TERMODINAMISKO PROCESU APRĒĶINA FORMULAS

Nr. p/k	Process	Procesa vienādojums	Parametru aprēķina formula			Darbs (izplēšanās - deformācijas) $l_{1,2}$, kJ/kg	Darbs (spiediena) $l'_{1,2}$, kJ/kg	Siltuma daudzums $q_{1,2}$, kJ/kg	Entropijas izmaiņa Δs, kJ/(kg·K)
			$\frac{p_2}{p_1} =$	$\frac{v_2}{v_1} =$	$\frac{T_2}{T_1} =$				
1	**Izohorais**	v = const	$\frac{T_2}{T_1}$	1	$\frac{p_2}{p_1}$	0	$-v(p_2 - p_1)$	$c_v(T_2 - T_1) =$ $= \frac{v}{R} c_v (p_2 - p_1)$	$c_v \ln \frac{T_2}{T_1}$
2	**Izobārais**	p = const	1	$\frac{T_2}{T_1}$	$\frac{v_2}{v_1}$	$p(v_2 - v_1) =$ $= R(T_2 - T_1)$	0	$c_p(T_2 - T_1) =$ $= \frac{p}{R} c_p (v_2 - v_1)$	$c_p \ln \frac{T_2}{T_1}$
3	**Izotermiskais**	T = const pv = const	$\frac{v_1}{v_2}$	$\frac{p_1}{p_2}$	1	$RT \ln \frac{v_2}{v_1} =$ $= p_1 v_1 \ln \frac{p_1}{p_2}$	$p_1 v_1 \ln \frac{p_1}{p_2}$	$l_{1,2}$	$R \ln \frac{v_2}{v_1}$
4	**Adiabātiskais**	pv^k = const	$\left(\frac{v_1}{v_2}\right)^k =$ $\left(\frac{T_2}{T_1}\right)^{\frac{k}{k-1}}$	$\left(\frac{p_1}{p_2}\right)^{\frac{1}{k}} =$ $\left(\frac{T_1}{T_2}\right)^{\frac{1}{k-1}}$	$\left(\frac{v_1}{v_2}\right)^{k-1} =$ $\left(\frac{p_2}{p_1}\right)^{\frac{k-1}{k}}$	$\frac{1}{k-1}(p_1 v_1 - p_2 v_2) =$ $= \frac{RT_1}{k-1} \cdot \left[1 - \left(\frac{p_2}{p_1}\right)^{\frac{k-1}{k}}\right]$	$kl_{1,2}$	0	0
5	**Politropais**	pv^n = const	$\left(\frac{v_1}{v_2}\right)^n =$ $\left(\frac{T_2}{T_1}\right)^{\frac{n}{n-1}}$	$\left(\frac{p_1}{p_2}\right)^{\frac{1}{n}} =$ $\left(\frac{T_1}{T_2}\right)^{\frac{1}{n-1}}$	$\left(\frac{v_1}{v_2}\right)^{n-1} =$ $\left(\frac{p_2}{p_1}\right)^{\frac{n-1}{n}}$	$\frac{1}{n-1}(p_1 v_1 - p_2 v_2) =$ $= \frac{RT_1}{n-1}\left[1 - \left(\frac{p_2}{p_1}\right)^{\frac{n-1}{n}}\right]$	$nl_{1,2}$	$c_n(T_2 - T_1) =$ $= c_v \frac{n-k}{n-1}(T_2 - T_1)$	$c_n \ln \frac{T_2}{T_1} +$ $+ R \ln \frac{v_2}{v_1}$