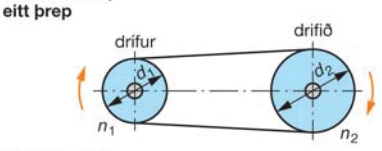
Gírar; gírhlutföll *gears; transmission ratios*

Flatreimadrif, eitt þrep



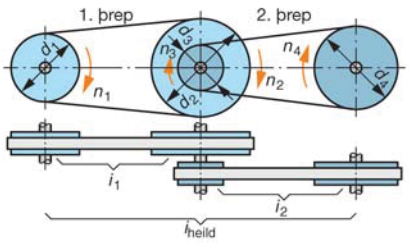
$$d_1 \cdot n_1 = d_2 \cdot n_2$$

$$i = \frac{n_1}{n_2} = \frac{d_2}{d_1}$$

$$n_1 = \frac{d_2 \cdot n_2}{d_1} \qquad n_2 = \frac{d_1 \cdot n_1}{d_2}$$

d_1; d_3 : þvermál drifskífa
d_2; d_4 : þvermál drifinna skífa
n_1; n_3 : snúningshraði drifskífa
n_2; n_4 : snúningshraði drifinna skífa
n_A : snúningshraði inntaks
n_E : snúningshraði úttaks
i : gírhlutfall
i_1; i_2 : gírhlutfall stakra þrepa
i_{heild} : heildargírun

Flatreimadrif, tvö þrep



$$n_1 \cdot d_1 \cdot d_3 = n_4 \cdot d_2 \cdot d_4$$

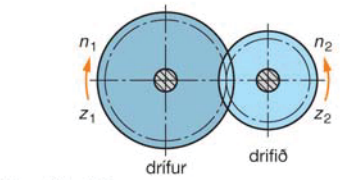
$$n_A \cdot d_1 \cdot d_3 \cdot \ldots = n_E \cdot d_2 \cdot d_4 \cdot \ldots$$

$$i_{heild} = i_1 \cdot i_2 = \frac{n_1}{n_2} \cdot \frac{n_3}{n_4} = \frac{n_1}{n_4}$$

$$i_{heild} = i_1 \cdot i_2 = \frac{d_2 \cdot d_4}{d_1 \cdot d_3}$$

$$i_{heild} = \frac{n_A}{n_E} = \frac{d_2 \cdot d_4 \cdot d_6 \cdot \ldots}{d_1 \cdot d_3 \cdot d_5 \cdot \ldots}$$

Tannhjóladrif, eitt þrep



$$z_1 \cdot n_1 = z_2 \cdot n_2$$

$$i = \frac{n_1}{n_2} = \frac{z_2}{z_1}$$

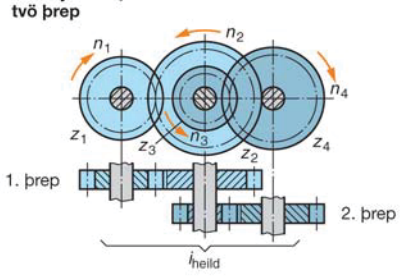
$$n_1 = \frac{z_2 \cdot n_2}{z_1}$$

$$n_2 = \frac{z_1 \cdot n_1}{z_2}$$

z_1; z_3 : tannafjöldi drifhjóla
z_2; z_4 : tannafjöldi drifinna hjóla
n_1; n_3 : snúningshraði drifhjóla
n_2; n_4 : snúningshraði drifinna hjóla
n_A : snúningshraði inntaks
n_E : snúningshraði úttaks
i : gírhlutfall
i_1; i_2 : gírhlutfall stakra þrepa
i_{heild} : heildargírun

Málsetning tannhjóla: sjá tannhjól

Tannhjóladrif, tvö þrep



$$n_1 \cdot z_1 \cdot z_3 = n_4 \cdot z_2 \cdot z_4$$

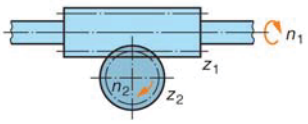
$$n_A \cdot z_1 \cdot z_3 \cdot \ldots = n_E \cdot z_2 \cdot z_4 \cdot \ldots$$

$$i_{heild} = i_1 \cdot i_2 = \frac{n_1}{n_2} \cdot \frac{n_3}{n_4} = \frac{n_1}{n_4}$$

$$i_{heild} = i_1 \cdot i_2 = \frac{z_2 \cdot z_4}{z_1 \cdot z_3}$$

$$i_{heild} = \frac{n_A}{n_E} = \frac{z_2 \cdot z_4 \cdot z_6 \cdot \ldots}{z_1 \cdot z_3 \cdot z_5 \cdot \ldots}$$

Snekkjudrif

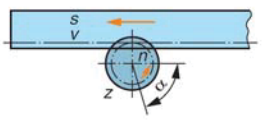


$$z_1 \cdot n_1 = z_2 \cdot n_2$$

$$i = \frac{n_1}{n_2} = \frac{z_2}{z_1}$$

z_1 : gengjufjöldi (tannafjöldi) snekkju
z_2 : tannafjöldi snekkjuhjóls
n_1 : snúningshraði snekkju
n_2 : snúningshraði snekkjuhjóls
i : gírhlutfall

Tannstangardrif



$$s = d \cdot \pi$$

$$s = m \cdot z \cdot \pi$$

$$s = \frac{m \cdot z \cdot \pi \cdot \alpha}{360°}$$

$$v = m \cdot z \cdot \pi \cdot n$$

s : færsla tannstangar
v : færsluhraði tannstangar
d : þvermál deilihrings
m : módúll
z : tannafjöldi
n : snúningshraði
α : snúningshorn
π : 3,14159…

Úr Töflubókinni. Birt með góðfúslegu leyfi IÐNÚ bókaútgáfu.