



SCS Concept Group

Discover the **Freedom**

EN







SCS
Concept Group





About Us

SCS Concept was founded in 2005, with Head Quarters in Milan, Italy.

It is a young and innovative company, developing and manufacturing advanced quality control and production equipment, with over 150 persons worldwide.

In 2007, in partnership with Q-Direct GmbH, attained DKD accreditation (Dakks) according to DIN EN ISO/IEC 17025:2005

After, SCS Concept introduced first SCS developed electronic Torque & Angle wrenches.

Offering customers today – a wide range of torque/angle wrenches for production, quality & lab, data collector / analyzers, rotary & static transducers, test benches, software, calibration and service, including customized solutions.

Operating globally in all prime vertical markets Automotive Industry, Aerospace, General Industry.

Our Mission

- Expand the brand SCS globally.
- Sell, market and service best in class production and quality control products, solutions and consultancy fastening / tightening techniques to all market verticals.
- Create value and make a difference to all of our customers.

Our Vision

- To be the prime brand of choice within our market verticals and segments by the year 2020.
- **People** - offering an environment where our people are inspired to the best they can be. Passion, creativity, optimism and fun.
- **Our partners** - create mutual and enduring value for our customers, nurture a winning channel / distribution network and suppliers.
- Meet and exceed the expectations of our customers with our evolving products, solutions and services.
- **Productivity** - be a highly effective, innovative, lean and fast paced organization.
- **Profit** - maximize long term returns to our shareowners, invest in our growth and being aware of our overall responsibilities to our company.
- **Planet** - be responsible owners of our environment that make a difference by developing, educating and supporting sustainable communities.

Sites and Partners

 Sites

 Partners

SCS Concept S.r.l.

Cormano (MI)
Ph. +39 02 925 02 684
info@scsconcept.com
www.scsconcept.com
ITALY

SCS Concept Italia S.r.l.

Torino
Ph. +39 011 4530844
italia@scsconcept.com
www.scsconcept.it
ITALY

SCS Concept France SAS

Seloncourt
Ph. +33 (0) 381 954 188
france@scsconcept.com
www.scsconcept.fr
FRANCE

SCS Concept Deutschland GmbH

Loiching - Kronwieden
Ph. +49 (0) 8731 3261 660
deutschland@scsconcept.de
www.scsconcept.de
GERMANY

SCS Concept UK

Swindon
Ph. +44 7531 127 480
UK@scsconcept.com
www.scsconcept.com
UK

SCS Concept Iberia

Barcelona
Ph. +34 600 51 13 35
iberia@scsconcept.com
www.scsconcept.es
SPAIN

SCS Concept Americas LLC

Auburn Hills, MI
Main +1 248 419 4999
Toll Free +1 877 898 6484
northamerica@scsconcept.com
www.scsconcept.us
U.S.A North America - Mexico

SCS Concept Latin America Ltda

São Paulo
Ph. +55 11 96599-6161
brazil@scsconcept.com
BRAZIL

SCS Concept China Co., Ltd.

Jiading District, Shanghai
Ph. +86 21 595 60 096
china@scsconcept.com
www.scsconcept.cn
CHINA

The Tool House

New Berlin - Wisconsin
Ph. +1 800 829 4174
www.toolhse.com
U.S.A.

Industrial & Manufacturing Solutions

Raleigh - North Carolina
info@iandmsolution.com
www.iandmsolutions.com
U.S.A.

EDLO Sales & Engineering

Logansport - Indiana
Ph. +1 574 753 0502
www.edlosales.com
U.S.A.

Southern Tool Specialists

Chelsea - Alabama
Ph. +1 205 504 0747
www.southerntoolinc.com
U.S.A.

Power Tools & Supply

Detroit - Michigan
Ph. +1 800 829 7445
www.pts-mi.com
U.S.A.

Ultra Torq

Lachute - Quebec
Ph. +1 855 400 7864
info@ultratorq.com
www.ultratorq.com
CANADA

Adecom - Advanced Equipments & Components México Oficina México D.F.

Puebla
Ph. +52 (222) 644 13 40
ventas@adecom.com.mx
MEXICO

Grupo Equipar S.A

Buenos Aires
Ph. 0348 4446870
info@grupoeq.com.ar
www.grupoeq.com.ar
ARGENTINE



Dai-ichi Dentsu, Ltd.

Chofu-city, Tokyo
Ph. +81 42 440 1465
sales@daiichi-dentsu.co.jp
JAPAN

**Micromeasures 312,
Sidco-Aiema**

Chennai
Ph. +33 (0) 381 954 188
sales@micromeasures.com
www.micromeasures.com
INDIA

**Suministros Industriales
Jatur S.L.**

Lazkao (Gipuzkoa)
Ph. +34 943 888 466
jatur@jatur.com
www.jatur.com
SPAIN

Connexall

Samutprakarn
Ph. +66 (2) 313 3400
info@connexall.co.th
www.connexall.co.th
THAILAND

AFS

Pretoria
Ph. +2712 803 5456
charles@afsmi.co.za
sales@afsmi.co.za
SOUTH AFRICA

SAB-Bnl

Dendermonde
Ph. +32 52 40 95 74
info@sab-bnl.be
www.sab-bnl.be
BELGIUM

**Shanghai Blaze International
Trade Co. Ltd**

Shanghai
Ph. +86 21 648 23556
info@blaze-sh.com
www.blaze-sh.com
CHINA

**Toolimpex Czech Republic
S.r.o.**

Cesky Tesin
Ph. +420 558 713 810
logistika@toolimpex.eu
www.toolimpex.eu
CESKA REPUBLIKA

INTOOL Slovakia S.r.o.

Žilina
Ph. +421 904 001 920
logistika@intool.sk
www.intool.sk
SLOVAKIA

**Kompania Narzędziowa "HERMES"
Sp. z o.o.**

Bielsko-Biala
Ph. +48 (33) 810 05 64
sales@hermestools.eu
www.hermestools.eu
POLAND

SAB-Nordic

Västra Frölunda
Ph. +46 731 419 232
info@sab-nordic.se
www.sab-nordic.se
SWEDEN

Markets



Motor Vehicle Industry

MotorCycle

Aerospace

General Industry

Broad Range of Industries to Serve & Develop

- Many diverse industries served
- All pursuing hi-caliber business resources in the world of Quality Control & Production
- Lessons learned shared amongst industries
- Strong Quality System drives value



Off Road | Agriculture | Rail

Heavy Truck

Wind Energy

Large Power Train

Calibration | Lab Service

" We Offer our Customers Independent & Unbiased Systems
& Solutions for Validating & Calibrating their
Power Tools & Wrenches "

Portfolio of Torque Measurement Products



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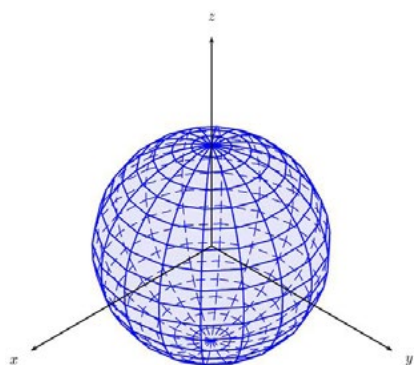


Transducers

Torque & Torque/Angle Rotary
 Torque & Torque/Angle Rotary Bluetooth
 Torque Static
 Torque Static Bluetooth
 FWE e FWE TA
 RGT
 FSE

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Torque Wrenches

control || functionality



Freedom^{4S} Production



Freedom⁴ Quality



EWW³ + FWEPL TA



CDM



CL - CLS



Click Wrenches

Freedom^{4S} Production

Torque & Angle Wrench

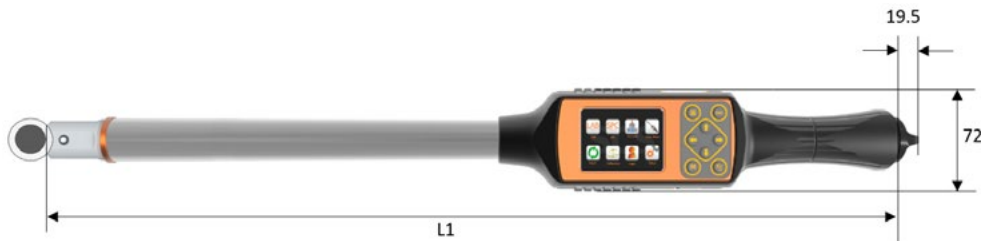
Advance solution for production from 0 to 1 200 N·m



- Light, robust and accurate
- Automatic obstacle detection & incorrect hand position
- Wireless communication for data traceability
- End-fitting recognition
- High memory capacity

Freedom^{4S} Production

Torque & Angle Wrench



Freedom PRW	Designation	Wireless cradle	Capacity	Drive	L1	Weight
			N·m	N·m	mm	kg
113 38 0015	Freedom ^{4S} 15	197 13 0049: 15 N·m	1.5 - 15	9 x 12	364	1.0
113 38 0030	Freedom ^{4S} 30	197 13 0049: 30 N·m	3 - 30	9 x 12	364	1.0
113 38 0050	Freedom ^{4S} 50	197 13 0049: 50 N·m	5 - 50	9 x 12	364	1.0
113 38 0070	Freedom ^{4S} 70	197 13 0050: 70 N·m	7 - 70	9 x 12	470.5	1.0
113 38 0100	Freedom ^{4S} 100	197 13 0050: 100 N·m	10 - 100	9 x 12	470.5	1.0
113 38 0200	Freedom ^{4S} 200	197 13 0051: 200 N·m	20 - 200	14 x 18	604.5	1.2
113 38 0300	Freedom ^{4S} 300	197 13 0052: 300 N·m	30 - 300	14 x 18	754.5	1.2
113 38 0400	Freedom ^{4S} 400	197 13 0053: 400 N·m	40 - 400	14 x 18	854.5	1.4
113 38 0600	Freedom ^{4S} 600	197 13 0054: 600 N·m	60 - 600	14 x 18	1034.5	1.4
113 38 0800	Freedom ^{4S} 800	197 13 0055: 800 N·m	80 - 800	22 x 28	1255	
113 38 1000	Freedom ^{4S} 1000	197 13 0056: 1000 N·m	100 - 1000	Special	1470	
113 38 1200	Freedom ^{4S} 1200	197 13 0063: 1200 N·m	120 - 1200	Special	1570	

Part Number	Designation
197 14 0038	Option tool recognition for wrenches with 9x12 drive
197 14 0039	Option tool recognition for wrenches with 14x18 drive
333 51 0017	Direct battery charger to connect with your USB cable
197 14 0046	1D Barcode reader integrated
197 14 0044	2D Barcode reader integrated
197 14 0029	External battery charger
197 14 0040	Programming unit for recognition end fitting
323 19 0105	Rubber protection
313 11 0177	Rubber and display protection (only for Freedom ⁴)
323 19 0012	Display protection (only for Freedom ⁴)

➤ Wireless cradle



Freedom^{4S} Production



- Standard end-fitting end fitting recognition



- Rubber protection
(PRW wrench is delivered with rubber protection wireless radio wings)



• Part number: 313 11 0177

PRW Production

- ✓ Production tightening
- ✓ Wireless management
- ✓ Data traceability
- ✓ Barcode reader/VIN management
- ✓ LAB functionalities

Tightening strategy

- Fastening torque driven
- Fastening torque/angle
- Fastening yield
- Fastening yield/angle
- Prevailing torque



LAB

Laboratory

- ✓ Joint analysis
- ✓ Prototype
- ✓ Material studies
- ✓ Pre-series
- ✓ Onboard results analysis
- ✓ Onboard traces
- ✓ Results and traces analysis on PC with Explorer software

Features

- Autonomy : up to 8 hours
- Torque accuracy : 0.5% of the read value
- Torque range : 10 to 100%
- Angle accuracy : $\pm 1^\circ$ over 360°
- Memory 16 GB: >50 000 operations, traces and results
- Wireless communication WIFI/Bt
- WIFI 802.11 a/b/g/n
- Bluetooth V2
- Full security management
- WEP, WPA, WPA 2, EAP-TLS, LEAP, PEAP
- PRW functionalities
- LAB functionalities
- Untightening detection

- Quick change wireless communication (WIFI/bt)
- Carbon extension
- USB connection for data traceability
- Large screen, 7 LEDs, vibration and buzzer to communicate with the operator
- Wireless charger
- Barcode reader in option
- Self diagnostic





- Accurate VDI/VDE 2645-2:2014
- Wireless communication
- Open protocol
- VW-XML protocol
- End fitting recognition to manage your assembly process
- Flexibility with more than 50 000 operations



➤ **Hand position detection to ensure correct operation**

➤ **Guidance solution**

A large color touch screen help the operator during the assembly process.



➤ **Obstacle detection “patented” eliminate damage of your parts and protect your wrench**

➤ **Compatible with FIM-EVO**



Manage up to 12 assembly tools and 6 stations
Fieldbus compatibility and data traceability
Webserver application.

Freedom⁴ Quality

Torque & Angle Wrench

Advance solution for quality from 0 to 1 200 N·m



- Light, robust and accurate
- Automatic obstacle detection & incorrect hand position
- Full quality check strategy
- Self diagnostic solution
- High memory capacity

Freedom⁴ Quality

Torque & Angle Wrench



Freedom Quality	Designation	Wireless cradle	Capacity	Drive	L1	Weight
			N·m	N·m	mm	kg
113 37 0015	Freedom ⁴ 15	197 13 0049: 15 N·m	1.5 - 15	9 x 12	364	1.0
113 37 0030	Freedom ⁴ 30	197 13 0049: 30 N·m	3 - 30	9 x 12	364	1.0
113 37 0050	Freedom ⁴ 50	197 13 0049: 50 N·m	5 - 50	9 x 12	364	1.0
113 37 0070	Freedom ⁴ 70	197 13 0050: 70 N·m	7 - 70	9 x 12	470.5	1.0
113 37 0100	Freedom ⁴ 100	197 13 0050: 100 N·m	10 - 100	9 x 12	470.5	1.0
113 37 0200	Freedom ⁴ 200	197 13 0051: 200 N·m	20 - 200	14 x 18	604.5	1.2
113 37 0300	Freedom ⁴ 300	197 13 0052: 300 N·m	30 - 300	14 x 18	754.5	1.2
113 37 0400	Freedom ⁴ 400	197 13 0053: 400 N·m	40 - 400	14 x 18	854.5	1.4
113 37 0600	Freedom ⁴ 600	197 13 0054: 600 N·m	60 - 600	14 x 18	1034.5	1.4
113 37 0800	Freedom ⁴ 800	197 13 0055: 800 N·m	80 - 800	22 x 28	1255	
113 37 1000	Freedom ⁴ 1000	197 13 0056: 1000 N·m	100 - 1000	Special	1470	
113 37 1200	Freedom ⁴ 1200	197 13 0063: 1200 N·m	120 - 1200	Special	1570	

Part Number	Designation
333 51 0017	Direct battery charger to connect with your USB cable
197 14 0046	1D Barcode reader integrated
197 14 0044	2D Barcode reader integrated
197 14 0029	External battery charger
323 19 0105	Rubber protection
313 11 0177	Rubber and display protection
323 19 0012	Display protection

Features

- Autonomy : up to 8 hours
- Torque accuracy : 0.5% of the read value
- Torque range : 10 to 100%
- Angle accuracy : +/-1° over 360°
- Memory 16 GB: >50 000 operations, traces and results
- Full quality control strategy following VDI/VDE 2645-3:2019
- SPC functionalities
- LAB functionalities

Freedom⁴ Quality



LAB

Laboratory

- ✓ Joint analysis
- ✓ Prototype
- ✓ Material studies
- ✓ Pre-series
- ✓ Onboard results analysis
- ✓ Onboard traces
- ✓ Results and traces analysis on PC with Explorer software

SPC

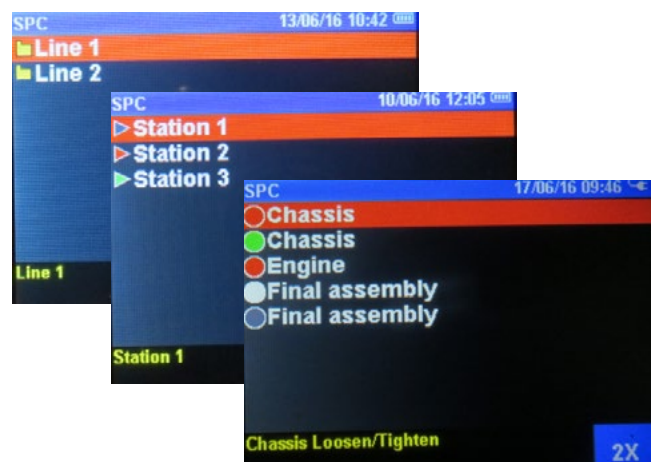
Quality control

- ✓ Residual torque check on a production line
- ✓ Route and job management via software (SQnet+ or QS torque)
- ✓ Onboard results analysis
- ✓ Data traceability
- ✓ VIN management
- ✓ Onboard traces
- ✓ Results, traces and statistic analysis on PC with SQNET + software

Quality strategy

- Smart breakaway
- Breakaway peak
- Breakaway angle
- Loosen/tighten
- Minimum torque
- Loose torque
- Intersection determination

Route management

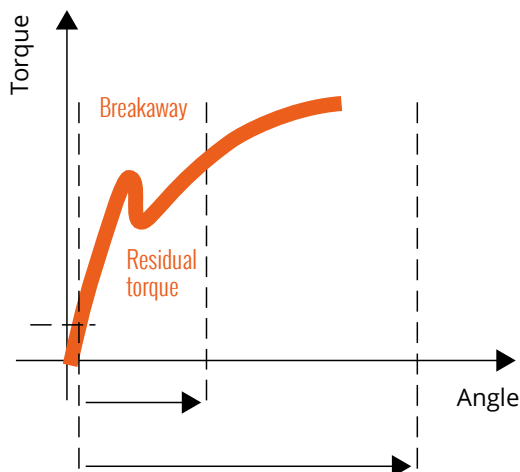




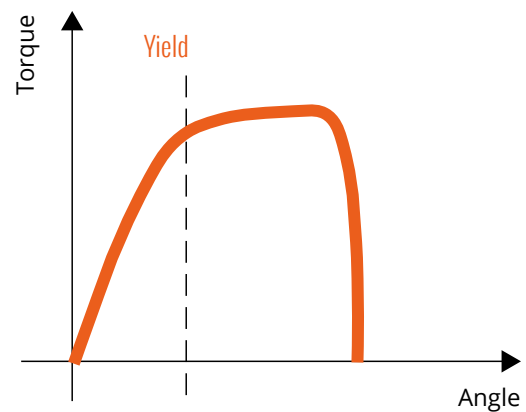
Freedom⁴ fulfil the evaluation methods conforming to VDI/VDE 2645-3:2019

- Peak value measurement
- Torque at angle of rotation
- Minimum after breakaway
- Intersection determination
- Gradient change

Smart breakaway



Joint analysis



Statistic

Cp / Cpk e X/R charts

Cp/Cpk



T/A curve

X/R chart



➤ Quality process manager for production line

- Data collection
- Operation management
- Statistic analysis
- Process control management
- SPC management
- Route definition



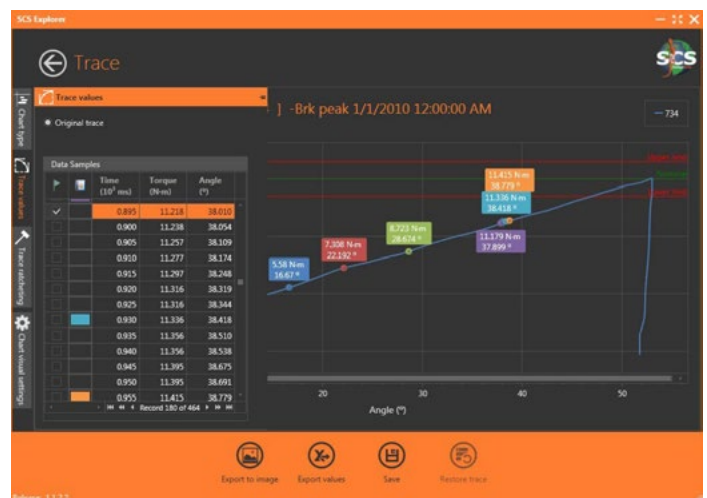


➤ Hand position detection to ensure correct operation

➤ Full quality control strategy following VDI/VDE 2645-3:2019

➤ SCS Explorer

- Test definitions
- Instrument programming
- Results & trace download
- Trace comparison
- Analytic function to find the right residual torque strategy



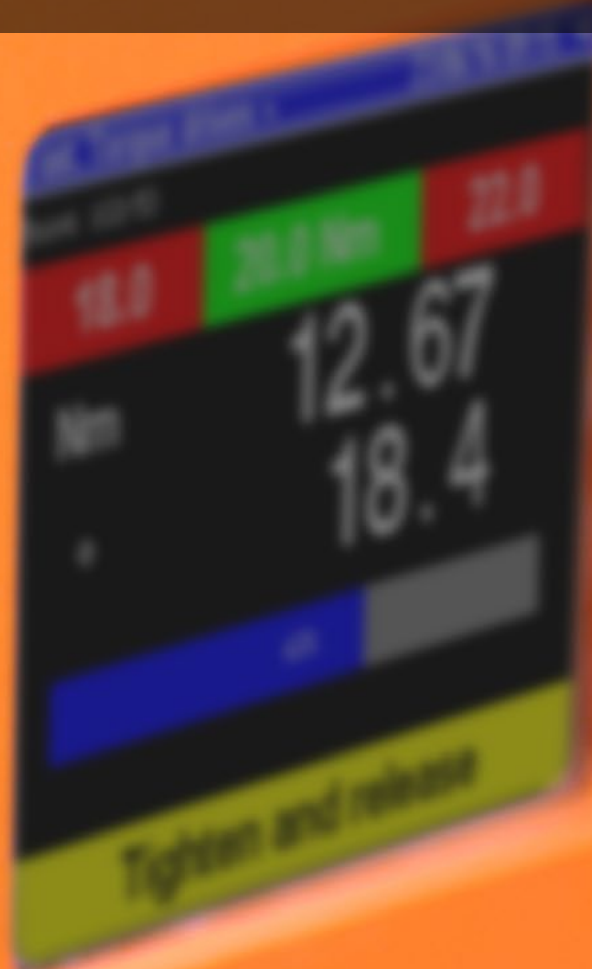
• Part number: 102 11 0025

➤ Obstacle detection “patented” eliminate damage of your parts and protect your wrench

EWV³ + FWEPL TA

Digital Torque Wrench for Production

SS concept



Freedom Event



EWV³ + FWEPL TA

Digital Torque Wrench for Production



Features

- All features of Freedom³ (Production version)
- End-fitting tool recognition optional
- LEDs
- Vibration device
- Ring for wrench suspension system
- Supplied with interchangeable end-fitting

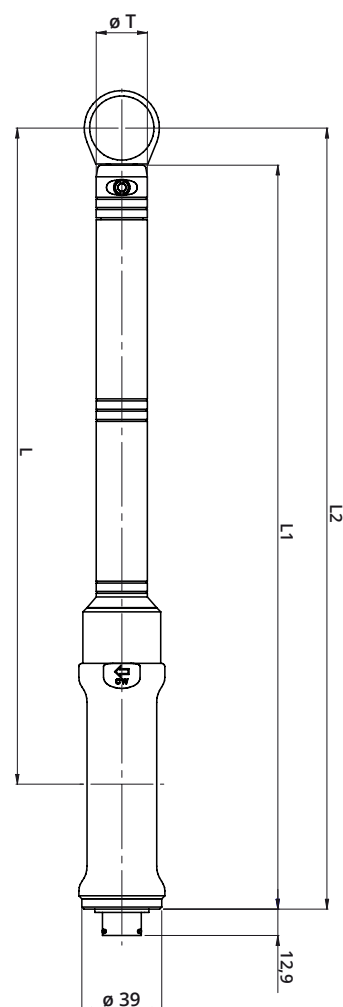
Benefits

- Small
- Light weight

Code	Model	Capacity	Drive	L	L1	L2	Ø T
		N·m	mm	mm	mm	mm	mm
113 21 0015	Freedom FWEPL TA 15	15	9 x 12	262	314	332	25
113 21 0030	Freedom FWEPL TA 30	30	9 x 12	262	314	332	25
113 21 0070	Freedom FWEPL TA 70	70	9 x 12	311	363	381	25
113 21 0100	Freedom FWEPL TA 100	100	9 x 12	311	363	381	25
113 21 0200	Freedom FWEPL TA 200	200	14 x 18	445	490	515	30
113 21 0300	Freedom FWEPL TA 300	300	14 x 18	595	640	665	30
113 21 0400	Freedom FWEPL TA400	400	14 x 18	695	740	765	30
113 21 0600	Freedom FWEPL TA 600	600	14 x 18	876	921	946	34
113 21 0800	Freedom FWEPL TA 800	800	Ø 20	1140	1065	1200	40
113 21 1000	Freedom FWEPL TA 1000	1000	Ø 20	1420	1345	1480	40

Accessories

163 10 0032	Freedom EWW3S Torque Wrench Remote Controller (RS232)
163 10 0026	Freedom EWW3S CE Torque Wrench Remote Controller (Ethernet)
163 10 0033	Freedom EWW3S I/O Torque Wrench Remote Controller (I/O option)
163 10 0034	Freedom EWW3S CE I/O Torque Wrench Remote Controller (Ethernet + I/O option)
313 21 0056	Wrench suspension and rotation till 100 N·m
313 21 0057	Wrench suspension and rotation from 200 Nm to 60 N·m
333 41 0023	FWE cable
197 14 0038	Tool recognition option 9x12
197 14 0039	Tool recognition option 14x18



CDM

With compact design and WiFi connectivity, it is an optimized wrench for tightening operations.



Functions

- Tightening operations with various strategies with torque and angle control
- Anti-grip function for automatic joint problem detection
- VPG+ interface via WiFi
- Support the SCS Concept positioning system for position detection of the wrench on the assembly station (with VPG+)
- Input/Out optional module, to interface with customer systems (select the tightening program, receive results)
- LED ring for immediate result indication
- Statistical computation
- Rechargeable battery in the wrench handle

Benefits

- Accurate tightening operations
- Industry 4.0 compliance: Integration with SCS Concept and customer software systems
- Error proof assembly procedure with VPG+

Technical Data

- Torque range: from 1 N·m to 1200 N·m
- Torque measurement accuracy: 1% of the reading
- Angle measurement accuracy: 1° over 360°
- Memory capacity: 30 tightening programs, 900 results
- Maximum angular speed: 320 °/s
- Display: 132x32 pixel backlighte
- Rechargeable Li-on battery



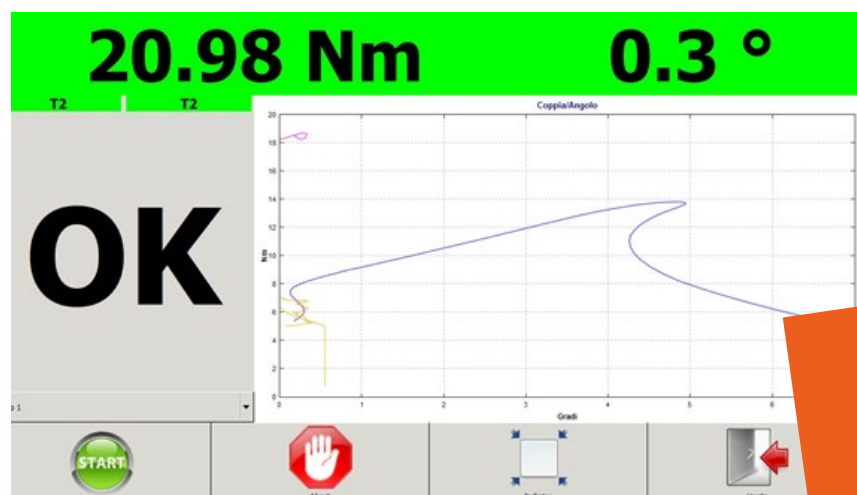
VPG+ interface via WiFi

- Rechargeable Li-on Battery
- Battery Charger

Code	Model	Capacity	Drive	L1	L2	Weight (no ratchet)
		N-m	mm	mm	mm	Kg
113 34 0050 113 35 0050	CDM CDM WiFi	50	9 x 12	389	46	0.90
113 34 0100 113 35 0100	CDM CDM WiFi	100	9 x 12	413	46	1.04
113 34 0200 113 35 0200	CDM CDM WiFi	200	14 x 18	506	46	1.25
113 34 0350 113 35 0350	CDM CDM WiFi	350	14 x 18	604	46	1.44
113 34 0600 113 35 0600	CDM CDM WiFi	600	14 x 18	960	46	3.30
113 34 0800 113 35 0800	CDM CDM WiFi	800	3/4" Ratchet **	1094	70 (ratchet head)	4.40
113 34 1000 113 35 1000	CDM CDM WiFi	1000**	1" Ratchet **	1334	70 (ratchet head)	6.60
113 34 1200 113 35 1200	CDM CDM WiFi	1200**	1" Ratchet **	1583	70 (ratchet head)	7.50
102 11 0023	Wrench backup software					
102 11 0024	Light Wi-Fi software					



- Light WiFi - CDM Management software



Wrench backup
Download data from CDM



CL - CLS

Wireless Click Wrench

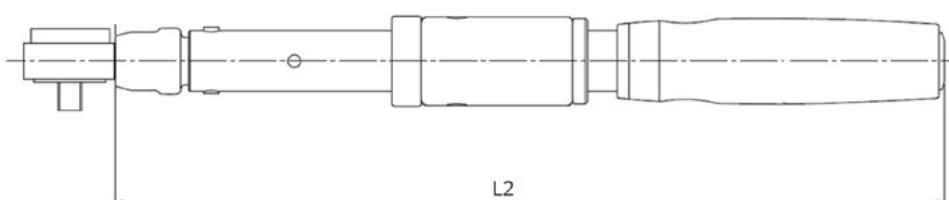
Error proofing management and data acquisition from 2 to 350 N·m

- Small, light, ergonomic and robust
- Productivity of a click wrench with data traceability
- Accurate and repeatable
- Fulfill industry 4.0 with torque & angle value



CL - CLS

Wireless Click Wrench



Reference	Designation	Reference	Designation	Capacity	Drive	L2	Weight
	Error Profiling			N·m		mm	kg
114 42 0020	Freedom CL 20	114 41 0020	Freedom CLS 20	2 - 20	9 x 12	190	0.43
114 42 0050	Freedom CL 50	114 41 0050	Freedom CLS 50	10 - 50	9 x 12	270	0.673
114 42 0100	Freedom CL 100	114 41 0100	Freedom CLS 100	20 - 100	9 x 12	330	0.795
114 42 0200	Freedom CL 200	114 41 0200	Freedom CLS 200	40 - 200	14 x 18	445	1.18
114 42 0350	Freedom CL 350	114 41 0350	Freedom CLS 350	70 - 350	14 x 18	690	1.98

Each wrench is delivered with the torque setting key	CL	CLS
Data traceability (With FIM)		X
Torque and angle values		X
Angle monitoring		X
Analyze mode with FIM-EVO		X
Error proofing management	X	X
Batch size	X	X
Re-tighten detection	X	X
Untightening detection	X	X

CL/CLS wireless click wrench

➤ RF 868MHz or 915MHz
to connect to a controller

➤ 360° ring report
Multi-color LED to manage tightening report

➤ Highly accurate click - 3° click



➤ Standard end-fitting



➤ Re-tighten detection
untightening detection

➤ Torque & angle transducer
(CLS only)

Features

Autonomy : 9 hours to 18 hours (5 hours to charge)
Click accuracy : 4% to fulfill ISO6789
Untightening detection
First peak and max torque applied send to the controller
Bidirectional RF communication between the wrench and
our controller
Conform to ISO6789: 2017

➤ CL click wrench

CL click wrench is design for error proofing management, without any data traceability with SCS-FCB controller.

➤ CLS torque & angle click wrench

CLS torque & angle click wrench is design for error proofing and data traceability with FIM-EVO.



BIDIRECTIONAL COMMUNICATION

TO A CONTROLLER

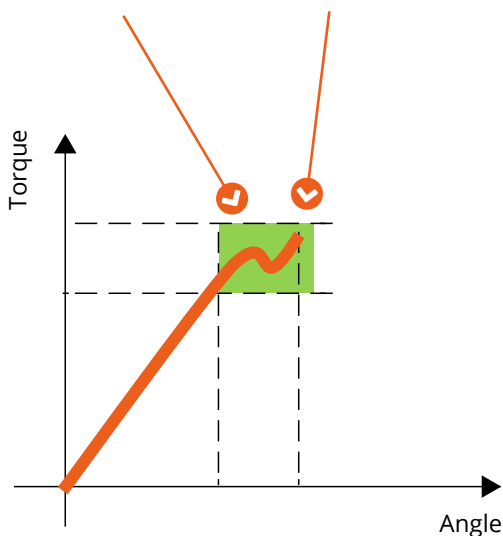
➤ Mechanical torque adjustment



➤ Ergonomic handle

Soft grip

➤ Click torque or max torque apply



CL/CLS controllers



➤ SCS FCB

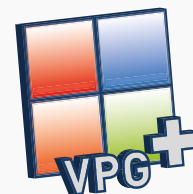
SCS FCB can manage up to 4 CL/CLS wrench and is design for Error proofing management, No data store, but all report are available on the 8 input/8 output 24V.



➤ FIM-EVO

FIM-EVO can manage up to 12 SCS Concept tools (CL/CLS, Freedom³, Freedom⁴, CDM, etc) and is designed to manage error proofing, data collection and communication protocol.

A controller can manage 2 stations in same time. Please see the leaflet for more information.



➤ VPG+

VPG+ can manage SCS Concept tools (CL/CLS, Freedom³, Freedom⁴, CDM, etc) and is design to manage error proofing, data collection and communication protocol.

Please see the leaflet for more information.



- Productivity
- Data traceability
- Error proofing management
- Untightening detection

➤ Decrease maintenance

SCS Concept click mechanism reduces friction and mechanical wear and allows much longer working time without need for mechanical adjustment. It also allows for longer maintenance intervals, compared to competitors.

Part Number	Designation
197 14 0045	RF868 Mhz interface for CL/CLS Wrench
197 14 0049	RF915 Mhz interface for CL/CLS Wrench
153 20 0010	SCS FCB controller
333 51 0024	Power supply SCS FCB
153 20 0008	FIM-EVO 4 output
153 20 0013	FIM-EVO with 16 input & 16 output

➤ Wireless charger

Part Number: 197 13 0048



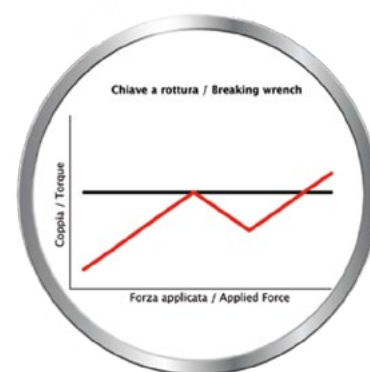
Click Wrenches

Interchangeable Standard Preset Click Wrench, Click 20°



Breaking Torque Wrench - 20 Degrees of release

The torque increases at the growing of the applied force. At the achievement of the set torque - threshold "set torque" - the wrench breaks and for 20° it doesn't exercise any torque, gap wider than the previous one, as shown in the graphic. The operator has more margin to stop to apply the force, preventing the overcoming of the set torque.



Features

- Pre-set torque (via a torque analyzer), ideal for production 20 degrees click
- Clockwise operation
- Compact and robust
- Automatic reset
- Precision $\pm 3\%$, over the requirements of the UNI EN ISO 6789
- Traceable calibration certificate from accredited laboratory optional

Model	Capacity	Click (degrees)	Length	Drive	Weight
	N·m		mm	mm	Kg
114 21 0025	5 – 25	20	240	9 x 12	0.65
114 21 0060	10 – 60	20	360	9 x 12	0.87
114 21 0120	20 – 120	20	415	9 x 12	1.20
Accessories					

114 21 9001 Accessorio di regolazione della coppia

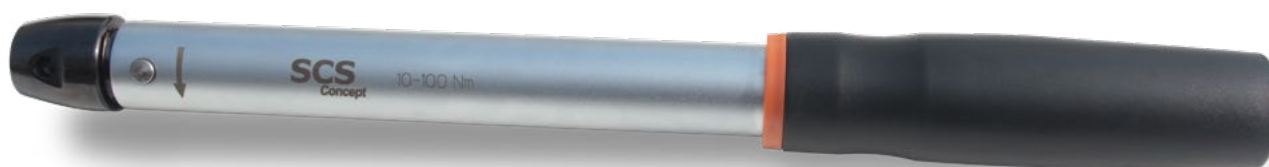
114 21 9002 Accessorio di regolazione della coppia per chiave 20 N·m





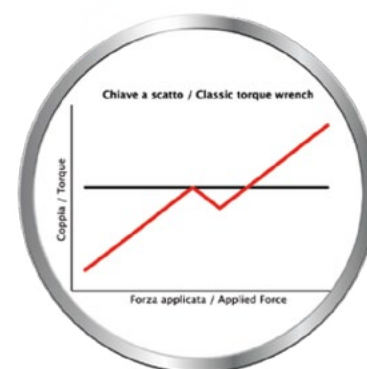
Click Wrenches

Interchangeable Standard Preset Click Wrench, Click 3°



Classic Torque Wrench - Limited Degrees of release

The torque increases at the growing of the applied force. At the achievement of the set torque - threshold "set torque" - the wrench breaks and for 3°/6° it doesn't exercise any torque. If the operator doesn't stop to apply force during this gap, the torque begins again to grow, overcoming the set torque.



Features

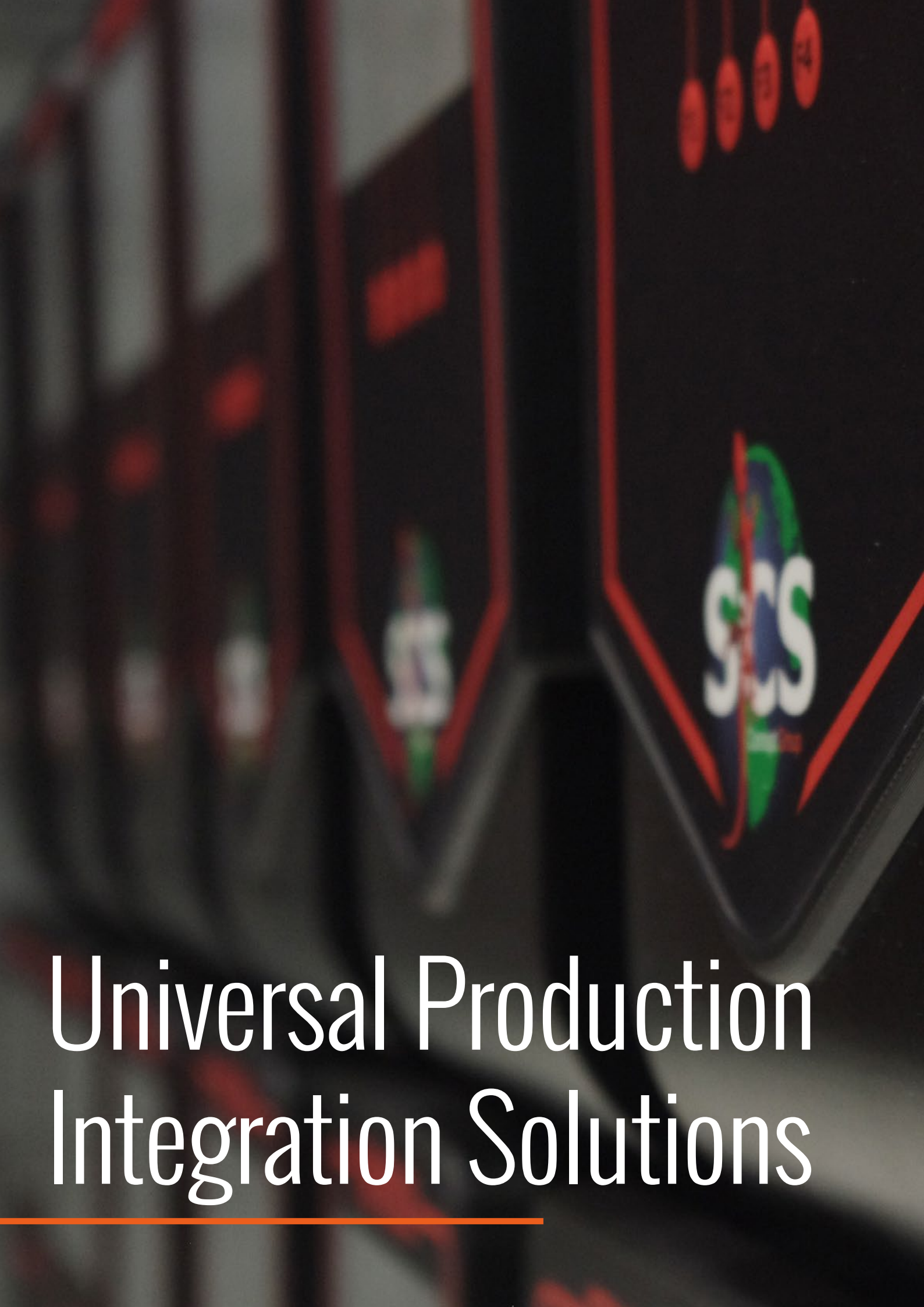
- Pre-set torque (via a torque analyzer), ideal for production 3 degrees click
- Clockwise operation
- Compact and robust
- Automatic reset
- Precision $\pm 3\%$, over the requirements of the UNI EN ISO 6789
- Traceable calibration certificate from accredited laboratory optional

Model	Capacity	Click (degrees)	Length	Drive	Weight
	N·m		mm	mm	Kg
114 22 0020	2 – 20	3	189	9 x 12	0.35
114 22 0050	5 – 50	3	265	9 x 12	0.55
114 22 0100	10 – 100	3	350	9 x 12	0.65
114 22 0200	20 – 200	3	400	14 x 18	0.95
114 22 0340	30 – 340	3	680	14 x 18	1.50
Accessories					

114 21 9001 Accessorio di regolazione della coppia

114 21 9002 Accessorio di regolazione della coppia per chiave 20 N·m





Universal Production Integration Solutions

controller universal



FIM EVO

- Management of power tools and torque wrenches
- Connection to the customer's production system
- Data traceability
- Simplification of the production station

FIM EVO

The multi brand integration hub for industry 4.0

- Only one device manage up to 12 production tools
- Compatible with all types of tools
- Productivity/traceability/error proofing
- Easy to use with the webserver application



FIM EVO

The multi brand integration hub for industry 4.0



➤ Open protocol tools



Description	FIM_EVO
Number of tools managed	12
Compatible with SCS products	Yes
Manage Sequences, Operations	Unlimited
Manage tightening strategies	Yes
Manage barcode reader	Yes
Manage printer/label printer	USB/serial
Number of result Store	100 000
Number of traces store	100 000
2 Serial ports, 4 USB, 2 Ethernets, 1 Can bus	Yes
FieldBus compatibility (profinet, etc)	Yes
Number of input/output manage	4 Output

Software module "Universal HUB"	FIM_EVO Standard	Universal HUB
Stations managed by controller	2	6
Multi brand Tools compatibility	No	Yes

Part Number	
153 20 0008	FIM EVO 4 out
153 20 0013	FIM EVO 16 I/O
102 21 0018	Software module universal HUB
197 14 0045	RF 868 MHZ for CL/CLS tools
197 14 0049	RF 915 MHZ for CL/CLS tools

FIM EVO

FIM-EVO is an industrial universal controller able to manage up to 12 tools on a single communication point to reduce cost and simplify the integration on your network.

FIM-EVO will give you the full flexibility and scalability requested today by our industry.

➤ Industrial universal hub controller

- A single point connection for your tools
- Manage up to 12 tools and 6 stations



➤ Open protocol tools

- Full compatibility with all your production tools

➤ Easy and clear interface

- 7" Color touch screen
- VGA connection for external screen

➤ Fully scalable

- Quick backup and restore for faster maintenance
- Webserver application form easy setup and full version compatibility



➤ Full traceability

- Store up to 100 000 results
- Store up to 100 000 traces
- No limitation for sequences & operations

Description	Identifier	Ref.	Tool	Torque Res.	Angle Result	Date / Time	Status
No. 2020030102010							
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 12:29:08	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 12:29:09	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 12:29:10	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 12:29:11	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 12:29:12	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 12:29:13	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 12:29:14	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 12:29:15	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 12:29:16	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 12:29:17	OK
No. 2020030102011							
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 14:18:01	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 14:18:02	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 14:18:03	OK
OPERATION 001 - PRECISION	0.1.0	Predefined 1		10.0Nm	0°	16/05/2021 14:18:04	OK

➤ Full protocol communication

- Fully compatible with the mains industries protocols
- Open protocol, Toolsnet, IPM, XML, PFCS
- 2 Ethernet ports



➤ FieldBus (option)

- Profibus DP master, Profibus DP slave, DeviceNet master, DeviceNet slave, CC-Link slave, CANopen master, CANopen slave, Profinet IO device, Profinet IO controller, EtherNet/IP scanner, EtherNet/IP adapter, Open Modbus/TCP



➤ Compatible with geolocation (option)

- Can be used with SCS geolocation system, please don't hesitate to ask for a demo.

➤ Compatible with following accessories

- Barcode reader
- Printer
- Socket tray
- Label printer
- Input/Output 24V

➤ Barcode reader



➤ Printer



➤ Label printer



➤ Socket tray
6/8 & 16 socket up to 50 mm



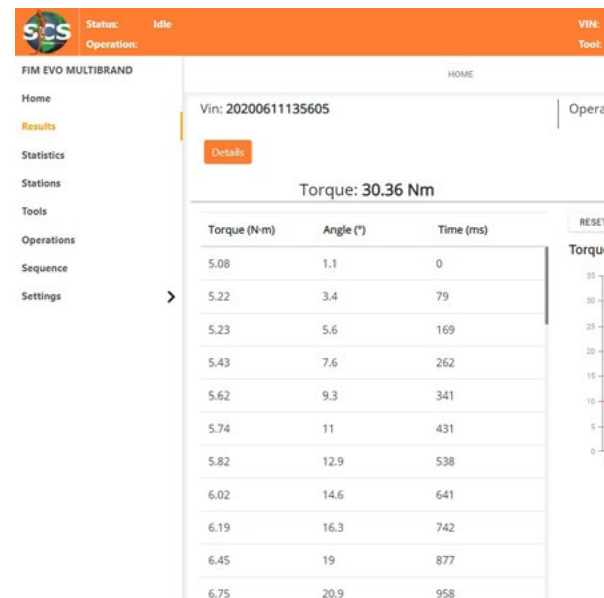
Webserver software

- ✓ Manage 12 SCS tools
- ✓ Manage up to 2 stations at the same time
- ✓ Data storage & open protocol
- ✓ 4 outputs as standard and 16 I/O in option
- ✓ Manage barcode reader/printer
- ✓ Manage socket tray
- ✓ Industrial fieldbus on option

► FIM-EVO Universal HUB

FIM EVO functionalities and:

- ✓ Manage 12 tools (SCS or multi brand)
- ✓ Manage up to 6 stations at the same time



► SCS wrenches supported:

- Freedom CDM
- Freedom³
- Freedom⁴
- Freedom CL/CLS
- Freedom EWW³



➤ Results and trace database

SCS

VIN: VIM0001
Task: P0001

Network1: ● Network2: ●

RESULTS

Tools

Tasks

Job

I/O Module

Settings

Drag a column header here to group by that column

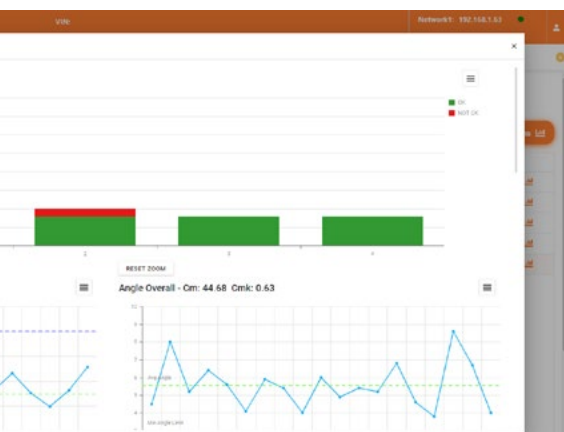
Description	Vin	Batch	Tool	Torque Result	Angle Result	Date / Time	Status	
OP_01_F3STD_DE...	20200219172507	2 / 2	FREEDOM 3 STD	20.9 Nm	21.9 °	19/02/2020 04:26...	OK	Details - Trace
OP_01_F3STD_DE...	20200219172507	2 / 2	FREEDOM 3 STD	17.6 Nm	0.1 °	19/02/2020 04:26...	OK	Details - Trace
OP_01_F3STD_DE...	20200219172507	2 / 2	FREEDOM 3 STD	20.8 Nm	0 °	19/02/2020 04:26...	OK	Details - Trace
OP_01_F3STD_DE...	20200219172507	2 / 2	FREEDOM 3 STD	21.9 Nm	0.4 °	19/02/2020 04:26...	OK	Details - Trace
OP_01_F3STD_DE...	20200219172507	2 / 2	FREEDOM 3 STD	22.7 Nm	0.3 °	19/02/2020 04:26...	OK	Details - Trace
OP_02_F3STD_DE...	20200219172507	1 / 1	FREEDOM 3 STD	21.8 Nm	0.2 °	19/02/2020 04:26...	OK	Details - Trace
OP_02_F3STD_DE...	20200219172507	1 / 1	FREEDOM 3 STD	21.4 Nm	0.4 °	19/02/2020 04:26...	OK	Details - Trace
OP_02_F3STD_DE...	20200219172507	1 / 1	FREEDOM 3 STD	22.1 Nm	0.4 °	19/02/2020 04:26...	OK	Details - Trace
OP_02_F3STD_DE...	20200219172507	1 / 1	FREEDOM 3 STD	25 Nm	2.2 °	19/02/2020 04:25...	NOT OK	Details - Trace
OP_02_F3STD_DE...	20200219172507	1 / 1	FREEDOM 3 STD	23.8 Nm	24.5 °	19/02/2020 04:25...	OK	Details - Trace
OP_02_F3STD_DE...	20200219172507	1 / 1	FREEDOM 3 STD	20.5 Nm	0.3 °	19/02/2020 04:25...	OK	Details - Trace



➤ Trace torque/angle or torque/time

➤ Open protocol tools

➤ Statistic analysis



➤ Optimise your assembly process





Data Analyzers

capability | functionality



MTC-P Multichannel

- Multi spindle test capability, up to 12 channels
- Programming from a remote PC
- Full traceability
- Results database
- Statistics



DataTouch³

- Power tool test
- Joint analysis
- Quality control test
- Data traceability
- Programmable by remote device/software
- Radio module for wireless transducer
- Result database
- Reports and Statistics

DataTouch³

Data Analyzer

DataTouch³ makes quality control efficient, fast and easy.

The perfect solution for dynamic tool tests and residual torque measurement



Color **Touchscreen Display**

Integrated **Barcode** Scanner



Supports third party
mV/V Transducers

Cable



USB communication
with external programs and databases

 **SQnet+**



DataTouch³

Data Analyzer

Features

- Automatic SCS transducer recognition
- Connectivity to transducers wireless or via cable
- Connectivity to FWE for residual torque test
- Joint analysis
- Cm-Cmk, Cp-Cpk statistics
- Standalone programming or program with SQnet+ quality management software
- Housing for extra spare battery

Benefits

- Quality control of power tools on the production line
- Process control through residual torque test
- Part recognition or operation initiation via barcode scanner
- Two operational modes: Lab and Quality
- Supports many industry protocols

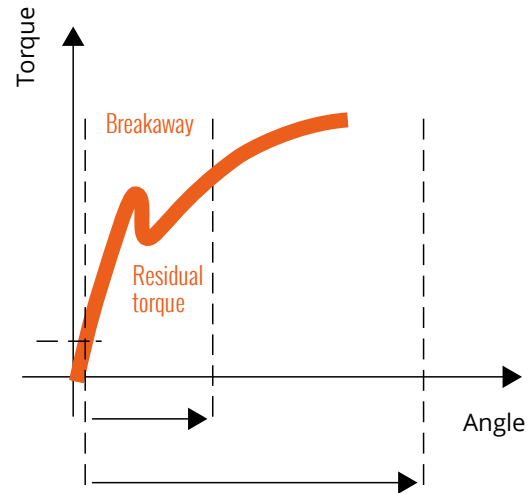


Code	Model	
163 10 0002	DataTouch ³	Data Analyzer for quality control
Optional		
197 14 0001	Freedom ³ -BT	Bluetooth module
197 14 0008	Freedom ³ -BR	Integrated barcode reader
197 14 0029	Freedom ³ -EC1	External battery charger
197 99 0008	Freedom ³ -USB	USB cable
313 21 0280	Freedom ³ -BA	Battery
333 51 0003	Freedom ³ -CR	Direct battery charger

Test Strategies

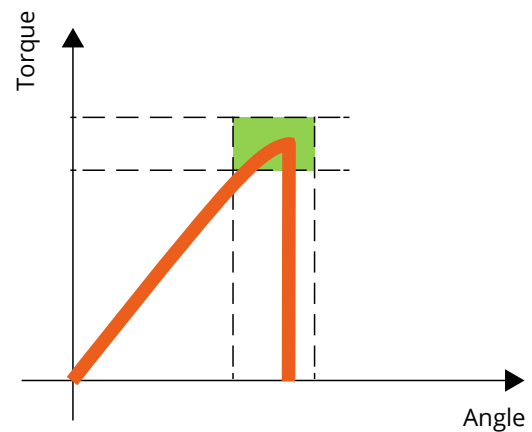
Joint test

- Joint analysis (LAB only)
- Breakaway peak
- Breakaway angle
- Smart breakaway
- Loosen/Tighten
- Loose torque
- Minimum torque



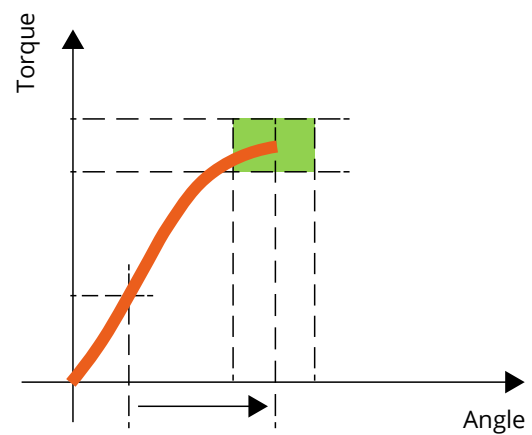
Power tool and torque wrench

- Torque test
- Torque/angle test
- Rivet test



Tightening (LAB only)

- Tightening torque
- Tightening torque and angle
- Tightening torque + angle
- Tightening to yield
- Tightening to yield + angle





LAB

Laboratory

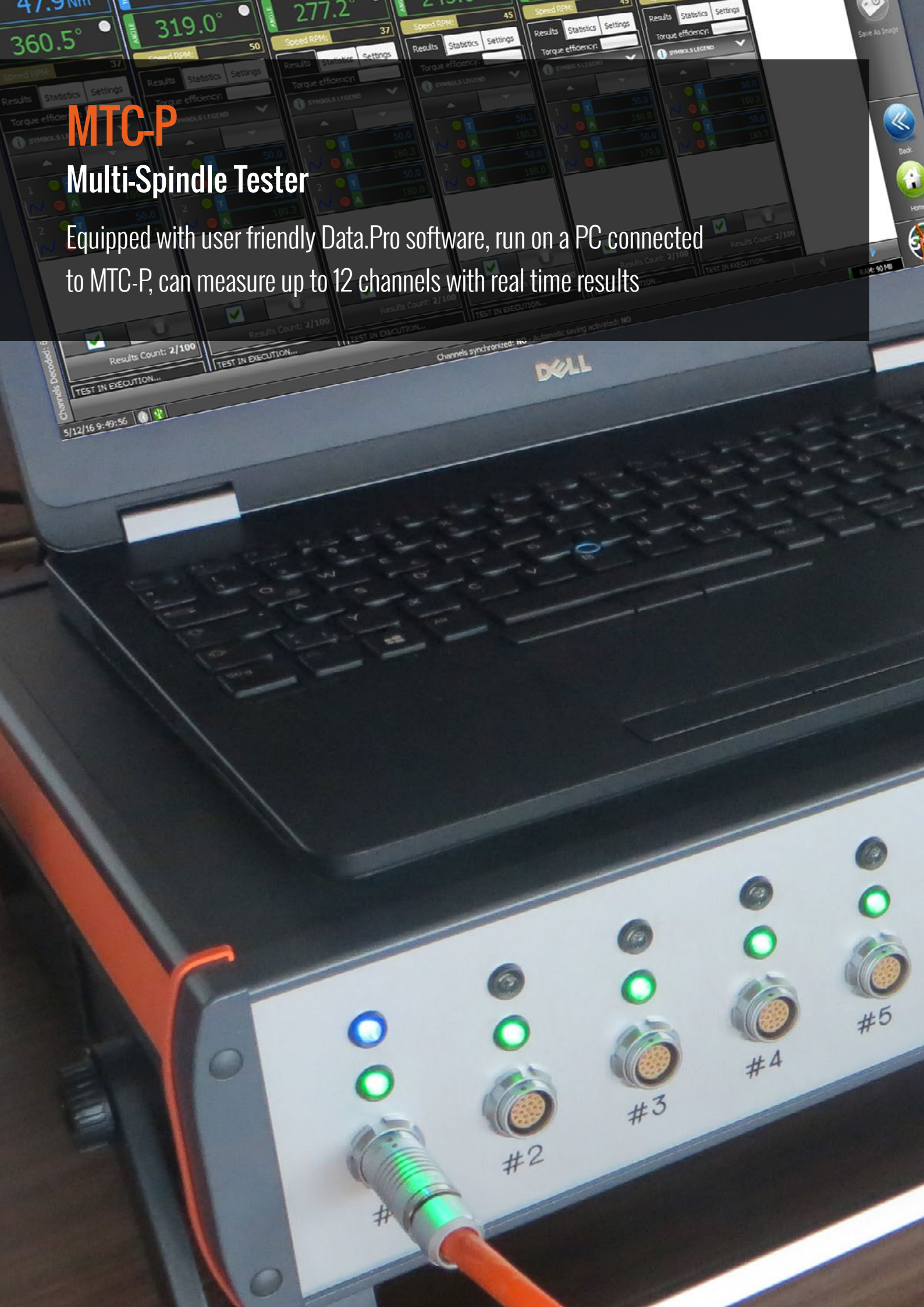
- ✓ Joint analysis
- ✓ Prototype
- ✓ Material studies
- ✓ Pre-series
- ✓ Check and verification of performances of power tools and wrenches
- ✓ Results analysis
- ✓ Traces on display
- ✓ Results and traces analysis on PC software Explorer



SPC

Quality control

- ✓ Power tools and wrenches test on production line
- ✓ Residual torque check on production line
- ✓ Route/job from remote software (SQnet+ or QS Torque)
- ✓ Wireless programming
- ✓ Data traceability
- ✓ VIN management

The image shows a Dell laptop screen displaying the MTC-P Multi-Spindle Tester software. The interface is divided into several panels. At the top, there are large digital readouts for torque (47.9 Nm, 360.5°, 319.0°, 277.2°) and speed (37, 45 RPM). Below these are tabs for 'Results', 'Statistics', and 'Settings'. The main area shows multiple channels of data, each with a graph of torque vs. speed and a 'Torque efficiency' meter. The bottom of the screen shows 'Results Count: 2/100' and 'TEST IN EXECUTION...'. The laptop is a Dell model, and the keyboard is visible. In the foreground, the MTC-P hardware unit is shown, featuring five channels labeled #1 to #5. Each channel has a green status light and a multi-pin connector. Channel #1 is connected to an orange cable. The hardware unit is white and black.

MTC-P

Multi-Spindle Tester

Equipped with user friendly Data.Pro software, run on a PC connected to MTC-P, can measure up to 12 channels with real time results



MTC-P

MTC-P is a multichannel Torque/Angle Analyzer for multi-spindle test



Connectivity to:

- Rotary transducers RMC and RMC TA
- Static transducers SMC and SMCI
- Third party, mV/V torque and torque/angle (encoder) transducers
- Third party, amplified transducers

Features

- Multichannel torque/angle acquisition
- Save multi-spindle test setup
- Real time results
- Statistics
- Test and traces storage
- Traces view with overlapping function

Benefits

- Quick and efficient test for multi-spindle tools
- Compact rack design easy to move
- User friendly software
- Store test configurations

➤ Single and compared traces



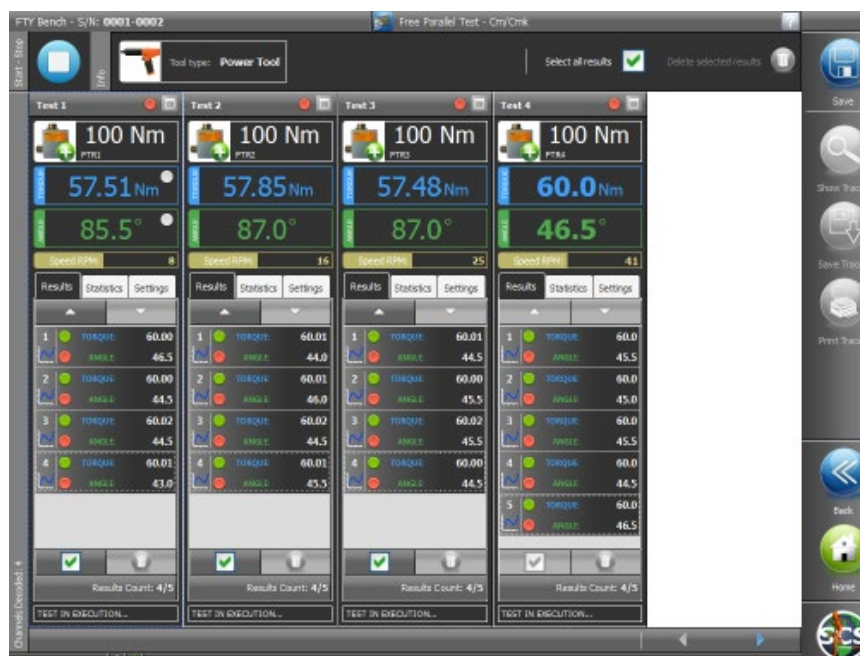
➤ Optional “Trigger” input per for angle synchronization



Multispindle Test with PC Programming



➤ Storage of the **Multichannel test** configurations



Statistics Data traceability
Results database



Test Benches



FTY

Power Tool and Wrench Dynamic Tester



MSB

Wrench and Tool Static Tester



AWT

Automatic Wrench Tester



FTA

Automatic Torque/Angle Dynamic Wrench Tester



FTS Hybrid

Power tools and automatic
wrench certification



FMS Multistation

Online Rework, Backup,
Pilot/Beta Build, Repair Station

FTY

Power Tool and Wrench Dynamic Tester

Features

- Tool test: wrenches (electronic/digital, click), pneumatic, electric and battery tools, pulse tools (except impact wrenches)
- Statistical Process Control: Measurement of machine capability (C_m , C_{mk}) and X, R charts
- Test according to ISO 6789 and ISO 5393
- Fast and easy setup
- Click point auto detection feature for click wrenches
- Comparative test capability
- Mechanical wrench loader for torque wrenches
- External transducer connectivity for special tests
- Standalone programming or program with SQnet+ quality management software
- Joint editor for non-linear joints "multistep simulation"



**"First test bench able to simulate
the fastener in all conditions"**



FTY

Power Tool and Wrench Dynamic Tester

Benefits

- Enter the test parameters & run 40% faster than any other comparable bench on the market, today
- FTY reproduces real joint behavior
- Easy to service – “plug and play” brakes
- Fully customized in hardware, transducers configuration, statistical reports
- Robust design with minor maintenance compared to competitors

Technical Data

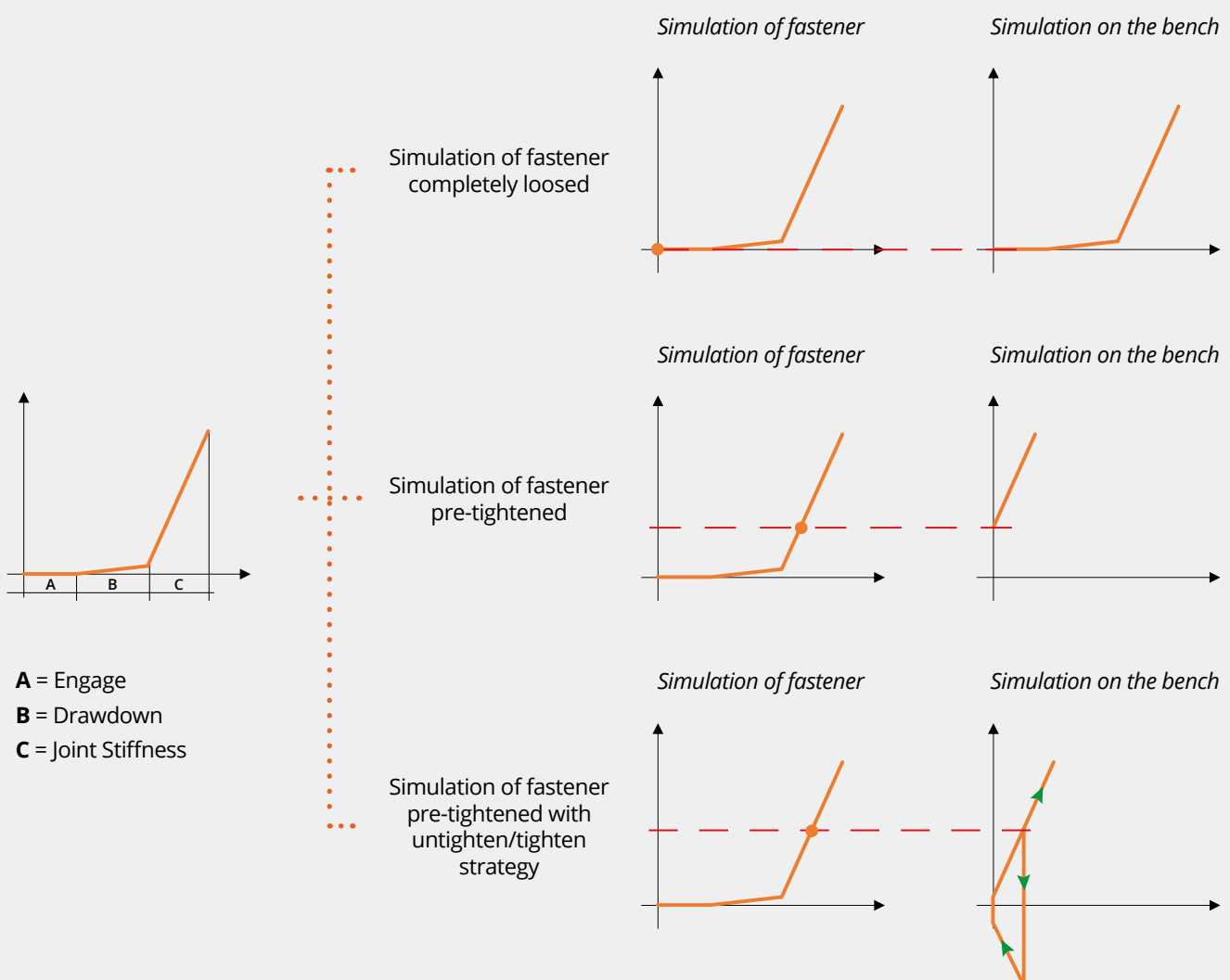
Torque range	0.2 N·m ÷ 2000 N·m maximum (the range depends from the transducers configuration)
Torque measurement accuracy	0.5% of the reading
Max tool speed	1100 rpm
Angle measurement accuracy	1° over 360°
Joint simulation range	15° to 360° (angle measured from 50% to 100% of the target torque)





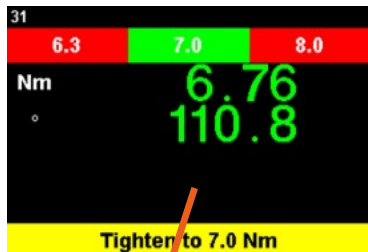
➤ Mechanical Wrench Loader

Example of parametrization of a fastener to be simulated



Compared test:

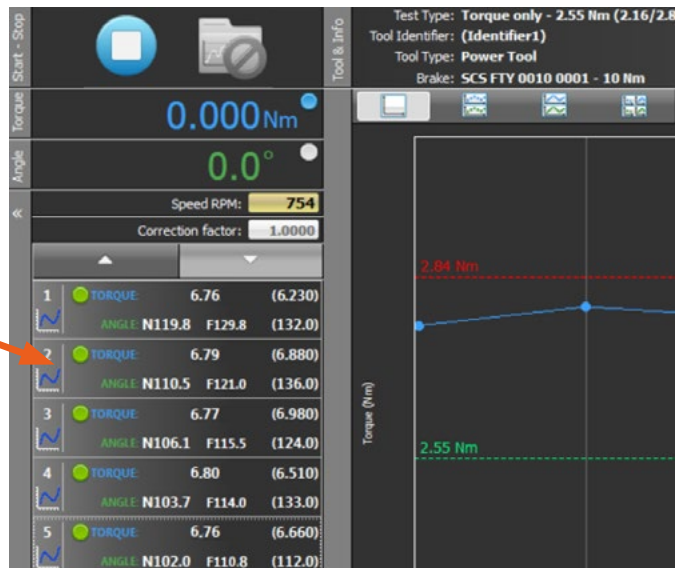
Bench results are compared with wrench results.
Automatic communication or manual results entry.



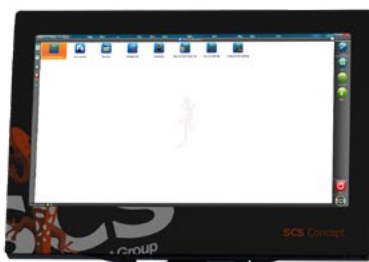
➤ Tool result



➤ SCS app

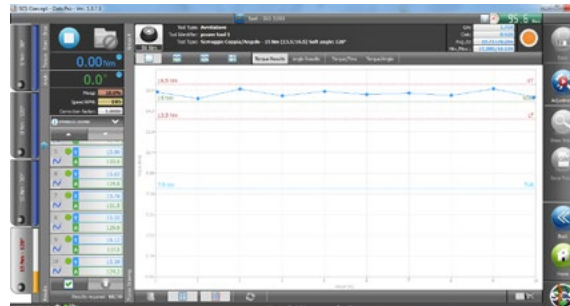
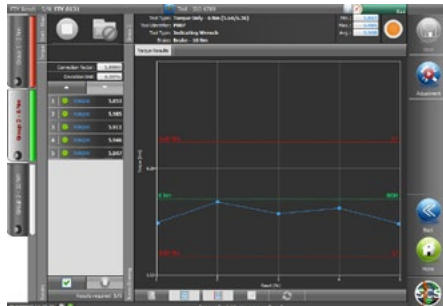


➤ Compared results

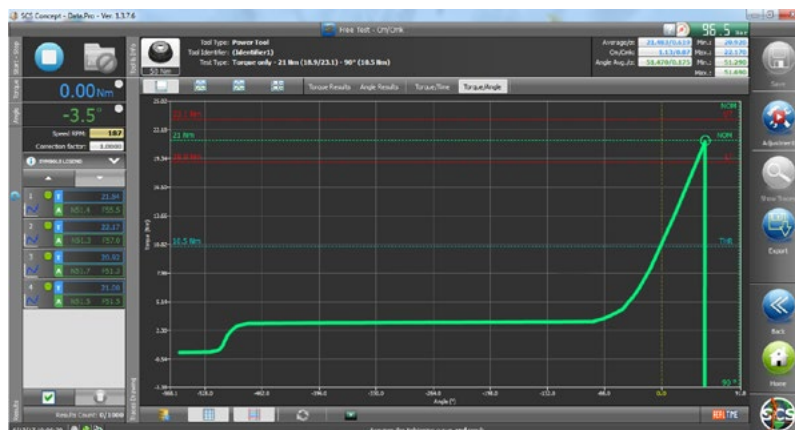




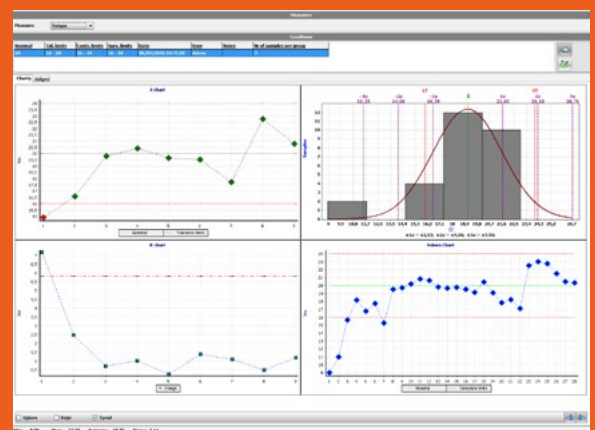
ISO 6789 test (torque wrench) and **ISO 5393** (power tools) for and extended test on the whole range of the tool under test.



Prevailing **torque simulation**



Statistical process control
(Cm-Cmk and control charts) with
SQnet+ software.





FTY

Power Tool and Wrench Dynamic Tester



Tilt



Motorized wheel



➤ Up/down spindle support



➤ External brake



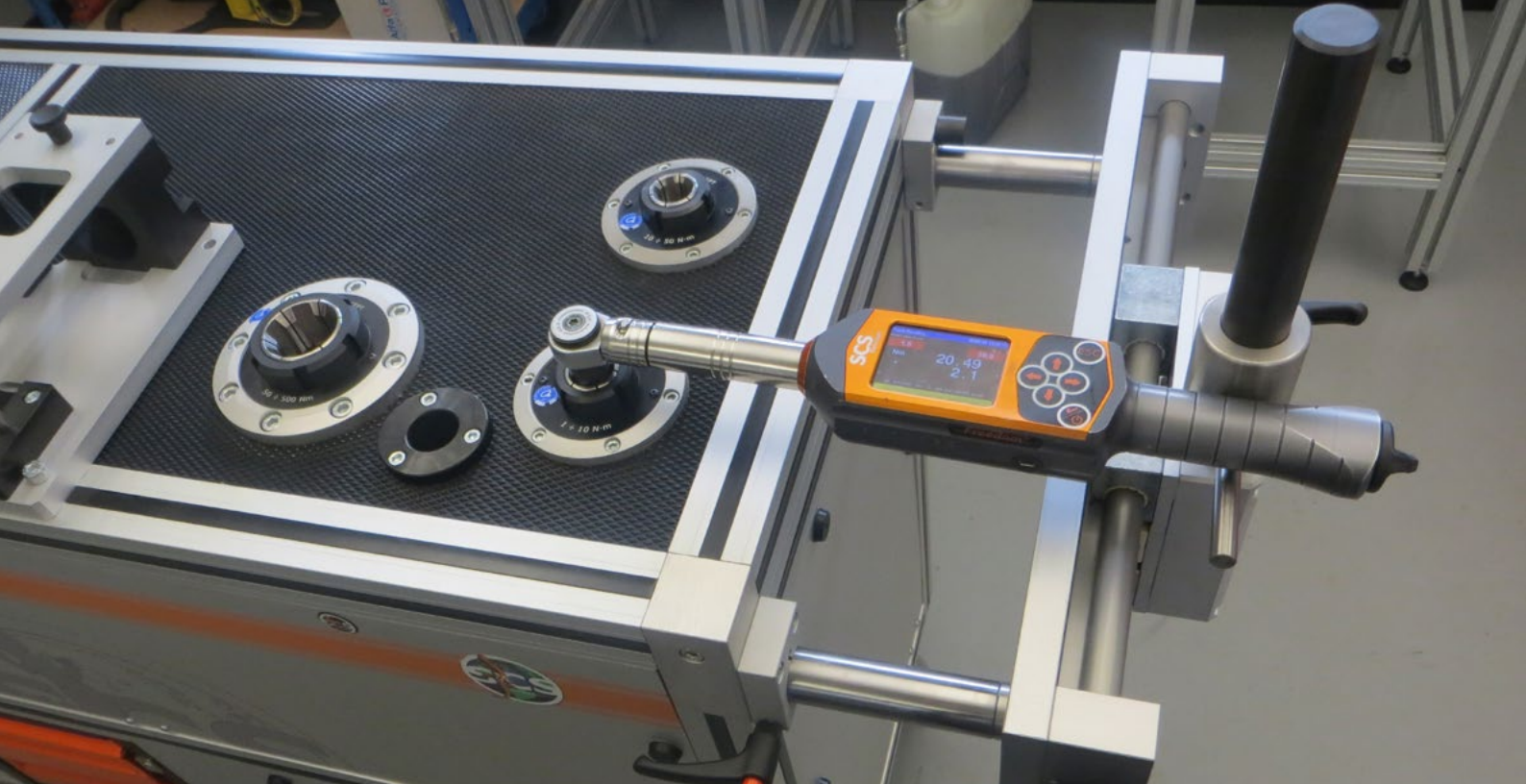
MSB

Wrench and Tool Static Tester

Features

- Test, pulse tools and direct driven rotary power tools with mechanical joint simulator. Torque wrenches (electronic/digital, click)
- Statistical Process Control: Measurement of machine capability (Cm, Cmk) and X, R charts
- Test according to ISO 6789
- Automatic detection of the click point of click wrenches
- Comparative test capability
- Mechanical wrench loader for torque wrenches
- External transducers connectivity for special tests
- Standalone programming or program with SQnet+ quality management software





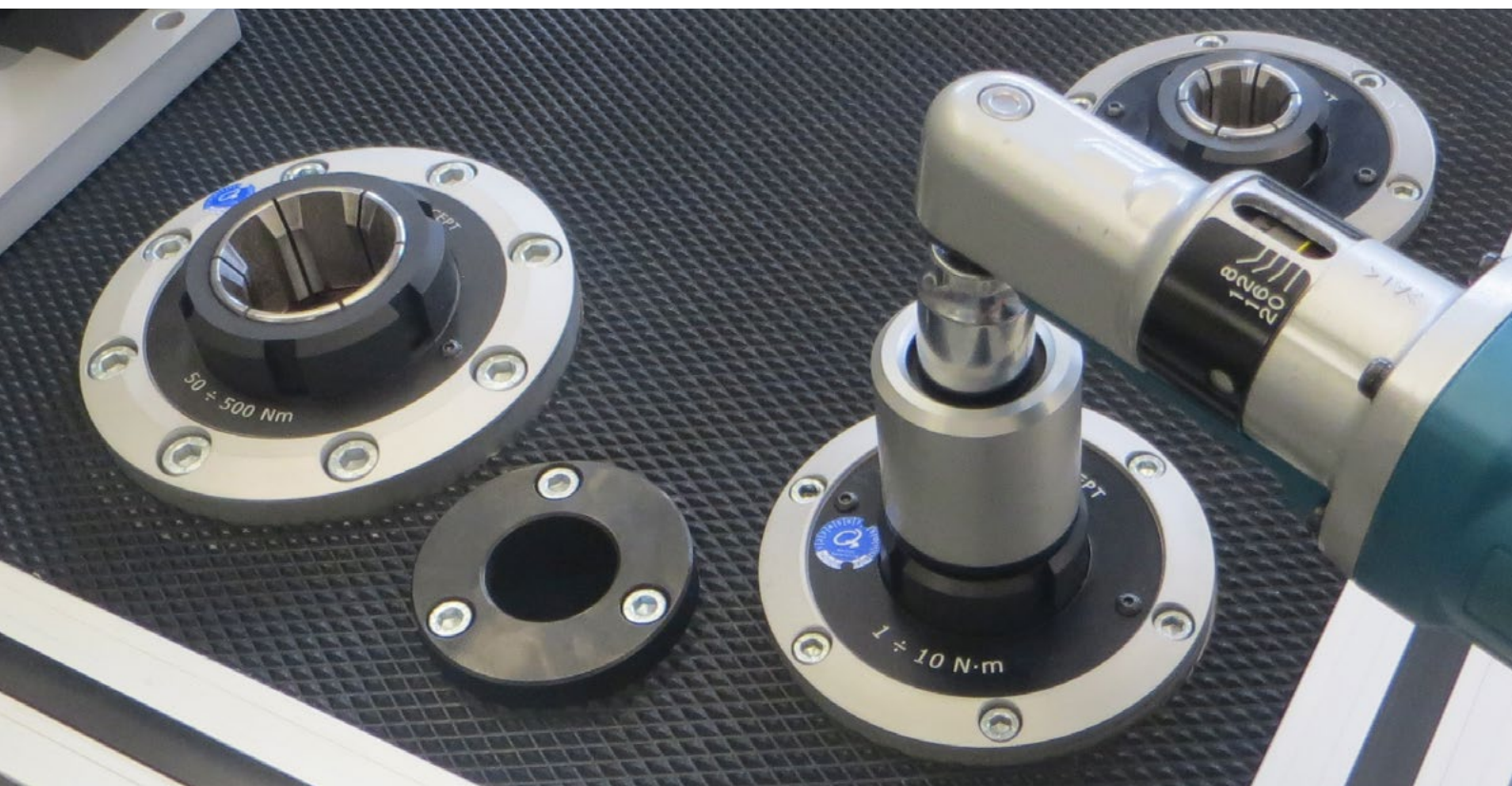
Benefits

- Easy test setup
- Easy to service – “plug & play” transducers
- Fully customized in hardware, transducers configuration, statistical reports
- Robust design with minor maintenance compared to competitors

Technical Data

Torque range 0.2 N·m ÷ 2500 N·m maximum (the range depends from the transducers configuration)

Torque measurement accuracy 0.5% of the reading



AWT

Automatic torque wrench test according to ISO 6789

Features

- Dynamically driven transducer for automated wrench testing
- Test according to ISO 6789
- Automatic detection of the click point of click wrenches
- Comparative test capability
- Clockwise and counterclockwise test
- Standalone programming or program with SQnet+ quality management software



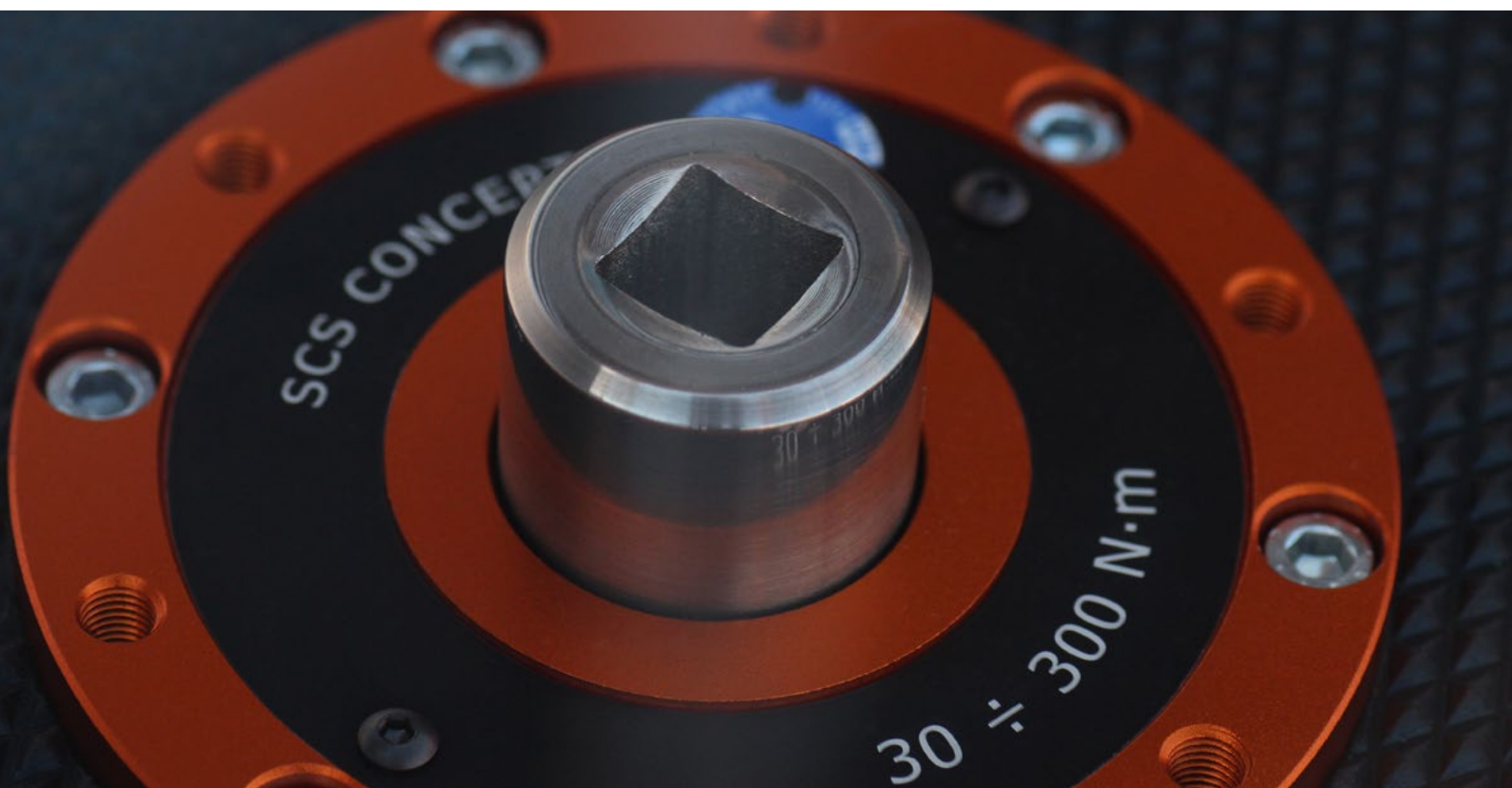


Benefits

- Lower total cost of ownership (TCO)
- Eliminate operator influence
- Productive, high thru put of wrenches
- Robust design with minor maintenance

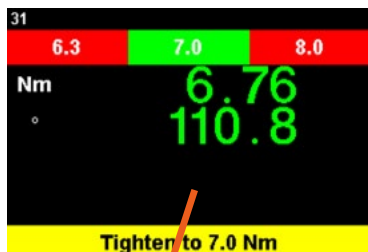
Technical Data

Torque range	0.3 N·m ÷ 1600 N·m maximum (the range depends from the transducers configuration)
Torque measurement accuracy	0.5% of the reading
Angle measurement accuracy	1° over 360°



Compared test:

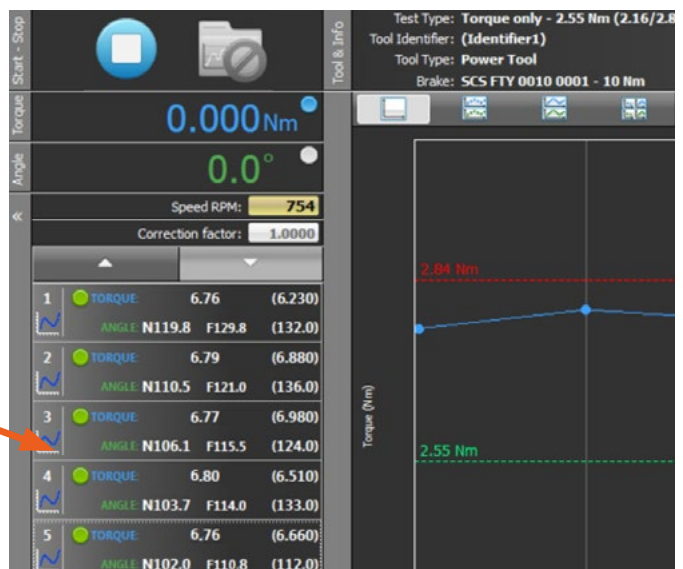
Bench results are compared with wrench results.
Automatic communication or manual results entry.



➤ Tool result



➤ SCS app

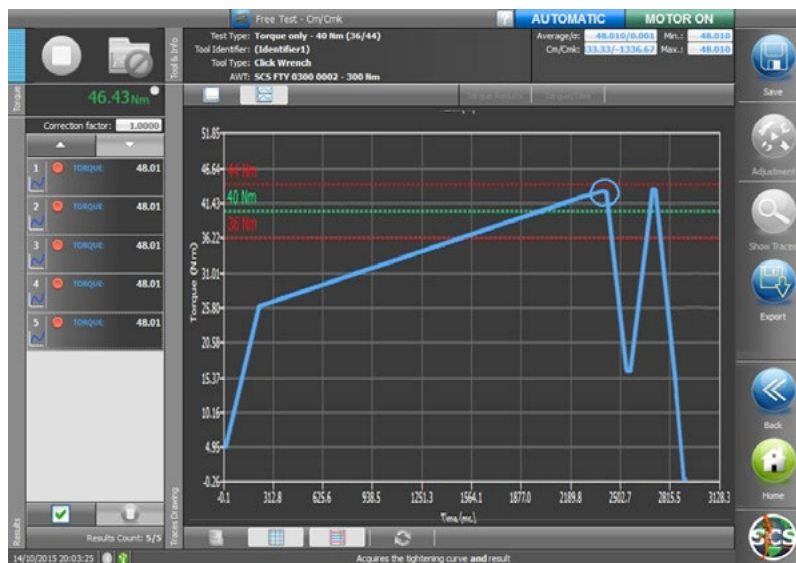


➤ Compared results

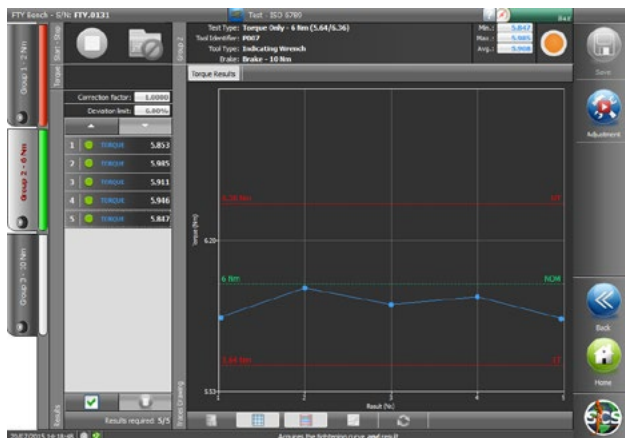




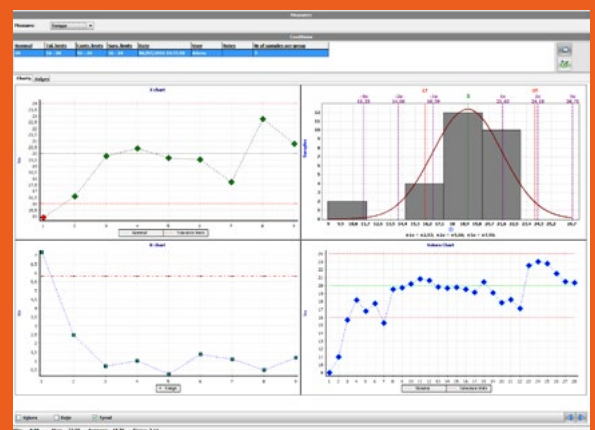
Automatic recognition of the wrench click.



ISO 6789 test for an extended test on the whole range of the torque wrench.



Statistical process control
(Cm-Cmk and control charts) with
SQnet+ software.



FTA

Automatic Torque/Angle Wrench test according to VDI/VDE 2645 and 2647

Features

- Automatic test of digital wrenches according to VDI/VDE 2645 part 2 and VDI/VDE 2647
- Comparative test capability
- Test wrenches with extension
- Clockwise or counter clockwise test
- Automatic detection of the click point of click wrenches
- Standalone programming or program with SQnet+ quality management software





Benefits

- Conforms to VDI/VDE norms and exceeds
- Lower total cost of ownership (TCO)
- Eliminate operator influence
- Productive, high thru put of wrenches
- Robust design with minor maintenance

Technical Data

Torque range	3 ÷ 300 N·m, 5 ÷ 500 N·m
Torque measurement accuracy	0.5% of the reading 1°
Angle measurement accuracy	over 360°



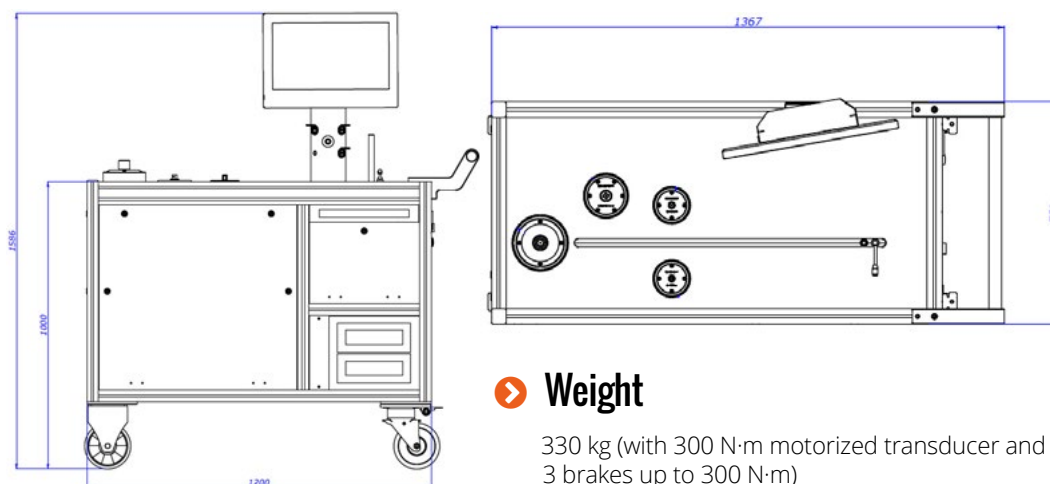
FTS

Power tools and automatic wrench certification



Features

- Test of wrenches (electronic/digital, click), pneumatic, electric and battery tools, pulse tools (except impact wrenches)
- Torque accuracy : 0.5% of the read value
- Angle accuracy : $\pm 1^\circ$ per 360°
- Joint simulation range for brake : 15° to 360°
- Max speed acceptable for brake : up to 2 000 rpm
- Local database with more than 256 Gb of capacity
- Print/export/curves
- Barcode reader to select assembly tools
- Statistic analysis
- Autonomy for up to 8 hours
- Motorized wheel (optional)
- Easy to maintain
- Comparative test capability
- Check your assembly tools before integration and during production with the same bench
- FTS bench can perform all types of control using the internal battery



➤ Weight

330 kg (with 300 N·m motorized transducer and 3 brakes up to 300 N·m)

Reference

133 60 0001	Freedom FTS 300	BRK 10-50-300	BIMOTORIZED GROUP 3-300
133 60 0003	Freedom FTS 500	BRK 10-50-500	BIMOTORIZED GROUP 5-500

➤ Every FTS bench is delivered with:

- Reaction bar
- Kit adaptors
- Calibration certificates
- USB key with manual, product safety, etc

➤ FTS

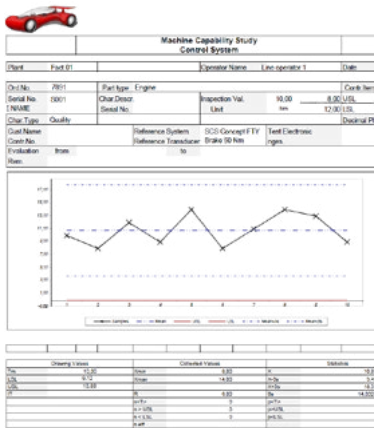
- ✓ Touch screen monitor 18,5"
- ✓ Two USB ports
- ✓ Network port 10/100 Base-T RJ-45
- ✓ Connector for external transducers with automatic recognition
- ✓ Multilanguage software Data.Pro and SQnet+



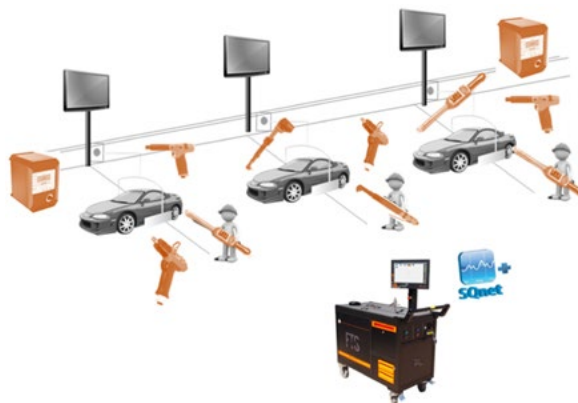
FTS - Global Overview

➤ A 360° quality solution

- ✓ Audit and manage all your assembly tools with ONLY one bench
- ✓ Test report referring to ISO and VDI Norms
- ✓ Tool checking alarm
- ✓ Route checking
- ✓ Print your test report
- ✓ Control and monitor the performance of your assembly tools
- ✓ Global overview of your assembly tools
- ✓ FTS bench allows you to connect an external transducer to check multi-spindle machines or pulse tools



➤ Customized report



➤ Route management



➤ Safety solution

The bench automatically detects if the torque set-up to check the wrench is compatible with the length of the reaction bar

Our brakes automatically release if the torque applied is too high



Minimum length check by FTS



- Compatible with all types of assembly tools
- Fulfil norms ISO 5393:2017, ISO 6789-1:2017, VDI/VDE 2645-2:2014
- Flexible, high performance and ergonomic
- Automatic and manual tools test
- Stand alone test with battery

Hybrid bench FTS

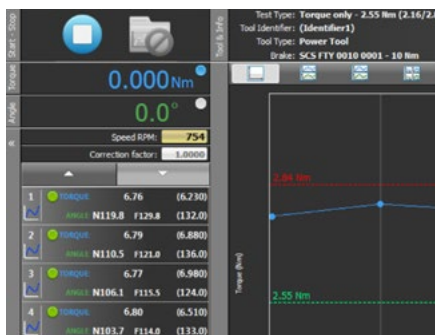
➤ AWT functionalities



➤ Motorized transducer

Wrench control and certification

- ✓ Automatic wrench test/report ISO 6789-1:2017 & VDI/VDE 2645-2:2014
- ✓ Automatic Cm/Cmk statistic analysis
- ✓ Compatible with electronic, slip and click wrench tools
- ✓ Automatic value comparison between testing device and bench
- ✓ Productivity
 - Improve your productivity with our automatic wrench test
 - Manage X/R chart and validate wrenches in production line



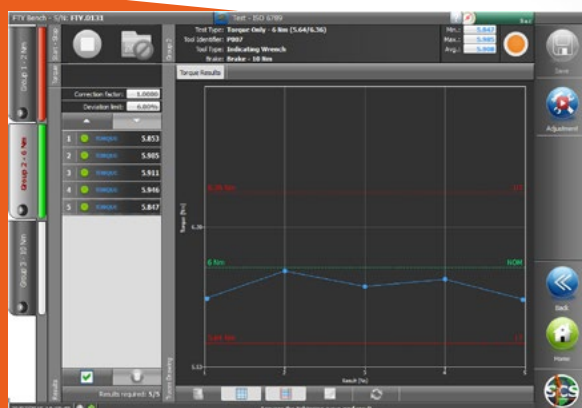
➤ Automatic value comparison

➤ Example of ISO 6789:2017 test

Group 1 →

Group 2 →

Group 3 →

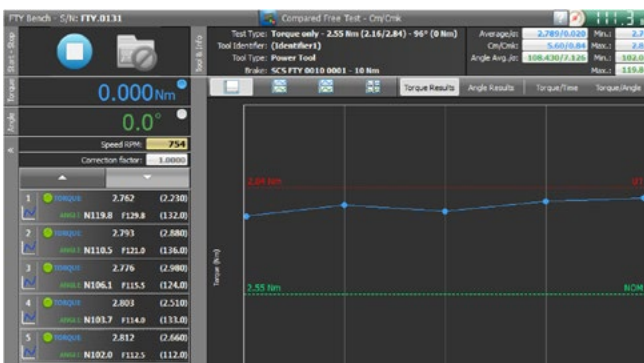
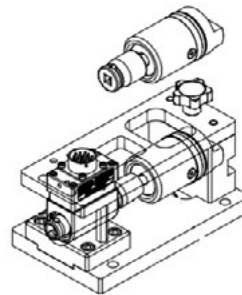


FTY functionalities



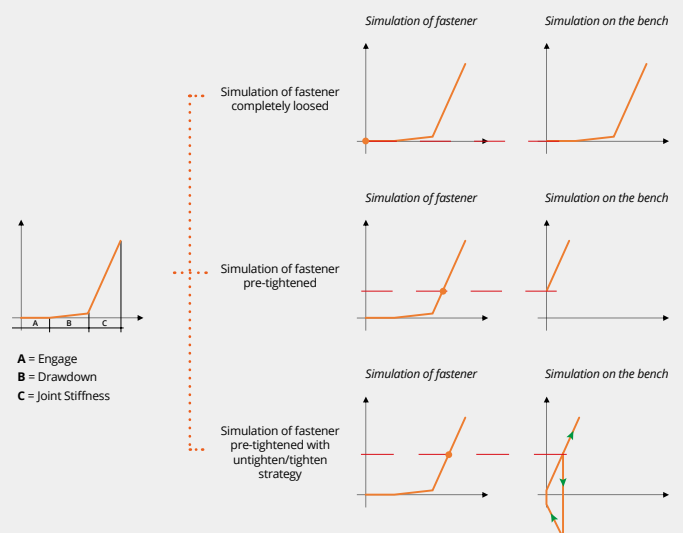
Power tools control and certification

- ✓ Dynamic Joint simulation to reproduce assembly joints
- ✓ Amazing Joint simulator allows you to conduct 50 tightenings in less than 2 minutes (Fastest breaking device of the market)
- ✓ Reproduce real joint behavior for testing power tools in real conditions and validate the multi-step program (according VDI/VDE 2645-2:2014)
- ✓ Compatible with all type of tools
 - Spindle with external rotary transducer
 - Impulse tools with our Freedom TH solution



CM / CMk following ISO 5393

Example of parametrization of a fastener to be simulated



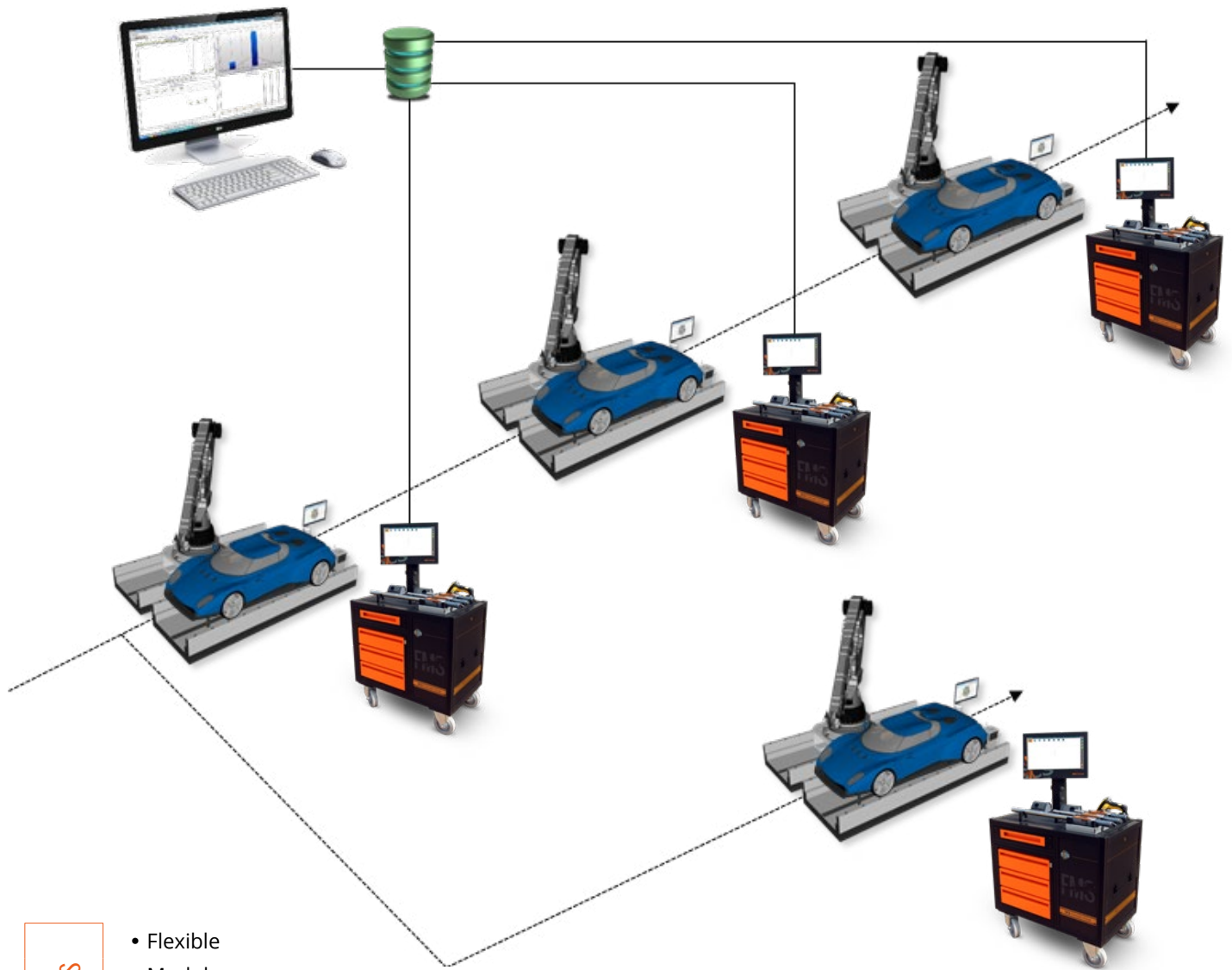
FMS Multistation

Online Rework, Backup, Pilot/Beta Build, Repair Station

Features

- Flexible and modular production system
- Error-proofed procedures to work parts along the production line
- Temporary replacement of a failed power tool, minimizing downtime
- Operates with SCS Freedom³ wrenches and third party DC power tools controllers
- Custom plugins communication capabilities
- Ability to work with multiple tools in parallel
- Several types of operations supported: tightening (torque and torque/angle), logical, barcode, generic
- VIN scanning
- Reports and statistics
- AC Power Supply with PC backup unit





Benefits

- Flexible
- Modular
- Efficient
- Error proofing capabilities
- Economic



Back-up tool

FMS can be used as a back up for tools used on the production line. Due to its flexibility, FMS can be easily moved along the production line and substitute the whole defecting unit, with a very short stop of the production.



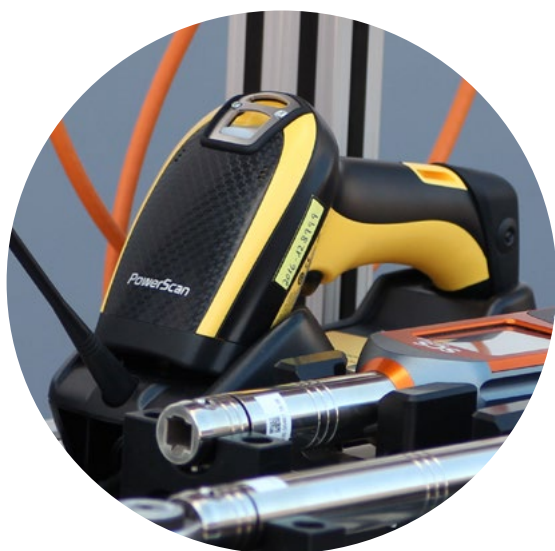
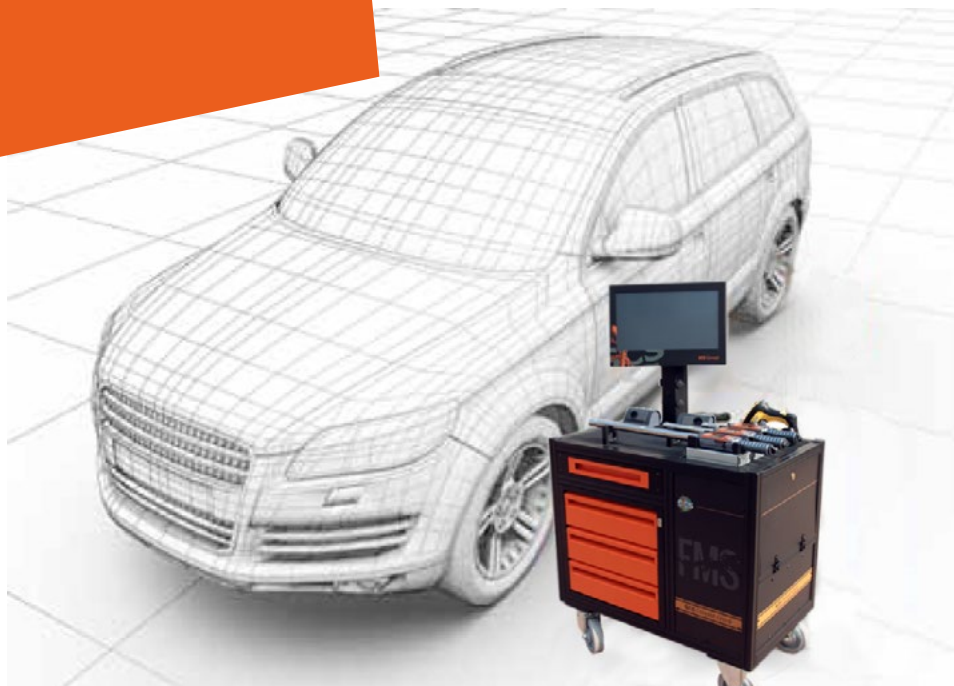
Repair

FMS can reproduce and production station. In case of a repair of a production item, FMS guides the operator in each phase of the rework procedure, with same quality and data traceability of the production line.

Beta pilot (pre-series)

or small production

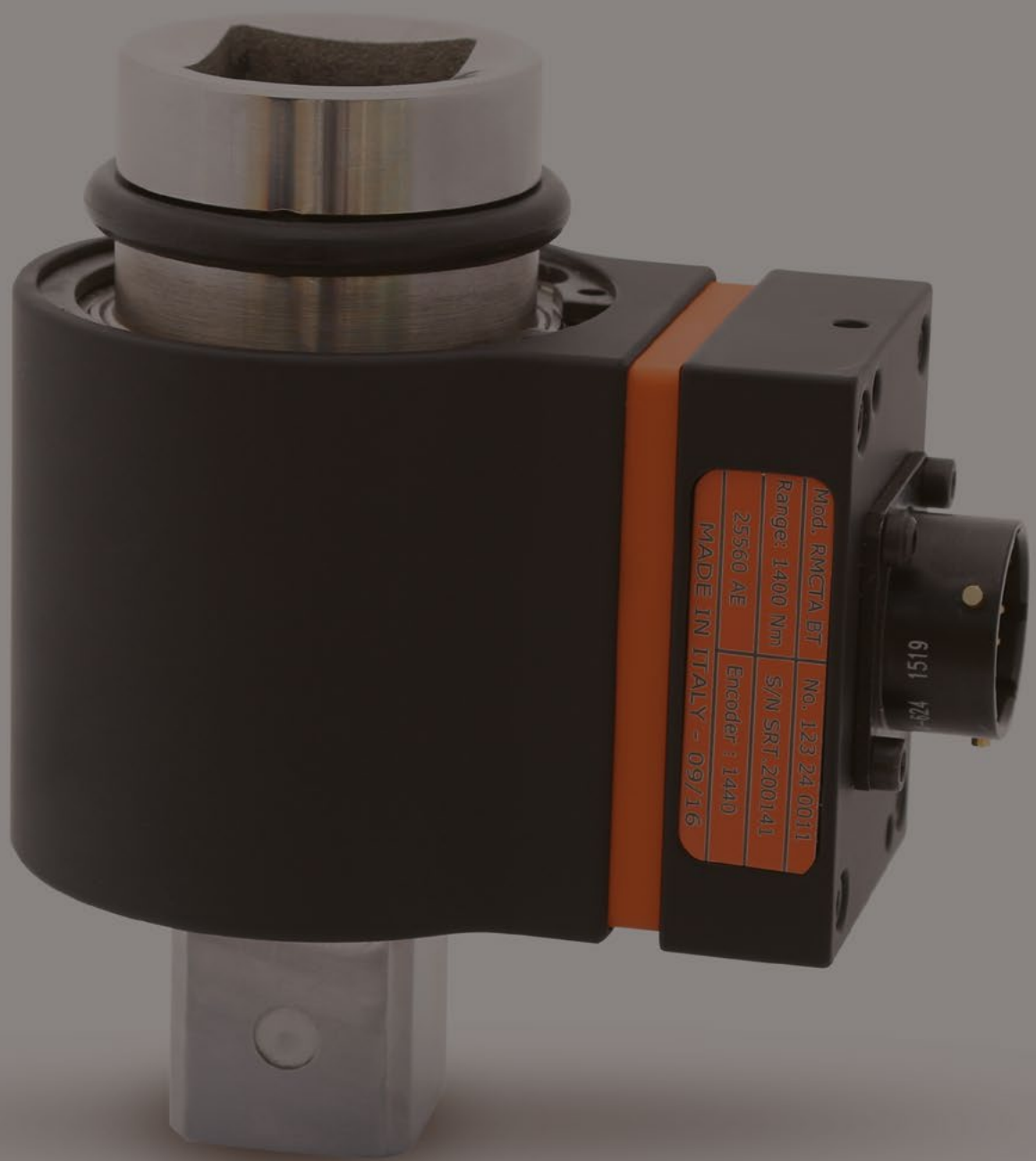
FMS is a perfect instrument for small production or for pre-series, where the tightening tools are not yet defined. It can store all the assembly operations of the production station.



- **Barcode** scanner for part recognition and traceability

Connection to power tools

FMS, with VPG+ software, can communicate directly with SCS Concept wrenches and most of the power tools controllers on the market, using the industrial protocols.



Transducers



Torque & Torque/Angle Rotary



Torque & Torque/Angle Rotary
Bluetooth



Torque Static



Torque Static
Bluetooth



FWE and FWE TA



RGT
Rivet Nut Gun Tester



FSE

Features!

- Memory chip for automatic recognition
- Calibration data stored inside the memory chip
- Cable or Bluetooth interface
- Robust design

Benefits

- Test all power tools and wrenches
- Quick connectivity
- Flexibility
- Durable, lower cost of ownership

Torque & Torque/Angle Rotary



RMC Torque Rotary Transducers

Code	Model	Capacity			Drive
		N·m	ft·lb	mm	
123 21 9001	Freedom RMC 2 HEX	2	1	HEX 1/4"	
123 21 9002	Freedom RMC 5 HEX	5	4	HEX 1/4"	
123 21 9016	Freedom RMC 10 HEX	10	4	HEX 1/4"	
123 21 9003	Freedom RMC 10	10	7	1/4"	
123 21 9004	Freedom RMC 20 HEX	20	15	HEX 1/4"	
123 21 9005	Freedom RMC 20	20	15	1/4"	
123 21 9006	Freedom RMC 25	25	19	3/8"	
123 21 9007	Freedom RMC 75	75	56	3/8"	
123 21 9008	Freedom RMC 180	180	133	1/2"	
123 21 9009	Freedom RMC 250	250	185	3/4"	
123 21 9010	Freedom RMC 500	500	370	3/4"	
123 21 9014	Freedom RMC 750	750	553.2	1"	
123 21 9011	Freedom RMC 1400	1400	1036	1"	
123 21 9012	Freedom RMC 3000	3000	2220	1 1/2"	
123 21 9013	Freedom RMC 5000	5000	3700	1 1/2"	
197 99 0015	RMC Cable - Torque Cable to connect RMC to Datacollector				

RMCTA Torque/Angle Rotary Transducers

Code	Model	Capacity			Drive
		N·m	ft·lb	mm	
123 22 9001	Freedom RMCTA 2 HEX	2	1	HEX 1/4"	
123 22 9002	Freedom RMCTA 5 HEX	5	4	HEX 1/4"	
123 22 9016	Freedom RMCTA 10 HEX	10	4	HEX 1/4"	
123 22 9003	Freedom RMCTA 10	10	7	1/4"	
123 22 9004	Freedom RMCTA 20 HEX	20	15	HEX 1/4"	
123 22 9005	Freedom RMCTA 20	20	15	1/4"	
123 22 9006	Freedom RMCTA 25	25	19	3/8"	
123 22 9007	Freedom RMCTA 75	75	56	3/8"	
123 22 9008	Freedom RMCTA 180	180	133	1/2"	
123 22 9009	Freedom RMCTA 250	250	185	3/4"	
123 22 9010	Freedom RMCTA 500	500	370	3/4"	
123 22 9014	Freedom RMCTA 750	750	553.2	1"	
123 22 9011	Freedom RMCTA 1400	1400	1036	1"	
123 22 9012	Freedom RMCTA 3000	3000	2220	1 1/2"	
123 22 9013	Freedom RMCTA 5000	5000	3700	1 1/2"	
197 99 0015	RMCTA Cable - Torque/Angle Cable to connect RMC to Datacollector				



Torque & Torque/Angle Rotary

Bluetooth



RMC Torque Rotary Transducers Bluetooth

Code	Model	Capacity			Drive
		N·m	ft·lb	mm	
123 23 0001	Freedom RMC 2 BT HEX	2	1	HEX 1/4"	
123 23 0002	Freedom RMC 5 BT HEX	5	4	HEX 1/4"	
123 23 0016	Freedom RMC 10 BT HEX	10	4	HEX 1/4"	
123 23 0003	Freedom RMC 10 BT	10	7	1/4"	
123 23 0004	Freedom RMC 20 BT HEX	20	15	HEX 1/4"	
123 23 0005	Freedom RMC 20 BT	20	15	1/4"	
123 23 0006	Freedom RMC 25 BT	25	19	3/8"	
123 23 0007	Freedom RMC 75 BT	75	56	3/8"	
123 23 0008	Freedom RMC 180 BT	180	133	1/2"	
123 23 0009	Freedom RMC 250 BT	250	185	3/4"	
123 23 0010	Freedom RMC 500 BT	500	370	3/4"	
123 23 0014	Freedom RMC 750 BT	750	553.2	1"	
123 23 0011	Freedom RMC 1400 BT	1400	1036	1"	
123 23 0012	Freedom RMC 3000 BT	3000	2220	1 1/2"	
123 23 0013	Freedom RMC 5000 BT	5000	3700	1 1/2"	

RMCTA Torque/Angle Rotary Transducers Bluetooth

Code	Model	Capacity			Drive
		N·m	ft·lb	mm	
123 24 0001	Freedom RMCTA 2 BT HEX	2	1	HEX 1/4"	
123 24 0002	Freedom RMCTA 5 BT HEX	5	4	HEX 1/4"	
123 24 0016	Freedom RMCTA 10 BT HEX	10	4	HEX 1/4"	
123 24 0003	Freedom RMCTA 10 BT	10	7	1/4"	
123 24 0004	Freedom RMCTA 20 BT HEX	20	15	HEX 1/4"	
123 24 0005	Freedom RMCTA 20 BT	20	15	1/4"	
123 24 0006	Freedom RMCTA 25 BT	25	19	3/8"	
123 24 0007	Freedom RMCTA 75 BT	75	56	3/8"	
123 24 0008	Freedom RMCTA 180 BT	180	133	1/2"	
123 24 0009	Freedom RMCTA 250 BT	250	185	3/4"	
123 24 0010	Freedom RMCTA 500 BT	500	370	3/4"	
123 24 0014	Freedom RMCTA 750 BT	750	553.2	1"	
123 24 0011	Freedom RMCTA 1400 BT	1400	1036	1"	
123 24 0012	Freedom RMCTA 3000 BT	3000	2220	1 1/2"	
123 24 0013	Freedom RMCTA 5000 BT	5000	3700	1 1/2"	

Torque Static



Torque Static Transducers Connected by Cable

Code	Model	Capacity		Drive
		N·m	ft·lb	mm
123 25 0002	Freedom SMC 2	2	1	1/4"
123 25 0010	Freedom SMC 10	10	7	3/4"
123 25 0020	Freedom SMC 20	20	15	3/4"
123 25 0050	Freedom SMC 50	50	37	3/4"
123 25 0100	Freedom SMC 100	100	74	3/4"
123 25 0250	Freedom SMC 250	250	185	3/4"
123 25 0500	Freedom SMC 500	500	370	3/4"
123 25 1000	Freedom SMC 1000	1000	740	1"
123 25 2500	Freedom SMC 2500	2500	1850	1 1/2"
197 99 0007	SMC Cable - Torque Cable to connect Static Transducer to Datacollector			

Torque Static Transducers Connected by Cable for Hydraulic Pulse Tools

Code	Model	Capacity		Drive
		N·m	ft·lb	mm
123 26 0002	Freedom SMCI 2	2	1	SA 21
123 26 0010	Freedom SMCI 10	10	7	SA 21
123 26 0020	Freedom SMCI 20	20	15	SA 21
123 26 0050	Freedom SMCI 50	50	37	SA 21
123 26 0100	Freedom SMCI 100	100	74	SA 24
123 26 0250	Freedom SMCI 250	250	185	SA 24
123 26 0500	Freedom SMCI 500	500	370	SA 36
123 26 1000	Freedom SMCI 1000	1000	740	SA 46
123 26 2500	Freedom SMCI 2500	2500	1850	SA 46
197 99 0007	SMCI Cable - Torque Cable to connect Static Transducer to Datacollector			

SA = Special adapter



Torque Static

Bluetooth



Torque Static Transducers Bluetooth

Code	Model	Capacity		Drive
		N·m	ft·lb	mm
123 11 0002	Freedom SMC 2 BT	2	1	1/4"
123 11 0010	Freedom SMC 10 BT	10	7	3/4"
123 11 0020	Freedom SMC 20 BT	20	15	3/4"
123 11 0050	Freedom SMC 50 BT	50	37	3/4"
123 11 0100	Freedom SMC 100 BT	100	74	3/4"
123 11 0250	Freedom SMC 250 BT	250	185	3/4"
123 11 0500	Freedom SMC 500 BT	500	370	3/4"
123 11 1000	Freedom SMC 1000 BT	1000	740	1"
123 11 2500	Freedom SMC 2500 BT	2500	1850	1 1/2"



Torque Static Transducers Bluetooth
for Hydraulic Pulse Tools

Code	Model	Capacity		Drive
		N·m	ft·lb	mm
123 13 0002	Freedom SMCI 2 BT	2	1	SA 21
123 13 0010	Freedom SMCI 10 BT	10	7	SA 21
123 13 0020	Freedom SMCI 20 BT	20	15	SA 21
123 13 0050	Freedom SMCI 50 BT	50	37	SA 21
123 13 0100	Freedom SMCI 100 BT	100	74	SA 24
123 13 0250	Freedom SMCI 250 BT	250	185	SA 24
123 13 0500	Freedom SMCI 500 BT	500	370	SA 36
123 13 1000	Freedom SMCI 1000 BT	1000	740	SA 46
123 13 2500	Freedom SMCI 2500 BT	2500	1850	SA 46

SA = Special adapter

FWE and FWE TA



FWE - Torque Wrench for DataTouch³

Code	Model	Capacity			Drive
		N·m	ft·lb	mm	
113 20 0005	Freedom FWE 5	5	3.7	**	
113 20 0010	Freedom FWE 10	10	7.4	**	
113 20 0015	Freedom FWE 15	15	11	9 x 12	
113 20 0030	Freedom FWE 30	30	22	9 x 12	
113 20 0070	Freedom FWE 70	70	52	9 x 12	
113 20 0100	Freedom FWE 100	100	74	9 x 12	
113 20 0200	Freedom FWE 200	200	148	14 x 18	
113 20 0300	Freedom FWE 300	300	222	14 x 18	
113 20 0400	Freedom FWE 400	400	296	14 x 18	
113 20 0600	Freedom FWE 600	600	444	14 x 18	
113 20 0800	Freedom FWE 800	800	592	Ø 20	
113 20 1000	Freedom FWE 1000	1000	740	Ø 20	
197 99 0006	FWE Cable - Torque Cable to connect Wrench to Datacollector				

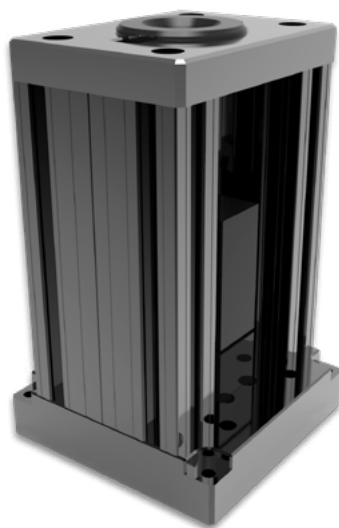
FWE TA - Torque/Angle Wrench for DataTouch³

Code	Model	Capacity			Drive
		N·m	ft·lb	mm	
113 21 0005	Freedom FWE TA 5	5	3.7	**	
113 21 0010	Freedom FWE TA 10	10	7.4	**	
113 21 0015	Freedom FWE TA 15	15	11	9 x 12	
113 21 0030	Freedom FWE TA 30	30	22	9 x 12	
113 21 0070	Freedom FWE TA 70	70	52	9 x 12	
113 21 0100	Freedom FWE TA 100	100	74	9 x 12	
113 21 0200	Freedom FWE TA 200	200	148	14 x 18	
113 21 0300	Freedom FWE TA 300	300	222	14 x 18	
113 21 0400	Freedom FWE TA 400	400	296	14 x 18	
113 21 0600	Freedom FWE TA 600	600	444	14 x 18	
113 21 0800	Freedom FWE TA 800	800	592	Ø 20	
113 21 1000	Freedom FWE TA 1000	1000	740	Ø 20	
197 99 0006	FWE TA Cable - Torque/Angle Cable to connect Wrench to Datacollector				



RGT

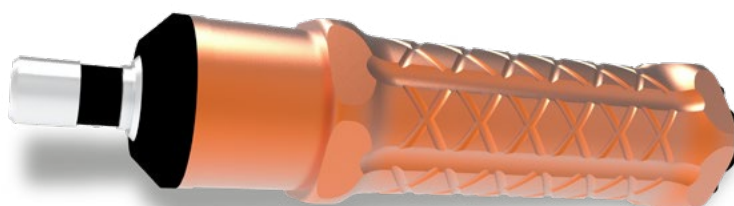
Rivet Nut Gun Tester



Code	Model	Capacity	A	B	C
			mm	mm	mm
123 99 0001	Freedom RGT 20	20 kN	211.5	129	115
123 99 0002	Freedom RGT 50	50 kN	211.5	129	115

FSE

Torque Screwdriver



Code	Model	Capacity		Drive
		N·m	ft·lb	mm
123 30 3001	FSE 2	2	1.48	HEX ¼"
123 30 3002	FSE 5	5	3.69	HEX ¼"
123 30 3003	FSE 10	10	7.38	HEX ¼"
197 99 0006	Cable			

Code	Model	Capacity		Drive
		N·m	ft·lb	mm
123 30 4001	FSE TA 2	2	1.48	HEX ¼"
123 30 4002	FSE TA 5	5	3.69	HEX ¼"
123 30 4003	FSE TA 10	10	7.38	HEX ¼"
197 99 0006	Cable			



Positioning System

position detection



FPS Freedom Positioning System

- Auto-learning of the working positions
- 3D coordinates used in **ATC** or **VPG+**
- Positioning System with SCS Concept wrenches
- **MiWi** system for power tools

FPS Freedom Positioning System

Ultrasonic systems with transmitters and receivers that identify the position of the tool on an assembly station.



Functions

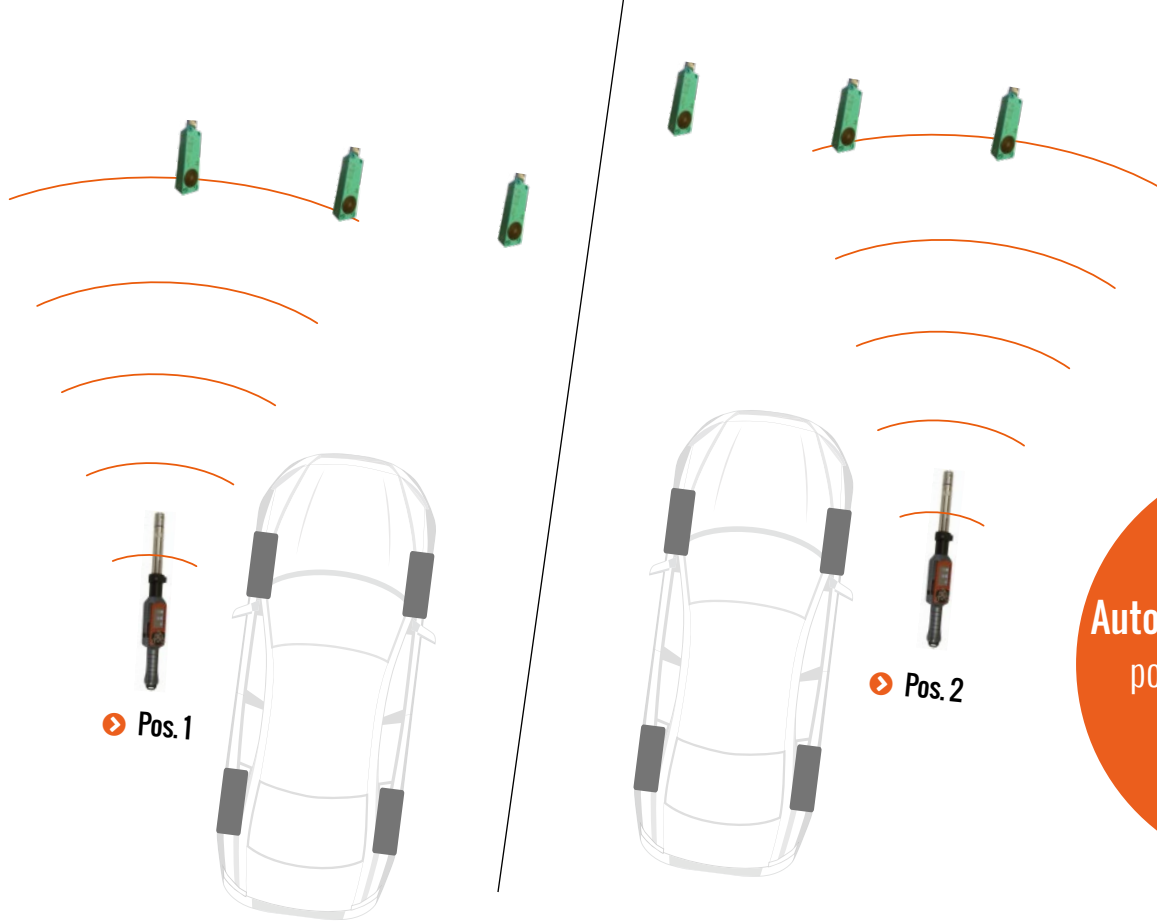
- Detection of the position of the tool on x, y, z axes
- Automatic cycle start or cycle end from the tool position
- Kit for SCS Concept Freedom wrenches
- Kit for power tools
- ATC software
- Interface with VPG+ (visual production guide)
- Flexible configuration of the receivers position to suit the working area
- Auto-learning of the working position for system configuration

Benefits

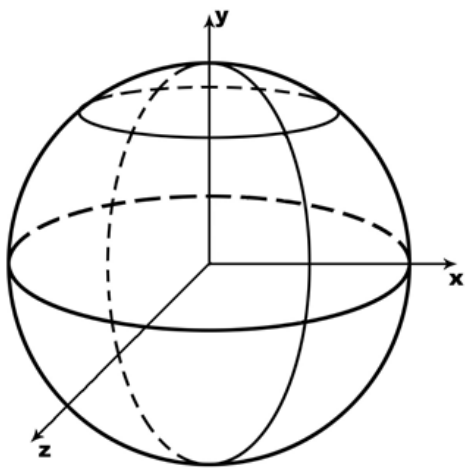
- Operator guidance
- Industry 4.0 compliance: Integration with SCS Concept and customer software systems
- Error proof assembly procedure with VPG+

Technical Data

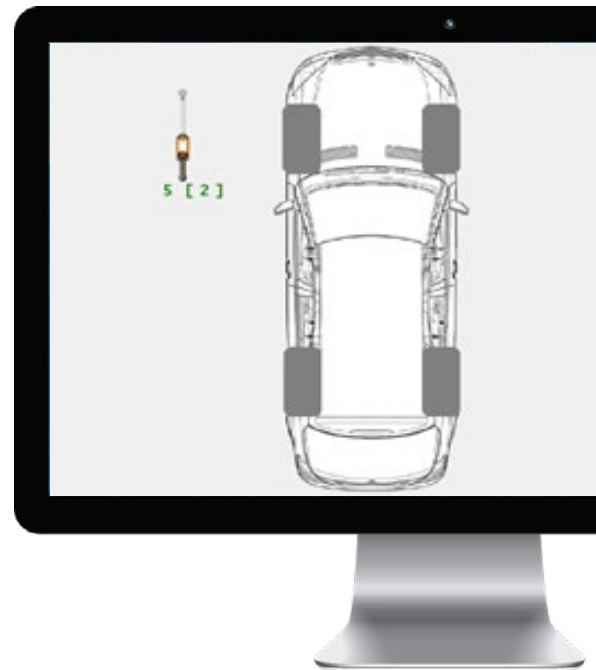
- Spatial resolution: 1 cm
- Range: 10 m
- Maximum receivers number: 16



Auto-learning of the working positions for the system configuration



➤ X,Y,Z

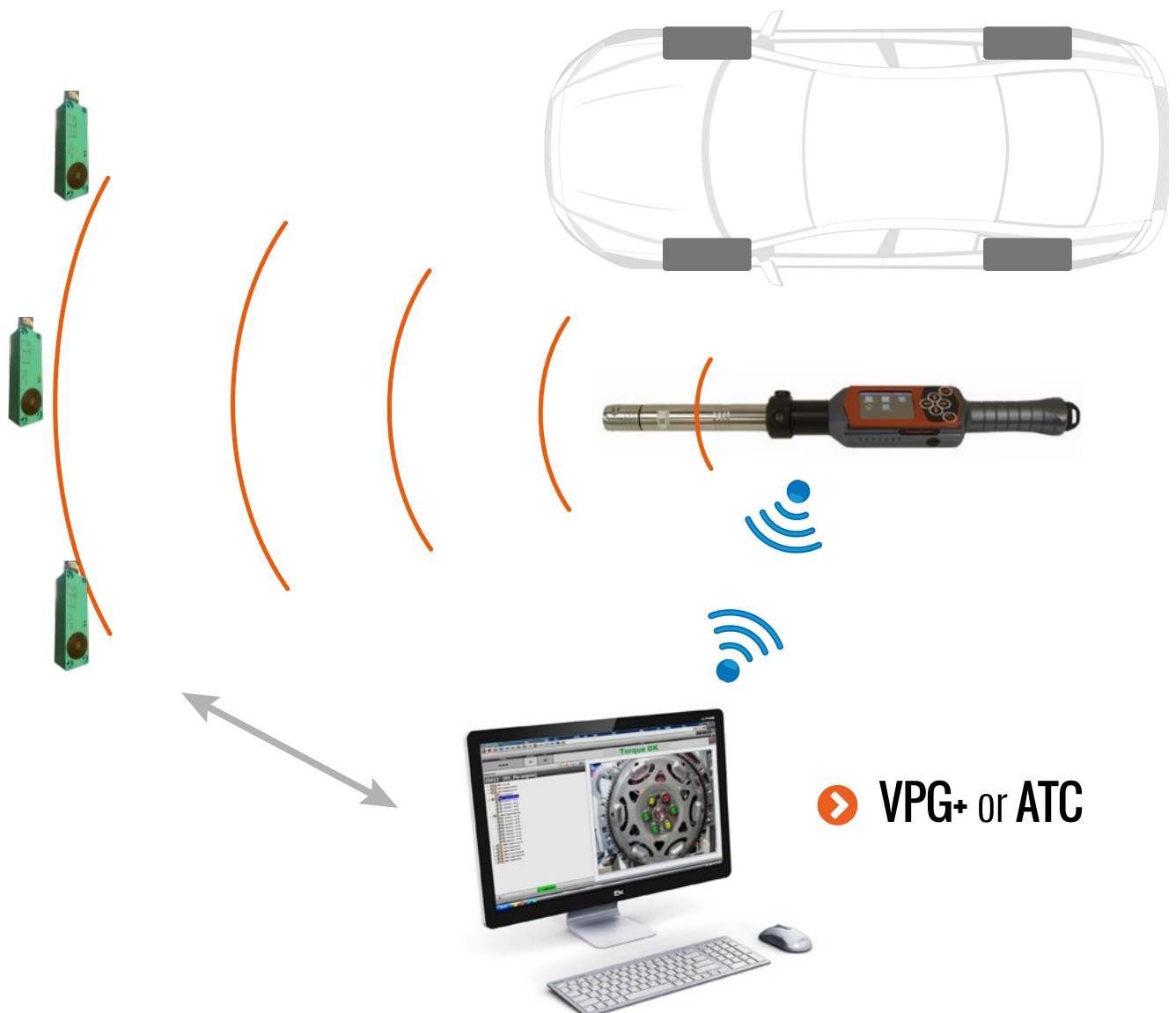


The **3D coordinates** of the tool are used by **ATC** or **VPG+** software to locate the tool and guide the operator in the correct assembly operation.



Positioning System with SCS Concept wrenches

- Transmitter is connected with the wrench electronic board, and communicates directly to **VPG+** or **ATC** software.
- **VPG+** and **ATC** takes actions based from the wrench position on the assembly station.
- If the wrench cradle is also a working position, when the operator put the wrench on it the software can recognize the end cycle.

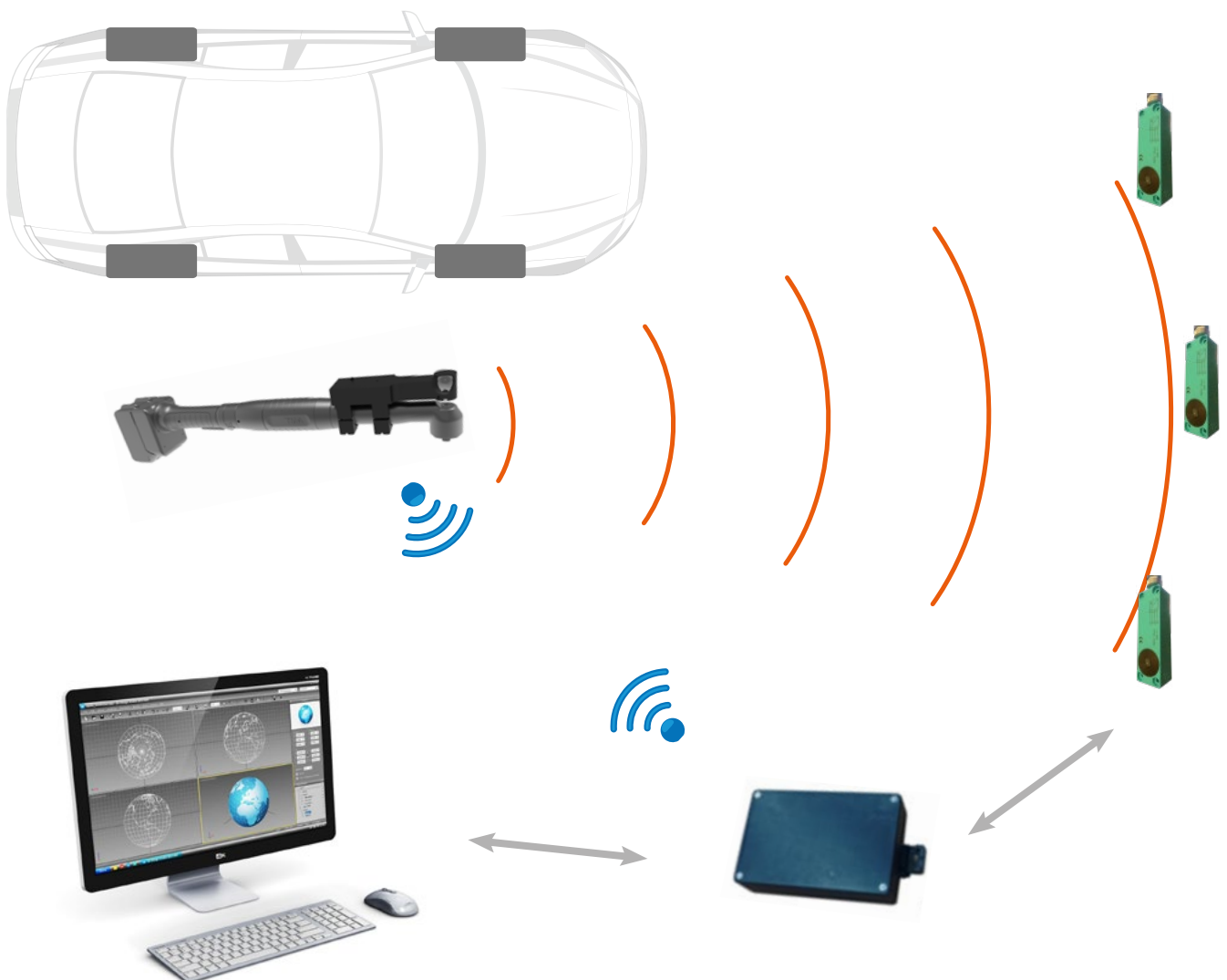


➤ **VPG+** or **ATC**



MiWi system for power tools

- Transmitter mounted on the tool, from which it takes the power supply
- Transmitter communicates to the system via **WiFi**
- The positioning system provides the spatial coordinated to the SCS software or to the customer system, which can take actions based from the tool position



➤ Customer system



Accessories



Open End



Ring Insert



Open Ring



Reversible Ratchet



Weld-On



Torque Multipliers

Open End

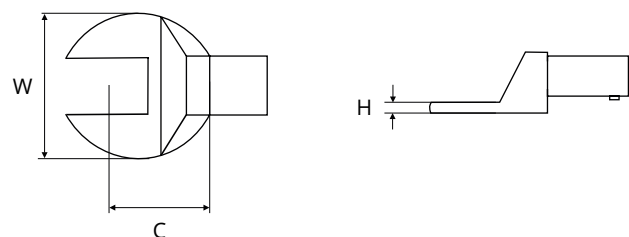


Code	Size	Width W	Height H	Center to Edge C	Weight	Insert
	mm	mm	mm	mm	g	mm
197 17 0024 197 17 9024	7	20.7	5.7	17.5	40	9x12
197 17 0025 197 17 9025	8	22	5.7	17.5	39	9x12
197 17 0026 197 17 9026	9	23.5	5.7	17.5	38	9x12
197 17 0027 197 17 9027	10	24.8	5.7	17.5	42	9x12
197 17 0028 197 17 9028	11	26	5.7	17.5	41	9x12
197 17 0029 197 17 9029	12	27.5	5.7	17.5	43	9x12
197 17 0030 197 17 9030	13	28.8	5.7	17.5	48	9x12
197 17 0031 197 17 9031	14	31.5	7.7	20	52	9x12
197 17 0032 197 17 9032	15	33.5	7.7	20	51	9x12
197 17 0033 197 17 9033	16	36	7.7	20	58	9x12
197 17 0034 197 17 9034	17	37.7	7.7	20	60	9x12
197 17 0035 197 17 9035	18	39	7.7	20	71	9x12
197 17 0036 197 17 9036	19	41.6	7.7	20	74	9x12
197 17 0037 197 17 9037	13	29.7	7	25	128	14x18
197 17 0038 197 17 9038	14	31.1	7	25	129	14x18

Code	Size	Width W	Height H	Center to Edge C	Weight	Insert
	mm	mm	mm	mm	g	mm
197 17 0039 197 17 9039	15	33.4	7	25	132	14x18
197 17 0040 197 17 9040	16	35.8	9	25	140	14x18
197 17 0041 197 17 9041	17	37	9	25	136	14x18
197 17 0042 197 17 9042	18	38.6	9	25	147	14x18
197 17 0043 197 17 9043	19	40.6	9	25	147	14x18
197 17 0044 197 17 9044	21	45.2	11	25	171	14x18
197 17 0045 197 17 9045	22	47.3	11	25	165	14x18
197 17 0046 197 17 9046	24	50.8	11	25	167	14x18
197 17 0048 197 17 9048	27	58.7	14	32.5	219	14x18
197 17 0049 197 17 9049	30	62.7	14	32.5	245	14x18
197 17 0050 197 17 9050	32	65.2	14	32.5	246	14x18
197 17 0051 197 17 9051	34	66.5	14	32.5	239	14x18
197 17 0052 197 17 9052	36	66.5	14	32.5	275	14x18
197 17 0053 197 17 9053	38	66.5	14	32.5	265	14x18
197 17 0054 197 17 9054	41	82.5	14	40	307	14x18

197 17 0*** = standard

197 17 9*** = with tool recognition chip





Ring Insert

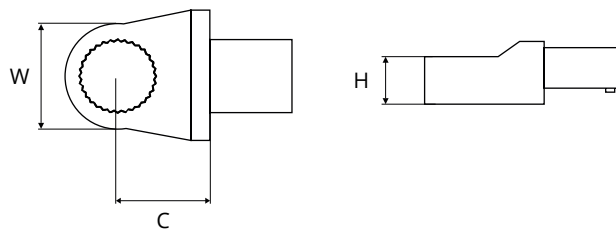


Code	Size	Width W	Height H	Center to Edge C	Weight	Insert
	mm	mm	mm	mm	g	mm
197 17 0055 197 17 9055	7	13.1	8	17.5	37	9x12
197 17 0056 197 17 9056	8	13.1	8	17.5	40	9x12
197 17 0057 197 17 9057	10	17.6	8	17.5	44	9x12
197 17 0058 197 17 9058	11	19	8	17.5	41	9x12
197 17 0059 197 17 9059	12	20.3	12.2	17.5	49	9x12
197 17 0060 197 17 9060	13	21.1	12.2	17.5	56	9x12
197 17 0061 197 17 9061	14	23.4	12.2	17.5	52	9x12
197 17 0062 197 17 9062	15	24.4	12.2	17.5	52	9x12
197 17 0063 197 17 9063	16	26.4	13.2	17.5	54	9x12
197 17 0064 197 17 9064	17	27.4	13.2	17.5	59	9x12
197 17 0065 197 17 9065	18	28.9	13.2	17.5	56	9x12
197 17 0066 197 17 9066	19	31	13.2	17.5	65	9x12
197 17 0067 197 17 9067	21	33.4	14.7	17.5	71	9x12
197 17 0068 197 17 9068	22	35	14.7	17.5	74	9x12
197 17 0069 197 17 9069	13	21	12	25	130	14x18

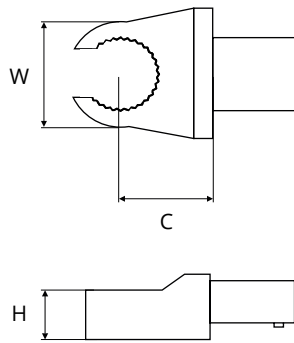
Code	Size	Width W	Height H	Center to Edge C	Weight	Insert
	mm	mm	mm	mm	g	mm
197 17 0070 197 17 9070	14	23	12	25	123	14x18
197 17 0071 197 17 9071	15	26	12	25	128	14x18
197 17 0072 197 17 9072	16	26	12	25	133	14x18
197 17 0073 197 17 9073	17	27.5	12.5	25	135	14x18
197 17 0074 197 17 9074	18	29.5	12.5	25	134	14x18
197 17 0075 197 17 9075	19	31	12.5	25	138	14x18
197 17 0076 197 17 9076	21	33	15	25	144	14x18
197 17 0077 197 17 9077	22	35	15	25	145	14x18
197 17 0078 197 17 9078	24	38	15	25	153	14x18
197 17 0079 197 17 9079	27	42	17.5	31	162	14x18
197 17 0081 197 17 9081	30	45.1	17.5	31	182	14x18
197 17 0082 197 17 9082	32	48	17.5	31	181	14x18
197 17 0083 197 17 9083	34	51	19	31	210	14x18
197 17 0084 197 17 9084	36	53	19	31	203	14x18
197 17 0085 197 17 9085	41	59.3	19	31	240	14x18

197 17 0*** = standard

197 17 9*** = with tool recognition chip



Open Ring

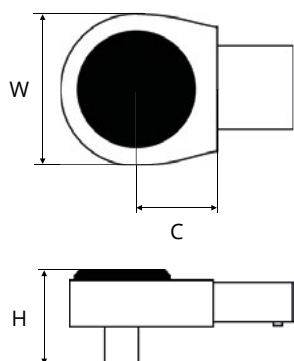


Code	Size	Width W	Height H	Center to Edge C	Weight	Insert
	mm	mm	mm	mm	g	mm
197 17 0126 197 17 9126	10	21.2	12	17.5	57	9 x 12
197 17 0127 197 17 9127	11	22.6	12	17.5	55	9 x 12
197 17 0128 197 17 9128	12	24.1	12	17.5	59	9 x 12
197 17 0129 197 17 9129	13	25.2	12	17.5	55	9 x 12
197 17 0130 197 17 9130	14	27.3	13	17.5	60	9 x 12
197 17 0131 197 17 9131	16	30.1	13	17.5	65	9 x 12
197 17 0132 197 17 9132	17	31.6	13	17.5	64	9 x 12
197 17 0133 197 17 9133	18	33.3	15	17.5	74	9 x 12
197 17 0134 197 17 9134	19	34.6	15	17.5	80	9 x 12
197 17 0135 197 17 9135	21	37.7	15	17.5	88	9 x 12
197 17 0136 197 17 9136	22	39.3	15	17.5	92	9 x 12

197 17 0*** = standard

197 17 9*** = with tool recognition chip

Reversible Ratchet



Code	Teeth	Width W	Height H	Center to Edge C	Weight	Fitting Size	Drive
		mm	mm	mm	g	mm	
197 17 0201 197 17 9201	52	25	23	17.5	69	9 x 12	1/4"
197 17 0202 197 17 9202	52	34	33	17.5	143	9 x 12	3/8"
197 17 0203 197 17 9203	52	34	38	17.5	154	9 x 12	1/2"
197 17 0205 197 17 9205	52	41	43	25	300	14 x 18	1/2"
197 17 0206 197 17 9206	52	41	51	25	338	14 x 18	3/4"
197 17 0007	36	70	60	75	1685	Ø 20	3/4"
197 17 0008 197 17 9208	36	70	60	152	2500	Ø 30	1"

197 17 0*** = standard

197 17 9*** = with tool recognition chip



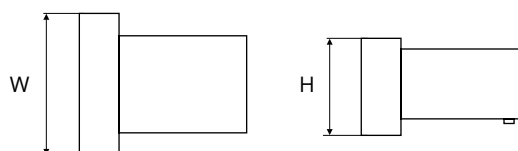
Weld-On



Code	Width W	Height H	Weight	Insert
	mm	mm	g	mm
197 17 0146 197 17 5146	17.4	14.5	28	9 x 12
197 17 0147 197 17 5147	26.3	22	94	14 x 18

197 17 0*** = standard

197 17 5*** = suitable for tool recognition chip



Torque Multipliers



Code	Square Drive	Torque Ratio	Gear Ratio	Max Input	Max Output	Weight
				N·m	N·m	kg
197 41 0001	1/2" F x 3/4" M	1:3.5	1:4	285	1.000	3.8
197 41 0002	1/2" F x 3/4" M	1:3.8	1:4.3	395	1.500	3.9
197 41 0003	1/2" F x 1" M	1:12.5	1:16	215	2.700	8.3
197 41 0004	3/4" F x 1" M	1:3.8	1:4	710	2.700	7.5
197 41 0005	3/4" F x 1 1/2" M	1:4.8	1:5.5	938	4.500	12.3
197 41 0006	1/2" F x 1 1/2" M	1:16.8	1:22	357	6.000	20
197 41 0007	1/2" F x 1 1/2" M	1:23.1	1:30.25	347	8.000	32
197 41 0008	3/4" F x 1 1/2" M	1:23.1	1:30.25	433	10.000	35.8
197 41 0009	1/2" F x 1 1/2" M	1:16.8	1:22	275	4.500	13.6



Software



SQnet+

Quality process manager for production line



VPG+

Visual production guide



Data.Pro

Torque/Angle Acquisition Software



SCS Explorer

Program and download data from SCS instruments

SQnet+

Quality process manager for production line



Tools Test

- 1 or 2 steps tool
- Pulse tool
- Click wrench
- Dial wrench
- ISO 6789
- ISO 5393

Miscellaneous

- User management
- Tools archives
- Joint archive
- Test scheduling
- Route of tests for control instruments
- Data traceability with VIN management

Quality Control

- Smart Breakaway
- Breakaway angle
- Breakaway peak
- Loosen/Tighten
- Minimum torque
- Loose torque

Benefits

- Production line quality improvement
- Reports and statistics
- Structured data and traceability
- Connectivity with all SCS reporting capable products
- Custom functions per customer need

Statistics

- Statistic process control
- Cm-Cmk and X/R charts
- Cp-Cpk and X/R charts
- Global traces composition
- Customized reports
- Export to Excel



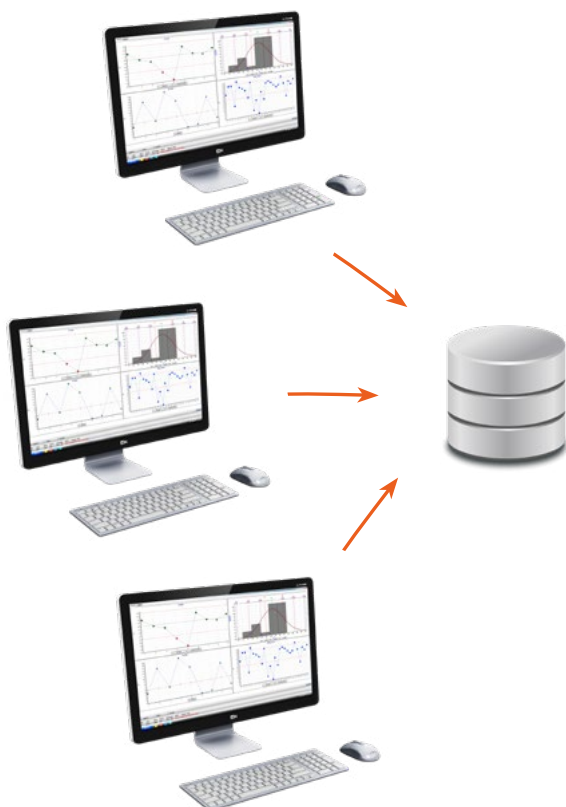
➤ Local PC database



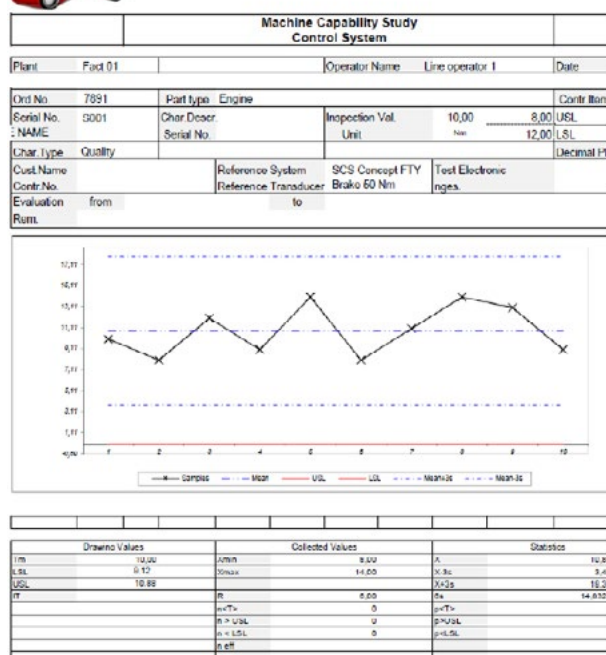
➤ Local **bench** database



➤ Network database



➤ Customized reports

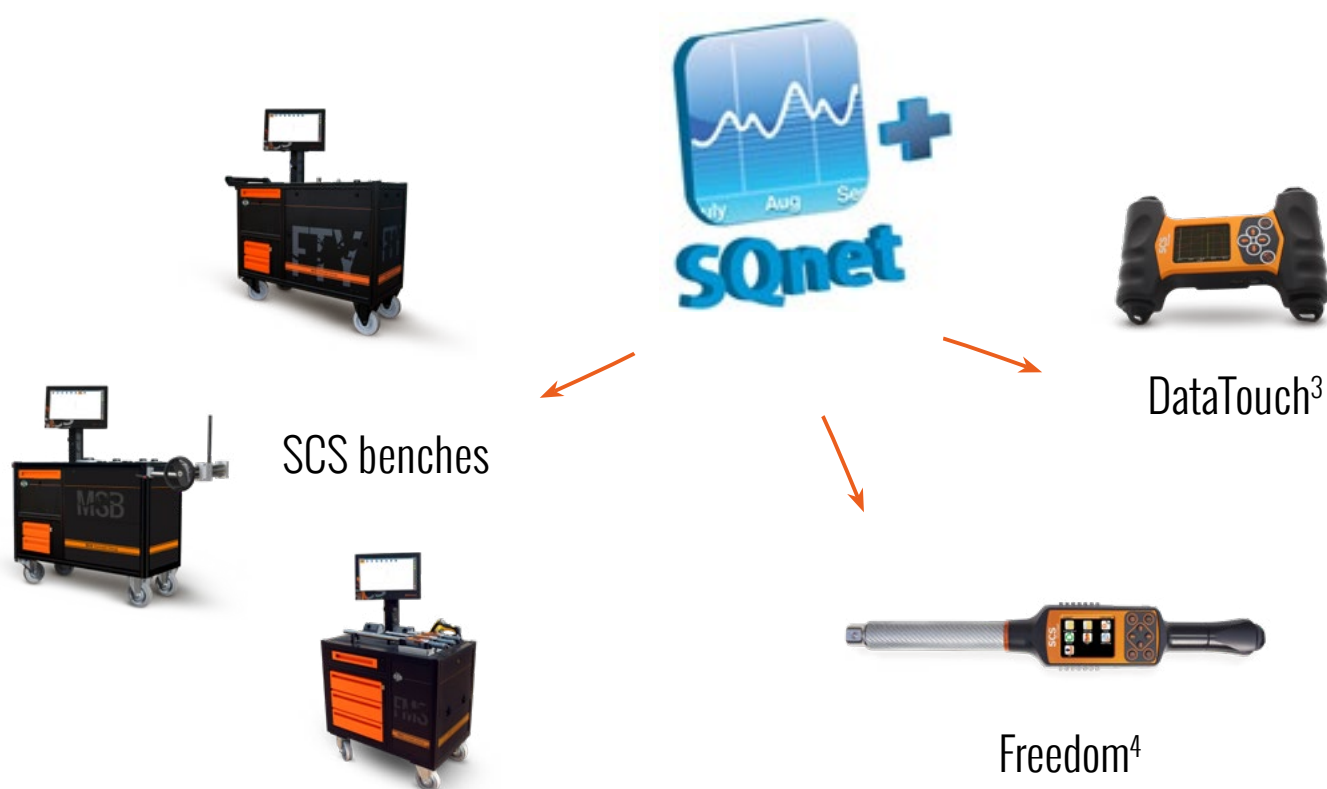


➤ Customizable functions on customer needs

➤ Compared test definitions and reports

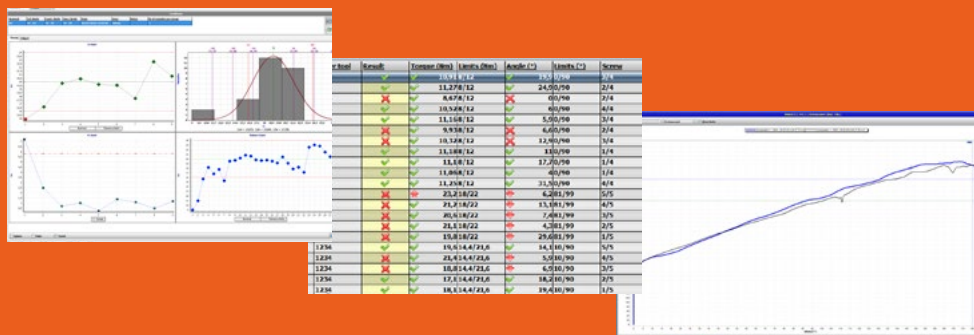
Control Instruments

➤ SCS Instruments Programming



Analysis

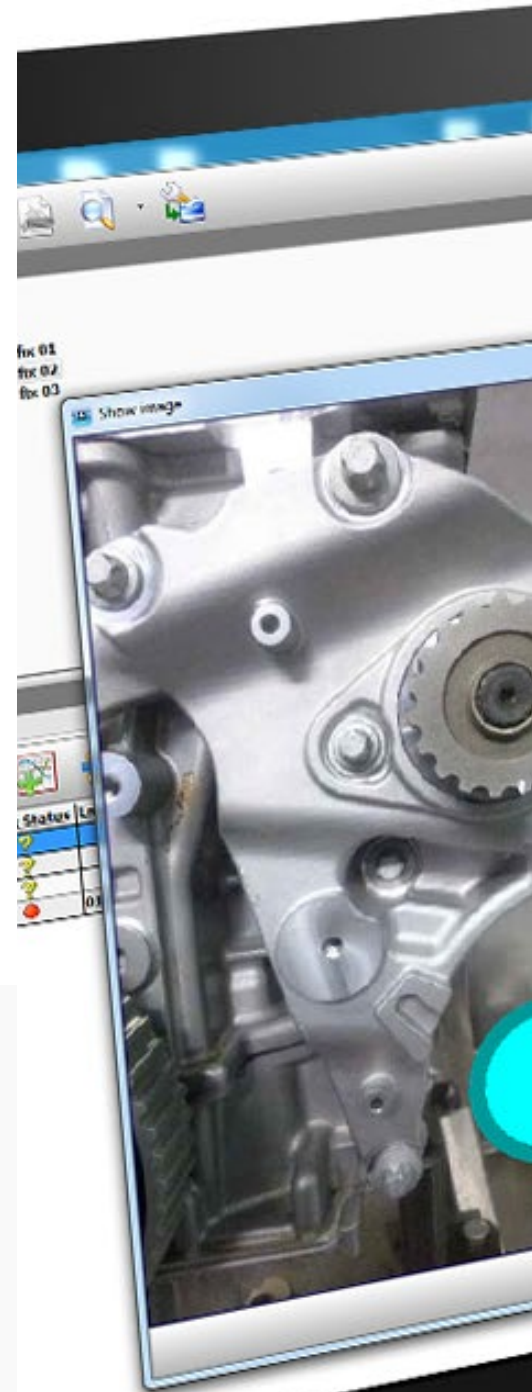
➤ Results, Traces, Statistics



Power tools and Wrenches Management

- Tools archive
- Test definition
- Test scheduling
- Cm-Cmk and X, R charts

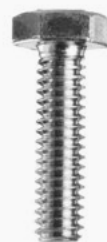
Check status	Last check	Next check	Cm/Cp
●	06/06/201...	20/06/2016	1.42
●	06/06/201...	20/06/2016	1.09
●	06/06/201...	20/06/2016	3.41
●	06/06/201...	20/06/2016	4.2
●	13/06/201...	27/06/2016	2.88
✗	29/09/201...	14/10/2016	1.72
●	13/06/201...	27/06/2016	2.43
✗	29/09/201...	14/10/2016	3.81
●	06/06/201...	20/06/2016	2.57
●	06/06/201...	20/06/2016	2.58
●	01/06/201...	15/06/2016	0.78



Operations (joints) Management

- Operations archive
- Residual torque test definition
- Test scheduling
- Cp-Cpk and X, R charts

Test type	Check Status	Last check	Next check
Loose/tighten	?	06/05/2017	15/05/2017
Torque/angle	●	16/05/2017	25/05/2017
Breakaway (peak)	●	16/05/2017	25/05/2017
Torque only	●	16/05/2017	25/05/2017



VPG+

Visual production guide



Features

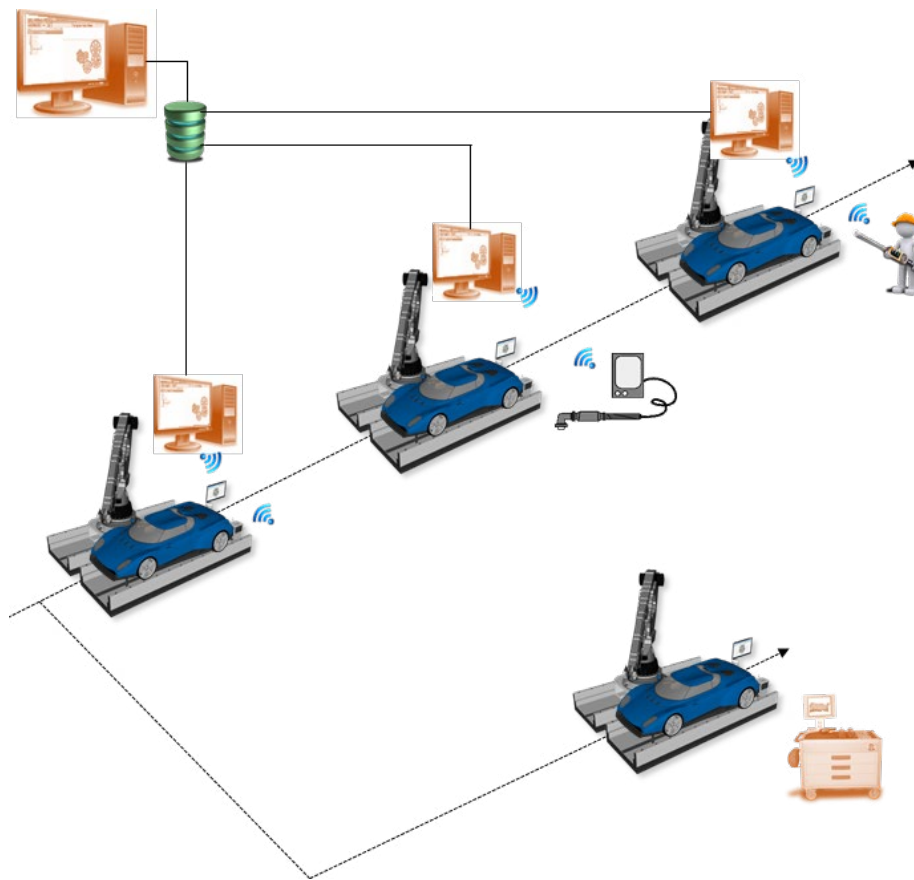
- Operator guidance during the assembly and rework processes
- Error proof procedures
- Automatic selection of the correct tightening program and the associated tool for the operation
- Visual instructions for the operator
- Real time status
- Manual or automatic mode for rework or assembly procedures
- Data traceability with VIN management

Benefits

- Zero fault assembly
- Rework process capabilities
- Cost effective solution for rework and assembly process
- Improve quality
- Operator guidance
- Structured data and traceability
- Connectivity with all SCS reporting capable products
- Custom functions per customer need

Can be installed on
FMS Freedom Multistation.
It communicates with **SCS wrenches** and most of the power
tools controlled available on the
market

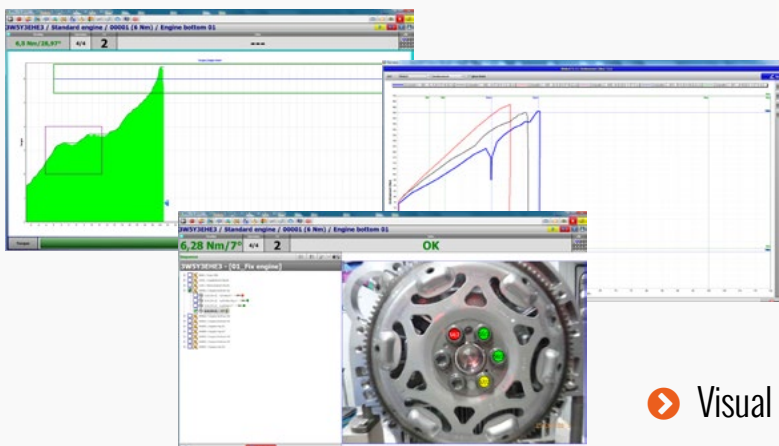
Manual or automatic mode for rework or assembly procedures



Data Traceability

- with VIN management
- check after the assembly with the VIN

➤ Real time torque rate check

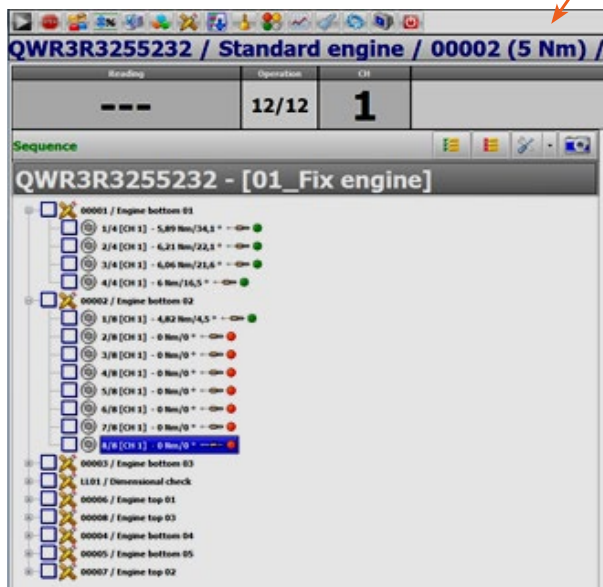
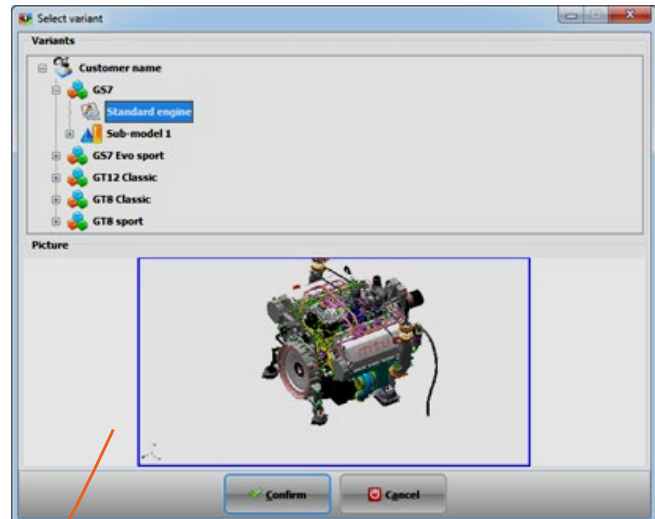


➤ Results and traces analysis

➤ Visual procedure

➤ Procedure selection directly from the part

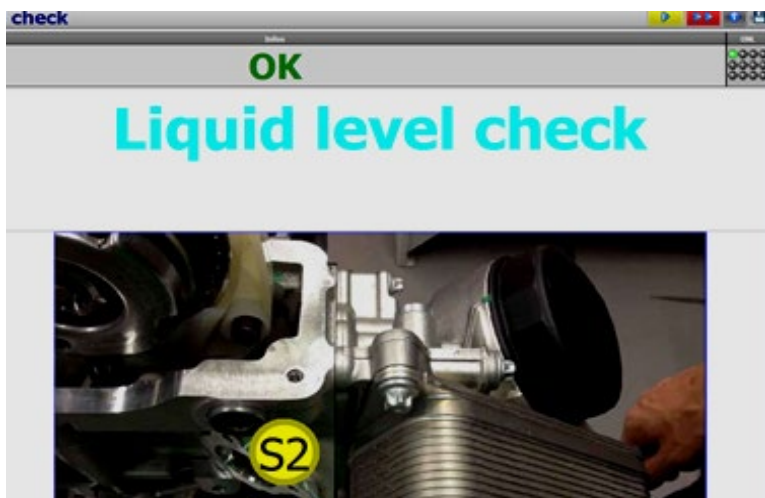
Selecting the part



Procedure for the selected part

➤ **Open protocol / Full protocol** interface
for external tool controllers

➤ **Handling of other operations**
than tightening:
logical operations, positioning , liquid level
check, distance measurement, ...



Reading		Operation
4,9 l		3/3
Sequence		
EQ2E23 - [01_Fix engine]		
☐	BB01 / Scan VIN	
☐	1/1 [CH 0] - 11162AA	
☐	GG01 / Liquid level check	
☐	1/1 [CH 0] - 4,9 lt	

➤ Can **work offline** and download data to database
when connected again to the network

Data.Pro

Torque/Angle Acquisition Software



Features

- Power tool test
- Bluetooth communication with SCS Concept transducers
- Real time results
- Test and traces storage
- Traces view with overlapping function
- User friendly

Benefits

- Cost effective solution

Radio connection with **SCS transducers**, for easy **test programming and execution**

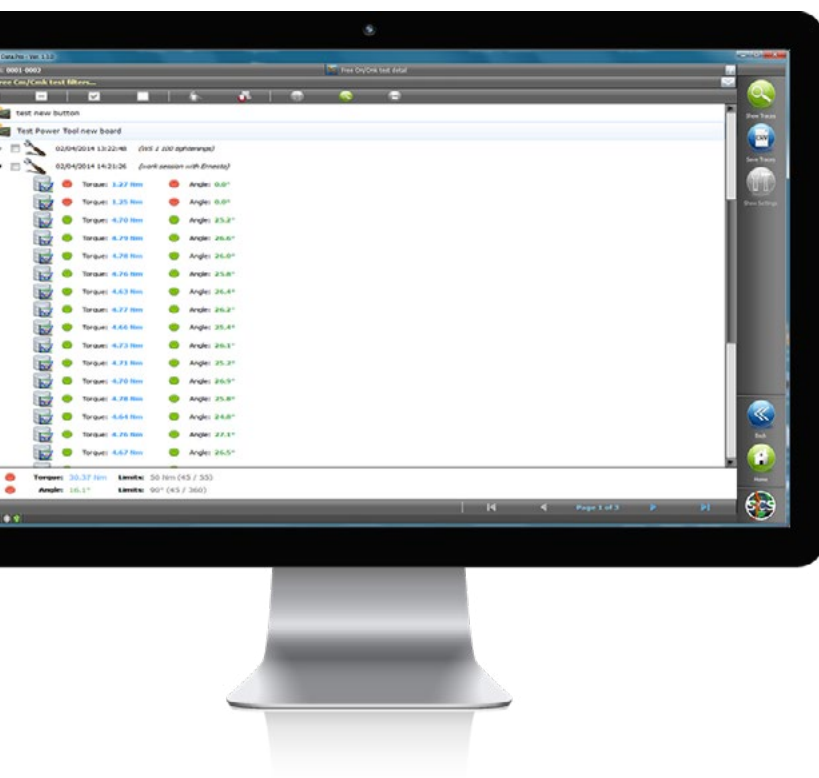
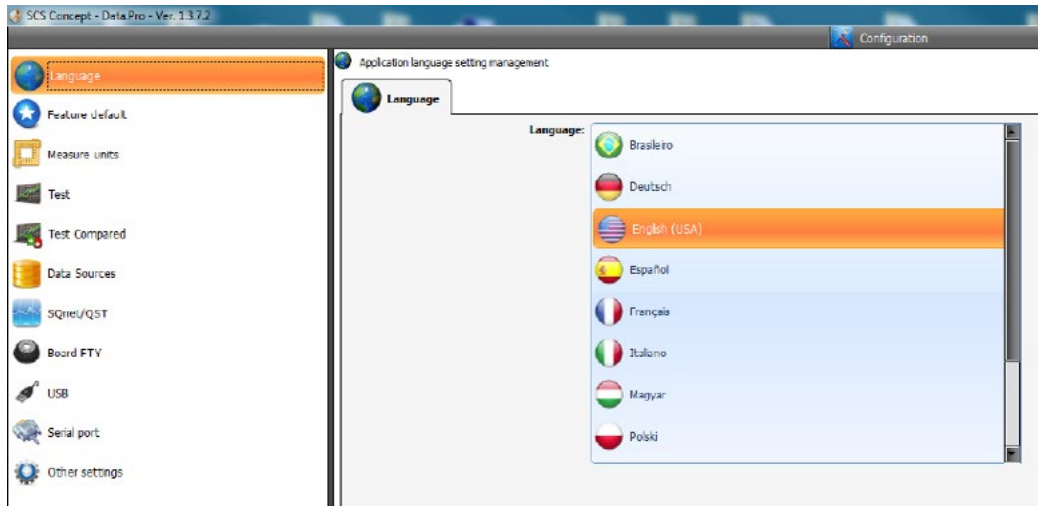


➤ The SCS Concept **transducer** is **connected** to the **PC** with **Data.Pro**
The **test** is **programmed** from the **PC** with the following test strategies:

- Power tool
- Pulse tool
- Click wrench
- Dial wrench
- Dial torque/angle wrench

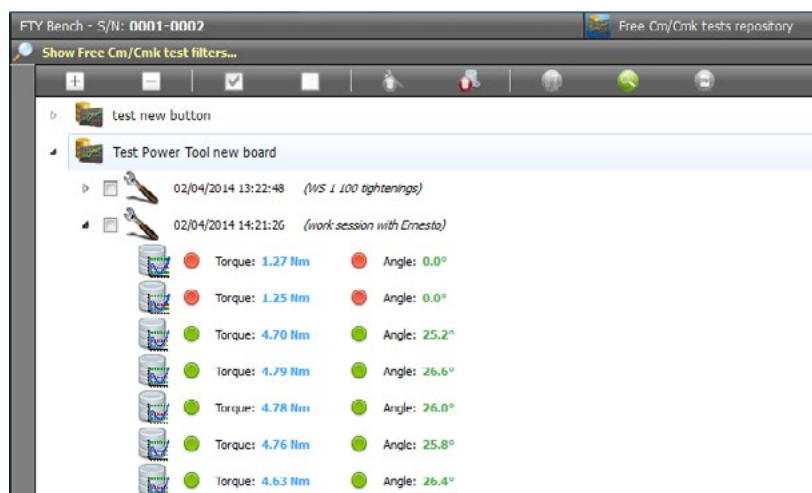
Same software installed on **SCS Concept** benches,
for a coordinated product line

➤ **Multilanguage** software with customizable dictionary



Data.Pro can be
installed on any
Windows PC

➤ Results and traces archive on local database



The screenshot shows the 'SCS Concept - Data.Pro - Ver. 1.3.7.2' user management interface. It features a 'Filters' sidebar on the left and a main control area. The main area includes fields for 'Role', 'Access level priority - From' (set to 1), and 'To' (set to 100). Below these is an 'Activation status' dropdown menu with options: 'Active', 'Not active', and 'Both'. There are 'Execute' and 'Reset' buttons. A list of roles is shown at the bottom: '(Anonymous)', 'Administrator', 'Operator', 'Guest', and 'Quality'.

➤ User management

SCS Explorer

Program and download data from SCS Concept instruments:
Freedom³ and DataTouch³ in “LAB” mode, EasyTouch.

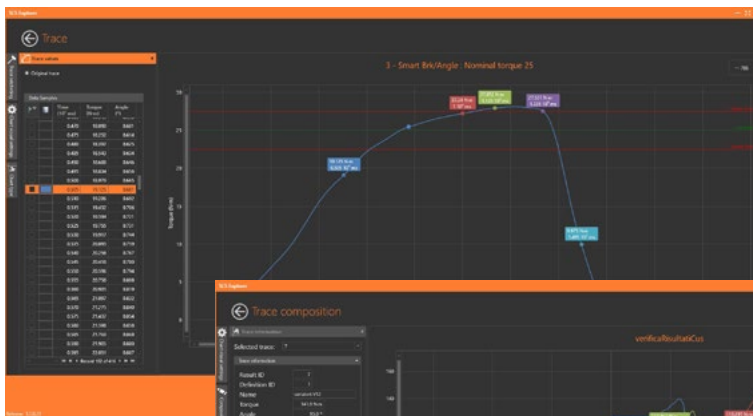


Functions

- Test definitions
- Instrument programming (PC synchronization)
- Test programs edit on the instrument or from PC
- Results download
- Traces download
- Traces comparison
- Export data to Excel

Benefits

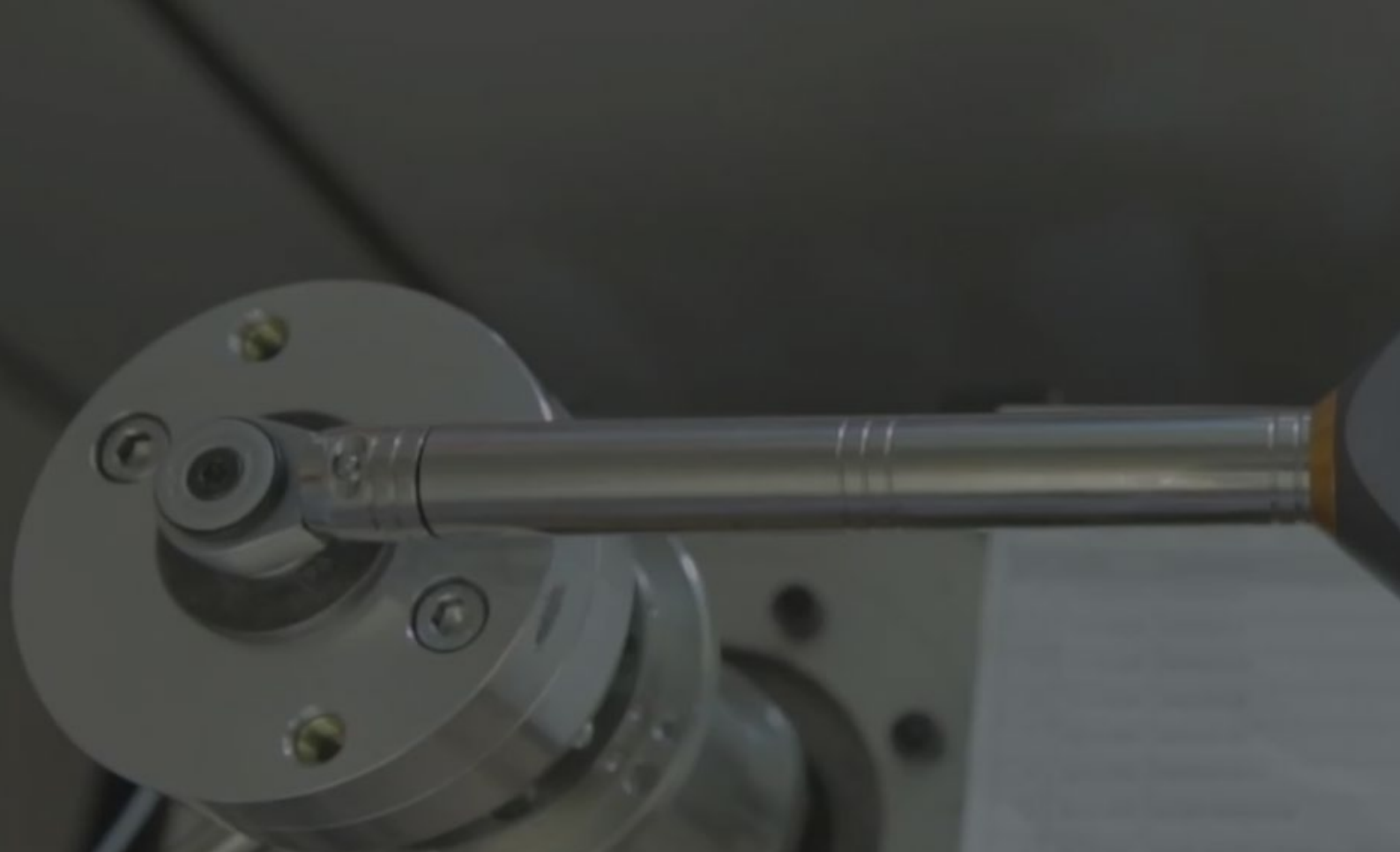
- Full data traceability on a non-expensive application
- Single application connecting to more instruments



Result ID	Test Name	Test Type	Result	Measurement unit	Report	Planned Torque	Actual Torque	Max Torque	Min Torque
102	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
103	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
104	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
105	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
106	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
107	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
108	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
109	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
110	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
111	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
112	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
113	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
114	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
115	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
116	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
117	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
118	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
119	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm
120	18 Aug 18 12:08	18 - 18 Nm torque	18 Nm	Nm	18 Nm	18 Nm	18 Nm	18 Nm	18 Nm

Instrument Programming

Results and traces download



Services





Calibration



Training

Calibration

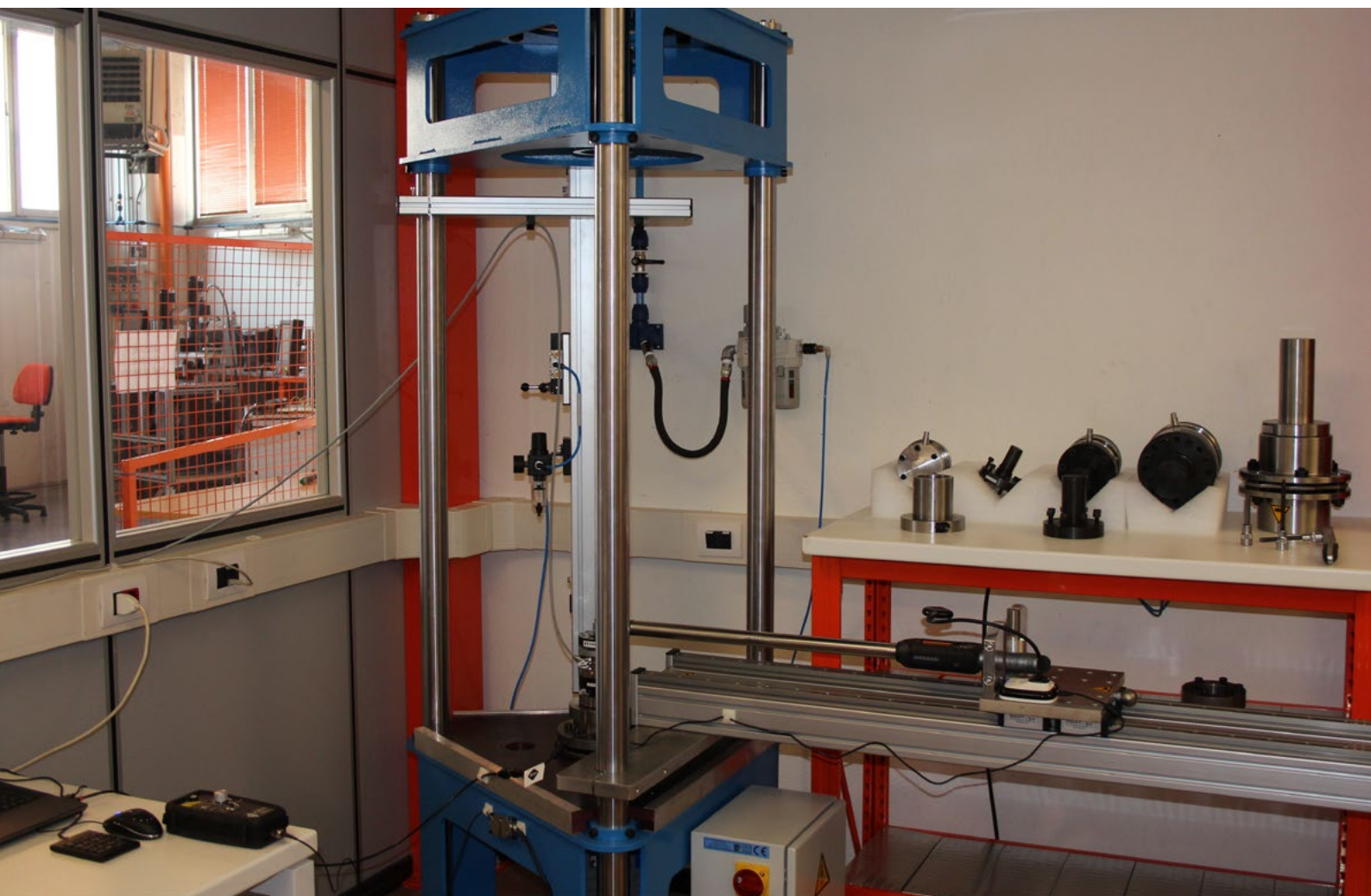
Measuring equipment has to be calibrated, according to DIN EN ISO 9001ff, ISO/TS 16949. With our accredited laboratory (according to DIN ISO IEC EN 17025), we can offer you a multi-supplier calibration for torque and angle. Professional, equitable and independent!

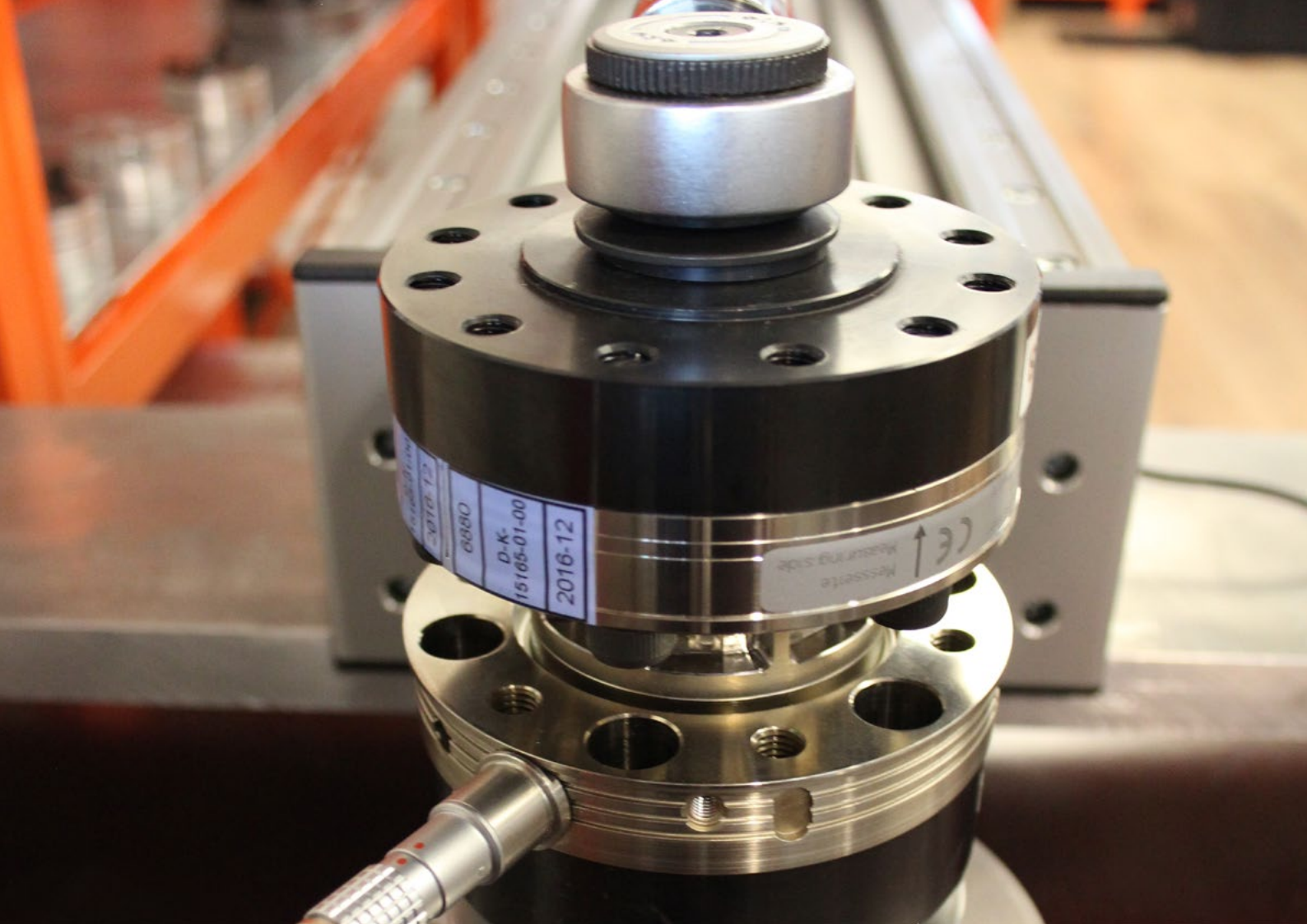
Torque Calibration

- 0,1 - 2000 N·m
- Test benches for power tools
- Test devices for click-wrenches and electronic torque wrenches
- Static and rotary torque transducers
- Mechanical torque wrenches

According to the procedures:

- DIN 51309
- DKD-R 3-7
- DKD-R 3-8
- Machine capability test and internal accredited procedure according ISO 6789: 2003-10





Angle Calibration

Which instruments can we calibrate:

- Test benches and systems for power tools with angle simulation
- Torque/Angle wrenches
- Torque/Angle rotary transducers

According to the procedure:

- VDI/VDE 2648, page 1 and 2

Other Services

- Electronical calibration of measurement amplifier
- Safety Check (VDE)
- Adjustment of measurement devices
- Optimization of functionality
- Help and support



Training & Analytics

SCS Concept Academy



Team

Our training experts for you

SCS Concept Academy, as an official learning service provider, is certified according to ISO 29990. The team of trainer consists of top educated and certified trainers. Individual training concepts, theoretically and practically realized assessments of training achievements guarantee the training success of all participants. The whole team succeeds in teaching complex technologies, processes and branch-specific quality requirements in a joyful and comprehensible way. The complex, technical causal relations will be taught with easiness and will always be carried out close to practical relevance.





Knowledge

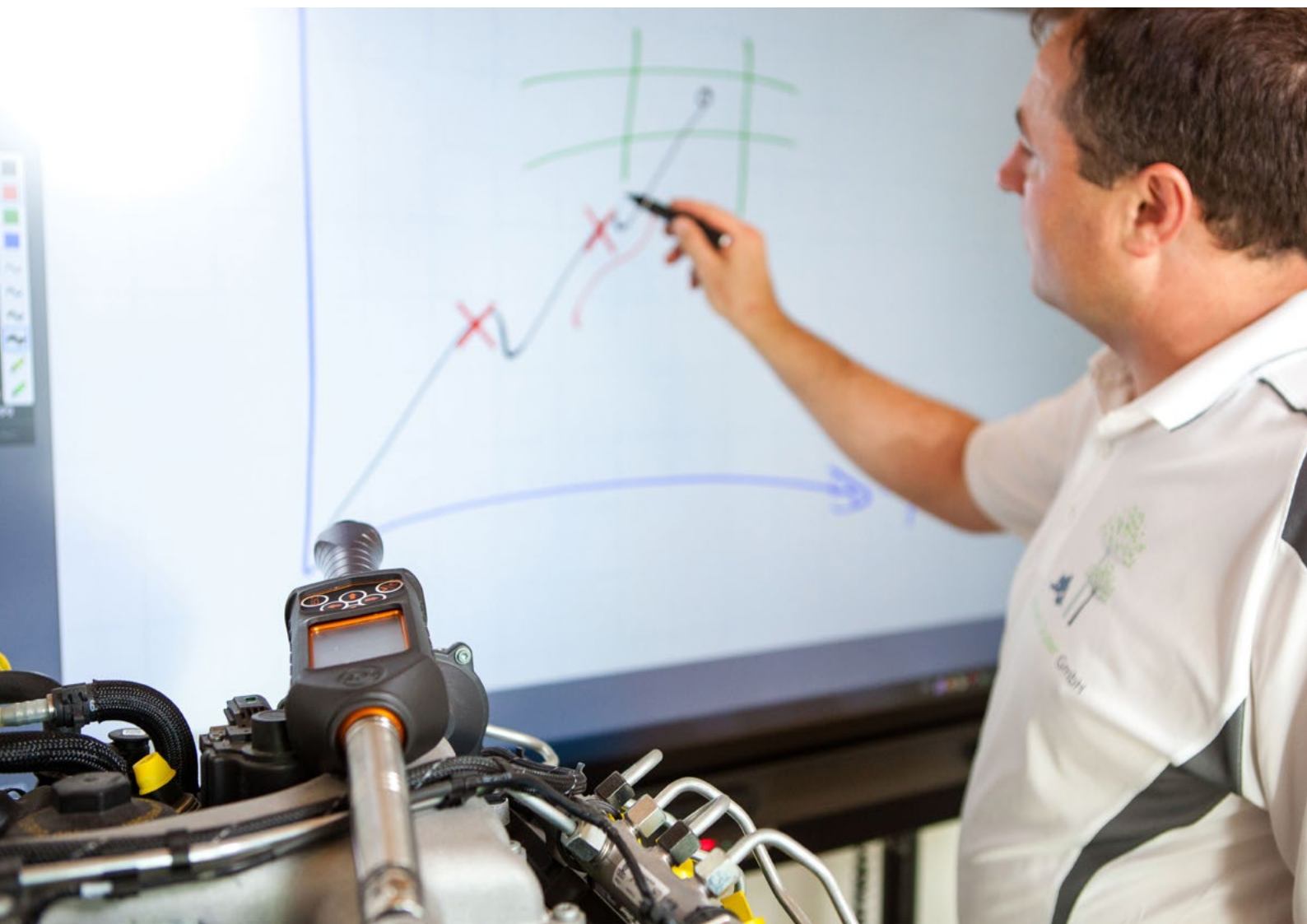
Together. We know more.

Standards, guidelines and laws are an indispensable fundament of technical acting world-wide. For years, our experts actively help shaping the main technical rules. In our training and consultancy service we offer you exactly this expertise and the skills for implementation. Theoretical, technical set of regulations according to the current status of science and technology, productivity, highest quality standards and practical implementability – Our knowledge management for you.

Qualification

The key to success.

We've developed a vast set of theoretical education modules and practical trainings for threaded joints, assembly processes and the respective quality assurance. Based on approx. 300 different training sequences and experiments, we've created a standardized training, divided in basic, advanced or expert level sequences. Our courses for qualification are always target-group-specific: from the assembly line to management level, from construction to quality assurance, from the planning department to laboratory technology – the right training course for everybody. Well established international management systems (ISO 9001, IATF 16949, ISO/TS 22163, ISO 9100 etc.) require organisations to determine the necessary competence of their employees and to ensure this competence through effective and verified training.





Location

Wherever you want.

Learning is a holistic process. Free from day-to-day duties, effective and efficient learning will be stimulated. For this aim we are happy to offer a suitable surrounding. The central training center of the SCS Academy is located in the middle of Europe. More than 1500 m², including professional seminar rooms, training and laboratory equipment, will be at your disposal. Our certified trainers are based in our world-wide subsidiaries, close to you as well. For inhouse training, we are perfectly equipped with presentation tools, assembly and laboratory equipment.

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