

KILEWS

KILEWS JAPAN CO., LTD.

☐ KTM - CSP

☐ KTM - CSM

数字扭力计操作手册

DIGITAL TORQUE METER INSTRUCTION MANUAL

OSH-Q03

操作前请阅读全部说明

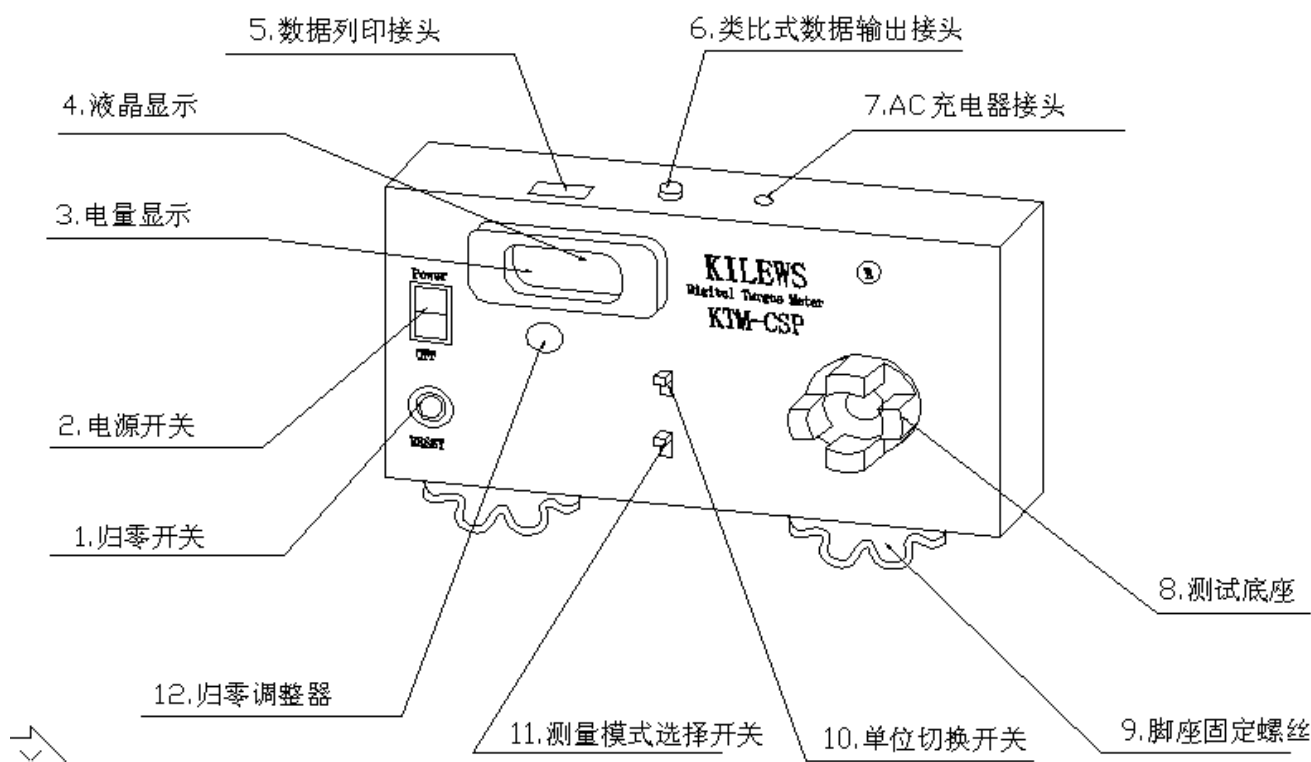
一. 安全警告 !!

1. 工作场所要保持干净。
 - ◎ 杂乱的工作区域及台面容易造成伤害。
2. 注意工作场所的环境。
 - ◎ 勿将扭力计置放于雨中或潮湿处。
 - ◎ 请在正常室温下(约 24℃)使用扭力计。
 - ◎ 工作场所应照明良好。
 - ◎ 勿于有易燃液体或气体之处所使用扭力计。
3. 勿让孩童接近。
 - ◎ 除操作人员以外应避免他人靠近工作场所。
4. 穿着适宜。
 - ◎ 勿穿着太宽松的衣物或珠宝，以免操作工具时勾扯拉到。
5. 谨慎操作。
 - ◎ 操作扭力计时应小心使用，注意操作方式及工作场所安全。
6. 稳固的固定机身主体。
 - ◎ 当测量较大扭力时应使用夹子或虎头钳等工具来固定起子，如此会比较安全，同时可用双手操作起子。
7. 勿测试超过负荷量的扭力。
 - ◎ 若测试超过负荷量会使仪器损坏甚至产生意外或伤害。
8. 勿拆卸、撞击或震动仪器。
 - ◎ 自行拆卸仪器或仪器遭过度撞击、震动，可能导致仪器损坏。
9. 电击警告!!
 - ◎ 勿以潮湿的手碰触电源插座以免电击。
10. 使用专用的充电器充电。
 - ◎ 使用非专用的充电器可能会损坏仪器，更可能引起火灾意外。
11. 适当的充电。
 - ◎ 请依指示电压充电。勿使用直流供电机或发电机充电，如此会产生高热引发火灾。
 - ◎ 充电时间不要超过 8 小时，过量充电会引起爆炸、过热和电池漏液，引起火灾。
12. 绝不可将电池(嵌装于扭力计内)丢弃火中。
 - ◎ 如此会导致爆炸或释放有毒物质。(丢弃电池的程序应依当地法律规定妥善处理或送到专门的回收处)
13. 如有下列情况应关闭电源。
 - ◎ 没有使用时或进行充电时。
 - ◎ 进行修理时。
 - ◎ 其它可能招致危险的情况时。
14. 细心保养扭力计。
 - ◎ 请经常检查弹簧座，不要使用变形或坏掉的接头，以使操作正常安全。
 - ◎ 定期检查电线和延长线，更换有损坏的线材。

15. 不可猛烈拉扯电线。
 - ◎ 不可搬运悬挂着电线的仪器，也不要拉扯电线来拔开插头。
 - ◎ 不可将电线放在高温、油腻和有锐利边缘的物品旁。
 16. 检查有无因零件损坏所造成的功能损失。
 - ◎ 在进一步使用仪器前，仔细检查有无损坏、能否正常运作。
 - ◎ 检查任何有可能会影响运作的零件是否正常。
 17. 请由专业的人员来修理仪器。
 - ◎ 勿改装此产品。
 - ◎ 应在购买的经销商处维修产品，若由非专业人员修理此产品，有可能会无法正常运作，甚至引起意外或伤害。
 18. 请使用专用的配件或附件。
 - ◎ 勿使用本操作手册指示以外的配件或附件。
 19. 不使用时请小心储放。
 - ◎ 扭力计应储放在干燥且儿童无法接触之处、或是安全的地方。在运送时可利用此产品原有的包装盒。
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二. 外观

- | | |
|------------------------------|--------------------------------|
| (1) RESET SW (归零开关) | (7) DC IN (AC 充电孔) |
| (2) POWER SW (电源开关) | (8) SOCKET (测试底座) |
| (3) LOBAT DISPLAY (低电量显示) | (9) KNOB (脚座固定螺丝) |
| (4) DISPLAY (液晶显示器) | (10) UNIT SW (单位切换开关) |
| (5) DATA PUTPUT (数据输出端口) | (11) MODE SELECT SW (测量模式选择开关) |
| (6) ANALOG OUTPUT(模拟式数据输出端口) | (12) ZERO ADJ. (归零调整器) |



三. 规格

型 号		KTM-CSP	KTM-CSM
测 量 范 围		1.5 ~ 90.0 Lbf.in	0.15 ~ 9.0 Lbf.in
		1.5 ~ 100 Kgf.cm	0.15 ~ 10.0 Kgf.cm
		0.15 ~ 10 N.m	0.015 ~ 1.0 N.m
正 确 度		200 ~ 1000 数字显示为±0.5% 15 ~ 199 数字显示为±1%	
显 示 器		三位半 LCD 影像显示	
测 试 方 向		正、反时钟方向	
测量模式	P-P(Peak) 峰值模式	显示负荷力最高值	
	TRACK 变值模式	显示负荷力值的变化	
	P-D(Peak Down) 初值模式	显示负荷力最初峰值	
数 据 输 出		RS232 序列输出 (速率 9600BPS)	
电 池 配 置		6VDC (Ni-Cd 1.2V x5)	
使用扭力单位		Lbf.in 、 Kgf.cm 、 N.m	
充 电 时 间		少于 8 小时	
连续使用时间		约 12 小时	
电 池 寿 命		可充电 300 次以上，视操作情况而定	
专 用 充 电 器		输入:AC 110V or 220V 输出:DC 7.25V(120mA)	
底 座 尺 寸		20 方形 和 9.5 方形	
机 体 尺 寸		230(长)x123(宽)x65(高)	
重 量		约 1.5Kg	

四. 准备与测量方法

4-1 安装

测量仪器在测量较大扭力时可能会晃动起来。因此测量仪器必须用稳固的脚座器具来固定它。

4-2 测量模式的设定

有以下两种模式可供选择。(视使用用途来选择)

- (1) P-P(Peak) 峰值模式：显示测量到的最大扭力值。
- (2) TRACK 变值模式：显示实时的扭力值。
- (3) P-D(Peak Down) 初值模式：显示第一个峰值。

4-3 测量方式

- (1) 归零调整: 打开扭力计电源，再将测量模式切换到” TRACK” ，此时显示器的数值应为零。若不是零则按”归零开关” 将数值归零，接着将测量模式切换为” PEAK” 。
- (2) 准备好受测工具并衔接,并开始测量扭力。
- (3) 测量时应顺时针完全锁紧或工具自行停止或跳脱为止。
- (4) 当测量完成后，显示器上的数值就是该次测量的扭力值。
- (5) 如果要再进行测量，再次测量前按” 归零开关” 将显示器的数据清除。
- (6) 仪器在连续 10 分钟未使用的情况下，将会自动关机。

(7) 若使用者需要测量扭力变化可切至 TRACK 变值模式

五. 充电

当显示器上出现”LOBAT”字样时表示扭力计电量不足，需进行充电。

请关闭扭力计电源，以随机配备的充电器，接妥正确电源与扭力计充电孔即可进行充电。

充电时间请勿超过 8 小时，以免造成电池过热、漏液甚至燃烧等伤害。

六. 数据传输(只限 PEAK 模式)

数据传输(需搭配专用传输线与软件)：在每次测量完毕按归零开关时(或机器自动归零时)，扭力计会自动将测得的数据经传输装置输出到计算机上。

※ 搭配用的传输装置为选购产品;扭力测试仪必须切于 PEAK 模式。

七. 服务保证

本产品在购买后一年内若有因生产或运送过程瑕疵而产生的故障情况，本公司无条件提供修理服务；但下情况则被排除在外：

- ◎ 不当使用、修理或重组仪器而导致故障者。
- ◎ 在购买后因摔落等事故而导致故障者。
- ◎ 因天然灾害、污染和不正常的电压所导致的故障。

八. 校正服务

本产品于出厂前皆已做过可靠且符合国际标准的准确度校正，但为维持扭力计的精确度，应将扭力计做定期的校验。本公司另提供专业并符合标准的调修服务，唯保证期间外的校验服务得另收费用。

如有任何疑问 请与当地代理商联系！

Operation Menu for Digital Torque Meter

Model: KTM-CSP KTM-CSM

1. Caution for safety

1. Keep work area always clean.
Cluttered areas and benches may invite injuries.
 2. Consider work area environment.
Do not use torque meter in the rain or in the damp or wet place.
Use the product at a place left at constant temperature (about 24°C).
Keep work place well lighted.
Do not use or charge the product in presence of flammable liquids or gases.
 3. Keep children away.
Keep any person other than the operator(s) away from work area.
 4. Dress properly.
Do not wear loose clothing or jewelry, which may be caught in moving parts.
 5. Work with the most care.
When using the product, carefully work, with consideration to how to handle, how to work, work environment, etc.
 6. Fix main body firmly.
When operated for measuring a large torque, use clamps or a vise, etc. It is not only more safe than holding by hand but also makes it possible to grip the screwdriver by both hands.
 7. Do not apply a torque exceeding the permissible load.
If applied beyond the permissible load, it may cause damage to the detector, resulting in accident or injury.
 8. Do not disassembly, shock and vibrate this product.
Avoid disassembling the product that is a precise instrument. If the torque meter is damaged by excessive shock or vibration, the product may not only show the full performance but also result in accident or injury.
 9. Caution to electric shock
Do not touch power plug by wet hand. It may cause electric shock.
 10. For charging the battery be sure to use only exclusive charger.
Using a charger other than specified may cause a fire or injury.
 11. Charge properly.
Charge on the indicated voltage. Do not use DC power or engine generator. It may cause abnormal heat, resulting in a fire.
Keep the charging time not longer than 8 hours. Overcharge may bursting, overheat and liquid leakage, resulting in a fire or injury.
Charge in a well-ventilated place. While being charged, do not cover with cloth.
 12. Never throw the battery (built-in the torque meter) into fire.
It may cause burst or give off toxic substance. (The procedure for scrapping the battery shall be followed in accordance with local or regional law on waste disposal. If there is no local or regional law on waste disposal, be sure to dispose of the battery at a recycling shop.)
 13. In the following cases, turn off the main switch and disconnect the plug from outlet.
When not used or charged;
When repaired;
When any other danger is expected.
 14. Maintain torque meter with care.
For better and safer performance, check screw joints regularly and use ones whose tips are free from deformation and wear down.
For replacement of accessories follow the instruction manual.
Inspect cords and extension cords periodically and if damaged, replace them.
 15. Do not handle cord violently.
Do not carry the product hanging by cord or draw out socket from outlet by pulling cord.
Do not put cord near to a hot, oily or edgy part.
 16. Check for absence of damaged parts.
Before further use of the product, carefully check for no damage, normal operation, or intended functions.
Check whether or not any other components that may affect its operation are normal.
Replace parts according to the instruction manual.
 17. Have the product repaired by the specialized dealer.
Do not modify this product.
-

Repair should be made always by the dealer where you purchased the product. If repaired by any person with no knowledge or skills of repair, it may not only show the full performance but also may cause any accident or injury.

18. Use only the specified accessories and attachments.

Do not use any accessories and attachments other than ones specified in this instruction manual.

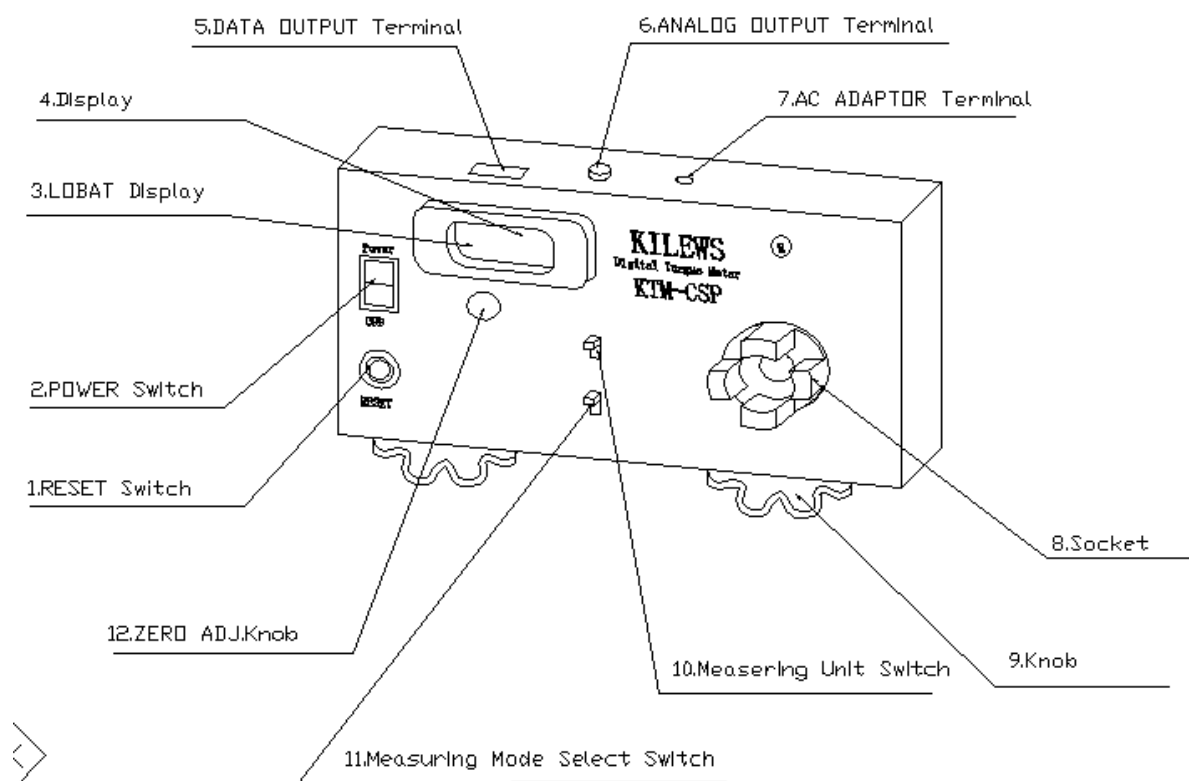
19. Store properly when not in use.

Store the torque meter in a dry place and in a height out of children's reach, or secured area.

To transport the product, reuse the packing case with which this product was delivered.

2.Appearance

(1) Reset Switch	(7)AC Adaptor Terminal
(2) Power Switch	(8) Socket
(3) Lobat Display	(9) Knob
(4) Display	(10) Measuring Unit Switch
(5) Data Output Terminal	(11) Measuring Mode Select Switch
(6) Analog Output Terminal	(12) Zero ADJ. Knob



3. Specifications

MODEL		KTM-CSP	KTM-CSM
Measuring range	lbf · in	1.5~90.0	0.15~9.00
	kgf · cm	1.5~100.0	0.15~10.00
	N·m	0.15~10.00	0.015~1.000
Accuracy		From 200~1000 digit display within +/- 0.5 % From 15~199 digit display within +/-1digit	
Display		3.5 figures of LCD	
Measuring direction		CW · CCW	
Measurement mode 3 way	P-P (peak)	Peak load value hold.	
	TRACK	Indication of real time torque value.	
	P-D (peak down)	Indication peak down point and hold.	
Data transfer		Serial interface RS232C (Baud rate: 9600)	
Power supply		6 VDC (Ni-Cd chargeable battery 1.2V×5cells)	
Measuring unit		lbf·in·kgf·cm·N·m (selectable)	
Charging time		From empty – 8hours	
Continuous working time		About 12hours	
Battery life		Chargeable for 300 times or more. However, it varies depending on operating conditions.	
Exclusive charger		INPUT: 120V or 230V 60Hz OUTPUT: DC7.25V 120mA	
Socket size		20mm square and 9.5mm square	
Size		230(W) × 123(D) × 65(H)	
Weight		About 1 kg	

***Do not use for measurement of impact tool. Do not apply more than the specified torque.**

4. Preparation and the measuring method

4.1 Installation

A measuring instrument may be brandished at the time of measurement of a large torque.

Surely, a measuring instrument should use a fixed knob etc. and fix it firmly.

4.2 A setup in the measurement mode

The 3 following modes can be chosen with the setting. (It unites with the use purpose and please choose.)

(1) PP (peak measurement) : The maximum under measurement is always displayed.

(2) TRACK (track measurement) : The value of the load torque concerning the detection machine is displayed as it is.

(3) PD (peakdown measurement) : Value when load torque value changes from a rise to descent is displayed.

Carry out after pushing a CLEAR button at once when applying re-load.

*PD and PP measurement operates from 10 or more numerical values.

4.3 Measuring method

(1) Check that the display part is zero at the time of power supply ON. If display is not show as zero, set a measurement mode select switch to TRACK, push CLEAR button, and set it as back PP which performed zero adjustment.

(2) The bit of screwdriver to measure among the screw part of screw joint is set firmly, and screwdriver is started.

(3) It checks that operation of screwdriver has been completed normally, the measurement torque value of a display part is read, and it becomes a measurement end.

(4) After a measurement end, if CLEAR button is pushed, a display will be cleared by zero. When continuing measurement, it repeats from (1) again.

(5) Choose the TRACK mode, if real time torque value want to be measured

5. Power supply

If this measuring instrument is left 10 minutes or more or battery capacity stops being sufficient, a power supply is turned off automatically. If battery capacity decreases, since LOBAT will be displayed, charge by inserting the connector of an exclusive charger in an AC ADAPTOR terminal.

The fully charge is in the state which turned OFF the power supply switch, and takes about 8 hours.(Do not perform charge of 8 hours or more. It may become the cause of the fire by a burst of a battery, generation of heat, and liquid leak, or an injury by fault charge.)

Moreover, when turning off a power supply, a power supply SW is pushed for about 1 second.

6. Data transfer (PEAK Mode Only)

6.1 Date format

Data transfer is RS-232C output conformity. Data can be outputted to the printer corresponding to RS-232C, or a personal computer etc.

Spec.	Data bit length	Start bit 1 + data bit 8 + stop bit 2 + NO parity									
	Baud rate	9600bps									
	Connector form	D-Sub-9pin									
	Connector spec.	No. 3 pin: Data output / No. 5 pin: GND									
	18	000	OE	20	+/-	00000	20	OF	000000	OD	
	Measured										
	CAN	※	SO	Space	Mark	value	Space	SI	Unit	CR	
	All data 21										

CAN : Cancellation

※ : Case in the memory mode Number of samples • Usually case in the mode Space

SO : Double width expansion printing specification

+/- : Measurement mark + the direction of bolting • - return direction

Measured value : A decimal point is also included.

The last is a space when there is no decimal point.

1 0 . 0 0 → 10.00 SI.

SI : Double width expansion printing release

Unit : In the case of N·m etc., the remainder space

N · m (k g f · c m) → kgf·cm

CR : Carriage return

△cautions An interface cable is used for connection of a computer.

Unite with a computer and prepare a cable.

Please inquire about a cable of a dealer where you purchased the product.

6.2 Output method of data

Data is outputted whenever it pushes CLEAR key after a measurement end.

Date output of the time of use of an date clear function is automatically carried out in setting time.

7. Guarantee

It is allowed to fix gratuitously, if the fault which will originate in manufacture, ransportation, etc. of our company within one year after a purchase should occur, although product was manufactured under sufficient quality control.

In the following case, it becomes the charge also within a guarantee term.

Failure by the error, and unjust repair and unjust reconstruction and damage on use

Failure by fall etc. and damage after a purchase

Failure by the natural disaster, pollution, and unusual voltage, and damage

8. Calibration trust service

Periodical calibration is required in order to manage the accuracy of torque meter. By our company, the calibration with the high reliability traced to the national standard is performed, and in order to use it within accuracy, I recommend you calibration of one year. I offer an result of calibration document, a certification on calibration, and a traceability system figure by demand. (Periodical calibration is a charge.)

Documents appended at the time of product purchase

Result of calibration document

Certification on calibration document

Traceability system figure

The cautions on use

- * Please do not apply the load more than the measurement range by any means.
- * Attached grease is attached to the bolt or the bearing part, please check before use.
- * Where a spring is loosened, please be sure to keep after use.

The number of times of an exchange standard is about 2500 times.

When the following condition comes out, please stop use, and use new joint.

When there is bend and wear of a screw thread

When there is sound etc.

For any inquiry, please contact your dealer !
