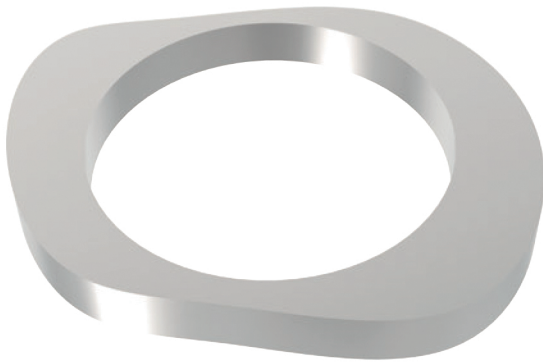


PASS CALCULATION OF PUNCHING FORCE

Formula for calculating the punching force:



Example round:

$$U = d \times \pi$$

$$U = 10 \times 3,14$$

$$U \sim 31,4 \text{ mm}$$

$$F \text{ (in kN)} = \frac{U \times t \times R_m \times 0,9 \times f}{1000}$$

- F = punching force in kN
- U = circumference or perimeter of the punch shape (in mm)
- t = sheet thickness (in mm)
- R_m = tensile strength (in N/mm²)
 for stainless steel (1.4301) 720 N/mm²
 for steel (DC01) 420 N/mm²
 for aluminium (AlMg3) 220 N/mm²
- f = factor between 0,5 - 0,95 when using punches with shear

Example 1:
f ~ 0,5



Example 2:
f ~ 0,8

