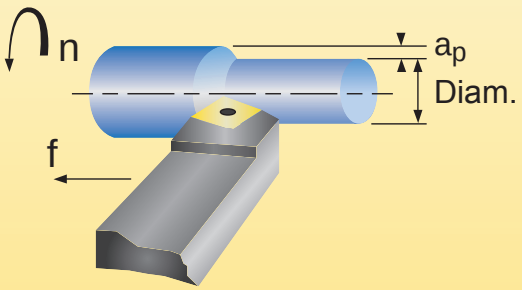
STELLRAM

## Cutting Data

In the turning operation we can distinguish three important elements:

- Work piece' s rotation at a determined speed of the spindle, "n"
- linear movement of the tool at a determined feed, "f"
- Cut depth, $a_p$




### Terminology

**Vc** - Indicated in meters/min. It refers to the speed at the insert edge removing the material at the periphery of the work piece. The cutting speed is related to the diameter of the work piece.

**F** - Defined in mm/rev and it is the distance covered by the tool during every rotation of the work piece. "f"- refers to the distance covered by the tool in a one minute, that is the feed vf (mm/min)

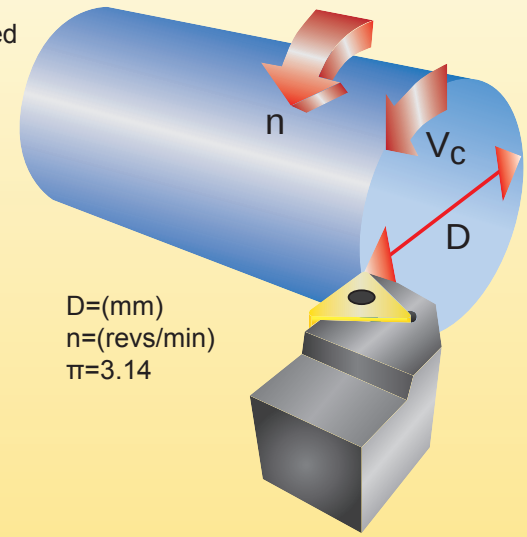
**-$a_p$** - Depth of Cut

## Cutting Parameters

The spindle speed n is the number of rotations the work piece rotates in one minute and it is indicated in revolutions/minute.

The Surface Speed can be calculated with the following formula:

D=Diameter
n=Spindle speed
π=Constant




D=(mm)
n=(revs/min)
π=3.14

### Formula

Volume "$Q_Z$": Metal Removal Rate
This value takes into consideration $V_C$, $A_P$ and feed to calculate the amount of material removed.

$$Q_Z = V_C \times f \times a_p \text{ (cm3/min)}$$

**Metric**

$$V_C = \frac{D \times \pi \times n}{1000} \quad \textbf{(m/min)}$$