7.2 – OSNOVNE POLITROPSKE PRIVIDNO RAVNOTEŽNE PROMENE STANJA IDEALNOG GASA

Promena stanja		Izohorska	Izobarska	Izotermska	Izentropska	Opšta politropska
		$v = $ idem	$p = $ idem	$T = $ idem	$s = $ idem	
Jednačina promene		$p^0 v = $ idem $\;$ $T^0 v = $ idem $\;$ $T p^{-1} = $ idem	$p v^0 = $ idem $\;$ $T v^{-1} = $ idem $\;$ $T^0 p = $ idem	$p v = $ idem $\;$ $T v^0 = $ idem $\;$ $T p^0 = $ idem	$p v^\kappa = $ idem $\;$ $T v^{\kappa-1} = $ idem $\;$ $T^\kappa p^{1-\kappa} = $ idem	$p v^n = $ idem $\;$ $T v^{n-1} = $ idem $\;$ $T^n p^{1-n} = $ idem
Odnosi veličina stanja između	$\dfrac{p_1}{p_2} = $	$\dfrac{T_1}{T_2} = $	1	$\dfrac{v_2}{v_1} = $	$\left(\dfrac{v_2}{v_1}\right)^\kappa = \left(\dfrac{T_1}{T_2}\right)^{\frac{\kappa}{\kappa-1}}$	$\left(\dfrac{v_2}{v_1}\right)^n = \left(\dfrac{T_1}{T_2}\right)^{\frac{n}{n-1}}$
	$\dfrac{v_1}{v_2} = $	1	$\dfrac{T_1}{T_2} = $	$\dfrac{p_2}{p_1} = $	$\left(\dfrac{p_2}{p_1}\right)^{\frac{1}{\kappa}} = \left(\dfrac{T_2}{T_1}\right)^{\frac{1}{\kappa-1}}$	$\left(\dfrac{p_2}{p_1}\right)^{\frac{1}{n}} = \left(\dfrac{T_2}{T_1}\right)^{\frac{1}{n-1}}$
	$\dfrac{T_1}{T_2} = $	$\dfrac{p_1}{p_2} = $	$\dfrac{v_1}{v_2} = $	1	$\left(\dfrac{p_1}{p_2}\right)^{\frac{\kappa-1}{\kappa}} = \left(\dfrac{v_2}{v_1}\right)^{\kappa-1}$	$\left(\dfrac{p_1}{p_2}\right)^{\frac{n-1}{n}} = \left(\dfrac{v_2}{v_1}\right)^{n-1}$
Izvršen specifični rad usled promene zapremine $w_{1-2} = $		0	$-R(T_2 - T_1)$ $\;$ $-p(v_2 - v_1)$	$RT \ln \dfrac{p_2}{p_1}$ $\;$ $-p_1 v_1 \ln \dfrac{v_2}{v_1}$	$\dfrac{R}{\kappa-1}(T_2 - T_1)$ $\;$ $-\dfrac{p_1 v_1}{\kappa-1}\left[1 - \left(\dfrac{p_2}{p_1}\right)^{\frac{\kappa-1}{\kappa}}\right]$	$\dfrac{R}{n-1}(T_2 - T_1)$ $\;$ $-\dfrac{p_1 v_1}{n-1}\left[1 - \left(\dfrac{p_2}{p_1}\right)^{\frac{n-1}{n}}\right]$
Predata specifična količina toplote, $q_{12} = $		$c_v(T_2 - T_1)$ $\;$ $\dfrac{v(p_2 - p_1)}{\kappa-1}$	$c_p(T_2 - T_1)$ $\;$ $\dfrac{\kappa}{\kappa-1}l_{12}$	$-w_{1-2} = -w_{t,1-2}$ $\;$ $RT \ln \dfrac{v_2}{v_1}$	0 $\;$ 0	$c_v \dfrac{n-\kappa}{n-1}(T_2 - T_1)$ $\;$ $\dfrac{\kappa-n}{\kappa-1} w_{1-2}$
Izvršen specifični tehnički rad, $w_{t,1-2} = $		$v(p_2 - p_1)$	0	$w_{1-2} = RT \ln \dfrac{p_2}{p_1}$	κw_{1-2}	$n \cdot w_{1-2}$
Promena specifične entropije gasa, $s_2 - s_1 = $		$c_v \ln \dfrac{T_2}{T_1}$	$c_p \ln \dfrac{v_2}{v_1}$	$R \ln \dfrac{v_2}{v_1}$	0	$c_v \dfrac{n-\kappa}{n-1} \ln \dfrac{T_2}{T_1}$
Promena specifične unutrašnje energije, $u_2 - u_1 = $		$c_v(T_2 - T_1)$		0	$c_v(T_2 - T_1)$	
Promena specifične entalpije, $h_2 - h_1 = $		$c_p(T_2 - T_1)$		0	$c_p(T_2 - T_1)$	
Eksponent politrope, $n = $		$\pm \infty$	0	1	κ	n
Specifična toplota promene stanja, $c = $		c_v	c_p	$\pm \infty$	0	$c_v \dfrac{n-\kappa}{n-1}$