

EasyTouch

EasyTouch



User Manual



General Terms

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Trademarks are the property of SCS Concept and their respective owners. SCS Concept reserves the right to change products at any time without being obliged to have a stock of the devices previously produced

The information in this manual are suitable for the intended use of the product. If the product, or its individual modules or procedures, are used for other purposes, than their validity and suitability must be obtained.

If any error will be found in this manual, SCS Concept thanks his customer, distributors and partners, who will communicate them to us.

Terms of warranty

Never try to repair the product yourself, it may cause injury, damage of the product and the warranty cancellation.

Use SCS Products and accessories exclusively as per manufacturer manual specifications.

Any operation expressly prohibited in this manual, or adjustments and assembly procedures not recommended or authorized in this manual, may void the warranty.

Compliance with EMF

SCS Concept provides and sells many products targeted to customers who use electronic devices in general that have the capability to emit and receive electromagnetic signals. One of SCS corporate policy, is to take all the necessary measures for health and safety, of our products users. This to produce devices comply with all regulations and the EMF standards applicable at the production date.

If SCS products are properly used, we ensure their safety for their intended use, according to the scientific test available today.





Battery information according to European regulation 2006/66/CE



Serial number: : 313 21 0042

Type: Ioni di Litio 3.7V 2600 mAh

Weight: 84 g



The battery must be disposed of according to local regulation.

Historique de révision

Edition	Date	Description	Version Firmware
1.0	12/2013	First edition	1.0.0033





EASYTOUCH TOUR

EasyTouch is a data collector designed to be connected to static or rotary transducers in order to perform click wrenches tests and power tools tests (pneumatic, battery and pulse tools or electronic dc tool). The test can be performed on a production line process, directly on the joint during the tightening or in laboratory using a mechanical joint simulator.

SCS Concept is also a producer of mechanical joint simulators, offering to the customers a great possibility to choose between different torque range and different stiffness.

The Advanced Mode of EasyTouch allows to save two curves for each single measurements

(Torque-Time and Torque-Angle), giving to the customer the possibility to analyze them directly on EasyTouch display, just after the test or later by downloading them to F3 LAB Explorer software.

Bluetooth technology allows the wireless printing and wireless transducers connection.





EasyTouch BASIC mode

EasyTouch Basic mode



EasyTouch is a data collector designed to perform tests on production line or laboratories by connecting torque or torque/angle transducers.

User can select the test by Touch screen or keyboard.

EasyTouch connected to rotary or static transducers, it's the best solution to keep under control the production tools (Pulse wrench, click wrench, power tools).

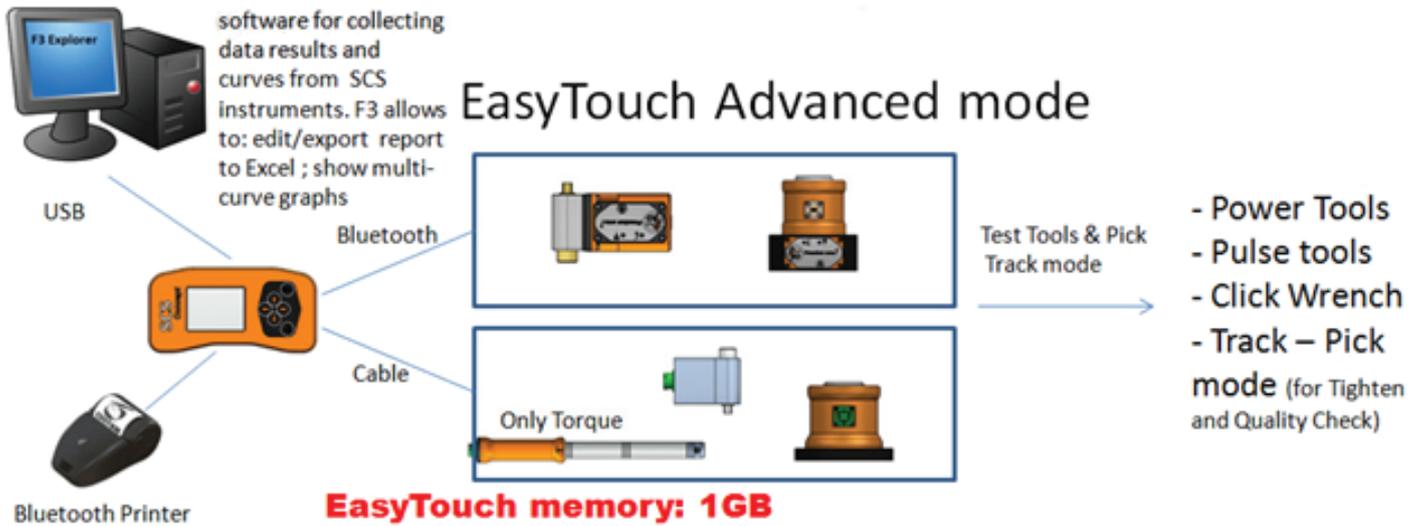
EasyTouch BASIC mode can just display results (torque and torque/angle) It doesn't allow to print, save results file and send data results to PC.

EasyTouch Basic mode can perform test only in "Easy Test" mode.





EasyTouch ADVANCED mode



EasyTouch Full mode allows to perform the same tool test of ET Basic mode. It is also possible to connect BT transducers. ET Advanced mode allows to create programs, display curves and chart related to each single program. ET Advanced allows to save data results in a file from local test, export them to F3 Explorer (by USB cable), edit reports and export them to Excel. With Ft Explorer is also possible to select more curves at the same time.





BASIC and ADVANCED mode - Functions List

Briefly:

Functions List	Basic	Advanced
Tool Test Torque and Torque/Angle	YES	YES
SCS BT Transducers communication	NO	YES
SCS BT printer communication	NO	YES
Curves and trend results visualization	NO	YES
Software transmission data to F3 Explorer	NO	YES
Optional		
Shoulder Belt	YES	YES
SCS BT Printer	NO	YES
F3 Explorer Software	NO	YES

NOTE: All options must be ordered separately (please see "ordering numbers" paragraph for parts number).

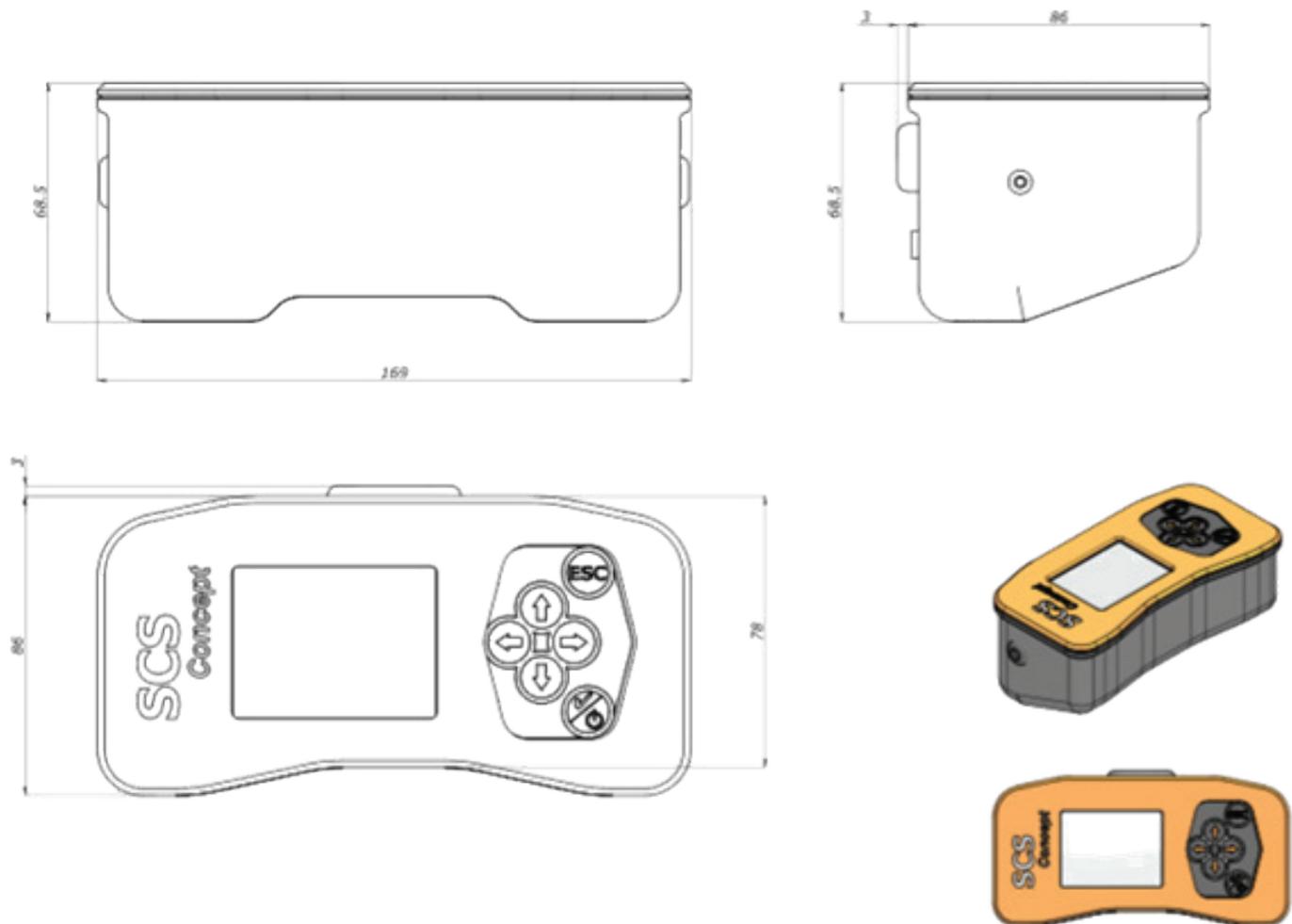




SYSTEM OVERVIEW

In the following chapters, we will show EasyTouch main technical characteristics.

Technical Specification



Dimension and Weight

- Length: 169mm
- Width: 88 mm (avec antenne)
- Depth: 68,5 mm
- Weight: 498 g

Power Supply

- Rechargeable Lithium- Ion Battery 3.6 V - 2700 mA
- Battery life: 9 hours
- Battery charging time from PC USB: 6 Hours
- Battery charging time from EasyTouch USB: 4 Hours.

Battery charger

- Input Power: 100 - 240 AV ~ 50/60 Hz
- Output: 5.0 DV = 1.2A (DC)

Performance

- Internal memory: 1GB
- 20000 results, 20000 curves, 1000 settable programs.
- 2.8" touch screen (for a fast and easy navigation).
- Display 320 x 240 pixel, high resolution. 65535 colors.
- Keyboard (to turn on/off the devise and for navigation).





Connection and operator interface

Port and interface:

- For SCS software connection, F3 software and battery charger connection
- Female pole D-SUB 15 connector. (for SCS transducers connection and for all analog transducers mV/V connection).
- Programming and navigation by Touchscreen and Keyboard.



Note: All SCS New Generation transducers (starting from 2012) are automatically recognized from ET.

Is possible to connect NOT SCS transducers, but ET will not be able to recognized them automatically.

All the connected transducers must be 0.4 mV/V a 2,5 mV/V, analog and not preamplified.

ET doesn't allow the connection with pre-amplified or digital output transducers.





Software

To enable all users to data downloading or PC communication, SCS developed F3 Explorer software (available only for ADVANCE Mode).

Listed here below the minimum system requirements to install and use F3 EXPLORER:

- **CPU:** AMD A4 2 GB Ram
- **Hard Disk Space:** 50 MB
- **Operating System:** Windows XP or superior.





START-UP

In the following paragraph, we will show how to start up EasyTouch
To allow ET to display torque and torque/angle measures, is necessary to connect the torque and torque/angle transducers to the device.
There are different transducers brand connectable to ET, however by choosing SCS transducers, the connection will be automatically done.
During Start Up procedures, not SCS transducers must be registered

How to connect transducers to EasyTouch

In this paragraph, we will show step by step, how to connect SCS transducers to ET to perform a local test with ADVANCED mode version
Switch on EasyTouch by pushing the start button (see picture below):

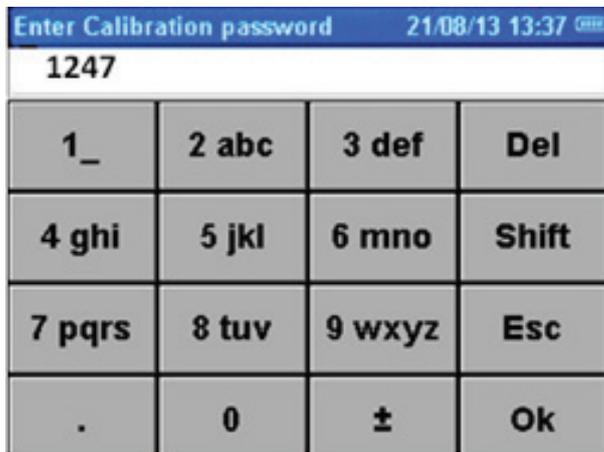


Firmware startup in few seconds.



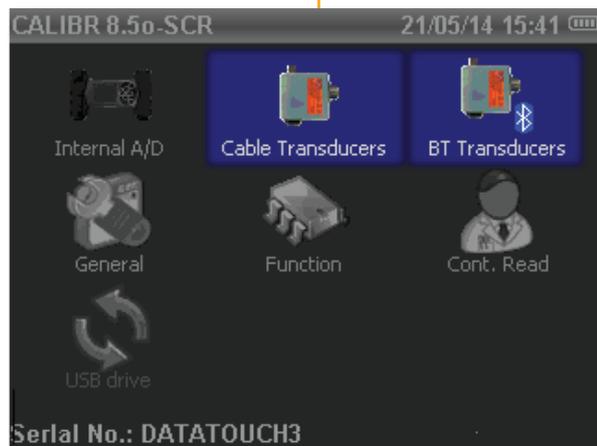


Enter into "Calibration" setup by pressing "calibration" icon. A new window will be displayed and ET will require to enter the password "1247" to proceed. See below image.



Enter the password "1247" and press "OK".

EasyTouch will display the "CALIBR menu":



In the calibration window are shown two icons:

Cable transducers and **BT transducers**

- Cable transducers icon allow to set all cable transducers
- The BT transducers icon can be used only with SCS Transducers (wireless).



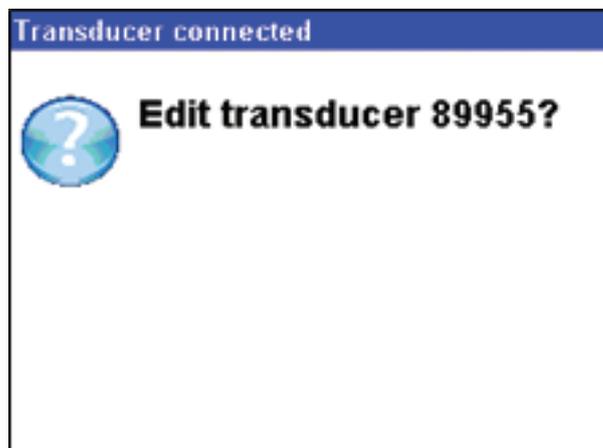
Cable Transducer

1. SCS cable transducer connection.

Connect the cable transducer to EasyTouch.



From the "calibration menu" page, a new window will be displayed (see previous paragraph to enter in Calibration menu)

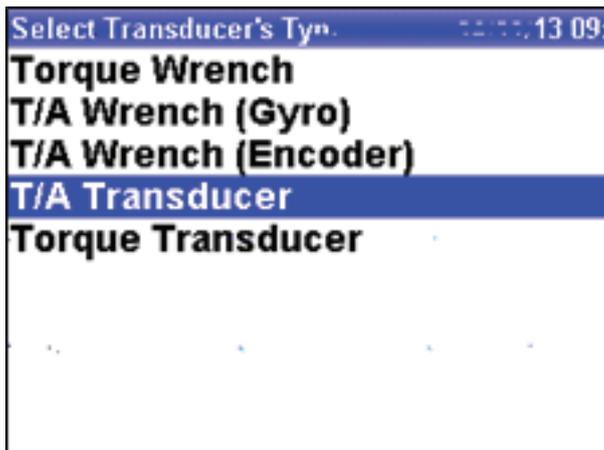


EDIT the transducer 89955?

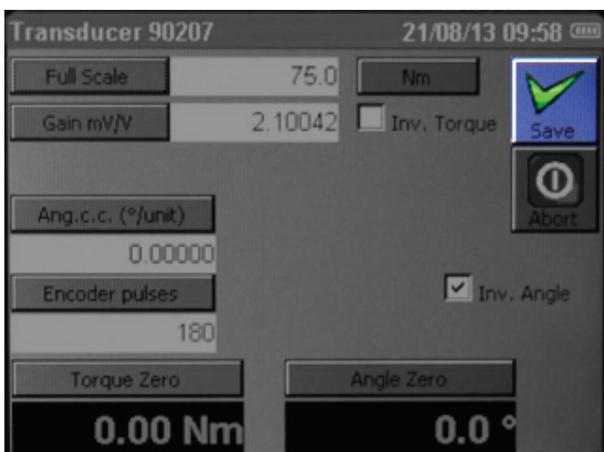




ET will now ask to confirm the transducer serial number written in the transducer memory (in the example 89955). Press OK on ET's keyboard to continue.

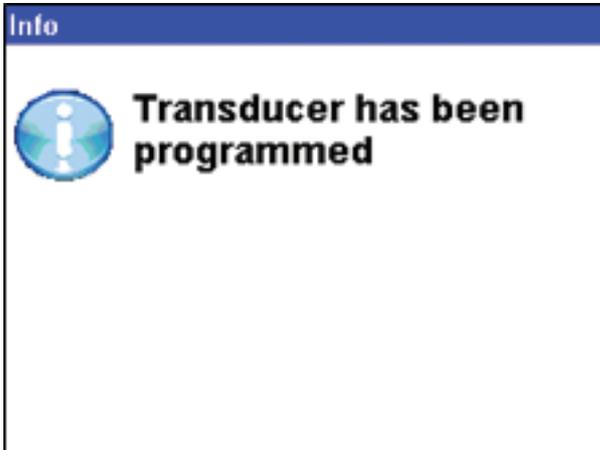


EasyTouch will display a new window asking to confirm the transducer type (In this example we are connecting a Torque/Angle transducer, so we have selected T/A transducer).



After the confirmation, ET will ask to confirm all transducers parameters. Press "save" button to add the transducer to ET memory.

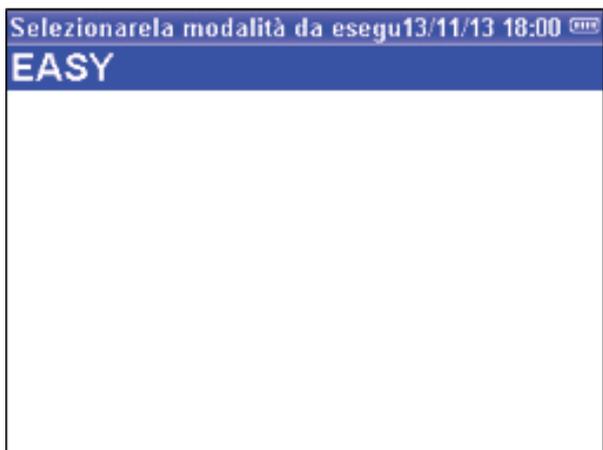




The transducer has been programmed. The transducer parameter will be saved in the traducers memory.



Press OK button to confirm EasyTouch will display the " Calibration menu" window. Press "Function" icon



The side window will be displayed. Select EASY and ET will go back in test mode. Press OK Button.

ET is ready to work with the transducer previously associated with new parameters.





Connection with Not SCS cable transducer

Connect the cable transducer to EasyTouch.

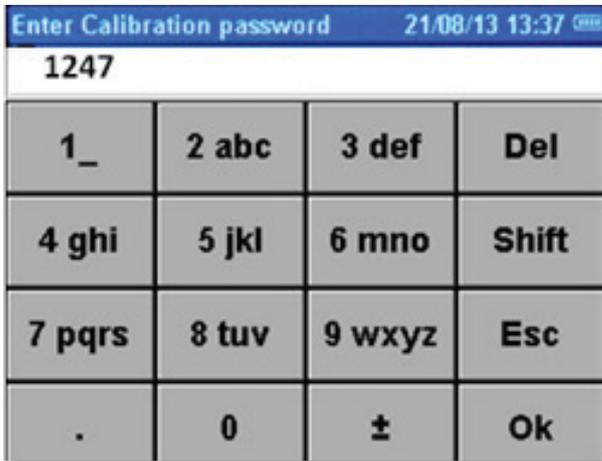


On EasyTouch calibration menu select "cable transducer" icon (see the beginning of the chapter "How to connect a transducer to ET" to enter in Calibration menu).



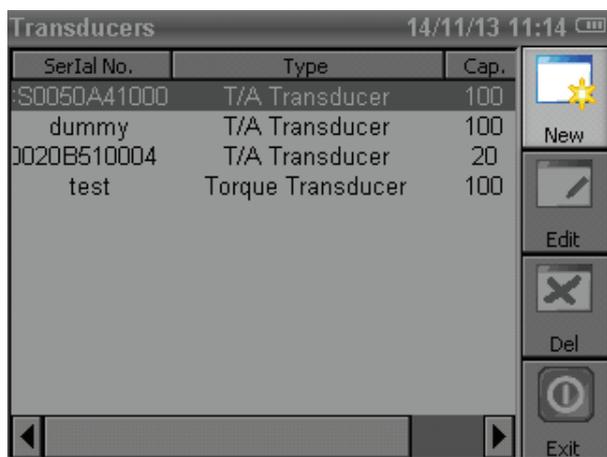


The window "password set up" will be displayed, enter 1247 to proceed:



Once into the "cable transducer" menu, push the "new" button to add a new transducer in ET memory.

The displayed list shows the transducers already present in ET memory. In case of first insertion the list will appear empty.



After pressing the "new" button, ET will ask to enter Not SCS transducers serial number that the user wants to add.

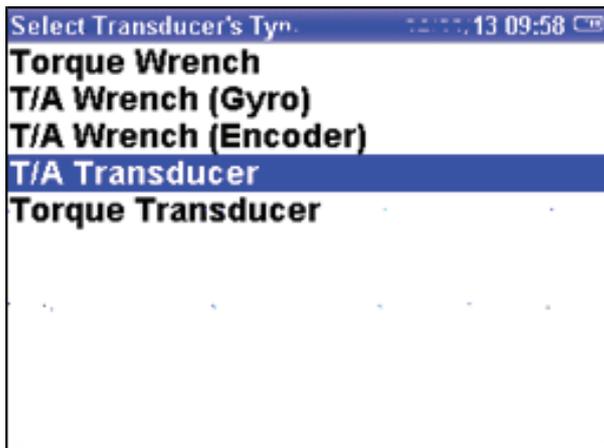




As an example, we enter transduce serial number: "89955".



EasyTouch will ask to select the stranducer type that the user wants to add:





TORQUE WRENCH

Wrench Torque → after selecting the transducer, for all the dynamometric wrenches with only Torque transducer (0.4 – 2.5mV/V, not angle), ET will show the parameters window.



Here below is shown how to set the parameters to be added to ET "Wrench Torque":

- Push full "**full scale**" button to enter the maximum Wrench capacity
- Push "**Nm**" button; it is possible to select different measures unity
- Push "**Gain**" button mV/V to modify calibration torque value
- Enable "**reverse torque**" only to reverse torque reading
- Push "**Abort**" to exit without saving
- Push "**Save**" to confirm and exit.





WRENCH C/A(GYRO)

Torque/Angle Wrench (gyro) → not available for EasyTouch.

C/A WRENCH (ENCODER)

Torque/Angle wrench Encoder → for all encoder dynamometric wrenches.



Once the window is displayed , follow the same step of “torque wrench” model, but the user must specify the following parameters:

- **Length (mm)** → Represent the wrench length during the calibration torque, usually is the distance between fulcrum (usually the centre of the jack) and the applied torque point (the handle centre). This value is reported in SCS certificate in the parameters of tightening strategy. Is possible to set the extension length. In this case ET will automatically calculate the wrench corrector factor.
- **Angle. C.C.(°/unit)** → This parameter represent the angle coefficient correction; user can found it on the wrench SCS Certificate. This coefficient is used for the wrench flexion compensation; this helps to avoid errors in the angle value reading, especially at high torque values. Is not mandatory to add this parameter, especially if the user doesn't add any wrench extension.
- **Encoder Gyro pulses** → This field must be filled with the Encoder Gyro pulses.
 - This value is reported on the wrench encoder or in the calibration certificate.
 - This value is mandatory. Without it, ET won't be able to read angle values.
- **Reverse Angle** → Select this parameter only to reverse angle reading.
- **Zero Torque** → Push to reset the continuous torque reading.
- **Zero Angle** → Push to reset the continuous angle reading.
- Push “**Save**” button to set the parameters on ET, or “**Abort**” to exit without saving.





TORQUE/ANGLE TRANSDUCER

Torque /Angle Transducer → for all rotary transducer with encoder.



Once the window is displayed , follow the same step of “torque wrench” model, but the user must specify the following parameters:

- **Full scale** → is the maximum transducer capacity.
- **Nm** → Is the measure unit. This button also allows to select more measurements units (kNm, Kgm, lbf.in, lbf.ft, Nm).
- **Gain mV/V** → is the wrench calibration value (sensitivity). Push the button to add the value (refer to SCS certificate)
- **Reverse Torque** → To reverse the torque reading.
- **Angle.c.c. (°/unit)** → This parameter represent the angle coefficient correction; user can found it on the wrench SCS Certificate. This coefficient is used for the wrench flexion compensation; this helps to avoid errors in the angle value reading, especially at high torque values. Is not mandatory to add this parameter, especially if the user doesn't add any wrench extension.
- **Gyro Encoder Pulses** → This parameter describes the Gyro Encoder pulses number.
 - This value is reported on the wrench encoder or in the calibration certificate.
 - This value is mandatory. Without it, ET won't be able to read angle values.
- **Reverse Angle** → Select this parameter only to reverse angle reading
- **Zero Torque** → Push to reset the continuous torque reading.
- **Zero Angle** → Push to reset the continuous angle reading.
- Push “**Save**” button to set the parameters on ET, or “**Abort**” to exit without saving.





TORQUE TRANSDUCER

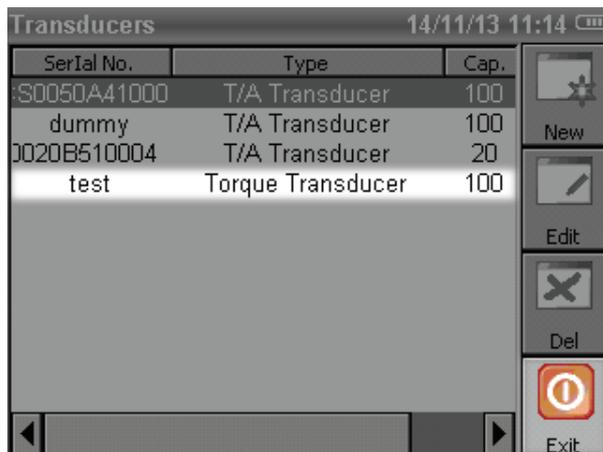
Torque transducer → For all rotating and static transducers (0.4 – 2.5 mV/V; No angle).



It is necessary to explain the parameters that the user is going to set during start up:

- Full scale → is the maximum transducer capacity
- Nm → Is the measure unit. This button allows to select more measurements units (kNm, Kgm, lbf.in, lbf.ft, Nm).
- Gain mV/V → is the torque calibration value (sensitivity). Push the button to add the value (refer to SCS certificate)
- Reverse Torque → Select this parameter only to reverse torque reading
- Zero Torque → Push to reset the continuous torque reading

Push "**Save**" button and the new transducer will be added to the list:



Push "**Exit**" button to go to "Calibration" menu.

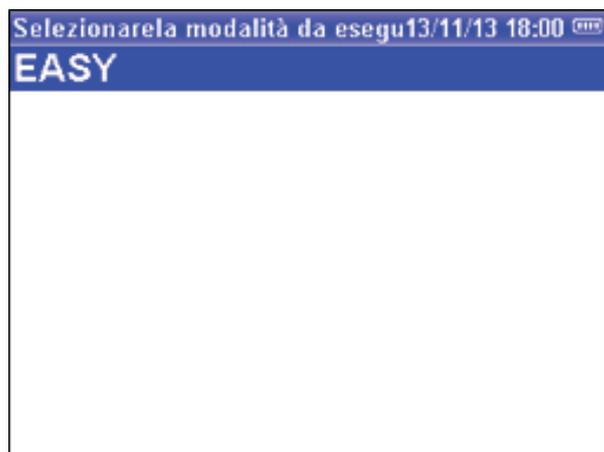




L'EasyTouch will display the "Calibration menu", select "**Function**" icon.



A new window will be displayed, select Easy mode and EasyTouch will go back in test mode.
Push OK button.



EasyTouch is ready to work with the previously associated transducer.





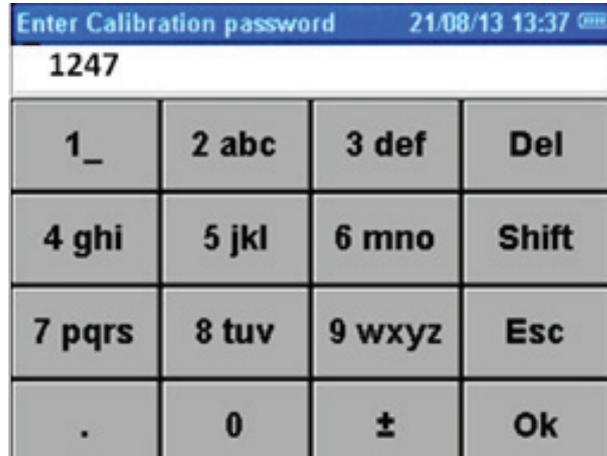
SCS Transducer with Radio Bluetooth

As per the cable transducer, also BT transducers must be set on ET before being used
Connect BT SCS transducers to EasyTouch, is very simple:

Push "**Calibration**" icon to enter:



Enter password "1247":



Push "**BT Transducers**" icon:

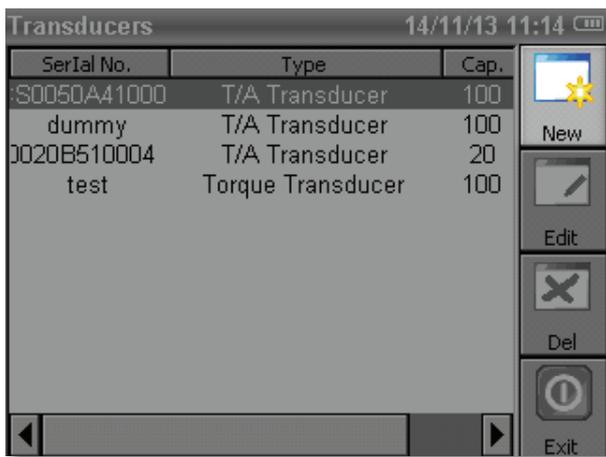




Enter password "1247":

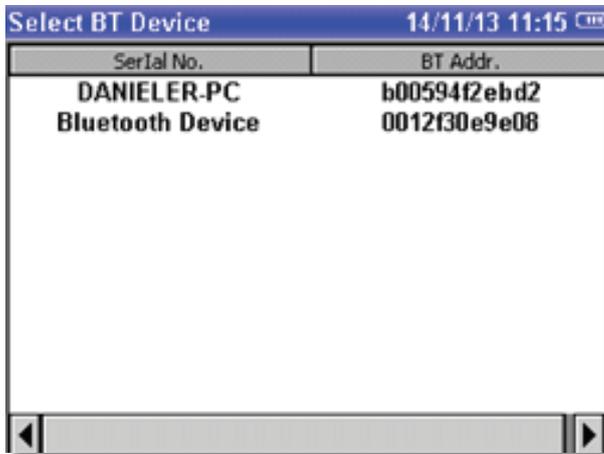


Press "New" on EasyTouch "transducer" window



Switch on BT transducer by pressing ON/OFF button until two green leds will be lighted





In a few seconds EasyTouch will recognize all BT tools and will show them in the following window :

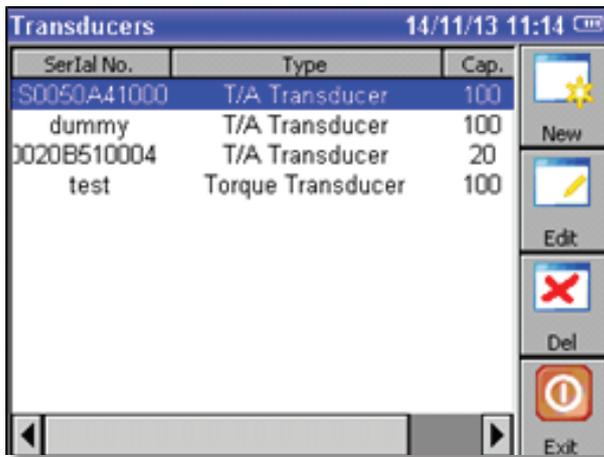
Select the correct transducer to store it in ET memory.

The left side on the page shows the transducer serial number. On the right side is displayed the MAC address of the BT transducer.

Push "Confirm" button on the ET keyboard.

ET will show "transducer" window with a new transducer added in ET memory: The last transducer shown in the window, is the last added.

Push "Exit" to go back to calibration menu.



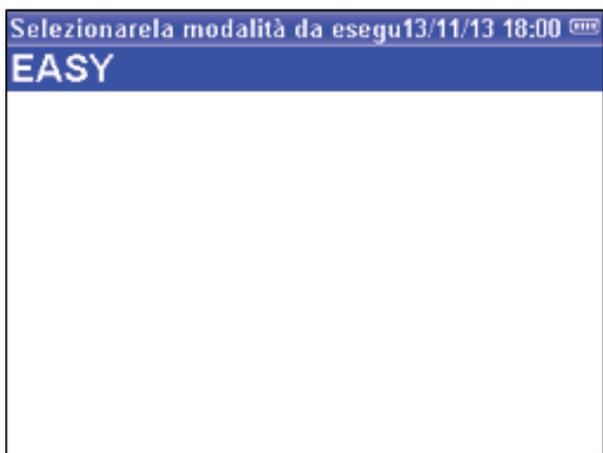
In "Calibration" menu, push "Function" icon:





A new window will be displayed, select EASY and ET will turn back to the main page.

Push "OK" button



EasyTouch is ready to work with the previously associated transducer



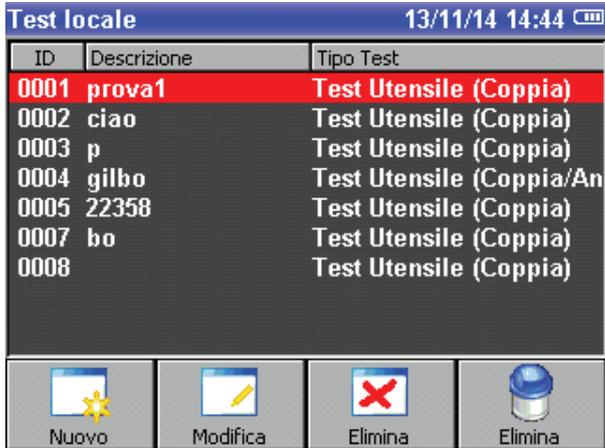
“How to perform a local test (ADVANCED mode only)”

In this paragraph is shown in a few steps, how to perform a test with Advance EasyTouch. Once connected the transducer to ET and added it to the setup, from the front page of ET, select “Local test” (SPC version doesn’t allow to have free test. Is necessary to switch from SPC to Lab version)

See below image:



The “Local Test” window will be displayed.



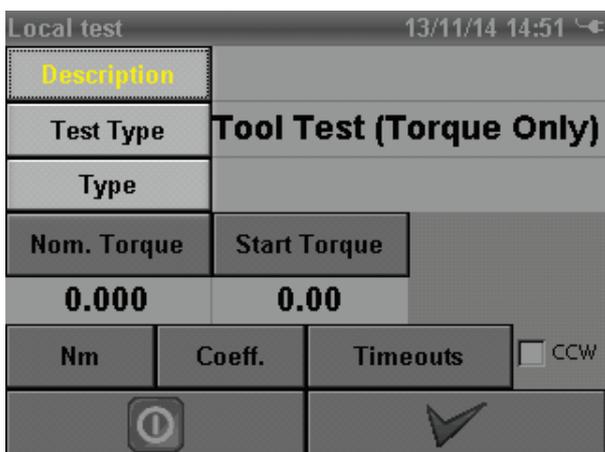
“New” Button allows to modify a new test

“Modify” button, allows to modify an existing test

“Delete” button (shown with an X symbol), allows to delete a test

“Delete” button (shown with a Basket symbol), allows to delete all test results, related to the selected test.

The displayed window will show the local test parameter and the following fields:



Description: push this button to add notes to the test

Test type: Push this button to select the test to be performed.

Type: EasyTouch will show all the available tests. Select the proper test for the wrench to be checked.





Note: virtual keyboard works as in a mobile phone. By pressing more times the same button, you can select the required alphabet letter.

Device test list:

- Tool Test (Torque only): for power tools control, pulses and click wrenched control (the test result will be the torque pick reached). For click wrenches the result will be the first pick.
- Tool Test (Torque/ angle): for electronic power tools control (one step-two steps-quick step) and battery power tools.

In the following paragraph, all the test are explained one by one. It is also explained how to correctly fill, each single field.





Power Tools test - Dynamometric wrenched

“**Tool Test (Torque only)**” and “**Tool Test (Torque/Angle)**” are functions that allow the operator to check the torque and angle outputs performed, of the following tools:

- Power Tool (battery, pneumatic and electronic tools, one, two or quick step).
- Pulse tools: all tools with not generating continuous torque.
- Click wrench.

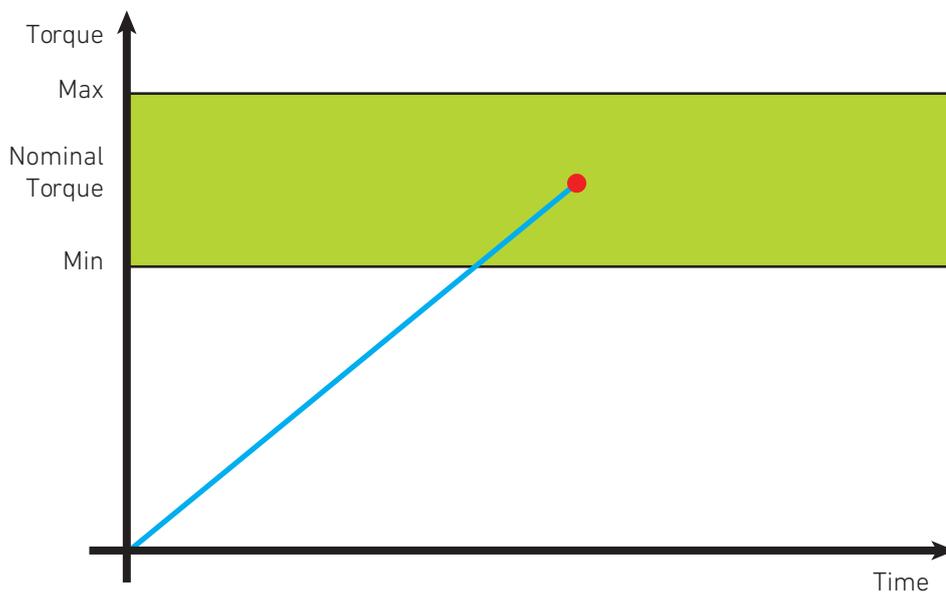
By using Tool Test (Torque only) ET will show only the torque results

By using Tool Test (Torque/Angle) ET will show torque/angle results. e.

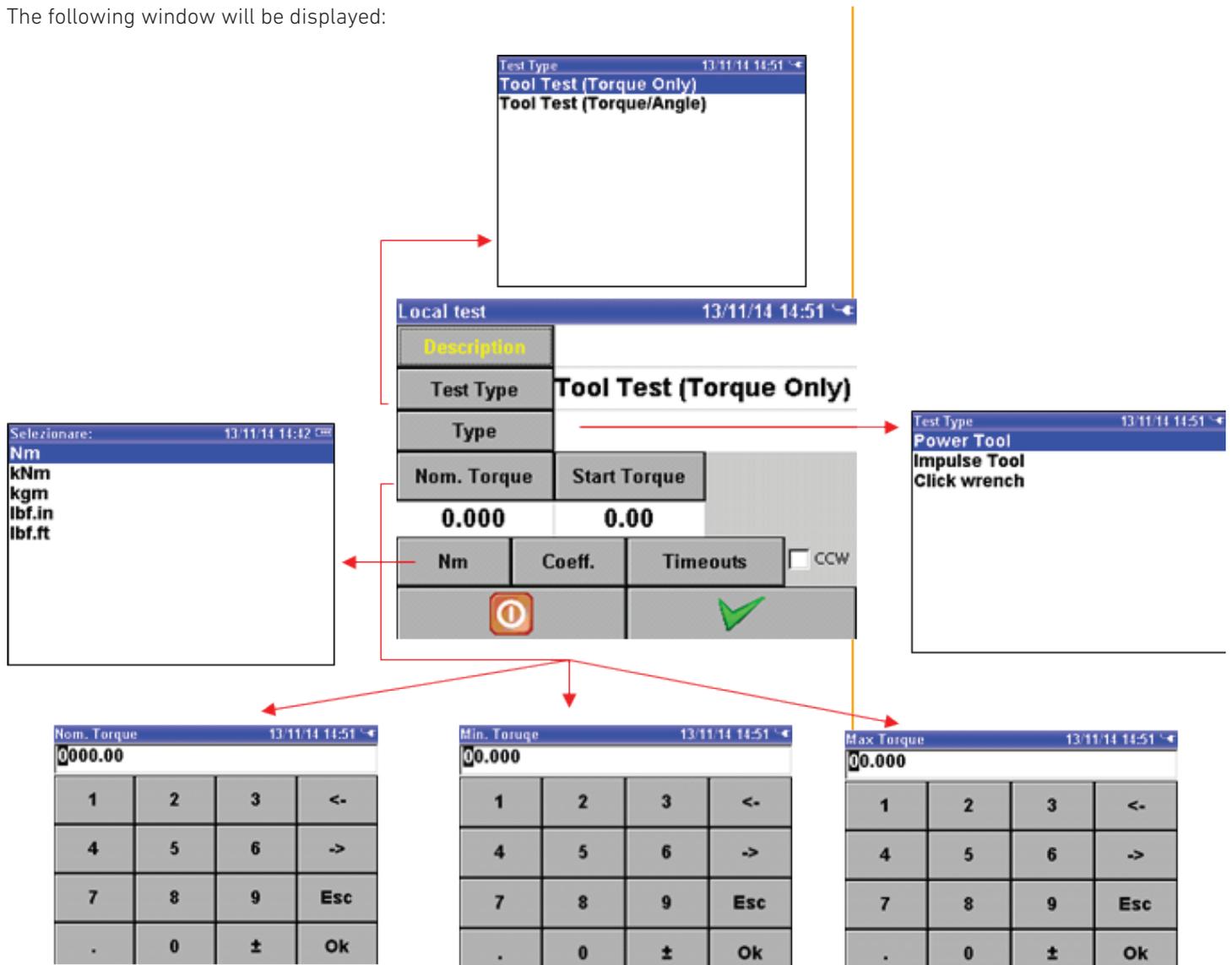
Tool Test (Torque Only)

C'est un test de qualité de l'outil (Outils électriques-Outils à impulsion-Clés mécaniques). En sélectionnant ce type de test, l'utilisateur peut vérifier le rendement du couple des outils. Pour réaliser ce test il est nécessaire de connecter un capteur statique ou rotatif à EasyTouch. L'opérateur doit régler le couple nominal et les tolérances.

Le test aura un résultat positif, seulement si le rendement du couple de l'appareil est inclus dans la limite de tolérance.



The following window will be displayed:



- ☑ **Description** → User can provide a description of the test type to be performed
- ☑ **Test Type** → User can choose to perform a tool test “torque only” or a tool test “torque/angle”
- ☑ **Type** → Push “**Type**” to choose the toll type to be checked (power tool, pulse power tools, click wrench)
- ☑ **Nominal Torque** → Push “**Nom. Torque**” to enter the NT value and the minimum/maximum tolerance
- ☑ **Start Torque** → Push “**Start Torque**” to select from which torque the test should start
- ☑ **Nm** → Push “**Nm**” to change the measures unit.
- ☑ **Coefficient** → Push “**Coeff.**” To set the torque/angle coefficient correction
- ☑ **Timeouts** → Push “**Timeouts**” to set the capture timing (longue Timeout and short Timeout) Refer to “Timeouts” paragraph.
- ☑ **Confirm** → To save and Exit from the page and go back to local test menu
- ☑ **Abort** → Push “**Abort**” to exit without saving.





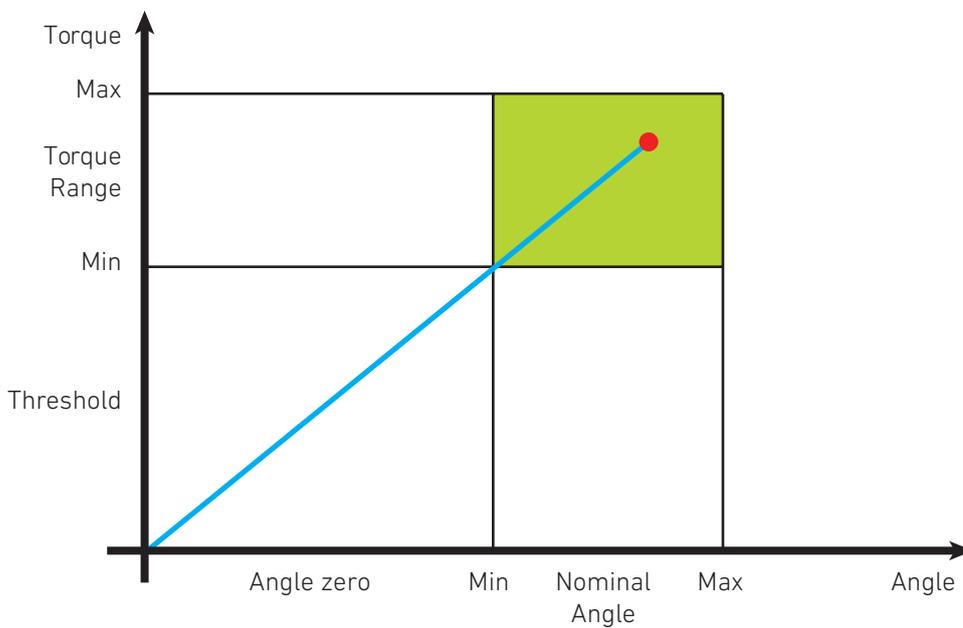
Tool Test (Torque/Angle)

Is a quality tool test (battery and pneumatic tools, DC tools, quick step, two steps)

By selecting this test, the user can check the torque /angle output of the tools. To perform this test, is necessary to connect a rotary torque/angle transducer to EasyTouch. User must set nominal Torque, nominal Angle and tolerances.

The test result will be successful, only if the Torque /angle tool outputs, are included in the tolerances range.

See below image:



The following window will be displayed:

Note: The shown fields are the same as in "Tool test (Torque Only)" with the exception of the "Nom. Angle" parameter.

Local test			13/11/14 14:59
Description			
Test Type	Tool Test (Torque/Angle)		
Type	Power Tool		
Nom. Torque	Start Torque	Nom.Angle	
0.000	0.00	0.0	
Nm	Coeff.	Timeouts	<input type="checkbox"/> CCW

Nom.Angle				13/11/15 10:34
000.0				
1	2	3	<-	
4	5	6	->	
7	8	9	Esc	
.	0	±	Ok	

Max.Angle				13/11/15 10:34
000.0				
1	2	3	<-	
4	5	6	->	
7	8	9	Esc	
.	0	±	Ok	

Min.Angle				13/11/15 10:34
000.0				
1	2	3	<-	
4	5	6	->	
7	8	9	Esc	
.	0	±	Ok	

- ☑ **Description** → User can provide a description of the test type to be performed
- ☑ **Test Type** → User can choose to perform a tool test "torque only" or a tool test "torque/angle"
- ☑ **Type** → Push "Type" to choose the toll type to be checked (power tool, pulse power tools, click wrench)
- ☑ **Nominal Torque** → Push "Nom. Torque" to enter the NT value and the minimum/maximum tolerance
- ☑ **Nom. Angle** → Push "Nom. Angle" to enter the NT value and the minimum/maximum tolerance
- ☑ **Start Torque** → Push "Start Torque" to select from which torque the test should start
- ☑ **Nm** → Push "Nm" to change the measures unit.
- ☑ **Coefficient** → Push "Coeff." To set the torque/angle coefficient correction
- ☑ **Timeouts** → Push "Timeouts" to set the capture timing (longue Timeout and short Timeout) Refer to "Timeouts" paragraph.
- ☑ **Confirm** → To save and Exit from the page and go back to local test menu
- ☑ **Abort** → Push "Abort" to exit without saving





Local test example

The below example chart shows a local test "click wrench" (number 0009 of the local test list)

ID	Descrizione	Tipo Test
0001	prova1	Test Utensile (Coppia)
0002	ciao	Test Utensile (Coppia)
0003	p	Test Utensile (Coppia)
0004	gilbo	Test Utensile (Coppia/An
0005	22358	Test Utensile (Coppia)
0007	bo	Test Utensile (Coppia)
0008		Test Utensile (Coppia)
0009	chiave a scatto	Test Utensile (Coppia)

By selecting the previously created test and by pushing "Confirmation" button on the keyboard EasyTouch will go to "test" page.



Will be now possible to start the click wrench test. The example below shows a positive result, test:





Test Type



Date/Time



Battery level



Test description



Nominal torque and tolerances



Measure unit



Test result



Message to user

Note: in the above example (click wrench test) the angle magnitude is not reported because it refers to a torque only test.





The example here below shows, a negative result test:



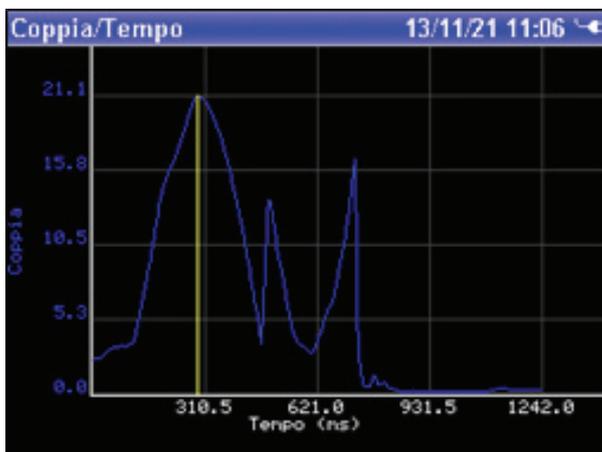
The test has a negative result, if the torque is too low and under the minimum tolerance. In this case the result will be displayed in red color. When the test has a negative result, ET provides the reason by displaying a message.

ET will ask to confirm the test (message/repeat/accept).

By pressing the left arrow user selects to repeat the test.

by pressing the right arrow, to accept the test.

This option is selectable from the setup, in case the user wants to save the result, is possible to change ET setting.



The side window shows a Torque/Angle curve of a click wrench test.

The click wrench test does not allow to display a torque/angle curve because the angle magnitude is not indicated.





By exit the test page will be anyway possible to display curves and trend results, by pressing the left arrow on "local test list":

ID	Descrizione	Tipo Test
0001	prova1	Test Utensile (Coppia)
0002	ciao	Test Utensile (Coppia)
0003	p	Test Utensile (Coppia)
0004	gilbo	Test Utensile (Coppia/An
0005	22358	Test Utensile (Coppia)
0007	bo	Test Utensile (Coppia)
0008		Test Utensile (Coppia)
0009	chiave a scatto	Test Utensile (Coppia)

Nuovo Modifica Elimina Elimina

By pushing the right arrow ET will display the following window:

Nr.	Coppia	Data	Ora
1	23.84	2013/11/20	14:54:04
2	20.81	2013/11/20	14:54:11
3	20.05	2013/11/20	14:54:19
4	22.01	2013/11/20	14:54:24
5	20.65	2013/11/20	14:54:29
6	20.82	2013/11/20	14:54:33
7	20.16	2013/11/20	14:54:37
8	20.73	2013/11/20	14:54:41

chiave a scatto Stampa

The left column "NR" shows the number of the performed tests. The "Data" column shows the performed test date. On the "hour" is indicated the hour in which the test has been performed (hour/minutes/seconds).

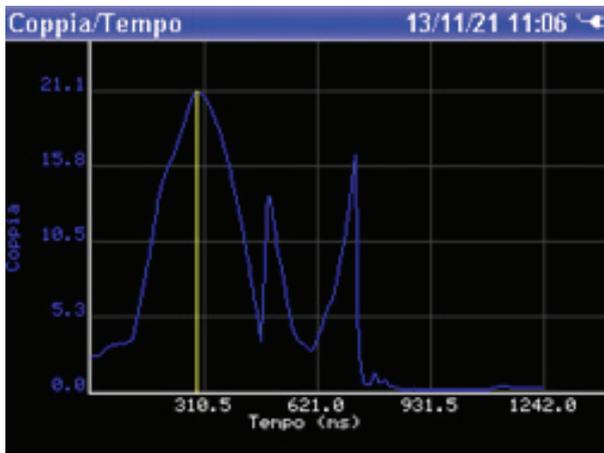
By pushing the "confirm" button the following window will be displayed:

Selezionare:	13/11/21 10:46
Curva Coppia/Tempo	
Curva Coppia/Angolo	
Grafico Valori	





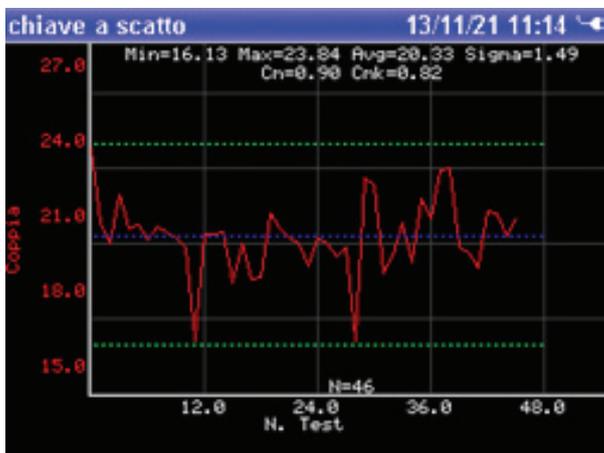
User will be able to visualize Torque/Time – Torque/Angle curves and also the graphic values that summarizes all the result referred to a specific local test.



Torque/Time chart Example for a “click wrench” test.



Torque/Angle chart example for a “power tool” test.



Graphic value example.

Push “**ESC**” button to exit e go back to previous menu.





HOW TO PRINT FROM LOCAL TEST

Statistic 13/11/21 11:50			
Nr.	Coppia	Data	Ora
1	23.84	2013/11/20	14:54:04
2	20.81	2013/11/20	14:54:11
3	20.05	2013/11/20	14:54:19
4	22.01	2013/11/20	14:54:24
5	20.65	2013/11/20	14:54:29
6	20.82	2013/11/20	14:54:33
7	20.16	2013/11/20	14:54:37
8	20.73	2013/11/20	14:54:41

chiave a scatto

Stampa

By pushing "**Print**" button will be possible to print a label with statistic test values or the complete result list. To be able to print is necessary to connect the SCS BT printer (see "how to connect BT printer paragraph")

The following window will be displayed :

Selezione tipo di stampa 13/11/21 11:11

Elenco **Etichetta**

Uscita

By pushing on "**Label**", Easy Touch will print the following layout (real label dimension 54 x 25 mm):

```

13/11/20 14:54:04
chiave a scatto      46
SCS25                Nm
T:20.000(16.000,24.000)
CM: 0.898    CMK: 0.825

```





By pushing "**list**" the following labels will be displayed:

```
13/11/20 14:54:04
chiave a scatto      46
SCS25                Nm
T:20.000(16.000,24.000)
CM: 0.898    CMK: 0.825
MIN:16.128    MAX:23.839
```

```
MIN: -2.4° MAX: 259.0°
1)23.839 Nm      259.0°
2)20.809 Nm      3.4°
3)20.048 Nm      1.8°
4)22.014 Nm      1.1°
5)20.654 Nm      5.2°
6)20.815 Nm      2.4°
```

Push "**ESC**" to exit and go to previous menu.



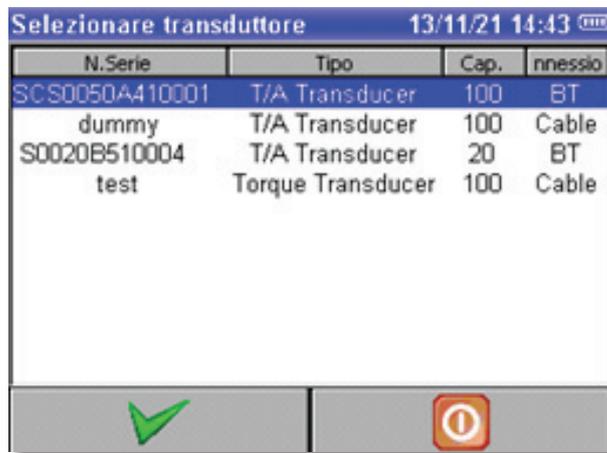


How to perform an Easy Test BASIC end ADVANCED mode

To perform an Easy Test push the "Easy Test" icon.

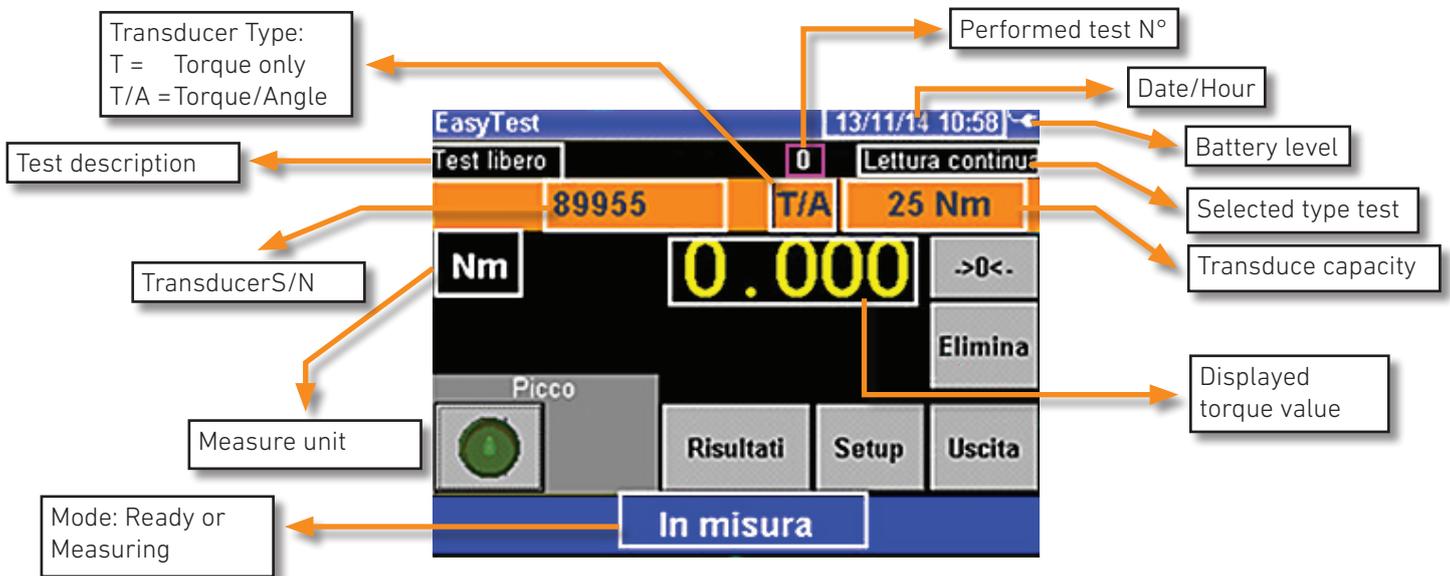


EasyTouch will display the following window:



This window will be displayed only if you are using a transducer without identification or a BT transducer. In case of identified transducer, EasyTouch will display the test page automatically.





Grey icon descriptions:

>0< → to reset torque and angle.

Delete → to delete the last result

Results → to visualize all the performed tests and print them

Setup → to set the test type and the related parameter. For more information see the following paragraph

ESC → to exit and go back to the main menu

Peak → This icon is enabled only when the test type "Continuous reading" has been selected. By pushing this icon, EasyTouch will display the torque peak reached.

Note: For transducers SCS connections, the bar with the related details will be orange colored.

For transducers NOT SCS connections, the bar with the related details will be blue colored.





Settings in Easy test setup

Parametri Easy test				13/11/14 11:03			
Descrizione		Test libero					
Trasduttore(Auto)		89955			T/A		
Tipo		Lettura continua					
Filtro(Hz)	Reset(ms)	Start Cop.		Start Ang.			
200	2000	1.0		1.0			

Description → Gives the possibility to add a brief test description

Transducer → This icon gives the possibility to select the transducer connected to Easy Touch; If the transducer is SCS, it will be automatically recognized by EasyTouch. In the right field are shown the serial number and the transducer type

Type → Allows to select the test type to be performed (continuous reading/power tool/pulse power tools/ click wrenches)

Filter(Hz) → Allow to select the filter frequency.

Warning: by modifying the filter frequency, the test result could be different

Reset (ms) → Allows to set for how long the test result will be displayed (default value 2.000 ms)

Start Cop. → It is the torque value that establishes the beginning of the test

Start Ang. → It is the angle value that establishes the beginning of the test



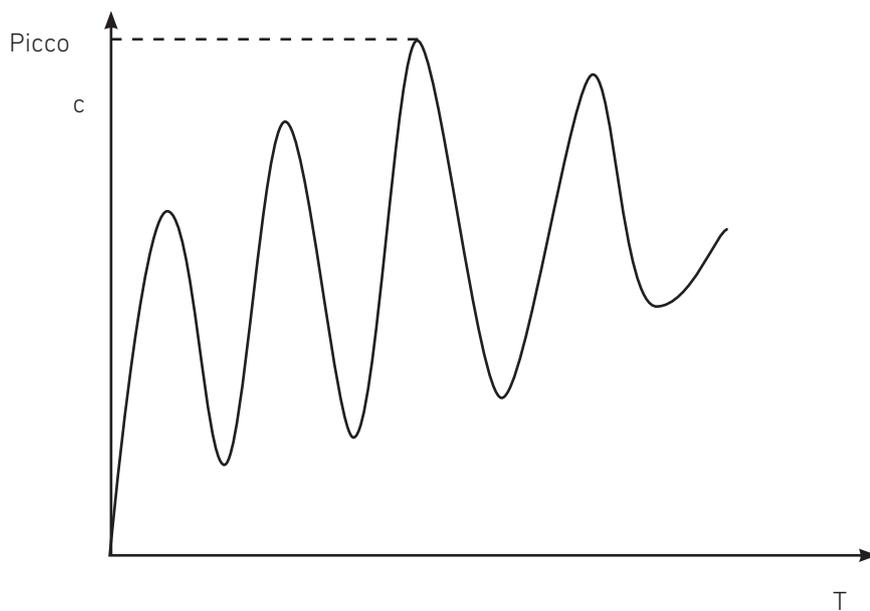


Selectable types tests

Here below the selectable test list :

- Continuous reading
- Power tool test
- Click wrench
- Pulse power tools

Continuous reading



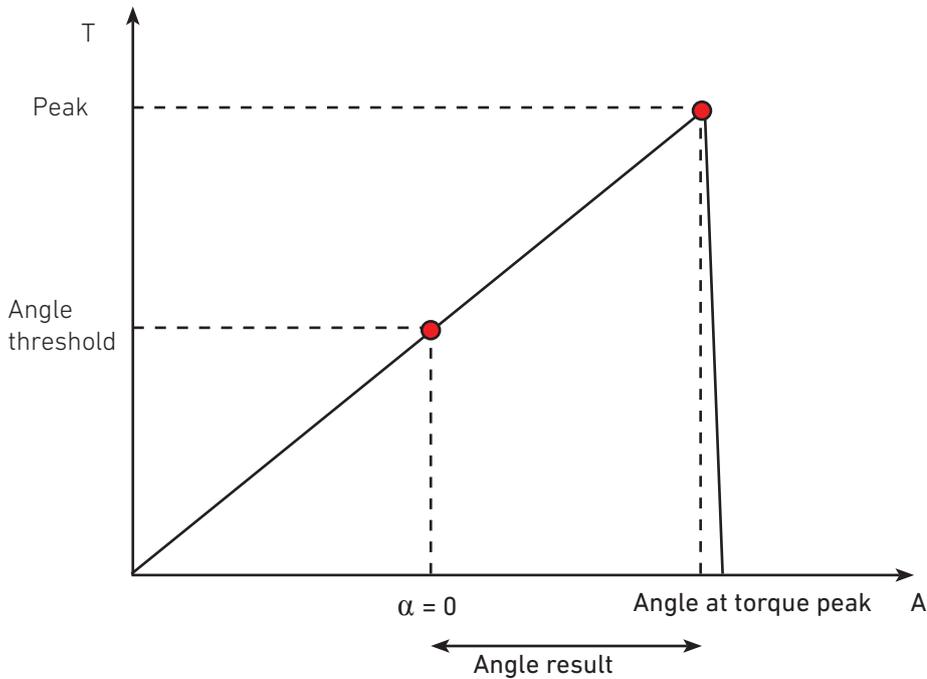
Description

By selecting this type of test, ET will display the torque and the angle in real time (if only a torque transducer is connected. Et will display only the torque value). Is possible to enable the Peak function that allows to display the reached peak for a few instant.
(see the setup "reset ms" section)
In the chart is shown a Torque/Time and Torque/ Angle curve with oscillating values.





Power Tool Test



Description

With power tool test is possible, by connecting a rotary transducer only torque or torque/angle or static transducer with joint simulator, to test the following continuous torque power tool:

Battery power tools, pneumatic power tools, electronic power tools one step – two steps – quick step.

During this type of test, ET will display the maximum torque reached with the power tool

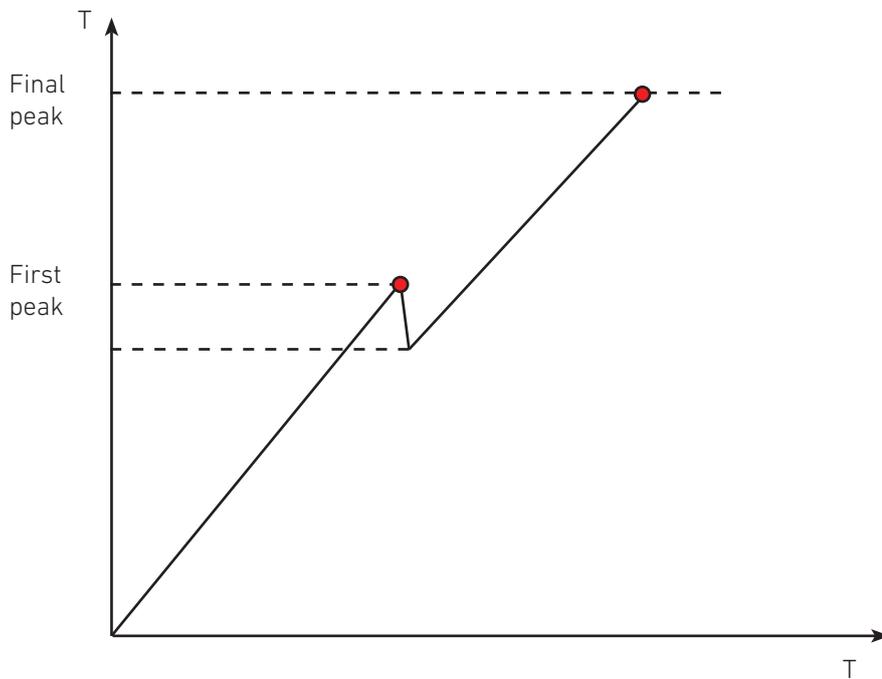
and the maximum torque angle. (see above chart)

ET saves all the performed tests, until ESC button will be pushed.





Click wrench



Description

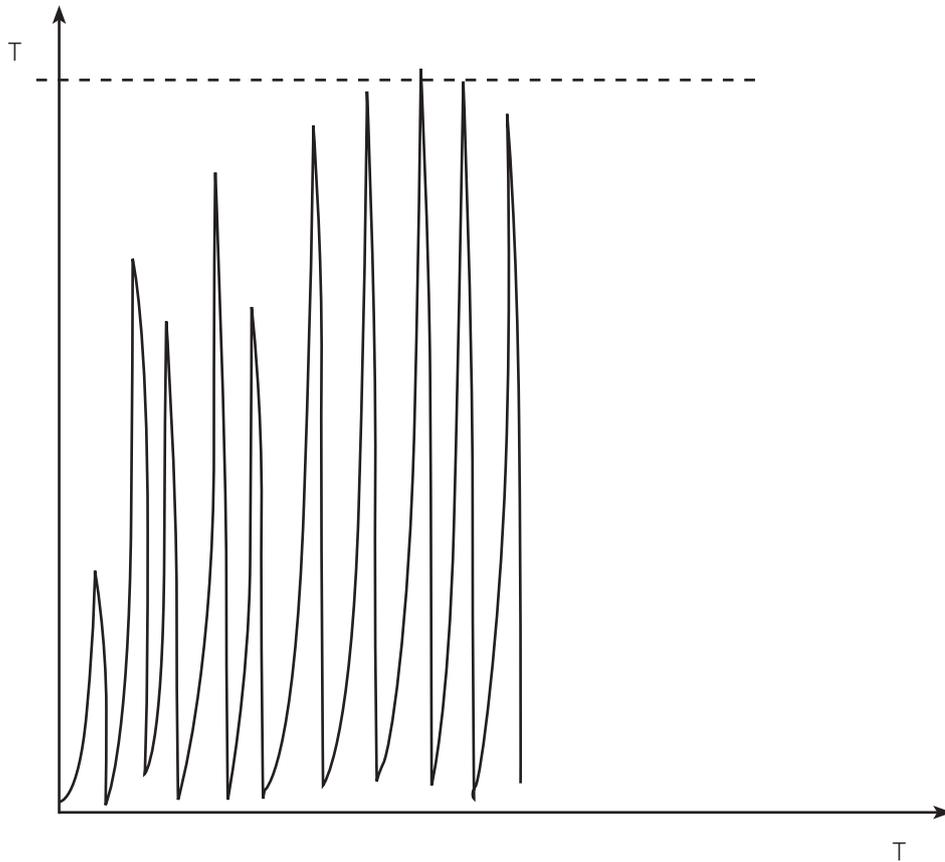
With a click wrench test is possible, by connecting a static or dynamic transducer (joint test already started) to measure the provided click wrench torque by identifying the trigger point on the wrench. (first peak on chart)

By connecting a dynamic torque /angle transducer, will be displayed only the torque value.





Pulse Power Tools



Description

By connecting SCS SMCI static transducer (for pulses power tools) or a rotary torque transducer or torque/angle, will be possible to test impulse power tools, with and without "shut off" valve.

By connecting a static transducer, for a shut off power tool test, user must use a mechanical joint simulator.

By connecting a dynamic torque transducer or torque/angle, user will perform the test directly on the joint to be screwed (for power tool with and without shut off)

As a final result, Et will display, the maximum peak reached during the test.

For dynamic transducers torque /angle, EasyTouch will display only the torque.





How to print

From the main menu, push "Easy Test".

After performing a series of tests, push "Results".



The above window "Results", will be displayed. To print them, push "**Print**".



The left column shows the performed test number.

The column "Torque" shows the Torque value during the test.

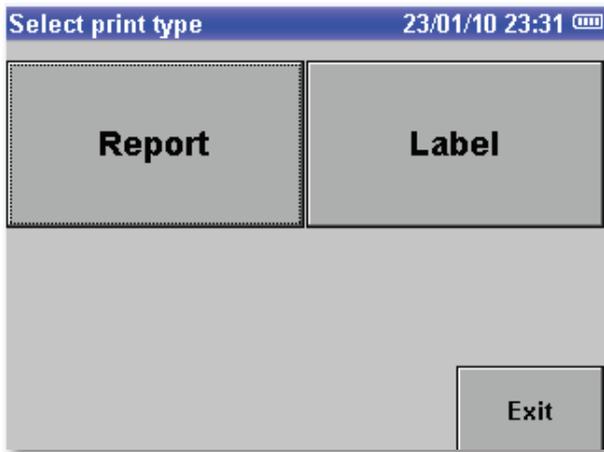
The column "Date" shows the test day, and the "Hour" column, the test hour (hour/minutes/seconds).

By selecting one of the performed tests and by pressing the "**Delete**" button, is possible to delete the selected test.



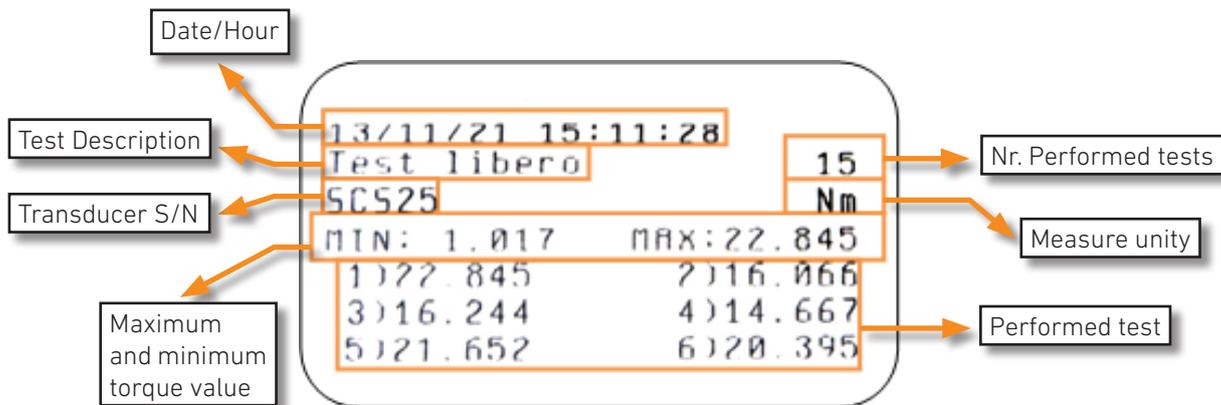


After pushing the Print button the following window will be displayed:

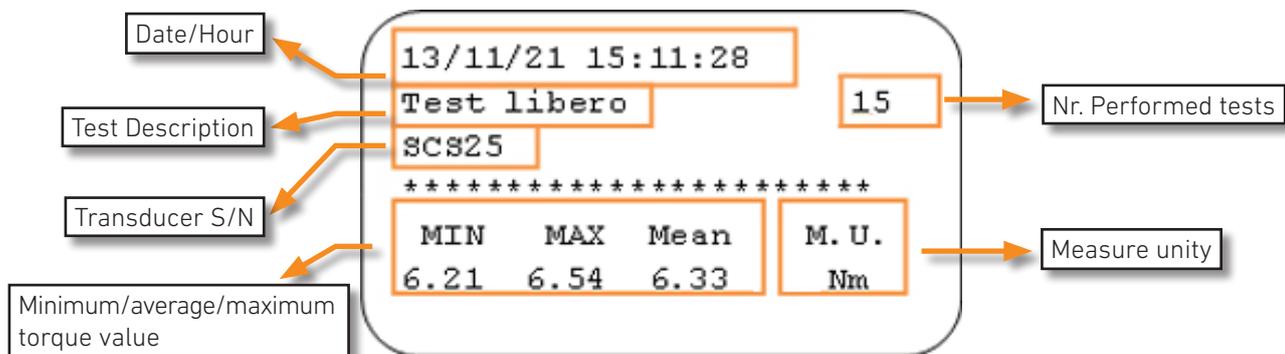


By pressing the "List" button, EasyTouch will print a list of all the results of the performed tests.

See the following example:



By pressing the "Label" button, ET will print with the following layout:





How to connect a Bluetooth printer

EasyTouch allows SCS BT connection by following the instruction here below:

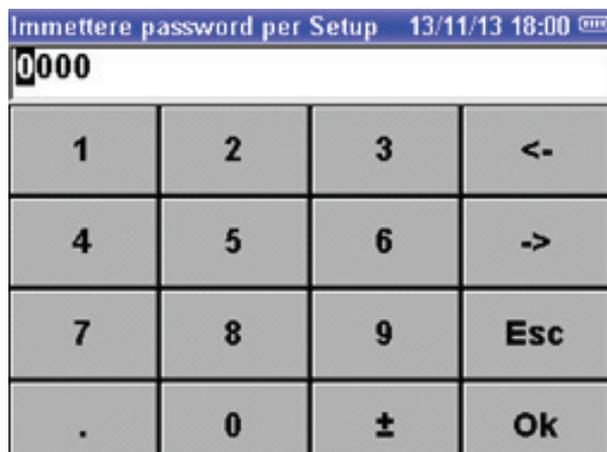


Switch on l'EasyTouch.

Switch on Bluetooth printer



From the main menu select "printer setup" icon



Enter "1274" password for printer set up access.





Push "**address**" button and EasyTouch will automatically search the S'print – BT printer.



After few seconds EasyTouch will display the BT tools list. Select S' print BT printer and press "confirm" button. Push "update" button, if the user wants to research the printer. Push "Abort" to exit without saving.



The BT printer is ready and connected. Is now possible to print from "Local Test" and from ET.

Note: Once the printer has been associated, user won't need to repeat the above procedure, because it will be automatically recognized from the device.





How to send data to F3 Explorer

With F3 Explorer is also possible to create reports and export them to Excel. (Freedom, Data Touch and SCSeasy)

F3 also allows to visualize one or more curves.

For F3 explorer and ET connection, EasyTouch must be switched on.

Push ON/OFF button as shown in the picture:



By using an USB cable, connect EasyTouch to PC.



Push the "**Synchronize**" button on the main window page .



Wait few seconds for the synchronization.





For F3 Explorer to EasyTouch connection, click on the below shown icon:



Shows memorized EasyTouch folders.

Push the green button for EasyTouch and F3 Explorer, communication. F3 Explorer will recognize all the memorized folders In ET.

Push the "Export" button to visualize the test reports with Microsoft Excel.

Push "Analysis" button to visualize the test reports.

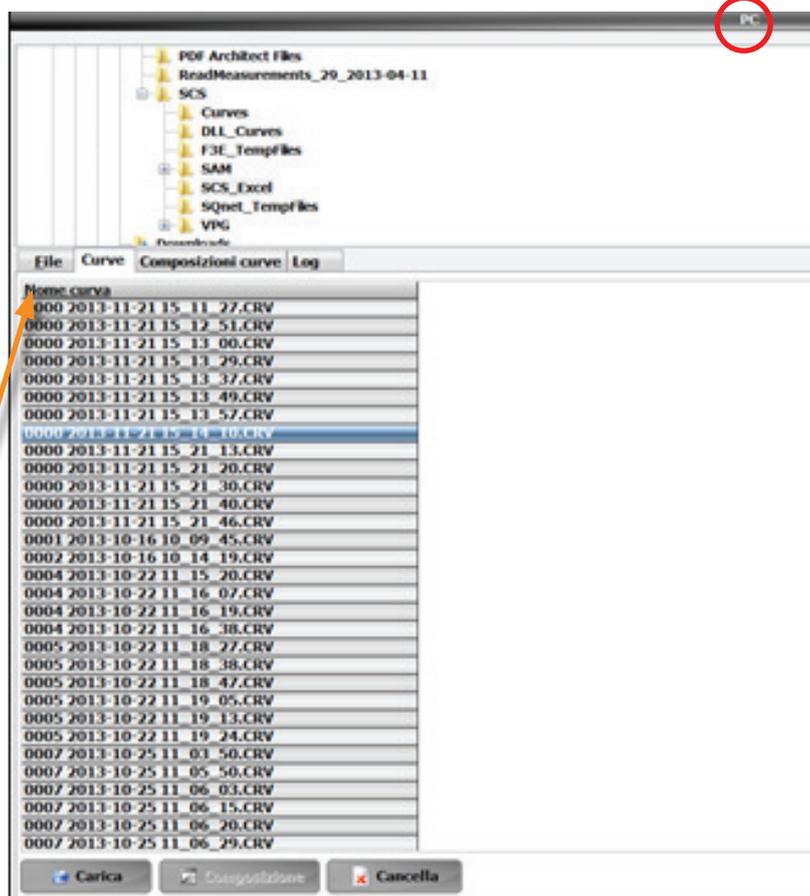
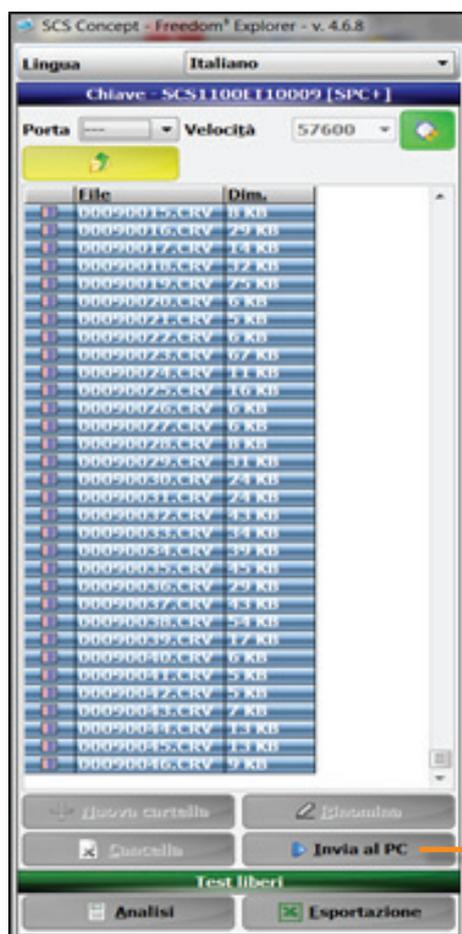
Nome	Tipo															Ris.	Sel.
prova1	Picco																
Data/ora	Coppia nom.	Coppia n	Coppia n	Angolo n	Angolo n	Angolo n	Sollia	Ris. c.	Ris. a.	C. max	A. max	C. finale	A. finale	Forza	VIN	Ris.	Sel.
16/10/2013 10	10	8	12	0	0	0	0	5	-12,4	0	6,35	0	0	0	---		<input type="checkbox"/>
Nome																	
prova1																	
Tipo																	
Picco																	
Data/ora	Coppia nom.	Coppia n	Coppia n	Angolo n	Angolo n	Angolo n	Sollia	Ris. c.	Ris. a.	C. max	A. max	C. finale	A. finale	Forza	VIN	Ris.	Sel.
16/10/2013 10	10	4	16	0	0	0	0	5	1,104	0	1,101	0	0	0	---		<input type="checkbox"/>
16/10/2013 10	10	4	16	0	0	0	0	5	4,839	0	0	0	0	0	---		<input type="checkbox"/>
16/10/2013 10	10	4	16	0	0	0	0	5	5,234	-3,5	0	0	0	0	---		<input type="checkbox"/>
16/10/2013 10	10	4	16	0	0	0	0	5	6,414	1,5	0	0	0	0	---		<input type="checkbox"/>
16/10/2013 10	10	4	16	0	0	0	0	5	6,175	2	0	0	0	0	---		<input type="checkbox"/>
16/10/2013 10	10	4	16	0	0	0	0	5	6,652	7	0	0	0	0	---		<input type="checkbox"/>
16/10/2013 10	10	4	16	0	0	0	0	5	6,475	8,5	0	0	0	0	---		<input type="checkbox"/>
16/10/2013 10	10	4	16	0	0	0	0	5	6,594	4	0	0	0	0	---		<input type="checkbox"/>
16/10/2013 10	10	4	16	0	0	0	0	5	6,095	3	0	0	0	0	---		<input type="checkbox"/>
16/10/2013 10	10	4	16	0	0	0	0	5	6,995	4,5	0	0	0	0	---		<input type="checkbox"/>
#	T Min	T Max	T Avq	T Sigma	T Cm/Cp	T Cmk/C		A Min	A Max	A Avq	A Sigma	A Cm/Cp	A Cmk/C				
10	1,104	6,995	5,658	1,730	1,16	0,32		-3,5	8,5	2,7	3,5292	0	-0,26				
Nome																	
prova1																	
Tipo																	
Picco																	
Data/ora	Coppia nom.	Coppia n	Coppia n	Angolo n	Angolo n	Angolo n	Sollia	Ris. c.	Ris. a.	C. max	A. max	C. finale	A. finale	Forza	VIN	Ris.	Sel.
22/10/2013 10	10	8	12	50	20,1	80	5	9,985	63,4	9,985	0	0	0	---		<input type="checkbox"/>	
22/10/2013 11	10	8	12	50	20,1	80	5	9,911	65,8	9,911	0	0	0	---		<input type="checkbox"/>	
22/10/2013 11	10	8	12	50	20,1	80	5	9,936	53,5	9,936	0	0	0	---		<input type="checkbox"/>	
#	T Min	T Max	T Avq	T Sigma	T Cm/Cp	T Cmk/C		A Min	A Max	A Avq	A Sigma	A Cm/Cp	A Cmk/C				
3	9,911	9,985	9,944	0,0376	17,71	17,22		53,5	65,8	60,8	6,5199	1,53	0,98				
Nome																	
prova1																	
Tipo																	
Picco																	
Data/ora	Coppia nom.	Coppia n	Coppia n	Angolo n	Angolo n	Angolo n	Sollia	Ris. c.	Ris. a.	C. max	A. max	C. finale	A. finale	Forza	VIN	Ris.	Sel.
22/10/2013 11	22	17,6	26,4	0	0	0	11	20,191	0	20,191	0	0	0	---		<input type="checkbox"/>	
22/10/2013 11	22	17,6	26,4	0	0	0	11	18,212	0	18,212	0	0	0	---		<input type="checkbox"/>	
22/10/2013 11	22	17,6	26,4	0	0	0	11	21,053	0	21,053	0	0	0	---		<input type="checkbox"/>	
22/10/2013 11	22	17,6	26,4	0	0	0	11	21,64	0	21,64	0	0	0	---		<input type="checkbox"/>	
22/10/2013 11	22	17,6	26,4	0	0	0	11	22,505	0	22,505	0	0	0	---		<input type="checkbox"/>	
22/10/2013 11	22	17,6	26,4	0	0	0	11	23,012	0	23,012	0	0	0	---		<input type="checkbox"/>	
#	T Min	T Max	T Avq	T Sigma	T Cm/Cp	T Cmk/C		A Min	A Max	A Avq	A Sigma	A Cm/Cp	A Cmk/C				
6	18,212	23,012	21,104	1,73937	0,84	0,62		0	0	0	0,001	0	0				
Nome																	
prova1																	
Tipo																	
Picco																	
Data/ora	Coppia nom.	Coppia n	Coppia n	Angolo n	Angolo n	Angolo n	Sollia	Ris. c.	Ris. a.	C. max	A. max	C. finale	A. finale	Forza	VIN	Ris.	Sel.
25/10/2013 11	10	9	12	0	0	0	5	6,29	0	6,29	0	0	0	---		<input type="checkbox"/>	
25/10/2013 11	10	9	12	0	0	0	5	9,02	0	9,02	0	0	0	---		<input type="checkbox"/>	
25/10/2013 11	10	9	12	0	0	0	5	21,54	0	21,54	0	0	0	---		<input type="checkbox"/>	





By selecting the "EASY" folder and then its subfolder "CURVES", on the left screen side, all the memorized curves file, will be displayed.

By pushing "**Send to PC**", after selecting one curve or all curves, is possible to save the mentioned curves in a specific PC folder.



On the right side of F3 Explorer window, will be displayed all curve file, exported from PC. As shown in the picture here below, in each performed test file, date and hour, are indicated.

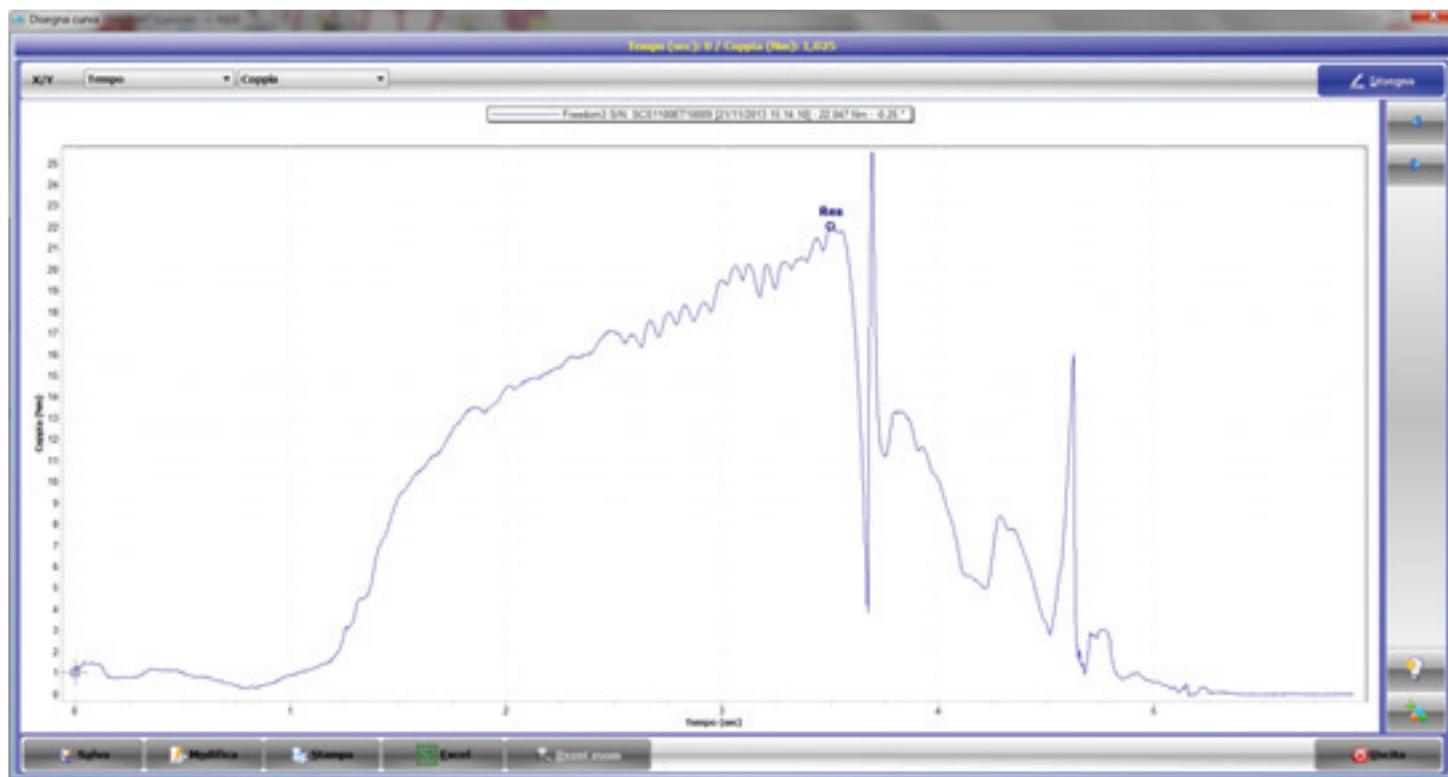
Ex. 2013 - 11- 21 à 15:11:27.





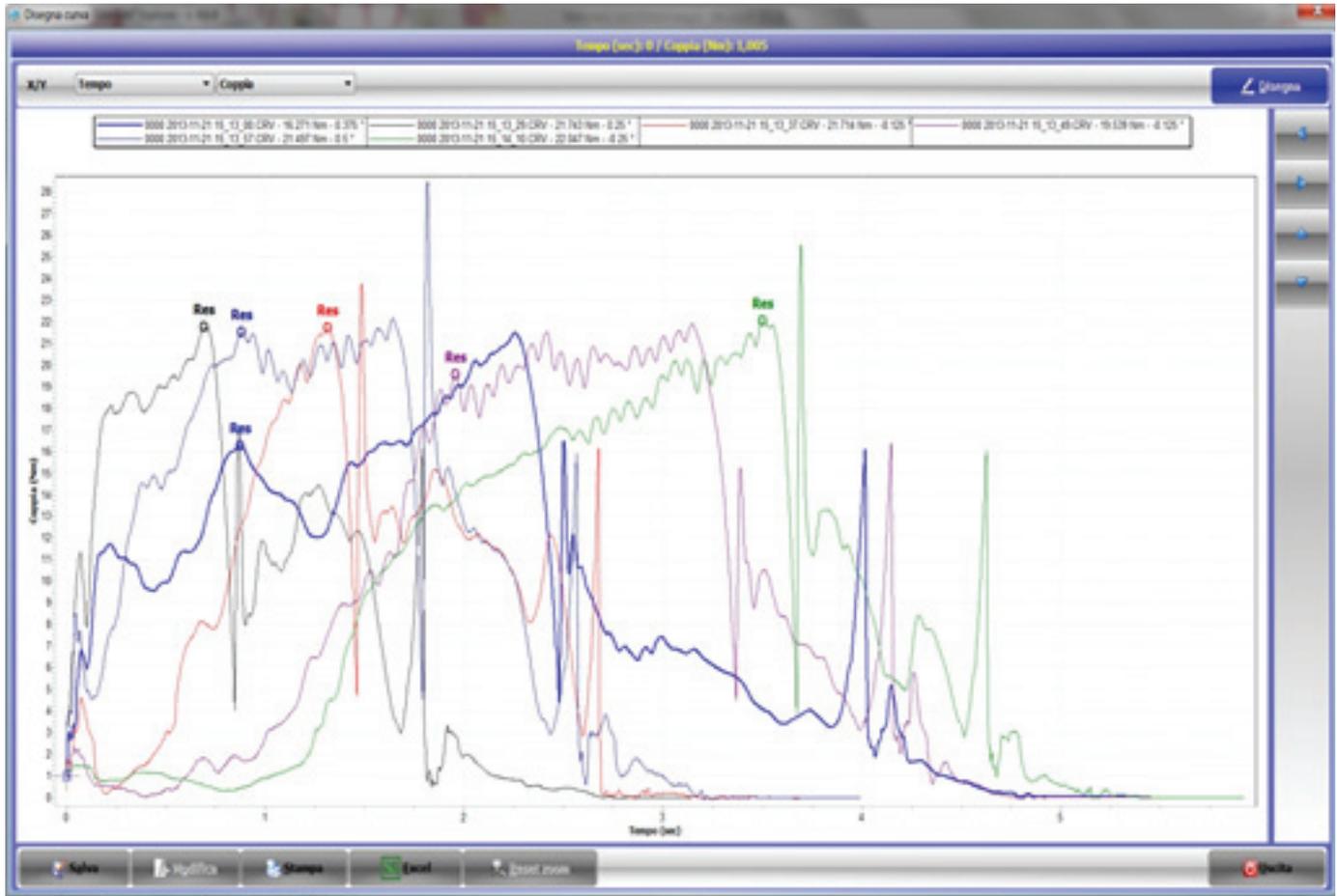
 Carica

The transferred curves, will be displayed by pushing the “Charge” button.





By selecting more files, ("Composition") is possible to display one or more curves in the same chart. Push "**Delete**" to delete one or more files.



Note: From the menu, user can choose the graphic type to be visualized.



Once selected the required option, by pushing the "**Draw**" button, user will visualize a new chart.

Note: The first selected greatness is the X-Axis (X) the second one is the ordinate axis (Y).





SETUP MENU

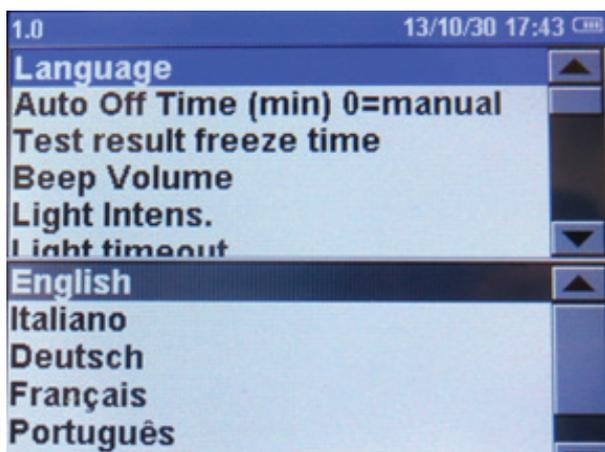
EasyTouch allows to personalize many settings. From ET main menu, select "General" icon to enter in the Setup to modify each single setting. See below image:



EasyTouch will ask to digit the password "1247" to enter in the menu. A new window will be displayed, select "setup":



The main menu window, will be displayed:





On top is shown the setup title, on the side button, the possible selections.
To select each setup, touch the screen or use the "up/down" arrows
Refer to the below chart for each setting description.

Setting	Descriptions
Language	This function allow to choose one of the following languages: English, Italia, German, French, Portuguese, Spanish and Hungarian (special version).
Test Result freeze time	This function shows for how long the result will displayed at the end of each single test (Default value 2000 ms.)
Auto Shutdown time (min)	This function shows, the device shutting down time.
Results visualization time	This function shows, the result displayed time, expressed in MS
Beep Volume	This function allows the user, to adjust EasyTouch sounds volume.
Light Intens.	This option allow user to adjust the brightness
Light Timeout	EasyTouch has two light screen modalities: When in Stand by (light time out), ET goes in energy saving modality for battery saving.
Delete test	This function allows to delete all results. This option is applicable on Easy test and on local tests.
Result Confirmation	This function is applicable only on local test. At the end of the test, Et will ask to confirm the result that will be saved. Without confirmation, the result will be erased. This function is subject to the previous mentioned definition "Delete test". By pushing "confirm result" button a drop-down menu will be displayed with 3 options: <ol style="list-style-type: none"> 1. If the result confirmation is NEVER, Easy Touch will automatically save it. In this case "Delete test" option does not have effect. 2. If the result confirmation is ALWAYS, at the end of the test , Et will ask to confirm the result by pushing the right arrow. If the function "delete test" is active, on the test window, the user can repeat the test by pushing the left arrow. 3. EasyTouch will ask to confirm or repeat the test, according to the above mentioned point (N°2).
Date and Hour	This function allows to set date and hour.
Force Peak Results	This function is for tightening strategy programs in production. If activated, Et will consider as a result the torque /angle peak value, reached during the test.
Force Pick Res (Click wrenched)	By enabling this function, ET will consider as a result, the torque peak reached during the click wrench test.
Force Pick Res (Power Tools)	By enabling this function, ET will consider as a result, the torque peak reached during the Power tools test. Easy Touch will not consider the first peak of the power tool tightening (one step - two steps - quick step).
Enter Password	For local tests, EasyTouch will ask to digit the password "1247".
Font size	Allows to adjust the font size. User can choose between two option: small and big.
BT Curve Download	This function allows to optimize the communication speed with F3 Explorer. In available only for F3 Explorer 4.6.3 version
Binary export	When enabled, allows to speed up the data exporting to F3 software.
Power tools filter frequency	This function shows, the frequency cutoff applied to power tool test. Only for Easy test, when the user sets the test parameters, the cutoff frequency can be modified.





Impulse filter frequency	This function shows, the frequency cutoff applied to impulse power tools test..
Personnaliser le bouton de réglages	This function allows to customize the ET setup button. The drop-down menu gives three options: 1. REPORT PRINT : allows to print a list directly after a test. 2. LABLE PRINT : allows to print a label directly after a test. 3. RESULTS LIST : opens the window with a results list, already saved in ET memory.
Format date	This function allows to choose the date format: Year/Month/Day - Day/Month/Year - Month/Day/Year.





Part number

<i>Part number</i>	<i>Type</i>	<i>Description</i>
163 10 0006	EasyTouch Advanced	Data collector
163 10 0008	EasyTouch Basic mode	Data collector
197 99 0016	FEW click wrench cable and SMC static transducer.	EasyTouch accessory
197 99 0017	Torque, Torque/Angle cable for rotary transducer	EasyTouch accessory
102 11 0002	Freedom3 Explorer	Software
343 91 0020	EasyTouch BT printer	EasyTouch accessory

Note: All spare parts are already included in EasyTouch.





“EASYTOUCH” ATTACHMENTS

- **TIMEOUTS**
- **TORQUE CORRECTION COEFFICIENT CALCULATION**
- **FREQUENCY OF SAMPLING AND CUTTING (FILTER)**

TIMEOUTS

Introduction

This document describes how to use timeouts during tightening cycles on power tools acquisition tests or wrenches tightening.

Timeouts principles

Timeouts are used by SCS products with the following targets:

- During the wrench tightening, allows the user to complete the tightening in more "resumptions". This to obtain a final result once the nominal target is reached.
- During the power tool tightening, with more steps, when the power tool stops, will not be considered as a final test, but it will give the time for subsequent steps acquisition.

Start and Stop test cycle/tightening cycle

A test cycle/tightening cycle starts when the torque value is higher than the minimum torque value (minload) of the connected transducer

A test cycle/tightening cycle, automatically ends after a timeout. During this time, the torque value is lower than the minimum torque value of the transducer (minload).

Short and long Timeouts

There two different timeouts:

- **Short Timeout**
- **Long Timeout**

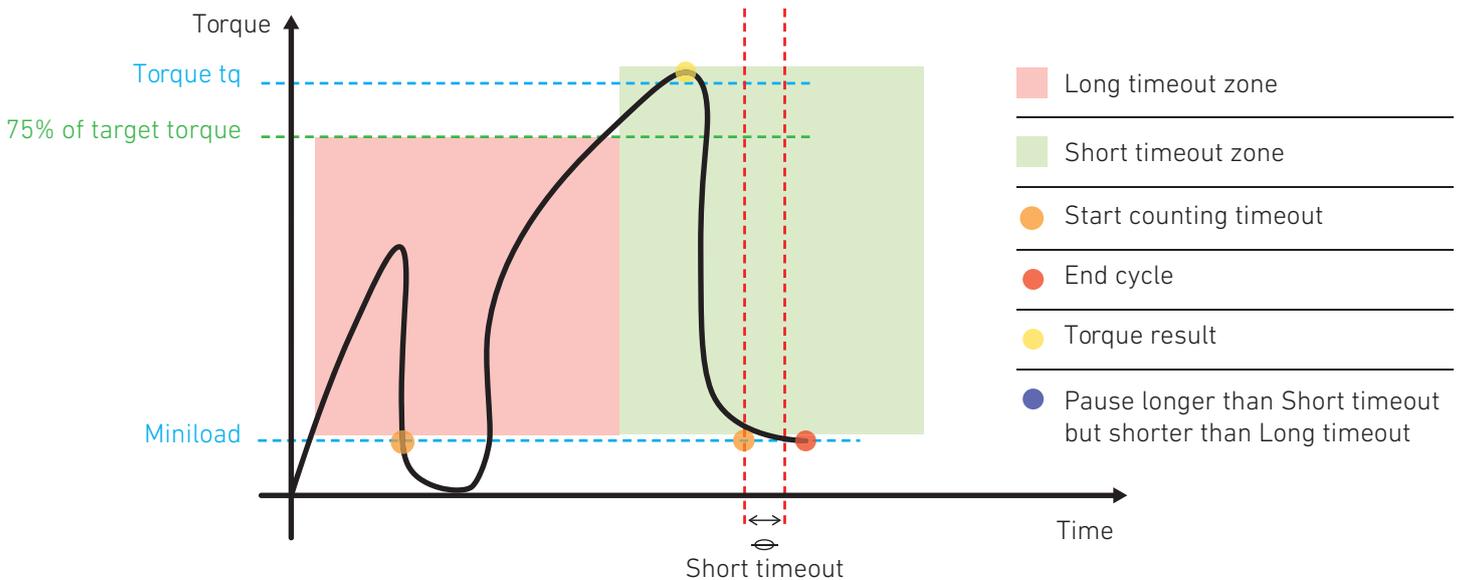
The timeout counter is increased each time the torque value is under the minload. They are resetted when the torque is higher than the minload.

The long timeout is active during the cycle, until the torque or angle values are close to the target to be reached. This to allow the user to complete the resumption tightening (ratchet engaging, hexagon adaptor repositioning, the multistep power tool stand-by)

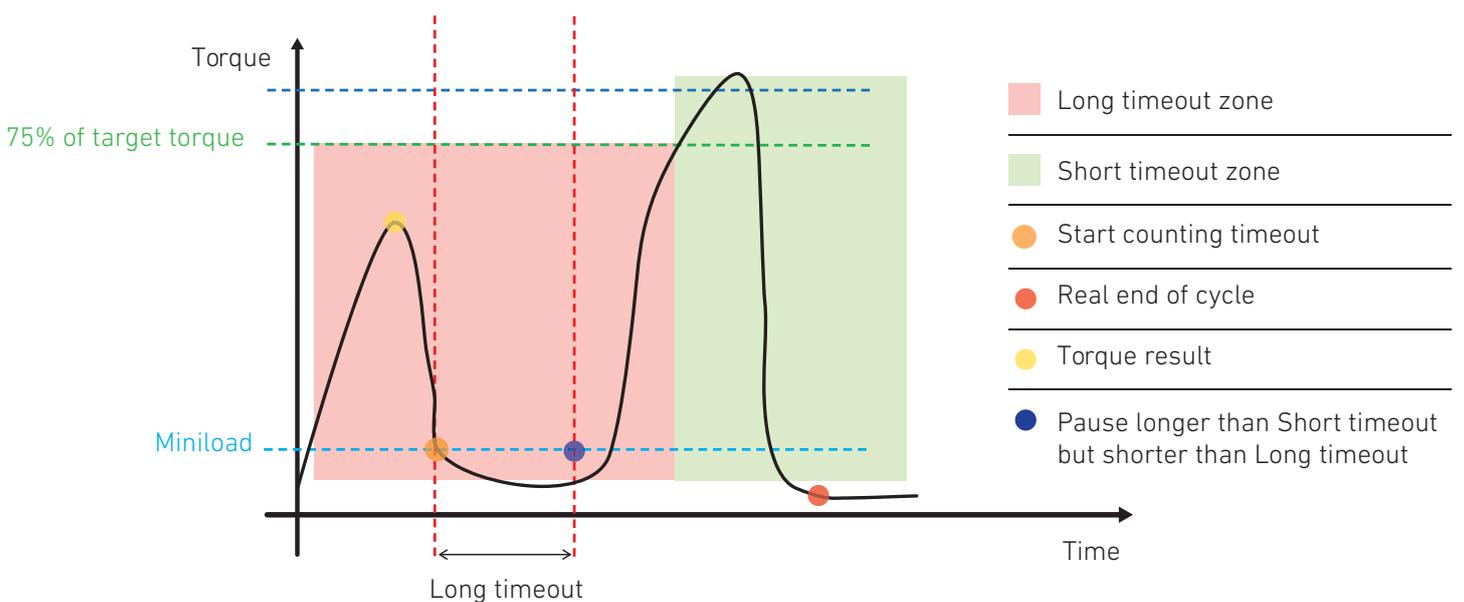
The long timeout must be settled with a higher value than the maximum expected pause, during the tightening.



The short timeout is active, when the torque or angle value are close to the target to be reached.
 This function allows to speed up the cycle when the 75% of the target (torque/angle) has been achieved and the torque is released (goes under the minload).



When the torque is released (paused) for a longer time than "long timeout" but the 75% of the target is not yet reached, SCS devices will complete the cycle giving a result related only to the first part of the tightening.(first step). See below chart .

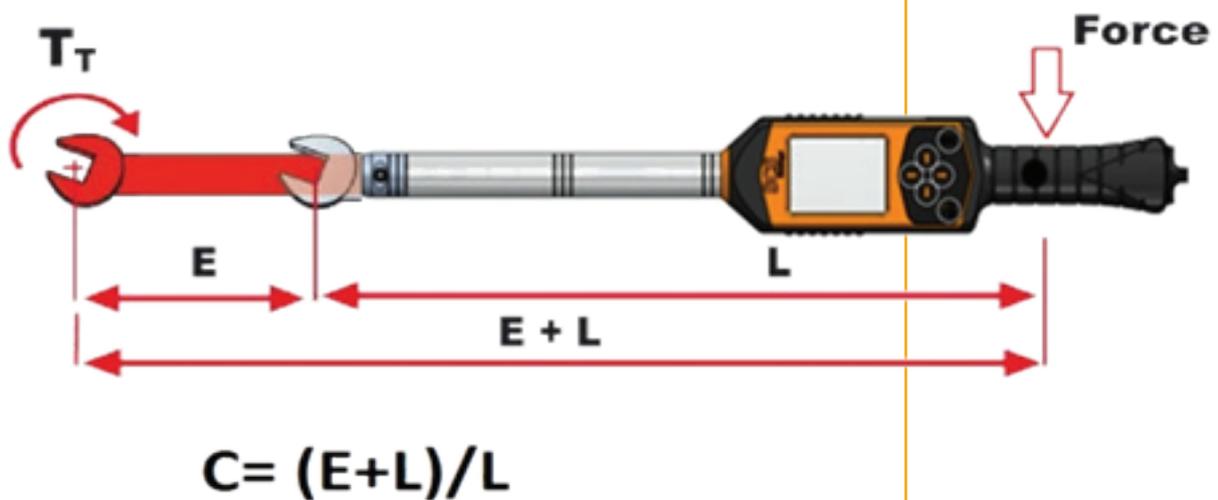


Torque Correction Coefficient Calculation

SCS WRENCHES ARE CALIBRATED BY APPLYING AN “F” FORCE IN THE MID-HANDLE THAT PROVIDES A TORQUE “C” THAT IS RELATED TO THE WRENCH LENGTH “L”.

If for tightening needs, a wrench extension has been applied, the torque reading will be modified accordingly (to equal applied force, by varying the arm, the torque will be modified accordingly)

In this section we will explain how to calculate the torque correction coefficient, and how to compensate the torque reading error, in case of wrench extension



LEGENDA

- C: Torque correction
- L: Original wrench length
- E: Extension length

Torque/Angle correction factor calculation

The Angle correction factor, is a parameter to be set in SCS firmware and software in order to compensate the angle reading error, caused by using extensions on dynamometric wrenches or rotary transducers

The extension will twist by increasing the applied torque. By considering the same quality material, a longer extension, will twist more than a shorter one.

If not compensated, the extension twisting during the tightening, can compromise the angle reading value. The wrench or torque/angle transducer used for the tightening will measure the joint twist (angle) and the extension joint twist that will be added to the final angle result.

With SCS devices is possible to solve this problem by entering the angle correction factor.

Refer to below explanation, for factor calculation.

The following picture shows an example of extension, applied to SCS wrench "Freedom 3"



To compensate the extension twist, user need to measure the extension twist degrees on maximum torque tightening

To be able to do it, is necessary to block the end of the extension (screw side) to a static cell or to a clamp so that will be fixed while torque will be applied

On the SCS data collectors and wrenches, is possible to enter in peak measure modality. The torque/angle peak reached will be visualized.

Apply torque until maximum torque reachable; ex: with tightening on 100 Nm apply torque max. 110Nm (maximum tolerance limit)

Verify the angle value provided at the maximum torque reached limit. For Ex. 5

Repeat the test for at least 5 times to calculate the angle and torque average values.

Divide the average value for the maximum torque value (calculate the average of the maximum reached torque values)

In the following example we will consider an average angle value of 5 and a maximum torque average value of 100 Nm.

FA = Am/Cm.

FA = 5/110= 0,04545 °/Nm.

FA = Angle correction factor.

Am = Average angle value.

Cm = Average torque value at maximum tolerance.

FA = 0,04545 angle correction factor to be entered in SCS devices and software.





SAMPLING FREQUENCY AND CUTTING (FILTER)

The sampling frequency is the Hertz measure of the number of times per second, in which the analogical signal is visualized and memorized in digital form.

The sampling frequency is the parameter used when "translates" a natural phenomenon in a numerical representation "understandable" and so usable from a PC and all the devices based on BIT functioning.

In Electronic, a filter is a device that realize transforming functions or signal processing, of input signal.

For example, one of the filter function, can be erasing only specific frequency bands and let all the other in. This can be obtained by attenuating the higher or lower frequencies of a specific value (low-pass and high-pass filters), or those included in a certain range (band pass and band-stop filters).

In the following chart, the sampling frequency used by EasyTouch on power tools and dynamometric wrenches.

Cut-off frequency (Hz)	Sampling frequency (Hz)
2000	10000
1500	
1250	
1000	
750	8000
500	4000
300	
200	2000
100	1000
50	1000



