1					ST240	24 ~ 240	1
ST48N	4.8~ 48	0.2		75	48	250	ST480	48 ~ 480	2
ST120N	12 ~ 120	0.5	12.7				ST1200	120 ~1200	5
								kgf·m	
ST240N	24 ~ 240	1					ST2400	2.4~ 24	0.1
ST480N	48 ~ 480	2	19.0	120	66.5	1300	ST4800	4.8~ 48	0.2
ST1200N	120 ~1200	5	25.4	135			ST12000	12 ~ 120	0.5

Note 1 : Total 100 data memory.
Note 2 : Do not use with impact wrenches.

ST OPTION

INFRARED RECEIVER

MODEL
R-DT999

PRINTER…… P.41

MODEL
EPP16M2

SOFTWARE

MODEL	DESCRIPTION
DFS	DATA PROCESSING SOFTWARE

CONNECTING CABLE

CATALOG NO.	DESCRIPTION
379	R-DT999 to EPP16M2
572	R-DT999 to PC (D-SUB 9 pins Female)
584	R-DT999 to PC (USB A Type)

OPTIONAL EXTENSION SOCKET

CATALOG NO.	APPLICABLE MODEL
281	ST12N
	ST24N
247	ST48N
	ST120N
	ST240N
248	ST480N
249	ST1200N

Note 3 : AC adapter is included for charging the unit.
Note 4 : For data transfer by infrared, use R-DT999, Data Tank.

RA RATCHET ADAPTER

Loading Adapter for Torque Testers

- Rotates Wrench to Proper Testing Position on Tester
- Gear Action 3.75 degrees

MODEL	Dimension mm EXTERNAL DRIVE	Dimension mm INTERNAL DRIVE	Dimension mm HEIGHT	Dimension mm THICKNESS	Dimension mm DIAMETER	ALLOWABLE TORQUE N·m	WEIGHT Approx. kg
RA3	9.5	9.5	40.5	23	62	50	0.3
RA4	12.7	12.7	49	28	90	200	0.9
RA6	19.0	19.0	65	35	125	750	2.3
RA8	25.4	25.4	86	51	190	2100	7.1
RA12	38.1	38.1	111	60	234	3000	12.6

Note : For use with TF, TCC, DOT(E)

TORQUE METER

TME TORQUE METER

DIRECTION

Manual
Digital tester
Fixed type

Digital Torque Meter

- Ideal for Bottle Cap Testing

TME

Accuracy±1%+1digit

MODEL	CAPACITY MIN.~MAX.	CAPACITY 1digit	CHUCK GRIP mm	DIMENSION mm OVERALL LENGTH	DIMENSION mm OVERALL WIDTH	DIMENSION mm OVERALL HEIGHT	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY 1digit
	cN·m	cN·m							gf·cm	gf·cm
3TME9CN	1.8~ 9.0	0.01	φ14 ~ φ110	220	235	153	3.5	3-TME09	180 ~ 900	1
3TME18CN	3.6~ 18	0.02						3-TME1.8	360 ~1800	2
3TME45CN	9 ~ 45	0.05						3-TME4.5	900 ~4500	5
									kgf·cm	kgf·cm
3TME90CN	18 ~ 90	0.1						3-TME9	1.8~ 9	0.01
	cN·m	cN·m							kgf·cm	kgf·cm
2TME180CN	36 ~ 180	0.2	φ18 ~ φ190	331	235	280	12	2-TME18	3.6~ 18	0.02
2TME450CN	90 ~ 450	0.5						2-TME45	9 ~ 45	0.05
2TME900CN	180 ~ 900	1						2-TME90	18 ~ 90	0.1
2TME1800CN	360 ~1800	2						2-TME180	36 ~ 180	0.2

Note 1 : Total 50 data memory.
Note 2 : TME inspection equipment is an optional accessory.
Note 3 : Applicable for calibration of torque driver and small size torque wrenches.

TME OPTION

PRINTER····· P.41

MODEL
EPP16M2

CONNECTING CABLE

CATALOG NO.	DESCRIPTION
380	TME to EPP16M2
561	TME to PC (D-SUB 9 pins Female)

SOFTWARE

MODEL	DESCRIPTION
DFS	DATA PROCESSING SOFTWARE

TM TORQUE METER

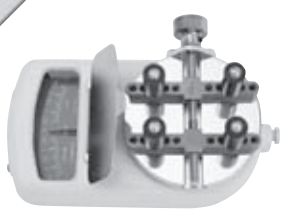
DIRECTION

Manual
Analog type
Fixed type

Analog Torque Meter

- Dial Indicating
- Wide Variety of Torque Testing Ranges

2TM~4TM



5TM

Accuracy±2%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	CHUCK GRIP mm	Dimension mm OVERALL LENGTH	Dimension mm OVERALL WIDTH	Dimension mm OVERALL HEIGHT	WEIGHT Approx. kg	MODEL Metric	CAPACITY MIN.~MAX.	CAPACITY GRAD.
	mN·m	mN·m							gf·cm	gf·cm
5TM1MN	0.2~1	0.05	φ6 ~ φ58	122	76.5	59	0.3	5-OT10	2~10	0.5
5TM1.5MN	0.2~1.5							5-OT15	2~15	
5TM2.5MN	0.5~2.5	0.1						5-OT25	5~25	1
5TM5MN	1 ~5	0.2						5-OT50	10~50	2
5TM7.5MN	1 ~7.5							5-OT75	10~75	

Note 1 : 5TM models are provided without memory pointer.
Note 2 : S.I. Models have single scale, and -A-S models have dual scale.
Note 3 : Applicable for calibration of torque driver

Accuracy±2%

MODEL	CAPACITY MIN.~MAX.	CAPACITY GRAD.	CHUCK GRIP mm	Dimension mm OVERALL LENGTH	Dimension mm OVERALL WIDTH	Dimension mm OVERALL HEIGHT	WEIGHT Approx. kg	MODEL	CAPACITY METRIC MIN.~MAX.	CAPACITY English MIN.~MAX.
	mN·m	mN·m							gf·cm	in·lbs
4TM10MN(-S)	1 ~ 10	0.2	φ14 ~ φ110	252	158	105	3	4TM100-A-S	10 ~100	0.1~0.86
4TM15MN(-S)	1.5~ 15	0.5						4TM150-A-S	15 ~150	0.2~1.3
4TM25MN(-S)	2.5~ 25							4TM250-A-S	25 ~250	2.5~2.15
4TM50MN(-S)	5 ~ 50	1						4TM500-A-S	50 ~500	0.5~4.3
4TM75MN(-S)	8 ~ 75	2						4TM750-A-S	80 ~750	0.8~6.5
	cN·m	cN·m							kgf·cm	in·lbs
3TM10CN(-S)	1 ~ 10	0.2						3TM1-A-S	0.1 ~ 1	0.1~0.86
3TM15CN(-S)	1.5~ 15	0.5						3TM1.5-A-S	0.15~ 1.5	0.15~1.3
3TM25CN(-S)	2.5~ 25							3TM2.5-A-S	0.25~ 2.5	0.25~2.15
3TM50CN(-S)	5 ~ 50	1						3TM5-A-S	0.5 ~ 5	0.5~4.3
3TM75CN(-S)	8 ~ 75	2						3TM7.5-A-S	0.8 ~ 7.5	0.8~6.5
2TM100CN(-S)	10 ~100	2	φ18 ~ φ190	331	223	133	10.5	2TM10-A-S	1 ~ 10	1~8.6
2TM150CN(-S)	20 ~150							2TM15-A-S	2 ~ 15	2~13
2TM200CN(-S)	30 ~200							2TM20-A-S	3 ~ 20	3~17
2TM300CN(-S)	30 ~300	5						2TM30-A-S	3 ~ 30	3~26
2TM400CN(-S)	40 ~400							2TM40-A-S	4 ~ 40	3~34
2TM500CN(-S)	50 ~500	10						2TM50-A-S	5 ~ 50	4~43
2TM600CN(-S)	60 ~600							2TM60-A-S	6 ~ 60	5~50
2TM750CN(-S)	80 ~750							2TM75-A-S	8 ~ 75	7~65

ATG/BTG TORQUE GAUGE

DIRECTION

Manual
Direct reading
Portable

Handheld Torque Gauge

- Top and Side Scales for Easy Reading
- Three Fingered Keyless Chuck

ATG

BTG

Accuracy ±2%

MODEL	CAPACITY		CHUCK GRIP	Dimension mm		WEIGHT Approx.	MODEL Metric	CAPACITY	
	MIN. ~ MAX.	GRAD.	mm	OVERALL LENGTH	DIAMETER	kg		MIN. ~ MAX.	GRAD.
	cN·m	cN·m						gf·cm	gf·cm
ATG045CN	0.05~ 0.45	0.01					45ATG	5 ~ 45	1
ATG09CN-S	0.1 ~ 0.9	0.02					90ATG-S	10 ~ 90	2
ATG1.5CN-S	0.2 ~ 1.5						150ATG-S	20 ~ 150	
ATG3CN-S	0.3 ~ 3	0.05	1~φ6.5	90	43.5	0.18	300ATG-S	30 ~ 300	5
ATG6CN-S	0.6 ~ 6	0.1					600ATG-S	60 ~ 600	10
ATG12CN-S	1 ~ 12	0.2					1200ATG-S	100 ~1200	20
ATG24CN-S	3 ~ 24	0.5					2400ATG-S	300 ~2400	50
								kgf·cm	kgf·cm
BTG15CN-S	2 ~ 15	0.2					1.5BTG-S	0.2~ 1.5	0.02
BTG24CN-S	3 ~ 24	0.5					2.4BTG-S	0.3~ 2.4	0.05
BTG36CN-S	4 ~ 36						3.6BTG-S	0.4~ 3.6	
BTG60CN-S	6 ~ 60	1	1~φ8.5	118	64.2	0.52	6BTG-S	0.6~ 6	0.1
BTG90CN-S	10 ~ 90						9BTG-S	1 ~ 9	
BTG150CN-S	20 ~150	2					15BTG-S	2 ~ 15	0.2

CATALOG NO.	APPLICABLE MODEL
322	All Plastic Chuck for ATG

Note 1 : ATG045CN and 45ATG models are provided without memory pointer on dial face.
Note 2 : Without memory pointer models are available.
Remove "-S" from model name, for example 2400ATG.
Note 3 : Aluminum chuck comes standard.
Note 4 : All plastic chuck, fingers and collar for ATG is available as an optional accessory.

TORQUE SENSOR

TCF REACTION TORQUE SENSOR

Fixed type

Fixed Torque Sensor

- Requires CD42 Display

CD42, DISPLAY (OPTIONAL)

TCF

MODEL	CAPACITY MIN. ~ MAX.	Dimension mm INLET	HEIGHT	DIAMETER	WEIGHT Approx. kg
	N·m				
TCF02N	0.02~ 0.2		56		0.45
TCF04N	0.04~ 0.4				
TCF1N	0.1 ~ 1	6.35		45	
TCF2N	0.2 ~ 2		62.5		0.5
TCF4N	0.4 ~ 4				
TCF10N	1 ~ 10				
TCF20N	2 ~ 20	9.5	66	70	0.6
TCF40N	4 ~ 40				
TCF100N	10 ~ 100	12.7	100	105	2.5
TCF200N	20 ~ 200				
TCF400N	40 ~ 400	19.0	145	140	6.0
TCF1000N	100 ~1000	25.4	180	178	12.0
TCF2000N	200 ~2000				

Note 1 : Display CD42 is sold separately. See page 39.
Note 2 : Not available for impact and impulse wrenches.
Note 3 : Cable is supplied as standard accessory.

TCR ROTARY TORQUE SENSOR

Rotary

Rotary Torque Sensor

- Captures Directly Applied Torque
- Requires CD42 Display

TCR

CD42, DISPLAY (OPTIONAL)

MODEL	CAPACITY MIN. ~ MAX.	PERMISSIBLE ROTATION r.p.m.	Dimension mm SQUARE DRIVE	HEIGHT	WIDTH	WEIGHT Approx. kg
	N·m					
TCR18N	1.8~ 18	2000	9.5	91	76	0.9
TCR180N	18 ~ 180		12.7	104	83	1.3
TCR700N	70 ~ 700	1000	19.0	118.5	95	2.0
TCR1800N	180 ~1800		25.4	138.5	110	3.6

Note 1 : Display CD42 is sold separately. See page 39.
Note 2 : Not available for impact and impulse wrenches.
Note 3 : Cable is supplied as standard accessory.

TP/DTF/TTF TCF RELATED EQUIPMENT

Attachments for Various Applications

- TP, Test Piece: Replicates Joint Hardness
- DFT, Drill Chuck
- TTF, Table (Requires Fixture ATF)

TCF + TP

TCF + DTF

TCF + ATF + TTF

TP TEST PIECE

MODEL	CAPACITY MIN. ~ MAX.	ADAPTING TCF	INLET mm OPPOSITE SIZE	SCREW	Dimension mm DIAMETER	HEIGHT	WEIGHT Approx. kg
	N·m						
TP2.5N	0.25~2.5	TCF02N~TCF4N	8	M4	18	58	0.08
TP18N	1.8~18	TCF10N,TCF20N	13	M6	35	83.5	0.27
TP180N	18~180	TCF40N~TCF200N	24	–	65	148	1.9
TP1800N	180~1800	TCF400N~TCF2000N	50	–	140	297.5	16.8

DTF DRILL CHUCK

MODEL	ADAPTING TCF	CHUCK GRIP mm	Dimension mm DIAMETER	HEIGHT
DTF5-3	TCF02N~TCF4N	φ5	33	65
DTF5-2	TCF10N~TCF40N			61

TTF TABLE/ATF TABLE ATTACHMENT

MODEL TTF	MODEL ATF	ADAPTING TCF	CHUCK GRIP mm	DIAMETER mm
TTF7	ATF18-2	TCF02N~TCF4N	φ10~ 70	70
TTF11	ATF18-2	TCF02N~TCF4N	φ14~110	110
	ATF180	TCF10N~TCF20N		
TTF19	ATF18-2	TCF2N~TCF4N	φ18~190	180
	ATF180	TCF10N~TCF20N		

Note : ATF attachment is required to fix TTF table to TCF model.

CD42 COMPACT DISPLAY

Digital Display for Torque Equipment

- Shows Torque Values from Strain Gauges
- Judgment Functions

CD42

DISPLAY	5digit, Fluorescent display tube
RESOLUTION	±1/2000
INPUT SIGNAL	0.5～3mV/V
INPUT SIGNAL	DC5V
ACCURACY	Non-linearity 0.05%F.S.
	Zero drift : within 0.5 μv/℃
	Gain drift : within 0.01%/℃
GAIN ADJUSTMENT	Gain adjustment by digital method
	Equivalent input calibration/Actual loaded calibration
MEMORY	99 data
EXTERNAL OUTPUT	RS232C output, Analog output, HI, OK, LO relay point output
POWER SOURCE	AC100～AC240V
DIMENSION	150(W)×200(D)×92(H)mm
WEIGHT	1.7kg

CD42 OPTION

PRINTER……P.41

MODEL
EPP16M2

SOFTWARE

MODEL	DESCRIPTION
DFS	DATA PROCESSING SOFTWARE

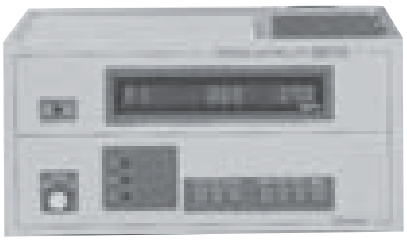
CONNECTING CABLE

MODEL	DESCRIPTION
380	CD42 to EPP16M2
561	CD42 to PC (D-SUB 9 pins Female)

EM250 TORQUE CONTROLLER

Controller for Multi-Spindle Nutrunners

- Setup to 4 Nutrunners



DISPLAY	4 Figures, LED Display
CHANNEL	1ch(up to 4ch)
ACCURACY	±1%±1Digit
ADJUSTMENT	Auto Zero Adjustment
RESULT EVALUATION	Hi-NG, OK, Lo-NG
CONTROL RELAY OUTPUT	T≧T Set
DATA INPUT	Keyboard
RESET	Manual/Auto, Remote Available
OUTPUT	RC232C(Option)
DIMENSION	210×430×370mm
WEIGHT	8.4kg

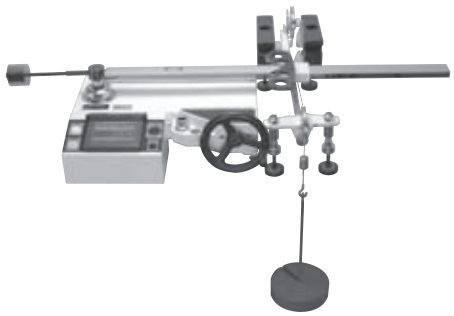
CALIBRATION KIT

For TCC models

NEW

MODEL	COMPONENT			OPTION	APPLICABLE MODEL
	CALIBRATION LEVER	CALIBRATION STAND	CALIBRATION WIRE	SCALE HOLDER/WEIGHT	
TCCTCL100N	CALIBRATION LEVER×2	1 SET	WIRE×2	HOLDER 100g×1、1kg×1 WEIGHT 1kg×1、2kg×2、5kg×3	TCC100N
TCCTCL100N-D	CALIBRATION LEVER×2		WIRE×3	HOLDER 100g×1、1kg×1 WEIGHT 1kg×1、2kg×2、5kg×3	TCC100N-D
TCCTCL500N	CALIBRATION LEVER×2		WIRE×4	HOLDER 500g×1、1kg×1、5kg×1 WEIGHT 1kg×1、2kg×2、5kg×9	TCC500N
TCCTCL1000N	CALIBRATION LEVER×2		WIRE×2	HOLDER 1kg×1、5kg×1 WEIGHT 1kg×1、2kg×2、5kg×13	TCC1000N

Note : Please contact us in case you have DOTCL.



For DOT and DOTE models

MODEL	COMPONENT			OPTION		APPLICABLE MODEL
	CALIBRATION LEVER	CALIBRATION STAND	REACTION UNIT	SCALE HOLDE WITH FOOK	WOODEN BOX FOR LOVER	WOODEN BOX FOR FOOK	
DOTCL36N	KL-DOTCL36N	KS-DOTCL	RU-DOTCL100N	WT0.5	KLB36N	WTB36N	DOT35N DOT50N DOTE20N DOTE36N
DOTCL100N	KL-DOTCL100N			WT1	KLB100N	WTB200N	DOT100N DOTE100N
DOTCL200N	KL-DOTCL200N		RU-DOTCL360N		KLB200N		DOTE200N
DOTCL360N	KL-DOTCL360N			WT5	KLB360N	WTB700N	DOT300N DOTE360N
DOTCL700N	KL-DOTCL700N		RU-DOTCL700N		KLB700N		DOT700N DOTE700N
DOTCL1000N	KL-DOTCL1000N				—		DOTE1000N

For TCL models

MODEL	COMPONENT	APPLICABLE MODEL
TCL50N	LEVER×1,WIRE×1 HOLDER 1kg×1, Scale pan 100g×1	LC20N,ST24N,ST12N TCF40N,TCF20N,TCF10N,TCR18N
TCL200N	LEVER×1,WIRE×1 HOLDER 1kg×1	LC200N,ST240N,ST120N,ST48N TCF200N,TCF100N,TCR180N
TCL800N	LEVER×1,WIRE×1 HOLDER 1kg×1	ST480N,TCF400N,TCR700N
TCL2000N	LEVER×1,WIRE×1 HOLDER 1kg×1	ST1200N,TCF2000N,TCF1000N TCR1800N

Note 1 : TCL2000N model is supplied on request.

For TM and TME models

MODEL	COMPONENT	APPLICABLE MODEL
2TMTCL	Wire×1, Roller×1, Calibration frame×1, Bolt×2, Scale holder 1kg×1, Scale pan 100g×1	2TM 2TME
3TMTCL	Wire×1, Roller×1, Calibration frame×1, Bolt×2, Scale pan 100g×1+50g×1	3TM, 4TM 3TME

For TG models

MODEL	COMPONENT	APPLICABLE MODEL
ATGTCL24CN	Main Unit, Calibration Pulley × 2 Calibration Wire × 2, Scale Pan (5 and 100g)	ATG models
BTGTCL150CN	Main Unit, Calibration Pulley × 2 Calibration Wire × 3, Scale Pan (5 and 100g)	BTG models

For TDT models

MODEL	COMPONENT	APPLICABLE MODEL
TDTCL60CN	Calibration lever×1, Wire×1, Roller×1, Scale pan 100g×1, Scale holder 1kg×1	TDT60CN
TDTCL600CN	Calibration lever×1, Wire×1, Roller×1, Scale pan 100g×1, Scale holder 1kg×1	TDT600CN

Weights

MODEL	WEIGHT
WP-TCL5	5kg
WP-TCL2	2kg
WP-TCL1	1kg
WS-TCL2	Combination weights

EPP16M2 PRINTER

Printer for Digital Torque Equipment

- Compact Dot Matrix

MODEL	SPEC.
INPUT SIGNAL	RS232C I/F
APPLICABLE MODEL	CD42,TME,TDT,LC,DOTE,R-DT999, CEM2,CTA,CTB,CEM3,TCC
PRINTING METHOD	Dot impact method
PRINTING SPEED	2.5 line/sec.
LINE SPACE	3dot, line base
NUMBER OF PRINTED DIGITS	Standard letter 16 (letter/line)
CHARACTER SIZE	2.6mm (H)×1.7mm (W)
PAPER	57.5mm roll paper
INK RIBBON	Ribbon cassette method
POWER SOURCE	AC adapter DC9V 2A
DIMENSION	106×144×60mm (W.D.H.)
WEIGHT	Approx. 400g (body)
ENVIRONMENTAL CONDITION	Operating temperature : +5℃～+45℃ Storage temperature : −10℃～+70℃
ACCESSORIES	AC adapter 1pc. Rolled paper 1pc. Ribbon Cassette 1pc.

EPP16M2 OPTION

MODEL	DESCRIPTION
408	ROLL PAPER

MODEL	DESCRIPTION
409	RIBBON CASSETTE

CONNECTING CABLE

MODEL	DESCRIPTION
378	Cable for CTA and CTB
379	Cable for CEM2
380	Cable for CD42, TME, TDT, LC, DOTE and R-DT100-3
381	Cable for EPP16M to EPP16M2

R-DT999 DATA TANK

Infrared Data Collector for Torque Equipment

- 999 Data Storage
- External Keypad Setup Functions

MODEL	SPEC.
DATA INPUT	Infrared data input
DISPLAY	7segLED 4 fig,14segLED 6 fig,7segLED
APPLICABLE MODEL	CEM2,CTB,CTA,ST,STC,CEM3
DATA OUTPUT	RS232C I/F (correspondence to USB1.1)
Power Source	AC adapter DC 3V 300mA
OPERATING CONDITION	0～40℃

R-DT999 OPTION

PRINTER

MODEL
EPP16M2

SOFTWARE

MODEL	DESCRIPTION
DFS	DATA PROCESSING SOFTWARE

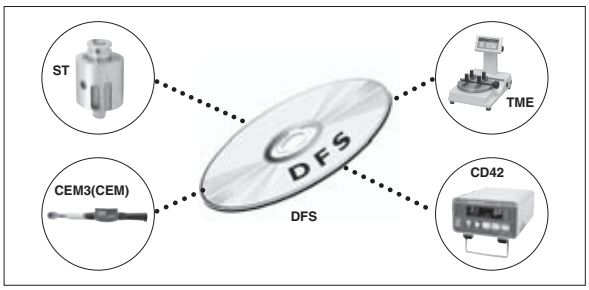
CONNECTING CABLE

MODEL	DESCRIPTION
379	R-DT999 to EPP16M2
575	CEM2/CEM3/R-DT999 to PC (D-SUB 9 pins Female)
584	R-DT999 to PC, (USB A TYPE)

DFS DATA FILE SYSTEM

Data Processing Software

- Especially for Tohnichi Digital Equipment
- Statistics, Standard Deviation, Cp Values
- Charts



BASIC REQUIREMENT OS : Microsoft Windows 98, 2000, XP
Memory : More than 64MB

Note : Connecting cable is an optional accessory.

INTERFACE CABLE TO PERSONAL COMPUTER

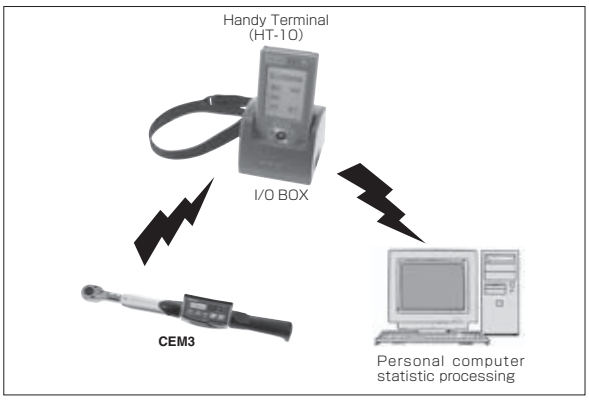
MODEL	DESCRIPTION
575	CEM2, CEM3, R-DT999 → PC (D-SUB 9 pins Female)
561	DOTE, LC, TDT, TME, CD42, TCC → PC (D-SUB 9 pins Female)
579	CTA, CTB → PC (D-SUB 9 pins Female)
584	CEM3, R-DT999 → PC (USB A Connector)
583	CTA-P → PC (D-SUB 9pins Female)

Note : For model CEM3, 99 data transfer is available by setting the CEM2 communication mode.

HT-10 HANDY TERMINAL

Compact Data Collection Device for CEM3

- Upload & Download Torque Measuring Information
- Guides User Through Torque Assembly & Quality Processes
- Statistics and Charting Capabilities



Note 1 : Available upon request
Note 2 : Application should be discussed before installing this system, price will be depending on its specification.

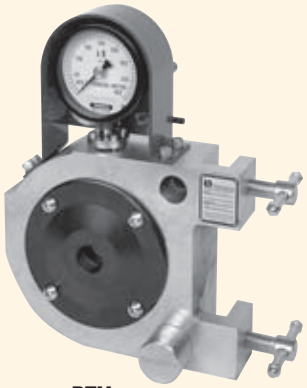
BOLT TENSION METER

BTM/B-BTM BOLT TENSION METER

Hydraulic
Bourdon tube
Direct reading

Hydraulic Bolt Tension Meter

- Measure Bolt Tension to Determine Optimal Torque
- Ideal for Design and Engineering



BTM

B-BTM

Accuracy ±3%

MODEL	CAPACITY		MEASURING BOLT DIAMETER (MIN. LENGTH) mm	Dimension			WEIGHT Approx. kg	MODEL Metric	CAPACITY	
	MIN. ~ MAX.	GRAD.		OVERALL WIDTH	OVERALL THICKNESS	OVERALL HEIGHT			MIN. ~ MAX.	GRAD.
	kN	kN	HIGH TENSION BOLT M16 (70) , M20 (75) , M22 (80) , M24 (85)						ton	ton
BTM400K	100 ~400	5	TORSIA BOLT M16 (65) , M20 (70) , M22 (75) , M24 (80)	260	64	280	12.6	40BTM-2	4 ~40	0.5
B-BTM13K	1.2~ 13	0.2	STANDARD BOLT M5 (20) , M6 (21) , M7 (22) , M8 (23)	106	78	217	7.7	1.3B-BTM	0.12~ 1.3	0.02
B-BTM40K	4 ~ 40	0.5	STANDARD BOLT M10 (29) , M12 (31) , M14 (32)	134	82	241	9.8	4B-BTM	0.4 ~ 4	0.05
B-BTM130K	12 ~130	2	STANDARD BOLT M16 (41) , M18 (43) , M20 (44) , M24 (47)	186	106	287	17.5	13B-BTM	1.2 ~ 1.3	0.2
B-BTM400K	40 ~400	5	STANDARD BOLT M27 (72) , M30 (74) , M36 (79) , M42 (84)	280	126	369	31.0	40B-BTM	4 ~40	0.5

Note 1 : BTM400K includes a torsia type high tension bolt (M20) and plate & bushing for M22 as standard accessories.
Note 2 : B-BTM models contains the plate and bushing for measurable standard bolts as standard accessories.

BTM OPTIONAL PARTS FOR BTM

BUSHING FOR HIGH TENSION BOLT		BUSHING FOR TORSIA BOLT		PLATE FOR HIGHTENTION AND TORSIA BOLT	
NO.	APPLICABLE BOLT	NO.	APPLICABLE BOLT	NO.	APPLICABLE BOLT
650	M16	654	M16	658	M16
651	M20	655	M20	659	M20
652	M22	656	M22	660	M22
653	M24	657	M24	661	M24

Fcon BOLT TENSION STABILIZATION

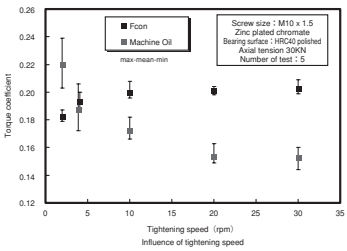
Bolt Treatment

- Creates Consistent Bolt Tension
- Applied to Fasteners and Nuts

MODEL
Fcon

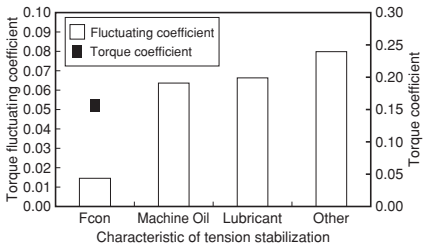
Note : 1 box contains 10 bottles (90g per)

Influence of tightening speed



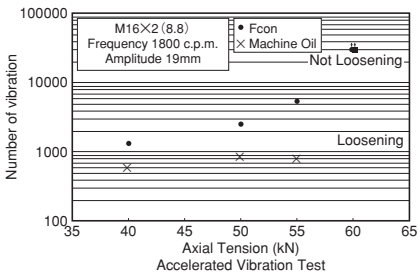
Influence of tightening speed

Axial tension stabilization characteristics



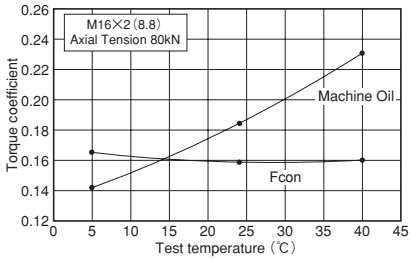
Characteristic of tension stabilization

Loosening characteristics

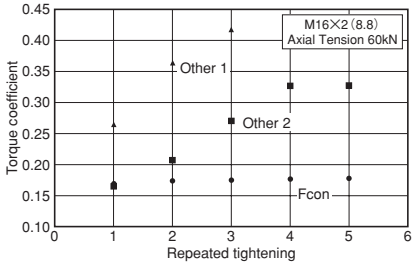


Accelerated Vibration Test

Axial tension stabilization effect depending on temperature



Repeated tightening characteristics



TT2000 ULTRASONIC TIGHTENING TESTER

Ultrasonic

Non-Destructive Axial Bolt Tension Tester

- Input Information Regarding Fastener & Materials
- Sound Wave Lengths are Measured and Compared

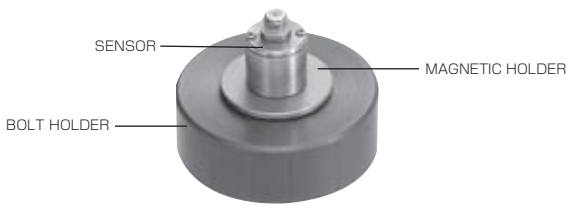
MODEL	DESCRIPTION
Measurement Range	5～10000mm for Steel material
Applicable Bolt Length	50～9000mm
Applicable Bolt Diameter	6mm Dia, or more
Ultrasonic Wave Frequency	0.5～15MHz
Time Axis Resolution	5ns, 200MHz Correspond
Result of Measurement	Bolt initial length (mm), Traveling Time (μS) Bolt axial force (MPa), Elongation (mm)
Axial Force measurement	Decided by bolt diameter and length. Example, measuring of first base echo, A : ϕ10 diameter bolt with 50mm tightening length - approx. 1.47kN B : ϕ20 diameter bolt with 100mm tightening length - approx. 2.94kN
Memory	Total 1500
Bolt temperature Correction	Manual input by key
Display Screen	Color, TFT6.4 type 640 × 480 dots
External Output	8 bits serial interface, RS232C
Power Source	AC85～130V, AC185～265V
Battery	2.5 hours / portable battery. 8 hours / optional buit-in battery.
Operating Condition	0～45℃
Dimensions	160 H × 246 W × 60 D, main unit
Weight	1.2kg, main unit

Note 1 : Auto temperature compensation is available to connect optional thermometer on TT2000C and TT2000M in the limit of −40℃～200℃. Measurement at 60℃ and more requires the sensor for high temperate.
Note 2 : Communication function by RS232C is available only for TT2000C and TT2000M.
Note 3 : Composite output, alarm output encoder input are available to use multi connector box supplied for TT2000M or battery built-in case for option.
Note 4 : DC12V is only available to use with portable battery or battery built-in case of option.

ULTRASONIC TIGHTENING TESTER

MODEL
TT2000
TT2000C
TT2000M

TT OPTION



MODEL	DESCRIPTION
AFC-20G	Axial Force Calibration

MODEL	DESCRIPTION	APPLICABLE BOLT
606	5C4.8N	More than M6, L1＜80mm
607	5C6.4N	More than M8, L1＜50cm
608	5C12.7N	More than M14, L1＜2mm
609	5C19.1N	More than M20, L1＜4mm

Note 1 : L1 is standard bolt length with material in SCM, S-C or ST-ST for ultrasonic wave reflection measurement n=1.
Note 2 : Ultrasonic wave sensor is consisting of 3 parts, Sensor, Magnet Holder and Bolt Holder.
Note 3 : Standard 5C6.4N does not include bolt holder.
Note 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 would provide high reproducibility measurement.
2 The Bolt holder gives same position of sensor to support accurate measurement.

FORCE MEASURING

FP FORCEPEN

Digital display separate

Pen Style Force Sensor

- Compact, Lightweight, User Friendly Operation
- Requires CD42 Compact Display

CD42, DISPLAY (OPTIONAL)

MODEL	CAPACITY MIN. ~ MAX.	RATED OUTPUT	ACCURACY	PERMISSIBLE OVERLOAD	DISPLAY (OPTION)	WEIGHT Approx.	ACCESSORY
	N						
FP1	±0.1~ 1						
FP2	±0.2~ 2						
FP4	±0.4~ 4	1mV/V	±1% F.S.	150%	CD42	80g	Standard Attachment
FP10	±1 ~10						
FP20	±2 ~20						
FP40	±4 ~40						

Note : Display CD42 is sold separately. See page 39.

FG FORCE GRIP

Digital display separate

Grip Style Force Sensor

- For Large Product Testing
- Requires CD42 Compact Display

FG

CD42, DISPLAY (OPTIONAL)

MODEL	CAPACITY MIN. ~ MAX.	RATED OUTPUT	ACCURACY	PERMISSIBLE OVERLOAD	DISPLAY (OPTION)	WEIGHT Approx.	ACCESSORY
	N						
FG40	± 4~ 40						
FG100	±10~100	2mV/V	±1% F.S.	150%	CD42	580g	Standard Attachment
FG200	±20~200						
FG400	±40~400						

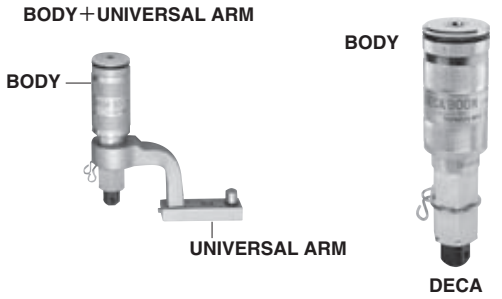
Note 1 : Display CD42 is sold separately. See page 39.
Note 2 : FG is available upon request

DECA TORQUE MULTIPLIER

Manual

Torque Multiplier

- Multiplied Torque Output by 10
- Ideal for Applying High Torque Values with Less Force



Accuracy ±5%

MODEL	OUTPUT TORQUE MIN. ~ MAX.	TORQUE RATIO	Dimension mm OVERALL LENGTH	DIAMETER	OUTPUT SQ. DRIVE	INPUT SQ. DRIVE	WEIGHT Approx. kg	OUTPUT TORQUE MIN.~MAX.	UNIVERSAL ARM (OPTION)
	N·m							kgf·m	
DECA450N	90~ 450	10:1	195	52	19.0	9.5	2.0	9~ 45	UA450N
DECA900N	180~ 900		241	63	25.4	12.7	3.4	18~ 90	UA900N
DECA1800N	360~ 1800		270	78			5.7	36~ 180	UA1800N
DECA3000N	600~ 3000		324	95	31.75	19.0	10	60~ 300	UA3000N
DECA4500N	900~ 4500		367	110	38.1		12.5	90~ 450	UA4500N
DECA9000N	1800~ 9000		464	140	50.8	25.4	34	180~ 900	UA9000N
DECA18000N	3600~18000		540	172	63.5		60	360~1800	UA18000N

Note : Universal arm is sold separately.
ACCESSORIES : DECA450N~DECA3000N in Steel Case
DECA4500N~DECA9000N in Steel, Carrying Case
DECA18000N in Steel Case with Caster

RPTM ROPE TENSION METER

Direct reading
Beam

DIRECTION

Wire Cable Torque Meter

- Measure Tension on Intertwined Cables
- One Touch Operation

Accuracy ±10%

MODEL	MEASURING RANGE MIN. ~ MAX.	GRAD.	OVERALL LENGTH mm	DIAMETER OF ADAPT WIRE, ROPE (REF.) mm	WEIGHT Approx. kg	MODEL Metric	MEASURING RANGE MIN. ~ MAX.	GRAD.
	N	N					kgf	kgf
RPTM2500	500~ 2500	100	375	3.15、4、5	0.7	RPTM250	50~ 250	10
RPTM5000	1000~ 5000	200	445	5、6.3	1.1	RPTM500	100~ 500	20
RPTM10000	2000~10000	200	535	8、9、10	1.7	RPTM1000	200~1000	20
RPTM20000	4000~20000	500	700	11.2、12.5、14	2.9	RPTM2000	400~2000	50

Note 1 : Tell us measuring rope diameter, tension.
Note 2 : Contact us if you measure other than steel wire.
Note 3 : This unit is designed for tension not torque. Do not use as torque wrench.
Note 4 : RPTM is available upon request.

SA REACTION ARM

Lightweight Reaction Arm

- Protects from Potential Kick Back Reaction
- Required Use with AP, DAP, DECA

MODEL	CAPACITY	STANDARDS SOCKET'S LENGTH
SA400N	400N·m	50
SA700N	700N·m	62
SA1200N	1200N·m	62

UA UNIVERSAL REACTION ARM

Universal Reaction Arm

- Protects from Potential Kick Back Reaction
- Required Use with AP, DAP, DECA

MODEL	WEIGHT Approx. kg
UA450N	1.2
UA900N	2.6
UA1800N	4
UA3000N	7.2
UA4500N	10.9
UA9000N	18
UA18000N	—

Note : UA9000N, UA18000N are made-to-order items.

RELATION FIGURE OF SCREW AND TORQUE

(Torque coefficient K=0.2)

Calculation Formula

$T=K \cdot d \cdot F_f$

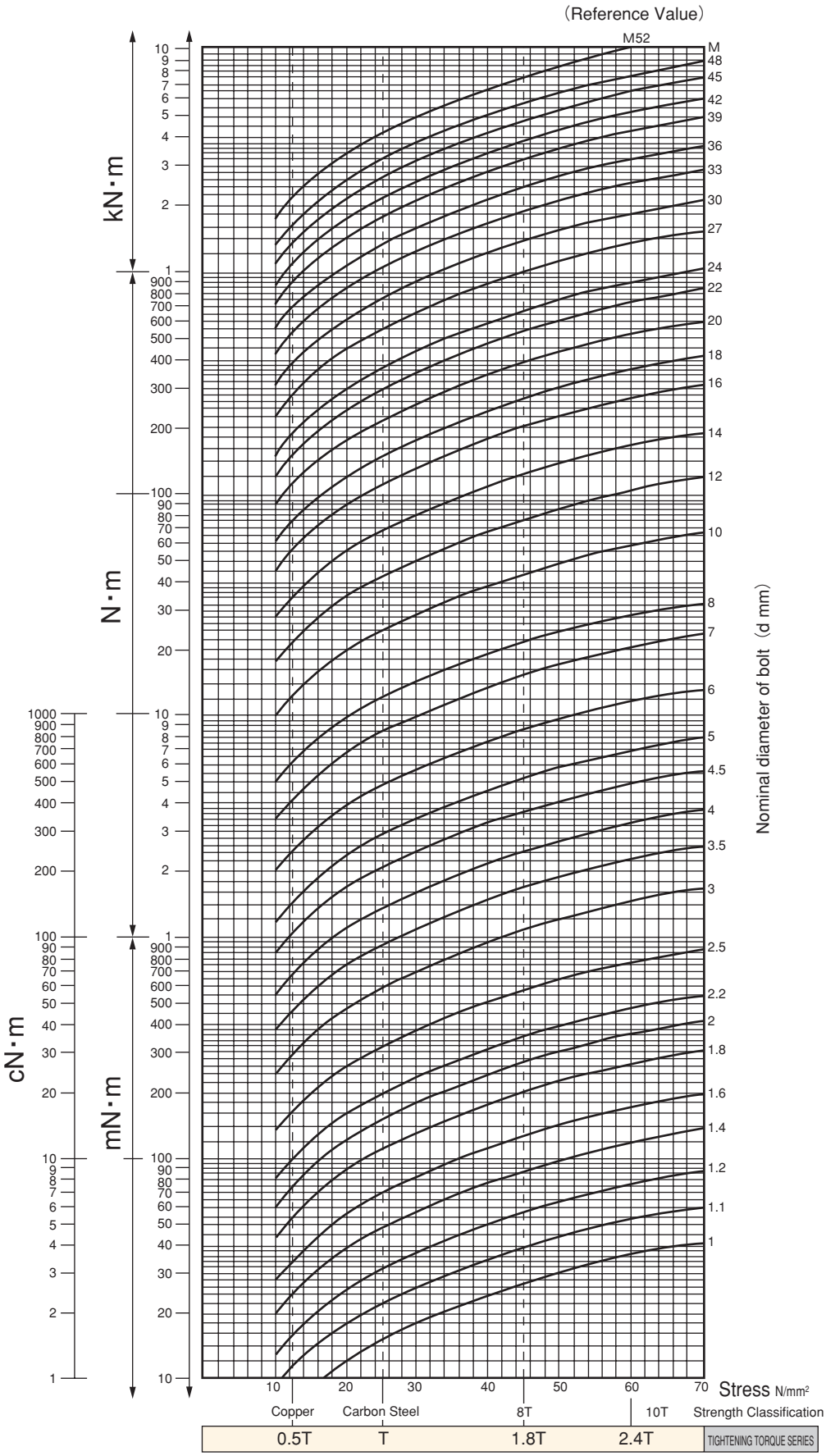
$A_s=\frac{\pi}{4}\left(\frac{d_2+d_3}{2}\right)^2$

$d_3=d_1-\frac{H}{6}$

$H=0.866025P$

$\sigma=\frac{F_f}{A_s}$

T : Tightening torque [N·m/kgf·cm]
K : Torque coefficient 0.2 ($\mu \fallingdotseq 0.15$)
d : Nominal diameter of bolt [mm]
F_f : Axial tension [N/kgf]
A_s : Stress area of bolt [mm²]
(JIS B 1082)
d_2 : Effective diameter of bolt [mm]
(JIS B 0205)
d_1 : Root diameter of bolt [mm]
(JIS B 0205)
H : Fundamental triangle height [mm]
P : Pitch [mm]
σ : Tensile stress of bolt [N/mm² / kgf/mm²]



STANDARD TIGHTENING TORQUE

STANDARD TIGHTENING TORQUE N·m

NOMINAL SIZE OF SCREW	T	0.5T	1.8T	2.4T
	N·m	N·m	N·m	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	0.205
(M1.8)	0.0128	0.064	0.230	0.305
M2	0.176	0.088	0.315	0.42
(M2.2)	0.230	0.116	0.41	0.55
M2.5	0.36	0.180	0.65	0.86
M3	0.63	0.315	1.14	1.50
(M3.5)	1.00	0.50	1.80	2.40
M4	1.50	0.76	2.70	3.6
(M4.5)	2.15	1.08	3.9	5.2
M5	3.00	1.50	5.4	7.2
M6	5.2	2.60	9.2	12.2
(M7)	8.4	4.2	15.0	20.0
M8	12.5	6.2	22.0	29.5
M10	24.5	12.5	44	59
M12	42	21.0	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 axial stress 210 N/mm² stress area of bolt(JIS 1082)
Note : This is not converted from standard tightening torque kgf·cm.

STANDARD TIGHTENING TORQUE kgf·cm

NOMINAL SIZE OF SCREW	T	0.5T	1.8T	2.4T
	kgf·cm	kgf·cm	kgf·cm	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 : This is converted from Standard tightening torque N·m.

SCREWS AND APPLICABLE "T" SERIES

	Standard T series	0.5 T series	1.8 T series	2.4 T series
Screws (Strength) (Material)	4.6～6.6 SS SC	— CR(Brass) CB(Copper) AB(Aluminum)	8.8～12.9 SCr SNC SCM	10.9～12.9 SCr SNC SCM SNCM
Axial stress Standard value kgf/mm² (N/mm²) Max.～Min.	25 (210) 36～19.0 (300～160)	12.5 (105) 18.0～9.5 (150～80)	45 (380) 64～35 (540～290)	60 (500) 86～46 (710～380)
Application (Applicable products)	To be applied to ordinary screws, unless otherwise specified. Ordinary products	Male and female screws with copper, aluminum or plastic, for die-cast plastic products. Electronic products.	Durable screw joints made of special steel including those affected by additional dynamic loads. Vehicles, Engines	Durable screw joints made of special steel including those bearing static loads only. (Friction clamping) Construction products

TORQUE UNIT AND CONVERSION

To measure the tightening torque for screws, kgf·cm has often been used in the past.
This becomes N·m in terms of SI units. Therefore, their relationship is given as:

1N·m=10.1972kgf·cm≒10.2kgf·cm　　1kgf·cm=0.0980665N·m≒0.098N·m

	SI Unit System			Metric Unit System			English Unit Systen		
	mN·m	cN·m (N·cm)	N·m	gf·cm	kgf·cm	kgf·m	ozf·in	lbf·in	lbf·ft
1mN・m=	1	0.1	0.001	10.2	0.0102	0.000102	0.142	0.00885	0.000738
1cN・m=	10	1	0.01	102	0.102	0.00102	1.42	0.0885	0.00738
1N・m=	1000	100	1	10200	10.2	0.102	142	8.85	0.738
1gf・cm=	0.0981	0.00981	0.0000981	1	0.001	0.00001	0.0139	0.000868	0.0000723
1kgf・cm=	98.1	9.81	0.0981	1000	1	0.01	13.9	0.868	0.0723
1kgf・m=	9810	981	9.81	100000	100	1	1390	86.8	7.23
1ozf・in=	7.06	0.706	0.00706	72	0.072	0.00072	1	0.0625	0.00521
1lbf・in=	113	11.3	0.113	1150	1.15	0.0115	16	1	0.0833
1lbf・ft=	1360	136	1.36	13800	13.8	0.138	192	12	1

Note : Effective number is treated as 3 figures.

BOLT TIGHTENING ASSURANCE SYSTEM

—FROM TORQUE CONTROL TO TIGHTENING ASSURANCE SYSTEM—

TIGHTENING ASSURANCE

1. Tohnichi Torque Assurance System advises the users how to tighten bolts properly and how to eliminate various mistakes which occur during bolt tightening.
2. Four major errors during bolt tightening:

1) Human Errors	Missed tightening・Improper tools used
2) Tightening Method Errors	Wrong specifications・Wrong tightening procedure・Wrong selection of tools
3) Improper Tool Errors	Inaccuracy・Mechanical failure
4) Joint Parts Errors	Out of parts tolerance・Bad material・Insufficient lubrication

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

CLASSIFICATION AND CAUSES FOR LOOSENING OF BOLTS

CLASSIFICATION		CAUSE
Bolt Loosening without bolt-turning	1. Initial loosening	Uneven contact surface becomes flat
	2. Subsidence seating	Plastic deformation of bearing surface
	3. Micro-friction loosening	Friction by lateral displacement of contact surface
	4. Loosening by permanent deformation of sealing material	Setting of the gasket
	5. Loosening by over-tightening	Progress of plastic deformation of bolt
	6. Loosening by heat	Variation of internal stress over recrystallization temperature, different thermal expansion of joint members
Bolt loosening with bolt-turning	7. Loosening by lateral external force	Relative displacement of bearing surface and threaded part
	8. Loosening by axial external force	
	9. Loosening by lateral dynamic force	
	10. Loosening by axial dynamic force	Impact by collision, loss and lowering of compressive force of threaded part and bearing surface by shock wave

CHARACTERISTICS DIAGRAM OF DEFECTIVE JOINT

1. Design Failure
- Prospect failure of required tightening force.
- Insufficient strength of bolt joint.
- Insufficient permission variantion width of tightening force.
- Prospect failure of drop of initial tightening force.
- Indication failure of tightening operation.
- Insufficent loosing measure.
- No availability of tightening tools.
- No availability of tightening inspection.

2. Improper Tightening by Operator
- Incorrect tightening procedure performed.
- Improper handing of tools.
- Missed tightening.
- Instruction failure to operator.

3. Improper Tightening Tool
- Change of working condition.
- Function failure.
- Decrease in accuracy.
- Improper selection.

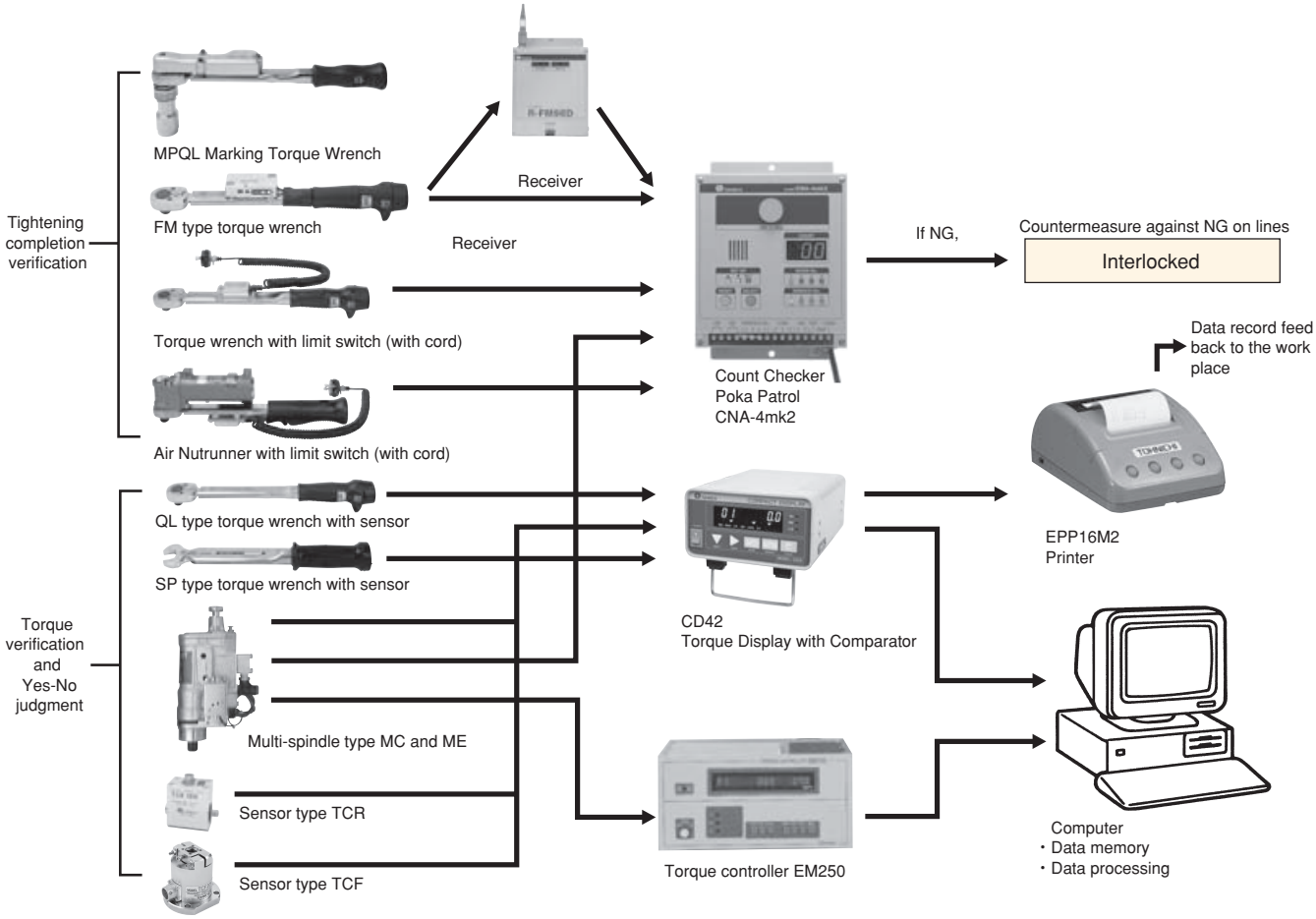
4. Defective Bolt Joint
- Excessive variation width of torque coefficient.
- Change of condition on friction part of screw.
- Process failure of bolt.
- Insufficient strength of bolt.
- Size error of bolt.
- Right angle defective of bearing surface.

5. Failure of Service
- Insufficient education to operator.
- Check failure of loosening of bolts.
- No proper tightening tools available.
- Insufficient instruction about tightening spec.

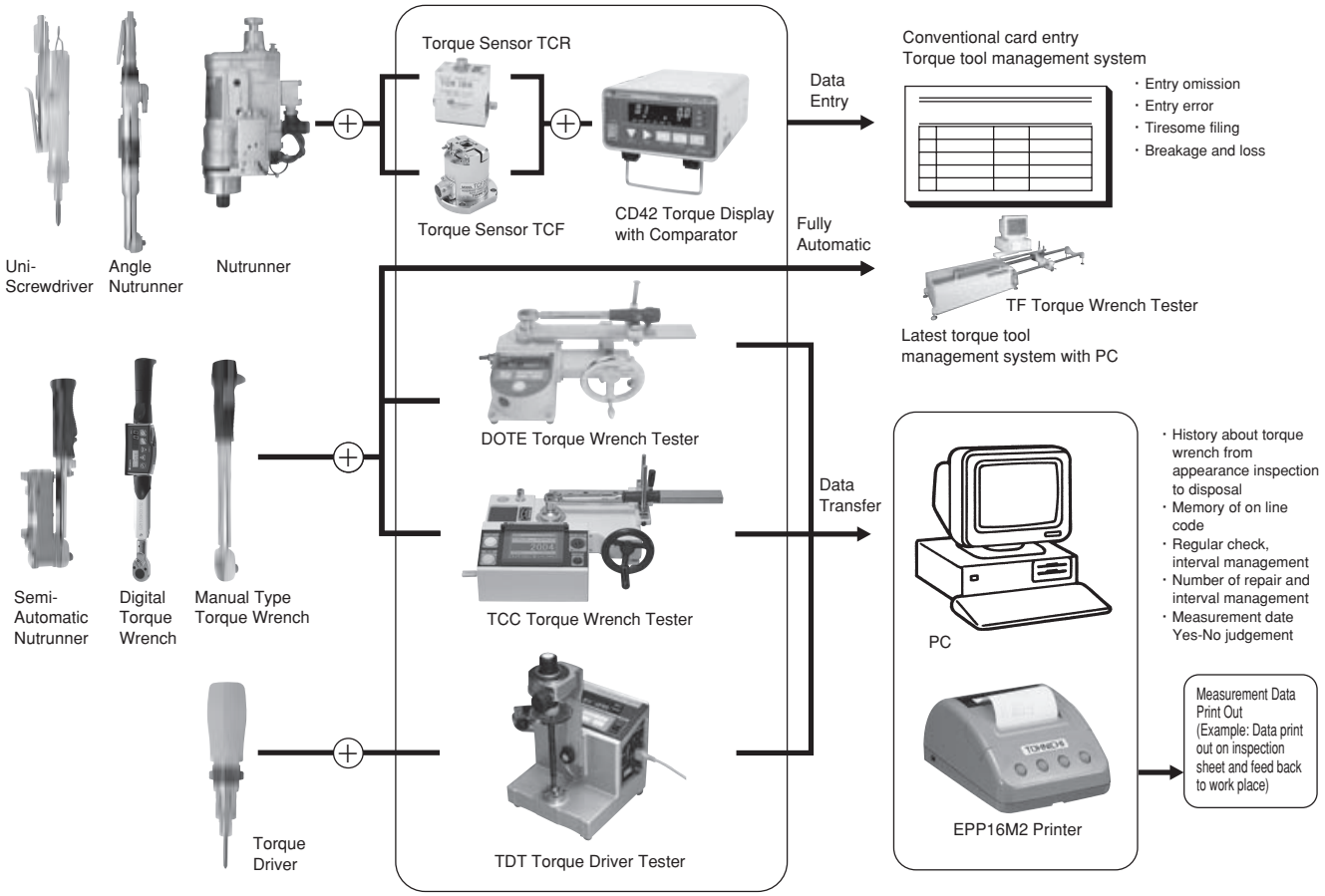
6. System Failure
- Insufficent standardization of bolt tightening.
- Insufficent indication of tightening spec. to operator.
- Insufficent observation sysytem to tightening failure.
- Insufficent bolt tightening.
- Insufficent training of bolt tightening.

Defective Joint
- Damage of joint
- Loose fastener
- Improper alignment
- Conduction defective
- Leakage

TIGHTENING ASSURANCE SYSTEM



TOOL MANAGEMENT SYSTEM (Labor-saving in Measurement, Inspection and Calibration)



Your Torque Partner

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