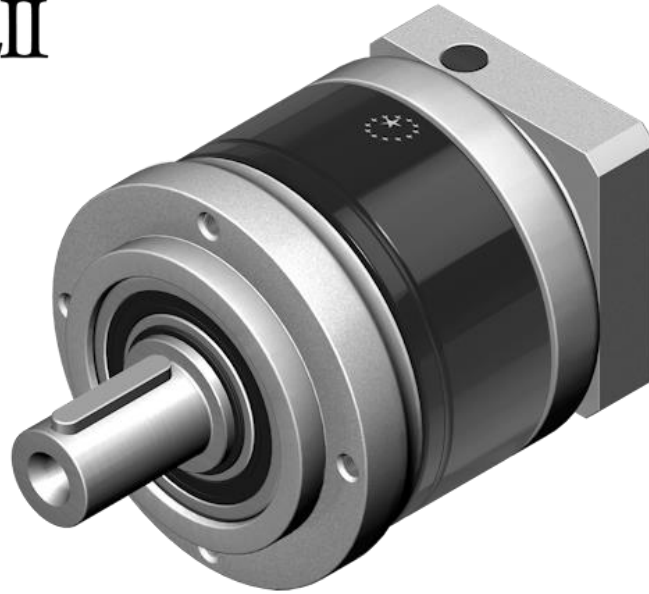


PEII



PEII-SERIES HIGH PRECISION PLANETARY GEARBOXES

QUICK OVERVIEW

The Apex PEII series is the newest revision of the P series. The PII series design has been optimized for higher accuracy, lower weight and length, and greater motor mounting versatility. The PEII features an industry standard metric c-face output flange, carbon steel and aluminium construction, precision bonded housings for greater accuracy and faster, more precise assembly, and laser welded pinions for the highest concentricity two-part assemblies.

Economic

High efficiency

Low noise

Reduced backlash

Optimized Inertia moment

Limited temperature rise

Long service life

Flexible mounting diameters

Minimized size and weight

Model No.	Stages	Ratio ⁽¹⁾	Type	PE II 050	PE II 070	PE II 090	PE II 120	PE II 155	
				PE IIR 050	PE IIR 070	PE IIR 090	PE IIR 120	PE IIR 155	
Nominal Output Torque T_{2N}	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 T_{2N}				
Max. Acceleration Torque T_{2B}	Nm	1,2	3~100	All	$T_{2B} = 60\%$ of T_{2NOT}				
No Load Running Torque ⁽⁴⁾	1	3~10	PE II	0.05	0.10	0.40	0.80	2.50	
			PE IIR	0.10	0.15	0.45	0.85	2.55	
	2	15~100	PE II	0.05	0.10	0.30	0.40	0.80	
			PE IIR	0.10	0.15	0.35	0.45	0.85	
Backlash ⁽²⁾	1	3~10	PE II	≤ 8	≤ 7	≤ 6	≤ 6	≤ 6	
			PE IIR	≤ 12	≤ 11	≤ 10	≤ 10	≤ 10	
	2	15~100	PE II	≤ 10	≤ 9	≤ 8	≤ 8	≤ 8	
			PE IIR	≤ 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_{2R} ⁽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 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	PE II	≤ 60	≤ 62	≤ 64	≤ 66	≤ 68
				PE IIR	≤ 70	≤ 72	≤ 74	≤ 75	≤ 77
Efficiency η	%	1	3~10	PE II	$\geq 97\%$				
				PE IIR	$\geq 93\%$				
	2	15~100	PE II	$\geq 94\%$					
			PE IIR	$\geq 90\%$					

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

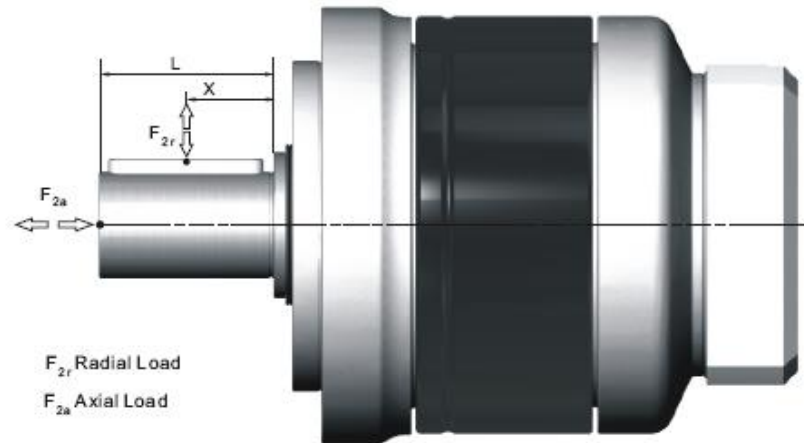
(2) Backlash is measured at 2% of Nominal Output Torque T_{2N} .

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

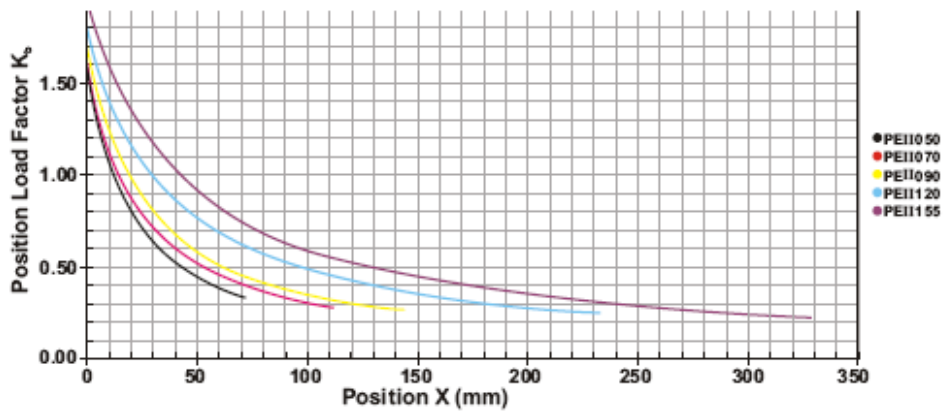
(4) These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) without loading at 3,000 rpm, or at the Nominal Input Speed n_{1N} .

(5) For continuous operation, the service life time is less than 10,000 hrs.

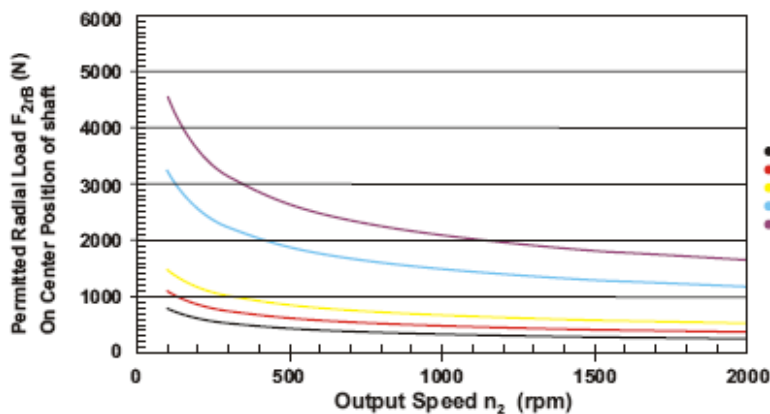
Permitted Radial And Axial Loads On Output Shaft



The permitted radial and axial loads on output shaft of the gearbox depend on the design of the gearbox supporting bearings.

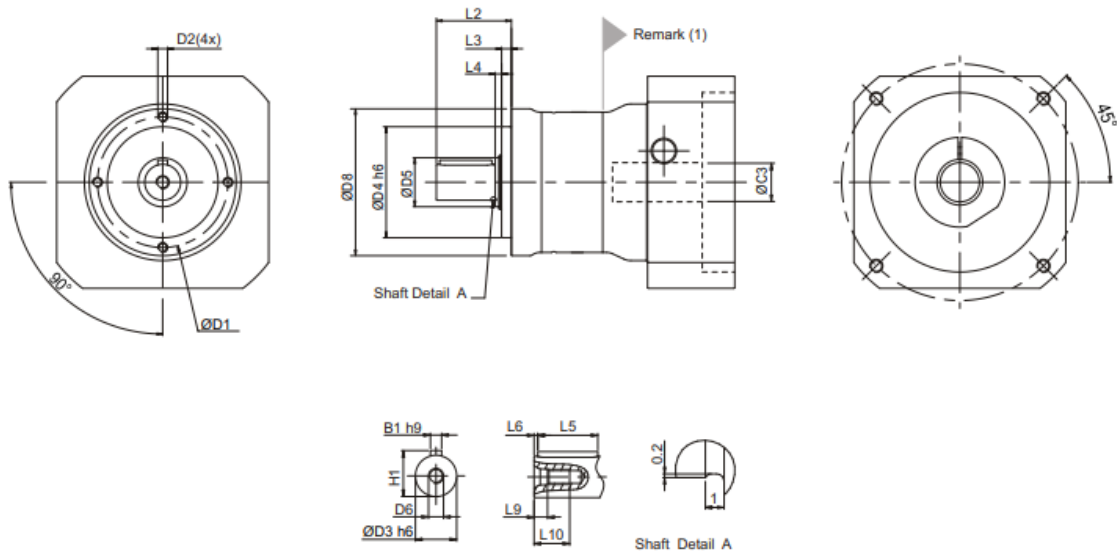


If radial force F_r is not exerted on the center of the output shaft $X < 1/2xL$ or $X > 1/2xL$, the permitted radial and axial loads can be calculated by the position load factor K_b on the above diagram.



Permitted radial load F_r , on center of output shaft $X=1/2 \times L$ for various output speeds. Values provided are for 20,000 hours^(L) life.

PEII Series Dimension



Dimension	PEII 050		PEII 070		PEII 090		PEII 120		PEII 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	M4X9		M5X10		M6X12		M8X15		M10X18	
D3	h6	12	16	22	32	40	55			
D4	h6	35	52	68	90	120				
D5		17	22	30	40	55				
D6		M4X0.7P	M5X0.8P	M8X1.25P	M12X1.75P	M16X2P				
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				
B1	h9	4	5	6	10	12				
H1		13.5	18	24.5	35	43				

ORDERING CODE

PEII 090 – **010⁽¹⁾** – ()⁽²⁾ / **MOTOR**

PEIIR 090 – **010⁽¹⁾** – ()⁽²⁾ / **MOTOR**

Motor Type :
Manufacturer and Model

Ratio⁽¹⁾:

1-stage: 3, 4, 5, 7, 9⁽³⁾, 10

2-stage: 12⁽⁵⁾, 15, 16, 20, 25, 30, 35, 40, 50, 70, 81⁽³⁾, 100

3-stage⁽⁴⁾: 120, 160, 200, 280, 350, 500, 700, 1000

Gearbox Size:

PEII : PEII 050, PEII 070, PEII 090, PEII 120, PEII 155

PGII : PGII 040, PGII 060, PGII 080, PGII 120, PGII 160

PAII : PAII 042, PAII 060, PAII 090, PAII 115, PAII 142

PSII : PSII A, PSII B, PSII C, PSII D, PSII E

PNII : PNII 017, PNII 023, PNII 034, PNII 042, PNII 056

PD : PD 053, PD 064, PD 090, PD 110

PL : PL 070, PL 090, PL 120,

Ordering Example : PEII 090 - 010 / SIEMENS 1FT6 041 - 4AF71

PAII 090 - 010 - S1 / SIEMENS 1FT6 041 - 4AF71

Gearbox Size:

PEIIR : PEIIR 050, PEIIR 070, PEIIR 090, PEIIR 120, PEIIR 155

PGIIR : PGIIR 040, PGIIR 060, PGIIR 080, PGIIR 120, PGIIR 160

PAIIR : PAIIR 042, PAIIR 060, PAIIR 090, PAIIR 115, PAIIR 142

PSIIR : PSIIR A, PSIIR B, PSIIR C, PSIIR D, PSIIR E

PNIIR : PNIIR 017, PNIIR 023, PNIIR 034, PNIIR 042, PNIIR 056

PDR : PDR 053, PDR 064, PDR 090, PDR 110

PLR : PLR 070, PLR 090, PLR 120

Ordering Example : PEIIR 090 - 010 / SIEMENS 1FT6 041 - 4AF71

PAIIR 090 - 010 - S1 / SIEMENS 1FT6 041 - 4AF71

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

(2) S1 = Smooth Output Shaft. S1 shaft is only provided for PAII / PAIIR series.

S2 = Output Shaft with Key. This is the standard shaft for PII / PIIR gearbox.

(3) Only provided for PSII/PSIIR and PAII / PAIIR series.

(4) Only provided for PGII and PGIIR series.

(5) Only provided for PL and PLR series.