



Digital Production Wrench

DPW SERIES

Instruction Manual

Ver. 12.3. (April, 2022)



To use this product properly and safely, be sure to read the instruction manual carefully before use. If you have any questions, please contact your dealer or Adrec Corp.



For safe use

To Our Customers

Before using this product, please read this instruction manual carefully to ensure correct use.




If you have any questions, please contact your dealer or Adrec Corp.

Please keep this instruction manual carefully.

1. Signal words

Signal words are classified as "DANGER," "WARNING," or "CAUTION" depending on the degree of danger they may pose to humans.

Before using this product, please understand the signal words described in this instruction manual to ensure proper management and safe operation.

Marks at warning		Contents
	DANGER	Imminent danger of serious impairment
	WARNING	Potential hazards that can be serious obstacles
	CAUTION	Precautions for proper use

2. WARNING

1) This product and dry cell batteries

① **Prohibition of disassembling or modifying this product**

Doing so may compromise safety, function, performance, lifespan, and may cause malfunctions.

Never use batteries other than those specified in this instruction manual.

Follow the manufacturer's instructions for correct use of the batteries.

② **Consider the conditions around your workspace.**

Do not use this product or batteries in the rain, or in wet or damp places.

• There is a risk of electric shock or smoke.

• Make sure your workspace is sufficiently illuminated.

• Working in the dark can cause accidents and may result in explosions, fires, or other accidents.

③ **Use only designated accessories or options.**

Do not use any accessories or options other than those specified in this instruction manual.

Using non-designated accessories may cause accidents or injuries.

④ **Do not dispose of batteries in fire.**

This may cause explosions or release of harmful substances.

⑤ **Be sure to switch the ratchet lever properly.**

Accidents, injuries, or malfunctions may occur due to slipping of the ratchet.

⑥ **Do not extend the handle using pipes or other objects.**

Doing so may cause damage to the main unit or affect its accuracy.

⑦ **Take measures to prevent falling when using the device at a high place.**

Dropping the main unit or socket may cause accidents, injury, or malfunction.

3. CAUTION



- ① **Keep the work area clean at all times.**
 - A messy workspace or workbench can cause accidents.
- ② **Keep children away.**

Do not allow anyone other than the operator to touch the main unit.

 - This may cause injury.

Keep only personnel away from the work area.

 - This may cause injury.
- ③ **Store properly when not in use.**

Store in a dry place, out of reach of children, or under lock and key.

 - This may cause an accident.

Do not store the main unit or storage batteries in a location where the temperature may rise above 50°C (122°F).

 - This may cause deterioration of the storage battery, which may result in smoking or ignition.
- ④ **Do not force use.**

For safe and efficient operation, work with a torque capacity appropriate to the capacity of the unit.

 - Working above capacity may cause accidents or damage.
- ⑤ **Use the appropriate tool body for the job.**

Do not use this product for purposes other than those specified.

 - This may cause injury.
- ⑥ **Do not work in an unreasonable posture.**

Always keep your feet on the ground and maintain balance.

 - Failure to do so may result in injury.
- ⑦ **Take care when cleaning and maintaining this device.**

For replacement of accessories, follow the instruction manual.

 - This may cause injury.

If an extension cord is used, inspect it periodically and replace it if damaged.

 - If this product is used with a short circuit, there is a risk of electric shock or short circuit that may cause a fire.

Always keep the gripping area dry and clean and free of oil and grease.

 - This may cause injury.
- ⑧ **Check for damaged parts before use.**

Before use, thoroughly inspect the case and other parts for damage and make sure they are in good working order and that it performs its prescribed functions.

Check for damage to parts, condition of installation, and any other irregularities in all areas affecting the work.

 - There is a risk of electric shock or short circuit leading to a fire.

If the case or other parts are damaged, replace or repair them through the seller or Adrec Corp.

4. Precautions for use

1) To use this product properly and safely

- ① Do not use batteries other than the specified ones.
- ② Do not use this product in any environment other than that described in the instruction manual.
- ③ Do not disassemble this product.
- ④ Please perform a start-up inspection and check the settings before use.
- ⑤ Note that this product may malfunction or burn if it gets wet with water or oil.
- ⑥ Please note that this product may malfunction or burn out if used in the presence of condensation.
- ⑦ Please be careful not to drop or bump this product as it may cause damage or malfunction.
- ⑧ Use this product within the measurement range described in the instruction manual.
- ⑨ Always perform daily and periodic inspections of this product.
- ⑩ Always check the zero before taking a measurement
- ⑪ To ensure accurate measurement, grip the effective length line on the handle securely and apply force at right angles to the torque wrench.
- ⑫ The main unit and the replacement head must be securely mated.

2) Before starting to use, replace the recommended Eneloop batteries (Panasonic).

If you detect any abnormal odor or if this product catches fire, immediately stop using it, move the measuring instrument to a safe place, and contact us.

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1. Overview and Features

This equipment is a digital type torque wrench for bolt tightening work.

1-1 Features

- 1) Can manage measurement and work data
Measurement data, date and time of screw tightening or measurement are recorded/output, enabling history management of work/measurement.
- 2) Pass-Fail function
Setting upper and lower torque limits enables pass/fail judgment of measured torque values.
 - ① Buzzer sound by ear
 - ② Vibration motor feel it with your hands
 - ③ Bar graph/ Indicator function (optional) ... visibly
- 3) Large capacity memory
Up to 6000 data can be recorded.
- 4) 10 different measurement conditions
Up to 10 different measurement conditions can be stored in the torque wrench body.
(This is done with dedicated software.)
- 5) Convenient wireless function
Real-time output of tightening data is possible. Peak torque value is transmitted wirelessly using the "Pass/Fail function".
- 6) Continuous use time
It can be used continuously for about 70 hours (wireless specification: about 70 hours).
- 7) Battery level display function
The remaining battery charge is indicated in three easy-to-understand levels.

2. Composition

- 1) Main unit1 unit
- 2) Standard accessories
 - Replacement head (compatible ratchet head)1 piece
 - USB cable (A male/mini-B male)1 piece
- 3) CD-ROM1 copy
(PC software, USB driver, instruction manual)
- 4) Inspection report and calibration certificate1 piece
- 5) Optional products
<Various replacement heads>

In addition to standard products, special specifications are also available.

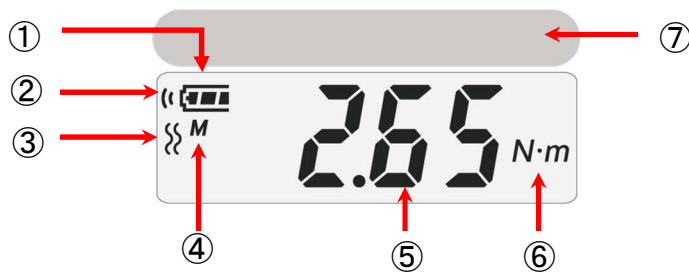
3. Name of each part

1) Main body



- ① Replacement head
Figure shows the QPH of standard accessories.
- ② Case
Polycarbonate case
- ③ Liquid Crystal Display (LCD)
Torque : Numerical display
Count Control / Count: Numerical Display
- ④ Force line (grip)
Position to apply force for accurate tightening operations
- ⑤ USB connection (on the back of the main body)
USB terminal for communication

2) Liquid Crystal Display (LCD) display panel



- ① Battery level indicator
 - 3 displays 50% to 100% charge.
 - 2 displays 10% to 50% charge.
 - 1 display requires battery replacement.

(This is a guideline when 100 tightening operations are performed in an hour.)
- ② Buzzer state
 - : Buzzer ON
 - No indication: Buzzer OFF
- ③ Vibration motor condition
 - : Vibration motor ON
 - No indication: Vibration motor OFF
- ④ MEMO mode
 - M** : Memory function enabled
 - No indication: Memory function disabled
- ⑤ Numeric display
Displays torque value/control times
- ⑥ Unit display
Display units on the numeric display

⑦ LED indicator section

- 1st LED: Lights up at the lower limit of 20%.
- 2nd LED: Lights up at the lower limit of 40%.
- 3rd LED: Lights up at the lower limit of 60%.
- 4th LED: Lights up at the lower limit of 80%.
- 5th LED: Lights up at the lower limit of 100%.

White LED: When the applied torque is less than the lower limit

Blue LED: When the applied torque reaches the lower limit

Red LED: When the applied torque exceeds the upper limit

During Communication Sleep: 5th LED blinks at regular intervals (normally blue/red when battery is low).

3) Operation panel



- ① Power Button
Switch to turn power ON/OFF
- ② Display Switching Button
Displays the torque wrench settings

*For details of button operations, refer to "Page: 9 5-1 Quick Guide to Button Operations "

4. Summary description of Each Mode

4-1 Preset/ Measurement Mode

After the target torque is set and the applied torque reaches the lower limit, the buzzer sounds and the vibrating motor notifies the operator. It is used mainly for tightening screws.



Point When shipped from the factory, the <Preset Measurement Mode> is set.

Torque wrench setting

- | | | |
|---|---|-------------------------|
| (1) <Maintenance> | "Tightening direction function" | 'Unidirectional' |
| (2) <Setting> | "Lower torque" | 'Target torque' |
| (3) <Setting> | "Upper torque" | 'Maximum target torque' |
| (4) <Setting> | "MEMO mode" | 'Enabled' * |
| *Please select 'disable' for wireless use (OP). | | |
| (5) <Setting> | Set the buzzer and vibration motor according to the work environment. | |

Operation Flow

- (1) Apply torque ... at the lower limit (buzzer sounds/vibration) ... apply more torque ... Loosen force
- (2) Display/record/transmit the maximum "torque value"
- (3) Automatically reset to "0.0" display

4-2 User Calibration Mode

This mode is useful for daily inspection of torque wrenches.

Point All settings in the torque wrench are ignored and only the torque value is displayed.



While holding down ② the display switching button, turn on the power with ① the power button.



LCD display section: <CAL> is displayed.



Measure the torque with your torque measuring this product.
Check the accuracy of the torque value displayed on the LCD display.



Please turn off the power supply after the inspection is completed.

5. Main Unit Operation Instructions

5-1 Quick Guide to Button Operations



Condition	Power	Switch Display	Detailed description No.	Description of Operation
	Power OFF	● Press and hold		1)
② Press and hold		① while pressing	8)	Activate User Calibration Mode
Power ON	● Press and hold		1)	Power OFF: "Press and hold "
		● Press and hold for 2 seconds	2)	Wrench setting contents display Lower limit → Upper limit → (Control Count) Add OP specification → Wireless CH → Wireless ID
	●		3)	Tightening count display Control count → Tightening count → Number of memory If the control count is 0, only the number of memories is displayed.
	Pressing simultaneously		4)	Shift to pattern switching mode *Effective only when multiple patterns are set
		●		Pattern selection *Effective only during pattern switching mode
	●			Pattern decision *Effective only during pattern switching mode
		●	5)	Display of previous torque value
	Pressing simultaneously for 2 seconds		6)	Erase the previous data
	●	7)	Wireless communication "ACK" / frequency management, manual "Reset"	

5-2 Button operation

(1) Power On/Off



Press and hold the "Power Button".

(2) Confirmation of settings



Press and hold the "Display Switching Button".
The current setting is displayed.

Lower limit torque → Upper limit torque → (Control Count)

Add OP specification

Wireless CH → Wireless ID

(3) Check the number of memories



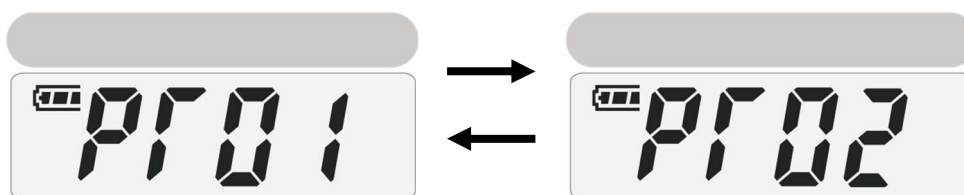
Push down the "Power Button".
The number of times managed, fastening times, and items in memory are displayed in order.
If the number of times is zero, only the number of items in memory is displayed.

(4) Pattern switching



Press the "Power Button" and the "Display Switching Button" simultaneously.
Note that if you press and hold for more than 2 seconds, the last work data will be deleted.

- ① With PT displayed, press the "Display Switching Button" to switch patterns, and press the "Power Button" to confirm.



(5) Display of previous torque value



Push down the "Display Switching Button".
The previous torque value is displayed.

(6) Deletion of data from previous work



Press the "Power Button" and the "Display Switching Button" simultaneously for 2 seconds.

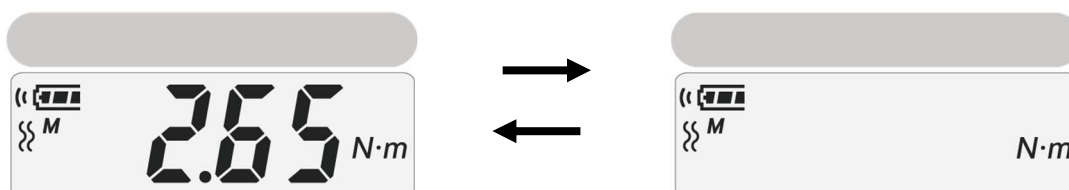
(7) Reset operation while waiting for wireless communication "ACK" reply



Push down the "Display Switching Button".

② **Waiting for wireless communication "ACK" reply (when maintenance operation <online system linkage function> is set to "Linked")**

When communication with the host system is interrupted due to some failure, the wrench enters the state of waiting for "ACK" reply, and the torque value on the LCD panel becomes blinked.



Waiting for wireless communication <ACK>

(8) Start in user calibration mode



With the power off, press the "Power Button" while holding the "Display Switching Button" and to turn the power on.

<CAL> display



Reference Refer to Chapter 4-2 "User Calibration Mode" for details.

(9) Memory Over

After the number of fastening data reaches 6000, <FULL> will be displayed on the LCD panel when the work is performed.



Save the internal data and erase the internal memory.



Reference Refer to the separate "PC Software Instruction Manual" for details on how to save the internal data.

5-3 Torque data setting range by model/unit

Unit: N·m

Model	Lower limit	Upper limit	Model	Lower limit	Upper limit
DPW-10	1.00	10.0	DPW-100	10.0	100.0
DPW-25	2.50	25.0	DPW-200	20.0	200.0
DPW-50	5.00	50.0	DPW-300	30.0	300.0

*In the case of micro torque setting, the accuracy may deviate from the guaranteed accuracy between the minimum setting value and the guaranteed accuracy value.

Unit: lbf · in

Model	Lower limit	Upper limit	Model	Lower limit	Upper limit
DPW-88i	8.80	88.00	DPW-880i	88.0	880.0
DPW-220i	22.0	220.0	DPW-1800i	180	1800
DPW-440i	44.0	440.0	DPW-2600i	260	2600

*In the case of micro torque setting, the accuracy may deviate from the guaranteed accuracy between the minimum setting value and the guaranteed accuracy value.

Unit: kgf · m

Model	Lower limit	Upper limit	Model	Lower limit	Upper limit
DPW-1k	0.100	1.000	DPW-10k	1.00	10.00
DPW-2.5k	0.250	2.500	DPW-20k	2.00	20.00
DPW-5k	0.500	5.000	DPW-30k	3.00	30.00

*In the case of micro torque setting, the accuracy may deviate from the guaranteed accuracy between the minimum setting value and the guaranteed accuracy value.

6. Battery replacement

6-1 Battery Replacement

Replace the batteries with recommended Eneloop (Panasonic) batteries before starting to use.

(1) Battery orientation

Insert batteries from the minus side.



(2) How to replace batteries

Note

- If you replace the batteries, be sure to turn the power **ON** once, then **OFF** before replacing them.
- Please replace the batteries **quickly**. If the torque wrench is left unattended with the battery removed, the date will be reset.

Please prepare two AA batteries. (Recommended batteries: Eneloop by Panasonic)

Remove the dedicated rubber cap on the grip end of the torque wrench and replace the battery.

※Refer to "Page: 13 3) How to attach/remove the dedicated rubber cap " to remove the cap.



When attaching



When removing the cap

Open the battery cover by pulling the claw in the direction of the arrow until it clicks.

Please open it while holding the circled area.

If opened without holding there, the battery may pop out due to the recoil of the spring.



(3) How to attach/remove the dedicated rubber cap

~How to remove it~



Remove the cap from the back of the torque wrench.



Pull it up slowly.



~How to attach it~



Attach the cap from the front of the torque wrench.



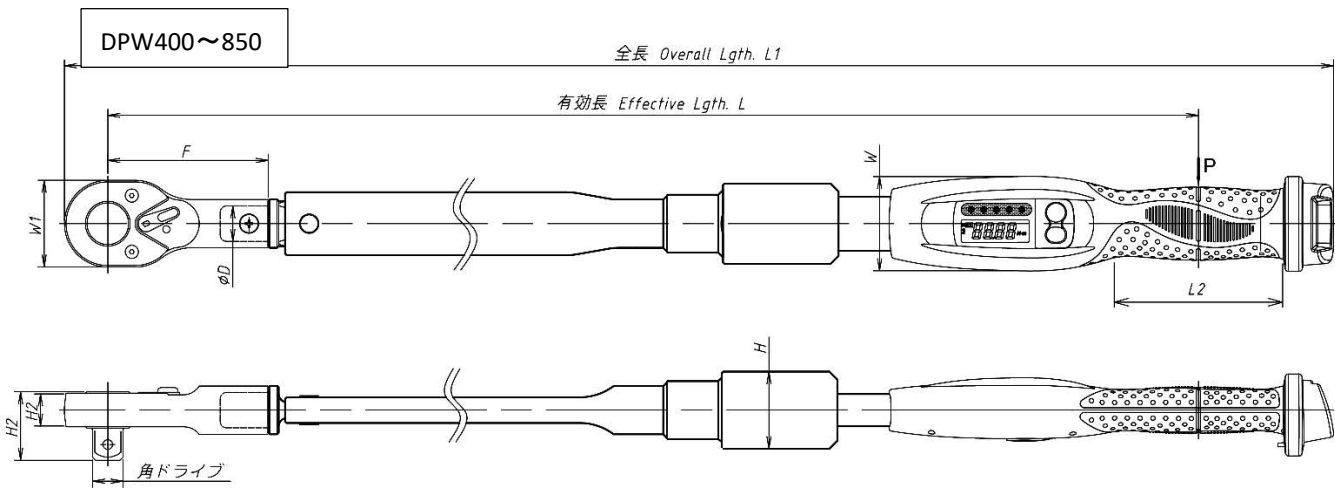
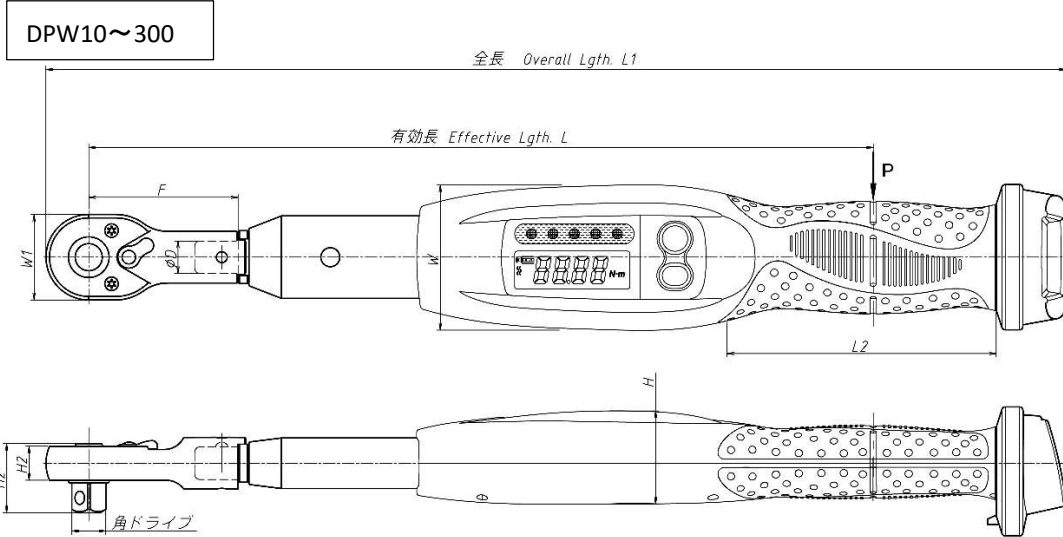
Cover it slowly from top to bottom.



Cover it completely.

7. Specifications

1) Main unit specifications



Model	Measurement range		Manual force at Maximum torque P [N]	Dimensions					Weight [kg]*
	Setting range [N-m]	Minimum reading [N-m]		Effective length L[mm]	Total length L1 [mm]	Max. width W [mm]	Handle length L2 [mm]	Max. thickness H [mm]	
DPW10	1.00~10	0.01	40.5	247	324	45.0	85.0	34.0	0.39
DPW25	2.50~25	0.01	99.2	252	333				0.39
DPW50	5.00~50	0.01	173.0	289	375	53.5	95.0	34.0	0.52
DPW100	10.0~100	0.1	294.1	340	430				0.64
DPW200	20.0~200	0.1	542.0	369	573	58.0	105.0	38.0	1.12
DPW300	30.0~300	0.1	461.5	650	766				1.40
DPW400	40~400	0.1	442.5	904	1015	39.0	105.0	38.0	2.45
DPW600	60~600	0.1	545.5	1100	1220	45.9			3.64
DPW850	85~850	0.1	566.7	1500	1620	55.0			6.26

*Weight excluding replacement head

Ratchet head

Model	Square drive [mm]	Insertion diameter ϕD [mm]	Head width W1[mm]	Head thickness H1 [mm]	Overall height H2[mm]	Length F[mm]	Weight [Kg]	Matching Torque Wrench
QPH10	6.35	10	25.0	9.5	18.3	45.0	0.07	DPW10
QPH25	9.53	10	31.5	12.5	25.5	50.0	0.14	DPW25
QPH50	9.53	12	31.5	12.5	25.5	55.0	0.14	DPW50
QPH100	12.70	15	39.0	16.5	34.8	65.0	0.31	DPW100
QPH200	12.70	18	39.0	16.5	34.8	80.0	0.34	DPW200
QCH400	19	22	54	21	42.5	100	0.7	DPW300,DPW400
QCH600	19	30	68	27.5	50	125	1.35	DPW600
QCH1000	25.4	34	76	29	58	130	1.47	DPW50

Features	Type	DPW type torque wrench
Load direction		Both right and left directions possible (switchable to one direction) / Automatic detection of tightening direction
Measurement accuracy		±3% + 1digit
Guaranteed accuracy range		20% ~ 100%
Measurement Mode Functions		Peak hold
Torque setting function		Lower limit / Upper limit
range of values		10% ~ 100% (maximum torque value)
unit		N · m / lbf · ft / lbf · in / kgf · m
Memory function		MEMO mode "Enable / Disable" [Max. 6,000 items]
Operation mode		AUTO mode
Auto power off function		1 hour / 4 hours / 8 hours / OFF
Advance warning function		OFF / 10 ~ 90% (in 10% increments) Up to 5 times
Buzzer sound setting		ON/OFF
Vibration function		ON/OFF
LCD display function		7-segment LCD 4-digit display
Step display function		High brightness LED indicator 5-step display
Battery level display function		3 steps
Over-torque warning function		Upper limit exceeded 120% <ng> Display
LED Pass/ Fail function		Lower limit reached LED lights up blue Upper limit exceeded LED lights up red
Work management Condition setting function		Up to 10 types (optional)
Frequency setting function		Continuous / 1 ~ 999 times
Data output function		Output to dedicated software Displayed/stored by dedicated software (When wireless is used, up to 16 simultaneous displays are possible)
File conversion function		Excel file / CSV file
Power		2 AA dry cell batteries
Continuous use time		Approx. 70 hours (nickel metal hydride rechargeable battery, tightening conditions: 100 times/H)
Calendar function		Record setting date and time
Wireless Specifications		RS232C compliant / USB connector compatible
Operating temperature range (recommended temperature)		0°C ~ 40°C (15°C ~ 30°C / no condensation)

3) Wireless specifications

Communication Specifications	ZigBee (equipped with a product certified as conforming to the technical standards of the Ministry of Internal Affairs and Communications)
Frequency band	2.4GHz (2405 ~ 2480MHz) Number of channels: CH11 ~ 26
Network	Torque wrench ID number: 001 ~ 255 (max. 255) When using special software: 01 ~ 16 (max. 16)
Communication distance (with obstructions)	Approx. 60 m (approx. 30 m (varies depending on operating environment))
Wireless receiver	Dimensions/Weight
ZC-101W / ZC-201W	L67 × W67 × H28 / approx. 65g
ZC-202W	L70 × W23 × H9 / approx. 10g

4) Torque unit Compatibility table

Unit: N·m	Unit: lbf · ft	Unit: lbf · in	Unit: kgf · cm
10.0	7.38	88.51	1.02
25.0	18.44	221.28	2.55
50.0	36.88	442.55	5.10
100.0	73.76	885.1	10.20
200.0	147.52	1,770.2	20.39
300.0	221.28	2,655.3	30.59