

TORQUE WRENCH CALIBRATION SYSTEM



SPECIFICATION SHEET
AUTOMATED: TWC-205
COMPUTER CONTROLLED: TWC-206



APPLICATION:

Calibration of Static Torque Tools as per **ISO 6789:2017-2**, such as:

- **Torque Wrenches:** Dial, Click, Digital, Fixed, Torsion/Flexion Types (Indicating and Settable Types)
- **Torque Screw drivers:** Click, Slip, Digital, Fixed Types (Indicating and Settable Types)

IMPORTANCE:

Torque Wrenches are one of the most commonly used tools across various industries and sectors.

The effects of improper torquing due to defective, worn-out or non-calibrated tools can be quite catastrophic leading to accidents, injuries, and in some cases, deaths.

Controlling torque of a torque tool is important for companies to ensure proper application of torque for their product's quality, safety, and reliability. It is also very important to maintain the requirements associated with ISO 9001 quality standard.

With regular calibration, we can ensure that the accuracy of a torque tool is within specified tolerances and maintain continuous quality standards in the assembly process.

Calibration ensures the performance of a torque tool and indicates the need for any adjustment. Furthermore, it can identify potential tooling problems such as wear and tear, broken component, etc, before it happens.

The torque tool calibration equipment plays an important role in preventive maintenance along with traceability to assure all measuring results are in accordance with national/international standards.

check out the white paper on difference between ISO 6789:2003 and ISO 6789:2017

DESCRIPTION:

Sushma's solution for calibration of static torque tools as per **ISO 6789:2017-2** is the **Torque Wrench Calibration System**. Our latest product is designed to make **your life easy** while complying with the new complex ISO standard.


We offer two models - Automated and Computer Automated. The systems require very limited training or experience to operate. It allows the user to learn hands on in a simple and straightforward manner.

The torque wrench is placed on **Sushma Torque Sensor-Reaction type** and held by the adjustable tool holding fixture, enabling perfect horizontal alignment, connected to the rigid reaction bar.

The connection between the torque tool and the tool holding fixture is designed to ensure self-alignment, reduce parasitic forces, and moments to minimum levels, helping in better reading of uncertainty.

The main **rigid torque loading rig** consists of the servo motor driven system with a highly precise gearbox which rotates the sensor in turn loading the torque wrench.





The **7-inch touch Smart Control & Display Unit** controls the entire machine and gives the user automated & guided instructions to help take actions. It also has a database to quickly recalibrate the tool without having to type all the details again (it can be coupled with the optional bar code scanner). The results from the test are then stored on the device, which can be viewed on the display or downloaded to PC through a USB or pen drive.

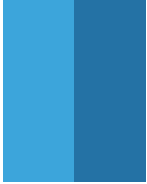
You can upgrade to a Computer Automated System any time by simply purchasing the **PC Software & PC Package**. The PC Software in the upgrade pack helps the user print **calibration reports** after all uncertainty calculations. It also has an audit mode to verify the uncertainty calculations.

The TWC-205/206 is also future ready or comes with **Internet of Things (IOT) Ready** features enabling to connect to the **Online Sushma Analytics Platform** which will allow for further analysis from various mobile devices which can be used for Quality, Productivity, Research or any other decision-making process.

HIGHLIGHTS AND FEATURES:

- Calibrate different types of torque tools, such as, Type 1 (Indicating) & Type 2 (Setting) as per ISO 6789:2017-2
 - Includes all indicating, settable, or fixed type of Torque Wrenches like Dial, Click, Digital, Torsion, etc
 - Includes Torque Screw Drivers - indicating, settable or fixed can also be done on the same machine by buying the optional **Screw Driver Torque Tool Testing Fixture** with relevant capacity of Torque Sensors
- The System consists of:
 - Rigid Torque Loading Rig
 - Torque Sensor
 - Control & Display Unit
- Optional Features
 - PC Software (*Standard in Computer Automated versions*)
 - PC Package (PC, Desk Printer, UPS, PC Holder, Cabling, etc) (*Standard in Computer Automated versions*)
 - Screw Driver Torque Tool Testing Fixture
 - Bar Code & Printer
- Quick Changeover of different capacity sensors with just two pins
- User-Guided Torque Wrench Calibration steps as per the ISO 6789:2017-2 for ease of operation
- User friendly and requires very little expertise to operate the machine
- Tool Database on the Control Display Unit (or in the PC in Computer Automated version) for ease of repeated calibration, couple it with optional bar code scanner & printer to keep track & manage all your Torque Tools.
- Calibration Readings are stored as Reports on the Control Display Unit in Automated versions which can be downloaded to the PC through a USB cable or USB Pen drive; in Computer Automated versions it is stored in the PC itself





- Add the Sushma Torque Wrench Calibration Software to get a Calibration Report as per ISO 6789:2017 part 2 after all the uncertainty calculation
- IOT Ready Control Display Unit for Remote Diagnostics & Monitoring - Scale up to the future with Dashboards & Analytics of your Calibration Activity
- Storage Space for Sensors, PC or files.
- CE Approved ready for world markets

RECOMMENDED RELATED PRODUCTS:

- **Transfer Torque Wrench** (Master Torque Wrench) for Effective Uncertainty Calculations or evaluation of CMC used as a reference standard required as per ISO 6789:2017-2 and DKD-R-3-7/8
 - Ask for **Sushma's Transfer Torque Wrench TTW-101** and its Display Unit with various capacities suitable as per your Torque Wrench Calibrator
- **Digital Torque Wrench** for regular Quality Checks
 - Ask for **Sushma's Digital Torque Wrench DTW-102** with various capacities suitable as per your Torque Wrench Calibrator

STANDARD SCOPE OF SUPPLY:

TWC-205

- Test Rig with Electrical Control System
- Control Display Unit
- Power Cable
- USB Cable
- Allen Key Tool Kit
- User Manual
- Warranty Certificate
- Selected Sensors
- Selected Features
- Selected Accessories
- Calibration Certificate

TWC-206

- Test Rig with Electrical Control System
- Control Display Unit
- All in one PC
- STS 206 TWC Software
- Power Cable
- USB Cable
- Allen Key Tool Kit
- User Manual
- Warranty Certificate
- Selected Sensors
- Selected Features
- Selected Accessories
- Calibration Certificate



FEATURE TABLE:

FEATURE	AUTOMATED TWC-205	COMPUTER AUTOMATED TWC-206
Calibration of Type 1 & Type 2 Torque Wrench	✓	✓
Calibration of Type 1 & Type 2 Torque Screw Drivers	Optional - Add Screw Driver Torque Tool Testing Fixture TWT-203	Optional - Add Screw Driver Torque Tool Testing Fixture TWT-203
Quick Changeover Torque Sensors	✓	✓
Parasitic Forces Elimination	✓	✓
Motor Driven System	✓	✓
User Interface	Sushma Smart Control Dis- play Unit	Primary: PC Secondary: Sushma Smart Control Display Unit
Guided Calibration Steps to the user	on Sushma Smart Control Display Unit	on PC via Sushma Torque Wrench Calibration Software
Calibration Readings Storage	on Sushma Smart Control Display Unit	on PC via Sushma Torque Wrench Calibration Software
Calibration Report with Uncertainty Calculations	X	on PC via Sushma Torque Wrench Calibration Software
Calibration Report Analytics	X	on PC via Sushma Torque Wrench Calibration Software



PRODUCT SELECTION GUIDE:

SEQUENCE OF SELECTION		SELECTION OPTIONS
Decide Type of Torque Tools to be Calibrated		
Decide Min and Max Torque Tool Capacities to be Calibrated		
Select Max Capacity of the Test Rig as per max torque tool to be calibrated	User Convenience with two control options	Ordering Code
1000Nm	Automated -	TWC-205-1kNm
		TWC-206-1kNm
3000Nm	Computer Controlled - TWC-206	TWC-205-3kNm
		TWC-206-3kNm
Torque Sensor -Reaction Type TS-203 to cover the Torque Tools to be calibrated Note: Each sensor Range is 10% to 100% of the Capacities		Capacity Of Options: Low Capacities: 0.2, 0.5, 1, 2, 5, 10,20, 50 Nm High Capacities: 100, 200, 500, 1000, 2000, 3000Nm
Select Optional Features If Automated		Screw Driver Torque Tool Testing Fixture TWT-203 Capacity: 50Nm (Select relevant sensors along with this)
Standard in TWC 206		Sushma Torque Wrench Calibration Software STS-206
Standard in TWC 206		PC Package
Bar Code Scanner & Printer Package		

Select Transfer Torque Wrench (TTW-101) or Digital Torque Wrench (DTW-102) (if required)

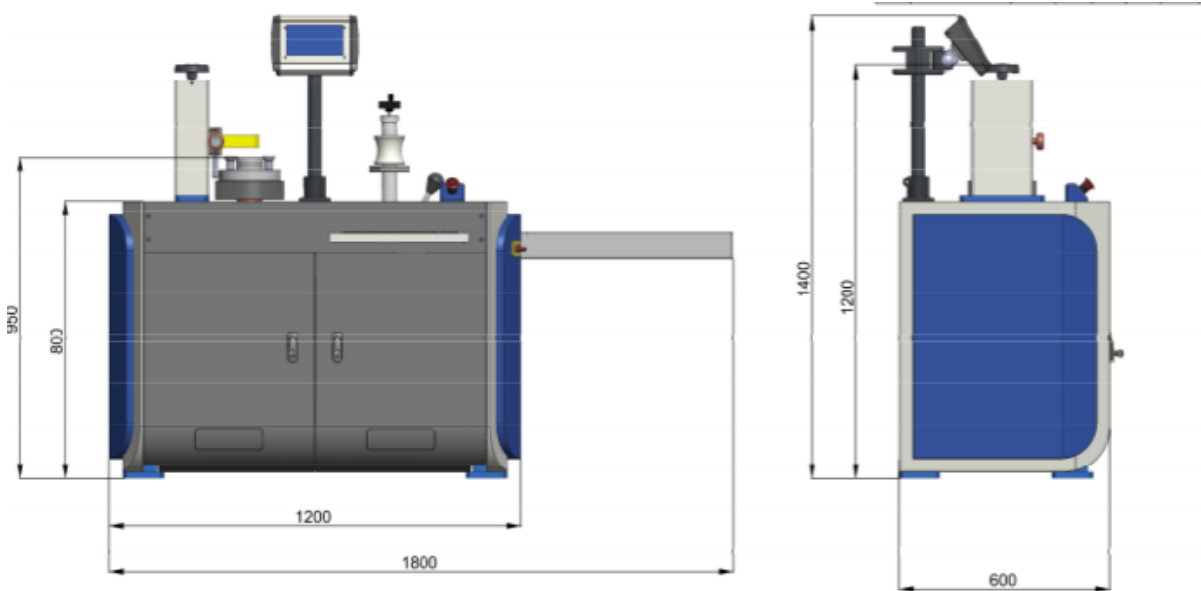
Select if required: Tool Adapters or Sockets- exercise caution while selecting as it adds high uncertainty



DIMENSIONS:

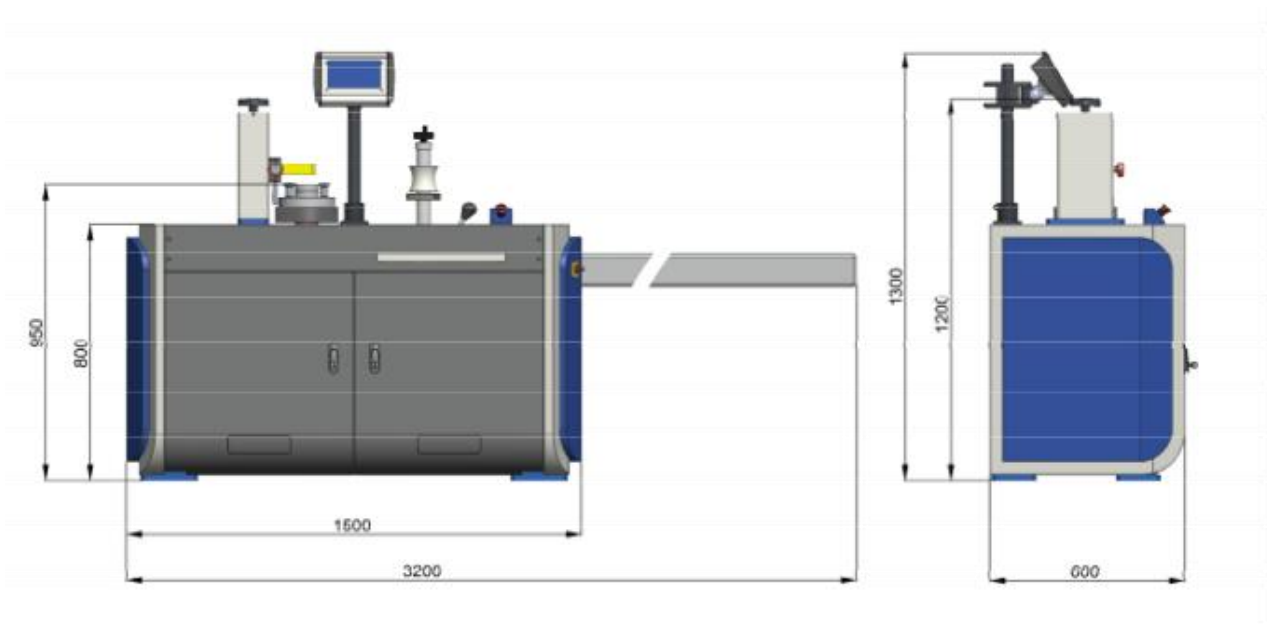
TWC-205-AUTOMATED 1000NM

Approximate Weight-310kgs



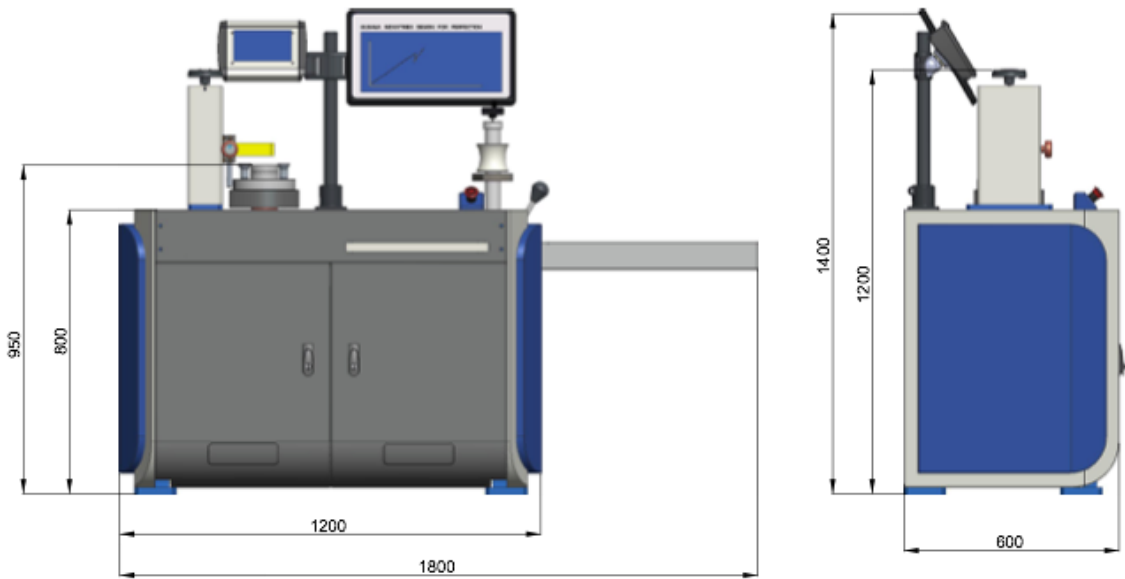
TWC-205-AUTOMATED 3000NM

Approximate Weight-450kgs



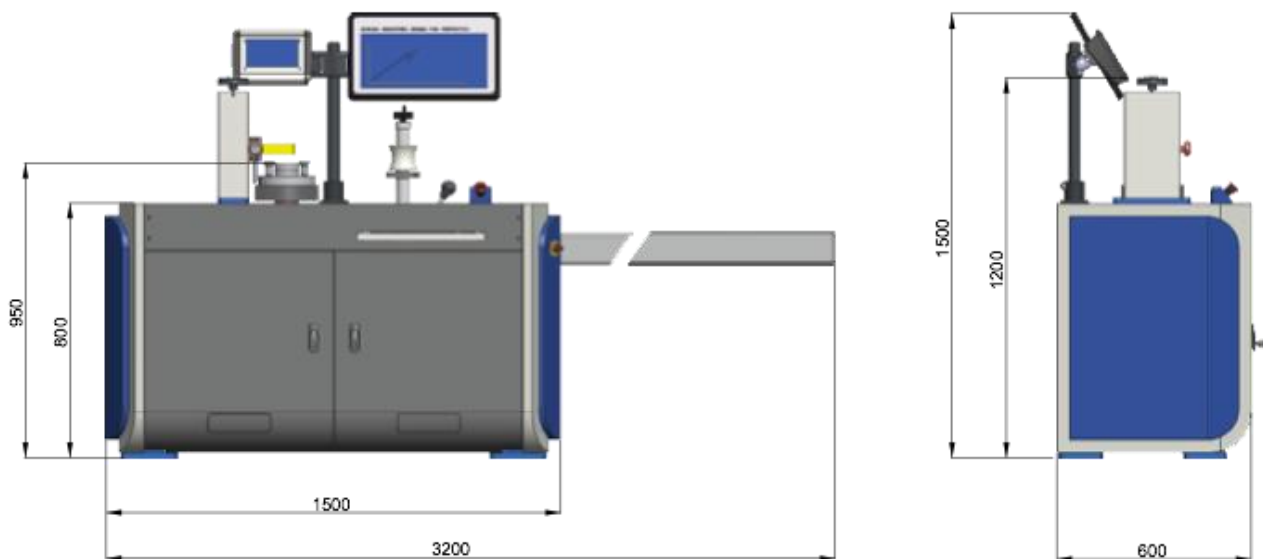
TWC-206-COMPUTER AUTOMATED 1000NM

Approximate Weight-310kgs



TWC-206-COMPUTER AUTOMATED 3000NM

Approximate Weight-450kgs



Release Note

- In view of continuous improvement in design and performance, specification is subject to change without notice.
- Correct mounting is essential to ensure optimum performance.
- Consult your application specialists or the factory for more technical information.