

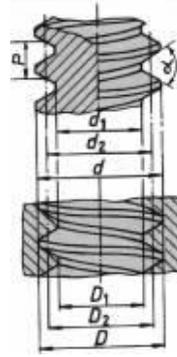
D and d1

A method for measuring the major diameter (D) on an internal thread and the minor diameter (d1) on an external thread

The reason for this page is because of a discussion on what thread gauges check and what they do not check.

A go/no-go thread plug gauge will not reveal if the major diameter on an internal thread is too large just as go/no-go thread rings will reveal if the minor diameter on an external thread is too small. *Large/small = either too small a nose radius on the thread cutting tool or too sharp.*

N.B. Normally this will not be a problem if the nose radius on the thread cutting tool can easily be checked.



EXTERNAL THREADS

d = Major diameter
 d_2 = Pitch diameter
 d_1 = Minor diameter

INTERNAL THREADS

D = Major diameter
 D_2 = Pitch diameter
 D_1 = Minor diameter

P = Pitch
 a = Flank angle

There are almost certainly other ways to do this but here is one suggestion:

The inserts shown below are FMS-DK thread inserts for measuring **pitch diameter**:

Type 21 is for measuring external pitch diameter (d_2)

Type 22 is for measuring internal pitch diameter (D_2)

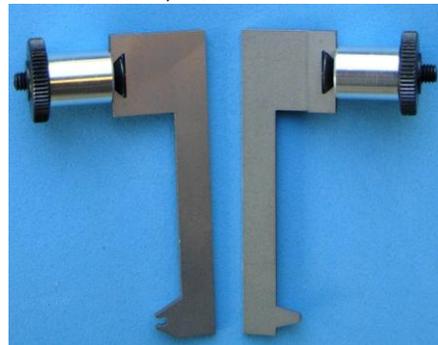
Type 23 is for measuring internal pitch diameter (D_2) on threads over 35mm/1.375"



Type 21



Type 23



Type 22

These thread inserts can be mounted on special holders that are attached to a standard digital caliper. There is also a special FMS caliper on which measuring inserts can be directly mounted.

For more information see:

WWW.FMS-DK.COM

or

WWW.F-M-S.DK



A method whereby D and d1 can be measured is:

If the "noses" on the male (M) and female (F) inserts are made as shown, then these inserts (made after the same principle as above) will be able to measure D and d1 on all threads with the same pitch if the "nose" radius is kept to a minimum.

