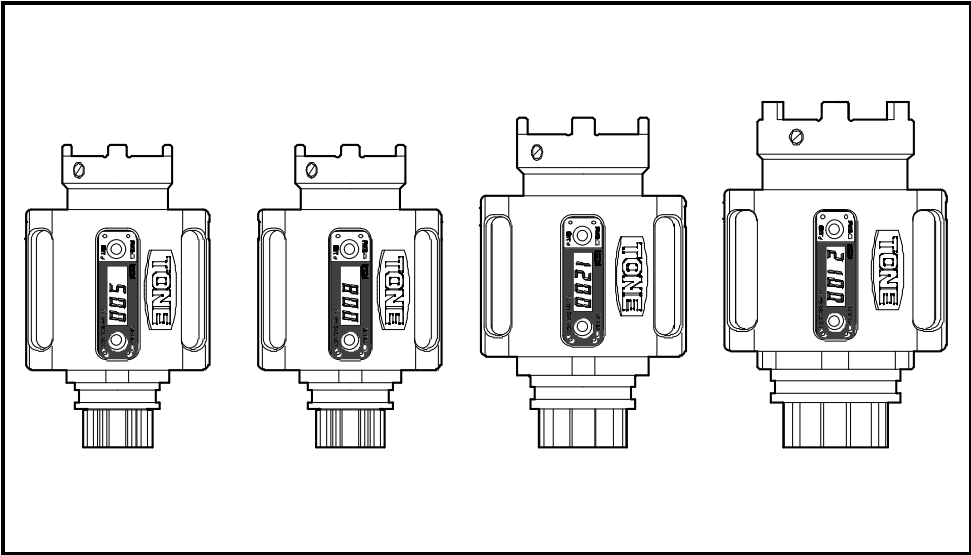


tone® DIGITORQON



INSTRUCTION MANUAL No.1310

型 式	DTM5EN/DTM5EF/DTM8EN/DTM8EF DTM12EN/DTM12EF/DTM21EN/DTM21EF
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CAUTION

Read and fully understand all the instructions before use.
Keep this manual in designated place for easy and quick reference.
The models mentioned on this manual are designed for use outside Japan.
Warranty shall be void if above mentioned models are use in Japan.

TONE CO., LTD.

PREFACE

Thank you for purchasing **DIGITORQON** .

- Upon receipt, check and confirm the following:
 - Check any transport damages.
 - Check for any loose or lost screws and bolts.
 - Check the model as per order.
 - Check all the accessories are contained.

If any problems are found, contact your distributor.

- Read this instruction manual carefully before use.
Full understanding of manual is essential to prevent personal injury or malfunction.
- Keep this manual in a bag attached to the back of metal case lid for easy and quick reference.
- If manual or warning label is lost or becomes illegible, or if additional manual is required, contact your distributor.

If you have any questions about the products or the contents of this instruction manual, contact your distributor.




- This manual is only applicable to outside Japan.

SAFTY INSTRUCTION

This manual specifies three (3) basic safety instructions:



■ Instructions are classified by degree of risk and described as follows:

	Danger is used to indicate threatening dangerous or unsafe practices which could immediately result in severe personal injury or death in the worst case.
	Warning is used to indicate hazardous or unsafe practices which could result in severe personal injury or death in the worst occasion.
	Caution is used to indicate hazardous or unsafe practices which could result in personal injury or product or property damage.



Even if the risk is classified as  , risk could become more serious result depending on conditions. Make sure to follow all instructions when using.

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1. Application

- The DIGITORQON has been designed as an accurate, cost effective and easy operated torque reading instrument with using SIMPLE TORQON.

2. Precautions for Use

- To prevent accidents such as fire electric shock and other injury, observe cautions as mentioned below.
- Read cautions before use and operate with following instructions.
- Read also instruction manuals of wrenches that are operated before use.

WARNING

● Handle batteries with care.

- Install the batteries with correct polarity by referring to the markings on the battery case.
- Do not put the batteries into fire. Do not short circuit batteries. Do not subject batteries to heat, deformation or decomposition.
- Do not use new batteries with old batteries. Do not use dry cell with rechargeable batteries.
- Do not attempt to recharge a dry cell.
- If battery electrolyte enters eye, immediately rinse the eye with clean water and receive medical treatment.
- If battery electrolyte adheres to skin or clothes, wash it off with clean water.
- Discard of exhausted batteries. Remove the batteries when the wrench is not in use..
- Follow precautions on the battery.

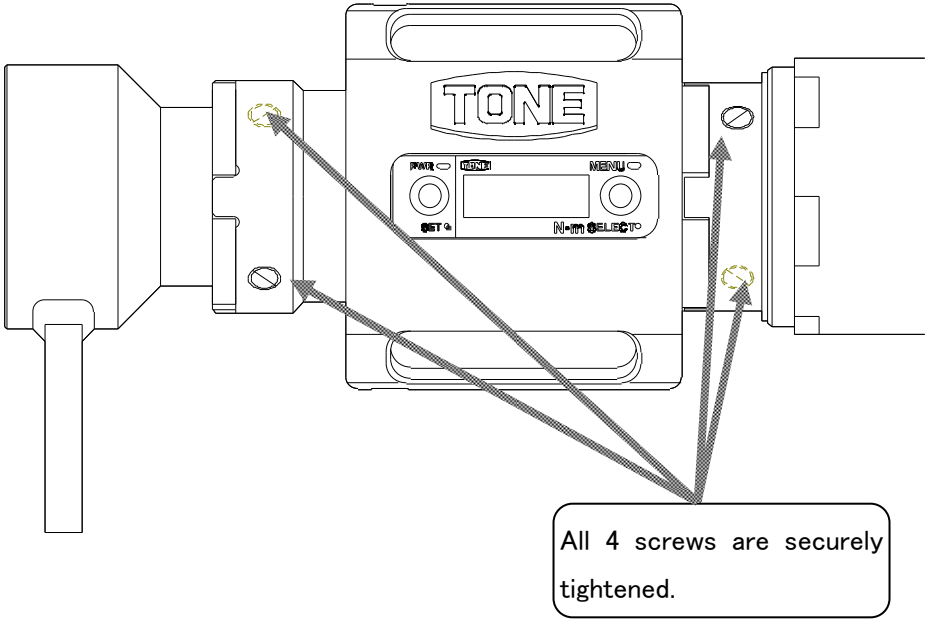
Failure to follow these instructions may result in fire, burn wound, injury, accidents, malfunction, liquid leakage or accuracy issue.

⚠ WARNING

● Install “DIGITORQON” on SIMPLE TORQON securely according to its instruction manual.

○ See “OPERATING PROCEDURE” on page 11.

Loose installation may result in accidents or injury.



 **WARNING**

● **Check following before use.**

- Check for any deformation, crack or damage on “DIGITORQON” body, batteries, L-type Hex Key Wrench (4mm), (-) Driver and Metal Case. Do not use “DIGITORQON” if any problem is found on items listed above.

Failure to follow this instruction may result in accidents or injury.

● **Store “DIGITORQON” in the metal case and keep it at the designated place when not in use.**

- Store in lockable dry location to keep any unauthorized personnel away.

Failure to follow this instruction may result in malfunction or accidents.

● **Use AAA alkaline dry cells or rechargeable nickel hydride batteries only.**

Failure to follow this instruction may result in fire, burn, injury, accidents, malfunction and accuracy problem.

● **Use genuine accessories or attachments manufactured by Maeda Metal Industries, Ltd.**

Failure to follow this instruction may result in accidents or injury.

● **Do not disassemble or modify “DIGITORQON”.**

- Disassembly & Re-assembly work is permitted only for microSD memory card.

Failure to follow this instruction may result in fire, burn, injury, accidents, malfunction and accuracy problem.

● **Contact your distributor for repair service.**

- Repair work should only be carried out by a qualified serviceman.
- Repair work done by an inexperienced person may cause accidents, injury or malfunction.

 CAUTION

● **Keep children away.**

- Do not let children touch wrenches and electric cord.
- All visitors should be kept away from work area.

● **Keep work area clean.**

- Cluttered areas and benches invite accidents.

● **Secure work area.**

- Keep body stance balanced and firmed.
- Never wrap the electric cord around something.
- Keep work area well lit.

● **Use suitable model for each application.**

- Do not use Simple Torqon beyond their rated specifications.
- Do not use Simple Torqon for purpose not intended.

● **Dress properly.**

- Always wear gloves and non-skid footwear when operating outdoor.
- Always wear safety helmet.

 CAUTION

● **Do not use solvent such as thinner for cleaning “DIGITORQON”.**

- Solvent could erase marking or print.
- Use dry cleaning.

● **Avoid dropping and impacting.**

- Handle with care when transportation.

Failure to follow this instruction may result in accidents, malfunction or accuracy problem.

● **Do not use in extremely high or low temperature.**

- Refer to operating temperature mentioned in its specification.

Failure to follow this instruction may result in accidents, malfunction or accuracy problem.

● **Do not use in humid condition.**

- Do not use in a location subject to rain.
- Refer to operating temperature and humidity mentioned in its specification.

Failure to follow this instruction may result in accidents, malfunction or accuracy problem.

● **Never use wrench under condensation condition.**

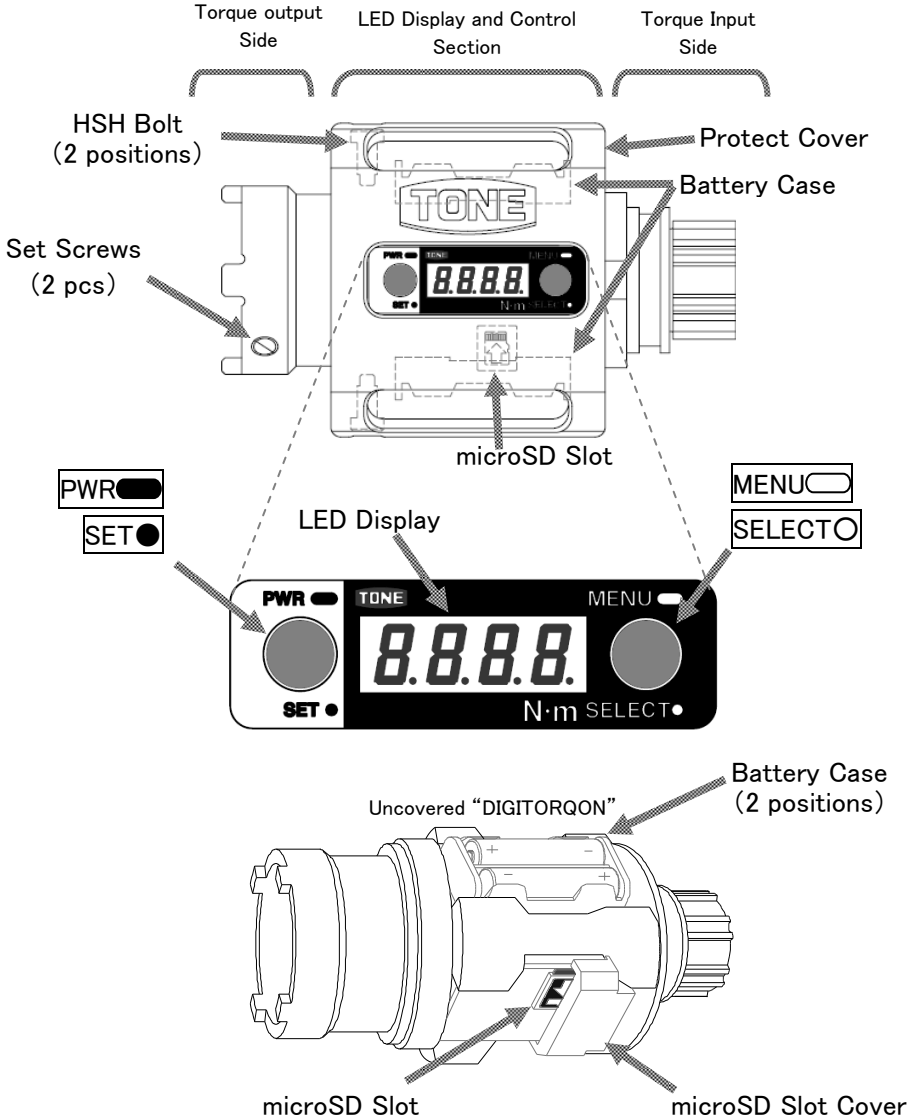
Failure to follow this instruction may result in accidents, malfunction or accuracy problem.

● **Do not use in dusty condition.**

- Prevent dust from entering “DIGITORQON”.

Dust may cause malfunction and accuracy problem as well.

3. Parts Name



※ / Marks indicate to push more than 2 seconds.

※ / Marks indicates to push less than 1 second.

4. Before Using

Check followings before using “DIGITORQON” or tightening torque measurement.

Insert microSD Memory Card

➞ P. 11

In case of storing tightening torque in the microSD memory card, insert the microSD memory card into “DIGITORQON”.

Tightening torque data management can be done to read in the microSD memory card with available spreadsheets.

NOTE microSD memory card has been installed in factory.

Set Clock

➞ P. 32

Set clock when “DIGITORQON” remains a factory condition, or after the batteries are changed, or when setting clock has not been made for a long time.

Also, when turning on the power to “DIGITORQON” installed the microSD memory card, and then “Clock setting screen” appears and blinks calendar year, set clock as necessary.

NOTE When tightening torque is measured without microSD memory card, the clock is used only for purpose of “5-6 Display setting state and battery power level” (See Page 19.) In this case, setting the clock is not necessary.

Turn ON / OFF Auto Start Mode

➞ P. 30

In the auto start mode, tightening torque measurement starts automatically as the variation in tightening torque is detected.

NOTE When the tightening torque is measured with auto start mode ON, the battery life can be shorter than that with auto start mode OFF due to increasing power consumption

NOTE Setup condition of Auto Start Mode is displayed in the following procedure: 「Turn Display ON」(See Page 14) and 「View Setup Condition and Battery Level」(See Page 19)

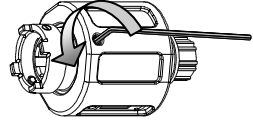
5. Operating Procedure

5-1. Insert/Remove microSD Memory Card

- ① Make sure that power is OFF (See Page.) ▷

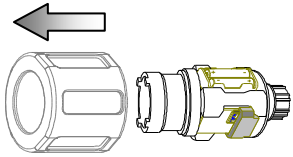


- ② Unscrew 2pcs of HSH bolt on the cover of “DIGITORQON” with using the L-type hex key wrench. ▷

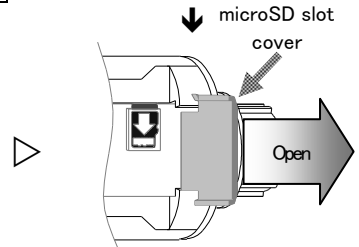


- ③ Slide the cover to remove. ▷

⚠ CAUTION	
●	Do not allow dust to enter the case.
●	Do not touch electrodes, terminals and parts on the electronic substrate: static electrical charge will cause malfunction.



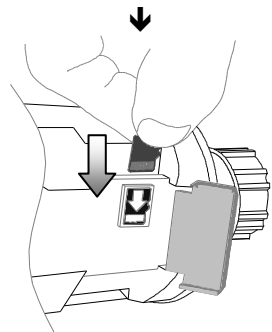
- ④ Open the microSD slot cover. ▷



Insert microSD Memory Card

- ⑤ Fully insert microSD memory card into the slot as shown in the figure until “click sound” is made. ▷

⚠ CAUTION	
●	Never touch electrode and any electronic components of the microSD memory card: static electrical charge will cause malfunction.

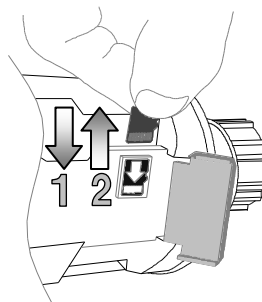


Remove microSD Memory Card

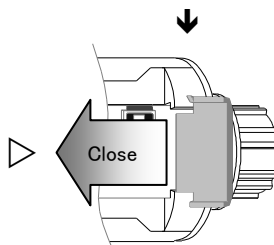
- ⑥ Push microSD memory card until “click sound” is made then remove it.

⚠ CAUTION

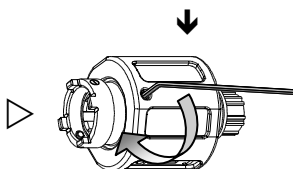
- Never touch electrode and any electronic components of the microSD memory card: static electrical charge will cause malfunction.



- ⑦ Close the microSD slot cover.



- ⑧ Set the cover and screw 2pcs of HSH bolt.



NOTE TransFlash Card compatible with the microSD memory card is also enable on “DIGITORQON”.

⚠ CAUTION

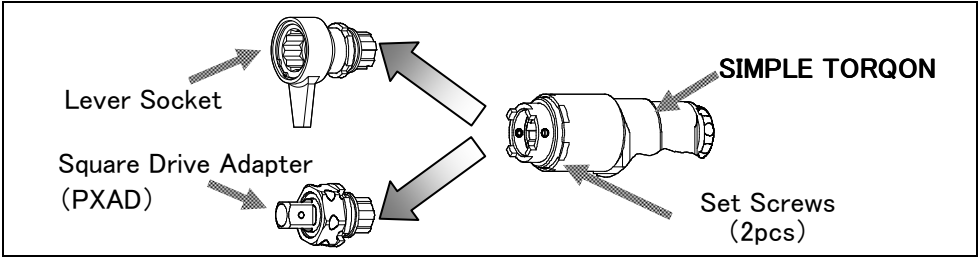
- Up to 2GB of microSD memory card can be enable on “DIGITORQON”

5-2. Mount “DIGITORQON” on SIMPLE TORQON

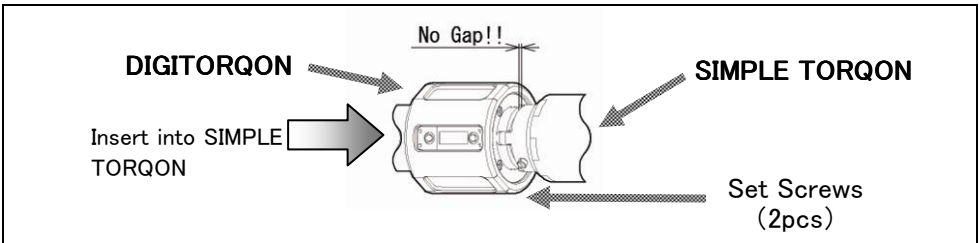
- ① Unscrew set screws and remove lever socket or square drive adapter from electric torque control wrench.

 **CAUTION**

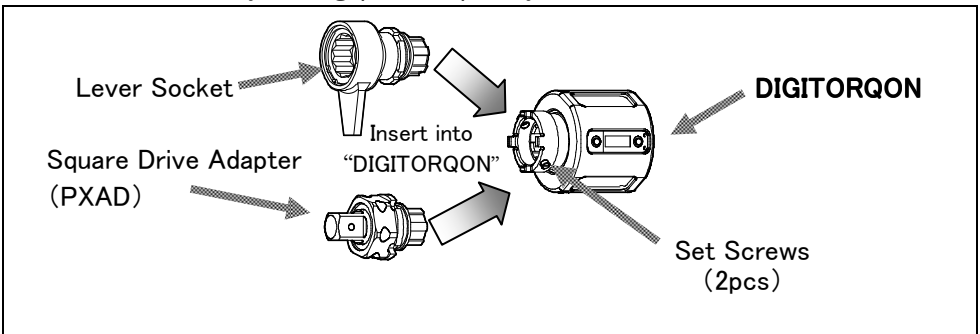
- Do not remove set screws completely from outer socket holder.



- ② Insert “DIGITORQON” into electric torque control wrench and fasten the set screws only after gap is completely removed.



- ③ Insert lever socket or square drive adapter into “DIGITORQON” and fasten the set screws only after gap is completely removed.

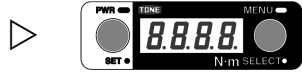
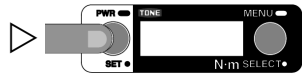


5-3. Turn Display ON

When microSD card is inserted

Approx. set up time: 9 sec

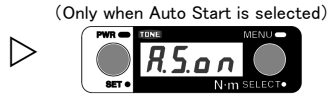
- ① Press **PWR** button for approx 1 sec at no-load.
- ② All digits will appeared in the window and power is turn on.



- ③ **5d.in**, will appear in the window if micro SD card is properly installed.



- ④ **R5.on** will appear if Auto Start is selected. No **R5.on** sign will appear if Auto Start is not selected.



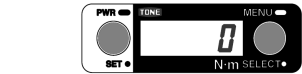
- ⑤ Year, date and time will appear in the window in the following sequence:
 - Calendar Year (no period)
 - Month & Date (separated by 1 period)
 - Hour & Minutes (separated by 2 periods)



NOTE No clock function won't appear if microSD card is not installed.

NOTE Press **SET** or **SELECT** button during step 3 & 4 to short cut initialization.

- ⑥ Zero adjustment will be made when **0000** is displayed and then zero adjustment is completed when **0** is appeared.



NOTE Zero adjustment is automatically made when power is just turned ON.

NOTE Set clock when calendar year is flashing. (See page 32)

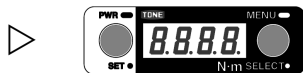
When microSD card is not installed

Approx. set up time: 6 sec

- ① Press **PWR** button for approx 1 sec at no-load.



- ② All digits will appear in the window and power is turn on.



- ③ **no5d** (no microSD) will appear in the window if microSD card is not installed.



- ④ **R5.on** will appear if Auto Start is selected. No **R5.on** sign will appear if Auto Start is not selected.

(Only when Auto Start is selected)



- ⑤ Zero adjustment will be made when **0000** is displayed and then zero adjustment is completed when **0** is appeared.



NOTE Zero adjustment is automatically made when power is just turned ON.

NOTE When tightening torque is measured without microSD memory card, the clock is used only for purpose of “5-6. Display setting state and battery power level” (See Page 19.) In this case, setting the clock is not necessary.




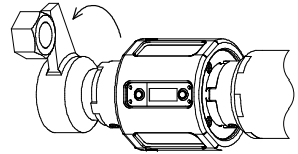
CAUTION



- Never apply load during **0000** is displayed as zero adjustment is being made.
- Only apply load when **0** is displayed.
- **Er.O.L** (Error Over Load) will appear right after **8.8.8.8** is displayed when load is applied beyond rated torque range. Measured torque cannot be guaranteed in such case (See Page 21).

5-4. Tightening Torque Measurement

○ Tightening procedure when auto start mode is on.

- ① Tighten bolt/nut with SIMPLE TORQON while the tightening torque or  is displayed. ▶



 **NOTE** “Zero adjustment” can be started by pressing  button (See Page 18).

- ② As SIMPLE TORQON stops, the maximum tightening torque measured during tightening procedure is displayed. To continue the measurement, repeat procedure with step 1).



CAUTION

- Before starting “Zero adjustment” by pressing  button, check the reaction bar for no loading.




NOTE When microSD memory card is installed, the tightening torque value is saved to “Group file” in the memory card (See Page 22)





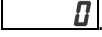
NOTE When no operation has been attempted for more than 10 min. “Automatic power off function” turns off power (See Page 20).

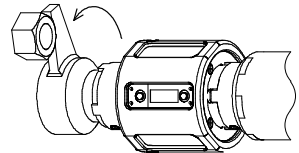


CAUTION

- When a tightening torque exceeding the maximum torque that can be displayed on “DIGITORQON” is measured, the window reads  (Error Over Load) in place of the tightening torque, and accuracy of tightening torque reading cannot be guaranteed (See Page 21)

○ Tightening procedure when auto start mode is off.



- ① When  is not displayed, press  button to display .




- ② Tighten the bolts/nuts with SIMPLE TORQON. .

- ③ As SIMPLE TORQON stops, the maximum tightening torque measured during tightening procedure is displayed. To continue the measurement, repeat procedure with step 1).

 **NOTE** When microSD memory card is installed, the tightening torque value is saved to “Group file” in the memory card (See Page 22)

 **NOTE** When “Auto start mode” is OFF, power saving message  will be displayed after a given length of time.

 **NOTE** When the auto start mode is on, tightening torque measurement starts automatically.

 **NOTE** When no operation has been attempted for more than 10 min. “Automatic power off function” turns off power (See Page 20).



CAUTION

- When a tightening torque exceeding the maximum torque that can be displayed on “DIGITORQON” is measured, the window reads **Er.O.L** (Error Over Load) in place of the tightening torque, and accuracy of tightening torque reading cannot be guaranteed (See Page 21)

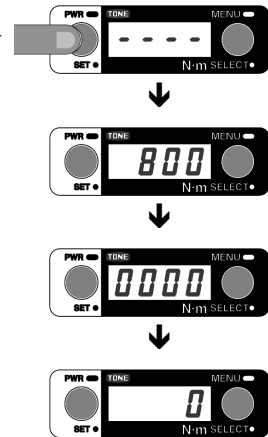
5-5. View Result and Automatic Zero Adjustment

- Press **SET** button to view torque value that is previously measured when **0** or **----** is shown in the window. Zero adjustment will automatically be made at the same time.

NOTE Display stores torque value previously measured even though it is turned off.

NOTE Zero adjustment must be made at no-load.

NOTE **0000** tells that zero adjustment is being made.



CAUTION

- Never press **SET** button when load is being applied.

5-6. View Setup Condition and Battery Level

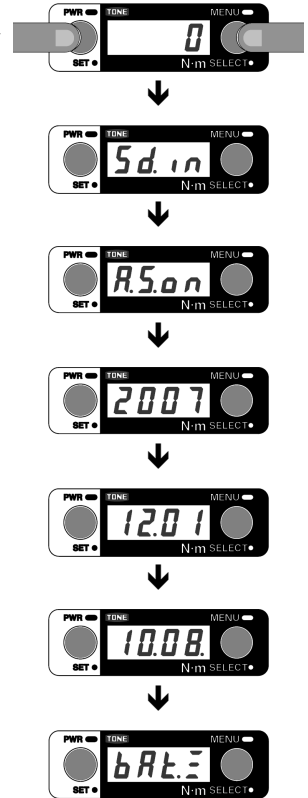
- Setup condition and battery level can be review by pressing **SET** and **SELECT** buttons at the same time when **0** or **----** is indicating.

- **Sd.in** (microSD installed)
- **no.Sd** (No microSD)
- **R5.on** (Auto Start **ON**)
(No indication if Auto Start is **OFF**)

- Calendar Year (no period)
- Month & Date (separated by 1 period)
- Hour & Minutes (separated by 2 periods)

- **bAt.:** (b A t tery enough)
- **bAt.:** (b A t tery falls)
- **bAt.:** (b A t tery almost Low))

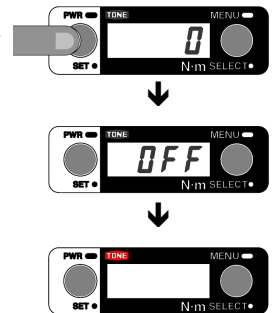
NOTE Keep pressing set & select buttons to proceed with clock setting (See Page 32).



5-7. Turn Display OFF

- Press **PWR** button for approx 3 sec to turn display off. **OFF** sign will appear.

NOTE Display shuts off automatically when it is not in use for more than 10 minutes (See Page 20).

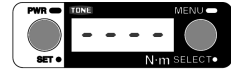


5-8. Automatic Display Shut OFF

- ① **OFF** will flash when display is not in use for more than 10 minutes. ▶

NOTE Press either **SET** or **SELECT** button during **OFF** is flashing to deactivate automatic shut off.

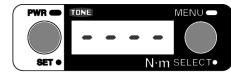
- ② After 10 seconds of **OFF** flashing, the display will be turned off automatically. ▶



5-9. Battery Level

- Battery level are indicated as follows: ▶
- **bA t .** (b A t tery falls)
 - **bA t .** (b A t tery almost Low)
 - **bA t L** (b A t tery completely Low)

Immediately change batteries when **bA t .** **bA t L** are indicated. (See Page 34)



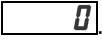
CAUTION

- No operation available other than shutting off the display when **bA t L** is indicated.



CAUTION

- Make sure press **SET** button to show  each time before next tightening when auto start is **OFF**.

Torque will not be measured if tightening operation is started without displaying .

- Never apply load before  is displayed.

Failure to follow this instruction results in inaccurate torque measurement.

- Never press **SET** button when load is being applied.

Failure to follow this instruction results in inaccurate torque measurement.

- **Er.Ol** (Error Over Load) will appear when load is applied beyond maximum torque of the wrench. Once **Er.Ol** is displayed, it will continue to show up every time when power is turned on to give alert that measured torque cannot be guaranteed.



- Contact your distributor for repair and recalibration.

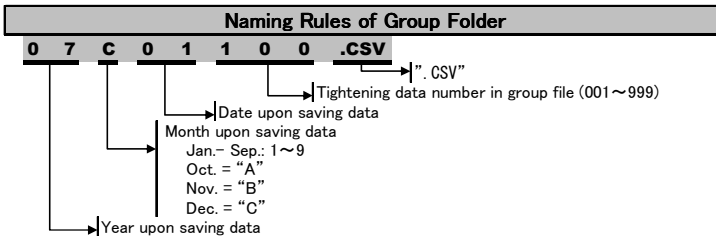
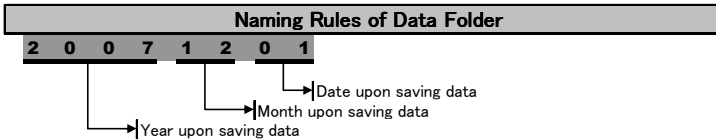
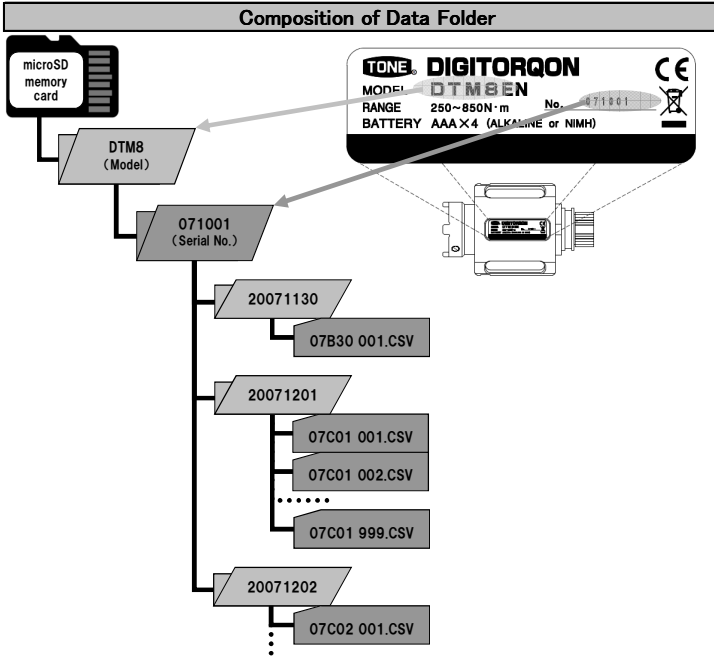
Failure to follow this instruction results in inaccurate torque measurement.

- Change batteries when **bAtL** is displayed. (See Page 34)



6. microSD Memory Card Storage Format

“DIGITORQON” saves measurements of tightening torque to **Date Folder** and **Group File** on the microSD memory card in the data folder format as shown in the figure below.



Storage Format of Group File

MODEL NAME,TONE DIGITORQ / DIGITORQON

TYPE NAME,DTM8

SERIAL No.,0710001

DATA No.,TORQUE,TIME[hh:mm:ss],DATE[YYYY/MM/DD],OVERLOAD,OPERATION,Remark_1

1,800,16:21:00,2007/12/01,,PowerON,

2,801,16:22:31,2007/12/01,,ZeroAdjustment,

3,799,16:23:20,2007/12/01,,AutoStart,

4,800,16:24:15,2007/12/01,,AutoStart,

5,799,16:25:31,2007/12/01,,AutoStart,

.....

998,1001,23:58:59,2007/12/01,,ErrorOverLoad,AutoStart,

999,800,23:59:59,2007/12/01,,ZeroAdjustment,

(ファイルの最後)

Open Group File with spreadsheet . . .

DATA No.	TORQUE	TIME[hh:mm:ss]
1	800	16:21:00
2	801	16:22:31
3	799	16:23:20
4	800	16:24:15
5	799	16:25:31
.....		
998	1001	23:58:59
999	800	23:59:59

- The model name, code and serial number of “DIGITORQON” is placed at the top three lines of the group file.
- In the group file, data is arranged in CSV (comma separated value) text format and in the order of DATA No., TORQUE (tightening torque), TIME (hour, minute, second), DATE (year, month, day). A data line is added as another tightening torque measurement is carried out.
- For the tightening torque values, plus values mean that tightening was done in clockwise direction. On the other hand, minus values mean that tightening was done in counter-clockwise direction.
- The maximum number of tightening torque data that can be in a group file is 999 (up to TORQUE DATA No. 999). The next data will be saved in a new group file having a serial number larger than that of the old file by 1.
- By pressing MENU button and then running 1 CHANGE GROUP (Change group file), change the group file to which tightening torque data are saved. (See page

NOTE Tightening torque data management can be done to read in the microSD memory card with available spreadsheets.

NOTE To read data folder and group file stored on microSD memory card on a PC, a memory card reader compatible with microSD memory card/SD memory card is required

NOTE microSD memory card can store the following data.

Storage Condition	Target
Size of 1 group file (tightening torque = 999)	Approx. 82KB
Number of pieces saved on microSD memory card (1GB)	Approx. 13 million

NOTE TransFlash Card compatible with the microSD memory card is also enable on “DIGITORQON”

 CAUTION

- If microSD memory card is not in the microSD slot upon turning on the power to “DIGITORQON”, tightening torque data will not be stored on the microSD memory card (See Page 11)
 - Check for display of `5d.in` upon turning on the power (See Page 14).
- The data folder contains, `LAST#GRP.TXT` and `LAST#TRQ.TXT` Since these files are special ones and therefore their file names shall not be changed.
- Do not touch electrodes of microSD card, and terminals and parts on the electronic substrate: static electrical charge will cause faults.
- A microSD memory card that can be used on “DIGITORQON” has memory size of up to 2 GB.
- For information on handling method and warranty of the microSD memory card, refer to the card instruction.
- Maeda Metal Industries is not liable for any loss to any data stored to the microSD memory card with “DIGITORQON”, regardless of reason or cause.
- Under no circumstances (except when disclaimer of liability is prohibited by law) shall Maeda Metal Industries be liable to the user for any special, indirect, incidental, or consequential damages including those to other devices, loss of data, etc., caused by abuse or misuse of “DIGITORQON” or microSD memory card by the user or third party.

7. Using Menu

Setup, edit or modify group file and various functions on “DIGITORQON” as well by pressing **MENU** button.

Show Menu Screen

- ① Press **MENU** for approx 1 sec when **0** or **----** is displayed in the window to proceed with menu screen. ▶

NOTE For list of menu screen, see page 45.



Select and Run Menu

- ② Press **SELECT** to proceed with next menu. ▶

- ③ Press **SET** to run menu. ▶

Finish Menu Screen

- ④ Press **MENU** for approx 1 sec to finish menu screen. ▶



NOTE Zero adjustment will not be made although **0** is displayed when menu screen is finished, Press **SET** to make zero adjustment before tightening

Menu Screen List

 1.CHANGE GROUP

[1_CHANGE
GROUP]

▷ Change group file
(See Page 27)

 2.GROUP DATA

[2_GROUP DATA]

▷ View measured torque values in
a selected group file (See Page 28)

 3.FILE TITLE

[3_FILE TITLE]

▷ View title of group file
(See Page 29)

4.AUTO START

[4_AUTO
START]



▷ Setup auto start ON OFF
(See Page 30)

5.SET DATE

[5_SET DATE]

▷ Setup clock
(See Page 32)

 **NOTE** Menu mark with  tells that microSD card installation is necessary.

 **NOTE** Zero adjustment will not be made although 0 is displayed when menu screen is finished, Press SET  to make zero adjustment before tightening.

7-1. Change Group File



(Only when microSD card is installed)

Torque data management can be done by changing group files that store tightening torque. (See Page 22)

- ① Call “Change Group” menu



- ② Press **SET** to run “Change Group” menu



- ③ Following **CLOSEd FILE :**, existing group file name is scrolled. In the next tightening measurement, the data will be saved in a new group file whose serial number is greater than the previous file name by 1.



NOTE When a group file is changed at the beginning on 2007/12/01 as described in “Data Folder Configuration (e.g.)” (See Page), the display scrolls the old group file name **CLOSEd FILE : 07C01001**. The group file named “07C01002.CSV” having a serial number incremented by 1 is the new data storage.

NOTE Example designation of group file name.

5 : Figure 「5」, **6** : Figure 「6」,
b : Alphabet 「B」, **d** : Alphabet 「D」

NOTE Group file name scrolls twice on the window. When **SET** or **SELECT** button is pressed during scrolling, it immediately reads **0**.

CAUTION

- The maximum number of tightening torque data that can be in a group file is 999 (up to TORQUE DATA No. 999). If the number exceeds 999, the next data will be saved in the new file as created in the step ③ above automatically (See Page).

7-2. Display Tightening Torque Data in the Current Group File



(Only when microSD card is installed.)

The tightening torque data in the current “Group File” can be checked sequentially by the button operation.

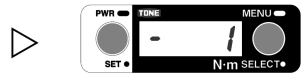
- ① On “Menu screen” (See Page 26), display and scroll the 2nd menu.



- ② Press **SET** to run the displayed menu.



- ② Following **-** (indication of previous data), previous tightening torque is displayed.



NOTE If no operation has been done for approx 10 second, the display returns to **0** and measurement can be continued.



- ④ When displaying the tightening torque data older than the previous one, press **SET** button.



NOTE For fast data scrolling, press and hold the button.

NOTE If no operation has been done for approx 10 second, the display returns to **0** and measurement can be continued.



- ⑤ When displaying newer tightening torque data, press **SELECT** button.

NOTE For fast data scrolling, press and hold the button.

NOTE If no operation has been done for approx 10 second, the display returns to **0** and measurement can be continued.



7-3. Display Name of Group File



(Only when microSD card is installed)

The name of file in the microSD memory card to which the current group file is stored can be identified through the button operation.

- ① On “Menu screen” (See Page 26), display and scroll the 3rd menu.



- ② Press **SET** to run the displayed menu.



- ③ Following **GROUP FILE**, current storage group file name is displayed and scrolled.



NOTE Example designation of group file name.

S : Figure 「5」, **b** : Figure 「6」,
b : Alphabet 「B」, **d** : Alphabet 「D」

NOTE Group file name scrolls twice on the window. When **SET** or **SELECT** button is pressed during scrolling, it immediately reads **d**.

Turn ON/OFF Auto Start Mode

4_Auto Start

In the auto start mode, tightening torque measurement starts automatically as the variation in tightening torque is detected.

Advantage and Disadvantage of Auto Start Mode

	OFF	ON
Pressing Button	Press SET button before measurement	Not necessary
Zero Adjustment	Upon turning on the power, or at every measurement	Upon turning on the power, or only when pressing SET button.
Battery Life	Complying with Specifications	Depending on usage condition

- ① On “Menu screen” (Page.26), display and scroll the 4th menu.

4_Auto Start:OFF indicates that auto start mode is currently **OFF**.

4_Auto Start:on indicates that auto start mode is currently **ON**.



- ② Press **SET** to run the displayed menu.



- ③ The current mode is displayed.



 CAUTION

- When the torque measurement is started with the auto start mode **ON**, tightening torque will be measured with reference to “Zero adjustment” performed immediately after power **ON**, or to “Zero adjustment” performed upon displaying the previously measured peak torque value by pressing **SET** button. If “Zero adjustment” has not been made for a long time, press **SET** button and manually perform “Zero adjustment”
- The **ON/OFF** setting data of auto start mode will be stored and retained after turning off the power.
- If **R.S.ON** is not displayed upon the power on, the auto start mode is **OFF**. **SET** must be pressed to start measurement.
- When the tightening torque is measured with auto start mode **ON**, the battery life can be shorter than that with auto start mode **OFF** due to increasing power consumption.
- When the tightening torque is measured with auto start mode **ON**, always check remaining battery level (See Page 20).

7-4. Set Clock



- ① On “Menu screen” (See Page 26), display and scroll the 5th menu.



- ② Press **SET** to run the displayed menu.



- ③ “Clock setting screen” appears and blinks calendar year.



- ④ Repeatedly press **SELECT** button until the current year is displayed.



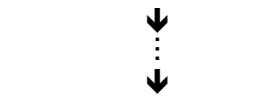
- ⑤ Press **SET** button to acknowledge the year, and then a month blinks.



In the same way as for the year setting set the month, day, hour and minute in that order.



- ⑥ The window, after displaying the date and time, returns back to **0** display, indicating that tightening torque can be measured.



NOTE For fast figure scrolling, press and hold **SELECT** button.

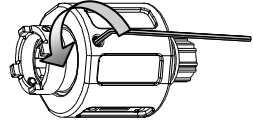
NOTE When tightening torque is measured without microSD memory card, the clock is used only for purpose of “5-6 Display setting state and battery power level” (See Page 19.) In this case, setting the clock is not necessary.

8. Changing Batteries

- ① Make sure that power is OFF (See Page 19) ▷



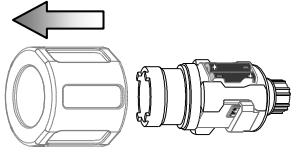
- ② Unscrew 2pcs of HSH bolt on the cover of “DIGITORQON” with using the L-type hex key wrench. ▷



- ③ Slide the cover to remove. ▷

CAUTION

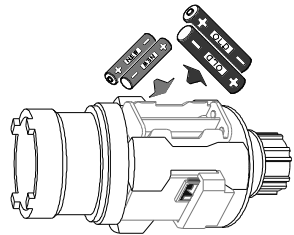
- Do not allow dust to enter the case.
- Do not touch electrodes, terminals and parts on the electronic substrate: static electrical charge will cause faults.



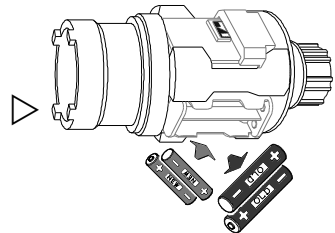
- ④ Remove the dead batteries from one side of battery holder and install new batteries. ▷

CAUTION

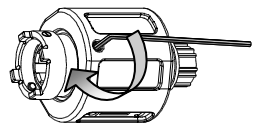
- Do not remove all 4pcs of battery from the battery holders at one time. If all 4pcs of battery are removed from the battery holders at one time, saved clock data will be disappeared.



- ⑤ Remove the dead batteries from the other side of battery holder and install new batteries. ▷



- ⑥ Set the cover and screw 2pcs of HSH bolt. ▷



 **WARNING**

● **Handle batteries with care.**

- Install the batteries with correct polarity by referring to the markings on the battery case.
- Do not put batteries into fire. Do not short circuit batteries. Do not subject batteries to heat, deformation or decomposition.
- Do not use new battery with old battery. Do not use dry cell with rechargeable battery.
- Do not attempt to recharge a dry cell.
- If battery electrolyte enters eye, immediately rinse the eye with clean water and receive medical treatment.
- If battery electrolyte adheres to skin or clothes, wash it off with clean water.
- Discard of exhausted battery. Remove the batteries when the wrench is to be left unused.
- Follow precautions on the battery.

Failure to heed these warnings will cause fire, burn wound, injury, accident, malfunction, liquid leakage or accuracy issue.

● **Use size AAA alkaline dry cells or nickel hydride rechargeable batteries.**

Failure to heed this warning will cause fire, burn wound, injury, accident, malfunction, liquid leakage or accuracy issue.

⚠ CAUTION

- Do not remove all 4pcs of battery from the battery holders at one time.
 - If all 4pcs of battery are removed from the battery holders at one time, saved clock data will be disappeared.
- Do not touch electrodes, terminals and parts on the electronic substrate: static electrical charge will cause faults.
- Do not allow dust to enter the case.

9. Error and Status Indication



- ▷ [Error Over Load]
Load is applied beyond maximum torque of “DIGITORQON” (See Page 21)



- ▷ [Error microSD]
Incompletely installation or lack of storage can happen for the microSD memory card.



- ▷ [no microSD]
microSD not installed (See Page 11)



- ▷ [microSD in]
microSD installed (See Page 11)



- ▷ [Auto Start = on]
Auto start mode ON. (See Page 30)



- ▷ “Zero Adjustment” is made (See Page 18)



- ▷ [no data]
No tightening torque data in the current group file. (See Page 28)



▷ [Battery Level = 3/3]
Battery Full (See Page 19)



▷ [Battery Level = 2/3]
Battery falls (See Page 20)



▷ [Battery Level = 1/3]
Battery almost low (See Page 20)
Change batteries (See Page 34)



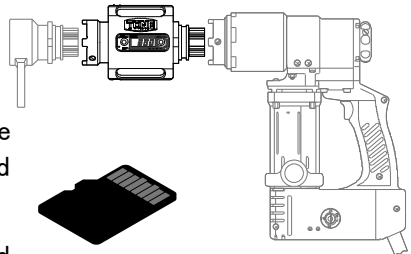
▷ [Battery Low]
Battery completely low (See page 20)
Change batteries (See Page 34)

10. Periodic Inspection

- Periodic inspection is required for every 12 months or 10,000 tightening cycle. Contact your distributor for inspection.

11. Features

- “DIGITORQON” can indicates and store tightening torque value by mounting on SIMPLE TORQON.
- Tightening torque data management can be done to insert the microSD memory card into “DIGITORQON”.
- Reading tightening torque data and measurement time arranged in CSV text format on microSD memory card on a PC.
- Tightening torque measurement starts automatically by installed Auto Start Mode on “DIGITORQON”
- High repeated accuracy (+/- 3%) in both clockwise and counter-clockwise direction.



- Protected from drop impact by rubber cover.
- Automatically shut off when “DIGITORQON” is not in use for more than 10 minutes.
- Notify the time of changing batteries.
- When a tightening torque exceeding the maximum torque that can be displayed on “DIGITORQON” is measured, the window alerts that accuracy of tightening torque reading cannot be guaranteed

12. Specifications

Model	DTM5EN /DTM5EF	DTM8EN /DTM8EF	DTM12EN /DTM12EF	DTM21EN /DTM21EF
Torque Range	100~550N·m /80~400lbf·ft	250~850N·m /190~620lbf·ft	550~1250N·m /410~920lbf·ft	840~2160N·m /620~1590lbf·ft
Weight (except Battery)	1.7 kg	1.7 kg	2.4 kg	3.0 kg
Measurement Direction	Both Directions (Clockwise/Counter-clockwise)			
Accuracy	Tightening Torque	+/- 3% (Both Direction)		
	Clock	+/- 3 seconds per month (Average) +/- 2 minutes per month (Max.)		
Battery	AAA Alkaline X 4 or Nickel Metal Hydride Rechargeable Battery			
Battery Life	Approx 10,000 readings (Approx 85 Hours) (in case Auto Start Mode is <input type="checkbox"/> OFF with AAA Alkaline)			
Memory Card	microSD Memory Card (Max. Storage: 2GB)			
Operating Temperature	0~40°C, humidity below 80% (no condensation allowed)			

13. Accessories

- ① Metal Case X 1
- ② Hex Key Wrench (4mm) X 1
- ③ (–) Screw Driver X 1
- ④ AAA Alkaline X 4 (Installed)
- ⑤ Instruction Manual X 1
- ⑥ microSD Memory Card X 1 (Installed)
- ⑦ Calibration Certificate X 1

14. Aftersales Service

- Use “DIGITORQON” properly according to this instruction manual and WARNING LABEL on the body of “DIGITORQON”.
- Provide model, serial number, date of purchase and details of failure when contacting your distributor.

CAUTION

- **Do not use “DIGITORQON” when malfunction, deficiency in its performance, personal injury or property loss is foreseen.**

If possible, prepare backup “DIGITORQON” beforehand.

15. EC Declaration of Conformity

We hereby declare that the following our product conform to the essential health and safety requirements of EC Directives.

Directives : EMC Directive, 2004/108/EC
RoHS Directive, 2011/65/EU

The above product has been evaluated for conformity with above directives using the following European standards. The technical documentation for this product is retained at the above manufacturer's location.

EMC Directive:

EMI EN 55014-1:2006 + A2:2011
EN 61000-3-2:2006 + A2:2009
EN 61000-3-3:2008
EMS EN 55014-2:1997 + A2:2008

Name : Motohiro Hirao
Title : General Manager Development Dept.
Address : 6-25, Kotobukicho, Kawachinagano-shi, Osaka,
586-0026, Japan
Signature : MOTOHIRO HIRAO
Date : 11 - May - 2013

16. FCC EMI Statement (USA Only)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

17. Industry Canada EMI Statement

This Class A digital apparatus complies with Industry Canada Standard ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 d'Industrie Canada.

Cette classe numérique dispositif A est conforme à la norme canadienne ICES-003.

MEMO

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● Specifications and the design are subject to change without notice. ●