

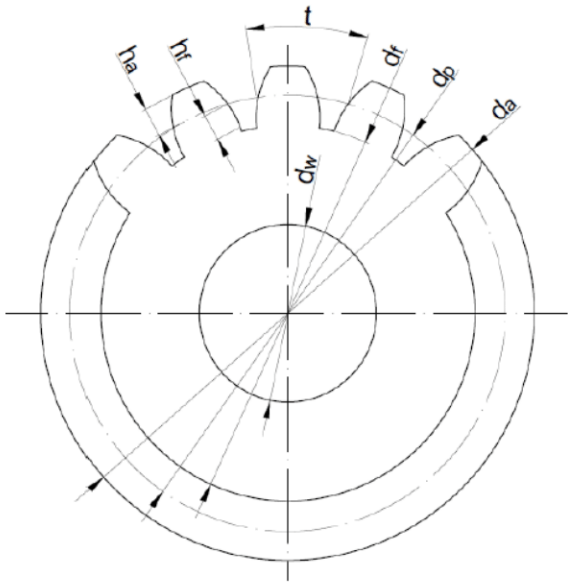
# Wał przekładni zębatej kompletny

Dane:

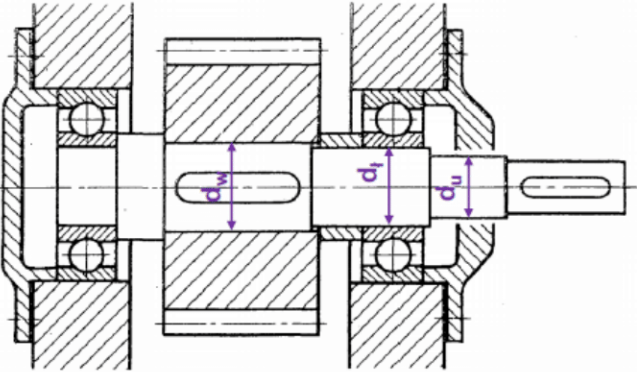

$$z = 25$$

$$m = 5$$

$$\varphi = 1.3$$

Dane	Obliczenia	Wyniki
$z = 25$ $m = 5$ $\varphi = 1.3$	 <p>The diagram shows a gear cross-section with the following labeled dimensions: <math>t</math> (tooth thickness), <math>h_a</math> (addendum), <math>h_f</math> (fillet height), <math>d_f</math> (fillet diameter), <math>d_p</math> (pitch diameter), <math>d_a</math> (addendum diameter), <math>d_w</math> (working diameter), and <math>d</math> (pitch diameter).</p> $h_a = m = 5 \text{ [mm]}$ $h_f = 1.25 \cdot m = 6.25 \text{ [mm]}$ $d_p = z \cdot m = 25 \cdot 5 = 125 \text{ [mm]}$	$h_a = 5 \text{ [mm]}$  $h_f = 6.25 \text{ [mm]}$  $d_p = 125 \text{ [mm]}$

Dane	Obliczenia	Wyniki
$d_p = 125 [mm]$ $h_a = 5 [mm]$	$d_a = d_p + 2 \cdot h_a = 125 + 10 = 135 [mm]$	$d_a = 135 [mm]$
$h_f = 6.25 [mm]$	$d_f = d_p - 2 \cdot h_f = 125 - 12.5$ $= 112.5 [mm]$	$d_f = 112.5 [mm]$
	$d_w = d_p(0.35 \div 0.45)$ $= 125 \cdot (0.35 \div 0.45)$ $= (43.75 \div 56.25) [mm]$ $\rightarrow \text{dobieram } 50 [mm]$	$d_w = 50 [mm]$
$\varphi = 1.3$	$\varphi = \frac{b}{d_p} = 1.3$ $b = 1.3 \cdot d_p = 1.3 \cdot 125 = 162.5 [mm]$	$b = 162.5 [mm]$

Dane	Obliczenia	Wyniki
$d_w = 50 \text{ [mm]}$	 $d_t = d_w - 5 = 50 - 5 = 45 \text{ [mm]}$  <p>→ dobieram łożysko o oznaczeniu 6009</p>	$d_t = 45 \text{ [mm]}$
$d_t = 45 \text{ [mm]}$	$d_u = d_t - 3 = 45 - 3 = 42 \text{ [mm]}$	$d_u = 42 \text{ [mm]}$

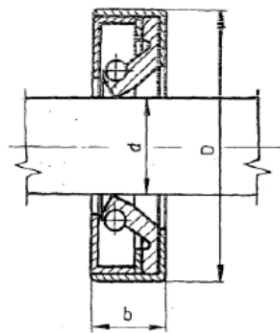
## Dane

$$d_u = 42 \text{ [mm]}$$

$$b = 162.5 \text{ [mm]}$$

$$d_w = 50 \text{ [mm]}$$

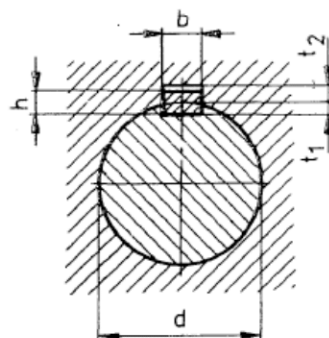
## Obliczenia



d	D	b
40	55 60 62 72	10
42	62 65 68 72	10

$$d = d_u$$

→ *dobieram uszczelniacz*  
o oznaczeniu: 42 x 65 x 10



Zakresy średnic d (mm)		Wymiary wpustu b x h (mm)	Głębokość rowków (mm)	
ponad	do		w wale t <sub>1</sub>	w piaście t <sub>2</sub>
6	8	2x2	1,2	1
8	10	3x3	1,8	1,4
10	12	4x4	2,5	1,8
12	17	5x5	3	2,3
17	22	6x6	3,5	2,8
22	30	8x7	4	3,3
30	38	10x8	5	3,3
38	44	12x8	5	3,3
44	50	14x9	5,5	3,8

<sup>a1)</sup> Normalne długości wpustów wynoszą: 6, 8, 10, 12, 14, 16, 18, 20, 22, 25, 28, 32, 36, 40, 45, 50, 56, 63, 70, 80, 90, 100, 110, 125, 140, 160, 180, 200, 220, 250, 280, 320, 360, 400, 450, 500.

→ *dobieram wpust o oznaczeniu:*

$$14 \times 9 \times 140$$

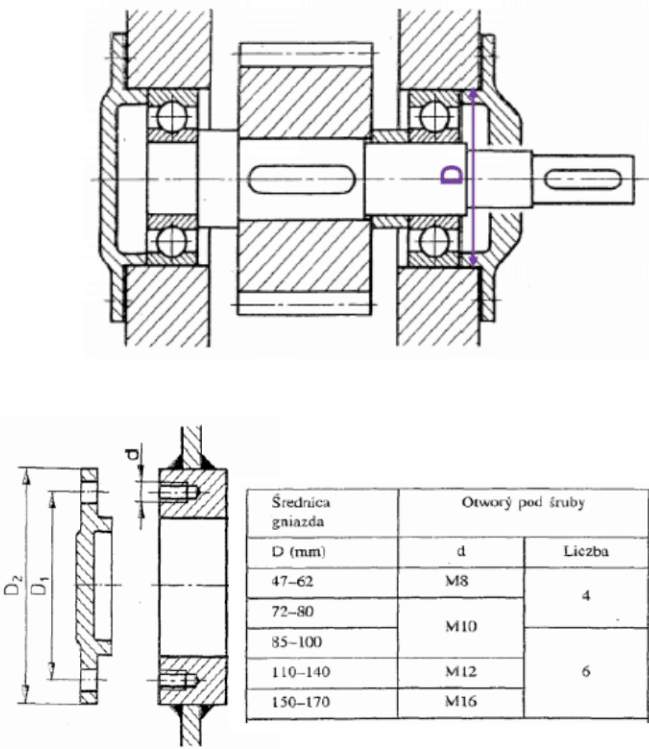
## Wyniki

Dane

Obliczenia

Wyniki

$D = 75 \text{ [mm]}$



→ dobieram  $d = M10$

$d = M10$

$$D_1 = D + 2.5 \cdot d = 75 + 2.5 \cdot 10$$
$$= 100 \text{ [mm]}$$

$D_1 = 100 \text{ [mm]}$

$$D_2 = D_1 + 2.25 \cdot d = 100 + 2.25 \cdot 10$$
$$= 122.5 \text{ [mm]}$$

$d = M10$

$D_1 = 100 \text{ [mm]}$

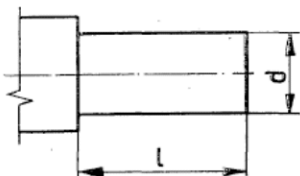
$D_2 = 122.5 \text{ [mm]}$

Dane

Obliczenia

Wyniki

$d_u = 42 \text{ [mm]}$



Średnica d (mm)					Długość l (mm)	
Wymiar nominalny					Tolerancja	
16		18		19	j6	Czopy długie
20		22		24		Czopy krótkie
	25		28			
30		32	35			
				38		

$d = d_c$

$d_u > d_c$

$\rightarrow \text{dobieram } R = 1.5 \text{ [mm]}$

$d_c = d_u - 7 = 42 - 7 = 35 \text{ [mm]}$

$d_c = 35 \text{ [mm]}$

$\rightarrow \text{dobieram } l = 58 \text{ [mm]}$

$R = 1.5 \text{ [mm]}$

$d_c = 35 \text{ [mm]}$

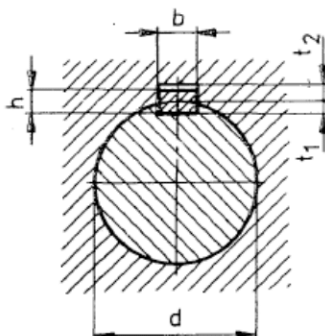
$l = 58 \text{ [mm]}$

## Dane

$$l = 58 [mm]$$

$$d_c = 35 [mm]$$

## Obliczenia



Zakresy średnic d (mm)		Wymiary wpustu b x h (mm)	Głębokość rowków (mm)	
ponad	do		w wale t <sub>1</sub>	w piąście t <sub>2</sub>
6	8	2x2	1,2	1
8	10	3x3	1,8	1,4
10	12	4x4	2,5	1,8
12	17	5x5	3	2,3
17	22	6x6	3,5	2,8
22	30	8x7	4	3,3
30	38	10x8	5	3,3

<sup>2)</sup> Normalne długości wpustów wynoszą: 6, 8, 10, 12, 14, 16, 18, 20, 22, 25, 28, 32, 36, 40, 45, 50, 56, 63, 70, 80, 90, 100, 110, 125, 140, 160, 180, 200, 220, 250, 280, 320, 360, 400, 450, 500.

→ *dobieram wpust o oznaczeniu:*

$$10 \times 8 \times 45$$

