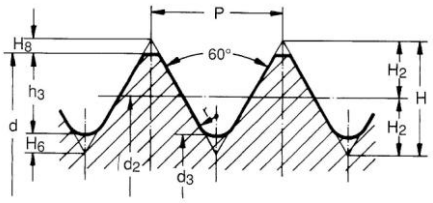
THREAD FORMULA

METRIC 60º (M)

$H = 0{,}86603 \cdot P$
$h_3 = 0{,}61343 \cdot P$
$d_2 = d - (0{,}6495 \cdot P)$
$d_3 = d - (2 \cdot h_3)$
$r = \frac{H}{6} = 0{,}14434 \cdot P$

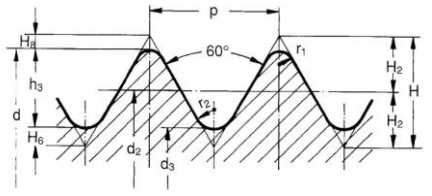


To find the correct drill diameter for internal threads subtract the pitch (P) from the outside diameter (d).

i.e. drill for M16x2 = 14.0mm

UNIFIED INCH 60º (UNC, UNF, UNR, NPS)

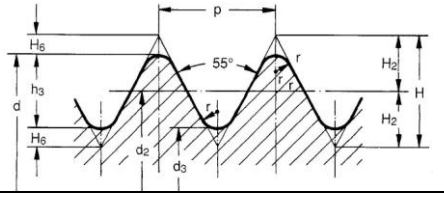
$H = 0{,}86603 \cdot P$
$h_3 = 0{,}61343 \cdot P$
$d_2 = d - (0{,}6495 \cdot P)$
$d_3 = d - (2 \cdot h_3)$
$r_1 = 0{,}10825 \cdot P$
$r_2 = 0{,}1443 \cdot P$



Pitch (P) is 1 divided by the number of threads per inch (TPI)

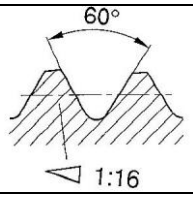
WHITWORTH 55º (BSW, BSF, G)

$H = 0{,}96049 \cdot P$
$h_3 = 0{,}64033 \cdot P$
$d_2 = d - h_3$
$d_3 = d - (2 \cdot h_3)$
$r = 0{,}13733 \cdot P$



Pitch (P) is 1 divided by the number of threads per inch (TPI)

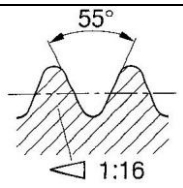
American Taper NPT



NPT uses the following TPI:

27, 18, 14, 11½ and 8

Whitworth BSPT (R, Rc)



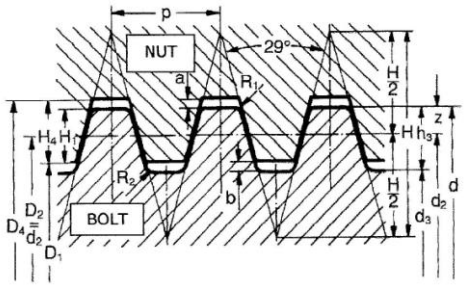
BSPT uses the following TPI:

28, 19, 14 and 11

N.B. The same TPIs apply also to NP and Whitworth (G) straight/parallel pipe threads

ACME 29º

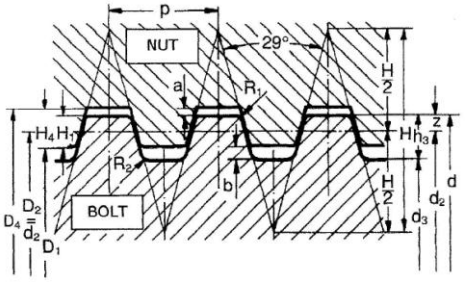
$H = 1{,}933 \cdot P$
$H_1 = 0{,}5 \cdot P$
$H_4 = 0{,}5 \cdot P + a = H_1 + a$
$h_3 = 0{,}5 \cdot P + b = H_1 + b$
$z = 0{,}25 \cdot P$
$D_4 = d + 2a$
$d_3 = d - 2\,h_3$
$d_2 = D_2 = d - 2z$



Pitch (P) is 1 divided by the number of threads per inch (TPI)

STUB ACME 29º

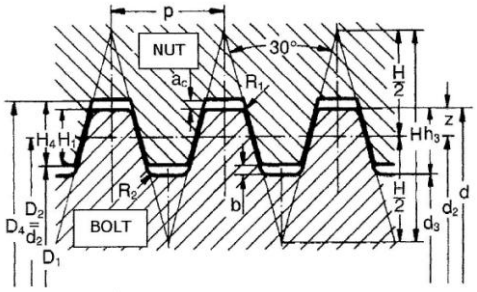
$H = 1{,}933 \cdot P$
$H_1 = 0{,}3 \cdot P$
$H_4 = 0{,}3 \cdot P + a = H_1 + a$
$h_3 = 0{,}3 \cdot P + b = H_1 + b$
$z = 0{,}15 \cdot P$
$D_4 = d + 2a$
$d_3 = d - 2\,h_3$
$d_2 = D_2 = d - 2z$
$= d - 0{,}3 \cdot P$



Pitch (P) is 1 divided by the number of threads per inch (TPI)

METRIC TRAPEZOID 30° (Tr)

$H = 1{,}866 \cdot P$
$H_1 = 0{,}5 \cdot P$
$H_4 = 0{,}5 \cdot P + ac$
$h_3 = 0{,}5 \cdot P + b$
$z = 0{,}25 \cdot P$
$D_4 = d + 2\,ac$
$d_3 = d - 2\,h_3$
$d_2 = D_2 = d - 2z$



METRIC TRAPEZOID STUB 30°

$H = 1{,}866 \cdot P$
$H_1 = 0{,}3 \cdot P$
$H_4 = 0{,}3 \cdot P + a = H_1 + a$
$h_3 = 0{,}3 \cdot P + b = H_1 + b$
$z = 0{,}15 \cdot P$
$D_4 = d + 2a$
$d_3 = d - 2\,h_3$
$d_2 = D_2 = d - 2z$
$= d - 0{,}3 \cdot P$