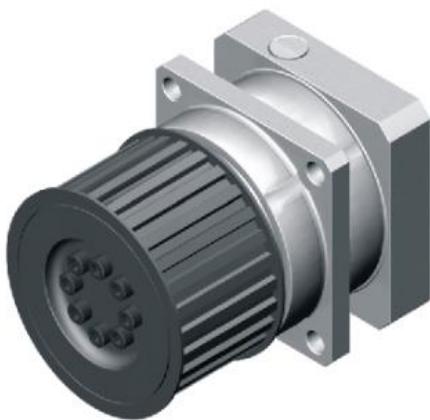
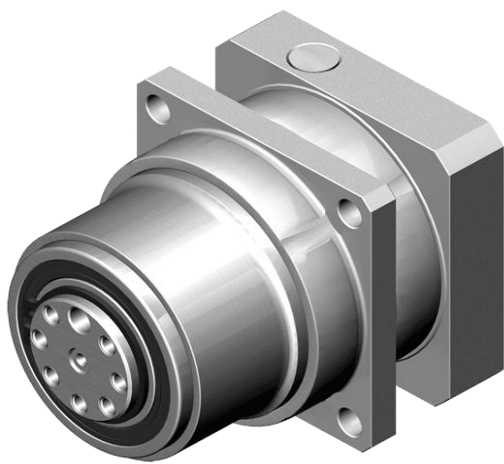


PL und PLR-Serie Planetengetriebe



PL Planetengetriebe

Technische Daten

Einfache Montage

Geringes Laufgeräusch

Schutzklasse IP 65

Ausgangsflansch für Zahnriemenräder

Aufnahme hoher Radialkräfte möglich

Ideal für Applikationen mit Riemenantrieb

Nenn-Abtriebsdrehmoment

T2N: 27 – 143 Nm

Untersetzungen

1-stufig: 3 / 4 / 5 / 7 / 10

2-stufig: 15 / 16 / 20 / 25 / 30 / 35 / 40 / 50 / 70 / 100

Geringes Verdrehspiel

1-stufig: 6 – 7 Winkelminuten

2-stufig: 8 – 9 Winkelminuten

Hoher Wirkungsgrad

1-stufig: $\geq 97\%$

2-stufig: $\geq 94\%$

Arbeitstemperatur

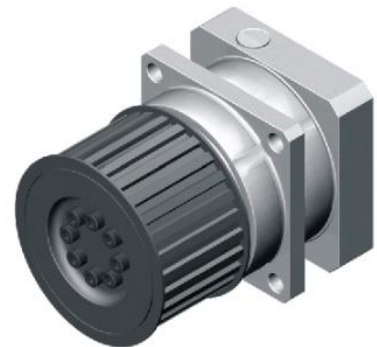
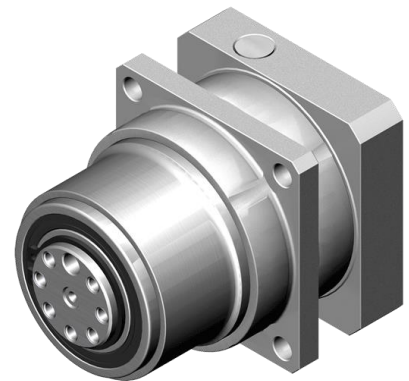
0°C bis 90°C mit Standardfett

Baugrößen

PL 070 / PL 090 / PL 120

Verwendung

Anwendungen im Maschinenbau, bei denen kostengünstige und gleichzeitig hochwertige Planetengetriebe gefordert sind.



PLR Winkelplanetengetriebe

Technische Daten

Einfache Montage

Geringes Laufgeräusch

Kompakte Bauweise

Schutzklasse IP 65

Ausgangsflansch für Zahnriemenräder

Aufnahme hoher Radialkräfte möglich

Ideal für Applikationen mit Riemenantrieb

Nenn-Abtriebsdrehmoment

T2N: 27 – 143 Nm

Untersetzungen

1-stufig: 3 / 4 / 5 / 7 / 10

2-stufig: 15 / 16 / 20 / 25 / 30 / 35 / 40 / 50 / 70 / 100

Geringes Verdrehspiel

1-stufig: 10 – 11 Winkelminuten

2-stufig: 12 – 13 Winkelminuten

Hoher Wirkungsgrad

1-stufig: $\geq 93\%$

2-stufig: $\geq 90\%$

Arbeitstemperatur

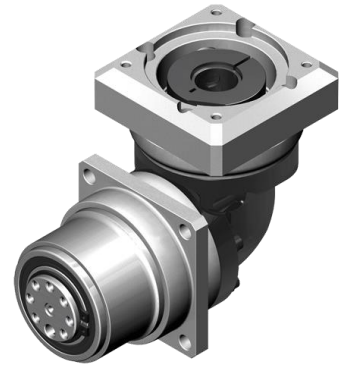
0°C bis 90°C mit Standardfett

Baugrößen

PLR 070 / PLR 090 / PLR 120

Verwendung

Anwendungen im Maschinenbau, bei denen kostengünstige und gleichzeitig hochwertige Planetengetriebe gefordert sind.



PL / PLR Spezifikationen

Model No.	Stages	Ratio ⁽¹⁾	Type	PL 070	PL 090	PL 120	
				PLR 070	PLR 090	PLR 120	
Nominal Output Torque T_{2N}	1	3	All	30	67	107	
		4		39	86	137	
		5		40	89	140	
		7		37	80	128	
		10		27	59	93	
	2	12		31	69	109	
		15		31	70	110	
		16		39	86	137	
		20		39	88	141	
		25		40	89	140	
		30		32	72	111	
		35		36	80	130	
		40		41	92	143	
		50		42	90	143	
		70		37	81	131	
		100		27	59	93	
Emergency Stop Torque T_{2NOT}	Nm	1,2	3~10	All	3 times T_{2N}		
Max. Acceleration Torque T_{2B}	Nm	1,2	3~10	All	$T_{2B} = 60\%$ of T_{2NOT}		
No Load Running Torque ⁽⁴⁾	1	3~10	PL	0.10	0.40	0.80	
			PLR	0.15	0.45	0.85	
	2	12~100	PL	0.10	0.30	0.40	
			PLR	0.15	0.35	0.45	
Backlash ⁽²⁾	1	3~10	PL	≤ 7	≤ 6	≤ 6	
			PLR	≤ 11	≤ 10	≤ 10	
	2	12~100	PL	≤ 9	≤ 8	≤ 8	
			PLR	≤ 13	≤ 12	≤ 12	
Torsional Rigidity	Nm/arcmin	1,2	3~100	All	2.2	8	12
Nominal Input Speed n_{1N}	rpm	1,2	3~100	All	4,000	3,600	3,600
Max. Input Speed n_{1B}	rpm	1,2	3~100	All	6,000	6,000	4,800
Max. Radial Load F_{2rB} ⁽³⁾	N	1,2	3~100	All	2,600	3,100	6,550
Max. Axial Load F_{2aB} ⁽³⁾	N	1,2	3~100	All	1,300	1,550	3,275
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	PL	≤ 62	≤ 64	≤ 66
				PLR	≤ 72	≤ 74	≤ 75
Max. belt tension	N	1,2	3~100	All	560	950	1200
Max. bending moment based on the gearbox input flange M_b ⁽⁶⁾	Nm	2	12~100	PL	19	38	45
		2		PLR	10	17	14
Efficiency η	%	1	3~10	PL	$\geq 97\%$		
				PLR	$\geq 93\%$		
		2	12~100	PL	$\geq 94\%$		
				PLR	$\geq 90\%$		

(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) at 3,000 rpm without load, By ratio smaller than 10, the noise value would be 3-5dB higher.

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

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

*with symmetrically distributed motor weight

*with horizontal and stationary mounting



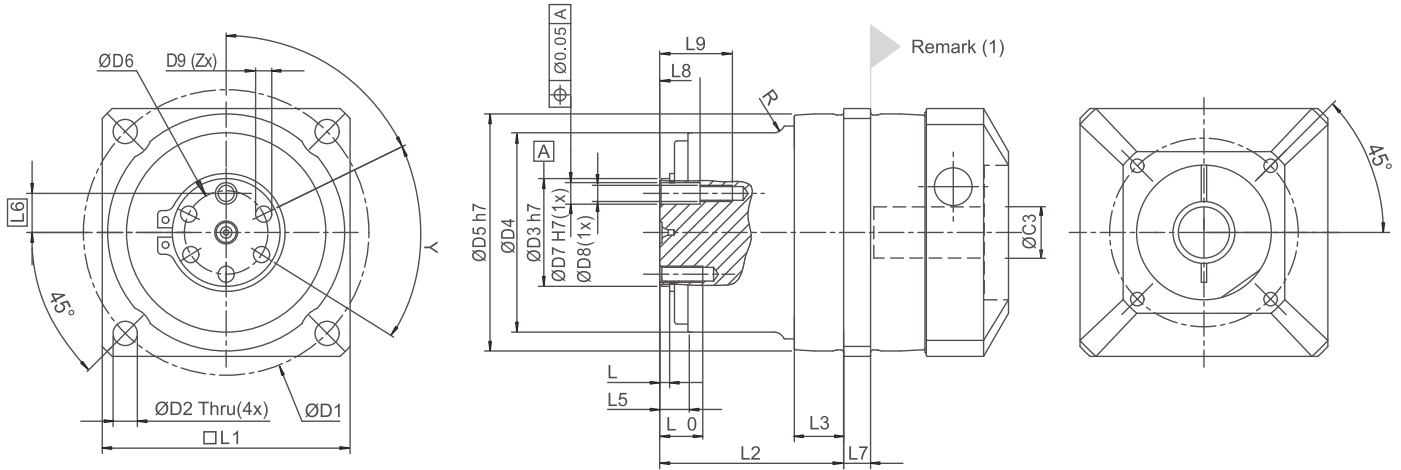
Massenträgheitsmoment PL

Model No.		PL 070		PL 090		PL 120	
$\emptyset^{(A)}$ (C3)		1-stage	2-stage	1-stage	2-stage	1-stage	2-stage
8	kg. cm ²	0.12	0.10	-	-	-	-
11		0.19	0.16	-	-	-	-
14		0.22	0.20	0.36	0.24	-	-
19		1.53	1.51	1.70	1.58	2.20	1.73
24		-	-	2.24	2.12	2.74	2.27
28		-	-	2.68	2.55	3.17	2.70
32		-	-	-	-	7.77	7.30
35		-	-	-	-	10.80	10.30
38		-	-	-	-	14.00	13.50
42		-	-	-	-	-	-

Massenträgheitsmoment PLR

Model No.		PLR 070		PLR 090		PLR 120	
$\emptyset^{(A)}$ (C3)		1-stage	2-stage	1-stage	2-stage	1-stage	2-stage
8	kg. cm ²	0.36	0.36	-	-	-	-
11		0.39	0.39	-	-	-	-
1		0.43	0.43	1.87	1.87	-	-
19		1.24	1.24	2.67	2.67	6.80	6.80
2		-	-	2.97	2.97	7.10	7.10
28		-	-	3.47	3.47	7.59	7.59
32		-	-	-	-	10.56	10.56
35		-	-	-	-	11.97	11.97
38		-	-	-	-	13.95	13.95
42		-	-	-	-	-	-

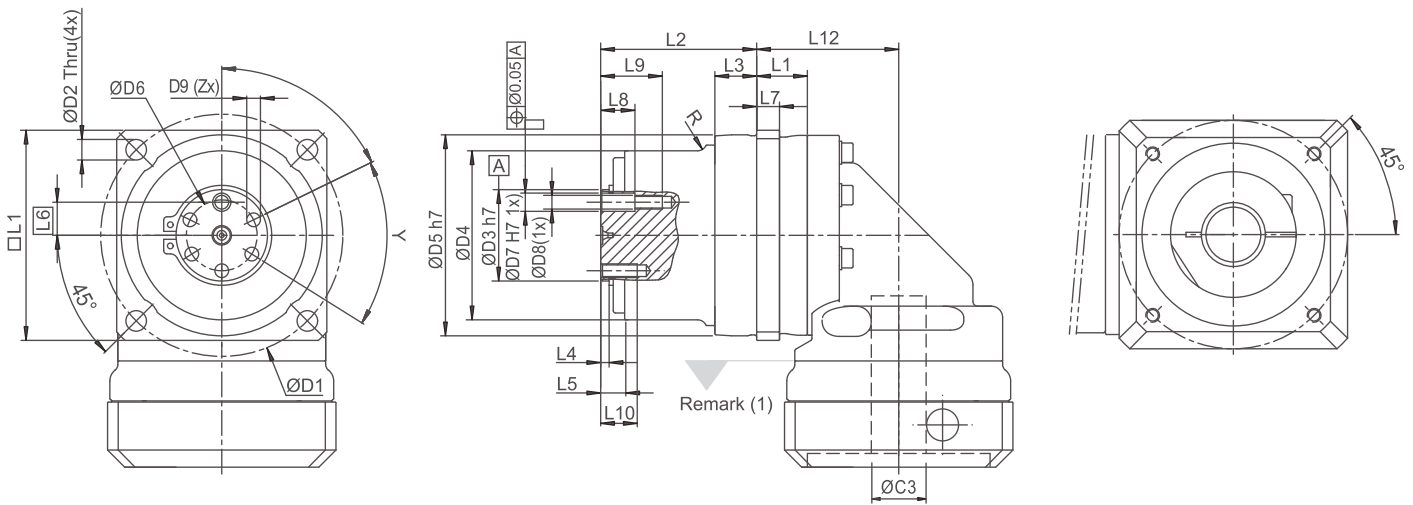
PL Abmessungen



Dimension	PL 070		PL 090		PL 120	
	1-stage	2-stage	1-stage	2-stage	1-stage	2-stage
D1	82		106		144	
D2	6.6		9		13	
D3	h7	25	40		50	
D4		58	74		100	
D5	h7	68	88		118	
D6		18	31		37	
D7	H7	6	8		8	
D8		M5X0.8P	M6X1P		M6X1P	
D9		M5X0.8P	M6X1P		M8X1.25P	
R		-	4		2	
L1		70	92		122	
L2		60.2	68.3		82.2	
L3		12.7	18.3		15.7	
L4		3.8	3.7		4.5	
L5		10	10.5		12.5	
L6		8.8	14.5		18.5	
L7		8	10		12	
L8		10	15		16	
L9		18.5	27		28	
L10		12	16		16	
X in Degree		64°	45°		45°	
Y in Degree		58°	45°		45°	
Z		5	7		7	

(1) Dimensions are related to motor interface.

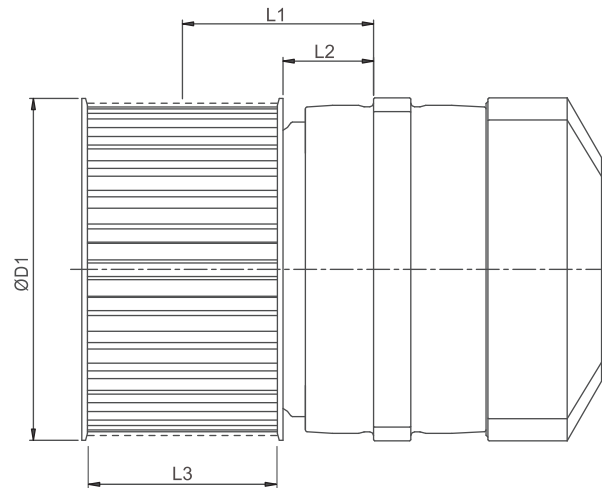
PLR Abmessungen



Dimension	PLR 070		PLR 090		PLR 120	
	1-stage	2-stage	1-stage	2-stage	1-stage	2-stage
D1	82		106		144	
D2	6.6		9		13	
D3 h7	25		40		50	
D4	58		74		100	
D5 h7	68		88		118	
D6	18		31		37	
D7 H7	6		8		8	
D8	M5X0.8P		M6X1P		M6X1P	
D9	M5X0.8P		M6X1P		M8X1.25P	
R	-		4		2	
L1	70		92		122	
L2	60.2		68.3		82.2	
L3	12.7		18.3		15.7	
L4	3.8		3.7		4.5	
L5	10		10.5		12.5	
L6	8.8		14.5		18.5	
L7	8		10		12	
L8	10		15		16	
L9	18.5		27		28	
L10	12		16		16	
L11	16.8	36.8	22.2	48.9	34.8	71.1
L12	46.3	66.3	62.2	88.9	85.8	122.1
X in Degree	64°		45°		45°	
Y in Degree	58°		45°		45°	
Z	5		7		7	

(1) Dimensions are related to motor interface.

PL + Riemenscheibe



Reducer	Belt Pulley	D1	L1	L2	L3	Pitch P	No. of Teeth Z	Circumference Z*P	Interia J	Mass m
						mm		mm/rotation	kgcm ²	kg
PL 070 PLR 070	AT05-W50-T43	71	41.8	14.8	51	5	43	215	4.68	0.57
	HTD 5M-W50-T44	72.9	41.8	14.8	51	5	44	220	5.58	0.65
	5GT-W50-T44	72.9	41.8	14.8	51	5	44	220	5.58	0.65
PL 090 PLR 090	AT10-W50-T28	91.7	51.3	24.3	51	10	28	280	14.07	1.00
	HTD 8M-W50-T36	98.4	51.3	24.3	51	8	36	288	17.78	1.18
	8YU-W50-T36	98.4	51.3	24.3	51	8	36	288	17.78	1.18
PL 120 PLR 120	AT20-W75-T19	124.6	57.7	17.7	76	20	19	380	69.55	2.71
	HTD 14M-W75-T28	137	57.7	17.7	76	14	28	392	87.83	3.20