


CALIBRATOR2 SW

User Guide

HOFFMANN CALIBRATION AND ADJUSTMENT SW v2.22



NAME: DTW012
SERIAL NUMBER: 3024000003
STATUS: CALIBRATED.

Overload Info | **Recalibration** | **Readjustment**

"Unlock Wrench" button is used only to unlock the wrench, it should not erase any info of the device

**Unlock Wrench
(restart the device)**

"Export Overload Info" button generates a file with the overload logs of the wrench. It also shows important information of the device:

- Date and Time when the file was generated.
- Name of Wrench.
- Serial Number.
- Status.
- Info Log(Date Time, Measured Value, Unit).

Export Overload Info(Excel)

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1 TASKS IN DOCUMENT

The document presents a brief explanation of how the SW Calibrator works.

2 EQUIPMENT

2.1 Digital Torque Measurement tools

655010	Garant electronic torque wrench HCT
655013	Garant electronic torque wrench
655025	Horex electronic torque wrench HCT
654410	Garant electronic torque tester HCT
654413	Garant electronic torque tester

2.2 USB-Stick token

Device Description	Enable the use of the software. USB Stick can be ordered with Article Number 655008.
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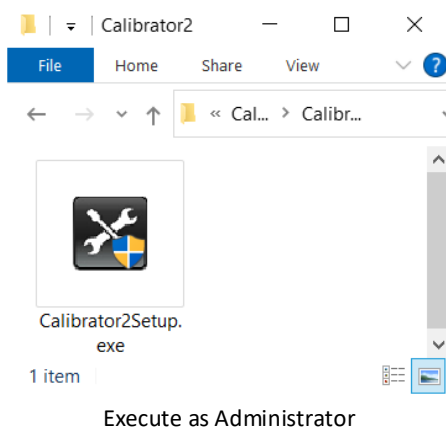
2.3 Computer

Model	Any
Operative System	Windows 10 (or latest)
Software / Version	Calibrator SW V2.22 (or latest)

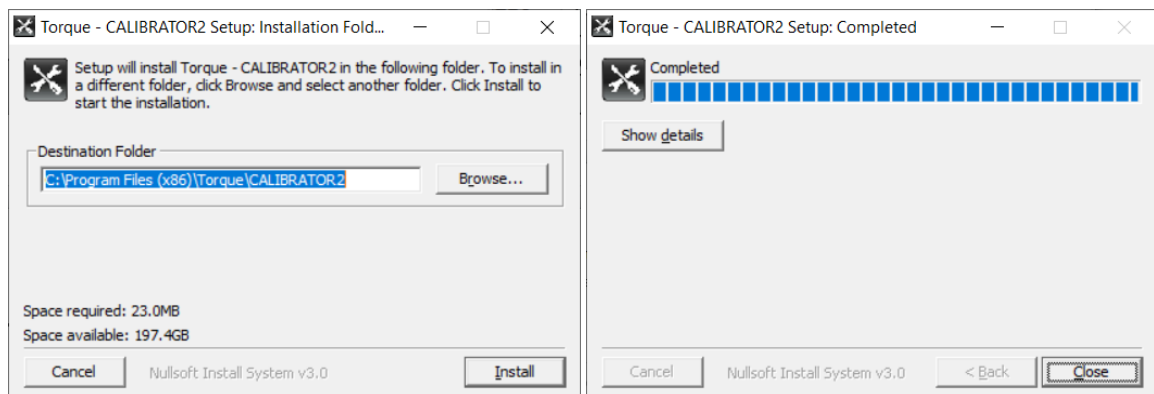
2.4 USB-C cable

3 SOFTWARE INSTALLATION

- Open the folder where the .exe is located, right click on the executable and select "Run as Administrator"

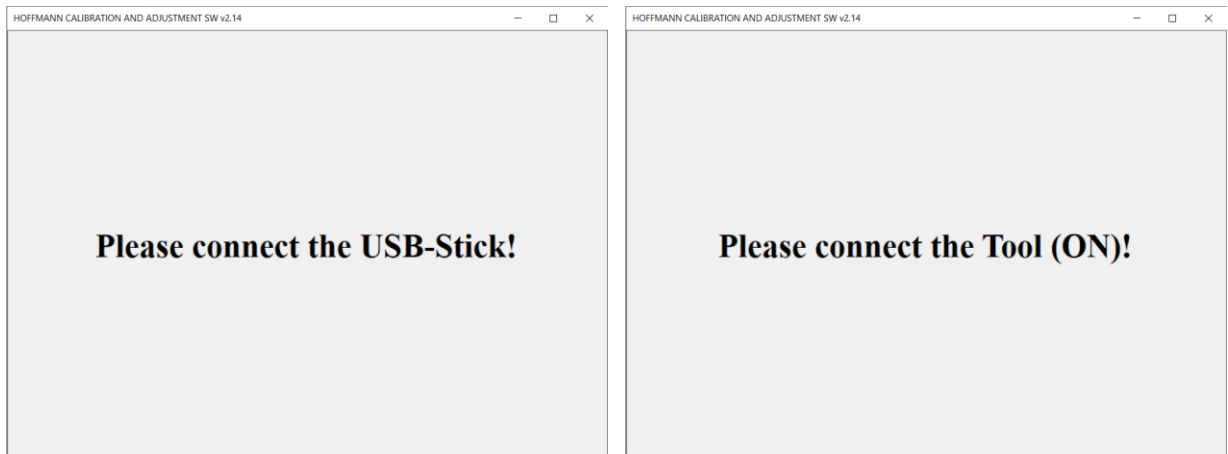


- Click "Install" and click "Close" when the installation is finished.



4 CALIBRATOR SOFTWARE

- Please be sure that the USB-Stick is plugged in, as well as the wrench (ON).



- After the USB-Stick and the tool are connected, a GUI like the one below will be displayed. It contains three main sections (tabs): *Overload Info*, *Recalibration* and *Readjustment*:



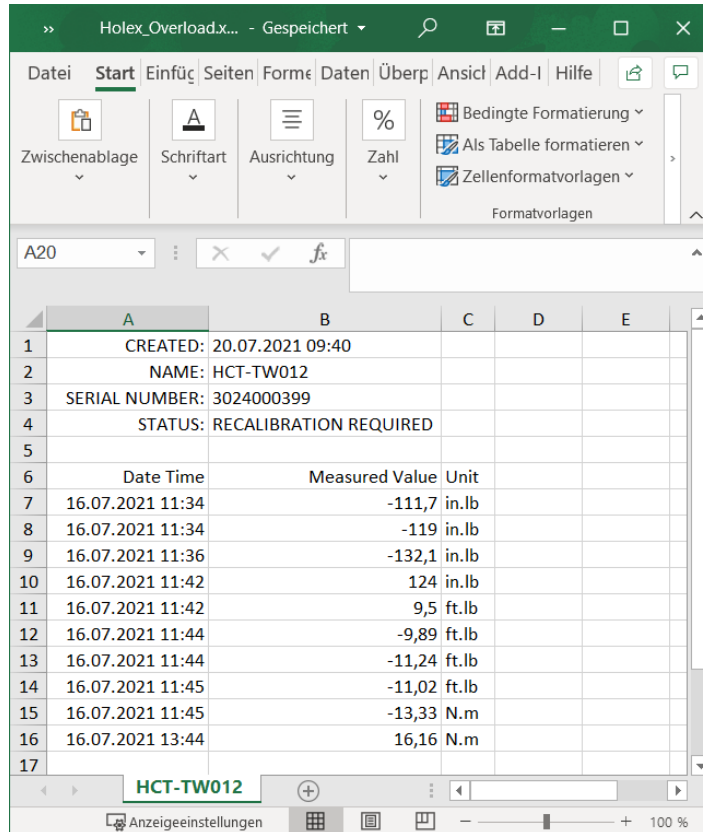
Overload Info

There are two options that can be used in this section:

- **Unlock tool (Unlock Wrench):**
Used only to unlock the connected device after it has been overloaded with more than 140% of the nominal value (more than 200% in the case of 12Nm types), it should not erase any information of the device. After pressing the button, please restart the device and the tool will be operational again.

- *Export Overload Info:*

This option creates an Excel file that visualizes the entire Info Log. It also contains important information about the instrument, such as the date and time the file was created, the type of wrench, the serial number, the status and the overload info log (readings above 105% of the nominal value are logged in the overload info log).



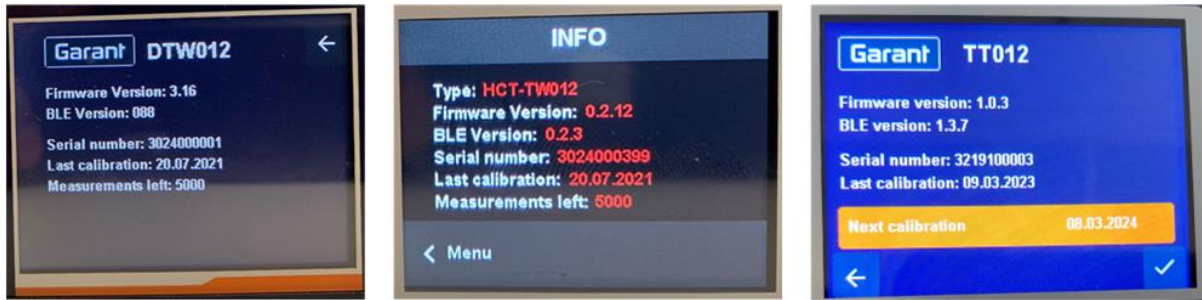
	A	B	C	D	E
1	CREATED:	20.07.2021 09:40			
2	NAME:	HCT-TW012			
3	SERIAL NUMBER:	3024000399			
4	STATUS:	RECALIBRATION REQUIRED			
5					
6	Date Time	Measured Value	Unit		
7	16.07.2021 11:34	-111,7	in.lb		
8	16.07.2021 11:34	-119	in.lb		
9	16.07.2021 11:36	-132,1	in.lb		
10	16.07.2021 11:42	124	in.lb		
11	16.07.2021 11:42	9,5	ft.lb		
12	16.07.2021 11:44	-9,89	ft.lb		
13	16.07.2021 11:44	-11,24	ft.lb		
14	16.07.2021 11:45	-11,02	ft.lb		
15	16.07.2021 11:45	-13,33	N.m		
16	16.07.2021 13:44	16,16	N.m		
17					

Recalibration

The Recalibration section resets the parameters of the wrench. After recalibration, the tool is in a calibrated state. Therefore, it is necessary to perform a recalibration or readjustment before resetting these parameters. What parameters of the tool are changed when Reset Calibration is pressed?

- Reset Recalibration required flag.
- Delete Overload Log.
- Delete Warning icon on screen.
- Reset Counter (5000 Measurements).
- New Recalibration date is written.

Info Screens on Garant and Horex wrenches after the recalibration is performed:

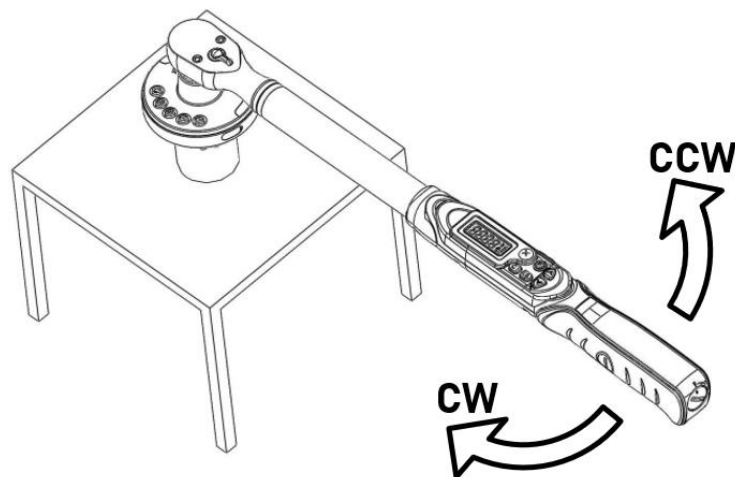


Readjustment

It is highly recommended to recalibrate the tool after overloading the wrench or after using the wrench more than 5000 times. If the recalibration shows that the wrench is not accurate enough according to the standards (related to torque and angle measurement), then a readjustment process is required.

Torque Readjustment:

It is required a Torque Measurement device that will be our reference for the readjustment. It is also necessary to perform the Readjustment in both Clockwise and Counter-Clockwise directions. Set the wrench in "Torque Indicating" mode in "Nm" unit or set the Torque Tester in "Track" Mode in "Nm" unit




Torque is measured at three points, 20%, 60% and 100% of the wrench's nominal value. For example, for a 100Nm wrench

Direction CW	Standard Torque	Wrench Torque	Direction CCW	Standard Torque	Wrench Torque
Test (20%)	20.0	18.1	Test (20%)	20.0	19.5
Test (60%)	60.0	54.1	Test (60%)	60.0	57.3
Test (100%)	100.0	90.1	Test (100%)	100.0	96.7

Note that the Torque Tester (HCT-TT) has between 6 and 7 measurement points for readjustment, depends on the type. See figure below

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NAME: TT-012
SERIAL NUMBER: 3219100003
STATUS: CALIBRATED.



Overload Info
Recalibration
Readjustment

Direction: Clockwise

Number Of Tests: 6

Standard Torque	Device Torque	Error% Before Calibration	Estimated Error% After Calibration
1	1,02	2	0,21
2,4	2,43	1,25	0,09
4,8	4,83	0,63	-0,29
7,2	7,27	0,97	0,14
9,6	9,65	0,52	-0,25
12	12,09	0,75	0,02


Calculate

Write Parameter

Readjustment Done

Once these measurements have been made, enter this information in the tables in the Torque Readjustment section. Once the information is filled in, press "Calculate" to estimate the error. Press "Write Parameters" to overwrite the wrench parameters and correct the estimated error.

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NAME: HCT-TW100
SERIAL NUMBER: 3026000401
STATUS: **RECALIBRATION REQUIRED**

Overload Info Recalibration **Readjustment** Torque Angle

Direction: Clockwise Counter Clockwise
Number Of Tests: 3

Standard Torque	Device Torque	Error% Before Calibration	Estimated Error% After Calibration
20	18,1	-9,5	0,41
60	54,1	-9,83	0,04
100	90,1	-9,9	-0,03

1. Fill the chart with the measurement results


2. Press "Calculate"

3. Press "Write Parameters"

Calculate
Write Parameter
Readjustment Done

Perform the same procedure for both directions of rotation. After calculating and writing of the new parameters in both directions, press "Readjustment Done". After the readjustment, check the torque accuracy. The same procedure should be followed for the HCT-TT.

HOFFMANN CALIBRATION AND ADJUSTMENT SW v2.14



NAME: HCT-TW100
SERIAL NUMBER: 3026000401
STATUS: **RECALIBRATION REQUIRED**

Overload Info Recalibration **Readjustment** Torque Angle

Direction: Clockwise Counter Clockwise
Number Of Tests: 3

Standard Torque	Device Torque	Error% Before Calibration	Estimated Error% After Calibration
20	19,5	-2,5	1,12
60	57,3	-4,5	-0,95
100	96,7	-3,3	0,29

4. Fill the chart with the measurement results

5. Press "Calculate"

6. Press "Write Parameters"

7. Press "Readjustment Done"

Calculate
Write Parameter
Readjustment Done

In Summary:

1. CW Measurement for 20%, 60% and 100% (more measurement points for TT)
2. Press "Calculate"
3. Press "Write Parameters"
4. CCW Measurement for 20%, 60% and 100% (more measurement points for TT)
5. Press "Calculate"
6. Press "Write Parameters"
7. Press "Readjustment Done"
Restart the tool
8. Check the accuracy

Angle Readjustment:

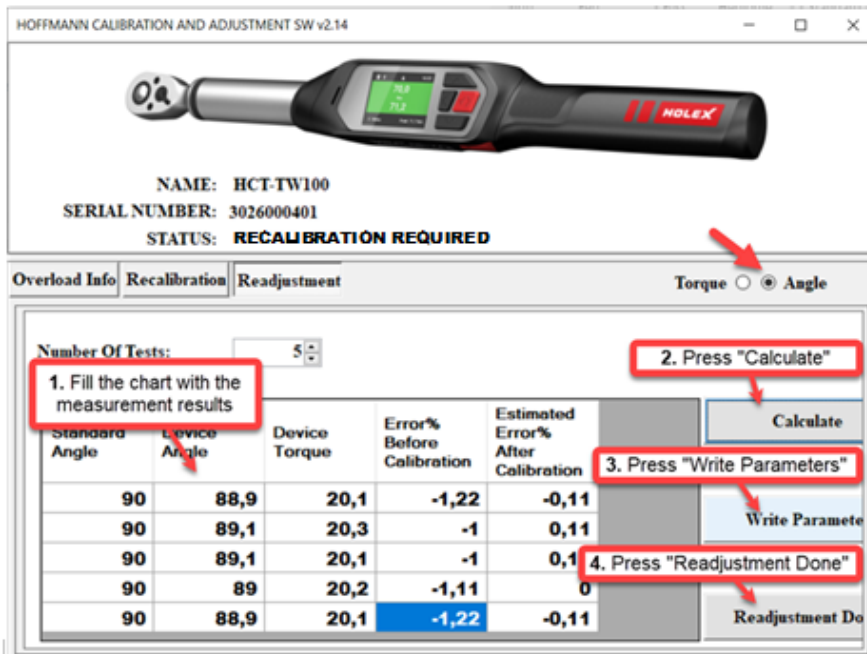
An angle measurement device is required, which will be our reference for readjustment. Torque readjustment must be performed before. Angle readjustment is required in clockwise direction only. *Note that the HCT-TT does not measure angle.*

Set the instrument in angle mode with a snug torque of 20% of the nominal value. Set the desired angle to use as a reference (typically 90°). Note the results.

Direction CW	Standard Angle	Wrench Angle	Wrench Torque
Test 1	90.0	88.9	20.1
Test 2	90.0	89.1	20.3
Test 3	90.0	89.1	20.1
Test 4	90.0	89.0	20.2
Test 5	90.0	88.9	20.1

After these measurements have been made, enter this information in the charts of the Angle Readjustment section. Once the information is filled in, press “Calculate” to estimate the error. Press “Write parameters” to overwrite the parameters of the wrench and correct the error estimated. Finally press “Readjustment Done”.

After the readjustment, check the angle accuracy.



HOFFMANN CALIBRATION AND ADJUSTMENT SW v2.14

NAME: HCT-TW100
SERIAL NUMBER: 3026000401
STATUS: **RECALIBRATION REQUIRED**

Overload Info | Recalibration | Readjustment

Torque Angle

Number Of Tests: 5

1. Fill the chart with the measurement results

Standard Angle	Device Angle	Device Torque	Error% Before Calibration	Estimated Error% After Calibration
90	88,9	20,1	-1,22	-0,11
90	89,1	20,3	-1	0,11
90	89,1	20,1	-1	0,11
90	89	20,2	-1,11	0
90	88,9	20,1	-1,22	-0,11

2. Press "Calculate"

3. Press "Write Parameters"

4. Press "Readjustment Done"

In Summary (*Angle readjustment not for HCT-TTs*):

1. Angle Measurement of XX,X° with a snug torque of 20% five times.
2. Press “Calculate”
3. Press “Write Parameters”
4. Press “Readjustment Done”
Restart the tool
5. Check the accuracy

5 Appendix

Garant electronic torque wrench HCT (655010)

<https://www.hoffmann-group.com/DE/de/hom/services/connected-tools/elektronischer-drehmomentschluessel-hct/e/474225/>

Garant electronic torque wrench (655013)

<https://www.hoffmann-group.com/DE/de/hom/Handwerkzeuge/Drehmomentwerkzeuge/Drehmomentschl%C3%BCssel/Drehmomentschl%C3%BCssel-elektronisch/Elektronischer-Drehmoment-Drehwinkelschl%C3%BCssel/p/655013-12?tld=710>

Horex electronic torque wrench HCT (655025)

<https://www.hoffmann-group.com/DE/de/hom/Handwerkzeuge/Drehmomentwerkzeuge/Drehmomentschl%C3%BCssel/Drehmomentschl%C3%BCssel-elektronisch/Elektronischer-Drehmomentschl%C3%BCssel-HCT/p/655025?tld=242>

Garant electronic torque tester HCT (654410)

<https://www.hoffmann-group.com/DE/de/hom/Handwerkzeuge/Drehmomentwerkzeuge/Drehmoment-Pr%C3%BCfger%C3%A4te/Elektronisches-Drehmoment-Pr%C3%BCfger%C3%A4t-HCT/p/654410?tld=324>

Garant electronic torque tester (654413)

[Elektronisches Drehmoment-Prüfgerät einfach kaufen | Hoffmann Group \(hoffmann-group.com\)](https://www.hoffmann-group.com/DE/de/hom/Handwerkzeuge/Drehmomentwerkzeuge/Drehmoment-Pr%C3%BCfger%C3%A4te/Elektronisches-Drehmoment-Pr%C3%BCfger%C3%A4t)