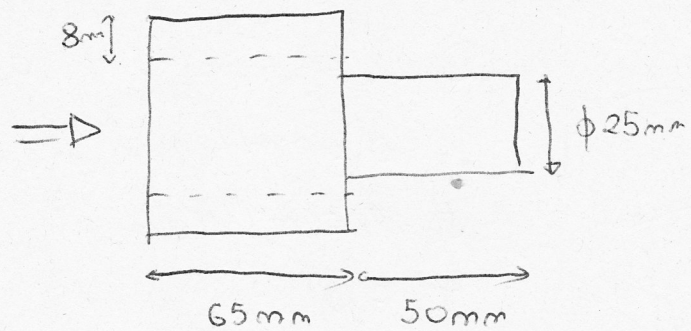
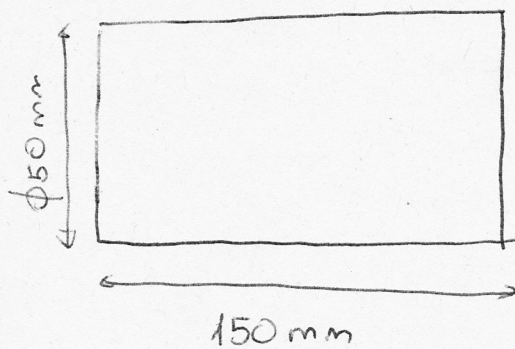
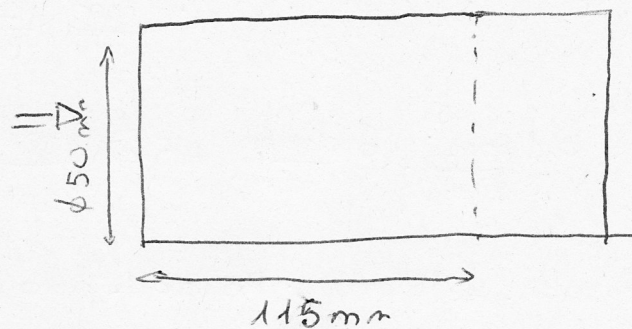
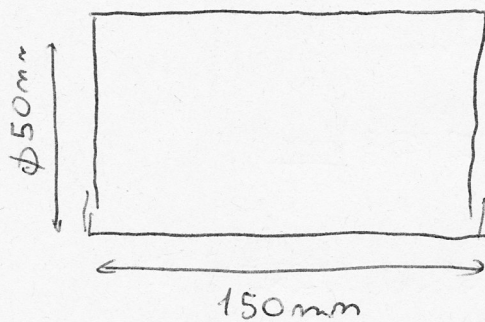




1º Tronzado

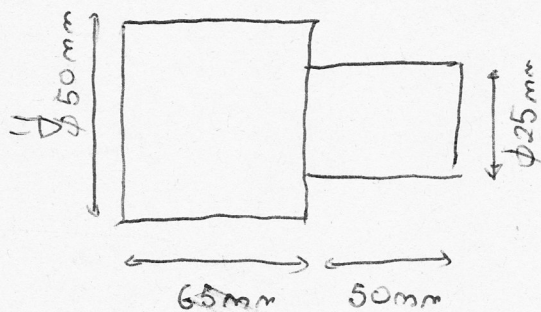
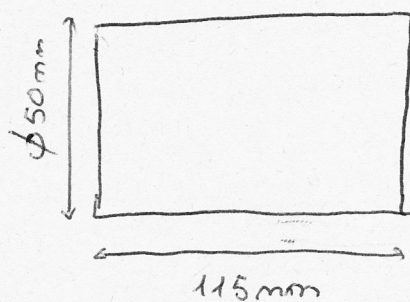


$$t_{\text{mecanizado}} = \frac{1 \text{ rev}}{N (\text{rev/min})} \cdot n_{\text{pasadas}} = \frac{1}{300} \cdot 10 = \frac{10}{300} \text{ min} = 0'033 \text{ min}$$

$$n_{\text{pasadas}} = \frac{D_o - D_f}{2 \cdot d} = \frac{50}{2 \cdot 2'5} = 10$$

prof. pasada

2º Cilindrado



$$V_c = 85 \text{ m/min}$$

$$f_r = 0'2 \text{ mm/rev}$$

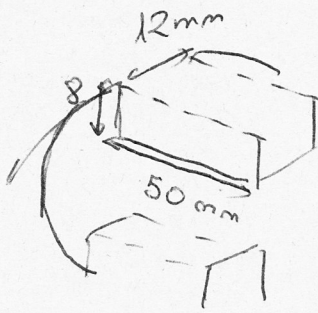
$$d = 2'5 \text{ mm}$$

$$V_c = \pi \cdot N \cdot D_m \Rightarrow N = \frac{V_c}{\pi \cdot D_m} = \frac{85 \text{ m/min}}{\pi \cdot 0'0375 \text{ m/rev}} = 721'5 \text{ rev/min}$$

$$f_r = f_r \cdot N = 0'2 \text{ mm/rev} \cdot 721'5 \text{ rev/min} = 144'3 \frac{\text{mm}}{\text{min}}$$

$$t_{\text{mec}} = \frac{L_{\text{cilindrado}}}{f_r} \cdot n_{\text{pasadas}} = \frac{50 \text{ mm}}{144'3 \frac{\text{mm}}{\text{min}}} \cdot \left(\frac{50 - 25}{2'5} \right) = 1'73 \text{ min}$$

3º Ranurado



$$D_{\text{presa}} = 7 \text{ mm}$$

$$d = 4 \text{ mm}$$

$$f_z = 0.1 \text{ mm/diente}$$

$$V_c = 100 \text{ m/min}$$

$$Z = 6 \text{ dientes}$$

$$V_c = \pi \cdot D \cdot N \quad ; \quad N = \frac{V_c}{\pi \cdot D} = \frac{100 \text{ m/min}}{\pi \cdot 7 \text{ mm} \cdot \frac{1 \text{ m}}{1000 \text{ mm}}} = 4547.13 \frac{\text{rev}}{\text{min}}$$

$$f_r = f_z \cdot Z \cdot N = 0.1 \frac{\text{mm}}{\text{diente}} \cdot 6 \frac{\text{diente}}{\text{rev}} \cdot 4547.13 \frac{\text{rev}}{\text{min}} = 2728 \frac{\text{mm}}{\text{min}}$$

$$n_{\text{pasadas}} = \text{Pasadas a lo ancho} \cdot \text{Pasadas a lo profundo} = 2 \times 2 = 4$$

$$t_{\text{mec}} = \frac{L_{\text{mec}}}{f_r} \cdot n_{\text{pasadas}} = \frac{65 \text{ mm}}{2728 \frac{\text{mm}}{\text{min}}} \cdot 4 = 0.095 \text{ min}$$

$$t_{\text{TOTAL}} = t_{\text{mec}} \times n_{\text{ranuras}} = 0.095 \text{ min} \cdot 2 = 0.190 \text{ min}$$

$$t_{\text{TOTAL por pieza}} = t_{\text{mec}} + t_{\text{cambio herramienta}} = 0.033 + 0.19 + 1.73 + 0.8 = 2.75 \text{ min/pieza}$$