

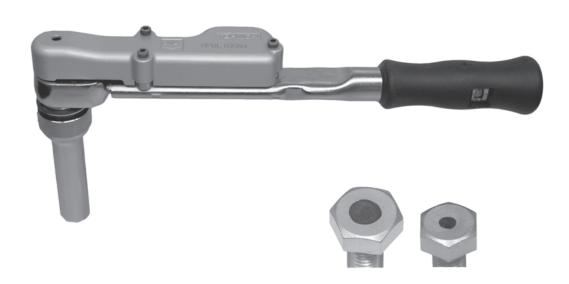
MARKING TORQUE WRENCH MODEL MPQL/MQL/MQSP

MARKING TORQUE WRENCH

OPERATING INSTRUCTION

MPQL • MPQL4 • MQL • MQSP

Model MPQL



This operating instruction is applied for the upgraded models which was produced or sold after September 21, 2010. The models before September 20, 2010 has different accessories (except torque wrench body).

MPQL sockets and marker heads on this operating instruction are modified. These new accessories are from May 2016.

Please refer page 22 for more details.

To use this product properly and safely, please read this manual carefully before use it. If you have any question about the product and its operations, please contact your nearest distributor or TOHNICHI MFG. CO., LTD.

Contents

Contents

1.	For Safety	2
2.	Features/Components	4
3.	How to Use	5
	3.1 Set the torque value	
	3.2 Put the marker onto the socket	
	1) How to refill ink	
	①Marker Head MK53RB (No.1780, No.2780)	
	②Marker Head MK93RB (No.2783)	
	3Marker Head MK53WY(No.1782, No.2782), MK93WY(No.2785)	
	3.3 How to set the marker head	13
	3.4 Put the socket onto the torque wrench	14
	3.5 How to adjust the position of the marker	16
	3.6 How to recover from stuck socket	17
4.	Optional Accessories	
	4.1 Socket	18
	4.2 Extension Bar	19
	4.3 MQSP Adapter	19
	4.4 Adjusting Tool (For MQSP)	19
	4.5 Marker Head	19
	4.6 Refill Ink, Solvent	20
	4.7 Felt Tip	20
	4.8 Marker Guide	20
5.	Specifications	21
6.	For previous version of Socket and Marker Head	22
	6.1 Combination of Previous Socket and New Marker Head (No.2780, 2782, 2783, 2785)	22
	6.2 Combination of New Socket and Previous Marker Head (No.1780, 1782, 1783, 1785)	23
	6.3 Combination of Previous Socket and Previous Marker Head (No.1780, 1782, 1783, 1785)	23

1 For Safety

⚠ Warning

- 1. Do not use it for other purpose other than for screw tightening.
 - a. This product is limited to apply for the screw-tightening purpose.
- 2. Do not get oily or greasy on the grip part.
 - a. This makes a hand slipping to cause accidents or injuries.
- 3. Make sure if there are any cracks, flaws or rusts.
 - a. This generates breakage to cause accidents or injuries.
 - b. Have an inspection or repair.
- 4. Do not use it for a higher place working.
 - a. Dropping a torque wrench or socket causes accidents or injuries.
- 5. Do not connect a longer length handle such as a pipe or others.
 - a. This causes breakage or accuracy deviation of a torque wrench.

A Caution

- 1. When applying a hand force to a torque wrench, do not spur, put your excessive weight, or step upon the torque wrench.
 - a. This makes breakage or bolt slipping to cause serious accidents or injuries.
- 2. Do not use it with over the maximum torque value.
 - a. This causes accidents or injuries by breakage failure.
- 3. Do not use it with shortage of parts such as pins, scale plate or others.
 - a. Consult the seller or Tohnichi to have an inspection or repair.
- 4. Do not make any alterations to the torque wrench.
 - a. This makes torque strength deterioration or accuracy deviation to cause accidents or injuries.
- 5. Do not drop or give a strong impact to the torque wrench.
 - a. This makes breakage or change of shape to deteriorate accuracy or durability to cause accidents or injuries.
- 6. Pay attention to surroundings when using a large-sized torque wrench.
 - a. This causes accidents or injuries.
- 7. Do not place a torque wrench in an upright position.
 - a. Falling or dropping down the torque wrench causes accidents or injuries.
- 8. Do not use any spare parts except for Tohnichi genuine parts.
 - a. Contact the seller or Tohnichi and use the Tohnichi spare parts only when making a repair.

Precautions for Use

- (1) Do not use it with beyond the torque capacity.
- (2) Do not set the graduation below the lowest torque value.
- (3) Set up a proper torque value before use.
 - The torque value is preset the lowest value before shipment.
- (4) Make sure the proper torque unit.
 - Confirm the torque unit before use.
- (5) Do not use a torque wrench in the water or sea.
 - This makes an internal structure defect to cause accidents or injuries. Have an inspection or repair if you drop a torque wrench in the water or sea.
- (6) Make a preventive measure for dropping when working at a higher place.
 - Dropping the torque wrench or socket causes serious accidents or injuries.
- (7) Use an appropriate socket to fit the size of your hexagon bolt head.
 - Using a different size of socket causes accidents or injuries.
- (8) Make loading with gripping on the effective length.
 - If not, that generates an improper torque value.
- (9) Stop tightening when hearing the click sound.
 - Further tightening brings on over-torquing.
- (10) Do not hit your hands or elbows against surroundings when using a torque wrench.
 - Pay attention not to hit your hands or elbows against surroundings when using a torque wrench.
- (11) Do not use a torque wrench like a hammer or lever use.
 - Alteration of the head or tube generates improper operation and harmful effect on the accuracy.
- (12) Have a periodical inspection.
 - The torque wrench is in need of periodical inspection.
- (13) Power direction
 - The force direction should be right-angled to the torque wrench.
 - Make a force direction within $\pm 15^{\circ}$ in up and down and backward and forward.
- (14) Keep it with taking out dirt, dust, mud, oil, moisture, etc. after use.
 - If not, it causes improper operation and accuracy.
- (15) Keep it at a dried place with setting up the lowest torque value and applying the anti-rust oil when not using it for a long time.
 - Improper store keeping festinates the deviation of accuracy and durability.

2 Features/Components

Features

- The marking is engaged as the Torque Set is achieved.
- Quick drying ink prevents dripping to keep the mark on the head of the bolt.
- Variety of Marker Heads
- Select in 4 color; Red, Blue, Yellow and White (5mm, 9mm marking diameter)
 Easy to replace the Marker Head

One refill of ink is capable of approximately 4500 times of stamping for MK53, 6000 times for MK93 Marking Head.

Components

- 1. Torque Wrench Body 1unit
- 2. Hex Wrench (for positioning of marker head) 1pc
 - * Use it for torque adjustment of MPQL
- 3. Operating manual 1 copy

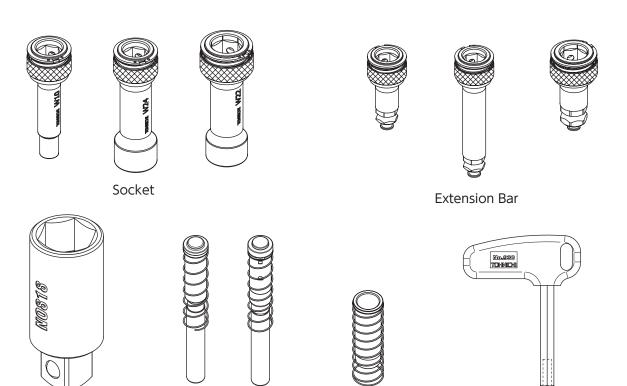
Option

- Socket
- · Extension Bar

Torque Adjusting

Adapter (for MQSP only)

- MQSP Torque Adjusting Adapter
- · Adjusting Tool (for MQSP only)
- · Marker Head
- · Refill Ink. Solvent
- · Felt Tip
- · Maker Guide (Set)



Maker Guide

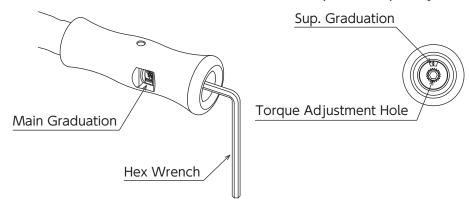
Marker Head

Adjusting Tool for MQSP

3 How to Use

3.1. Set the torque value

1) In case of MPQL, insert the hex wrench (standard accessory) into torque adjustment hole.



- 2) Rotate the hex wrench to change the torque value on the main/sup. graduation.
- In case of MQSP
- 1) Insert an Adjusting tool into the hexagonal hole with pin at the end of the wrench main unit.

Note: Adjusting tool is optional accessory.

2) Set the MQSP on a tester and adjust the setting torque by turning the adjusting tool that you want to achieve.

Turning the adjustment tool in a clockwise direction, increase the torque value, turning in a counterclockwise, decrease.

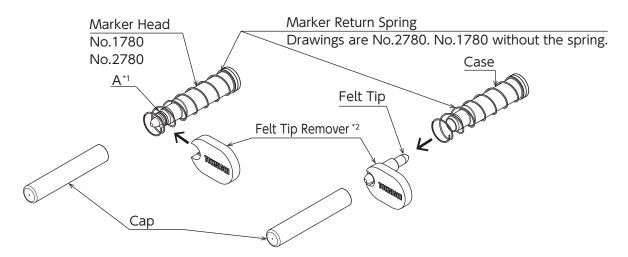


* Lock-free mechanism.

3.2. Put the marker onto the socket

- 1) How to refill ink
 - ① Marker Head MK53RB (No.1780, 2780).
 - a. Remove the cap and the felt tip.

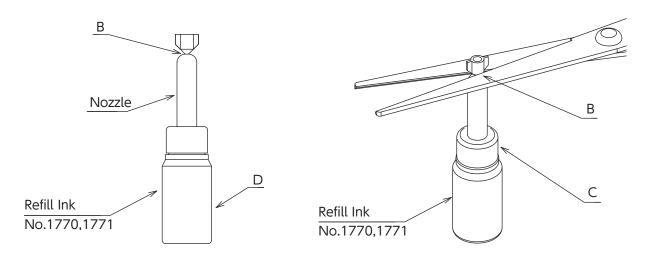
 Pinch A part with felt tip remover and pull out the tip gently.



- * 1: In inserting the Felt Tip Remover to Maker Head No.2780, push up Marker Head Spring to expose A part.
- * 2: Attached with Refill Ink No. 1770, No. 1771 as a standard accessory.

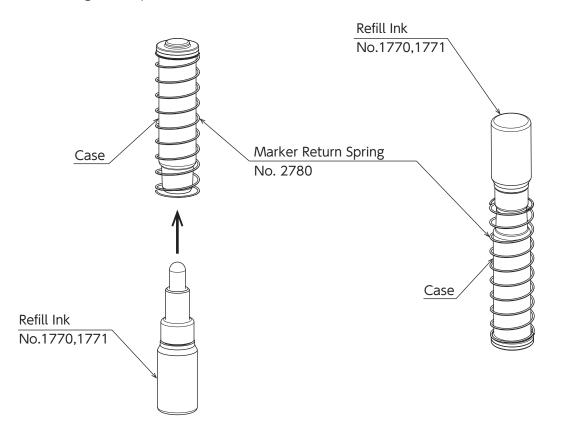
b. Cut off the tip of the refill ink.

Make sure to hold the refill ink with B side up so that the ink does not stay at the top. If the ink stays at the nozzle part, use your finger to put it off before opening. Hold C part and use scissors to cut off the tip B.



c. Refill ink into the case.

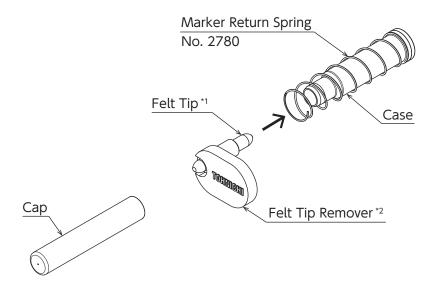
Insert the tip of the refill ink fully into the case to refill ink. Gently pinch D part of the refill ink container to fully use up the ink. After refill, gently pull it out. Be careful not for the remaining ink to spill.



d. Put back the felt tip and cap.

Make sure to fully insert the felt tip with felt tip remover back to the case and put the cap on as it was before.

* Lay it down still for about 5 minutes and test a few times before use.



- *1: In inserting Marker Head No.2780 to Felt Tip, take care not to be caught in Marker Return Spring.
- *2: Attached to Refill Ink No. 1770, No. 1771



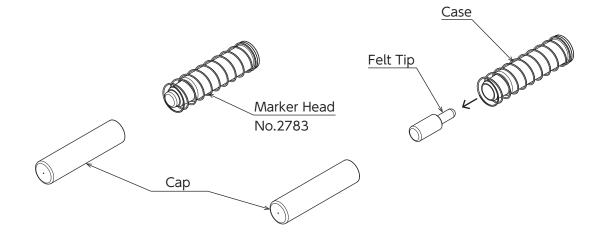
Be careful ink does not get in your eyes.

If you put ink too much, wipe it off with pare, etc.

Be careful ink does not splash and stain your clothes.

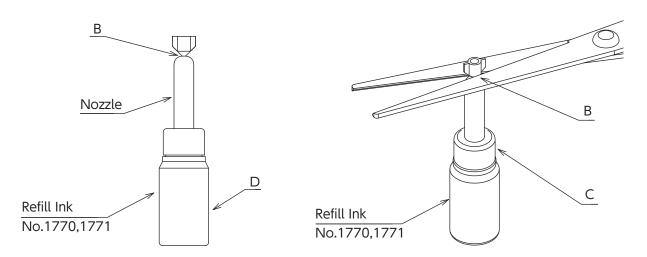
Be careful about the direction of felt tip (Refer page 20).

- ② Marker Head MK93RB (No.2783)
 - a. Remove a cap and felt tip from Marker Head.



b. Cut off the tip of the refill ink.

Make sure to hold the refill ink with B side up so that the ink does not stay at the top. If the ink stays at the nozzle part, use your finger to put it off before opening. Hold C part and use scissors to cut off the tip B.

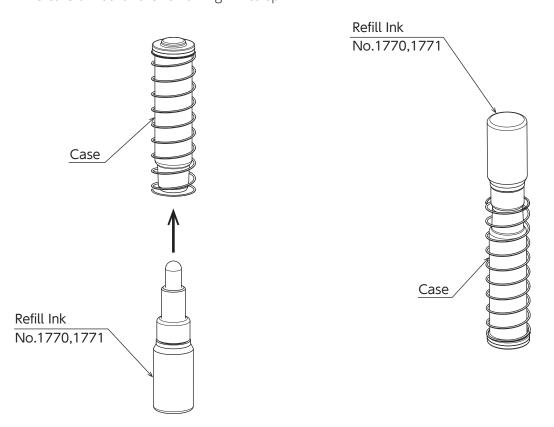


c. Refill ink into the case.

Insert the tip of the refill ink fully into the case to refill ink.

Gently pinch D part of the refill ink container to fully use up the ink. After refill, gently put it out.

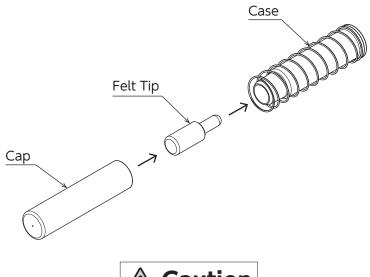
Be careful not for the remaining ink to spill.



d. Put back the felt tip and cap.

Make sure to fully insert the felt tip back to the case and put the cap on as it was before.

* Lay it down still for about 5 minutes and test a few times before use.





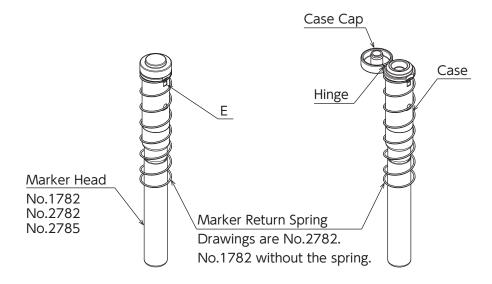
Be careful ink does not get in your eyes. If you put ink too much, wipe it off with pare, etc.

Be careful ink does not splash and stain your clothes. Be careful about the direction of felt tip (Refer page 20).

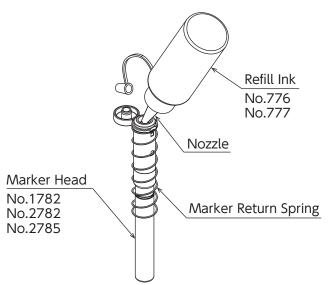
- ③ Marker Head MK53WY (No.1782, No.2782), MK93WY (No.2785).
 - a. Open the case cap of the marker head.

Hold the case and push the dent (E part) to open the cap.

Treat the cap gently so that it does not damage the hinge of the cap.

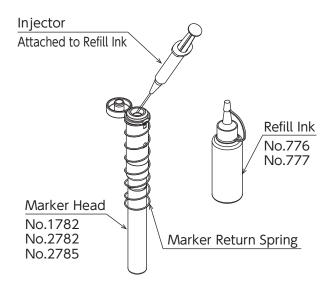


b. Refill ink Directly refilling from the refill ink

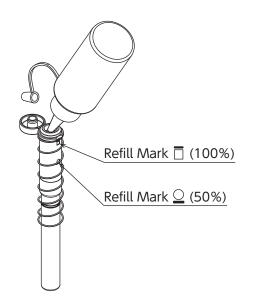


- I . Insert the nozzle of the refill ink into the marker head.
- II. Make sure to remove the seal inside the refill ink for the first time use.
- II. In case of white and yellow ink, make sure to shake it well before use.
- IV. Put the case cap on firmly after use.

Using injector to refill



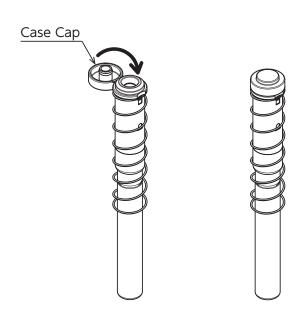
- I. Insert a needle into the injector.
- II. Stick the needle inside the refill ink and suck in the ink.
- II. Use up the ink inside the injector (if the ink stays inside the needle and dries up, it may cause it to clog)
- \mathbb{V} . Put solvent inside the injector to clean after use.
- V. Do not let solvent stay inside the injector. If solvent stays inside, it may cause damage on the injector.
- VI. Make sure to put the cap back on after use.



Refill ink up to the mark on the case

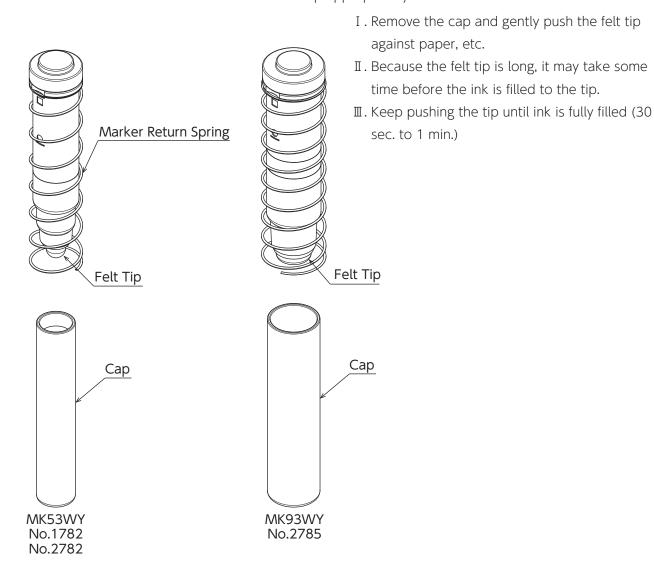
- ☐ mark 100% (Refill maximum)
- mark 50% (Refill half)

c. Put the case cap on.



- I . Put the case cap on firmly.
- $\ensuremath{\mathbb{I}}$. If the case cap is loose, it may cause ink to spill.

d. Check the ink is filled into the felt tip appropriately.





Be careful ink does not get in your eyes.

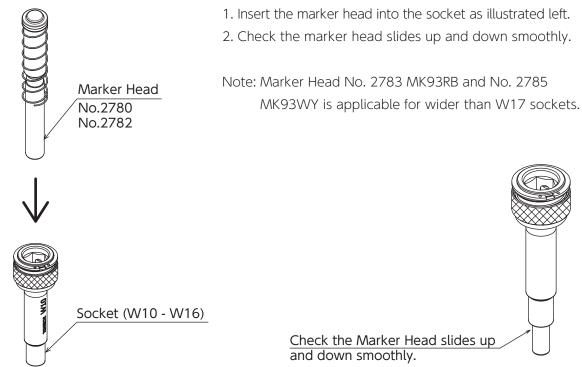
If you put ink too much, wipe it off with paper, etc.

Be careful ink does not splash and stain your clothes.

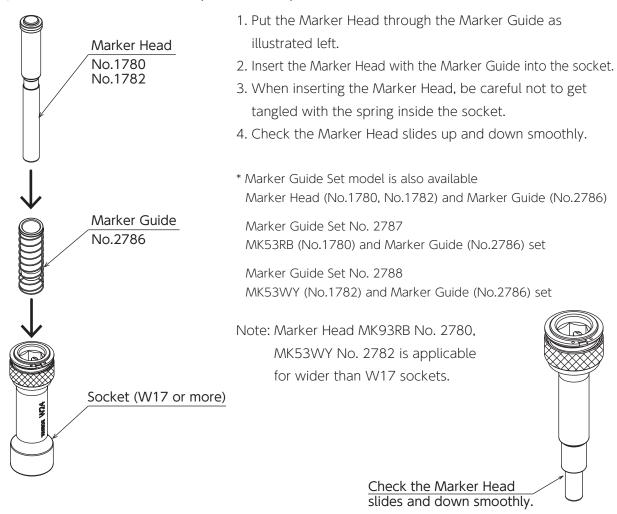
Use the enclosed glove for refill not to stain your hands.

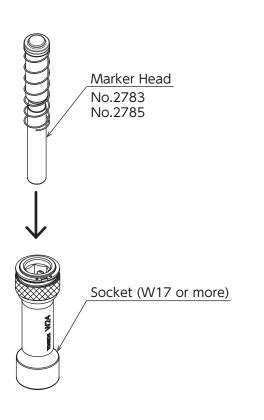
3.3. How to set the marker head

1) How to set the marker head (W10 - W16)



2) How to set the marker head (W17 or wider)





In case of MK93RB, MK93WY

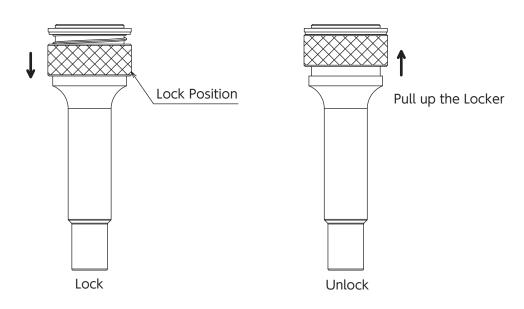
- 1. Insert the Marker Head into the socket as illustrated left.
- 2. Check the Marker Head slides up and down smoothly.



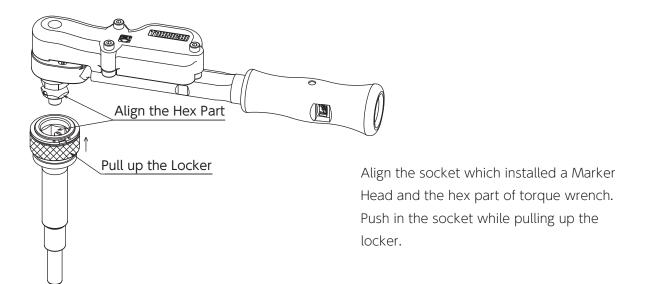
Note: Marker head MK93RB, MK93WY is applicable for wider than W17 sockets.

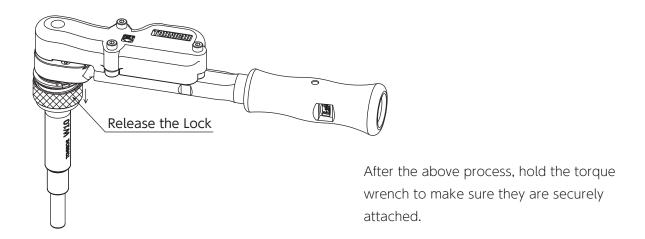
3.4. Put the Socket (combined with the marker head) onto the torque wrench

1) Unlock the Lock on the socket.



2) Attach the socket to the torque wrench.





3) Cap Remove.

The cap might not be removed with ink attached on inside of cap.

Do not tear the cap from marker head, it causes broken the marker head or spring. Take the marker head from socket and twist the cap to remove.

4) Tightening Operation

⚠ If you are not using it for more than 30 minutes, make sure to put the cap on.

With combination of using Marker Head MK53RB/MK93RB and Refill Ink Red No. 1770/Blue

No. 1771, it have dry hardiness for 2 weeks but recommend to put a cap during storage.

For nut tightening

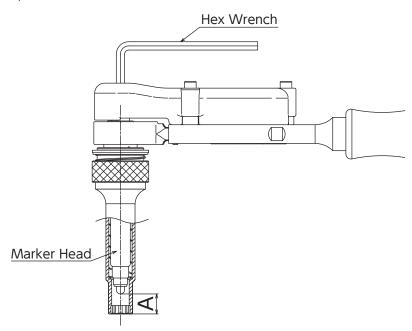
MPQL is adjusted for bolt tightening when shipped. For nut tightening, follow 3-5 2) instructions to make adjustment accordingly.

3.5. How to adjust the position of the marker

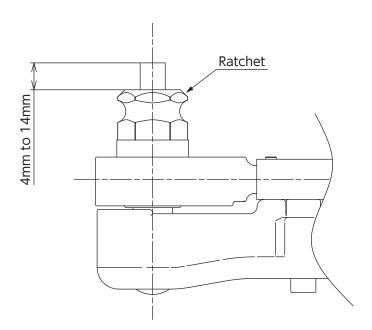
1) For bolt tightening

In case of bolt tightening, it is usually ready to use as it is shipped.

① Measure the distance between the base of Socket unit and the tip of Marker Head. (Dimension A)



② Insert the attached Hex Wrench into the hole on the cover, adjust Dimension A to the thickness a+5mm. Turn clockwise for A to be bigger, and counterclockwise to be smaller.

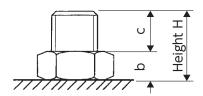




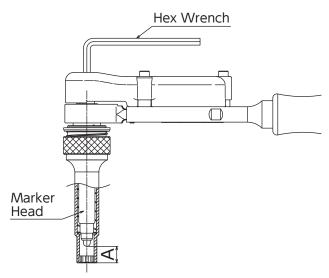
In adjusting marker position, upward the ratchet of MPQL/MQL/MQSP and adjust the length of the rod from the ratchet end surface between 4mm to 14mm.

2) For nut tightening

① Measure the length of "b" and "c" of the nut.



② Measure the distance between the base of Socket unit and the tip of Marker Head. (Dimension A)



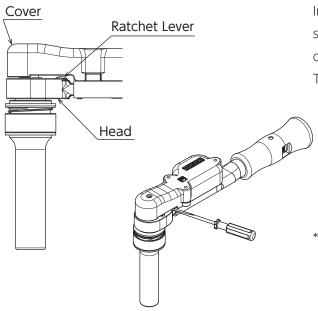
③ Insert the attached Hex Wrench into the hole on the cover, adjust Dimension A to the thickness H+5mm. Turn clockwise for A to be bigger, and counterclockwise to be smaller.



After the work is finished, put the cap on.

Otherwise, the ink of the Marker Head may dry up.

3.6. How to recover from stuck socket

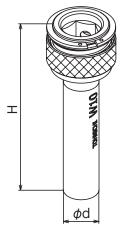


In case the socket stuck on Ratchet, insert a small driver between the Head and the Cover to change the ratchet direction by the Ratchet Lever. Then twist the socket to the left and remove.

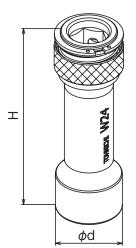
* After releasing the stuck socket, return the Ratchet Lever to the original position (tightening direction).

4 Optional Accessories

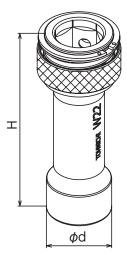
4.1. Socket



MPQL50N, MQSP50N to 200N4 Socket W10 to W14, W7/16 to 9/16 No.2700 to 2703, 2712 to 2714



MPQL50N, MQSP50N to 200N4 Socket W16 to W24, W5/8 to 3/4 No.2704 to 2710, 2715 to 2717

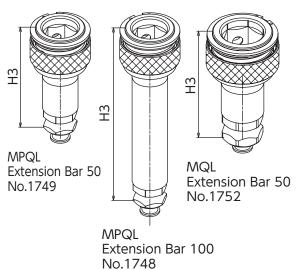


MQL280N Socket W22 to W30 No.2720 to 2723

Model	Part No.	Width Across Flat	Max. Torque	Height H	Dia.φd	Applicable
Model	Fait No.	[mm]	[N · m]	[mm]	[mm]	Models
Socket 4MH-10	2700	10	25		17.5	
Socket 4MH-12	2701	12	35		20.5	
Socket 4MH-13	2702	13	40	100	21.5	MPQL
Socket 4MH-14	2703	14	60	100	22.5	50N ·
Socket 4MH-16	2704	16	70		25	MQSP
Socket 4MH-17	2705	17	110		28	50N
Socket 4MH-18	2706	18	120		29	to
Socket 4MH-19	2707	19	170		20	200N4
Socket 4MH-22	2709	22	190	105	30	
Socket 4MH-24	2710	24 200			32.8	
Socket 6MH-22	2720	22	255		32	
Socket 6MH-24	2721	24	255		34.5	MQL
Socket 6MH-27	2722	27	255	110	38.5	280N
Socket 6MH-30	2723	30	280		42	

Model	Part No.	Width Across Flat		Max. Torque [lbf • in]	Height H	Dia. ϕ d	Applicable
Model	Part No.	[inch]	[mm]	(N·m)	[mm]	[mm]	Models
Socket 4MH-7/16	2712	7/16	11.113	300 (35)		20	MPQL
Socket 4MH-1/2	2713	1/2	12.7	400 (45)	100	21	50N ·
Socket 4MH-9/16	2714	9/16	14.288	700 (80)	100	23	MQSP
Socket 4MH-5/8	2715	5/8	15.875	800 (90)		25.5	50N
Socket 4MH-11/16	2716	11/16	17.463	1000 (120)	105	28.5	to
Socket 4MH-3/4	2717	3/4	19.05	1500 (170)	105	30	200N4

4.2. Extension Bar



Model	Part #	Applicable Models	Extension Length [mm]	
MPQL Extension Bar 50	1749	MPQL (MOSP)	50	
MPQL Extension Bar 100	1748	(MQSP) 50N to 200N4	100	
MQL Extension Bar 50	1752	MQL280N	50	

4.3. MQSP Adapter



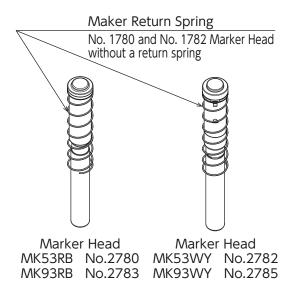
Model	Part #	Applicable Models	Applicable Testers
MQSP 3/8-17 Adapter	817	MPQL50N MQSP50N	DOTE50N3
MQSP 1/2-17 Adapter	818	MPQL100N4 to 200N4 MQSP100N to 200N	DOTE100N3 DOTE200N3

4.4. Adjusting Tool (For MQSP)



Model	Part #	Applicable Models
Adjusting Tool	930	MQSP50N to 200N

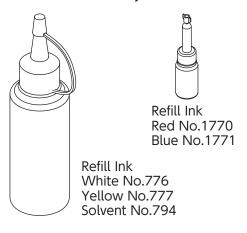
4.5. Marker Head



Model	Part #	Applicable Color	Applicable Socket Size
Marker Head MK53RB	1780	Red, Blue	W17 or
Marker Head MK53WY	1782	White, Yellow	more*
Marker Head MK53RB	2780	Red, Blue	W16 or
Marker Head MK53WY	2782	White, Yellow	less
Marker Head MK93RB	2783	Red, Blue	W17 or
Marker Head MK93WY	2785	White, Yellow	more

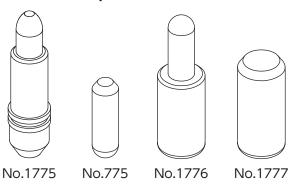
^{*} In use, Maker Guide (No.2786) is required separately.

4.6. Refill Ink, Solvent

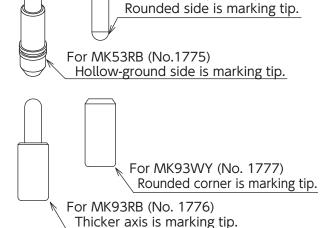


Model	Catalog No.	Color
Refill Ink R	1770	Red
Refill Ink B	1771	Blue
Refill Ink W	776	White
Refill Ink Y	777	Yellow
Solvent	794	White, Yellow

4.7. Felt Tip



Model	Catalog No.	Color
MK53RB Felt Tip	1775	Red, Blue
MK53WY Felt Tip	775	White, Yellow
MK93RB Felt Tip	1776	Red, Blue
MK93WY Felt Tip	1777	White, Yellow



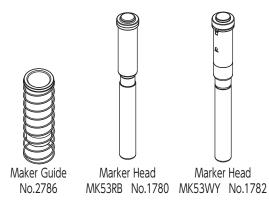
For MK53WY (No.775)



Be careful when attaching the felt tip with correct direction. Do not attach it upside down.

4.8. Marker Guide

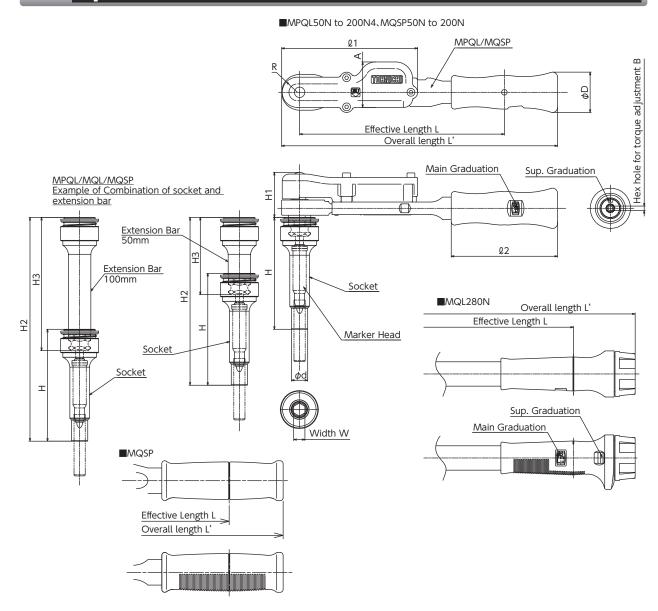
* Required to be used ϕ 5 Marker Head with width W17 or more larger size sockets.



Model	Catalog No.	Color
Marker Guide	2786	_
MK53RB Maker Guide Set	2787	Red, Blue
MK53WY Maker Guide Set	2788	White, Yellow

- *1: Marker guide set consists of marker guide (No. 2786) and the marker head (No.1780 or No.1782).
- *2: Marker heads are not filled the ink. Select necessary ink separately.
- *3: Marker guide No. 2786 can not be used for Marker Head other than No.1780 or 1782.

5 Specifications



Accuracy +/- 3%

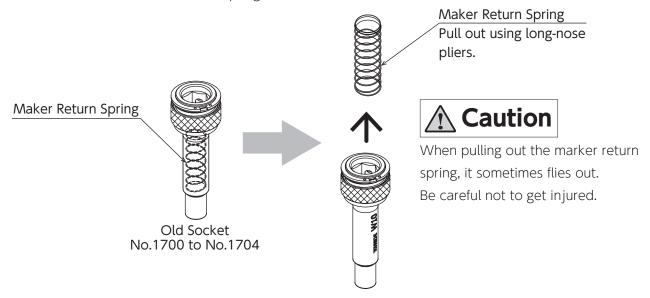
	Torque [N·I		<u>D:</u>	Max.	Effective Length			[Dimer	sions	[mr	_	<u>u.u.c.j</u>	+/- 3%
Model			rection	Handforce P	Length Length [mm]		Head			Body			Weight	
	MinMax. 1	1 Grad.	- S	[N]	L	Ľ	R	H ₁	l 1	Α	D	l 2	В	[kg]
MPQL50N	10 - 50	0.5		274	183	246	16	40.6	121		36	95		0.7
MPQL100N4	20 - 100	1		388	252	320	17	43	153	41	37.7	100	4	1
MPQL140N	30 - 140			443	316	385	18.75	45.1	155					1.1
MPQL200N4	40 - 200		2		500	397.5	468	20	46	183	40.6	44.2		
MQL280N	40 - 280		\bigcirc	467	600	692	22.5	48.5	103	45.2	51.5	_	_	2.6
MQSP50N	10 - 50			281	178	240	16	40.6	121		34	89		0.7
MQSP100N	20 - 100			398	251	315	17	43	153	41	24	107	4	1
MQSP140N	30 - 140			444	315	380	18.75	45.1	133		34	107	4	1.1
MQSP200N	40 - 200			500	400	465	20	46	183	40.6	27	75		1.8

6 For previous version of Socket and Marker Head

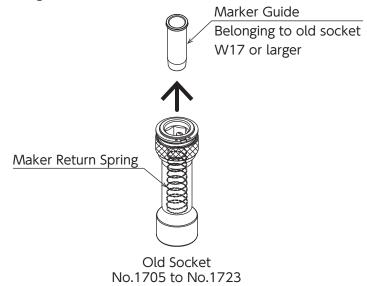
As of May 21, 2016, the socket and the marker head of marking torque wrench were changed the design. Along with it, the old socket (No.1700 to 1723) and the old marker head (No.1783 to 1785) can not be used as it is. In case using the old socket and the former marker head, please refer to the following.

6.1. Combination of Previous Socket and New Marker Head (No. 2780, 2782, 2783, 2785).

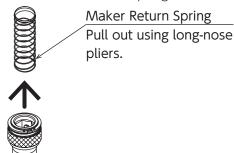
- 1) In applying Φ 5 of the marker head MK53RB (No.2780) or MK53WY (No.2782) for the old sockets width 10 to 16mm (No.1700 to 1704, No.1712 to No.1715).
 - ① Pull out the marker return spring from inside of the socket.



- ② Set the marker on the socket according to a set method of the marker on the page 13.
- 2) In applying $\Phi 9$ of the marker head MK93RB (No.2783) or MK93WY (No.2785) for the old sockets width 17 to 30mm (No.1705 to 1723, No.1716 to No.1723).
 - ① Pull out the marker guide from inside of the socket.



② Pull out the marker return spring from inside of the socket.





When pulling out the marker return spring, it sometimes flies out.

Be careful not to get injured.

③ Set the marker on the socket according to a set method of the marker on the page 13.

6.2. Combination of New Socket and Previous Marker Head (No.1780, 1782, 1783, 1785).

- 1) MK53RB No.1780 and MK53WY No.1782 are compatible width W17 or more larger size sockets. Refer to page 13 for details. In case using width W16 or less of new designed socket (No. 2700 to No. 2704, No. 2712 to No. 2715) and Marker Head ϕ 5, MK53RB (No. 1780) or MK53WY (No. 1782) which you already owned, consult to Tohnichi.
- 2) MK93RB No.1783 and MK93WY No.1785 are not compatible. In case purchased width W17 or more larger size socket (No. 2705 to No. 2723, No. 2716 to No. 2717) and going to use it with old Marker Head ϕ 9, MK93RB No. 1783 or MK93WY NO. 1785, consult to Tohnichi.

6.3. Combination of Previous Socket and Previous Marker Head (No.1780, 1782, 1783, 1785).

1) Since there is no problem, please use it as it is.

23

Designs and specifications are subject to change without notice.

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