

AD und ADR Planetengetriebe





AD Planetengetriebe

Technische Daten

Einfache Montage
Geringes Laufgeräusch
Schutzklasse IP 65
Kompakte Bauweise
Große Radiallast

Nenn-Abtriebsdrehmoment

T2N: 14 – 2000 Nm

Untersetzungen

1-stufig: 4 / 5 / 7 / 10
2-stufig: 16 / 20 / 21 / 25 / 31 / 35 / 40 / 50 / 61 / 70 / 91 / 100

Geringes Verdrehspiel

1-stufig:
≤ 3 Winkelminuten (P1)
≤ 5 Winkelminuten (P2)
2-stufig:
≤ 5 Winkelminuten (P1)
≤ 7 Winkelminuten (P2)

Hoher Wirkungsgrad

1-stufig: ≥ 97%
2-stufig: ≥ 94%

Arbeitstemperatur

-10°C bis 90°C mit Standardfett

Baugrößen

AD 047 / AD 064 / AD 090 / AD 110 / AD 140 / AD 200 / AD 255

Verwendung

Werkzeugmaschinen, Textilmaschinen,
Verpackungsmaschinen, Handhabungssysteme,
Druckmaschinen



**auch in Edelstahl erhältlich*

ADR Winkelplanetengetriebe

Technische Daten

Einfache Montage
Geringes Laufgeräusch
Schutzklasse IP 65 (optional IP 67 bei AER)
Kompakte Bauweise
Große Radiallast (Nur ALR und AFR)

Nenn-Abtriebsdrehmoment

T2N: 14 – 2000 Nm

Untersetzungen

1-stufig: 4 / 5 / 7 / 10 / 14 / 20

2-stufig: 20* / 25 / 30 / 35 / 40 / 50 / 70 / 100 / 140 / 200

Geringes Verdrehspiel

1-stufig:

≤ 2 Winkelminuten (P0)

≤ 4 Winkelminuten (P1)

≤ 6 Winkelminuten (P2)

2-stufig:

≤ 4 Winkelminuten (P0)

≤ 7 Winkelminuten (P1)

≤ 9 Winkelminuten (P2)

Hoher Wirkungsgrad

1-stufig: ≥ 95%

2-stufig: ≥ 92%

Arbeitstemperatur

-10°C bis 90°C mit Standardfett

Baugrößen

ADR 047* / ADR 064 / ADR 090 / ADR 110 / ADR 140 /
ADR 200 / ADR 255

Verwendung

Gleiches Einsatzspektrum wie bei Planetengetrieben (Werkzeugmaschinen, Textilmaschinen, Verpackungsmaschinen, Handhabungssysteme, Druckmaschinen, usw.) jedoch mit eingeschränktem Bauraum



** nur ADR047 bietet
Untersetzung 20 in 2-stufiger
Ausführung*

AD Spezifikationen

Gearbox Performance

Model No.	Stage	Ratio ^A	AD047	AD064	AD090	AD110	AD140	AD200	AD255	
Nominal Output Torque T_{2N}	1	4	19	48	130	270	560	1,100	1,700	
		5	22	60	160	330	650	1,200	2,000	
		7	19	50	140	300	550	1,100	1,800	
		10	14	40	100	230	450	900	1,500	
	2	20	19	48	130	270	560	1,100	1,700	
		25	22	60	160	330	650	1,200	2,000	
		35	19	50	140	300	550	1,100	1,800	
		40	19	48	130	270	560	1,100	1,700	
	Nm	2	50	22	60	160	330	650	1,200	2,000
			70	19	50	140	300	550	1,100	1,800
			100	14	40	100	230	450	900	1,500
			16	19	48	130	270	560	1,100	1,700
		2	21	22	60	160	330	650	1,200	2,000
			31	19	50	140	300	550	1,100	1,800
			61	19	50	140	300	550	1,100	1,800
			91	14	40	100	230	450	900	1,500
Emergency Stop Torque T_{2NOT}^B	Nm	1,2	4~100	3 times of Nominal Output Torque						
Nominal Input Speed n_{1N}	rpm	1,2	4~100	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed n_{1B}	rpm	1,2	4~100	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Micro Backlash P0	arcmin	1	4~10	-	-	≤1	≤1	≤1	≤1	≤1
		2	20~100	-	-	≤3	≤3	≤3	≤3	≤3
Reduced Backlash P1	arcmin	1	4~10	≤3	≤3	≤3	≤3	≤3	≤3	≤3
		2	20~100	≤5	≤5	≤5	≤5	≤5	≤5	≤5
Standard Backlash P2	arcmin	1	4~10	≤5	≤5	≤5	≤5	≤5	≤5	≤5
		2	20~100	≤7	≤7	≤7	≤7	≤7	≤7	≤7
Torsional Rigidity	Nm/arcmin	1,2	4~100	7	13	31	82	151	440	1,006
Max. Bending moment M_{2KB}^C	Nm	1,2	4~100	42.5	125	235	430	1,300	3,064	5,900
Max. Axial Load F_{2aB}^C	N	1,2	4~100	990	1,050	2,850	2,990	10,590	16,660	29,430
Service Life ^D	hr	1,2	4~100	30,000						
Efficiency η	%	1	4~10	≥97%						
		2	20~100	≥94%						
Weight	kg	1	4~10	0.7	1.2	3.0	5.6	11.9	31.6	56.1
		2	20~100	1.0	1.6	3.7	7.3	15.9	36.9	70.4
Operating Temp	°C	1,2	4~100	-10°C~90°C						
Lubrication				Synthetic lubrication oils						
IP Level		1,2	4~100	IP65						
Mounting Position		1,2	4~100	all directions						
Noise ($n_1=3000\text{rpm}, i=10, \text{No load}$) ^E	dB(A)	1,2	4~100	≤56	≤58	≤60	≤63	≤65	≤67	≤70

Massenträgheitsmoment AD

Model No.	Stage	Ratio ^A	AD047	AD064	AD090	AD110	AD140	AD200	AD255
Moments of Inertia J_1	1	4	0.03	0.14	0.51	2.87	7.54	25.03	58.31
		5	0.03	0.13	0.47	2.71	7.42	23.29	53.27
		7	0.03	0.13	0.45	2.62	7.14	22.48	50.97
		10	0.03	0.13	0.44	2.57	7.03	22.51	50.56
	2	20	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		25	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		35	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		40	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		50	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		70	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		100	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		16	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		21	0.03	0.03	0.13	0.47	2.71	7.42	23.29
		31	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		61	0.03	0.03	0.13	0.44	2.57	7.03	22.51
		91	0.03	0.03	0.13	0.44	2.57	7.03	22.51

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

B. Max. acceleration torque $T_{2B} = 60\%$ of T_{2NOT}

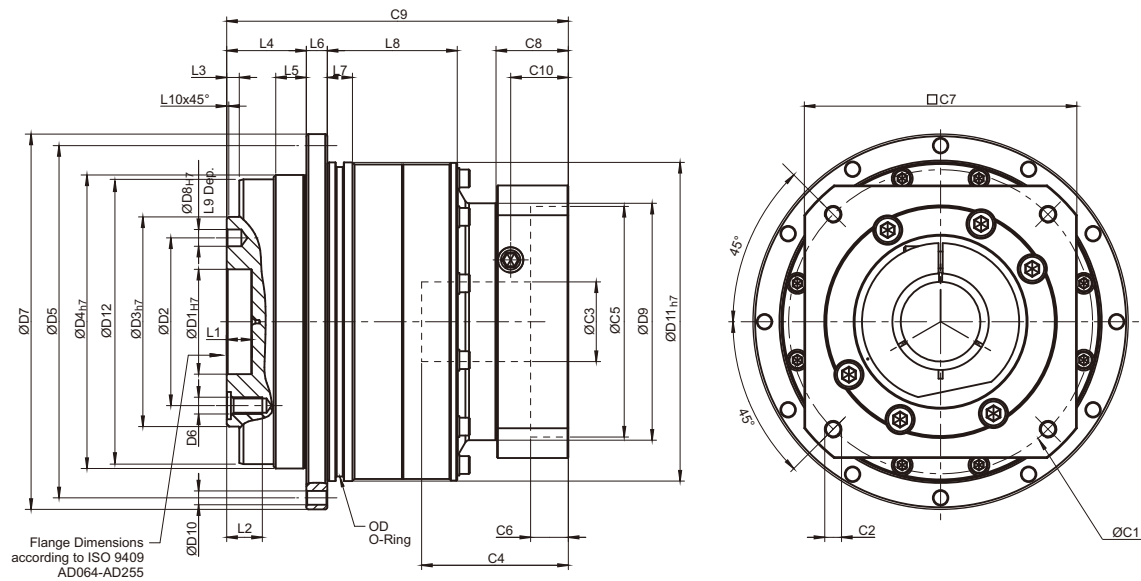
C. Applied to the output shaft center at 100 rpm

D. For continuous operation, the service life time is less than 15,000hrs

E. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at 3,000 rpm without load.

By smaller ratio and/or higher speed(RPM), the noise level would be higher

AD Abmessungen, 1-stufig, i=4~10

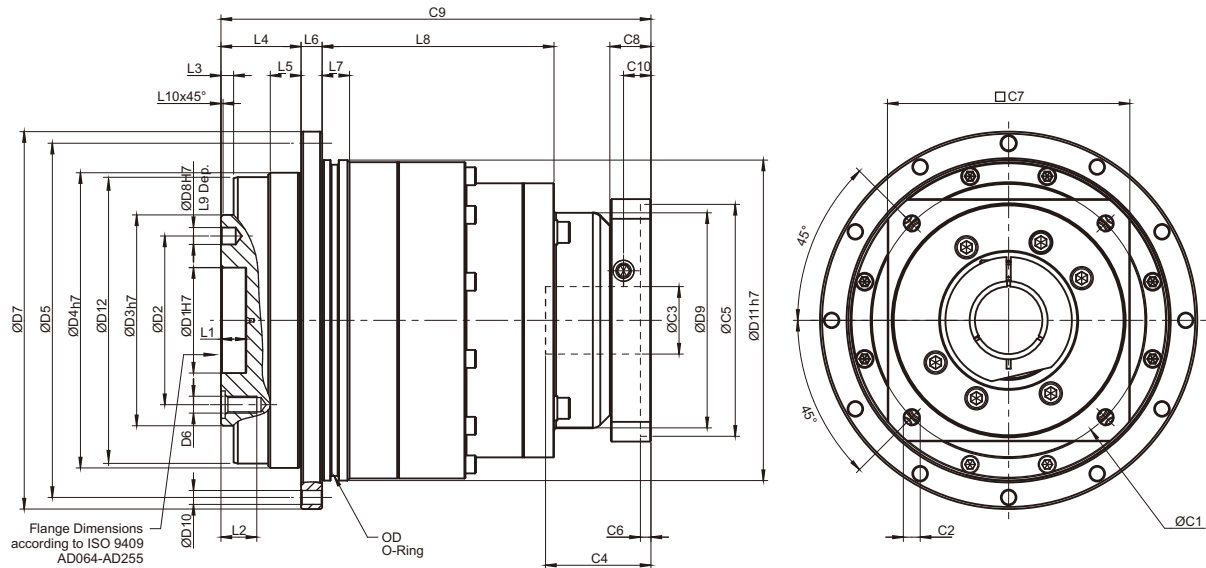


[unit: mm]

Dimension	AD047	AD064	AD090	AD110	AD140	AD200	AD255
D1 _{h7}	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 _{h7}	28	40	63	80	100	160	180
D4 _{h7}	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	4 x M3 x 0.5P	7 x M5 x 0.8P	7 x M6 x 1P	11 x M6 x 1P	11 x M8 x 1.25P	11 x M10 x 1.5P	12 x M16 x 2P
D7	72	86	118	145	179	247	300
D8 _{h7}	3	5	6	6	8	10	12
D9	45.5	55	77	90	113	138	175
D10	8 x 3.4	8 x 4.5	8 x 5.5	8 x 5.5	12 x 6.6	12 x 9	16 x 13.5
D11 _{h7}	60	70	95	120	152	212	255
D12	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6.5	8	13.5	13.5	17	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L7	5	7.7	8	10	12	15	20
L8	18.5	28.5	27	37	62	69.5	82
L9	4	6	7	7	7	10	10
L10	0.5	0.5	1	1	1	1	1
C1 ¹	46	70	100	130	165	215	235
C2 ¹	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M12 x 1.75P
C3 ¹	≤11 / ≤12 ²	≤14 / ≤16 ²	≤19 / ≤24	≤32	≤38	≤48	≤55
C4 ¹	30	34	40	50	60	85	116
C5 ¹	30	50	80	110	130	180	200
C6 ¹	3.5	8	4	5	6	6	6
C7 ¹	48	60	90	115	142	190	220
C8 ¹	19.5	19	17	19.5	22.5	29	63
C9 ¹	70	82.5	99.5	121.5	151	199.5	256.5
C10 ¹	13.25	13.5	10.75	13	15	20.75	53.5
OD	56 x 2	66 x 2	90 x 3	110 x 3	145 x 3	200 x 5	238 x 5

1. C1-C10 are motor specific dimensions (metric std shown). 2. AD047 ratio 5, 10 offers C3 ≤ 12 option; AD064 ratio 5, 10 offers C3 ≤ 16 option.

AD Abmessungen, 2-stufig, $i=2\sim 20$

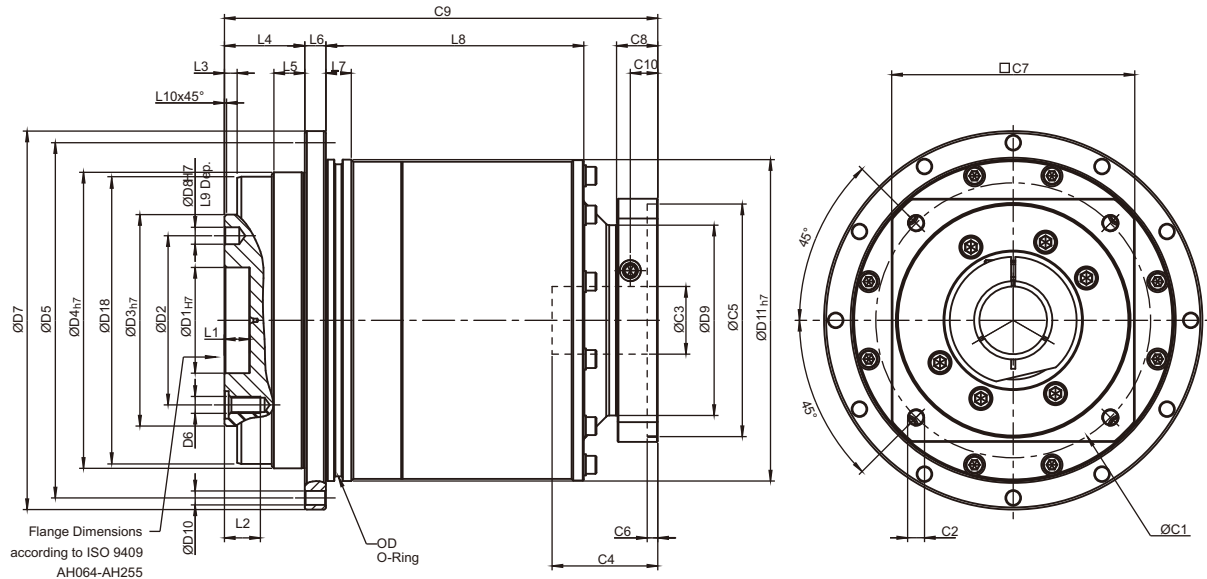


[unit: mm]

Dimension	AD047	AD064	AD090	AD110	AD140	AD200	AD255
D1 _{H7}	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 _{h7}	28	40	63	80	100	160	180
D4 _{h7}	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	4 x M3 x 0.5P	7 x M5 x 0.8P	7 x M6 x 1P	11 x M6 x 1P	11 x M8 x 1.25P	11 x M10 x 1.5P	12 x M16 x 2P
D7	72	86	118	145	179	247	300
D8 _{H7}	3	5	6	6	8	10	12
D9	45.5	45.5	53.4	77	102	125	160
D10	8 x 3.4	8 x 4.5	8 x 5.5	8 x 5.5	12 x 6.6	12 x 9	16 x 13.5
D11 _{h7}	60	70	95	120	152	212	255
D12	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6.5	8	13.5	13.5	17	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L7	5	7.7	8	10	12	15	20
L8	54.5	65	60	87.5	110	132.5	148
L9	4	6	7	7	7	10	10
L10	0.5	0.5	1	1	1	1	1
C1 ³	46	46	70	100	130	165	215
C2 ³	M4 x 0.7P	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P
C3 ³	≤11 / ≤12	≤11 / ≤12	≤14 / ≤15.875 / ≤16	≤19 / ≤24	≤32	≤38	≤48
C4 ³	30	30	34	40	50	60	85
C5 ³	30	30	50	80	110	130	180
C6 ³	3.5	3.5	8	4	5	6	6
C7 ³	48	48	60	90	115	142	190
C8 ³	19.5	19.5	19	17	19.5	22.5	29
C9 ³	97.5	108	134	160	204	248	311.5
C10 ³	13.25	13.25	13.5	10.75	13	15	20.75
OD	56 x 2	66 x 2	90 x 3	110 x 3	145 x 3	200 x 5	238 x 5

3. C1-C10 are motor specific dimensions (metric std shown).

AD Abmessungen, 2-stufig, i=16~91



[unit: mm]

Dimension	AD047	AD064	AD090	AD110	AD140	AD200	AD255
D1 _{H7}	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 _{H7}	28	40	63	80	100	160	180
D4 _{H7}	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	4 x M3 x 0.5P	7 x M5 x 0.8P	7 x M6 x 1P	11 x M6 x 1P	11 x M8 x 1.25P	11 x M10 x 1.5P	12 x M16 x 2P
D7	72	86	118	145	179	247	300
D8 _{H7}	3	5	6	6	8	10	12
D9	45.5	45.5	55	77	90	113	138
D10	8 x 3.4	8 x 4.5	8 x 5.5	8 x 5.5	12 x 6.6	12 x 9	16 x 13.5
D11 _{H7}	60	70	95	120	152	212	255
D18	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6.5	8	13.5	13.5	17	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L7	5	7.7	8	10	12	15	20
L8	52.5	28.5	32	37	122	79.5	82
L9	4	6	7	7	7	10	10
L10	0.5	0.5	1	1	1	1	1
C1 ⁴	46	46	70	100	130	165	215
C2 ⁴	M4 x 0.7P	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P
C3 ⁴	≤11 / ≤12	≤11 / ≤12	≤14 / ≤15.875 / ≤16	≤19 / ≤24	≤32	≤38	≤48
C4 ⁴	30	30	34	40	50	60	85
C5 ⁴	30	30	50	80	110	130	180
C6 ⁴	3.5	3.5	8	4	5	6	6
C7 ⁴	48	48	60	90	115	142	190
C8 ⁴	19.5	19.5	19	17	19.5	22.5	29
C9 ⁴	100	106	130.5	149	205	247.5	323
C10 ⁴	13.25	13.25	13.5	10.75	13	15	20.75
OD	56 x 2	66 x 2	90 x 3	110 x 3	145 x 3	200 x 5	238 x 5

4. C1~C10 are motor specific dimensions (metric std shown).



ADR Spezifikationen

Gearbox Performance

Model No.	Stage	Ratio ^A	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255	
Nominal Output Torque T_{2N}	1	4	19	48	130	270	560	1,100	1,700	
		5	22	60	160	330	650	1,200	2,000	
		7	19	50	140	300	550	1,100	1,800	
		10	14	60	160	325	650	1,200	2,000	
		14	-	42	140	300	550	1,100	1,800	
		20	-	40	100	230	450	900	1,500	
	2	20	19	-	-	-	-	-	-	-
		25	22	60	160	330	650	1,200	2,000	
		35	19	50	140	300	550	1,100	1,800	
		40	19	48	130	270	560	1,100	1,700	
		50	22	60	160	330	650	1,200	2,000	
		70	19	50	140	300	550	1,100	1,800	
		100	14	40	100	230	450	900	1,500	
		140	-	-	140	300	550	1,100	1,800	
200	-	-	100	230	450	900	1,500			
Emergency Stop Torque T_{2NOTB}	Nm	1,2	3 times of Nominal Output Torque							
Nominal Input Speed n_{1N}	rpm	1,2	4~200	5,000	5,000	4,000	4,000	3,000	3,000	2,000
Max. Input Speed n_{1B}	rpm	1,2	4~200	10,000	10,000	8,000	8,000	6,000	6,000	4,000
Micro Backlash P0	arcmin	1	4~20	-	-	≤2	≤2	≤2	≤2	≤2
		2	25~200	-	-	≤4	≤4	≤4	≤4	≤4
Reduced Backlash P1	arcmin	1	4~20	≤4	≤4	≤4	≤4	≤4	≤4	≤4
		2	25~200	≤7	≤7	≤7	≤7	≤7	≤7	≤7
Standard Backlash P2	arcmin	1	4~20	≤6	≤6	≤6	≤6	≤6	≤6	≤6
		2	25~200	≤9	≤9	≤9	≤9	≤9	≤9	≤9
Torsional Rigidity	Nm/arcmin	1,2	4~200	7	13	31	82	151	440	1,006
Max. Bending moment ^c	Nm	1,2	4~200	42.5	125	235	430	1,300	3,064	5,900
Max. Axial Load F_{2aB}	N	1,2	4~200	990	1,050	2,850	2,990	10,590	16,660	29,430
Service Life ^d	hr	1,2	4~200	30,000*						
Efficiency η	%	1	4~20	≥95%						
		2	25~200	≥92%						
Weight	kg	1	4~20	1.1	2.1	5.9	10.5	21.9	50.9	85.4
		2	25~200	1.4	1.9	4.5	9.8	20.1	45.4	85.9
Operating Temp	°C	1,2	4~200	-10°C~90°C						
Lubrication				Synthetic lubrication oils						
IP Level		1,2	4~200	IP65						
Mounting Position		1,2	4~200	all directions						
Noise	dB(A)	1,2	4~200	≤61	≤63	≤65	≤68	≤70	≤72	≤74

Massenträgheitsmoment ADR

Model No.	Stage	Ratio ^A	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255
Moments of Inertia J_1	1	4~10	0.09	0.35	2.25	6.84	23.4	68.9	135.4
		14	-	0.07	1.87	6.25	21.8	65.6	119.8
		20	-	0.07	1.87	6.25	21.8	65.6	119.8
	2	20	0.09	-	-	-	-	-	-
		25~100	0.09	0.09	0.35	2.25	6.84	23.4	68.9
		140~200	-	-	0.31	1.87	6.25	21.8	65.6

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

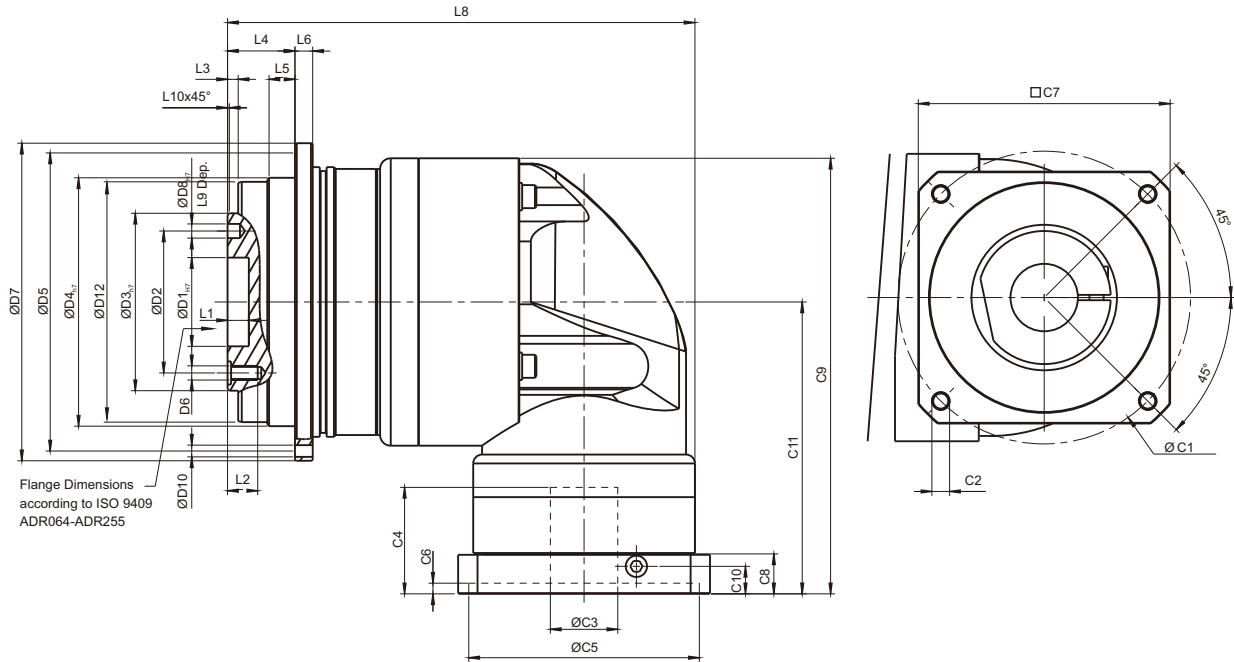
B. Max. acceleration torque $T_{2B} = 60\%$ of T_{2NOT}

C. Applied to the output shaft center at 100 rpm

D. For continuous operation, the service life time is less than 15,000hrs

E. These values are measured by gearbox with ratio = 10 (1-stage) or ratio = 100 (2-stage) at 3,000 rpm without load. At smaller ratio and/or higher speed (RPM), the noise level would be higher

ADR Abmessungen, 1-stufig, $i=4\sim 20$

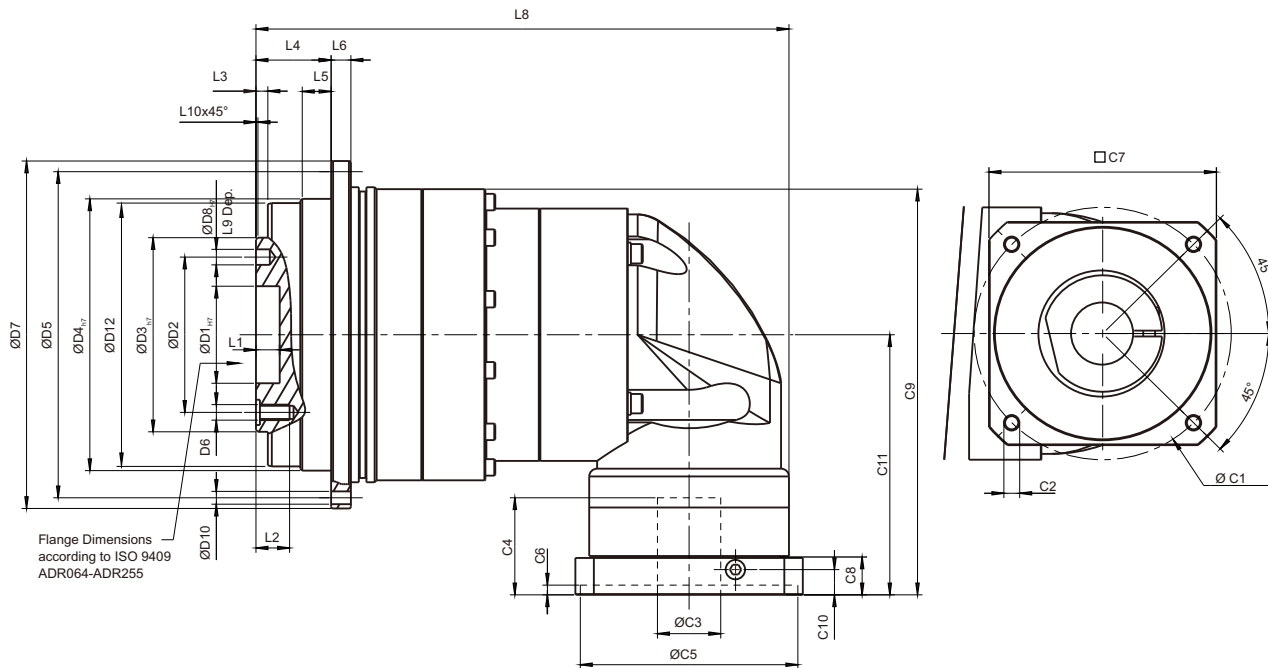


[unit: mm]

Dimension	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255
D1 _{H7}	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 _{h7}	28	40	63	80	100	160	180
D4 _{h7}	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	4 x M3 x 0.5P	7 x M5 x 0.8P	7 x M6 x 1P	11 x M6 x 1P	11 x M8 x 1.25P	11 x M10 x 1.5P	12 x M16 x 2P
D7	72	86	118	145	179	247	300
D8 _{H7}	3	5	6	6	8	10	12
D10	8 x 3.4	8 x 4.5	8 x 5.5	8 x 5.5	12 x 6.6	12 x 9	16 x 13.5
D12	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6.5	8	13.5	13.5	17	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L8	107.5	126	172.5	201	263.5	334.5	392
L9	4	6	7	7	7	10	10
L10	0.5	0.5	1	1	1	1	1
C1 ¹	46	70	100	130	165	215	235
C2 ¹	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P	M12 x 1.75P
C3 ¹	≤11 / ≤12	≤14 / ≤16	≤19 / ≤24	≤32	≤38	≤48	≤55
C4 ¹	30	34	40	50	60	85	116
C5 ¹	30	50	80	110	130	180	200
C6 ¹	3.5	8	4	5	6	6	6
C7 ¹	48	60	90	115	142	190	220
C8 ¹	19.5	19	17	19.5	22.5	29	63
C9 ¹	104.25	116.5	159.5	199	245.5	316	398.5
C10 ¹	13.25	13.5	10.75	13	15	20.75	53.5
C11 ¹	74	81.5	107.5	134	164.5	213.5	268.5

1. C1-C10 are motor specific dimensions (metric std shown).

ADR Abmessungen, 2-stufig, i=25~200



[unit: mm]

Dimension	ADR047	ADR064	ADR090	ADR110	ADR140	ADR200	ADR255
D1 _{H7}	12	20	31.5	40	50	80	100
D2	20	31.5	50	63	80	125	140
D3 _{H7}	28	40	63	80	100	160	180
D4 _{H7}	47	64	90	110	140	200	255
D5	67	79	109	135	168	233	280
D6	4 x M3 x 0.5P	7 x M5 x 0.8P	7 x M6 x 1P	11 x M6 x 1P	11 x M8 x 1.25P	11 x M10 x 1.5P	12 x M16 x 2P
D7	72	86	118	145	179	247	300
D8 _{H7}	3	5	6	6	8	10	12
D10	8 x 3.4	8 x 4.5	8 x 5.5	8 x 5.5	12 x 6.6	12 x 9	16 x 13.5
D12	46.2	63.2	89.2	109.2	139.2	199.2	254.2
L1	4	8	12	12	12	16	20
L2	6.5	8	13.5	13.5	17	22.5	30.5
L3	3	3	6	6	6	8	12
L4	19.5	19.5	30	29	38	50	66
L5	7	7	10	10	14.6	15	20
L6	4	4	7	8	10	12	18
L8	122	132.5	163	217.5	269.5	333.5	403
L9	4	6	7	7	7	10	10
L10	0.5	0.5	1	1	1	1	1
C1 ²	46	46	70	100	130	165	215
C2 ²	M4 x 0.7P	M4 x 0.7P	M5 x 0.8P	M6 x 1P	M8 x 1.25P	M10 x 1.5P	M12 x 1.75P
C3 ²	≤11 / ≤12	≤11 / ≤12	≤14 / ≤15.875 / ≤16	≤19 / ≤24	≤32	≤38	≤48
C4 ²	30	30	34	40	50	60	85
C5 ²	30	30	50	80	110	130	180
C6 ²	3.5	3.5	8	4	5	6	6
C7 ²	48	48	60	90	115	142	190
C8 ²	19.5	19.5	19	17	19.5	22.5	29
C9 ²	103.25	108.25	128.25	166.5	209	269.5	340
C10 ²	13.25	13.25	13.5	10.75	13	15	20.75
C11 ²	74	74	81.5	107.5	134	164.5	213.5

2. C1~C10 are motor specific dimensions (metric std shown).