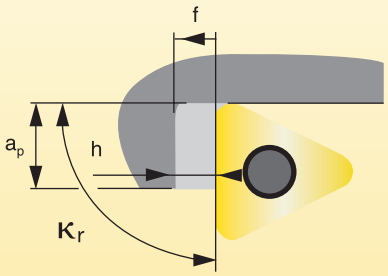
STELLRAM

The approach angle or attack angle is very important because it influences the tool life.

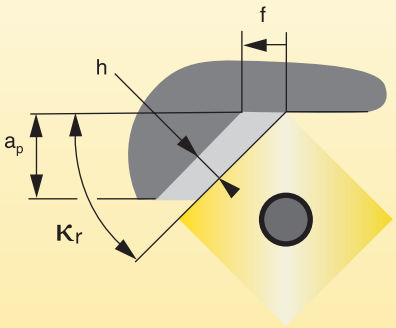
In the first picture we can see how it affects the chip thickness.

h = f



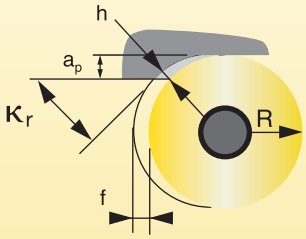
$\kappa_r = 90°$

h = f. sin [K_r]



$\kappa_r < > 90°$

h = 2f. Root [(a_p/2R). (1-a_p/2R)]

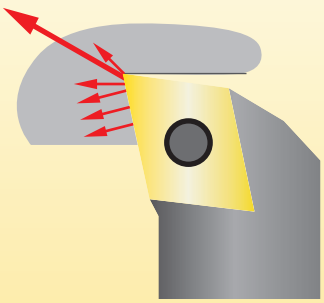


κ_r = cos-1. [1-a_p/R]

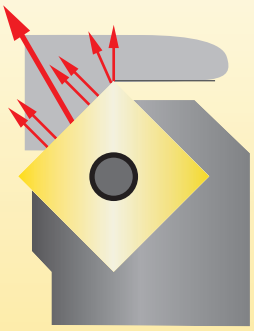
- h is the same as the feed f when the entering angle is 90°or equal to the sin of the approach angle * f
- A 45° approach angle will produce a lower chip thickness with a higher feed

In the second picture we can see the effect on cutting the force distribution.

$\kappa_r = 95°$



$\kappa_r = 45°$



- In the first case the first contact is between the workpiece and the insert point, and it is focused on the radius making the situation difficult
- On the second case, the approach angle on the workpiece is softer and the cutting forces, are distributed in a more uniform way, and not directly on the insert point.