

## Application Information

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### Dental Torque Wrench Performance Verification

When inserting a dental implant, it is imperative that the insertion torque is at a precise value. Too low of a torque, typically less than 2.6 in-lb (30 N-cm), can create instability in the implant. Whereas too high of a torque, typically greater than 4.4 in-lb (50 N-cm) can produce too much strain onto the jaw bone. This excessive strain may result in a condition which may limit blood flow to the bone marrow. This condition, Osteonecrosis, is a very serious disease where the bone degrades and eventually dies. In order to prevent improper over or under torqueing, dentists must ensure that their torque wrenches are performing consistently within operating specifications. If the instruments are not within tolerance, an incorrect implant insertion could induce pain, damage as well as potentially costly repairs.

The Nidec-Shimpo TTC Series Torque Tool Testers provide dentists and oral surgeons the ability to verify that their torque tools are in proper calibration before initiating repairs on dental implants. Specifically, the TTC-I-2 provides an ideally low range capacity of 0.02-17.7 in-lb (0.2 – 200 N-cm) combined with an exceptionally high resolution of 0.002 in-lb (0.02 N-cm). The TTC's programmable high/low alarm-limits provide quick verification that the dental torque wrenches are properly performing within the acceptable 2.6 in-lb (30 N-cm) to 4.4 in-lb (50 N-cm) range. Prior to each surgery, a dentist can now check their wrench's torque output to confirm that it is creating the required level, decreasing the chance that the implant will fail to take hold or damage the patient's jaw. The TTC also provides the ability to store data and upload to a computer with its free software, providing an extra level of indemnity in the instance of procedural complaints. These features make the TTC the perfect device for dentists and oral surgeons alike to ensure consistent, dependable results for their dental torque wrenches.

### Equipment Used

- *TTC-I-2 Torque Tool Tester, 2 N-m (1.48 ft-lb) Capacity*

