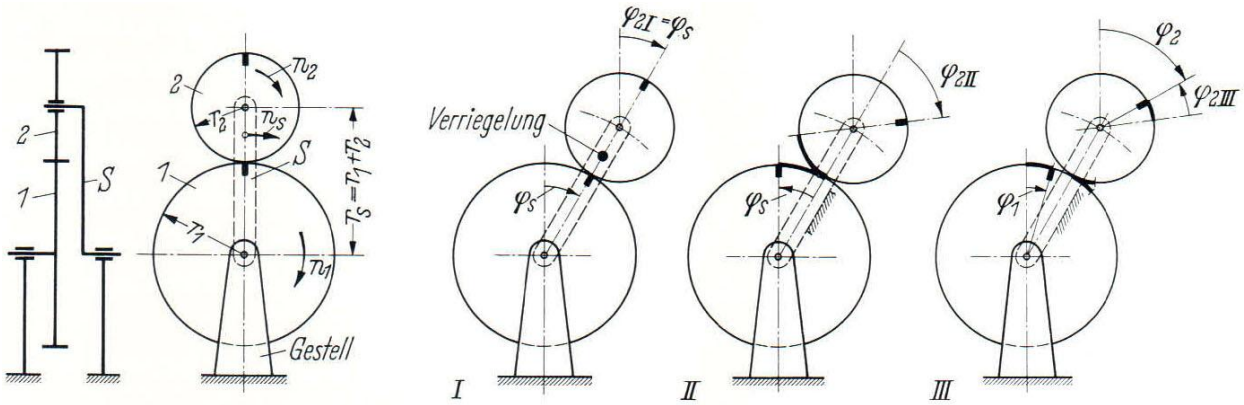
Univerza v Ljubljani
Fakulteta za strojništvo

Strojni elementi 3

Planetna gonila

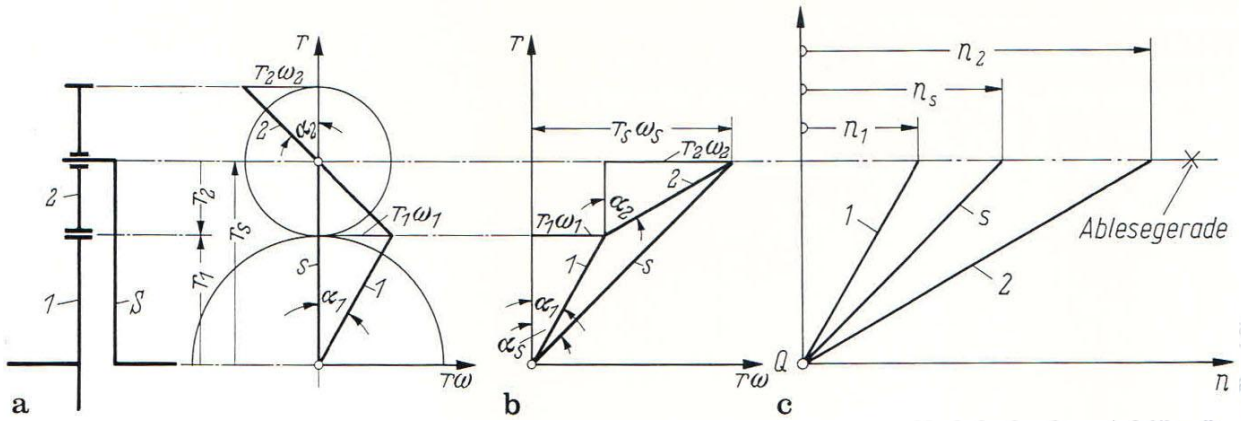
prof.dr. Marko Nagode

Enostavno planetno gonilo tipa 1A



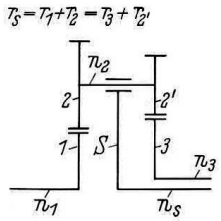
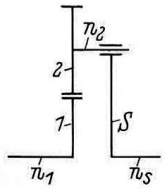
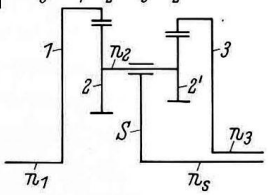
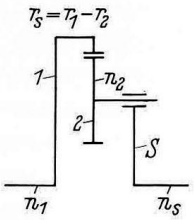
Vir: Haberhauer/Bodenstein Maschinenelemente

Obodne in vrtilne hitrosti



Vir: Haberhauer/Bodenstein Maschinenelemente

Vrste planetnih gonil in enačbe vrtilnih hitrosti

Bezeichnungen und Schema	Grundübersetzungen (bei $n_s = 0$)	Drehzahlgleichungen
Typ 2AA 	$i_{1/2} = -\frac{r_2}{r_1}$	$n_1 - \frac{r_2}{r_1}\frac{r_3}{r_{2'}} n_3 = \left(1 - \frac{r_2}{r_1}\frac{r_3}{r_{2'}}\right) n_s$
	$i_{2/3} = -\frac{r_3}{r_{2'}}$	$n_1 + \frac{r_2}{r_1} n_2 = \left(1 + \frac{r_2}{r_1}\right) n_s$
	$i_{1/3} = \frac{r_2}{r_1}\frac{r_3}{r_{2'}}$	$n_2 + \frac{r_3}{r_{2'}} n_3 = \left(1 + \frac{r_3}{r_{2'}}\right) n_s$
Typ 1A 	$i_{1/2} = -\frac{r_2}{r_1}$	$n_1 + \frac{r_2}{r_1} n_2 = \left(1 + \frac{r_2}{r_1}\right) n_s$
Typ 2II 	$i_{1/2} = \frac{r_2}{r_1}$	$n_1 - \frac{r_2}{r_1}\frac{r_3}{r_{2'}} n_3 = \left(1 - \frac{r_2}{r_1}\frac{r_3}{r_{2'}}\right) n_s$
	$i_{2/3} = \frac{r_3}{r_{2'}}$	$n_1 - \frac{r_2}{r_1} n_2 = \left(1 - \frac{r_2}{r_1}\right) n_s$
	$i_{1/3} = \frac{r_2}{r_1}\frac{r_3}{r_{2'}}$	$n_2 - \frac{r_3}{r_{2'}} n_3 = \left(1 - \frac{r_3}{r_{2'}}\right) n_s$
Typ 1I 	$i_{1/2} = \frac{r_2}{r_1}$	$n_1 - \frac{r_2}{r_1} n_2 = \left(1 - \frac{r_2}{r_1}\right) n_s$

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Vrste planetnih gonil in enačbe vrtilnih hitrosti

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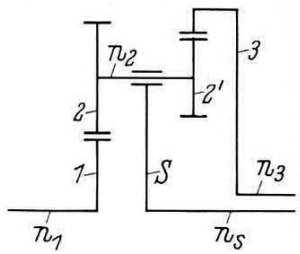
Typ 2AI 	$i_{1/2} = -\frac{r_2}{r_1}$	$n_1 + \frac{r_2}{r_1}\frac{r_3}{r_{2'}} n_3 = \left(1 + \frac{r_2}{r_1}\frac{r_3}{r_{2'}}\right) n_s$
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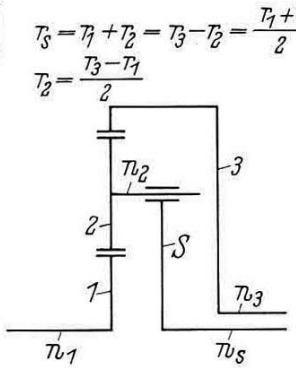
Typ 1AI 	$i_{1/2} = -\frac{r_2}{r_1}$	$n_1 - \frac{r_3}{r_1} n_3 = \left(1 + \frac{r_3}{r_1}\right) n_s$
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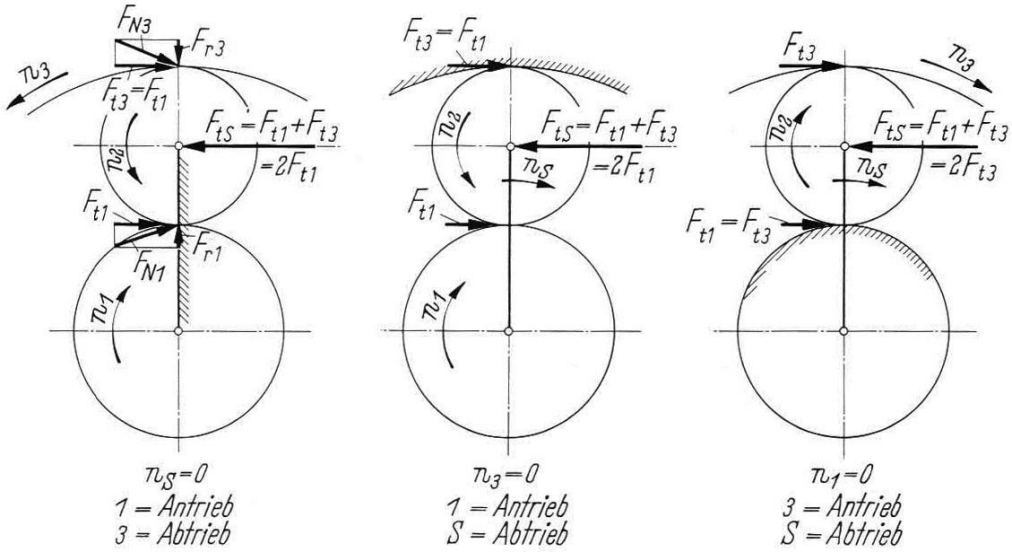
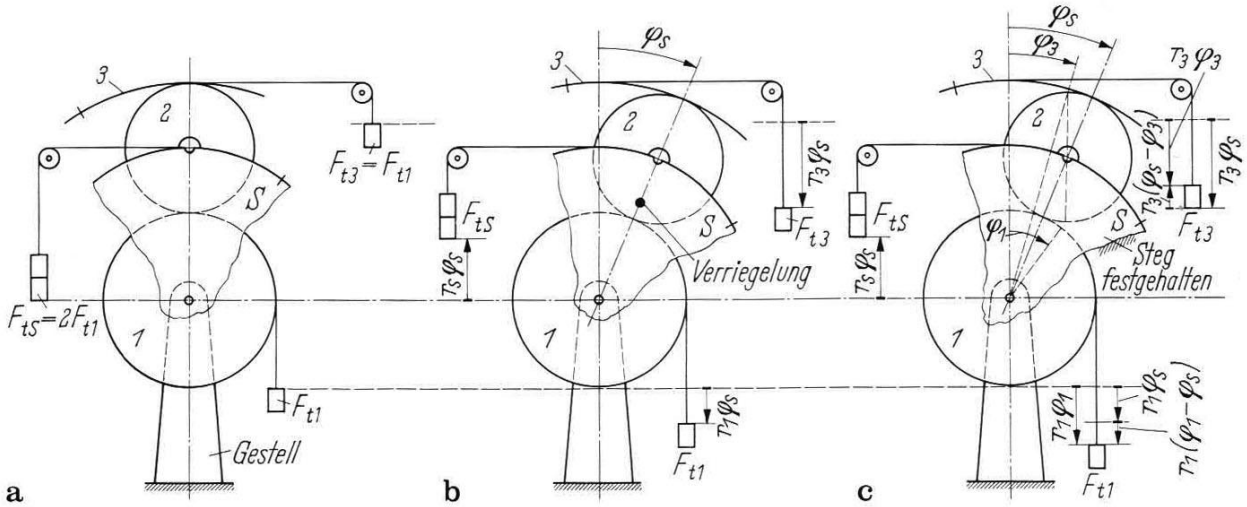
Vir: Haberhauer/Bodenstein Maschinenelemente

Sile momenti in moči brez upoštevanja izgub



Vir: Haberhauer/Bodenstein Maschinenelemente

Sile momenti in moči z upoštevanjem izgub



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