

PEIIR series

Overview

- Black coated steel housing, aluminum output and motor adapter flange
- Steel output shaft with or without key
- Spur gear design
- Nominal torques:
 - T_{2N} : 8 Nm – 459 Nm
- Ratios
 - 1-stage : 3 / 4 / 5 / 7 / 10
 - 2-stage : 15 / 16 / 20 / 25 / 30 / 35 / 40 / 50 / 70 / 100
- Low backlash
 - 1-stage : $\leq 10 \sim 12$ arcmin
 - 2-stage : $\leq 12 \sim 14$ arcmin
- High efficiency
 - 1-stage : $\geq 93\%$
 - 2-stage : $\geq 90\%$
- Easy mount
- Compact structure
- Sizes available: PEIIR 050 / PEIIR 070 / PEIIR 090 / PEIIR 120 / PEIIR 155



Specifications

PEIR		Stage	Ratio ⁽¹⁾	Type	PEIR 050	PEIR 070	PEIR 090	PEIR 120	PEIR 155
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
			10		10	27	68	155	295
		2	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
			50		15	40	123	228	450
			70		12	35	100	206	382
			100		10	27	70	162	308
Emergency stop torque T_{2NOT}	Nm	1,2	3~100	All	3 times nominal output torque 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	All	0,05	0,1	0,4	0,8	2,5
		2	15~100	All	0,05	0,1	0,3	0,4	0,8
Backlash ⁽²⁾	arcmin	1	3~10	All	≤ 8	≤ 7	≤ 6	≤ 6	≤ 6
		2	15~100	All	≤ 10	≤ 9	≤ 8	≤ 8	≤ 8
Torsional rigidity ⁽⁴⁾	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	3.260	4.550
Max. axial load F_{2aB} ⁽³⁾	N	1,2	3~100	All	405	575	765	1.630	2.275
Service Life ⁽⁵⁾	hr	1,2	3~100	All	20.000				
Operating temperature	°C	1,2	3~100	All	0° C ~ +90°C				
Degree of Protection		1,2	3~100	All	IP65				
Lubrication		1,2	3~100	All	Synthetisch lubrication grease				
Mounting position		1,2	3~100	All	All directions				
Running noise ⁽⁴⁾	dB (A)	1,2	3~100	All	≤ 60	≤ 62	≤ 64	≤ 66	≤ 68
Efficiency η	%	1	3~10	All	$\geq 97\%$				
		2	15~100		$\geq 94\%$				

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

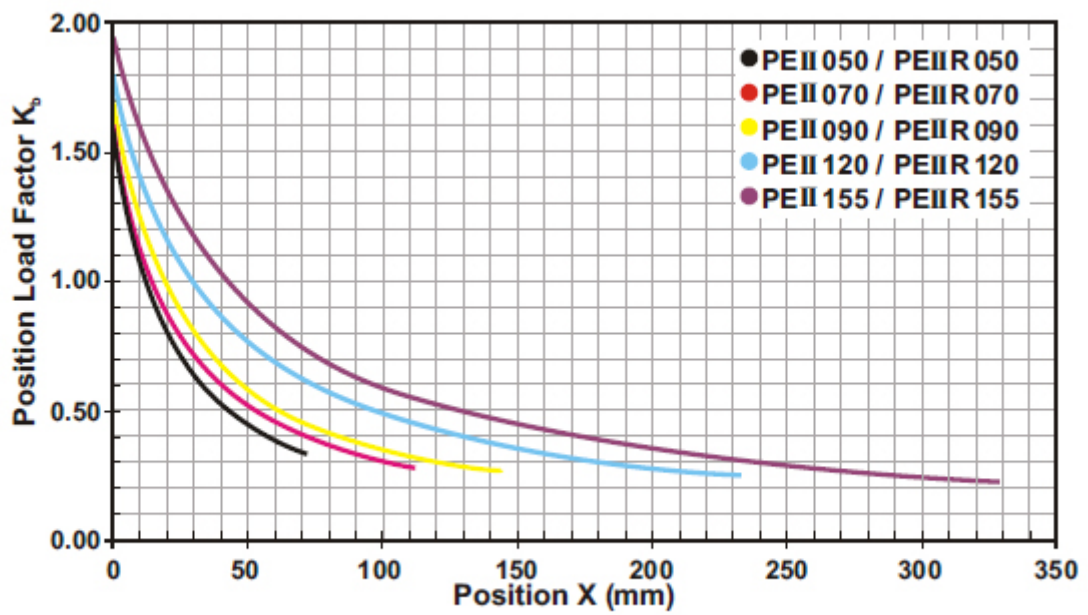
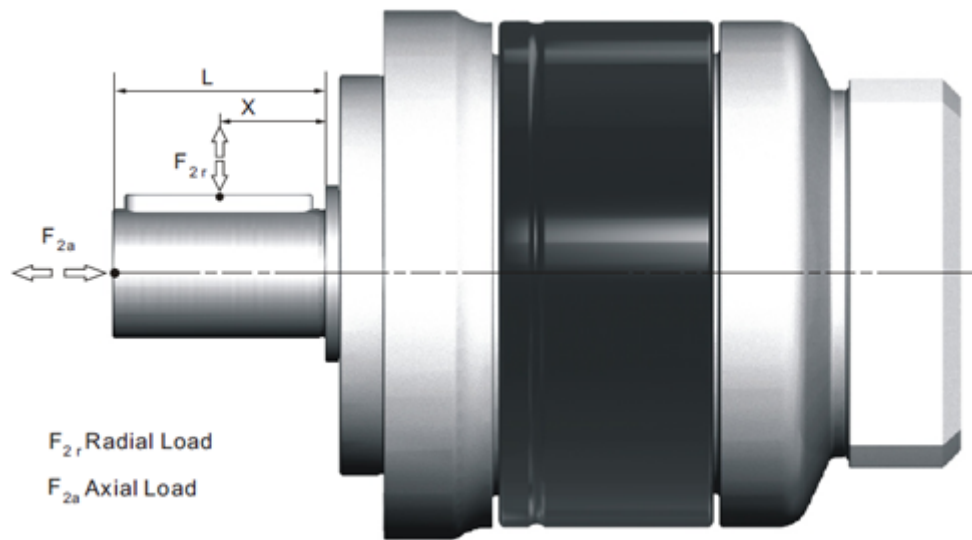
(2) Backlash is measured at 2% of Nominal output torque T_{2N} .

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

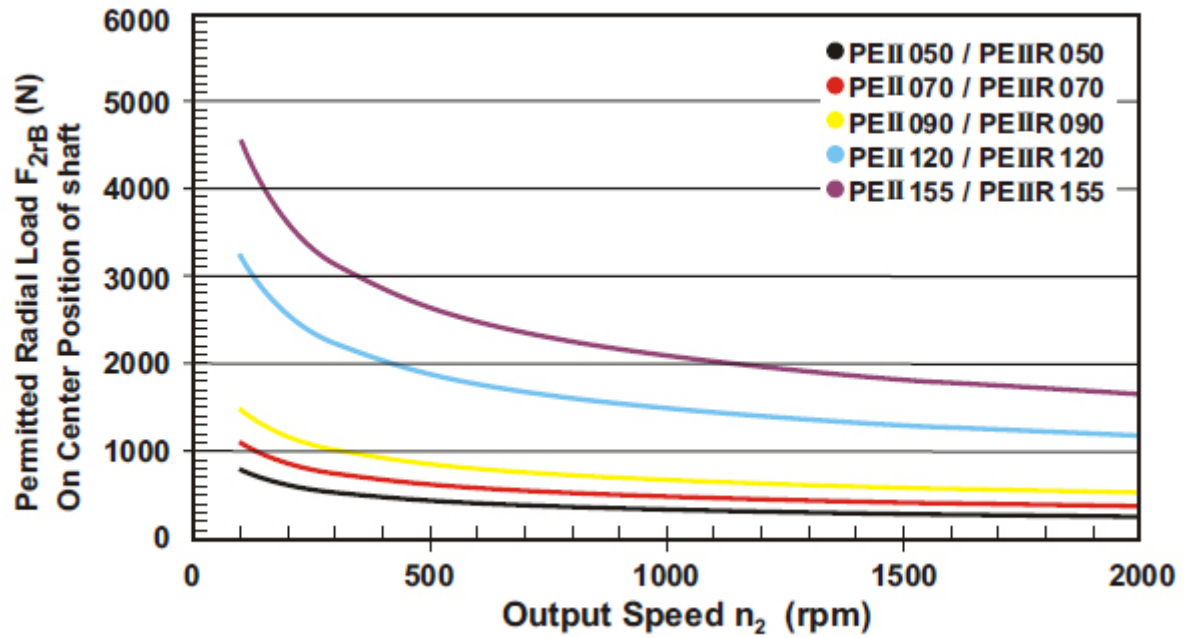
(4) These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100)2-stage) at 3.000 rpm without load.

(5) For continuous operation, the service life is less than 10.000 hrs.

Permitted Radial And Axial Loads



If radial force F_{2r} is not exerted on the center of the output shaft $X < \frac{1}{2} \times L$ or $X > \frac{1}{2} \times L$, the permitted radial and axial loads can be calculated by the position load factor K_b on the above diagram.



Permitted radial load F_{2r} on center of output shaft $X = \frac{1}{2} \times L$ for various output speeds.
 Values provided are for 20.000 hours life.

- (A) $\varnothing$ Input shaft diameter
- (B) Permitted loading values on the output shaft. Please contact Apex Dynamics for more details.
- (C) For continue mode (S1), the service life is reduced to 50%.

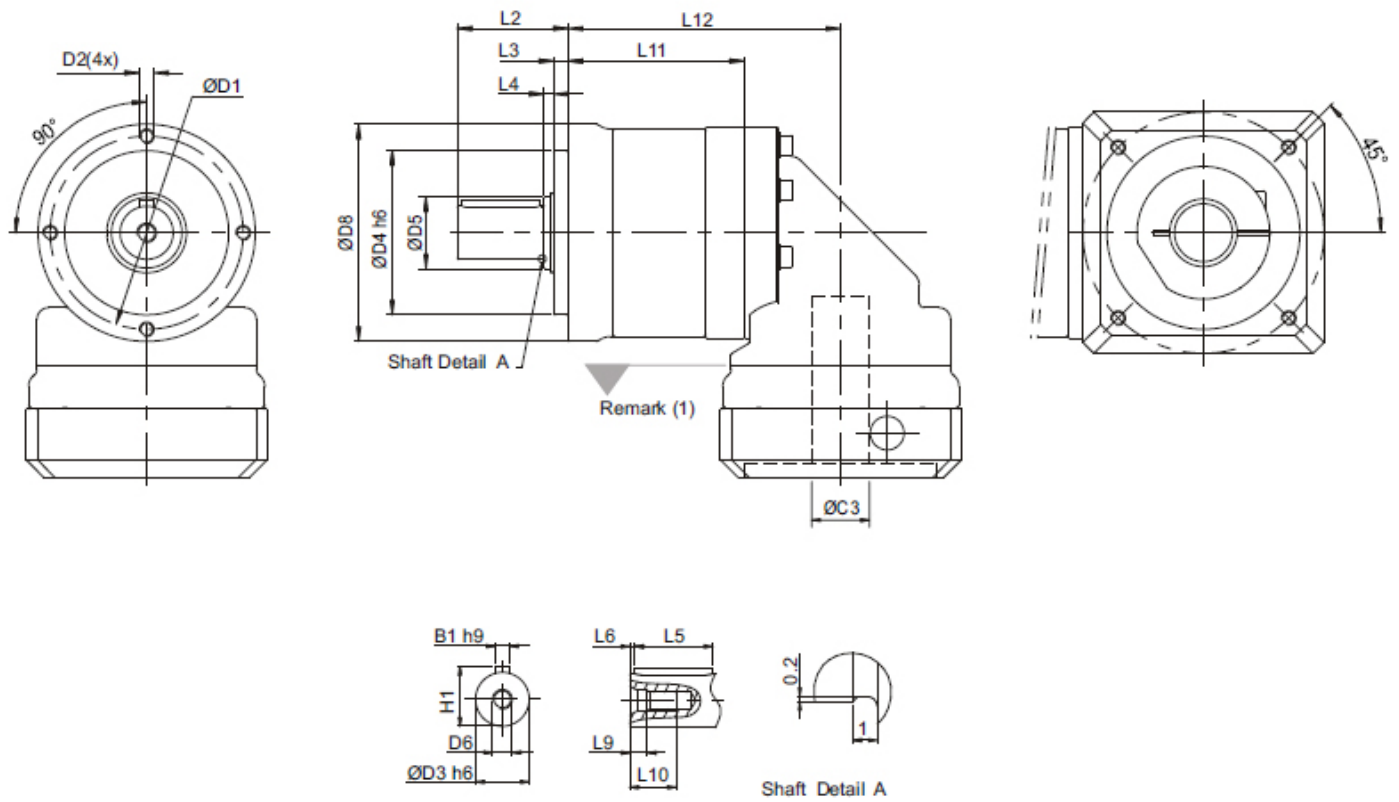
Inertia

Model No.	PEIIR 050		PEIIR 070		PEIIR 090		PEIIR 120		PEIIR 155	
Ø ^(A) (C3)	1-traps	2-traps	1-traps	2-traps	1-traps	2-traps	1-traps	2-traps	1-traps	2-traps
8	0,18	0,18	0,36	-	-	-	-	-	-	-
11	0,20	0,20	0,39	-	-	-	-	-	-	-
14	-	-	0,43	1,87	1,87	-	-	-	-	-
19	-	-	1,24	1,24	2,67	2,67	6,80	6,80	-	13,57
24	-	-	-	-	2,97	2,97	7,10	7,10	13,87	13,87
28	kg*cm ²	-	-	-	3,47	3,47	7,59	7,59	14,36	14,36
32		-	-	-	-	-	10,56	10,56	17,33	17,33
35		-	-	-	-	-	11,97	11,97	18,74	18,74
38		-	-	-	-	-	13,95	13,95	20,79	20,79
42		-	-	-	-	-	-	-	26,54	-

(A) Ø = Input shaft diameter

Sizes

PEIIR series



Dimension	PEIIR 050		PEIIR 070		PEIIR 090		PEIIR 120		PEIIR 155	
	1-stage	2-stage	1-stage	2-stage	1-stage	2-stage	1-stage	2-stage	1-stage	2-stage
D1	44		62		80		108		140	
D2	M4 x 9		M5 x 10		M6 x 12		M8 x 15		M10 x 18	
D3 h6	12		16		22		32		40	
D4 g6	35		52		68		90		120	
D5	17		22		30		40		55	
D6	M4 x 0,7P		M5 x 0,8P		M8 x 1,25P		M12 x 1,75P		M16 x 2P	
D8	50		70		90		120		155	
L2	24,5		36		46		70		97	
L3	4		4,5		6		7		9,5	
L4	2,5		3,5		4		5		5,5	
L5	14		25		32		50		70	
L6	2		2		2		4		6	
L9	4,5		4,8		7,2		10		12	
L10	10		12,5		19		28		36	
L11	49,5	64,5	60	80	73	99,5	101	137	121	168,5
L12	74,5	89,5	89,5	109,5	113	139,5	152	188	178	225,5
B1 h9	4		5		6		10		12	
H1	13,5		18		24,5		35		43	

(1) Dimensions are related to motor interface. Please contact APEX for details.