DWQL

Analog Torque Wrench with Digital Angle Module

Direction

RoHS

DWQL100N

Assembly | Adjustable | Digital | Ratchet Head | Graduation | ISO6789:2003

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

Accuracy ±3%

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

Note

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

* M-DW shows 20° from snug torque.

M-DW

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

Digital Angle Module

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

Note

1. M-DW can be installed on torque wrench with limit switch except for the following models: QSPCALS, ALS, ACLS, and MS type torque wrench, Refer to page 28.
2. Operate within torque range of installed torque wrench.
3. Cerlificate of angle calibration is attached.

M-DW Specifications

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

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

Step 1. Remove Limit Switch.

Step 2. Put M-DW on LS type torque wrench.

Torque wrench with Limit Switch

Step 3. Torque wrench with Digital Angle Module

WQL

Analog Torque and Angle Wrench

Direction

RoHS

WQL100N4

Assembly | Ratchet Head | Graduation | Angle Direct Reading | ISO6789:2017

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

Accuracy ±3%

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

Note

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

MPQL/MQL

Direction

Marking Torque Wrench

RoHS

MPQL100N4 with socket

Marked bolts

Assembly | Pre-Lock | Ratchet Head | Graduation | Quick Drying Ink | ISO6789:2017

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

Accuracy ±3%

S.I. Model	Torque Range [N·m] Min.-Max.	Grad.	Metric Model	Torque Range [kgf·cm/kgf·m] Min.-Max.	Grad.	American Model	Torque Range [lbf·in/lbf·ft] Min.-Max.	Grad.	Overall Length [mm]	Weight [kg]
				kgf·cm	kgf·cm		lbf·in	lbf·in		
MPQL50N	10-50	0.5	450MPQL	100-500	5	450MPQL-A	100-400	5	246	0.7
							lbf·ft	lbf·ft		
MPQL100N4	20-100	1	900MPQL4	200-1000	10	900MPQL4-A	15-75	1	320	0.95
MPQL140N	30-140		1400MPQL	400-1400		1400MPQL-A	30-100		385	1.1
MPQL200N4	40-200		1800MPQL4	400-2000	20	1800MPQL4-A	30-150		468	1.8
		2		kgf·m	kgf·m			2		
MQL280N	40-280		2800MQL3	4-28	0.2	2800MQL3-A	30-210		692	2.6

Note: Use Tohnichi's original socket. Standard sockets can not be used.

Standard Accessories: Hex key for torque adjustment

MQSP

Marking Torque Wrench

Direction

RoHS

MQSP100N with socket

Assembly | Preset | Ratchet Head | Quick Drying Ink | ISO6789:2017

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

Accuracy ±3%

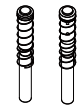
Model	Torque Range [N·m] Min.-Max.	[kgf·cm] Min.-Max.	[lbf·in] Min.-Max.	Overall Length [mm]	Weight [g]
MQSP50N	10-50	100-500	88.5-442.5	240	0.7
MQSP100N	20-100	200-1000	177-885	315	1.0
MQSP140N	30-140	400-1400	266-1238	380	1.1
MQSP200N	40-200	400-2000	354-1769	465	1.8

Note:
1. Use Tohnichi original socket. Standard sockets can not be used.
2. A torque wrench tester is necessary for torque adjustment. Specify required set torque when you order.
3. Adjusting tool #930 is sold separately.
4. MQSP200N has knurled handles.

MPQL/MQL/MQSP Optional Accessories

Marker Head

Model	Part #	Marking size	Color	Applicable Socket Size
MK53RB	1780	5mm	Red, Blue	W17 or more *Need a Maker Guide
MK53WY	1782		White, Yellow	
MK53RB	2780		Red, Blue	W16 or less
MK53WY	2782		White, Yellow	
MK93RB	2783	9mm	Red, Blue	W17 or more
MK93WY	2785		White, Yellow	

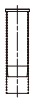


Marker Head

Note
1. #1780/1782 is for previous sockets, size W16 or less, #1700 to 1704.
   For the size W17 or more of new Sockets, #2705 to 2717, 2716 and 2717, requires a Marker Guide #2786 additionally.
2. #2783/2785 is for new Sockets only. When use it with an old sockets, size W17 or more, #1705 to 1723, remove Marker Return Spring and a Guide from the Marker Head. Previous 9 mm Marker Head #1783, 1785 can not be used for new Sockets.
3. When newly use 5 mm marking for W17 or more of new Sockets #2705 to 2723, 2716 and 2717, purchase Marker Guide set #2787/2788.

Marker Guide

Model	Part #	Marking size	Content
Marker Guide	2786	-	-
Marker Guide set MK53RB	2787	5mm	1780 and 2786
Marker Guide set MK53WY	2788		1782 and 2786



No.2786

Note
1. Marker Guide 2786 can be used with Marker Head 1780, 1782 only.
2. 2787 and 2788 are applicable for the sockets over W17, #2705 to 2723, 2716 and 2717.

Refill Ink and Solvent

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

No.776
No.777
No.794

No.1770
No.1771

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

Felt Tip

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

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

Note: Sold in pack of ten tip

Extension Bar

Specification	Part #	Applicable Model
50mm	1749	MPQL/MQSP50N-200N4
100mm	1748	MPQL/MQSP50N-200N4
50mm	1752	MQL280N

No.1749 No.1748 No.1752

Note: Only one Extension Bar can be connected to a socket.

Socket

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

Note
1. To be applied new Maker Heads #2780 and 2782 to previous W16 or less Sockets #1700 to 1704, remove a spring from the inside of socket and insert it.
2. To use previous W17 or more size of Sockets #1705 to 1723, 2716 and 2717 with 5mm Marker heads #1780/1782, required Marker Guide #2786.

Inch Size Socket

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

MPQL/MQSP Torque Adjusting Adapter

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

MQSP Adjusting Tool

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

As of May 2016, sockets and marker head were renewed. Contact to Tohnichi for combination of previous parts and new one.

MCSP

Marking Torque Wrench

Direction

RoHS

MCSP50NX15D
with a MSH head and maker

Marking Example

Assembly | Preset | Interchangeable | ISO6789:2017

- Interchangeable type marking torque wrench.
- Put ink mark on a bolt/nut when torque acheived.

Accuracy ±3%

Head Size	Model	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm/kgf·m] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Weight [kg]
	MCSP50N×15D	10-50	100-500	88.5-442	282	0.65
15D	MCSP100N×15D	20-100	200-1000	177-885	355	0.9
	MCSP140N×15D	30-140	300-1400	266-1238	418.5	1.0

Note
1. Overall length does not include interchangeable head.
2. Adjusting tools and MSH head, marker pen are sold separately.
3. A torque wrench tester is necessary for torque setting. Specify required set torque when you order.

MPCL

NEW Marking Torque Wrench

Direction

RoHS

MPCL50NX15D
with a MSH head and maker

Marking Example

Assembly | Pre-Lock | Interchangeable | ISO6789:2017

- Pre-lock style of spanner type marking torque wrench.

Accuracy ±3%

Head Size	Model	Torque Range [N·m] Min.-Max.	Torque Range 1 Grad.	Standard accessories	Overall Length [mm]	Weight [kg]
	NEW MPLC50N×15D	10-50	0.5	Torque setting hex key	282	0.65
15D	NEW MPLC100N×15D	20-100	1		355	0.9
	NEW MPLC140N×15D	30-140			418.5	1.0

Note
1. Overall length does not include interchangeable head.
2. Adjusting tools and MSH head, marker pen are sold separately.

MCSP/MPCL Optional Accessories

Spanner type Interchangeable Head

Model (Body size x Spanner size)	Tmax. [N·m]	Head Outside Width	Head Thickness	Weight [g]	Applicable Marker End
NEW MSH15Dx10	30	30	7.5	80	1671 Silver
MSH15Dx12			8	82	
MSH15Dx13		31		83	
MSH15Dx14		32		84.5	
MSH15Dx16	40	35		95	
MSH15Dx17	55	38	9	106.5	
MSH15Dx18		39		108	
MSH15Dx19			10	115	1672 Black
MSH15Dx21	75	44		123	
MSH15Dx22			11	132.5	
MSH15Dx24		46		132	
MSH15Dx26	100	50	12	152.5	1673 Gold
MSH15Dx27		51		150.5	
MSH15Dx30	140	58	13	192	
MSH15Dx32		60		194.5	

Note
1. One piece of Maker End and attachement bolt comes with a MSH head.
2. MCSP/MPCL body and MSH head are fixed by the attachment bolt W2 mm.

Marker Pen

Part #	Description
1651	Red maker, 10pcs/pack
1652	Red maker, 100pcs/pack
1653	Blue maker, 10pcs/pack
1654	Blue maker, 100pcs/pack

Note
1. Disposable type maker.
2. 2000 times of stamping by a maker. * It depends on conditions.

Marker End

Part #	Description
1671	Silver
1672	Black
1673	Gold

Adjusting Tool

Part #	Description
930	MCSP50N - 140N

CMQSP

Marking Torque Wrench

Direction

RoHS

CMQSP-M8

Marked bolt head

Assembly | Preset | Ratchet Head | Quick Drying Ink | ISO6789:2017

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

Accuracy ±3%

Model	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Width Across Flats [mm]	Overall Length [mm]	Weight [kg]
CMQSP-M6	5-25	50-250	44.3-221.2	5	241	0.85
CMQSP-M8	10-50	100-500	86.5-442.5	6		0.85
CMQSP-M10	20-100	200-1000	177-865	8	320	1.13
CMQSP-M12	30-140	300-1400	265.5-1239.1	10	380	1.13

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

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

CMQSP Optional Accessories

Bit

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

Marker Head

Part #	Description
792	Marker Head for CMQSP

Refill Ink and Solvent

Part #	Description
776	White Ink
777	Yellow Ink
794	Solvent

CMQSP Adjusting Adapter

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

CMQSP Adjusting Pole Holder

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

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

CMQSP Adjusting Tool (P.49)

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

CNA-4mk3

RoHS

POKA Patrol/
Count Checker

Assembly | Digital | Relay Counter | Judgment

- Tightening count verification with connecting up to 4 torque wrenches.
- Max. 8 preset counts, timer, alart by buzzer and lamp function are built in.
- Ideal for manufactuaring process management of mixed production line.

CNA-4mk3

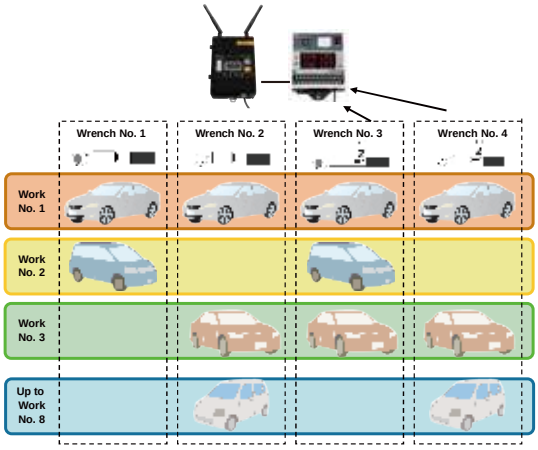
Count Display	16 × 32 dot-matrix LEDs
OK/NG Judgment Display	30 × 25 square display lamp (commonly used for OK/NG) OK: Blue lamp turned on NG: Red lamp blinking + Buzzer sounds (4 patterns)
Work No. Selection Display	1-digit 7-segment LED
Count Input	Contact input × 4
Max. Tightening Number of Bolts	99 counts
Max. Number of Works	8 sets
OK/NG Judgment Setting	• Preset judgment, • END input judgment, • Automatic judgment (0 to 300 seconds in steps of 1 second)
Output Function	• OK/NG output (Relay contact output rating: 30 V DC, 1 A, 125 V AC, 0.3 A) • Torque wrench selection signal output (Open collector rating: 100 mA)
Input Function	• SELECT input × 4, • START input, • END input, • RESET input, • WORK SENSOR input
Timer Function Setting	• Double count prevention timer (0 to 10 seconds in steps of 0.1 second) • Automatic reset timer (0 to 60 seconds in steps of 1 second) • Interval warning timer (0 to 99 seconds in steps of 1 second)
Setting Method	Special-purpose application software (USB communication), key operation
Operating Condition	0 ~ 40 °C, Below 85%RH (no condensation)
Power Supply/Electricity Consumption	AC100 ~ 240V ± 10% 50/60Hz, Below 10W
Weight/Dimension	400g, W121 × D175 × H44.9mm

Standard Accessories: Connecting cable (CNA-4mk3 to PC, USB A-B type)

Add the Count Checker to complete your torque verification system, to visualize and track clicks captured from a variety of compatible Tohnichi models.

Compatible Models
- LS/MS Limit Switch Wrenches.
- Wrenches & Receivers Models Series: FH/FHM, FHSLS, FHP, FHD, FD/FDD, BLA, BLE and FMA

CNA-4mk3 Outline



Setting example

Connect 2 LS torque wrenches directly and 2 Wireless torque wrench through R-CM receiver with M-FH module.

Work No.2 is required to tighten 2 different portions, one has hexagon bolts 4pcs and the other has cap screw 3pcs

No.	Setting	WRENCH No.1	WRENCH No.2	WRENCH No.3	WRENCH No.4
2	Tightening count	4	0	3	0

Set the number of bolts (0-99pcs) the work needs for each torque wrench. Set 0 when no torque wrench is needed.

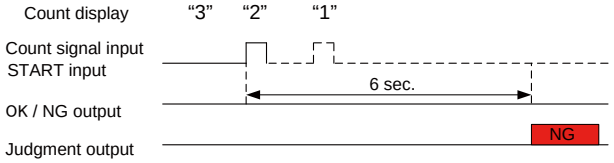
Example of Various Timer Functions

Automatic Judgment Timer (1-300 sec. 1 sec. interval)

Starts after START input or input of first count signal, and judges OK/NG as the timer reaches set time

[Timing chart]

Tightening number 3pcs, Judgment mode JG3, Automatic judgment timer 6sec.

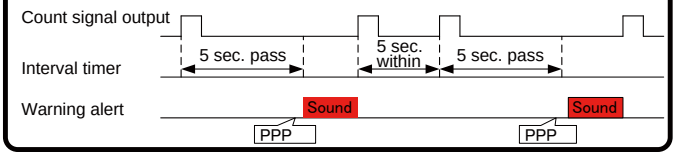


Interval Timer (0-99 sec. 1 sec. interval)

If the operator does not go on to the next bolt within the interval timer (0-99 sec. 1 sec. interval), the alarm goes off to warn the operator.

[Timing chart]

Tightening number 4pcs, Interval timer 5 sec.

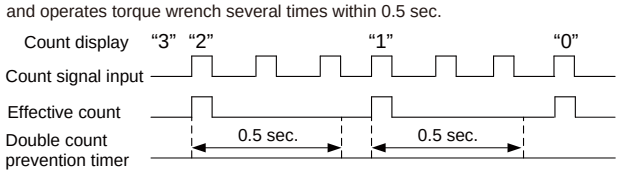


Double count prevention (0.1-10 sec. 0.1 sec. interval)

Prevents counting an accidental double click

[Timing chart]

Tightening number 3pcs, set on 0.5 sec.
and operates torque wrench several times within 0.5 sec.



Easy setting with CNA-4mk3 setting software

Setting software gives instruction for each setting parameter.

Torque Wrench with Limit Switch

- Limit switch counts the number of "Clicks".
- Connect to PLC or Count Checker/CNA-4mk3 to build verification system
- Can be upgraded into wireless output system by installing T-FHSLS256

QLLS25N5

QLLS100N4

SPLS38N2×17-MH

QL type with LS RoHS

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

CL type with LS RoHS

S.I. Model	Metric Model
CLMS2N×8D-MH	20CLMS-MH
CLMS5N×8D-MH	50CLMS-MH
CLMS10N×8D-MH	100CLMS-MH
CLMS10N×8D	100CLMS
CLMS15N×8D	150CLMS
QLMS15N×8D-MH	150CLMS-MH
CLLS25N5×10D	225CL5LS
CLLS50N×12D	450CL3LS
CLLS100N×15D	900CL3LS
CLLS140N×15D	1400CL3LS
CLLS200N×19D	1800CL3LS
CLLS280N×22D	2800CL3LS
CLLS420N×22D	4200CL2LS

SP2/-MH type with LS RoHS

Model (Body Size × Width)	
SP2MS/SP2LS	SPLS2-MH
SPMS2N2×5.5	-
SPMS2N2×7	-
SPMS2N2×8	-
SPMS2N2×10	-
SPMS2N2×12	-
SPMS2N2×13	-
SPMS2N2×17	-
SPMS2N2×19	-
SPMS8N2×7	-
SPMS8N2×8	-
SPMS8N2×9	-
SPMS8N2×10	-
SPMS8N2×12	-
SPMS8N2×13	-
SPMS8N2×19	-
SPMS8N2×24	-
SPMS8N2×27	-
SPLS19N2×10	SPLS19N2×10-MH
SPLS19N2×11	SPLS19N2×11-MH
SPLS19N2×12	SPLS19N2×12-MH
SPLS19N2×13	SPLS19N2×13-MH
SPLS19N2×14	SPLS19N2×14-MH
SPLS19N2×17	SPLS19N2×17-MH
SPLS19N2×19	SPLS19N2×19-MH
SPLS19N2X21	SPLS19N2×21-MH
SPLS19N2-1×10	SPLS19N2-1×10-MH
SPLS19N2-2×10	SPLS19N2-2×10-MH
SPLS19N2-3×10	SPLS19N2-3×10-MH
SPLS38N2×8	SPLS38N2×8-MH
SPLS38N2×9	SPLS38N2×9-MH
SPLS38N2×10	SPLS38N2×10-MH
SPLS38N2×11	SPLS38N2×11-MH
SPLS38N2×12	SPLS38N2×12-MH
SPLS38N2×13	SPLS38N2×13-MH
SPLS38N2×14	SPLS38N2×14-MH
SPLS38N2×16	SPLS38N2×16-MH
SPLS38N2×17	SPLS38N2×17-MH
SPLS38N2×19	SPLS38N2×19-MH
SPLS38N2×22	SPLS38N2×22-MH
SPLS38N2×24	SPLS38N2×24-MH
SPLS38N2×27	SPLS38N2×27-MH
SPLS38N2-1×10	SPLS38N2-1×10-MH
SPLS38N2-2×10	SPLS38N2-2×10-MH

QSP type with LS RoHS

Model
QSPMS12N4
QSPLS25N3
QSPLS50N3
QSPLS100N4
QSPLS140N3
QSPLS200N4
QSPLS280N3
QSPLS420N

CSP type with LS RoHS

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

QRSP type with LS RoHS

Model
QRSPLS38N×17
QRSPLS38N×19
QRSPLS38N×21
QRSPLS38N×24

SP2/-MH type with LS RoHS

Model (Body Size × Width)	
SP2LS	SP2LS-MH
SPLS38N2-3×10	SPLS38N2-3×10-MH
SPLS67N2×14	SPLS67N2×14-MH
SPLS67N2×16	SPLS67N2×16-MH
SPLS67N2×17	SPLS67N2×17-MH
SPLS67N2×18	SPLS67N2×18-MH
SPLS67N2×19	SPLS67N2×19-MH
SPLS67N2×21	SPLS67N2×21-MH
SPLS67N2×22	SPLS67N2×22-MH
SPLS67N2×24	SPLS67N2×24-MH
SPLS67N2×27	SPLS67N2×27-MH
SPLS67N2×29	SPLS67N2×29-MH
SPLS67N2×30	SPLS67N2×30-MH
SPLS67N2×32	SPLS67N2×32-MH
SPLS67N2×33.3	SPLS67N2×33.3-MH
SPLS120N2×14	SPLS120N2×14-MH
SPLS120N2×17	SPLS120N2×17-MH
SPLS120N2×18	SPLS120N2×18-MH
SPLS120N2×19	SPLS120N2×19-MH
SPLS120N2×21	SPLS120N2×21-MH
SPLS120N2×22	SPLS120N2×22-MH
SPLS120N2×23	SPLS120N2×23-MH
SPLS120N2×24	SPLS120N2×24-MH
SPLS160N2×19	SPLS160N2×19-MH
SPLS160N2×21	SPLS160N2×21-MH
SPLS160N2×22	SPLS160N2×22-MH
SPLS160N2×24	SPLS160N2×24-MH
SPLS160N2×26	SPLS160N2×26-MH
SPLS160N2×27	SPLS160N2×27-MH
SPLS220N2×19	SPLS220N2×19-MH
SPLS220N2×22	SPLS220N2×22-MH
SPLS220N2×24	SPLS220N2×24-MH
SPLS220N2×27	SPLS220N2×27-MH
SPLS220N2×29	SPLS220N2×29-MH
SPLS220N2×30	SPLS220N2×30-MH
SPLS220N2×32	SPLS220N2×32-MH
SPLS220N2×34	SPLS220N2×34-MH
SPLS220N2×36	SPLS220N2×36-MH
SPLS310N2×22	SPLS310N2×22-MH
SPLS310N2×24	SPLS310N2×24-MH
SPLS310N2×27	SPLS310N2×27-MH
SPLS310N2×30	SPLS310N2×30-MH
SPLS310N2×32	SPLS310N2×32-MH
SPLS310N2×41	SPLS310N2×41-MH
SPLS310N2×46	SPLS310N2×46-MH

PQL type with LS RoHS

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

PCL type with LS RoHS

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

TiQL type with LS RoHS

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

QSPCA type with LS RoHS

Model
QSPCAMS6N
QSPCAMS12N
QSPCALS30N
QSPCALS70N

RSP2/-MH type with LS RoHS

Model (Body Size × Width)	
RSP2MS/RSP2LS	RSP2LS-MH
RSPMS8N2×8	-
RSPMS8N2×10	-
RSPLS19N2×8	RSPLS19N2×8-MH
RSPLS19N2×10	RSPLS19N2×10-MH
RSPLS19N2×13	RSPLS19N2×13-MH
RSPLS38N2×10	RSPLS38N2×10-MH
RSPLS38N2×12	RSPLS38N2×12-MH
RSPLS38N2×13	RSPLS38N2×13-MH
RSPLS38N2×14	RSPLS38N2×14-MH
RSPLS38N2×16	RSPLS38N2×16-MH
RSPLS38N2×17	RSPLS38N2×17-MH
RSPLS67N2×14	RSPLS67N2×14-MH
RSPLS67N2×16	RSPLS67N2×16-MH
RSPLS67N2×17	RSPLS67N2×17-MH
RSPLS67N2×18	RSPLS67N2×18-MH
RSPLS67N2×19	RSPLS67N2×19-MH
RSPLS120N2×17	RSPLS120N2×17-MH
RSPLS120N2×19	RSPLS120N2×19-MH
RSPLS120N2×22	RSPLS120N2×22-MH
RSPLS160N2×19	RSPLS160N2×19-MH
RSPLS160N2×22	RSPLS160N2×22-MH
RSPLS160N2×24	RSPLS160N2×24-MH
RSPLS220N2×22	RSPLS220N2×22-MH
RSPLS220N2×24	RSPLS220N2×24-MH
RSPLS220N2×27	RSPLS220N2×27-MH
RSPLS310N2×24	RSPLS310N2×24-MH
RSPLS310N2×27	RSPLS310N2×27-MH
RSPLS310N2×30	RSPLS310N2×30-MH

SP2-N/-MH type with LS RoHS

Model (Body Size × Width)	
SP2LS-N	RSP2LS-N-MH
SPLS19N2-1×10N	SPLS19N2-1×10N-MH
SPLS19N2-3×10N	SPLS19N2-3×10N-MH
SPLS19N2-4×10N	SPLS19N2-4×10N-MH
SPLS19N2-5×10N	SPLS19N2-5×10N-MH
SPLS19N2-8×10N	SPLS19N2-8×10N-MH
SPLS19N2-9×10N	SPLS19N2-9×10N-MH
SPLS38N2×14N	SPLS38N2×14N-MH

Limit switch specifications
AC30V Below 1A
DC30V Below 1A

Note
1. Refer to base model series for torque ranges and wrench specs.
2. Female connector for LS cable is sold separately. Part# WA5219K.
3. Standard curl cord can be extended to about 2m in full extension.
4. The curl cord length of SPLS19N2-8×10N is about 5m in full extension.
5. SPLS-MH, RSPLS-MH models are made to oder products.
6. SPMS2 models come with ISO6789:2003 cert when request torque setting.

R-CM

Modular Coversion Receiver

RoHS

- Modular radio receiver for wireless torque wrench and driver
- Interchangeable modules allow for easy upgrades from basic radio signal to torque data transfer system
- Accepts 4 different interchangeable radio modules with ability to accept the next generation modules with easy exchange on the R-CM unit.

R-CM

R-CM with M-FH radio module

Mounting position of Redio Module

Specifications

Model	Receiver	Available Radio Module			
	R-CM	M-FH	M-FD	M-BLA	M-BLE
Frequency	Depend on the module	2.402GHz-2.479GHz		902.875MHz	868.3MHz
Communication		Spread spectrum (FHSS)		-	-
Modulation		GFSK		FSK	ASK
Group channel		256 (000-255)		-	-
ID		3-digits (000-999), 7-digits alphanumeric		8-digits fixed, not selectable	
In/Output	Relayx4, RS232C	-		-	
Input	LS-IN, Reset	-		-	
Power supply	DC24V	-		-	
Antenna	Depend on the module	Diversity antenna		Dipole antenna	
Distance		M-FH mode: 10 - 30m R-FH mode: 10 - 20m	10 - 20m	10 - 20m	
Temperature in use	0 - 50 ℃				
Weight (kg)	0.24	0.047	0.036	0.36	0.035
Other function	Time stamp, Battery alert, Remote setting, Quick pairing, Count checker (OUT1, OUT2)	M-FH mode, R-FH mode:	-	-	-

Note

1. Communication distance varies depending on surrounding radio environment.
2. M-FH mode: Advanced function mode, available Time stamp, Battery alert, long-distance communication mode.
   R-FH mode: Compatible mode with previous FH256MC series
3. M-FH mode is available for the newly updated T-FH/T-FHM transmitter which has a white antenna cover.
   The previous transmitter, black antenna cover type is available at R-FH mode only and cannot be converted.
4. M-FD, M-BLA/BLE are not support Remote Setting function.
5. Count cheker function is not available for M-FD.
6. Multiple wrenches can connect to one receiver as long as they do not signal at the exact same time.
7. An Ethernet terminal can be attached as an option.
8. Contact Tohnichi for status of wireless certification acquisition for each country.

Standard Accessory Part No. 1070

R-CM New Functions

Advanced Longer Distance Radio Wave

R-CM with M-FH module at M-FH mode, the wraparound radio wave avoids obstructions between receiver and transmitter.
* For T-FH/T-FHM/FHW at M-FH mode

Battery Alert

R-CM receives residual battery life signal from the transmitter and alerts when the voltage drops.
* For T-FH/T-FHM/FHW at M-FH mode

Quick Pairing

Easy pairing with transmitters when the tools require replacement
* For previous T-FH256MC and T-FH/T-FHM/FHW

Remote Setting

Group, ID and Judgment code are changed remotely. Convenient when receiver is located out of reach.
* For previous T-FH256MC and T-FH/T-FHM/FHW

Count Checker Function

Available count checker function (1-99 count) for the wrench set in Output 1.
* For M-FH, M-BLA and M-BLE

R-CM Optional Accessories

M-FH M-FD M-BLA M-BLE

IO-CM BZ-CM SB-FH2

Part No. 1070

BA-8R

Radio Module

Interchangeable Type Radio Modules for R-CM

RoHS

Model	Specification	Available Transmitter
M-FH	2.402GHz-2.479GHz FHSS radio signal	R(N)TDFH/FHP/FHSLS256/T-FH256MC(-LS),T-FH,T-FHM,FHW
M-FD	2.402GHz-2.479GHz FHSS data transfer	T-FD
M-BLA	902.875MHz solar powered radio signal	T-BLA
M-BLE	868.3MHz solar powered radio signal	T-BLE

Standard Accessory Antenna

Optional Extension Box

Extend relay output and loud buzzer with big lamp of R-CM

RoHS

Model	Applicable Module	Specification
IO-CM	M-FH, M-BLA, M-BLE	Add additional 4 relay output
BZ-CM	M-FH, M-FD, M-BLA, M-BLE	Extend loud-buzzer and large lamp

Note The power is supplied from R-CM.

Setting Box

Manage 4 tightening signals from receiver and output to external device

RoHS

Model	Applicable Module	Specification
SB-FH2	M-FH, M-FD	Input RS232C, Power DC9V battery x 1

Connecting Cable

For setting and RS232C data output

Part No.	Description
387	D-sub 9 Pin female

AC Adapter

AC adapter for R-CM

Model	Applicable Model	Description
BA-8R	R-CM	AC100V-240V, cable length 2m

DIN Rail

280mm DIN rail to fixing R-CM, IO-CM and BZ-CM

Part No.	Description
1070	280mm

FH Series

Radio Frequency
Torque Wrench System

- Wireless error-proofing, Pokayoke, system by 2.4GHz FHSS ISM band
- Wrench ID transfer feature establishes bolt tightening traceability
- R-CM+M-FH module features diversity antenna for long-range communication
- Easily change frequency with wireless setting box, SB-FH2

Torque wrench with FH256MC transmitter popular model series.

QLFHM100N4

SPFHM19N2X14

CSPFHP3N4X8D *

QSPFHP6N4

CSPFHP12N4X8D
with QH head

QSPCAFHP12N

T-FH / T-FHM

T-FHSLS256

R-CM

IO-CM

BZ-CM

R-CM, IO-CM and BZ-CM with fixing on standard accessory DIN rail Part No.1070.

M-FH

SB-FH2

FH-MHD

FH-COD

QLFH *Adjustable type

S.I. Model
QLFHM25N5
QLFHM50N
QLFHM100N4
QLFHM140N
QLFHM200N4
QLFHM280N
QLFHM420N

QLFH * Adjustable type

Metric Model
225QL5FHM
450QL3FHM
900QL4FHM
1400QL3FHM
1800QL4FHM
2800QL3FHM
4200QL2FHM

QSPFH * Preset type

Model
QSPFHM25N3
QSPFHM50N3
QSPFHM100N4
QSPFH1M40N3
QSPFHM200N4
QSPFHM280N3
QSPFHM420N

CSPFH * Preset type

Model
CSPFHM25N3X10D
CSPFHM50N3X12D
CSPFHM50N3X15D
CSPFHM00N4X15D
CSPFHM140N3X15D
CSPFHM200N3X19D
CSPFHM280N3X22D
CSPFHM420NX22D

Note
1. Refer to base model series for torque ranges and wrench specs.
2. Can be mounted on any other torque wrenches, contact to distributor or Tohnichi
3. The wrench's model with "FHM" is set at M-FH mode innitially, it is available advance long-range mode, battery alert with using R-CM and M-FH module. The wrenches model "FH", (e.g. QLFH100N4), is set the transmitter at R-FH mode in default for corresponding to previous R-FH256 receiver.

FHP transmitter for small size torque wrenches

- Applicable to small torque wrenches with a range from 0.4 to 15N·m

QLFHP

S.I. Model
QLFHP10N
QLFHP15N

CLFHP

Model
CLFHP10NX8D
CLFHP15NX8D

QSPFHP

Model
QSPFHP1.5N4 *
QSPFHP3N4 *
QSPFHP6N4
QSPFHP12N4

SP2FHP

Model
SPFHP2N2X5.5
SPFHP2N2X7
SPFHP2N2X8
SPFHP2N2X10
SPFHP2N2X12
SPFHP2N2X13
SPFHP2N2X17
SPFHP2N2X19
SPFHP8N2X7
SPFHP8N2X8
SPFHP8N2X9
SPFHP8N2X10
SPFHP8N2X12
SPFHP8N2X13
SPFHP8N2X19
SPFHP8N2X24
SPFHP8N2X27

RSP2FHP

Model
RSPFHP8N2X8
RSPFHP8N2X10

QLFHP-MH

S.I. Model
QLFHP2N-MH *
QLFHP5N-MH *
QLFHP10N-MH
QLFHP15N-MH

CLFHP-MH

Model
CLFHP2NX8D-MH *
CLFHP5NX8D-MH *
CLFHP10NX8D-MH
CLFHP15NX8D-MH
CLFHP15NX8D-MH

CSPFHP

Model
CSPFHP1.5N4X8D *
CSPFHP3N4X8D *
CSPFHP6N4X8D
CSPFHP12N4X8D

PQLFHP

S.I. Model
PQLFHP5N *
PQLFHP10N
PQLFHP15N

PCLFHP

Model
PCLFHP5NX8D *
PCLFHP10NX8D
PCLFHP15NX8D

QSPCAFHP

Model
QSPCAFHP6N
QSPCAFHP12N

Note
1. Refer to base model series for torque ranges and wrench specs.
2. FHP transmitter is using the same T-FHSLS transmitter module as T-FHSLS256.
3. FHP transmitter is provided in combination with a torque wrench.

* Position of FHP transmitter is on the back surface at rightangles

Transmitter Module

RoHS

Model	Description	Dimension [mm]	Selectable Mode
T-FHM	AAA battery x 1, 650,000 times of use	W36 × D80 × H18	M-FH/R-FH (Default: M-FH)
T-FH	AAA battery x 1, 650,000 times of use	W36 × D80 × H18	M-FH/R-FH (Default: R-FH)
T-FHSLS256	CR2032 battery x 1, 300,000 times of use	W32.4 × D56 × H22.3	N/A (R-FH mode only)

Note
1. Transmission distance 10-20 m at R-FH mode and 10-30 m at M-FH mode.
2. T-FH and T-FHM are changeable the operation mode by SB-FH2 setting box.
3. T-FHSLS256 is a wireless transmitter module to be installed on LS type torque wrenches.

Modular Conversion Receiver

Interchangeable radio module type receiver

RoHS

Model	Specification	Standard Accessories
R-CM	Output: No-Voltage contact output x 4, RS232C, Input: LS-IN, Reset, Power: DC24V	Part. No. 1070

Note Radio module is not included, it is optional.

Radio Module

Interchangeable type radio module for R-CM

RoHS

Model	Specification	Standard Accessories
M-FH	2.402GHz-2.479GHz Spred spectrum (FHSS)	Diversity antenna

Note Required to set and change frequency of receiver and transmitter.

Optional Extension Box

Extend relay output and loud buzzer with large lamp of R-CM

RoHS

Model	Applicable Model	Specification
IO-CM	R-CM with M-FH, R-CM with M-BLA/BLE	Add additional 4 relay output
BZ-CM	R-CM with M-FH/M-FD/M-BLA/BLE	Extend loud-buzzer with large lamp

Note The power is supplied from R-CM.

Setting Box

Manage 4 tightening signals from receiver and output to external device

RoHS

Model	Applicable Model	Specification
SB-FH2	R-CM with M-FH or M-FD, T-FH/T-FHM	Input RS232C, Power DC9V battery x 1

Antenna Extension Cable

Extends antenna from R-FH256 receiver to improve communication conditions

RoHS

Model	Description	Applicable Model	Specification
FH-MHD	Magnet antenna holder	R-CM with M-FH or M-FD	Cable Length: 1.5m
FH-COD	Antenna extenion cable		Cable Length: 9.5m

Protective Cover

Install on transmitter (T-FH256MC and T-FHSLS256) to protect from physical damage

RoHS

Model	Applicable Model	Specification
FHM-PCV	T-FH / T-FHM	NBR
FHSLS-PCV	T-FHSLS256. T-FMA	Material: Silcon Resin

Contact Tohnichi or distributor for conditions of wireless certification qcquisition for each country.

FHW

Radio Frequency Torque Wrench
with Double Tightening Detection

- Radio frequency torque wrench system with double tightening detection
- Mechanically detect double tightening and prevent double counting
- R-CM+M-FH module features diversity antenna for long-range communication
- Compatible to both previous R-FH256 receiver and R-CM with M-FH module

Direction

RoHS

Accuracy ±3%

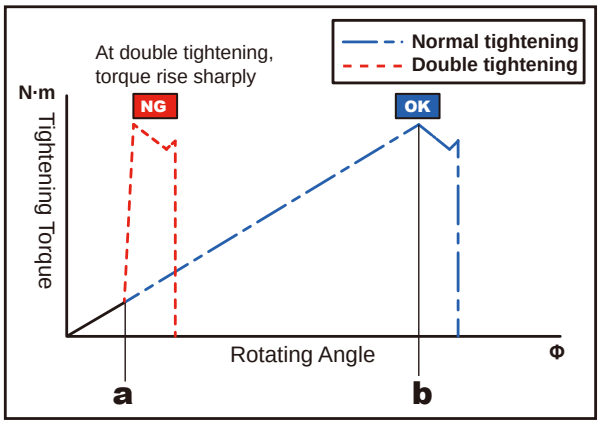
Head Size	Model	Torque Range [N·m] Min.-Max.	Torque Range [kgf·cm/kgf·m] Min.-Max.	Torque Range [lbf·in] Min.-Max.	Overall Length [mm]	Weight [kg]
			kgf·cm			
10D	CSPFHW25N3×10D	5-25	50-250	44.3-221.2	193	0.32
12D	CSPFHW50N3×12D	10-50	100-500	88.5-442.5	214	0.46
	CSPFHW50N3×15D				217	
15D	CSPFHW100N3×15D	20-100	200-1000	177-885	290	0.65
	CSPFHW140N3×15D	30-140	300-1400	265.5-1239.1	349	0.75
19D	CSPFHW200N3×19D	60-200	400-2000	354-1770.1	429	1.24
			kgf·m			
22D	CSPFHW280N3×22D	100-280	4-28	354-2478.2	627	1.66

Note
1. Consult to Tohnichi or distributor for any other types of torque wrench.
2. FHW transmitter has both R-FH, previous FH256MC mode and M-FH, advanced mode for R-CM+M-FH.
3. Set at R-FH mode as factory default, selecting modes, R-FH or M-FH can be done by SB-FH2.

Two Steps Click of double tightening detection

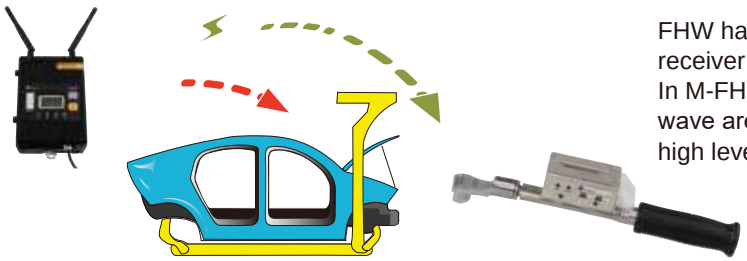
FHW mechanically detects rotated angle from A point to B using limit switches and a gyro sensor inside the transmitter, it can detect double tightening without error.

1st click: Light click feeling, it starts angle detection --- a
2nd click: Strong click when reaches set torque --- b



The transmitter can send 3-digits of double tightening detection signal to the R-CM.
By receiving the signal via RS232C, the external device can monitor whether double tightening has occurred.
Setting software is available for angle setting and double tightening signal ON/OFF.
Note: Angle setting can be conducted by the FHW itself and the tightening appplication.

Advanced Wireless Pokayoke Communication



FHW has advanced wireless communication with R-CM receiver and the M-FH module.
In M-FH mode, the diversity antenna and wraparound radio wave are effective in avoiding obstructions and achieves a high level of reliable communications.

FHW Optional Accessories

R-CM

M-FH

Modular Conversion Receiver RoHS

Model	Specification
R-CM	Output: Relay x 4, RS232C, Input: LS-IN, Reset

Note: Power source: DC24V

Connecting Cable RoHS

Part No.	Applicable Model	Specification
387	SB-FH2, R-CM - PC	RS232C straight

Protective Cover RoHS

Model	Applicable Model	Specification
FHW-PCV	FHW	Material: NBR

AC Adaptor for R-CM RoHS

Model	Description	Cable length
BA-8R	AC100V-240V	approx. 2m

Radio Module RoHS

Model	Specification	Standard Accessory
M-FH	2.4GHz FHSS	Material: Silicon Resin

Standard Accessory: Diversity antenna

Setting Box RoHS

Model	Available Setting Items	Dimension [mm]
SB-FH2	Group channel, Judgment code, 3-digit/7-digit ID, Communication settings	W160 × D120 × H35

Note
1. Provide PC setting software
2. RS232C straight cable needs optionally to use setting software.

Standard Accessory: Dipole antenna

BL Battery Less Wireless Torque Wrench

- Solar powered radio frequency torque wrench system
- Eliminates the need for battery replacements
- Chargeable under level of illuminance 200lx.
- Great for the environment
- Available on a wide variety of click type torque wrenches.

Direction

CSPBLA25N3x10D with SH-N head
CSPBLE25N3x10D with SH-N head

T-BLA/T-BLE

T-BLA

T-BLE

R-CM

IO-CM

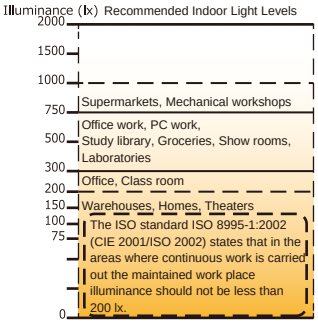
BZ-CM

M-BLA

M-BLE

BL-PCV

BA-8R



QSPBLA *QSP with T-BLA

Model
QSPBLA25N3
QSPBLA50N3
QSPBLA100N4
QSPBLA140N3
QSPBLA200N4
QSPBLA280N3
QSPBLA420N

CSPBLA *CSP with T-BLA

Model
CSPBLA25N3x10D
CSPBLA50N3x12D
CSPBLA50N3x15D
CSPBLA100N3x15D
CSPBLA140N3x15D
CSPBLA200N3x19D
CSPBLA280N3x22D
CSPBLA420Nx22D

Note: Available in USA and Canada only

QSPBLE *QL with T-BLE

Model
QSPBLE25N3
QSPBLE50N3
QSPBLE100N4
QSPBLE140N3
QSPBLE200N4
QSPBLE280N3
QSPBLE420N

CSPBLE *CSP with T-BLE

Model
CSPBLE25N3x10D
CSPBLE50N3x12D
CSPBLE50N3x15D
CSPBLE100N3x15D
CSPBLE140N3x15D
CSPBLE200N3x19D
CSPBLE280N3x22D
CSPBLE420Nx22D

Note: Available in EU and China only

SPBLA *SP with T-BLA

Model
SPBLA38N2×14
SPBLA38N2×27

Note: Available in USA and Canada only

SPBLE *SP with T-BLE

Model
SPBLE38N2×14
SPBLE38N2×27

Note: Available in EU and China only

Transmitter module

RoHS

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

Note
1. T-BLA/BLE can be installed on LS type torque wrenches.
2. LED on the side of transmitter to check communication status
3. For repair or conversion.

Modular Conversion Receiver

RoHS

Model	Description	Standard Accessories
R-CM	Output: No-Voltage contact output x 4, RS232C, Input: LS-IN, Reset, Power: DC24V	Part. No. 1070

Note
1. Simultaneous reception from multiple torque wrenches cannot be done.
2. It transmits relay signal up to 4 torque wrenches.
3. Required to capture signal from BLA/BLE wrenches.

Interchangeable Radio Module

RoHS

Model	Available Area	Standard Accessory
M-BLA	T-BLA for US and Canada	Dipole Antenna
M-BLE	T-BLE for EU and China	

Optional Extension Box

RoHS

Model	Specification
IO-CM	Add additional 4 relay output
BZ-CM	Extend loud-buzzer and large lamp

Protective Cover

RoHS

Model	Applicable model	Material
BL-PCV	T-BLA, T-BLE	NBR

AC Adaptor for R-CM

RoHS

Model	Description	Cable length
BA-8R	AC100V-240V	approx. 2m

Specifications of BLA/BLE

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

FMA *For United States and Canada Only

Radio Frequency Torque Wrench System

RoHS

- 900 MHz frequency wireless error-proofing torque system
- For facilities that restrict the use of 2.4GHz
- Transmission Distance 10-20 Meters/30-60 Feet
- Easily change frequency with wireless setting box, SB-FMA
- Available on a wide variety of click type torque wrenches.

R-FMA

T-FMA

Transmitter, Receiver, and Setting Box

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

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

FD/FDD

Click Type Torque Wrench
with Wireless Data Transfer

Direction

RoHS

CSPFD25N3X12D with QH

R-CM receiver with
M-FD module

M-FD

BA-8R

FD-PCV

SB-FH2

FD/FDD Free setting
software is provided

FD/FDD Common Outline

Display

OK

Hi/Lo NG

Wrench 1

Wrench 2

Multiple wrench control

Tightening Data Management System

- Transfer actual applied torque and wrench ID establish tightening traceability
- LED light offers simple visual judgment
- Interchangeable torque wrench type allows to use variety of standard heads
- FDD prevents double tightening counting by angle detection

Accuracy ±3%+1digit

Model		Torque Range [N·m]		Torque Range [kgf·m]		Torque Range [lbf·ft]		Overall Length	Weight	Head Size
FD	FDD	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	[mm]	[kg]	
				kgf·m	kgf·m	lbf·ft	lbf·ft			
CSPFD25N3-10N×10D	CSPFDD25N3-10N×10D	2-10	0.1	0.2-1	0.01	1.5-7.5	0.1	193	0.32	10D
CSPFD25N3×10D	CSPFDD25N3×10D	5-25		0.5-2.5		3.6-18				
CSPFD50N3×12D	CSPFDD50N3×12D	10-50	0.2	1-5	0.02	7.5-36		214	0.46	12D
CSPFD50N3×15D	CSPFDD50N3×15D							217		
CSPFD100N3×15D	CSPFDD100N3×15D	20-100	0.5	2-10	0.05	15-75	0.2	290	0.65	15D
CSPFD140N3×15D	CSPFDD140N3×15D	30-140		3-14		25-100	0.5	349	0.77	
CSPFD200N3×19D	CSPFDD200N3×19D	40-200	1	4-20	0.1	30-150	1	429	1.2	19D
CSPFD280N3×22D	CSPFDD280N3×22D	40-280		4-28		30-200		627	1.65	22D

Note
1. Interchangeable head is sold separately.
2. The transmitter display shows 3 digit for torque value.
3. FDD comes with double tightening detection function.
4. Contact Tohnichi for status of wireless certification acquisition for each country.
5. Ask to Tohnichi or distributor for any other torque range.

Standard Accessories: Rechargeable AAA battery x 2 pcs, Protective Cover * Battery charger does not come with the set

Modular Conversion Receiver

Receiver	Specification
R-CM	Output: Relay x 4, RS232C, Input: LS-IN, Reset

Note: Power source: DC24V

Connecting Cable

Part No.	Applicable Model	Specification
387	SB-FH2, R-CM - PC	RS232C straight

Protective Cover

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

Radio Module

Model	Specification	Standard Accessory
M-FD	2.4GHz FHSS	Diversity antenna

Setting Box

Model	Available Setting Items	Dimension [mm]
SB-FH2	Group channel, Judgment code, 3-digit/7digit ID, Communication settings	W160 × D120 × H35

Note
1. Provide PC setting software
2. RS232C straight cable needs optionally to use setting software.

FD/FDD Transmitter Specifications

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

FHSS, Frequency Hopping Spectrum System and 10 times of retry make communication reliability.

Use 2 FD/FDD wrenches by One Receiver

Preset 2 points of Upper & Lower limit

R-CM controls up to two units of wrench and gives OK/Hi-NG/Lo-NG judgment for applied torque value from wrench No.1 and No.2. Receiver conducts judgment and sends answer back signal to the wrench with the result.

Use Multiple FD/FDD wrenches by One Receiver

Control each Upper & Lower limit by PC/PLC

An external device gives OK/Hi-NG/Lo-NG judgment for applied torque value from each wrench.
R-CM receives the result from PC/PLC and sends answer back to each wrench.

R-CM with
M-FD Module

PC/PLC

RS232C

3-digit ID, 7-digit ID
Torque value, Judgment result, OK, Hi-NG, Lo-NG

STD mode: Time stamp

I/O signal

Out: OK/NG
In : Reset/LS signal

CNA-4mk3
Counter

Note:
Multiple wrenches can connect to one receiver as long as they do not signal at the exact same time.

FDD Double Tightening Detection Function

If the same fastener is tightened twice the second tightening data will be rejected.

Completion of tightening process with Blue signal.

LED lights Red when FDD wrench click on tightened bolt.

FDD-AD

Click Type Torque Wrench with
Torque and Angle Data Transfer

Direction

RoHS

CSPFD25N3X12D-AD with QH

Tightening Data Management System

- Transfer tightening peak torque and angle started from trigger torque
- Eliminating tightening error caused by bolt or application issues
- Interchangeable torque wrench type allows to use variety of standard heads

Accuracy ±3%+1digit

Model	Torque Range [N·m]		Torque Range [kgf·m]		Torque Range [lbf·ft]		Angle		Overall Length	Weight	Head Size
FDD-AD	Min.-Max.	1 digit	Min.-Max.	1 digit	Min.-Max.	1 digit	Range	Accuracy	[mm]	[kg]	
			kgf·m	kgf·m	lbf·ft	lbf·ft					
CSPFDD25N3-10N×10D-AD	2-10	0.1	0.2-1	0.01	1.5-7.5	0.1	0°-240° 1 digit: 1°	±2°+1digit (Angular velocity is 30°/X~180°/s when the bolt turned to 90°)	193	0.32	10D
CSPFDD25N3×10D-AD	5-25		0.5-2.5		3.6-18						
CSPFDD50N3×12D-AD	10-50	0.2	1-5	0.02	7.5-36				214	0.46	12D
CSPFDD50N3×15D-AD									217		
CSPFDD100N3×15D-AD	20-100	0.5	2-10	0.05	15-75	0.2			290	0.65	15D
CSPFDD140N3×15D-AD	30-140		3-14		25-100	0.5			349	0.77	
CSPFDD200N3×19D-AD	40-200	1	4-20	0.1	30-150	1			429	1.2	19D
CSPFDD280N3×22D-AD	40-280		4-28		30-200				627	1.65	22D

Note
1. Interchangeable head is sold separately.
2. The transmitter display shows 3 digit for torque value.
3. Contact Tohnichi for status of wireless certification acquisition for each country.
4. Ask to Tohnichi or distributor for any other torque range.

Standard Accessories Rechargeable AAA battery x 2 pcs, Protective Cover * Battery charger does not come with the set

Modular Conversion Receiver

Receiver	Specification
R-CM	Output: Relay x 4, RS232C, Input: LS-IN, Reset

Note Power source: DC24V

Connecting Cable

Part No.	Applicable Model	Specification
387	SB-FH2, R-CM - PC	RS232C straight

Protective Cover

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

Radio Module

Model	Specification	Standard Accessory
M-FD	2.4GHz FHSS	Diversity antenna

Setting Box

Model	Available Setting Items	Dimension [mm]
SB-FH2	Group channel, Judgment code, 3-digit/7digit ID, Communication settings	W160 × D120 × H35

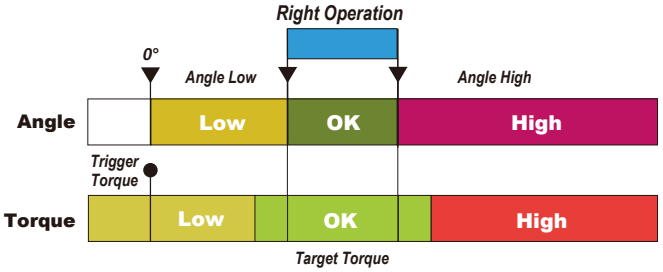
Note
1. Provide PC setting software
2. RS232C straight cable needs optionally to use setting software.

FDD-AD Torque & Angle Data Transfer

By detecting final angle at the completion of the tightening operation, it is possible to eliminate tightening errors caused by provisional tightening, the tightening application or double tightening.

The receiver's set value can be changed by command input from PC / tablet depending on each tightening operation.

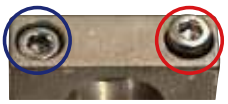
Detection of Tightening Error by Torque & Angle Monitoring



Angle Low
≒ Double Tightening
≒ Cross Threaded Screws
≒ Defect of work/Bolt
≒ Contamination

Angle High
≒ Defect of Work/Bolt
≒ Lack of O-Ring/Gasket
≒ Over torque of the provisional tightening

More Accurate with Angle function



Right Operation	*Error Operation*
Torque OK	*Torque OK / NG*
Angle OK	*Angle NG*

Torque & Angle OK

Torque or Angle, or Both NG

Answer Back

Converts Tohnichi format to NR Protocol
Integrates VIN info. Time stamp

TPC standard Protocols
1.ACOP Serial
2.ACOP Socket
3. Stanley
4. Request Custom Settings

Note:
1. TPC-AD is special type of TPC protocol converter, refer to page 67 for standard.
2. ATLAS COPCO is registered trademark of Atlas Copco Aktiebolag
3. STANLEY is registered trademark of Stanley Logistics, LLC