DIMENSIONS

64 (2.51")

TORQUE TESTER MODEL DI-5N

0.0

CLEAR   SET   UP   DOWN   ON/OFF

105 (4.13")

25 (.98")

ADAPTER   LBF-IN   KGF-CM   N-CM

⌀35 (1.37")

105 (4.13")

145 (5.70")

1/4" FEMALE HEX
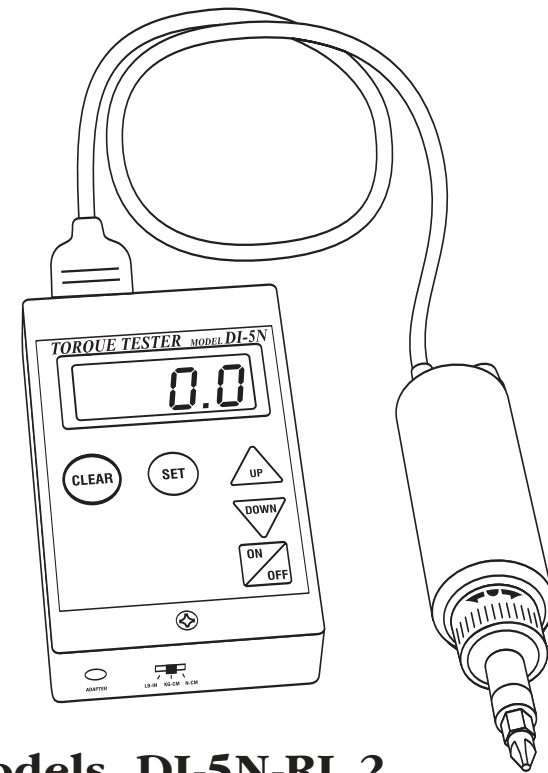
2 YEAR WARRANTY (RESTRICTIONS APPLY)

Imada, Inc. warrants its products to the original purchaser to be free from defects in workmanship and material under normal use and proper maintenance for two years (one year for adapters, attachments and cables) from original purchase. This warranty shall not be effective if the product has been subject to overload, shock load, misuse, negligence, accident or repairs attempted by others than Imada, Inc.

During the warranty period, we will, at our option, either repair or replace defective products. Please call our customer service department for a return authorization number and return the defective product to us with freight prepaid.

The foregoing warranty constitutes the SOLE AND EXCLUSIVE WARRANTY, and we hereby disclaim all other warranties, express, statutory or implied, applicable to the products and/or software, including but not limited to all implied warranties of merchantability, fitness, non-infringement, results, accuracy, security and freedom from computer virus. In no event shall Imada, Inc. and/or its affiliated companies be liable for any incidental, consequential or punitive damages in connection with the use of its products and/or software.

Digital Torque Tester/Screwdriver

TORQUE TESTER MODEL DI-5N

0.0

CLEAR   SET   UP   DOWN   ON/OFF

ADAPTER   LB-IN   KG-CM   N-CM

Models **DI-5N-RL 2**
DI-5N-RL 10
with continuous RS-232 output

INSTRUCTION MANUAL

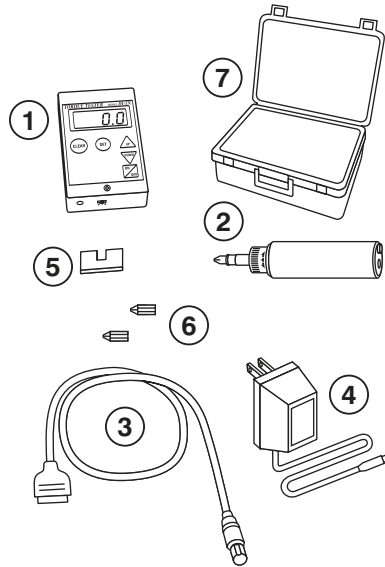## Digital Torque Tester/Screwdriver
Model DI-5N-RL 2 (0.15~18.00 lbf-in)
Model DI-5N-RL 10 (1.5~90.0 lbf-in)

Accuracy: ±0.5% F.S., ±1 LSD

List of Equipment

(1) Torque Tester Display Unit

(2) Screwdriver Sensor

(3) Cable

(4) AC adapter/charger

(5) Units designator

(6) 2 Phillips tips

(7) Carrying Case

Read First: Safety Information

For safety, and for damage avoidance, be sure to read this manual thoroughly. The warranty is only valid when the product is used following the instructions provided within this manual.

- Do not use tester in high temperature, high humidity, or in damp or wet areas.
- Recommended operating temperature is between 0-42ºC (32-100ºF).
- Do not apply a torque exceeding the rated capacity regardless of whether the unit is On or Off. Avoid shock load. Do not use with impact wrenches.
- When charging the battery, be sure to use the provided AC adapter/charger exclusively.
- Do not use lacquer thinner or any solvent to clean the unit.
- Do not disassemble or modify the unit.

4. Press UP or DOWN switch to select the ending memory location and press SET. While downloading the data, the display reads "–P-". Press CLEAR, to terminate the download function.

Auto Power Off
To maximize battery life, power shuts off after 10 minutes of non-use.

System Reset Button
When battery has been completely depleted and then recharged, the tester may not work. In this case, press the System Reset Button.

Low Battery Indicator
"LOBAT" icon appears when tester needs to be recharged. Turn off power. Do not recharge until LOBAT icon appears.

IMPORTANT! Use the provided CEDAR AC adapter/charger exclusively and plug into the correct AC output. It takes 8 hours to fully recharge. Do not recharge for more than 12 hours. When fully charged, disconnect the AC adapter/charger to avoid overcharging.

RS-232C Serial Output
Output is available in PD, PP and C modes. In PD and PP modes peak data is output when ZERO is pressed or activated by the AUTO ZERO function. In C mode, the gauge outputs data continuously.
RS-232C Signal: 8 data, 2 stop, no parity. Baud Rate: 9600 bps.

Peak Data Output Format

```
[CAN] _ _ _ [SO] [value] _ [SI] [unit] [CR]
[CAN]:      ASCII control code 24
_:          Space (code 32)
[SO]:       ASCII control code 14
[value]:    Output data with sign and decimal point. Plus sign
            represents for CW torque and minus sign for CCW.
            [Value] always occupy six locations and empty
            locations will be filled with spaces.
[SI]:       ASCII control code 15
[unit]:     N*m _ _ _=N·m
            kgf*cm = kg·cm
            lb*in _ = lb·in
[CR]:       ASCII control code 13 (Carriage Return)
```

Continuous Output Data Format

```
[CAN] [value] [CR]
```

7. **Time (In)**
   After Auto Zero Reset is entered "In" is displayed and then the Time duration. Press UP or DOWN switch to select, (0 to 24 seconds), then press SET to enter.

"S-" displays to confirm programming completion and 0.0 is displayed.

After setpoints and batch counter are set, the tester counts the number of properly torqued fasteners (between High and Low setpoint) and beeps three times when completed. If time ("In" value) elapses before reaching the batch count number, a beep sounds to alert to possible mis-tightening or stripped thread.

Storing and Recalling Data from Memory
Memory functions work in PP, PD and C modes. Store up to 300 values in memory. Values are simultaneously output as RS-232, even after memory is full.
1. Measure in PP or PD mode and press CLEAR to store peak values. In C mode, the tester outputs data continuously (80 data/sec).
2. To recall a value, hold down SET switch and press UP or DOWN to select a memory location (i.e. .0.0.1) and torque value.

Clearing Memory
1. **Single Clear:** While displaying a memory value, press the CLEAR switch. "CLR" is displayed and blinks 3 times. Press CLEAR switch again before "CLR" stops blinking and memory value is erased.
2. **All Clear:** Press CLEAR until "ALL" displays. While "ALL" is blinking, press CLEAR again. Display changes to "CLR" and blinks 3 times. Press CLEAR again before CLR stops blinking and all data in memory will be erased.

Downloading Memory Data
Memory download function works only in PP and PD measuring modes and will not function with the memory store function.

1. Press ON/OFF to turn on.
2. While pressing SET, press CLEAR. The display blinks "FA" twice and then displays memory locations (i.e. .0.0.1).
3. Press UP or DOWN switch to select a beginning memory location and press "SET" to enter. The display now blinks "LA" for the ending memory location.
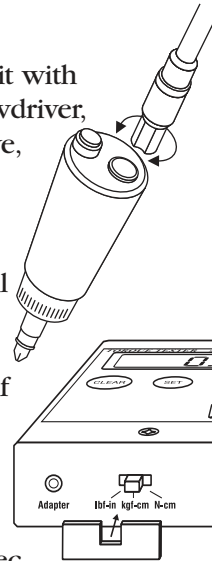
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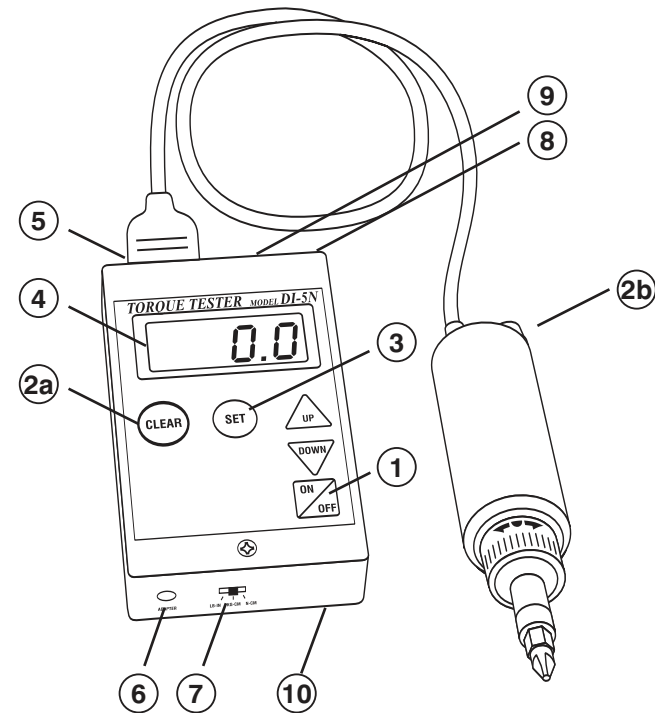
① **ON/OFF switch** Press to turn on, press again to turn off (click once, do not hold). After 10 minutes of non-use the unit shuts off.

② **CLEAR switch** To reset display to zero.

② **CLEAR switch** (on screwdriver sensor) To reset display to zero.

③ **Set switch**

④ **LCD display** Displays torque and low battery icon (LOBAT).

⑤ **Screwdriver cable receptacle**

⑥ **AC charger/adapter receptacle** If LOBAT icon appears, 8-hour battery recharge is required.

⑦ **Unit switch** To select measuring units (lbf-in, kgf-cm & N-cm)

⑧ **RS-232 output**

⑨ **Analog output** DI-5N-RL2 3 VDC, DI-5N-RL10 1.5 VDC, 10 mA max.

⑩ **System reset button** (on the back of the display unit)

GENERAL OPERATION

1. Connect the screwdriver sensor to the display unit with cable provided. To connect the cable to the screwdriver, rotate the connector and find the matching groove, then push in until a positive connection is made (When disconnecting the cable, hold the silver metal part of the round connector and pull out). Once both ends of the cable are connected, install the 1/4" female hex retainer. Select driver bit and insert into the 1/4" female hex.
2. Select measuring unit (lbf-in, kgf-cm or N-cm). If desired, affix unit designator to prevent units from being accidentally changed.
3. Select measuring mode (for normal testing, PP is recommended). Turn off the tester and on again. The display shows 0.0. Press SET and hold for 4 seconds, tester beeps and briefly shows selected measuring mode (GO, PP, PD or C) and then displays 0.0. To change to other measuring modes press and hold SET again for 4 seconds. Repeat until you get the desired measuring mode.
   **GO** *(Real Time) Display torque transient (no output).*
   PP *(Peak) Capture peak torque (peak data output).*
   PD *(Peak Down) Capture peak down value (peak data output).*
   C *(continuous RS-232 output, 80 data/sec) Display torque transients.*
4. Press ON/OFF, if the unit does not display zero, press the CLEAR button on the display unit or the screwdriver to make sure the display reads zero.
5. Insert tester tip into the screw, hold perpendicularly (not at an angle), and turn to measure.
6. After taking measurement, press CLEAR to zero display for the next test. If the memory function is set (see Storing or Recalling Data from Memory), the displayed data will be stored in memory every time CLEAR button is pressed.
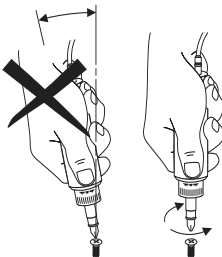
   For setting Go/No Go torque limit with audible beep, Memory and Auto Zero Reset functions, refer to Programming pages 5-6.

PROGRAMMING

Press ON/OFF to turn on. Press UP and SET switches simultaneously until a beep sounds, "HI" is displayed and then the High setpoint value. This confirms the tester is ready for the following programming steps.

1. **High Setpoint (HI)**
   After "HI" is displayed and then the High setpoint value. Press UP or DOWN switch to select (i.e. 10.0 for 10.0 lbf-in), then press SET to enter.
2. **Low Setpoint (LO)**
   After High value is entered, "LO" is displayed and then the Low setpoint value. Press UP or DOWN switch to select, then press SET to enter.
3. **Peak Down Minimum and Trigger Point (PdLO)**
   After Low value is entered, "PdLO" is displayed and then the PdLO value. Press UP or DOWN switch to select, then press SET to enter.
   PdLO sets a minimum torque value for Peak Down mode. For example, if "PdLO" value is set at 5.0 lbf-in, only a reading over 5.0 lbf-in will be measured in Peak Down mode.
   PdLO also sets the start and stop trigger points for Continuous data output. When torque reaches the PdLO value, the gauge starts to output data and stops if torque falls below the value.
4. **Batch Counter (CO)**
   After "PdLO" value is entered, "CO" is displayed and then the batch count number. Press UP or DOWN switch to select (0 to 99), then press SET to enter.
   Batch counter retains the number of properly torqued fasteners counted in memory even if the tester is turned OFF. Press and hold ON/OFF for more than 1 second to reset.
5. **Beeper (bp)**
   After the batch count number is entered, "bp" is displayed and the display shows "On" for beeper set ON, or "Off" for beeper set OFF. Press UP or DOWN switch to select, then press SET to enter.
6. **Auto Zero Reset (AC)**
   After Beeper selection is entered, "AC" is displayed and then Auto Zero Reset duration value. Press UP or DOWN to select 0.0C - 0.5C - 1.0C - 1.5C - 2.0C - 2.5C - 3.0C, and press SET to enter (0.5C for 0.5 second and 0.0C for MANUAL RESET).
   After measuring, Auto Zero automatically resets the tester to "0.0".