Discover the **Freedom**
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

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Markets

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
"We Offer our Customers Independent & Unbiased Systems & Solutions for Validating & Calibrating their Power Tools & Wrenches"
Portfolio of Torque Measurement Products

Torque Wrenches
- Freedom® Production: 14
- Freedom® Quality: 20
- EWW³ + FWEPL TA: 26
- CDM: 28
- CL - CL5: 30
- Click Wrenches: 36

Universal Production Integration Solutions
- FIM EVO: 40

Data Analyzers
- DataTouch³: 48
- MTC-P Multichannel: 54

Test Benches
- FTY: 60
- MSB: 68
- AWT: 70
- FTA: 74
- FTS: 78
- FMS Multistation: 84
Transducers

Torque & Torque/Angle Rotary 90
Torque & Torque/Angle Rotary Bluetooth 91
Torque Static 92
Torque Static Bluetooth 93
FWE e FWE TA 94
RGT 95
FSE 95

Positioning System

FPS Freedom Positioning System 98

Accessories

Open End 104
Ring Insert 105
Open Ring 106
Reversible Ratchet 106
Weld-On 107
Torque Multipliers 107

Software

SQnet+ (Quality Manager) 110
VPG+ (Visual Production Guide) 114
Data.Pro (Torque/Angle Acquisition) 118
SCS Explorer (Program and download data from SCS instruments) 122

Services

Calibration 126
Training & Analytics 128
Torque Wrenches
Freedom^4S Production
Freedom^4 Quality
EWW^3 + FWERL TA
CDM
CL - CLS
Click Wrenches
Freedom4S Production
Torque & Angle Wrench
Advance solution for production from 0 to 1200 N·m

- Light, robust and accurate
- Automatic obstacle detection & incorrect hand position
- Wireless communication for data traceability
- End-fitting recognition
- High memory capacity
# Freedom4S Production

## Torque & Angle Wrench

<table>
<thead>
<tr>
<th>Freedom PRW</th>
<th>Designation</th>
<th>Wireless cradle</th>
<th>Capacity</th>
<th>Drive</th>
<th>L1</th>
<th>Weight</th>
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<tr>
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### 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 Freedom4s)
- 323 19 0012: Display protection (only for Freedom4s)
Freedom⁴S Production

- Standard end-fitting end fitting recognition

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

- Part number: 313 11 0177

Tightening strategy

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

PRW Production

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

**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: +/-1° 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
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
Obstacle detection “patented” eliminate damage of your parts and protect your wrench

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

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 1200 N·m

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

**Torque & Angle Wrench**

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**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

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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
Freedom® 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
Freedom fulfills 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

- Torque
- Breakaway
- Residual torque
- Angle

### Joint analysis

- Torque
- Yield
- Angle

### Statistic

Cm / Cmk e X/R charts

- Cm/Cmk
- 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

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

Part number: 102 11 0025
EWW³ + FWEPL TA
Digital Torque Wrench for Production
EWW³ + 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

<table>
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<tr>
<th>Code</th>
<th>Model</th>
<th>Capacity</th>
<th>Drive</th>
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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 backlight
- Rechargeable Li-on battery
VPG+ interface via WiFi

- Rechargeable Li-on Battery
- Battery Charger

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<tr>
<th>Code</th>
<th>Model</th>
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<td>14 x 18</td>
<td>506</td>
<td>46</td>
<td>1.25</td>
</tr>
<tr>
<td>113 34 0350</td>
<td>CDM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>113 35 0350</td>
<td>CDM WiFi</td>
<td>350</td>
<td>14 x 18</td>
<td>604</td>
<td>46</td>
<td>1.44</td>
</tr>
<tr>
<td>113 34 0600</td>
<td>CDM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>113 35 0600</td>
<td>CDM WiFi</td>
<td>600</td>
<td>14 x 18</td>
<td>960</td>
<td>46</td>
<td>3.30</td>
</tr>
<tr>
<td>113 34 0800</td>
<td>CDM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>113 35 0800</td>
<td>CDM WiFi</td>
<td>800</td>
<td>3/4&quot; Ratchet **</td>
<td>1094</td>
<td>70 (ratchet head)</td>
<td>4.40</td>
</tr>
<tr>
<td>113 34 1000</td>
<td>CDM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>113 35 1000</td>
<td>CDM WiFi</td>
<td>1000**</td>
<td>1&quot; Ratchet **</td>
<td>1334</td>
<td>70 (ratchet head)</td>
<td>6.60</td>
</tr>
<tr>
<td>113 34 1200</td>
<td>CDM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>113 35 1200</td>
<td>CDM WiFi</td>
<td>1200**</td>
<td>1&quot; Ratchet **</td>
<td>1583</td>
<td>70 (ratchet head)</td>
<td>7.50</td>
</tr>
</tbody>
</table>

- Wrench backup software
- Light Wi-Fi software

** Light WiFi - CDM Management software

20.98 Nm  0.3 °

OK

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**

<table>
<thead>
<tr>
<th>Reference</th>
<th>Designation Error Profiling</th>
<th>Reference</th>
<th>Designation</th>
<th>Capacity</th>
<th>Drive</th>
<th>L2</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>114 32 0020</td>
<td>Freedom CL 20</td>
<td>114 31 0020</td>
<td>Freedom CLS 20</td>
<td>2 - 20</td>
<td>9 x 12</td>
<td>190</td>
<td>0.43</td>
</tr>
<tr>
<td>114 32 0050</td>
<td>Freedom CL 50</td>
<td>114 31 0050</td>
<td>Freedom CLS 50</td>
<td>5 - 50</td>
<td>9 x 12</td>
<td>270</td>
<td>0.673</td>
</tr>
<tr>
<td>114 32 0100</td>
<td>Freedom CL 100</td>
<td>114 31 0100</td>
<td>Freedom CLS 100</td>
<td>10 - 100</td>
<td>9 x 12</td>
<td>330</td>
<td>0.795</td>
</tr>
<tr>
<td>114 32 0200</td>
<td>Freedom CL 200</td>
<td>114 31 0200</td>
<td>Freedom CLS 200</td>
<td>20 - 200</td>
<td>14 x 18</td>
<td>445</td>
<td>1.18</td>
</tr>
<tr>
<td>114 32 0350</td>
<td>Freedom CL 350</td>
<td>114 31 0350</td>
<td>Freedom CLS 350</td>
<td>35 - 350</td>
<td>14 x 18</td>
<td>690</td>
<td>1.98</td>
</tr>
</tbody>
</table>

Each wrench is delivered with the torque setting key

<table>
<thead>
<tr>
<th>Data traceability (With FIM)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Torque and angle values</td>
<td>X</td>
</tr>
<tr>
<td>Angle monitoring</td>
<td>X</td>
</tr>
<tr>
<td>Analyze mode with FIM-EVO</td>
<td>X</td>
</tr>
<tr>
<td>Error proofing management</td>
<td>X</td>
</tr>
<tr>
<td>Batch size</td>
<td>X</td>
</tr>
<tr>
<td>Re-tighten detection</td>
<td>X</td>
</tr>
<tr>
<td>Untightening detection</td>
<td>X</td>
</tr>
</tbody>
</table>
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
- **Torque accuracy**: +/- 1% of the read value
- **Angle accuracy**: +/- 1% of the read value
- **Torque range**: 10 to 100%
- **Untightening detection**
  - First peak and max torque applied send to the controller
  - Bidirectional RF communication between the wrench and our controller

### 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.

**SCS design**

**Competitor design**

**Wireless charger**

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
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 ± 3%, over the requirements of the UNI EN ISO 6789
- Traceable calibration certificate from accredited laboratory optional

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity (N·m)</th>
<th>Click (degrees)</th>
<th>Length (mm)</th>
<th>Drive</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>114 21 0025</td>
<td>5 – 25</td>
<td>20</td>
<td>240</td>
<td>9 x 12</td>
<td>0.65</td>
</tr>
<tr>
<td>114 21 0060</td>
<td>10 – 60</td>
<td>20</td>
<td>360</td>
<td>9 x 12</td>
<td>0.87</td>
</tr>
<tr>
<td>114 21 0120</td>
<td>20 – 120</td>
<td>20</td>
<td>415</td>
<td>9 x 12</td>
<td>1.20</td>
</tr>
</tbody>
</table>

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 ± 3%, over the requirements of the UNI EN ISO 6789
• Traceable calibration certificate from accredited laboratorye optional

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

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
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 webservice application
# FIM EVO

The multi brand integration hub for industry 4.0

![FIM EVO](image)

- **Open protocol tools**

## Description of FIM EVO

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

## Software module "Universal HUB"

<table>
<thead>
<tr>
<th>FIM_EVO Standard</th>
<th>Universal HUB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stations managed by controller</td>
<td>2</td>
</tr>
<tr>
<td>Multi brand Tools compatibility</td>
<td>No</td>
</tr>
</tbody>
</table>

## Part Number

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>153 20 0008</td>
<td>FIM EVO 4 out</td>
</tr>
<tr>
<td>153 20 0013</td>
<td>FIM EVO 16 I/O</td>
</tr>
<tr>
<td>102 21 0018</td>
<td>Software module universal HUB</td>
</tr>
<tr>
<td>197 14 0045</td>
<td>RF 868 MHZ for CL/CLS tools</td>
</tr>
<tr>
<td>197 14 0049</td>
<td>RF 915 MHZ for CL/CLS tools</td>
</tr>
</tbody>
</table>
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
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

Trace torque/angle or torque/time

Open protocol tools

Statistic analysis

Optimise your assembly process
Data Analyzers
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 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**

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
<table>
<thead>
<tr>
<th>Code</th>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>163 10 0002</td>
<td>DataTouch$^1$</td>
<td>Data Analyzer for quality control</td>
</tr>
<tr>
<td>197 14 0001</td>
<td>Freedom$^1$-BT</td>
<td>Bluetooth module</td>
</tr>
<tr>
<td>197 14 0008</td>
<td>Freedom$^1$-BR</td>
<td>Integrated barcode reader</td>
</tr>
<tr>
<td>197 14 0029</td>
<td>Freedom$^1$-EC1</td>
<td>External battery charger</td>
</tr>
<tr>
<td>197 99 0008</td>
<td>Freedom$^1$-USB</td>
<td>USB cable</td>
</tr>
<tr>
<td>313 21 0280</td>
<td>Freedom$^1$-BA</td>
<td>Battery</td>
</tr>
<tr>
<td>333 51 0003</td>
<td>Freedom$^1$-CR</td>
<td>Direct battery charger</td>
</tr>
</tbody>
</table>

$^1$Optional
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
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
Storage of the Multichannel test configurations

Statistics Data traceability
Results database
Test Benches
FTY
Power Tool and Wrench Dynamic Tester

AWT
Automatic Wrench Tester

FTS Hybrid
Power tools and automatic wrench certification

MSB
Wrench and Tool Static Tester

FTA
Automatic Torque/Angle Dynamic Wrench Tester

FMS Multistation
Online Rework, Backup, Pilot/Beta Build, Repair Station
FTY
Power Tool and Wrench Dynamic Tester

- Tool test: wrenches (electronic/digital, click), pneumatic, electric and battery tools, pulse tools (except impact wrenches)
- Statistical Process Control: Measurement of machine capability (Cm, Cmk) 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

<table>
<thead>
<tr>
<th>Technical Data</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Torque range</strong></td>
<td>0.2 N·m + 2000 N·m maximum</td>
</tr>
<tr>
<td></td>
<td>(the range depends from the transducers configuration)</td>
</tr>
<tr>
<td><strong>Torque measurement</strong></td>
<td>0.5% of the reading</td>
</tr>
<tr>
<td><strong>accuracy</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Max tool speed</strong></td>
<td>1100 rpm</td>
</tr>
<tr>
<td><strong>Angle measurement</strong></td>
<td>1° over 360°</td>
</tr>
<tr>
<td><strong>accuracy</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Joint simulation range</strong></td>
<td>15° to 360° (angle measured from 50% to 100% of the target torque)</td>
</tr>
</tbody>
</table>
Example of parametrization of a fastener to be simulated

- Simulation of fastener completely loosed
- Simulation of fastener pre-tightened
- Simulation of fastener pre-tightened with untighten/tighten strategy

A = Engage
B = Drawdown
C = Joint Stiffness

Mechanical Wrench Loader
Compared test:
Bench results are compared with wrench results. Automatic communication or manual results entry.
**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.
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: 1.5 N·m ÷ 1200 N·m
- Torque measurement accuracy: 0.5% of the reading
- Angle measurement accuracy: 1° over 360°
**Compared test:**
Bench results are compared with tool results. Automatic communication or manual results entry.

Test of torque wrenches with extensions:
The FTA transducer can be lowered turning the wheel. This makes possible to test the wrench with its extensions, evaluating how the extension bending affects the angle measurement.
**Test of dial wrenches**, click wrenches with automatic recognition of the click point.

**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**.
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: +/-1° 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

<table>
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<tr>
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<th>Description</th>
<th>Code</th>
<th>Description</th>
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<td>Freedom FTS 500</td>
<td>BRK 10-50-500</td>
<td>BIMOTORIZED GROUP 5-500</td>
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</table>

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.

- Compatible with all types of assembly tools
- Flexible, high performance and ergonomic
- Automatic and manual tools test
- Stand alone test with battery
Hybrid bench FTS

AWT functionalities

Wrench control and certification

- 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
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

A = Engage
B = Drawdown
C = Joint Stiffness
FMS Multistation
Online Rework, Backup, Pilot/Beta Build, Repair Station

- 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 Freedom™ 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
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.

**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.
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 marked, using the industrial protocols.
**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**

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**RMCTA Torque/Angle Rotary Transducers**

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## Torque & Torque/Angle Rotary Bluetooth

### RMC Torque Rotary Transducers Bluetooth

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### RMCTA Torque/Angle Rotary Transducers Bluetooth

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Torque Static

Torque Static Transducers Connected by Cable

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Torque Static Transducers Connected by Cable for Hydraulic Pulse Tools

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SA = Special adapter
Torque Static
Bluetooth

Torque Static Transducers Bluetooth

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Torque Static Transducers Bluetooth
for Hydraulic Pulse Tools

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SA = Special adapter
### FWE and FWE TA

**FWE - Torque Wrench for DataTouch**

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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
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.

Auto-learning of the working positions for the system configuration.
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.
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

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197 17 0**** = standard
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197 17 0*** = standard
197 17 9*** = with tool recognition chip

Reversible Ratchet

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<th>Code</th>
<th>Teeth</th>
<th>Width</th>
<th>Height</th>
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197 17 0*** = standard
197 17 9*** = with tool recognition chip
Torque Multipliers

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<th>Gear Ratio</th>
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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

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

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

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

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

SCS benches

DataTouch³

Freedom⁴

Analysis
› Results, Traces, Statistics
Power tools and Wrenches Management

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

Operations (joints) Management

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

Open protocol / Full protocol interface for external tool controllers
Can work offline and download data to database when connected again to the network.

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

![Liquid level check](image1)

![Reading and Operation](image2)
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
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.
Data.Pro can be installed on any Windows PC

- Multilanguage software with customizable dictionary
Results and traces archive on local database

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
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 trainers 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 worldwide. 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.