Battery Power Tools by SCS Concept

SCS Concept, April 2022

Edition 2

HERMESTOOLS

Global Overview

Freedom EAS

Battery Power Tools

From clutch to transducerized battery tools

- From 1 to 120 Nm
- Pistol, Straight and Angle Head design
- Compatibility with Open and Close crowfoot
- Barcode, Wi-Fi in option
- Clutch, clutch with Wi-Fi, clutch with transducer and transducerized tool

- Productivity
- Tightening accuracy
- Robust & ergonomic
- Compliant to industry 4.0

Integrated all control like:

- Full tightening strategy
- Prevailing torque capability
- Barcode reader to start the sequence
- Joint condition monitoring
  - Trace comparison
  - Current, torque, angle, gradient, time monitoring
  - Rehit detection
- Full traceability with WiFi communication

Freedom EAS is managing all operations in stand alone mode or slave from SCS FIM EVO & VPG+ system management

Freedom EAS High Torque

Battery Power Tools

- From 50 to 1 250 Nm
- Pistol and Angle Head design
- Barcode, Wi-Fi in option
- XXT transducerized tool
- Reaction bar in option

Global Overview

Don’t lose any information
With our WiFi 2.4 or 5 GHz
- Automatic roaming to select the best access point
- Full security management

Status with multi-color LED and color screen

Durability and high speed
with brushless motor

Ergonomic handle with large trigger

Accurate and durability
with our spyroidal gear and angle head

Battery 18V
- 2.5 AH
- 5 AH

For more flexibility

Vibration & buzzer alarm

Highlight the part
With our flashlight

Integrated barcode reader for high durability

Up to 7 000 tightening with advanced battery
thanks to brake energy recovery

Define the right tools depending on your needs

Tools developed with a complete range to fulfil your industry standard and define the level of control, monitoring and traceability that you need.

XXC - Clutch : Accurate clutch tools to fulfill to your tightening strategy and productivity

XXCC - Clutch advanced control : Features of XXC with data acquisition, WiFi communication option and barcode reader to select and link all tightening to your product

XXCT - Clutch with Torque transducer : Features of XXCC with a torque transducer that you can use to monitor the clutch or control the shutoff

XXT - Torque transducer : Full tightening strategy available to manage all your requirements

These industrial battery power tools are design to match with all your requirements depending on the version selected. To help the operator job, the tools integrate multi-LED's, vibration device, display and buzzer, to have a feedback about the status of each tightening.

Freedom EAS	XXC	XXCC	XXCT	XXT
	Clutch Tools	Clutch adv Control	Clutch with Torque transducer	Torque transducer Shutoff
Strategy	Torque	Torque	Torque or Angle	Torque or Angle
Torque Accuracy	+/- 5%	+/- 5%	+/- 5%	+/- 4%
Torque repeatability	+/- 10%	+/- 10%	+/- 10%	+/- 7%
Setup				
Torque control	Clutch	Clutch	Clutch	Torque
Angle Control			Yes	Yes
Current control	Yes			
Gradient Control				Yes
Torque Monitoring			Yes	Yes
Angle Monitoring		Yes	Yes	Yes
Speed management	Yes	Yes	Yes	Yes
Current Monitoring		Yes	Yes	Yes
Time Monitoring		Yes	Yes	Yes
Gradient Monitoring				Yes
Multi-Step	Yes	Yes	Yes	Yes
Memory				
Data + Trace	No	150 000	150 000	150 000
Operation	100	100	100	100
Wifi 2.4 & 5 Ghz	No	Option	Option	Option
Bacode reader	No	Option	Option	Option

Understand the configuration of your battery power tools

Design

Freedom-EAS- S for Straight

Freedom-EAS- P for Pistol

Freedom-EAS- A for Angle Head

Gear

Depending on the target torque, you have access to two different levels of gear and torque multiplier, Standard and High Torque

Standard (1 to 120 Nm): Freedom-EAS-XST

High Torque (50 to 1 250 Nm): Freedom-EAS-XHT

Control & Monitoring

By default, we control and manage the angle, current consumption, speed and time to give you the possibilities to define precisely when the results is ok and adjust the speed depending on your assembly joint.

	Clutch	Clutch Advance control	Clutch with Torque transducer	Torque Transducer
Freedom-EAS-	XXXC	XXXCC	XXXCT	XXXT

Torque & Drive

To understand quickly the configuration of the tool, you will find the maximum torque of the tool and the driver Ttype (hex or square) and size like ¼”, ½” etc

	Torque (Nm)	Hex Female	Square	Size
Freedom-EAS-	XXXX13	XXXX13H	XXXX13S	XXXX13H14

Option

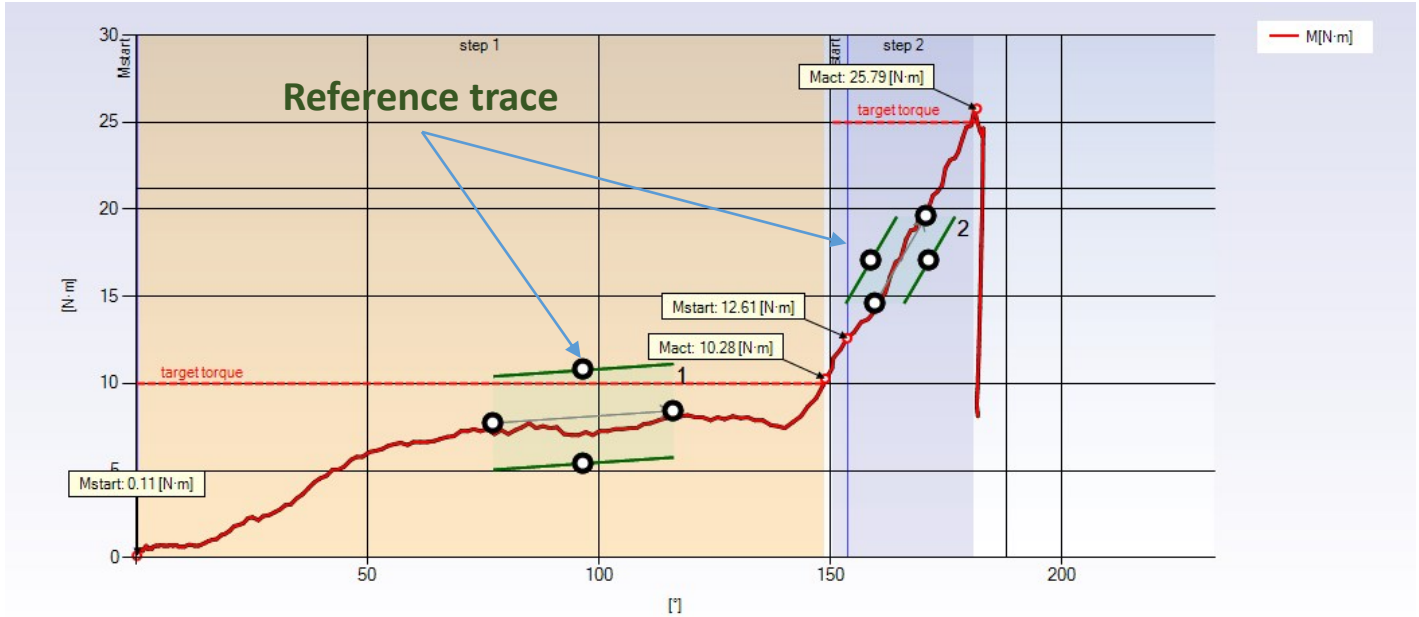
Depending on the needs, you can add a barcode reader and/or a WiFi communication module on your tools. This information is shown on the last letters: B for Barcode reader, W for WIFI

Example

Freedom-EAS-PSTT14H14BW = Transducerized pistol tool for 14 Nm with Hex ¼” drive including barcode reader & WiFi

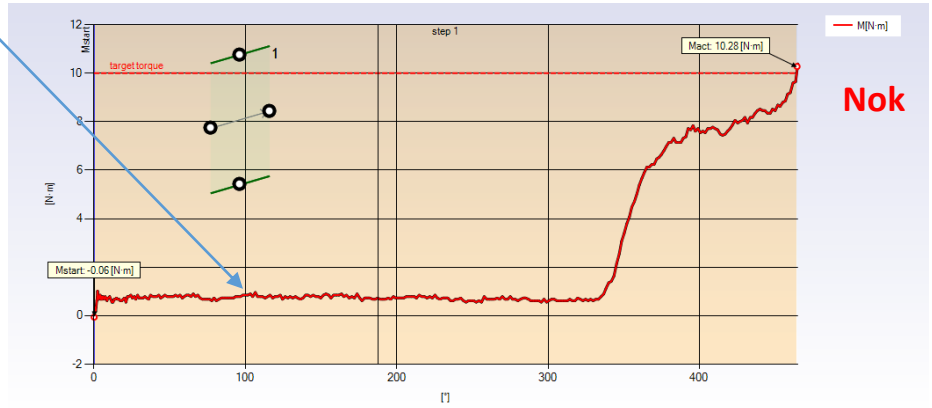
Freedom EAS XCT & XXT
Real time trace comparison

Unique real time trace comparison to detect any mistake occurred in the process



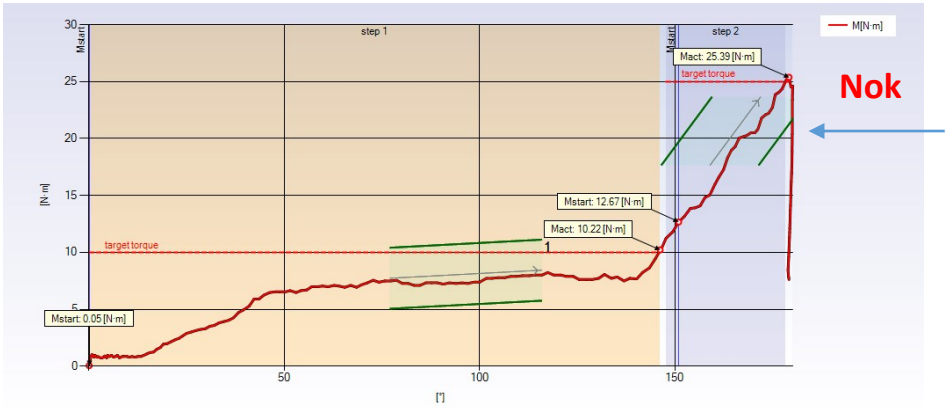
Ok

Friction torque is too low



Nok

Not ok on the first step



Nok

The tightening cross the reference trace

Not ok on the second step

Freedom EAS Wi-Fi communication

FIM EVO The solution to manage up to 12 tools with one Industrial device

FIM EVO is design to manage and collect production tools SCS Concept and all other brands

- Manage 12 tools
- 6 stations at same time (option)
- Unlimited sequences and operations
- Large memory to store all results and traces coming from your tools
- Multi-Protocol solution with : Open protocol, ToolsNet, IPM, VW XML
- 16 IO24V to manage your stations
- Manage barcode reader / printer
- Manage socket tray
- Industrial fieldbus on option

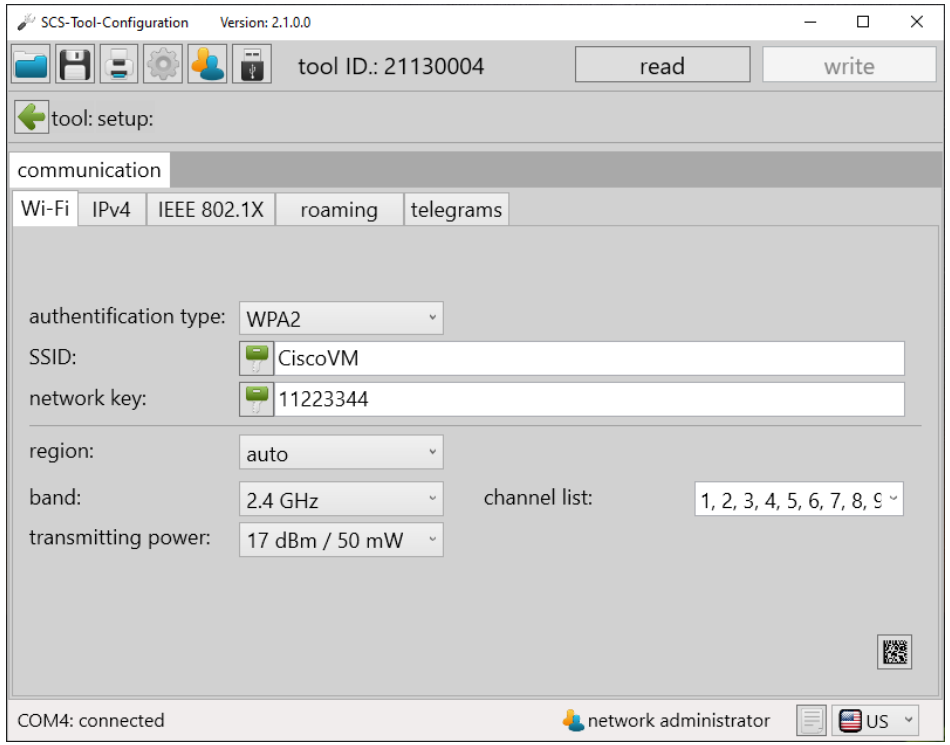
Used our battery power tools with WiFi to connect to our systems and communicate easily with your MES.
The FIM EVO and VPG+ is designed to manage your assembly processes, manage accessories like socket tray, barcode reader, fieldbus, etc.

VPG+ the solution for operation guidance and data collection

- Station operator visual guide
- Training tool for new operator
- Multi-brand tools capability
- 12 different tools can be connected to a station (Multi-brand solutions)
- Simple error proofing in production station for all tools
- Collect and manage all stations with VPG+ server
- Multi-Protocol solution with : Open protocol, ToolsNet, IPM, VW XML
- Manage accessories like barcode reader, socket tray, etc

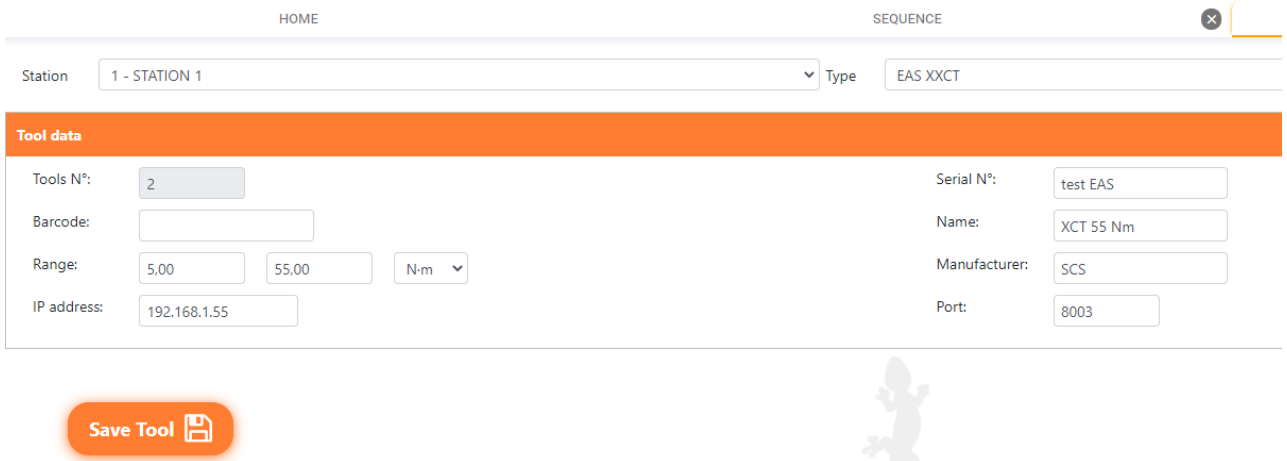
Ready end of November 21

Freedom EAS
Easy to setup with FIM & VPG+



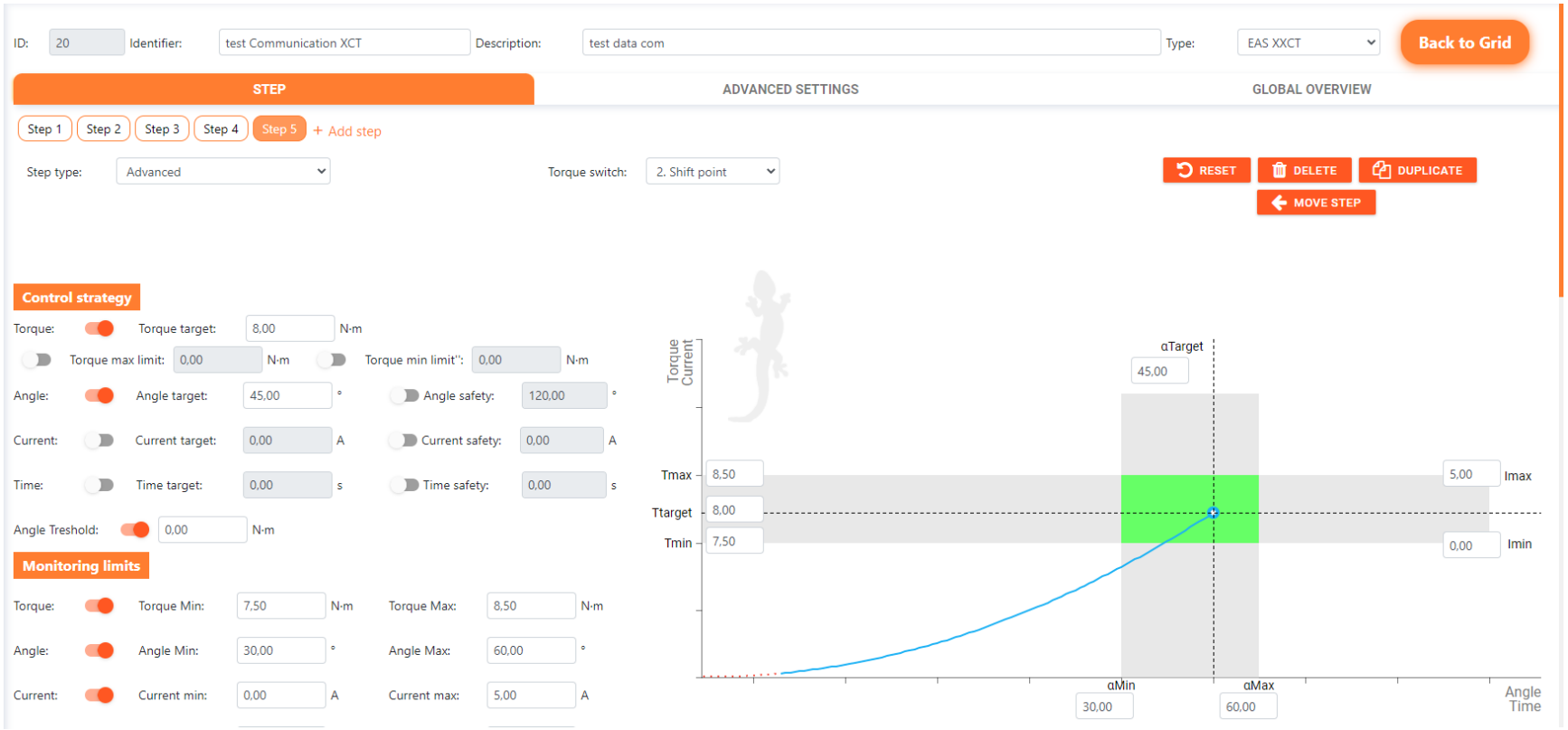
Setup the Wi-Fi communication to connect the Freedom EAS to our FIM evo or VPG+

Add the tool to the station



Freedom EAS

Easy to setup with FIM & VPG+

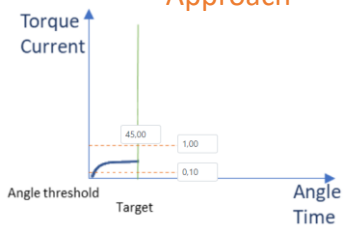


Create your operation with up to 6 step
Each step can be preset up:

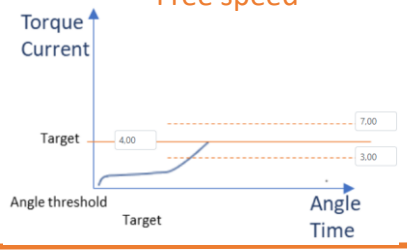
- Approach
- Free speed
- Prevailing torque calculation
- TC/AM with Prevailing Torque
- TC/AM
- AC/TM

Or advance setting function

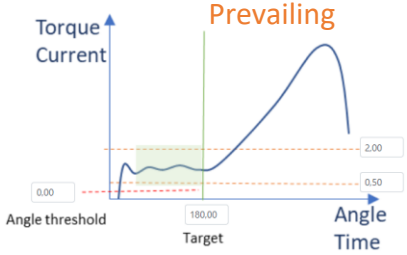
Approach



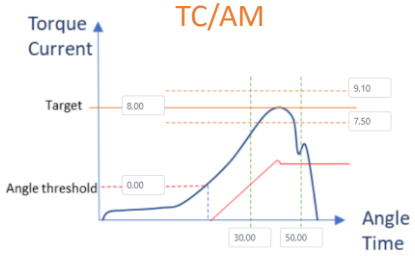
Free speed



Prevailing



TC/AM



AC/TM

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Easy to setup with FIM & VPG+

STEP | ADVANCED SETTINGS | GLOBAL OVERVIEW

Operation

Pre-stop factor:	1,00	Torque correction factor:	1,00	Angle correction factor:	0,00 °
Confirm Ok:		Confirm ok time:	0,00 s		
Unit:	N·m	Threshold trace start:	0,00 N·m	Increase batch count with Nok:	
Loosening operation:					
Rehit detection:		Minimum Angle:	10,00 °	Rehit Nok:	
Reverse before first step:		Display securing/prevailing torque:			
Total operation time active:		Max time:	0,00 s	Operation time counting start at:	Enable
Loosening operation ID:		Reverse after tightening:	Only if NOK	Retry:	2

Save operation

Define how the Freedom EAS need to be managed on this operation

Freedom EAS
Easy to setup with FIM & VPG+

STEP | ADVANCED SETTINGS | GLOBAL OVERVIEW

Global overview to check in One page the setting of your operation

	Designation	Step 1	Step 2	Step 3	Step 4	Step 5
Control strategy	**Torque**					
	Torque target	N·m	4.00 N·m	8.00 N·m	N·m	8.00 N·m
	Torque max limit	N·m	N·m	N·m	N·m	N·m
	Torque min limit''	N·m	N·m	N·m	N·m	N·m
	Angle					
	Angle target	80.00 °	°	°	100.00 °	45.00 °
	Angle safety	°	°	°	°	°
	Angle Treshold	N·m	N·m	4.00 N·m	0.00 N·m	0.00 N·m
	Current					
	Current target	A	A	A	A	A
	Current safety	A	A	A	A	A
	Time					
	Time target	s	s	s	s	s
	Time safety	s	s	s	s	s
Monitoring limits	**Torque**					
	Torque Min	0.10 N·m	3.00 N·m	7.50 N·m	0.10 N·m	7.50 N·m
	Torque Max	1.00 N·m	7.00 N·m	9.10 N·m	8.50 N·m	8.50 N·m
	Angle					
	Angle Min	°	°	30.00 °	0.00 °	30.00 °
	Angle Max	°	°	50.00 °	120.00 °	60.00 °
	Current					
	Current min	A	A	A	A	0.00 A
	Current max	A	A	A	A	5.00 A
	Time					
	Time min	s	s	s	s	s

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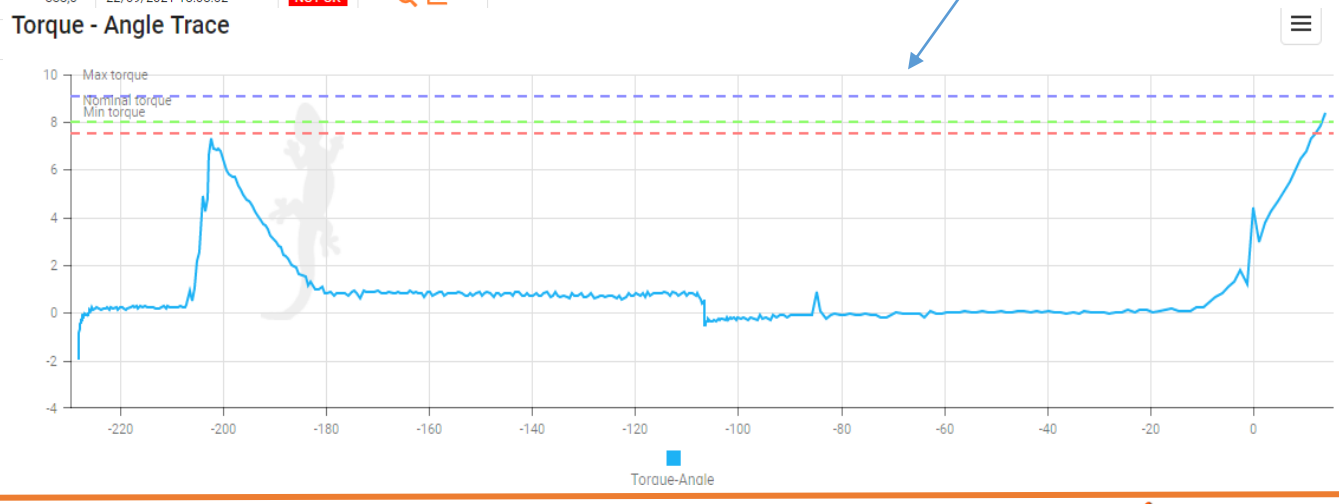
Freedom EAS
Data collection

Identifier	Description	VIN	Bat...	Tool	Station	Torque Res...	Angle result	Date / Time	Status
Sequence: 19 - XCT 55 at 8 Nm 1 STep									
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922181543	5 / 5	XCT 55 Nm	1 - STATION 1	8,4 N·m	14,0 °	22/09/2021 18:16:17	OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922181543	4 / 5	XCT 55 Nm	1 - STATION 1	8,4 N·m	14,0 °	22/09/2021 18:16:14	OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922181543	3 / 5	XCT 55 Nm	1 - STATION 1	8,74 N·m	13,0 °	22/09/2021 18:16:10	OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922181543	2 / 5	XCT 55 Nm	1 - STATION 1	8,63 N·m	14,0 °	22/09/2021 18:16:06	OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922181543	1 / 5	XCT 55 Nm	1 - STATION 1	8,35 N·m	15,0 °	22/09/2021 18:16:02	OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922180845	5 / 5	XCT 55 Nm	1 - STATION 1	8,23 N·m	13,0 °	22/09/2021 18:09:47	OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922180845	4 / 5	XCT 55 Nm	1 - STATION 1	8,4 N·m	19,0 °	22/09/2021 18:09:41	OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922180845	3 / 5	XCT 55 Nm	1 - STATION 1	8,4 N·m	15,0 °	22/09/2021 18:09:28	OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922180845	2 / 5	XCT 55 Nm	1 - STATION 1	8,46 N·m	16,0 °	22/09/2021 18:09:23	OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922180845	1 / 5	XCT 55 Nm	1 - STATION 1	12,61 N·m	3,0 °	22/09/2021 18:09:16	NOT OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922180845	1 / 5	XCT 55 Nm	1 - STATION 1	0,79 N·m	8,0 °	22/09/2021 18:09:08	NOT OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922180845	1 / 5	XCT 55 Nm	1 - STATION 1	0,56 N·m	338,0 °	22/09/2021 18:08:52	NOT OK
XCT 8 Nm 1 Step	Test tight at 8 Nm CW 1 St...	20210922180444	5 / 5	XCT 55 Nm	1 - STATION 1	8,29 N·m			

Results

Statistic

Trace



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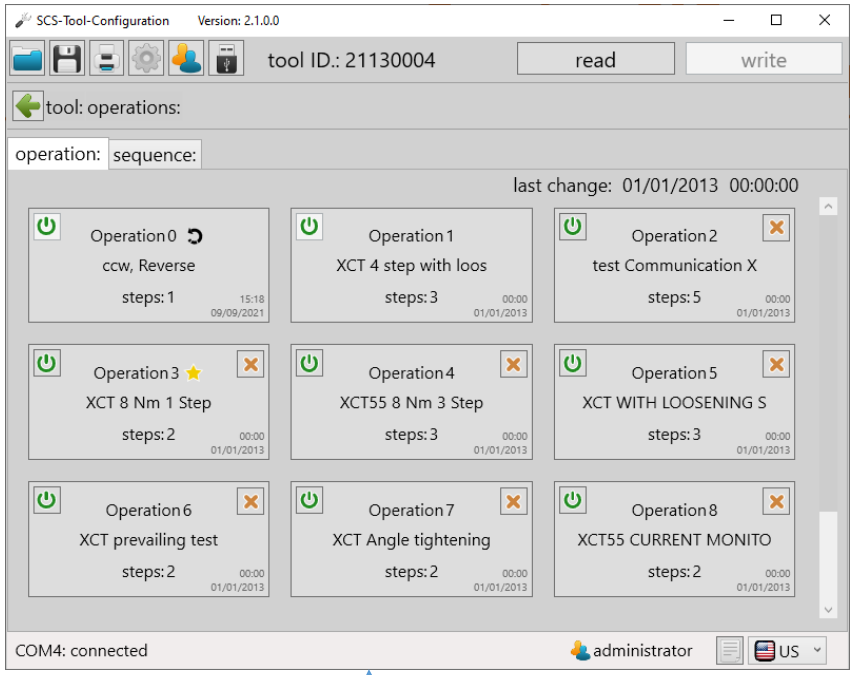
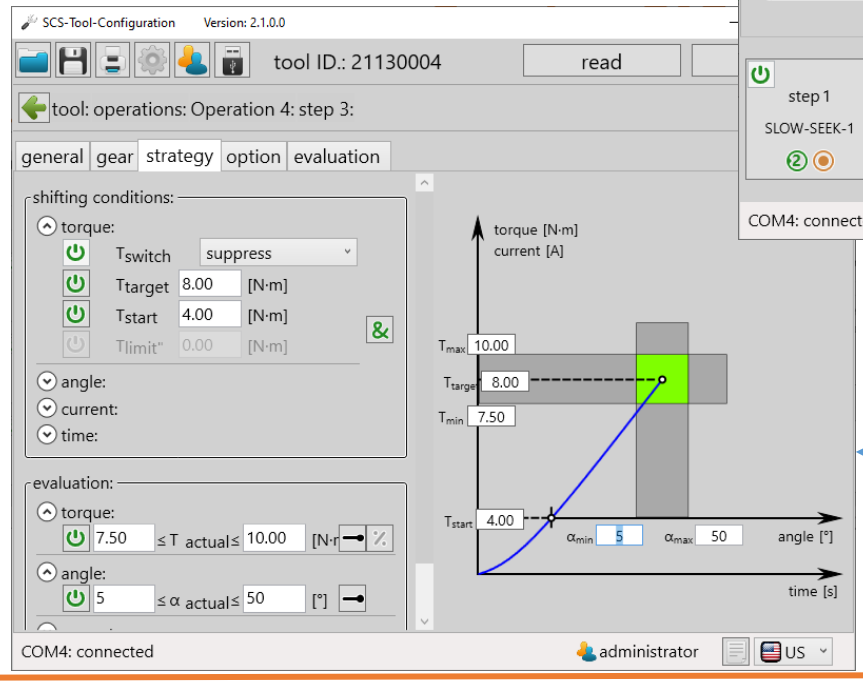
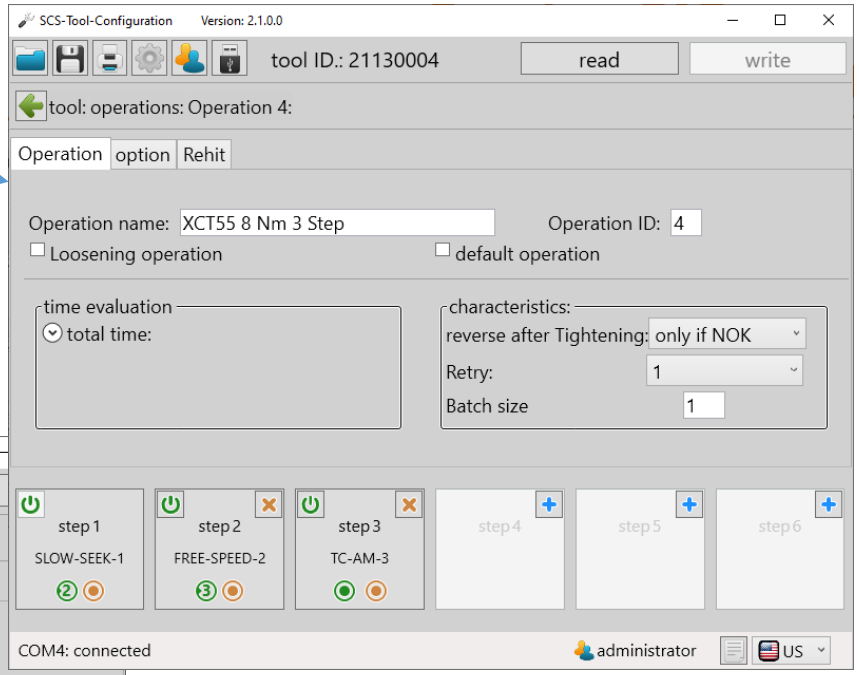
Freedom EAS
Stand Alone mode with SCS tool Manager



Create your operation

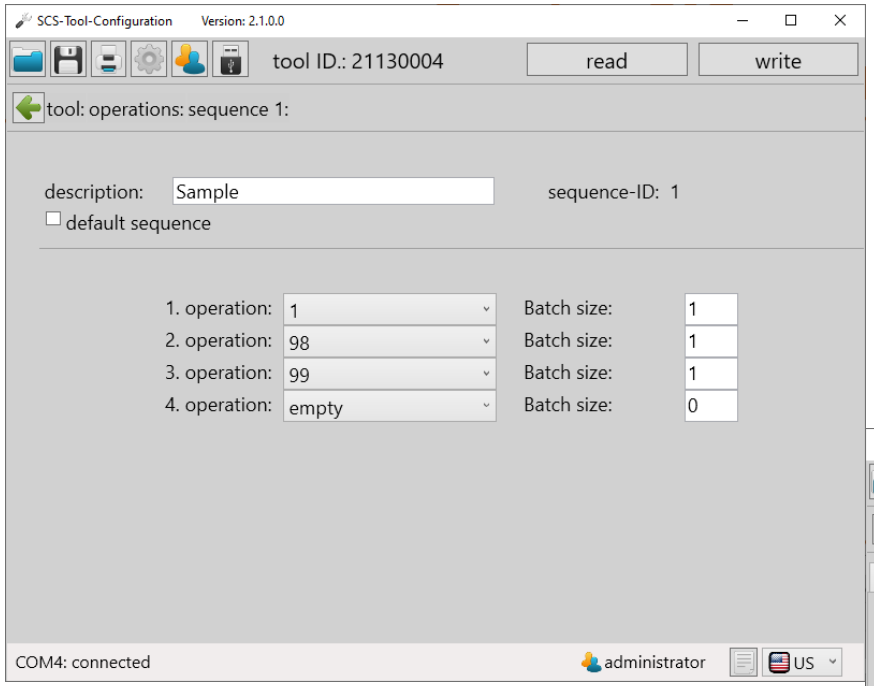
Create yours Steps





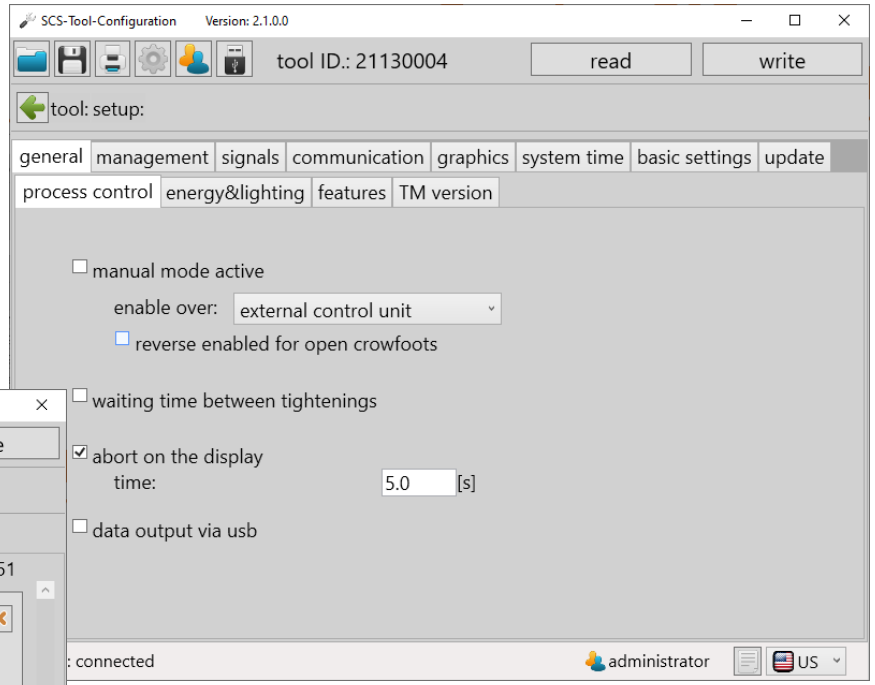
Setup yours steps

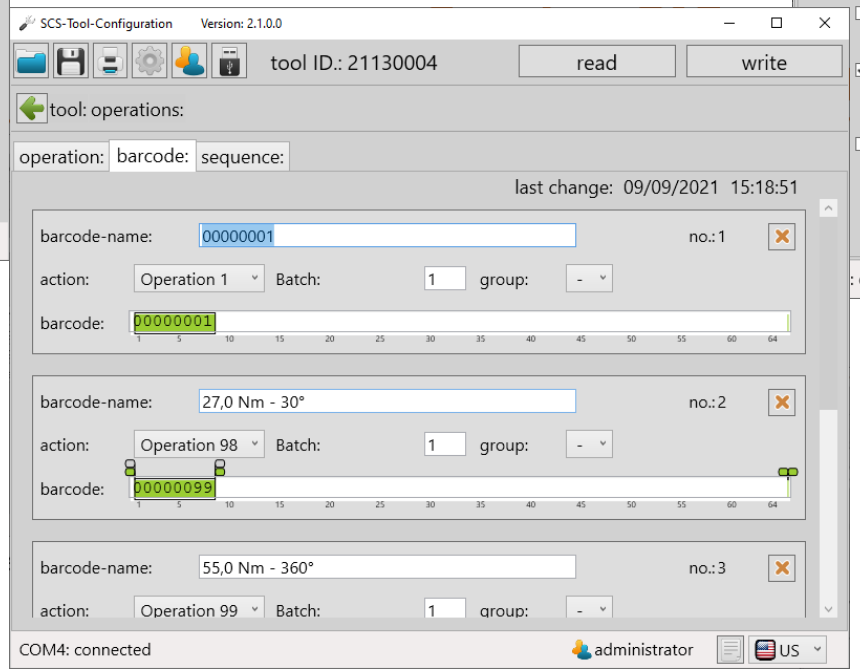
Freedom EAS
Stand Alone mode with SCS tool Manager



Create yours Sequences

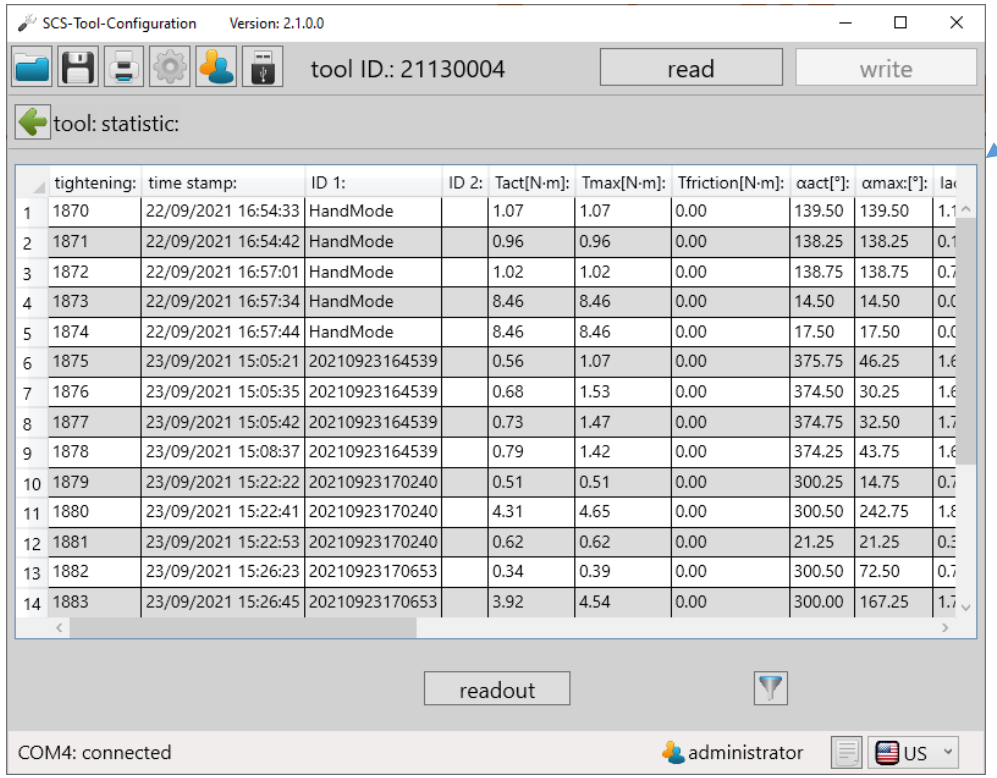
Define how you want manage the tool





Start the right sequence, Operation with a barcode reader

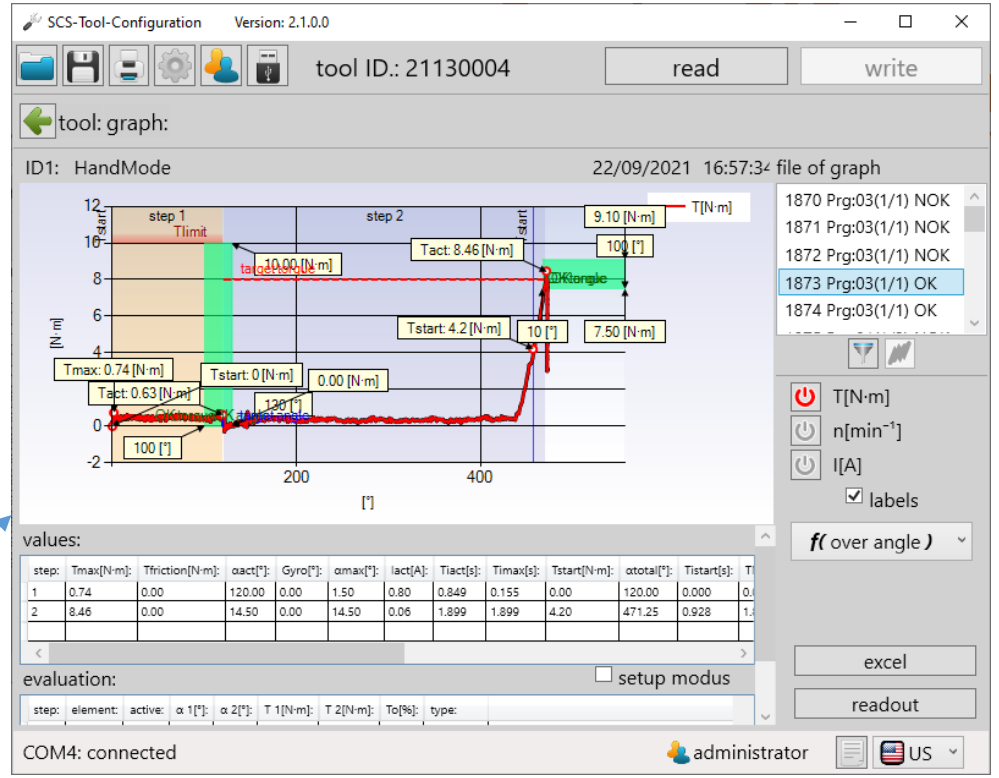
Freedom EAS
Stand Alone mode with SCS tool Manager



	tightening:	time stamp:	ID 1:	ID 2:	Tact[N·m]:	Tmax[N·m]:	Tfriction[N·m]:	αact[°]:	αmax:[°]:
1	1870	22/09/2021 16:54:33	HandMode		1.07	1.07	0.00	139.50	139.50
2	1871	22/09/2021 16:54:42	HandMode		0.96	0.96	0.00	138.25	138.25
3	1872	22/09/2021 16:57:01	HandMode		1.02	1.02	0.00	138.75	138.75
4	1873	22/09/2021 16:57:34	HandMode		8.46	8.46	0.00	14.50	14.50
5	1874	22/09/2021 16:57:44	HandMode		8.46	8.46	0.00	17.50	17.50
6	1875	23/09/2021 15:05:21	20210923164539		0.56	1.07	0.00	375.75	46.25
7	1876	23/09/2021 15:05:35	20210923164539		0.68	1.53	0.00	374.50	30.25
8	1877	23/09/2021 15:05:42	20210923164539		0.73	1.47	0.00	374.75	32.50
9	1878	23/09/2021 15:08:37	20210923164539		0.79	1.42	0.00	374.25	43.75
10	1879	23/09/2021 15:22:22	20210923170240		0.51	0.51	0.00	300.25	14.75
11	1880	23/09/2021 15:22:41	20210923170240		4.31	4.65	0.00	300.50	242.75
12	1881	23/09/2021 15:22:53	20210923170240		0.62	0.62	0.00	21.25	21.25
13	1882	23/09/2021 15:26:23	20210923170653		0.34	0.39	0.00	300.50	72.50
14	1883	23/09/2021 15:26:45	20210923170653		3.92	4.54	0.00	300.00	167.25

Check the last results
and export it to excel

Up to 150 000 tightening and trace are store inside the tool



Check the last Trace
and export it to excel

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