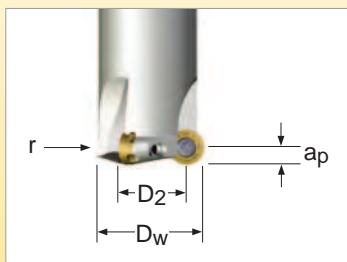




7713VR Technical Information

**Working Diameter:**

Formula to evaluate the correct working diameter based on axial depth of cut (a_p).

$$D_w = D_2 + 2 \times \sqrt{r^2 - (r - a_p)^2}$$

where:

- D_w = Working Diameter
- D_2 = Diameter of cutter insert centre to centre
- r = Insert radius
- a_p = Axial Depth of Cut

7713VR Technical Information

Formula to find programmed feed rate based on radial engagement and axial depth of cut.

$$f_z = \frac{h_m}{\frac{\sqrt{r^2 - (r - a_e)^2}}{r} \times \frac{\sqrt{r^2 - (r - a_p)^2}}{r}}$$

where:

f_z = Feed per tooth
 h_m = Average chip thickness
 r = Insert radius

a_e = Radial Depth of Cut
 a_p = Axial Depth of Cut

Formula to calculate the average chip thickness h_m in relation with radial engagement and depth of cut.

$$h_m = f_z \times \frac{\sqrt{r^2 - (r - a_e)^2}}{r} \times \frac{\sqrt{r^2 - (r - a_p)^2}}{r}$$

Simplified formulas to evaluate h_m and f_z based on axial depth of cut or radial engagement.

Calculation of the average chip thickness in relation with the D.O.C. (Axial)**Formula: Programme Feed Rate (f_z)**

$$f_z = h_m \times \sqrt{\frac{d}{a_p}}$$

h_m = Average chip thickness
 a_p = Depth of cut
 f_z = Feed per tooth
 d = Insert diameter

Formula: Average Chip Thickness (h_m)

$$h_m = f_z \times \sqrt{\frac{a_p}{d}}$$

Calculation of the average chip thickness in relation with the a_e (Radial Engagement) if a_e is less than 50% of Dia.**Formula: Programme Feed Rate (f_z)**

$$f_z = h_m \times \sqrt{\frac{d}{a_e}}$$

h_m = Average chip thickness
 a_e = Radial engagement
 f_z = Feed per tooth
 d = Cutter diameter

Formula: Average Chip Thickness (h_m)

$$h_m = f_z \times \sqrt{\frac{a_e}{d}}$$