

# Gear Calculations

## Spur Gear Calculations:

### 20 gear teeth

Thickness of Gear: 10 mm

Number of Teeth: 20

Module of Gear: 1.5 mm

Center distance between gears:  $R_1 + R_2 - 2M$

Outer Diameter of gear:  $M * (\text{Number of teeth} + 2) = 1.5 * (20 + 2) = 33 \text{ mm}$

Pitch circle Diameter =  $M * (\text{Number of teeth}) = 30 \text{ mm}$

Addendum:  $M = 1.5 \text{ mm}$

Dedendum:  $2.157 * M = 3.325 \text{ mm}$

Working Depth:  $2 * M = 3 \text{ mm}$

Whole Depth:  $2.157 * M = 3.325 \text{ mm}$

### 40 teeth gear

Number of teeth: 40

Outer Diameter of gear:  $M * (\text{Number of teeth} + 2) = 1.5 * (40 + 2) = 63 \text{ mm}$

Pitch circle Diameter =  $M * (\text{Number of teeth}) = 60 \text{ mm}$