turning

- a_c undeformed chip thickness
- a_p depth of cut
- A_c cross-sectional area
- d_m diameter of machined surface
- d_w diameter of workpiece
- f feed
- l_w length of cylindrical surface
- n_w rotational frequency of the workpiece
- p_s specific cutting energy (energy for a unit volume of work-material) unit J/m^3
- P_W power for primary motion
- R_a arithmetic average or centerline average roughness
- R_t maximum (peak to valley) height roughness
- R cutting tool edge corner radius
- t machining time
- v cutting speed
- Z_w material removal rate
- κ_r major cutting edge angle
- κ'_r minor cutting edge angle

grinding

- $a_{c,max}$: maximum undeformed chip thickness
- a_p: depth of cut
- a_w: average width of chip
- b_w: width of the of the workpiece in traverse grinding and the total depth of material to be removed in plunge grinding
- C_g: the number of actively cutting grains per unit area on the wheel surface
- D_s: wheel diameter
- d_g: average grit diameter
- f : feed
- G: grinding ratio
- h_{eff}: effective chip thickness
- l_c: average length of chip
- l_w: length of wokrpiece in traverse direction
- N_c: number of chips produced per unit time
- n_r: frequency of workpiece full reciprocation in traverse direction
- n_s: wheel spindle speed
- p_s: specific energy
- r_g: grain aspect ratio
- t_m: grinding time
- V_0: average volume of each chip
- v_r: wheel radius decrease rate
- v_t: surface speed of the wheel
- v_{trav}: traverse speed
- Z_r: radial wheel wear rate
- Z_w: material removal rate