

# TUBE MICRON COMPUTERIZED FORCE CALIPER

## USER MANUAL





Item No	Range		Resolution		Accuracy	Dimensions			Waterproof	Indication	Data output
						A	B	C			
	mm	inch	mm	inch	μm	mm	mm	mm			Wireless
141230157	0-150	0-6"	0,005	0.0002"	±20	46	30	4	IP54	computerized MICS system with 1,54" touchscreen	max 50 m
141230158			0,001	0.00005"	±20	46	30	4	IP54		max 50 m
141230207	0-200	0-8"	0,005	0.0002"	±25	50	40	4	IP54		max 50 m
141230208			0,001	0.00005"	±25	50	40	4	IP54	max 50 m	
141230307	0-300	0-12"	0,005	0.0002"	±25	50	40	4	IP54	max 50 m	
141230308			0,001	0.00005"	±25	50	40	4	IP54	max 50 m	

## TECHNICAL DATA

Parameters	
LED display	color 1,54 inch
Resolution	240x240
Indication system	MICS 3.0
Power supply	Rechargeable Li-Pol battery
Battery capacity	450-800 mAh (depends of device)
Charging port	micro-USB
Case material	Aluminium
Buttons	Switch (Multifunctional), Reset
Wireless data transfer	up to 50m on open area

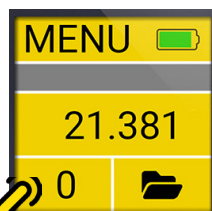
Clean the oil from the measuring surfaces of caliper by cloth.  
For recharging caliper (Li-Pol rechargeable battery) connect it with standard USB cable to charger device.

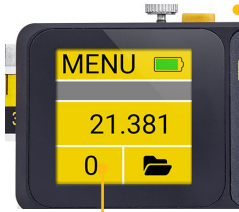
**DO NOT LEAVE UNCHARGED CALIPER FOR A LONG TIME.  
THIS MAY RESULT TO INTERNAL BATTERY FAILURE!**

## BASE RECONNECTION

Sometimes, when battery was uncharges for a long time - necessary to make reading base reconnection

**PUSH ZERO button (5sec.) on main screen  
or quick move computerized block on all range**





**SWITCH ON DEVICE** - button push (1 sec)

**SWITCH OFF DEVICE** - button push (3 sec)/ auto switch off

**DATA TRANSFER** - programming throw menu

**ZERO SETTING** - push 2 sec to ZERO setting

## CHARGING



**BUILT-IN BATTERY** - rechargeable Li-Pol battery



For charging connect USB cable

## FORCE CONTROL



FORCE control module 8N

For zero setting use Force control module- line inside lens must be came off with outside line.

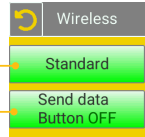
Press the **ZERO** button on Touchscreen for ZERO position setting.

During a measuring use Force control module to measure with optimal Force



Activate WIRELESS data transfer in WIRELESS menu

Switch on Wireless data transmission  
Activating multifunctional button to save value to memory or send data by touchscreen or button push



Connect instrument with MICS indication system to Tablet or PC  
Send data to Tablet or PC:

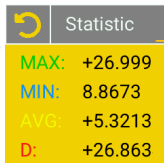
- by Touchscreen
- by Multifunctional button push (activated in Wireless menu)
- by Timer (activated in Timer menu)
- from Internal Memory

## MEMORY

For save measuring data to internal caliper's memory touch data area on screen or short button push. You can view saved data through menu or send Wireless connection to Windows PC, Android or iOS devices.

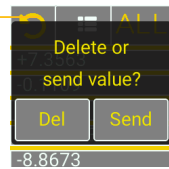
### Basic STATISTIC functions:

- MAX - maximum saved value
- MIN - minimum saved value
- AVG - average value
- D - variance VAR(x)



Saved values

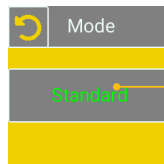
Each value can be Deleted or Send to application



Button ALL select all values  
All values can be Deleted or Send to application

### MEMORY settings

Memory sub-menu



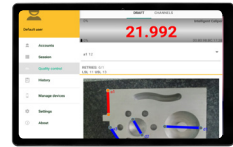
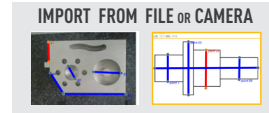
Selecting Standard mode or  
No saving data to internal memory



### WIRELESS CONNECTION



USB-DONGLE



Windows



iOS



ANDROID

DOWNLOAD



DOWNLOAD



DOWNLOAD



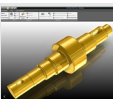
SAVING DATA TO XLS. CSV FORMATS



SAVING DATA TO XLS. CSV FORMATS



SAVING DATA TO XLS. CSV FORMATS



TRANSFER DATA TO CAD, SPC OR OTHER SOFTWARE



SAVING GRAPH



SAVING GRAPH



TRANSFER DATA TO EXCEL OR OTHER TABLE EDITORS



VOICE MODE



VOICE MODE

### DATA TRANSFER DISTANCE FOR INTELLIGENT INSTRUMENTS

- All MICROTECH Intelligent instruments has internal memory. You can collect data to memory and when it will be necessary transfer all data to the peripheral device with no data losing.
- It's possible transfer data, like in Wireless instruments up to 15 m or up 50 m with external antenna
- USB port can be used to transfer data directly to Windows PC



QUALITY CONTROL RESULTS



USE TOUCHSCREEN TO OPERATE MENU

MENU button **MENU** Battery Level

Colour can be changed according function **-0.0000** Actual value

Zero setting (2sec) **0** Memory

## MEMORY WITH STATISTIC

ALL	Statistic
+7.3563	MAX: +26.999
-0.1109	MIN: 8.8673
+1.2293	AVG: +5.3213
+26.9993	D: +26.863
-8.8673	

## MENU CONFIGURATION



MAIN MENU



**LIMITS**  
color Go/NoGo

Max/Min

Enable

OK

**MAX/MIN**  
indicating max or min value

Formula

$Ax+Bx+C$

Set Aray

**FORMULA MODE**  
 $Ax^2+Bx+C$

Timer

+000 sec.

RESET



0.8970

0.8920

OK

RESET

**ERROR COMPENSATION**  
mathematical correction

Temp.comp.

Blank Check  
Solid always, Mo

+00.00

**TEMPERATURE COMPENSATION**  
manual correction

Resolution

X.0000

Millimeters

**RESOLUTION**  
selected up to 0.0001mm

Extra

Axis Mode  
Normal

CONNECT



Wireless

Standard

Send data

Button OFF

**WIRELESS**  
modes of data transmission

Mode OFF

UART OFF

Keypad On

CONFIRM

**USB**  
USB connection configuration

Device

PIN

RESET

**DEVICE SETTING**  
pin, reset

Display

Angle 180

Sleep 0:05



Mode

Standard

**MEMORY SETTING**

Link to software

**SOFTWARE**  
link to download app

Calibration

DAY	MONTH	YEAR
01	01	2020

CHANGE

**CALIBRATION DATE**

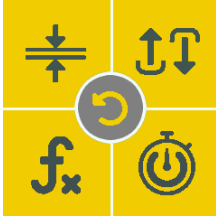
MICROTECH

www.microtech.ua

COMP.CALIPER 1

FW: 3.0.5

MAC: 12345



## LIMITS GO/NOGO

### MENU SETTING

MAX value  
 MIN value  
 zero values

### Colour indication limits

**MAX - NoGo** more MAX value  
**MIN - NoGo** less MIN value  
**RANGE - Go** between MIN & MAX  
**NONE** - disactivating mode

### MAIN SCREEN INDICATION

MENU

NoGo

Go

## MAX/MIN

### MENU SETTING

### Indication and saving MAX or MIN values

**ENABLE** - activating mode  
**MAX** - indicating MAX measured value  
**MIN** - indicating MIN measured value

### MAIN SCREEN INDICATION

MENU

MIN

MAX

## FORMULA

### MENU SETTING

Formula:

Formula:  
 $Ax^2+Bx+C$

+000.000  
 +001.000  
 +000.000

### FORMULA $Ax^2+Bx+C$

Long push digit to select value

Reset to zero arguments

### EXAMPLE OF FORMULA USING

Standard measuring    A=0, B=1, C=0  
 PRESET 50mm            A=0, B=1, C=50  
 Value magnification x3    A=0, B=3, C=0  
 Square value              A=1, B=0, C=0

## TIMER

### MENU SETTING

### Saving data to memory or sending Wireless by Timer

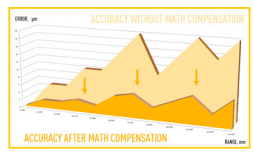
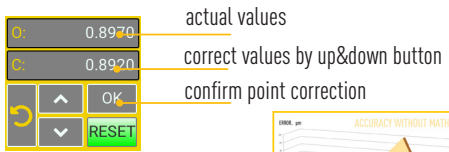
Select timer period

Reset to deactivate mode



## MATHEMATICAL ERROR COMPENSATION

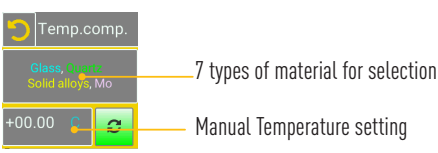
**MENU SETTING** Mathematical correction points with big error to normal values



use gauge blocks or measuring machine for points correction

## TEMPERATURE COMPENSATION

**MENU SETTING** Re-calculation detail size to calibration conditions (20°C)



- 7 types of material:
- glass, quartz, solid alloys
  - granite, graphite
  - Fe, Ni, Fe alloys
  - stainless steel
  - cooper, Cu alloys
  - aluminium, al alloys
  - acrylic sheet

## RESOLUTION

**MENU SETTING**



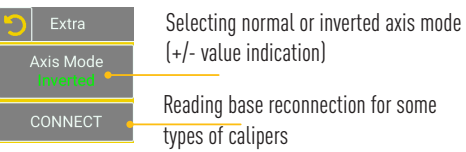
**MAIN SCREEN INDICATION**

**+8.0608**

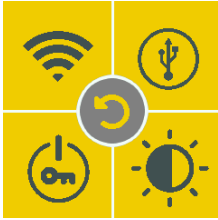
Selecting resolution of value on main screen and memory

## EXTRA (Axis mode)

**MENU SETTING**

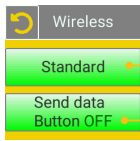






## WIRELESS CONNECTION

**MENU SETTING**      Activating or deactivating wireless data transfer



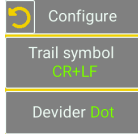
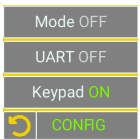
Switch on Wireless data transmission

Activating multifunctional button to save value to memory or send data by touchscreen or button push



## USB CONNECTION

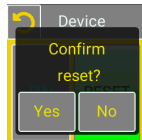
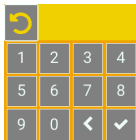
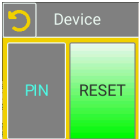
**MENU SETTING**      USB connection mode under construction



## PIN & RESET

**MENU SETTING**      Activating PIN to device setting

RESET to factory settings



## DISPLAY SETTING

**MENU SETTING**      DISPLAY ROTATION, BRIGHTNESS, SLEEPING MODE



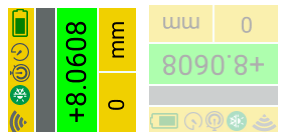
Display rotation 0°, 90°, 180°, 270°

- Sleep OFF (15 s low brightness off, sleep off)

- Sleep 15s (15 s low brightness on, sleep off)

- Sleep ON (15 s low brightness on, sleep on)

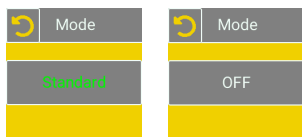
Brightness level





## MEMORY SETTINGS

MENU SETTING      Activating or disactivating saving values to memory



**Standard** - saving values to memory  
**OFF** - disable saving to memory

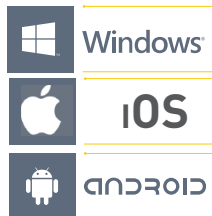
↻	☰	ALL
+7.3563		
-0.1109		
+1.2293		
+26.9993		
-8.8673		

## LINK TO SOFTWARE

MENU SETTING

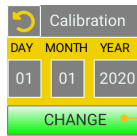


QR Link to MICROTECH web site page with MDS Software download  
- Android, iOS, Windows versions  
- Free and Pro versions  
- Manuals



## CALIBRATION DATE

MENU SETTING      Calibration date info



Push for change date info

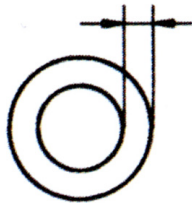
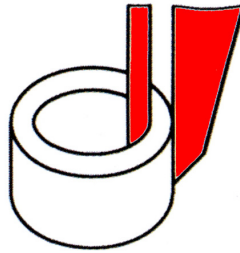
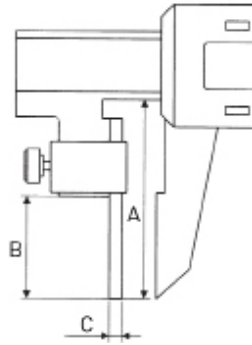


## DEVICE INFO

MENU SETTING



Information about device  
- device name  
- firmware version  
- MAC adress for easy connection





**MICROTECH**



**MICROTECH**

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