it’s common prac-
tice to measure the

gear over pins or

anvils. This is often
called a measure-
ment over wires
(MOW). As the
teeth get thinner,
this measurement
becomes smaller.

Figure 2 shows an
MOW operation.
This illustration
appears as Figure
6-1 in ANSI/
AGMA 2002-B88,
Tooth Thickness
Specification and Measurement.

Therefore, the standard pitch diam-
eter is actually a reference dimension that
doesn’t change as long as the number of
teeth and the diametral pitch or module
don’t change. The standard pitch diam-
eter shouldn’t have a tolerance and
isn’t measured.

When manufacturing a gear, the cut-
ting or grinding tool may be fed in or out
to make a size change. What this actually
does is make the teeth thicker or thinner,
at the standard pitch circle (gear refer-
ence circle). The standard pitch diameter,
however, doesn’t change. See Figure 1,
which appears as Figure B.1 in AGMA
913-A98, Method for Specifying the

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