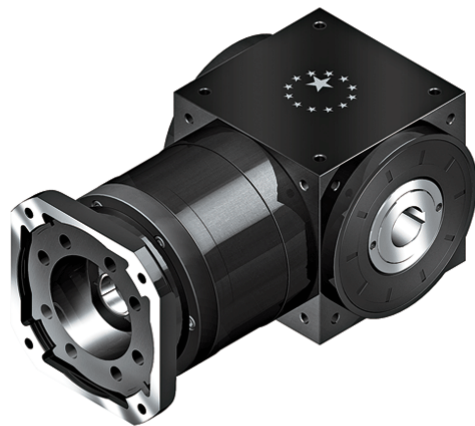
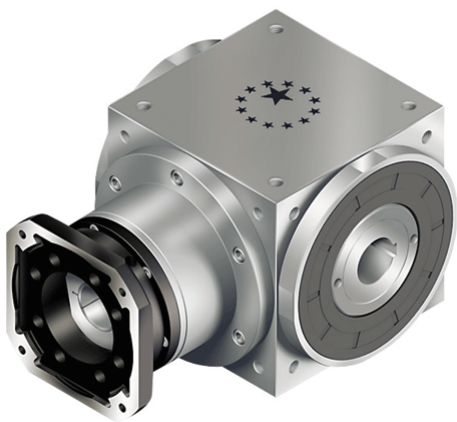


# Kania & Edinger GmbH

Winkelgetriebe AT-FH / ATB-FH



# Specifications

## AT / ATB Flange Type Series

### Gearbox Performance (The performance and specification of ATB series are identical to AT series.)

Model No.	Stage	Ratio <sup>(1)</sup>	AT065 FL	AT075 FL	AT090 FL	AT110 FL	AT140 FL	AT170 FL	AT210 FL	AT240 FL	AT280 FL		
			AT065 FL1	AT075 FL1	AT090 FL1	AT110 FL1	AT140 FL1	AT170 FL1	AT210 FL1	AT240 FL1	AT280 FL1		
			AT065 FH	AT075 FH	AT090 FH	AT110 FH	AT140 FH	AT170 FH	AT210 FH	AT240 FH	AT280 FH		
			AT065 FC	AT075 FC	AT090 FC	AT110 FC	AT140 FC	AT170 FC	AT210 FC	AT240 FC	AT280 FC		
			AT065 FR1	AT075 FR1	AT090 FR1	AT110 FR1	AT140 FR1	AT170 FR1	AT210 FR1	AT240 FR1	AT280 FR1		
Nominal Output Torque $T_{2N}$	Nm	1	25	45	78	150	360	585	1,300	2,150	3,200		
		1.5	25	45	78	150	360	585	1,300	2,150	3,200		
		2	24	42	68	150	330	544	1,220	2,010	3,050		
		3	18	33	54	120	270	450	1,020	1,650	2,850		
		4	13	28	48	100	224	376	860	1,410	2,300		
		5	12	25	40	85	196	320	740	1,210	2,000		
		2	7	12	12	33	91	91	91	195	358	358	
			10	24	28	68	150	208	208	430	846	846	
			15	18	33	54	120	270	312	645	1,269	1,269	
			20	13	28	48	100	224	376	860	1,410	1,692	
			25	12	25	40	85	196	320	740	1,210	2,000	
			35	12	25	40	85	196	320	740	1,210	1,790	
			50	12	25	40	85	196	320	740	1,210	1,465	
		3	75	-	-	-	120	210	312	585	1,269	1,269	
			100	-	-	-	100	224	376	780	1,410	1,692	
	125		-	-	-	85	196	320	740	1,210	2,000		
	150		-	-	-	120	135	312	390	975	975		
	200		-	-	-	100	180	376	520	1,300	1,300		
	250		-	-	-	85	196	320	650	1,210	1,625		
	350		-	-	-	85	196	320	740	1,210	1,790		
	500	-	-	-	85	196	320	740	1,210	1,465			
	Max. Acceleration Torque $T_{2B}$	Nm	1,2,3	1~500	1.5 times of Nominal Output Torque								
	Max. Acceleration Input Speed $n_{1B}$	rpm	1	1~5	7,500	6,500	5,500	4,500	3,500	3,000	2,200	2,000	1,700
			2	7~50	8,000	8,000	6,000	6,000	6,000	6,000	4,800	3,600	3,600
			3	75~500	-	-	-	8,000	8,000	6,000	6,000	6,000	6,000
	Standard Backlash <sup>(2)</sup>	arcmin	1	1~5	≤6	≤6	≤6	≤6	≤6	≤6	≤6	≤6	≤6
			2	7~50	≤8	≤8	≤8	≤8	≤8	≤8	≤8	≤8	≤8
			3	75~500	-	-	-	≤10	≤10	≤10	≤10	≤10	≤10
Max. Radial Load $F_{2aB}$ <sup>(3)</sup> Output d2	N	1,2,3	1~500	900	1,100	1,700	2,700	4,800	6,600	11,500	16,000	18,000	
Max. Axial Load $F_{2aB}$ <sup>(3)</sup> Output d2	N	1,2,3	1~500	450	550	850	1,350	2,400	3,300	5,750	8,500	9,000	
Efficiency $\eta$	%	1	1~5	≥98%									
		2,3	7~500	≥94%									
Operating Temp	°C	1,2,3	1~500	-10°C ~ 90°C									
Lubrication				Synthetic lubrication oils									
Noise Level <sup>(4)</sup>	dB (A)	1,2,3	1~500	≤71	≤72	≤76	≤77	≤78	≤79	≤81	≤83	≤84	

# Specifications

## AT / ATB Flange Type Series

### Gearbox Inertia (The performance and specification of ATB series are identical to AT series.)

Model No.	Stage	Ratio <sup>(1)</sup>	series.)								
			AT065 FL	AT075 FL	AT090 FL	AT110 FL	AT140 FL	AT170 FL	AT210 FL	AT240 FL	AT280 FL
Mass Moments of Inertia J <sub>i</sub>	1	1	0.51	1.30	3.14	7.62	23.54	59.09	195.96	365.38	787.63
		1.5	0.46	1.15	2.80	6.65	19.34	49.38	156.02	279.62	584.28
		2	0.44	1.10	2.68	6.23	17.72	45.44	140.80	245.78	500.26
		3	0.43	1.09	2.64	6.08	17.16	44.11	135.51	233.75	471.56
		4	0.43	1.08	2.63	6.05	17.03	43.79	134.14	230.77	464.76
		5	0.43	1.08	2.63	6.04	16.99	43.69	133.71	229.71	462.08
	2	7	0.15	0.15	0.50	2.79	2.79	2.79	9.91	29.26	29.26
		10	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
		15	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
		20	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
		25	0.15	0.15	0.50	2.80	2.80	2.80	9.96	29.43	29.43
		35	0.15	0.15	0.50	2.79	2.79	2.79	9.91	29.26	29.26
	3	50	0.15	0.15	0.50	2.79	2.79	2.79	9.89	29.20	29.20
		75	-	-	-	0.15	0.15	0.50	0.50	2.80	2.80
		100	-	-	-	0.15	0.15	0.50	0.50	2.80	2.80
		125	-	-	-	0.15	0.15	0.50	0.50	2.80	2.80
		150	-	-	-	0.15	0.15	0.50	0.50	2.79	2.79
		200	-	-	-	0.15	0.15	0.50	0.50	2.79	2.79
		250	-	-	-	0.15	0.15	0.50	0.50	2.79	2.79
		350	-	-	-	0.15	0.15	0.50	0.50	2.79	2.79
	500	-	-	-	0.15	0.15	0.50	0.50	2.79	2.79	

### Weight

Model No.	Stage	Ratio <sup>(1)</sup>	AT065	AT075	AT090	AT110	AT140	AT170	AT210	AT240	AT280
FL Series	1	1~5	2.8	4.4	7.1	12.1	20.9	36.1	69.4	101.2	158.3
	2	7~50	3.2	4.8	8.1	14.3	24.2	38.5	74.1	112.4	171.0
	3	75~500	-	-	-	13.9	23.7	38.8	73.4	110.2	168.7
FL1 Series	1	1~5	2.7	4.3	7.1	11.9	20.3	35.5	68.3	99.6	156.0
	2	7~50	3.2	4.8	8.0	14.2	23.9	37.9	73.0	110.8	168.6
	3	75~500	-	-	-	13.8	23.4	38.2	72.3	108.6	166.4
FH Series	1	1~5	2.6	4.1	6.7	11.4	18.9	32.9	63.2	92.5	146.0
	2	7~50	3.1	4.6	7.7	13.6	22.4	35.3	67.9	103.7	158.7
	3	75~500	-	-	-	13.3	21.9	35.6	67.2	101.5	156.5
FC Series	1	1~5	2.9	4.4	7.2	11.8	20.4	35.0	66.5	96.0	151.7
	2	7~50	3.3	4.9	8.2	14.1	24.1	37.4	71.2	107.2	164.4
	3	75~500	-	-	-	13.7	23.5	37.5	70.5	105.0	162.2
FR1 Series	1	1~5	2.7	4.3	7.1	11.9	20.3	35.5	68.3	99.6	156.0
	2	7~50	3.2	4.8	8.0	14.2	23.9	37.9	73.0	110.8	168.6
	3	75~500	-	-	-	13.8	23.4	38.2	72.3	108.6	166.4

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

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

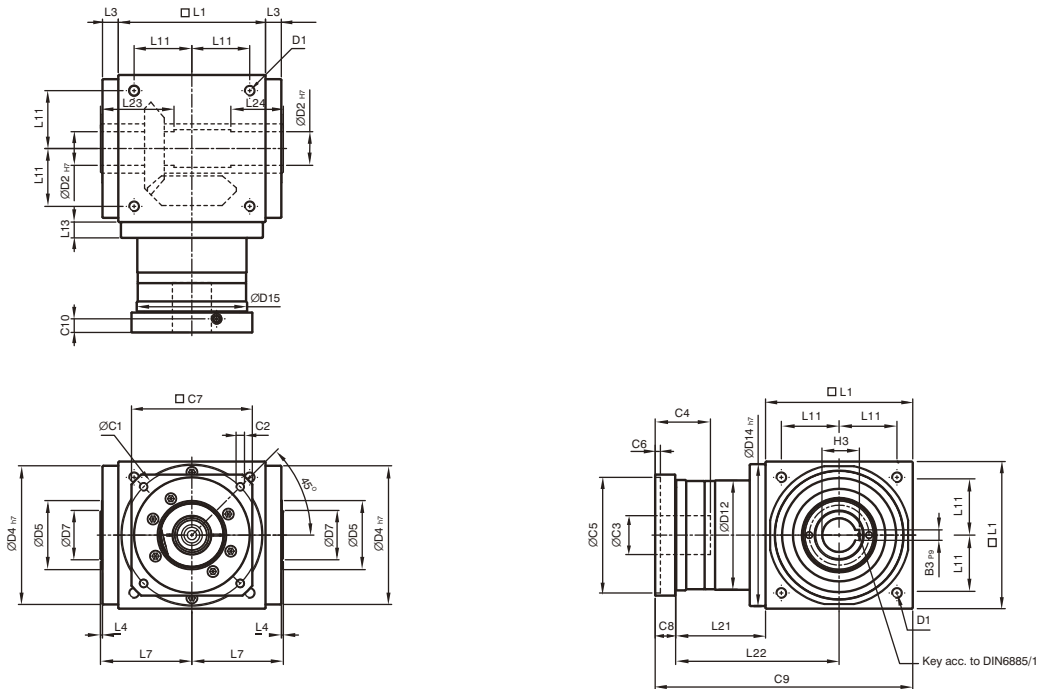
(3) Apply to the output shaft center at  $n_{is}$ .

(4) The dB values are measured by gearbox with ratio 5 (1-stage) or ratio 50 (2-stage) or ratio 500 (3-stage), no loading at 1,500 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.

# Dimensions (1-stage, Ratio i=1~5)

## AT-FH / ATB-FH Series



\* The dimensions of ATB series are identical to AT series.

[unit: mm]

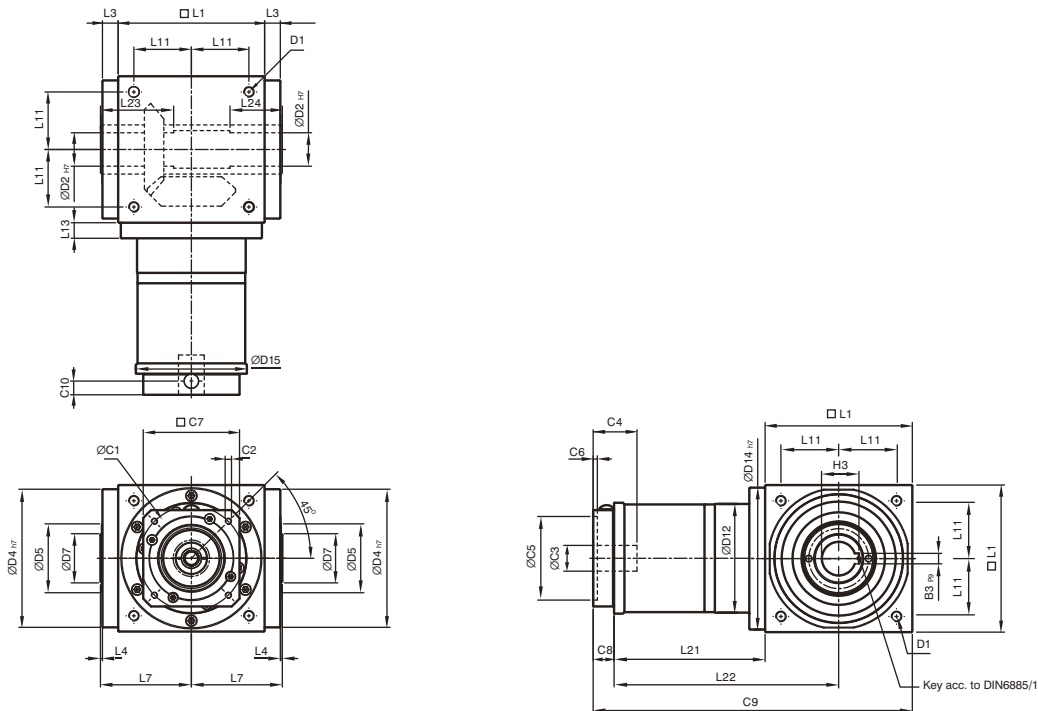
Dimension	AT065FH	AT075FH	AT090FH	AT110FH	AT140FH	AT170FH	AT210FH	AT240FH	AT280FH
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H7	13	14	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	105	130	158	178	198
L1	65	75	90	110	140	170	210	240	280
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	49	60.5	63	69.5	85.5	95	130	144.5	135
L22	81.5	98	108	124.5	155.5	180	235	264.5	275
L23	40	47	52	53	70	80	95	115	115
L24	30	32	35	35	50	55	65	80	80
C1 <sup>9</sup>	46	70	100	100	130	165	215	215	235
C2 <sup>9</sup>	M4	M5	M6	M6	M8	M10	M12	M12	M12
C3 <sup>9</sup>	≤11 / ≤12 <sup>10</sup>	≤14 / ≤15.875 / ≤16 <sup>10</sup>	≤19	≤24	≤32	≤38	≤42	≤48	≤55
C4 <sup>9</sup>	30	34	40	40	50	60	85	85	116
C5 <sup>9</sup>	30	50	80	80	110	130	180	180	200
C6 <sup>9</sup>	3.5	8	4	4	5	6	6	6	6
C7 <sup>9</sup>	42	60	90	90	115	142	190	190	220
C8 <sup>9</sup>	19.5	19	17	17	19.5	22.5	29	29	63
C9 <sup>9</sup>	133.5	154.5	170	196.5	245	287.5	369	413.5	478
C10 <sup>9</sup>	13.25	13.5	10.75	10.75	13	15	20.75	20.75	53.5
B3 P9	5	5	6	6	10	12	14	16	18
H3	15.3	16.3	20.8	24.8	35.3	43.3	53.8	59.3	64.4

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

10. AT065FHM1 offers C3 ≤12 option; AT075FHM1 offers C3 ≤16 option; AT075FHM2 offers C3 ≤15.875 option.

# Dimensions (2-stage, Ratio $i=7\sim 50$ )

## AT-FH / ATB-FH Series



\* The dimensions of ATB series are identical to AT series.

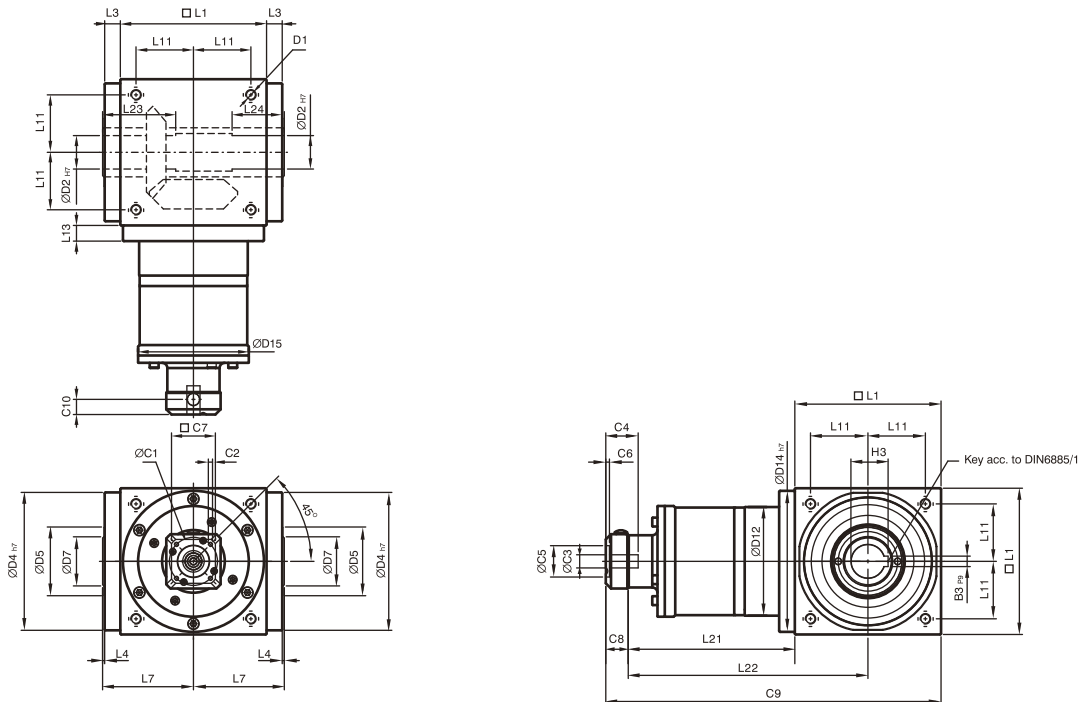
[unit: mm]

Dimension	AT065FH	AT075FH	AT090FH	AT110FH	AT140FH	AT170FH	AT210FH	AT240FH	AT280FH
D1	M4	M6	M6	M8	M10	M12	M16	M16	M16
D2 H7	13	14	18	22	32	40	50	55	60
D4 h7	63	73	88	108	135	165	205	235	275
D5	31	35	43	53	68	83	104	124	144
D7	21	22	28	33	47	55	75	85	110
D12	62	72	86	106	104	128	160	180	200
D14 h7	63	73	88	108	135	165	205	235	275
D15	62.9	72.9	87	107	106	130	158	178	198
L1	65	75	90	110	140	170	210	240	280
L3	13	14.5	15	15	15	15	20	25	25
L4	2	2	2	2	2	2	2	2	2
L7	47.5	54	62	72	87	102	127	147	167
L11	27	30	36	44	55	67	85	95	110
L13	13	15	15	15	15	15	20	25	25
L21	75	84.5	99	122	144.5	157.5	206.5	239	248
L22	107.5	122	144	177	214.5	242.5	311.5	359	388
L23	40	47	52	53	70	80	95	115	115
L24	30	32	35	35	50	55	65	80	80
C1 <sup>11</sup>	46	46	70	100	100	100	130	165	165
C2 <sup>11</sup>	M4	M4	M5	M6	M6	M6	M8	M10	M10
C3 <sup>11</sup>	≤12	≤12	≤16	≤24	≤24	≤24	≤32	≤38	≤38
C4 <sup>11</sup>	30	30	34	40	40	40	50	60	60
C5 <sup>11</sup>	30	30	50	80	80	80	110	130	130
C6 <sup>11</sup>	3.5	3.5	8	4	4	4	5	6	6
C7 <sup>11</sup>	42	42	60	92	92	92	115	142	142
C8 <sup>11</sup>	21.5	21.5	21.5	20	20	20	24	31	31
C9 <sup>11</sup>	161.5	181	210.5	252	304.5	347.5	440.5	510	559
C10 <sup>11</sup>	14.5	14.5	15.5	13	13	13	16	21	21
B3 P9	5	5	6	6	10	12	14	16	18
H3	15.3	16.3	20.8	24.8	35.3	43.3	53.8	59.3	64.4

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

# Dimensions (3-stage, Ratio $i=75\sim 500$ )

## AT-FH / ATB-FH Series



\* The dimensions of ATB series are identical to AT series.

[unit: mm]

Dimension	AT110FH	AT140FH	AT170FH	AT210FH	AT240FH	AT280FH
D1	M8	M10	M12	M16	M16	M16
D2 <sub>H7</sub>	22	32	40	50	55	60
D4 <sub>h7</sub>	108	135	165	205	235	275
D5	53	68	83	104	124	144
D7	33	47	55	75	85	110
D12	106	104	128	160	180	200
D14 <sub>h7</sub>	108	135	165	205	235	275
D15	107	106	130	158	178	198
L1	110	140	170	210	240	280
L3	15	15	15	20	25	25
L4	2	2	2	2	2	2
L7	72	87	102	127	147	167
L11	44	55	67	85	95	110
L13	15	15	15	20	25	25
L21	136.5	159.5	183.5	226	269	278
L22	191.5	229.5	268.5	331	389	418
L23	53	70	80	95	115	115
L24	35	50	55	65	80	80
C1 <sup>12</sup>	46	46	70	70	100	100
C2 <sup>12</sup>	M4	M4	M5	M5	M6	M6
C3 <sup>12</sup>	≤12	≤12	≤16	≤16	≤24	≤24
C4 <sup>12</sup>	30	30	34	34	40	40
C5 <sup>12</sup>	30	30	50	50	80	80
C6 <sup>12</sup>	3.5	3.5	8	8	4	4
C7 <sup>12</sup>	42	42	60	60	92	92
C8 <sup>12</sup>	21.5	21.5	21.5	21.5	20	20
C9 <sup>12</sup>	268	321	375	457.5	529	578
C10 <sup>12</sup>	14.5	14.5	15.5	15.5	13	13
B3 <sub>P9</sub>	6	10	12	14	16	18
H3	24.8	35.3	43.3	53.8	59.3	64.4

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