

# BASIC THREAD FORM TERMS

The following basic terms are necessary to understand threads of any form. The sketch illustrates each term. A listing of more thread terms is included in a glossary at the end.

**CREST:** The top of the thread form. The major diameter of an external thread, or the minor diameter of an internal thread.

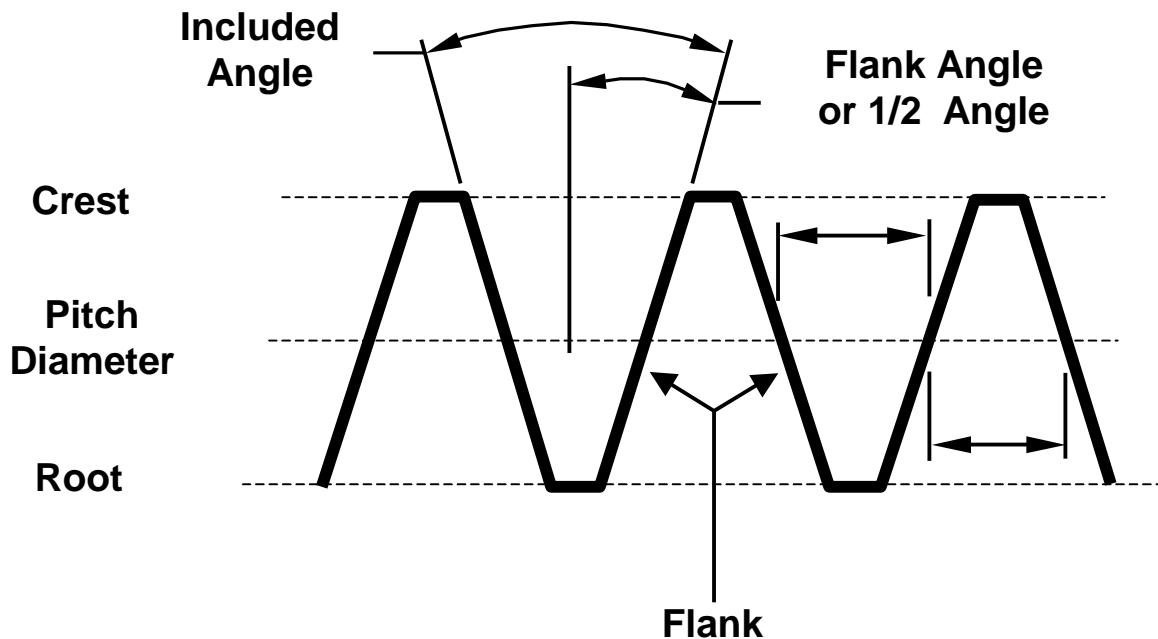
**ROOT:** The bottom of the thread form. The major diameter of an internal thread and the minor diameter of an external thread.

**PITCH DIAMETER:** The theoretical diametrical plane, which passes through a thread at the point where the width of the thread tooth and groove are equal.

**FLANKS:** The sides of the thread form or groove, connecting the crest and the root.

**FLANK ANGLE:** The angle between the flank and a line perpendicular to the axis of the thread. Also referred to as half angle or lead angle. Some exceptions to this definition will be encountered, such as tapered thread flank angles measured perpendicular to the taper, and should be noted.

**INCLUDED ANGLE:** Total of the two flank angles of a thread form.



# INTERNAL THREAD BASICS

Figure #1 Internal Thread Basics

## MAJOR DIAMETER - ROOT:

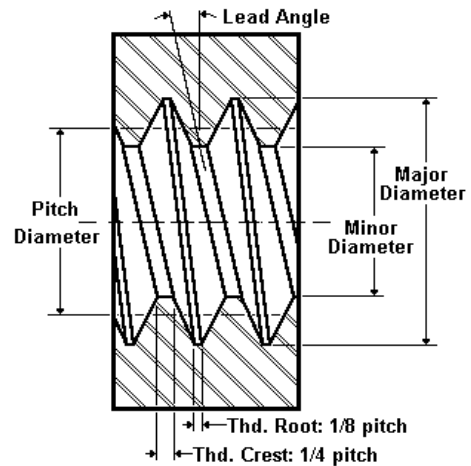
Must clear the major diameter of the mating external thread part.

## MINOR DIAMETER - CREST:

Controls the strength or shear of the thread.

## PITCH DIAMETER:

Controls the fit of the mating parts, looseness & tightness.



## GO THREAD PLUG GAGES

Plus tolerance on OD (Outer or Major Diameter), & PD (Pitch Diameter)

Functional check; checks minimum pitch diameter, minimum major diameter, flank angles, and lead.

Engages for full length of thread free and easy

## NOGO, NOTGO, HI THREAD PLUG GAGES

Minus tolerance on OD (Major Diameter), & PD (Pitch Diameter)

Checks one feature only: maximum functional pitch diameter

Engagement

**Inch:** Acceptable when gage does not enter product more than three complete turns. Thin or soft material, or small number of threads may require altering three-turn limit. Per ANSI B1.2-1983, page 13, par. 4.2.1

**Metric:** Acceptable when a definite drag from contact with the product material results on or before the second turn of entry. Per ANSI B1.16M-1984, page 15, par. 4.2.1



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