

# YORKSHIRE PRECISION GAUGES

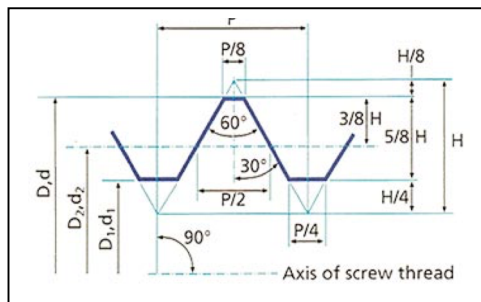
## BS 3643 PARTS 1 & 2

### Limits and Tolerances for ISO Screw Thread Gauges

BS 3643 comprises two parts. Part 1 provides information and data on the basic principles, it is based on ISO 965/1 and ISO 965/3.

Part 2 tabulates diameters of constant, coarse and fine pitch series threads, it is based on ISO 965/2.

BS 919: Pt3: 2007 contains the recommended gauging system for checking ISO metric threads in accordance with BS 3643. It is based on ISO 1502. The basic profile of the ISO threads is shown below.



ISO threads Profile D = Major diameter of internal thread

d = Major diameter of external thread

D2 = Pitch diameter of internal thread

d2 = Pitch diameter of external thread

D1 = Minor diameter of internal thread

d1 = Minor diameter of external thread

P = Pitch

H = Height of fundamental triangle =  $P/2 \tan 30^\circ$

BS 3643 Pt1 and Pt2: 2007 specifies the fundamental deviations and tolerances for e.g. 5H, 6H, 6G and 7H for internal threads, and 4H, 6g, 6e, 8g for external threads.

Generally 6H/6g are regarded as "medium fit". The nut and bolt deviations and tolerance zones are illustrated here.

Nut and Bolt deviations and tolerance zones  $H/h = \text{zero} = \text{basic size}$

Product tolerance:  $8 > 6 > 5$  etc.

BS 919 Pt3: 2007 specifies the limits for gauges for testing the product thread. The basis for determining the gauge limit is the magnitude of the product tolerance. i.e. the larger the product tolerance, the larger the gauge limit regardless of diameter.