



Gerald Niznick DMD, MSD • You

Dental Implant Pioneer

1d • Edited •

The question is, what is the best angle for a conical connection, or are they all the same with regard to stability and providing a sealed connection? The steeper the angle, the thinner the walls, and the deeper the internal hex, slots or other wrench engaging configuration. This limits how short an implant can be made.

- A. 45deg. - Referred to as the Standard or Classic connection by some companies. This was first introduced in 1986 by Core-Vent Corp., my first implant company with the Screw-Vent Implant. It is the most common internal conical connection on the market, sold by ZimVie whose predecessor bought Core-Vent in 2001, Bio-Horizons (licensed by ZimVie's predecessor), Implant Direct, Straumann's Nuvo and almost every Israeli implant company.
- B. 74 deg. - Neodent "Grand Morse" connection. (A Morse Taper is 1.5 degrees as measured from the vertical centerline of the implant and, for comparison purposes would be 88.5 degrees as measured from the horizontal.)
- C. 75 deg. - Straumann's "CrossFit" connection on its bone-level implant
- D. 78 deg. - Nobel Active Conical connection
- E. 79 deg. - Dentcon implant from Turkey, a country that just changed the spelling of its name to Türkiye
- F. 81 deg. - Astra connection
- G. 82 deg. - Straumann Synocta connection on its tissue-level implants. Licensed under Niznick's internal connection patent
- H. 83 deg. - Straumann's Torcfit BLX/TLX connection

Straumann alone has the Synocta, CrossFit, Torcfit and Standard connections at different angles, all claiming superior stability.

I believe they all function the same because the abutment bevel is 1/2 to 1 deg. greater as measured from the centerline of the implant to ensure first contact at the top of the implant's lead-in bevel.

In 1986, I invented the Screw-Vent Implant with a 44 degree lead-in bevel mating with the abutment's 45 deg. bevel. The Screw-Vent has an internal hex but the patent was not limited to any angle or any shape internal wrench-engaging surface. It was the first "Conical Connection". The NobelActive with its 78 degree lead-in bevel was not launched until 2008 as the Screw-Vent patent didn't expire until October 2007.

SCREW—VENT INTERNAL CONICAL CONNECTION PATENT

<https://lnkd.in/gct-KMJu>


In 1994 I invented the friction-fit connection with a 1 deg. taper to the abutment's hex.

<https://lnkd.in/gMvM3Z7V>

In 1995 I was the lead co-inventor on a method patent for inserting a tapered implant into an undersized socket for increased stability and in 1999 I launched the tapered Screw-Vent with patented Selective surface.

<https://lnkd.in/g2WjQJSW>


Tapered Screw-Vent implants with friction fit abutments are ZimVie's flagship products today. Paragon, my new implant company, filed two new patents, one on an implant design and another on an implant-abutment connection. Implant evolution is an ongoing process, not to be confused with design changes to create unique selling propositions and justify price increases.



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Not that I can contribute much more here other than observation and reports from the trenches on these connections. I have rotated through all of them over 30 years and have settled back to the 45 degree original Internal Hex design as my go to implant. The 78 degree in fact don't hold, lose bone, and don't seal up. They also tend to "flower" and or split after 5-8 years with the middle diameter connection. I also like the Ankylos, Neodent, SIN CM connection but not universally in all applications like you can use the 45 degree Internal Hex original connection for. You got it right with the 45 connection Dr. Niznick. Thank you for the epiphany of the Internal Hex



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Digital Dentistry Innovator, Digital Dentistry Consultant, Author of ...

So many years after world changing contributions and still thinking and innovating in the space. Dedication.