

V-torque

TORQUE TESTER

Mini K Series

OPERATOR'S HANDBOOK



Model	Code	Torque Nm	Dimensions mm	Weight Kg
mini K1	021402	0,03 - 1	150 x 70 x 45	0,80
mini K5	021403	0,1 - 5	150 x 70 x 45	0,80
mini K20	021404	0,5 - 20	150 x 70 x 45	0,8

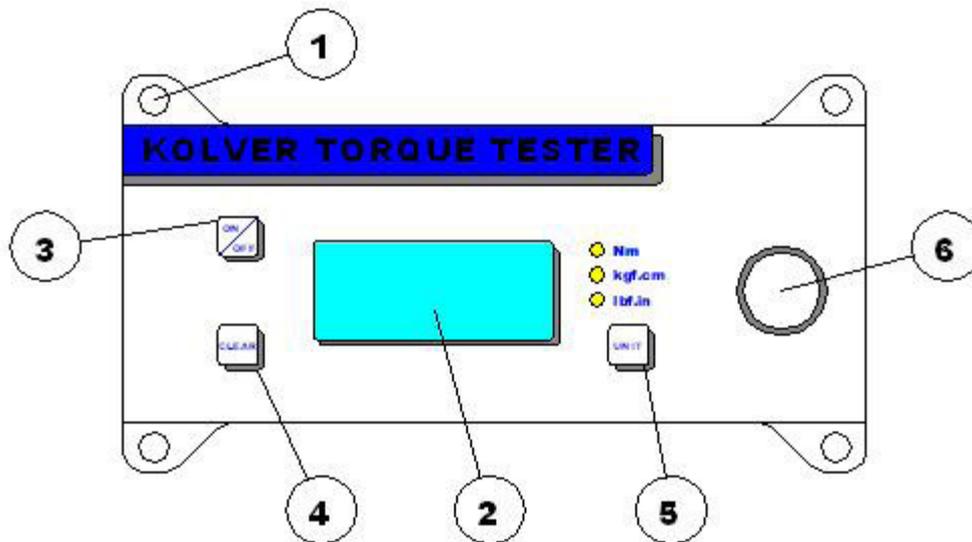
1. APPLICATIONS

Recommended for all hand screwdrivers, wrenches, or power tools.

2. FEATURES

Model	Torque range Nm	Accuracy	
miniK1	0,03 – 1	± 1 cNm	± 1 digit
miniK5	0,1 – 5	± 2 cNm	± 1 digit
miniK20	0,5 – 20	± 3 cNm	± 1 digit

- Built-in transducer to measure on joint simulator.
- External transducer (**miniKe**).
- Three units of torque measurements: Nm, Kgf.cm, lbf.in.
- Battery powered (9V) and AC adapter cord. 9V batteries provide 20 hours of continuous operation.
- Manual and auto reset functions to clear displayed values.
- Automatic shut down.
- Better performances on hard joint
- Correction factor (FATC): to connect more ext. transducers on the same tester.
- RS232C serial port as option with date and hour.
- Certificate of calibration.



3. DESCRIPTION

1. Mounting holes
2. Display 4 digit / 8 lines
3. “ON/OFF” key : press for 3 seconds to switch tester on or off
4. “CLEAR” key : press to reset the displayed value
5. “UNIT” key : press to select the unit of torque measurements
6. Internal transducer or port for external transducer

4. MOUNTING

It is strongly recommended securing the tester through slots “1” to a workbench before operating. Immobilizing the tester when checking torque values over 1 Nm is critical for the safety the operator as well as for the accuracy of torque measurements during operation.

5. JOINT SIMULATOR

The Joint Simulator (JS) consists of a screw compressing a series of washers. The way the washers are mounted can simulate soft or hard joint. The screw comes with a ¼” hex male head for proper fit to any ¼” hex female screwdriver drive. Hardened thread components increase accuracy and life. Since a joint simulator cannot duplicate actual joints, the torque values displayed on the miniK may vary from the actual torque that a screwdriver will apply to the actual assembly. When critical applications are involved, we

recommend to verify the torque output of the power tool being used on the actual assembly through an external transducer.

Mini K1 is supplied with a built-in joint simulator.

NB. We recommend to grease the JS each 1000 cycles.

6. STARTING AND OPERATING THE TESTER

1. Immobilize the tester when checking torque values over 1 Nm. This is critical for the safety the operator as well as for the accuracy of torque measurements during operation.

2. Switch the tester on pushing the ON/OFF key.

If used only with battery check its status. If the tester does not switch on or the display is not clear enough, please replace the battery. When used it the AC adapter, this will disable the battery. The battery is not rechargeable. The display will show the main screen:



3. Insert the joint simulator into its 13mm hex seat and make sure the screw is in its upper position (if not run the driver anticlockwise to unscrew it). The tester is ready for a measuring cycle.

In Mini K1, only unscrew before measuring.

4. Run the joint simulator screw all the way down until it stops and read the torque value on the display. Run the screw up to be ready for the next cycle.

5. Press the “ON/ESC” key for 3 seconds to switch the tester off. The tester features a built-in auto shut off mode function to save power when not in use. If there is no activity for 3 minutes, such as key press or no torque input, the tester will shut down. To restore power press the “ON/ESC” key for 3 seconds

NB. Before starting, always check that the screen displays 0.000. Instead push CLEAR.

7. SELECTING THE UNIT

MEASURING UNIT: Nm, kgf.cm and lbf.in

To change unit: press **Unit** key until the desired unit has been selected.

Each unit is indicated by a LED of different color: red for Nm, green for kgf.cm and yellow for lbf.in .

8. SELECTING MANUAL OR AUTO RESET

The flow chart below shows how to select **Manual** or **Auto Reset**.

Sens, Cal and **Fate** functions (sensitivity, calibration and correction factor) can be modified only by authorized personnel.

When you select **Manual Reset “Coff”**: you need to push “CLEAR” to remove readings from the display and reset all values to zero.

When you select **Auto reset “Con”**: any new measure will replace the previous one without resetting the value to zero.

Push at the same time
CLEAR+UNIT for 5sec

See
"Prg"

After 3sec see
"SEnS"

Push UNIT

See "rST"

Push UNIT

See "CAL"

Push UNIT

See "DATE"

Push UNIT

See "FATC"

Push ON/OFF
to return to
the main
screen

Push ON/OFF to enter, then push
UNIT to select the reset.
ON: automatic reset on
OFF: automatic reset off
Push ON/OFF to save or CLEAR to
exit

Push ON/OFF to enter.
Push UNIT to set hour.min (24hours),
day.month.year
At each digit push ON/OFF to save or CLEAR to exit.

9. EXTERNAL TRANSDUCER for miniKe

The miniKe readouts support an external rotary or non rotary transducer. The miniKe can read torque up to 500 Nm. The external transducer must be calibrated together with the miniKe here at V-torque before shipment. The following transducers are always available ex stock:

Model	Torque range Nm
KTE5	0.5 – 5.0
KTE25	2.0 – 25.0

Rotary and non rotary transducers for lower or higher torque ranges available on request

10. SERIAL PRINT (on request)

It is possible to print the results through the serial port placed near the power supply connector.

The serial print has the following settings:

VALUE - UNIT OF MEASUREMENT - TIME (hour; min; sec) – DATE (day/month/year)

Example of serial print:

0,247 Nm 14:07:27 30/05/2011

0,249 Nm 14:07:30 30/05/2011

0,255 Nm 14:07:33 30/05/2011

0,254 Nm 14:07:36 30/05/2011

0,249 Nm 14:07:39 30/05/2011

0,255 Nm 14:07:42 30/05/2011

0,247 Nm 14:07:45 30/05/2011

0,255 Nm 14:07:48 30/05/2011

11. MAINTENANCE

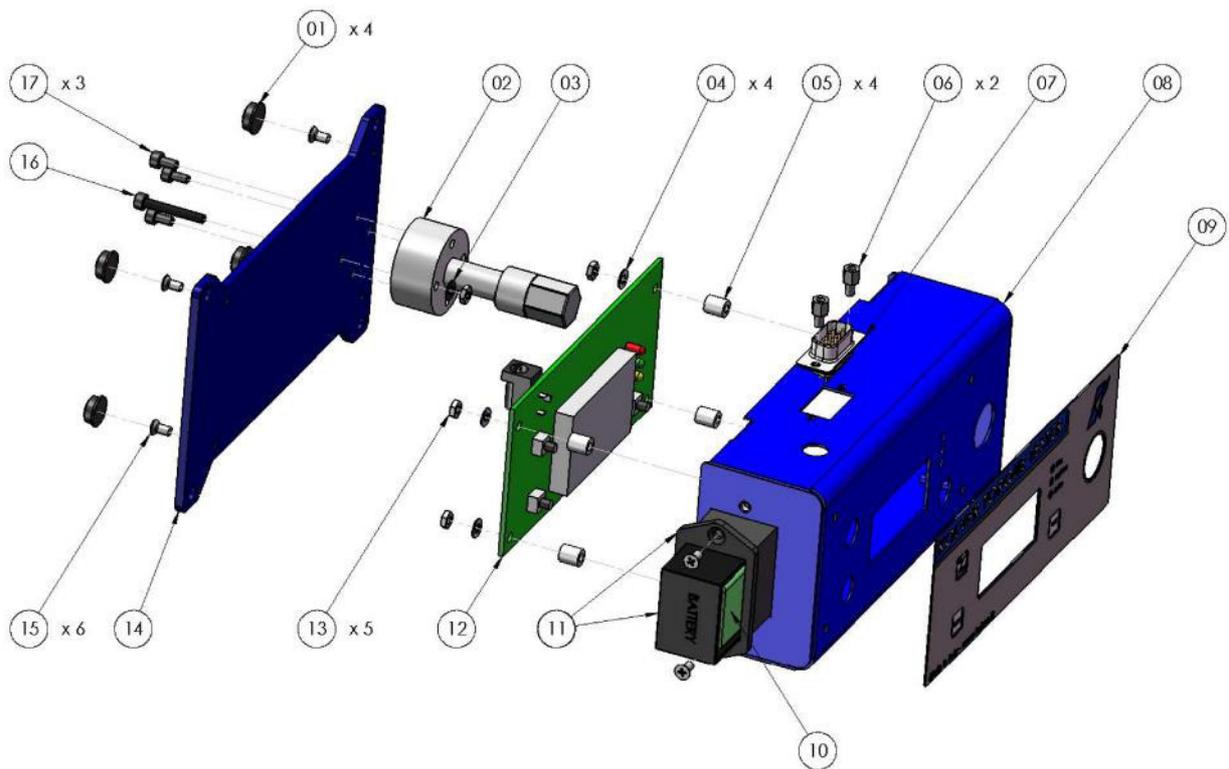
The miniK testers are maintenance free. The electronics and the internal transducers have no wearing parts except the battery once its charge is over. The internal transducer should be calibrated every 12 to 30 months, depending on the frequency of use.

WARNING: The overload protection of the internal transducer is limited to 125% of nominal value. Damages due to overloading will result in inaccurate readings and will not be covered by our warranty.

12. WARRANTY

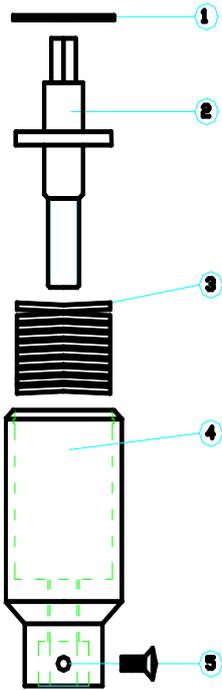
1. This V-torque product is guaranteed against defective workmanship or materials, for a maximum period of 12 months following the date of purchase from V-torque, provided that its usage is limited to single shift operation throughout that period. If the usage rate exceeds of single shift operation, the guarantee period shall be reduced on a prorata basis.
2. If, during the guarantee period, the product appears to be defective in workmanship or materials, it should be returned to V-torque or its distributors, transport prepaied, together with a short description of the alleged defect. V-torque shall, at its sole discretion, arrange to repair or replace free of charge such items.
3. This guarantee does not cover repair or replacement required as a consequence of products which have been abused, misused or modified, or which have been repaired using not original V-torque spare parts or by not authorized service personnel.
4. V-torque accepts no claim for labour or other expenditure made upon defective products.
5. Any direct, incidental or consequential damages whatsoever arising from any defect are expressly excluded.
6. This guarantee replaces all other guarantees, or conditions, expressed or implied, regarding the quality, the marketability or the fitness for any particular purpose.
7. No one, whether an agent, servant or employee of V-torque, is authorized to add to or modify the terms of this limited guarantee in any way. However it's possible to extend the warranty with an extra cost.

12. EXPLODED VIEW AND PART LIST



REF	DESCRIPTION	CODE
1	Plastic support (4 pcs)	800016
2	Internal transducer 1Nm (miniK1)	240505
	Internal transducer 5Nm (miniK5)	240503
	Internal transducer 20Nm (miniK20)	240504
3	Washer M3	800041
4	Flat washer M3 (4 pcs)	800042
5	Nut 6,3 mm	241003
6	Nut M3 (2 pcs)	872453
7	Serial connector M	890005
8	Metal housing miniK	240001/BC
	Metal housing miniK../S	240001/BCS
9	Pellicola adesiva miniK	241008
10	Battery 9V not rechargeable	241010
11	Portabatteria miniK	241005
12	Board miniK + display	241002/N
13	Screw M3 (5 pcs)	800056
14	Base	240001/BF2
	Base miniKe	241001/F
15	Screw M3 x 6 TSP (6 pcs)	210068
16	Screw M3 x 22	241012
17	Screw M4 x 8 (3 pcs)	241011
	Joint simulator M6 (miniK5)	240600
	Joint simulator M8 (miniK20)	240800
	Case	241000
	Power supply 12V	241009/N

JOINT SIMULATOR



JOINT SIMULATOR M6 5Nm	240600
------------------------	--------

JOINT SIMULATOR M8 20Nm	240800
-------------------------	--------

EXPLODED VIEW			
POS.	DESCRIPTION	COD.M6 5Nm	COD.M8 20Nm
1	SEIGER	240601	240801
2	JOINT SHAFT	240602	240802
3	WASHER SPRING	240603	240803
4	JOINT HOUSING	240604	240804
5	SCREW	240605	240805