

PAII / PAIIR Gearbox Performance

Model No.	Stages	Ratio ⁽¹⁾	Type	PAII 042	PAII 060	PAII 090	PAII 115	PAII 142	
				PAIIR 042	PAIIR 060	PAIIR 090	PAIIR 115	PAIIR 142	
Nominal Output Torque T _{2N}	Nm	1	3	All	16	42	110	217	430
			4		16	42	113	223	440
			5		15	40	118	220	435
			7		12	35	96	198	366
			9		8	24	60	125	273
			10		10	27	68	155	295
		2	12		16	42	110	217	430
			15		15	40	109	213	424
			16		16	42	116	228	452
			20		16	42	116	230	454
	25		15		40	123	228	450	
	30		15		40	108	212	422	
	35		12		35	100	206	382	
	40		16		43	117	232	459	
	2	50	15		40	123	228	450	
		70	12		35	100	206	382	
		81	8		24	59	131	285	
		100	10		27	70	162	308	
Emergency Stop Torque T _{2NOT}	Nm	1,2	3~100	All	3 times T _{2N}				
Max. Acceleration Torque T _{2B}	Nm	1,2	3~100	All	T _{2B} = 60% of T _{2NOT}				
No Load Running Torque ⁽⁴⁾	Nm	1	3~10	PAII	0.05	0.10	0.40	0.80	2.50
				PAIIR	0.15	0.6	1.6	3	6.8
	2	12~100	PAII	0.05	0.10	0.30	0.40	0.80	
			PAIIR	0.15	0.58	1.58	2.5	3	
Backlash ⁽²⁾	arcmin	1	3~10	PAII	≤ 8	≤ 7	≤ 6	≤ 6	≤ 6
				PAIIR	≤ 12	≤ 11	≤ 10	≤ 10	≤ 10
	2	12~100	PAII	≤ 10	≤ 9	≤ 8	≤ 8	≤ 8	
			PAIIR	≤ 14	≤ 13	≤ 12	≤ 12	≤ 12	
Torsional Rigidity	Nm/arcmin	1,2	3~100	All	0.9	2.2	8	12	16
Nominal Input Speed n _{1N}	rpm	1,2	3~100	All	4,500	4,000	3,600	3,600	2,500
Max. Input Speed n _{1B}	rpm	1,2	3~100	All	8,000	6,000	6,000	4,800	3,600
Max. Radial Load F _{2rB} ⁽³⁾	N	1,2	3~100	All	810	1,150	1,530	3,470	4,640
Max. Axial Load F _{2aB} ⁽³⁾	N	1,2	3~100	All	405	575	765	1,735	2,320
Max. Tilting Moment M _{2K}	Nm	1,2	3~100	All	15	35	55	170	300
Operating Temp	°C	1,2	3~100	All	0° C~ +90° C				
Degree of Gearbox Protection		1,2	3~100	All	IP65				
Lubrication		1,2	3~100	All	Synthetic lubrication grease				
Mounting Position		1,2	3~100	All	All directions				
Running Noise ⁽⁴⁾	dB(A)	1,2	3~100	PAII	≤ 60	≤ 62	≤ 64	≤ 66	≤ 68
				PAIIR	≤ 70	≤ 72	≤ 74	≤ 75	≤ 77
Max. bending moment based on the gearbox input flange Mb ⁽⁵⁾	Nm	1,2	3~100	PAII	5	12	22	45	54
				PAIIR	3	6	10	17	19
Efficiency η	%	1	3~10	PAII	≥ 97%				
				PAIIR	≥ 93%				
	2	12~100	PAII	≥ 94%					
			PAIIR	≥ 90%					

(1) Ratio (i= N_{in} / N_{out}).

(2) Backlash is measured at 2% of Nominal Output Torque T_{2N}.

(3) Applied to the output shaft center at 100 rpm.

(4) The dB values are measured by gearbox with ratio 10 (1-stage) or ratio 100 (2-stage), no loading at 3,000 RPM or at the respective Nominal Input Speed by bigger model size.

By lower ratio and/or higher RPM, the noise level could be 3 to 5 dB higher.

(5) Max. motor weight* (kg) = $\frac{0.1 \times Mb}{\text{motor length (m)}}$

*with symmetrically distributed motor weight

*with horizontal and stationary mounting