ACCESSORIES

Accessories for the measurement of tightening torque

Electronics dynamometric wrenches

PEOPLE AND SOLUTIONS

METHODS USED FOR THE MEASUREMENT OF TIGHTENING TORQUE

For an effective analysis of the tightening process, and therefore in general for an evaluation of the Process Capability *, it is necessary to have adequate instruments and correct methods to measure the tightening torque. Basically there are two methods for the measurement of the torque: Static measurement and Dynamic measurement

** Process Capability is an index of the variability with which the production process obtains results. Many external factors can influence the evaluation of the Process Capability, such as : the accuracy of the screwdrivers, the variability of the joint, use of screwdriver, air pressure and/or air flow variation, maintenance of the screwdriver.*

DYNAMIC MEASUREMENT

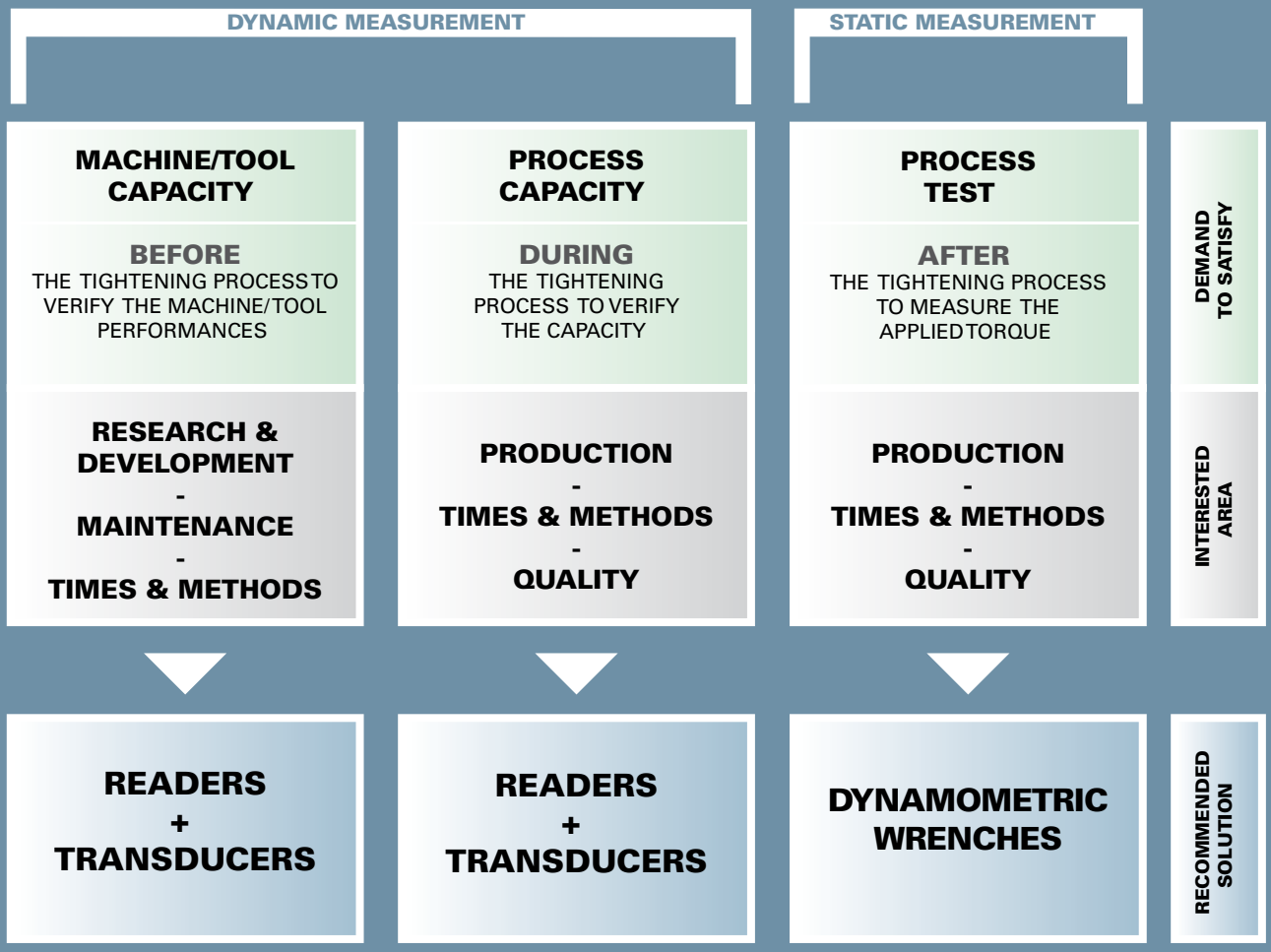
It is a measurement "in process", i.e. it is carried out **before or during** the tightening process using rotary transducers combined with a torque reader. It is a method with which a better accuracy of the torque is obtained since:

- it is independent of the operator (the torque transducer is placed between the screwdriver and the joint and the operator acts only on the screwdriver);
- the joint is not influenced by the relaxation, since the measured torque is exactly the one applied by the screwdriver.

STATIC MEASUREMENT

It is a "post process" measurement, i.e. it is carried out **after** the tightening process, with the aid of dynamometric wrenches..It is a method with which the accuracy of the obtained torque is strictly dependent on:

- operator's experience
- the moment the measurement is carried out (influence of the phenomenon of joint relaxation).



The answer to your quality needs

Extremely versatile, the range of Fiam digital dynamometric wrenches is able to measure, control, visualize, print, store the tightening torque values to **guarantee the required quality standards** and **a greater quality of the assembled product.**

These control instruments are fundamental when it is necessary to **certify every single tightening,** particularly when operating according to ISO 9000 standards.

The storage and the analysis of the data collected with these systems consent to **rapidly eliminate errors** thus giving important productivity returns.

Alike all Fiam solutions, these control instruments **respect ergonomic criterias** and **maximum operator's safety;** they are designed with **great attention to environment safeguard.**

FIAM SERVICE: ALWAYS CLOSE TO ITS CUSTOMER

Fiam, together with its solutions, offers a wide range of **services in order to optimize, in terms of safety and ergonomics, the productive processes of its customers:** from the choice of the tools and the accessories to the suggestions about correct operator's posture and the correct use of ergonomic tools.

For all further details, please apply to Fiam Technical Consultancy Service.

ERGOTECH

Ergotech project
Having full knowledge of the ergonomics needs and of the safety of the operator, Fiam optimizes the performances of its tools and offers consulting and qualified training for the correct use

Electronic dynamometric Wrenches E-TORC

- Having a **work range from 100 to 800 Nm** they are **suitable for all the torque controls** in Control Quality dept. and in test labs in all fields of industrial production
- Electronics is housed in a **robust aluminium body** while the connecting tube and the ratchet are made of steel.
- The built in display can be **rotated by 120°** for **better handling and reading** during the control operations
- **Optical, acoustic and sensorial (vibration) signals** when the pre-set torque values have been reached for a fast assembly and test process
- Three **procedures of measurement** are: **CONTINUOUS**, to check just in time the applied torque; **PEAK**, to note the maximum value of the torque obtained; **PRESETTING** to store different measurement configurations and retrieve them when necessary (up to 25 configurations)
- **Readings** (date, hour, measured values...) **can be transferred onto a PC,** where they can be stored and analysed using the Excel programme in order to carry out controls useful for the **improvement of the quality of the assembled product** (software being supplied with the wrench)
- Supplied with **bi-directional serial interface RS 232** for a better transfer of the data onto a PC/printer

Accuracy: lower than 1% of the reading (tightening/untightening condition) on all torque range
Memory: 2000 readings (data, value, min. max. limits)
Interface: RS 232

Model	Code	Torque capacity Nm	Ratchet drive □	Length mm	Weight of wrench Kg
E-TORC 600	686000688	100 ÷ 600	3/4	1055	3.20
E-TORC 800	686000689	100 ÷ 800	3/4	1405	6.40

Standard equipment (supplied with the instrument)

- Supplied with sturdy metal box with practical partition for accessories; dimensions in mm 1660x210x85; weight: E-TORC 600 - Kg. 14.5; E-TORC 800 – Kg. 16.7
- Reversible assembled ratchet
- RS 232 connecting cable for data transfer from Wrench to PC
- CD with programming software
- Test certificate in compliance with DIN EN ISO 6789
- Calibration certificate in compliance with national and international standards
- Batteries
- Use and maintenance manual with quick guide

Accessories and Models available upon request

- Calibration certificate
- Models for data transfer without cable (wireless) through Bluetooth
- Models for torque-angle and for threshold torque

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Quality Management System Certificate

Environmental Management System Certificate