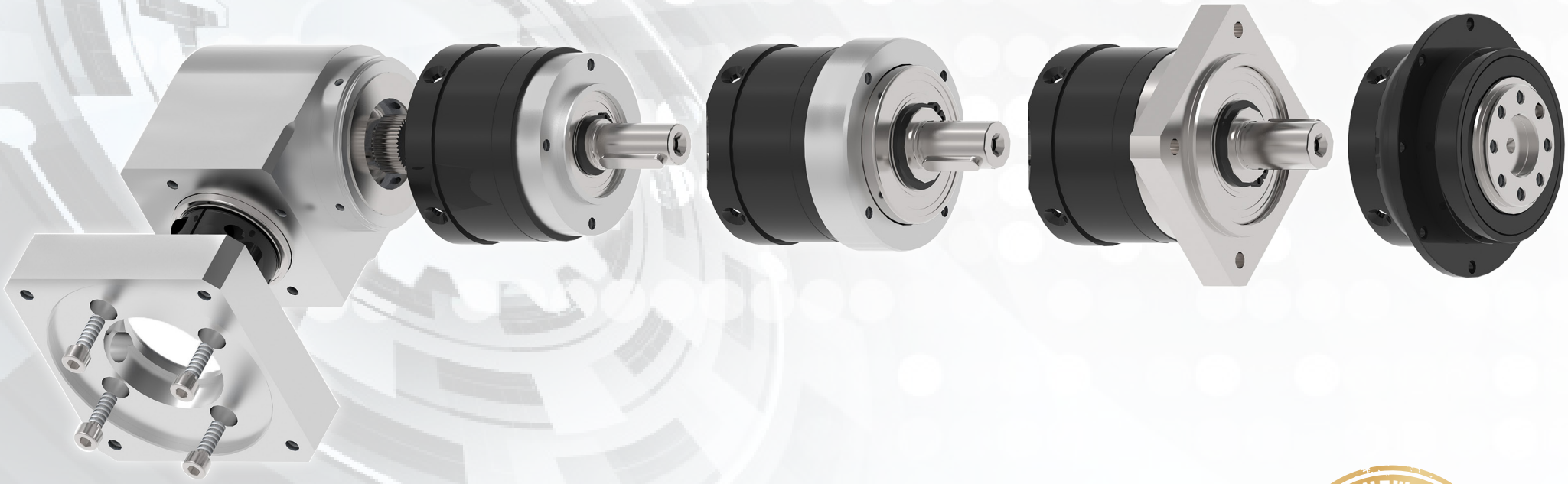
ANTRIEBSTECHNIK



right angle-planetary gearbox BPCE
planetary gearbox PCE

Quality gearboxes produced in Germany

As a medium-sized gear manufacturer, we can now look back on more than 75 years of tradition. For more than 30 years, everything has been "rotating" for us around right-angled power transmission. Then as now, we are driven by one thing: The solution to your engineering challenges. Technically competent, economical, reliable and fast.

With our comprehensive product range, developed and assembled in the metropolitan region of Hamburg and distributed all over the world, we have been able to secure a high and steadily growing market share.

The ATEK standard series are available on short delivery times. Whether you require special drive solutions for bespoke machines or standard products for general purposes: The ATEK modular system will meet your needs. Our customers benefit of sophisticated drive solutions, high product and process quality, with experienced knowledge and a competitive price/performance ratio.

www.atek.de

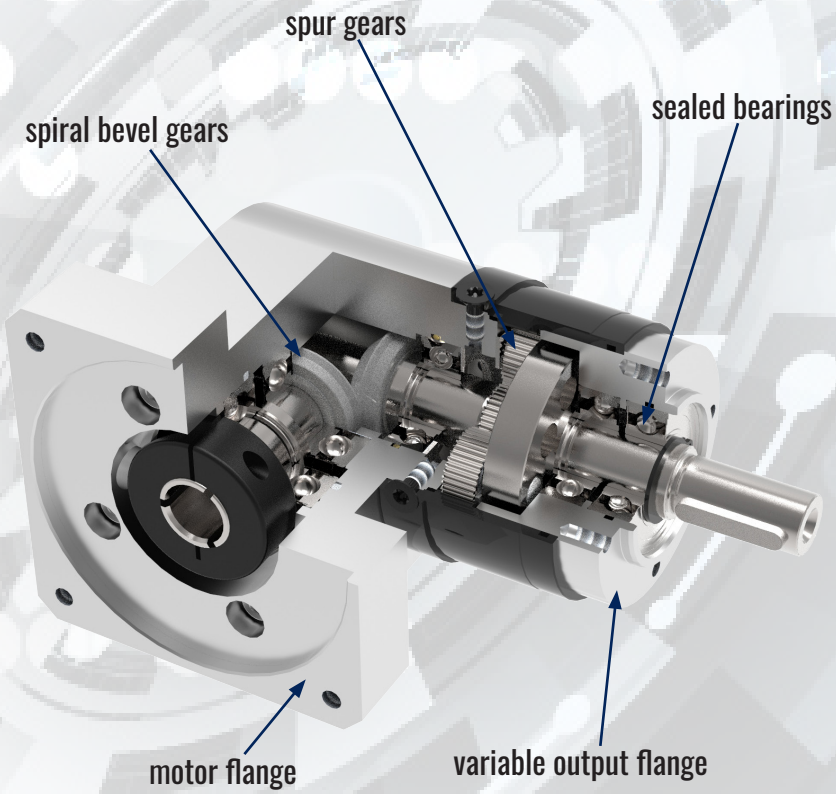
The new right angle planetary gearbox BPCE and planetary gearbox PCE

The new ATEK right angle planetary gearbox BPCE combines the features of the well known, compact, spiral toothed and low noise ATEK bevel gears with those of a planetary gearbox.
The spiral bevel gear stage ensures quiet and compact power transmission in a right angle, the planetary gearbox offers high torques and high gear ratios in the narrowest space.

In addition, the combination impresses with strong torsional stiffness and low backlash. The motor flange of the right angle planetary gearbox is freely configurable and can be individually adapted to your motor.

For maximum flexibility, the right angle planetary gears are low-maintenance, lifetime-lubricated and optimized for mounting in all mounting positions. This gives you the best possible flexibility for the positioning in your application. Different sizes types and ratios are available for your application requirements.

The new economy gearbox design gives a very high price/performance ratio coupled with short delivery times.



Product key

BPCE 060 005:1 COF

Type

B	Bevel gear
P	Planetary gear
C	Input: Flange for servo motor
E	Economy range

Size

	CO	COQ	COP	COF
	Nominal size per construction type - Frame Size			
040	40mm		50mm	
060	60mm	60mm	70mm	64mm
080	80mm	80mm	90mm	90mm
120	120mm	120mm	120mm	110mm

Model

CO	Output shaft
COQ	Output shaft, square flange
COP	Output shaft, reinforced
COF	robotflanged output

Ratio*

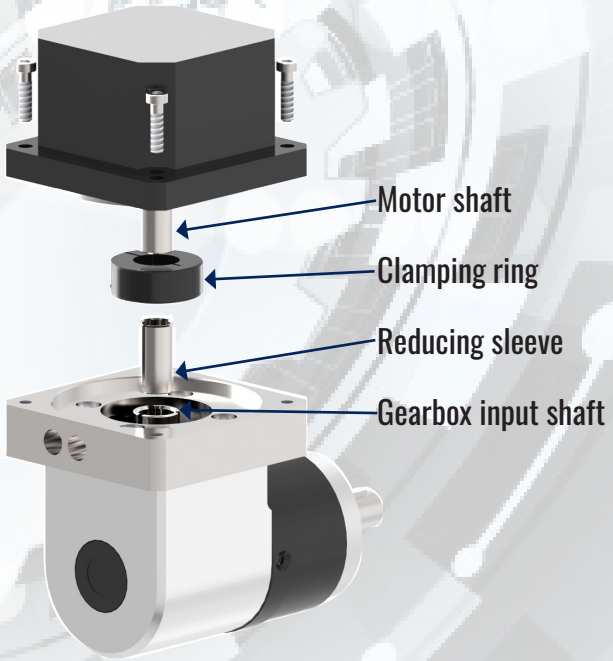
One stage PG	Two stages PG
3:1	9:1
4:1	12:1
5:1	15:1
7:1	16:1
10:1	20:1
	25:1
	28:1
	30:1
	35:1
	40:1
	50:1
	70:1
	100:1

*further ratios on request

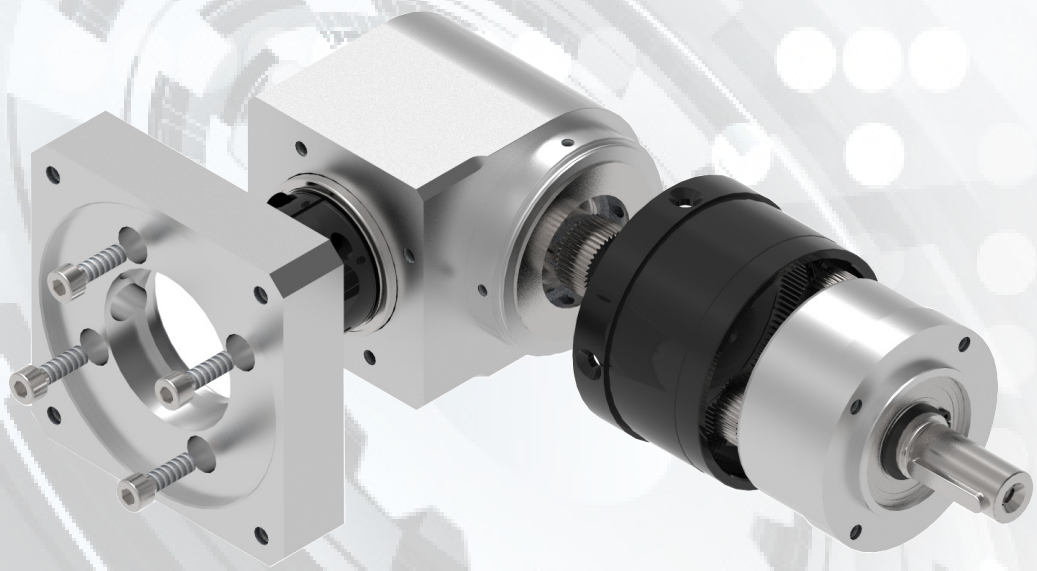
Input shaft sizes

Type →	BPCE						PCE									
Size →	040		060		080	120	040			060			080		120	
Maximum input shaft size in mm →	8	9	11	14	19	24	8	9	11	11	14	19	19	24	24	32
Acceptable input shaft sizes ↓																
4 mm	•						•									
5 mm	•		•				•			•						
6 mm	•		•				•			•						
6,35 mm	•		•				•			•						
7 mm		•	•					•		•						
8 mm	•		•		•		•			•			•			
9 mm		•	•		•			•		•			•			
9,5 mm			•		•				•	•			•			
9,525 mm			•		•				•	•			•			
10 mm				•	•						•		•			
11 mm			•		•	oR			•	•			•		A	
12 mm				•	•	oR					•		•		A	
12,7 mm				•	•	oR					•		•		A	
14 mm				•	•	•					•		•		•	
15,875 mm					•	•						•	•		•	
16 mm					•	•						•	•		•	
19 mm					•	•						•	•		•	
19,05 mm						•								•	•	
20 mm						•								•	•	
22 mm						•								•	•	
24 mm						•								•	•	
28 mm																•
32 mm																•

oR = on request
Please note: Reduction bushes will be used when motor shaft diameter is smaller than diameter shown.

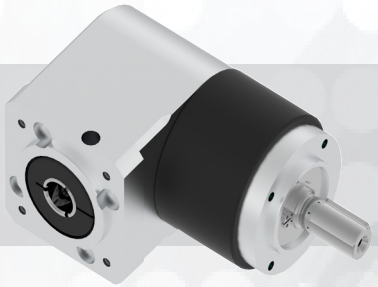
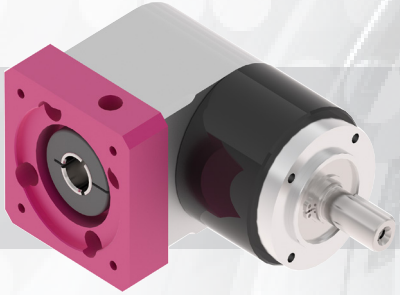
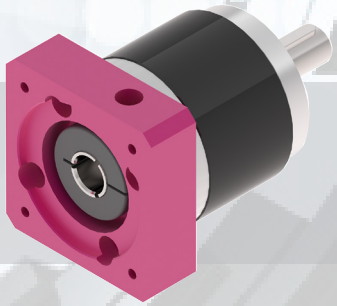
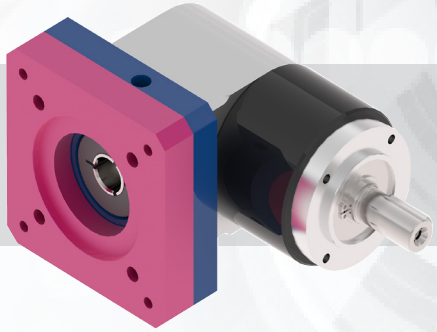
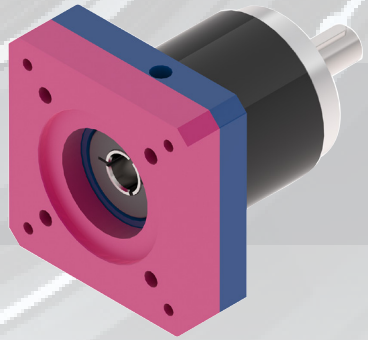


General technical performance data



B	
Toothing of the bevel gear	Spiral toothed
Ratio - bevel gearbox	1:1
Seal	2Z- bearing seal
PCE	
Toothing of the planetary gear	Straight toothed
Number of planetary stages	1 or 2
Ratio - planetary gearbox	3:1 to 100:1
Output shaft bearing	Deep groove ball bearing
Seal	2 RS- bearing seal
general	
Lifetime (L 10h)	20.000 h
Operating temperature	-25 °C / +90 °C
Protection class	IP 54
Lubrication	Grease
Maintenance intervals	none, lifetime lubricated
Mounting position	All sides
Operating mode	S1 + S5

Possible adjustments to the drive flange BPCE / PCE

	BPCE right angle-bevel-planetary gearbox	PCE planetary gearbox
Without motor flange		
For Motor flange B5		
For Motor flange B14		

Options for the motor flange BPCE / PCE

Gearbox size BG 040

040					
Flange No.	Motor shaft	Flange height	Centering circle	Bolt circle	Thread
Nr.-Fl. [-]	MWD [mm]	FH [mm]	ZK [mm]	LK [mm]	G [mm]
001	6-11	22	40	63	M4
002	6-11	22	40	63	M5
900	6-11	22	30	46	M4
901	6-11	22	19	26	M3
102	10-11	22	60	75	M5
202	10-11	22	60	75	M5

Other combinations on request!

Gearbox size BG 060

060					
Flange No.	Motor shaft	Flange height	Centering circle	Bolt circle	Thread
Nr.-Fl. [-]	MWD [mm]	FH [mm]	ZK [mm]	LK [mm]	G [mm]
001	5-6	18	40	63	M4
002	5-6	18	40	63	M5
001	7-14	23	40	63	M4
002	7-14	23	40	63	M5
102	7-14	23	60	75	M5
202	7-14	23	60	90	M5
103	7-14 / 15-19	23 / 27	60	75	M6
104	7-14	23	60	75	M5
201	7-14 / 15-19	23 / 27	60	90	M5
301	7-14 / 15-19	23 / 27	50	95	M6
401	7-14 / 15-19	23 / 27	80	100	M6
501	7-14 / 15-19	23 / 27	95	115	M8

Options for the motor flange BPCE / PCE

Gearbox size BG 080

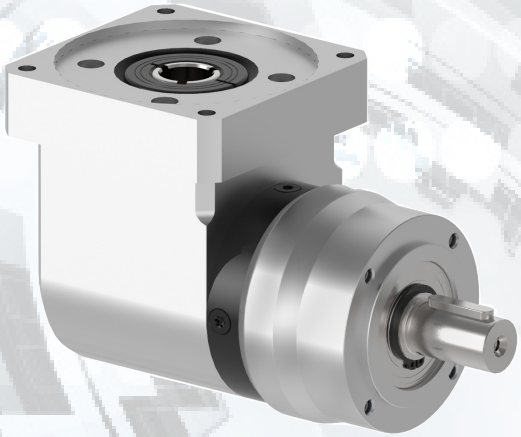
080					
Flange No.	Motor shaft	Flange height	Centering circle	Bolt circle	Thread
Nr.-Fl. [-]	MWD [mm]	FH [mm]	ZK [mm]	LK [mm]	G [mm]
001	8-19	24	40	63	M4
002	8-19	24	40	63	M5
102	8-19	24	40	75	M5
202	8-19	24	60	90	M5
103	8-19 / 19-24	24 / 34	60	75	M6
104	8-19	24	60	75	M5
201	8-19 / 19-24	24 / 34	60	90	M5
301	8-19 / 19-24	24 / 34	50	95	M6
401	8-19 / 19-24	24 / 34	80	100	M6
501	8-19 / 19-24	24 / 34	95	115	M8
601	8-19 / 19-24	24 / 34	95	130	M8
611	8-19 / 19-24	24 / 34	110	130	M8
701	8-19 / 19-24	24 / 34	110	145	M8
802	8-19 / 19-24	24 / 34	110	165	M10

Gearbox size BG 120

120					
Flange No.	Motor shaft	Flange height	Centering circle	Bolt circle	Thread
Nr.-Fl. [-]	MWD [mm]	FH [mm]	ZK [mm]	LK [mm]	G [mm]
103	11-24 / 28-32	30 / 45	60	75	M6
201	11-24 / 28-32	31 / 45	60	90	M5
301	11-24 / 28-32	32 / 45	50	95	M6
401	11-24 / 28-32	33 / 45	80	100	M8
501	11-24 / 28-32	34 / 45	95	115	M8
601	11-24 / 28-32	35 / 45	95	130	M8
611	11-24 / 28-32	36 / 45	110	130	M8
701	11-24 / 28-32	37 / 45	110	145	M8
802	11-24 / 28-32	38 / 45	110	165	M10
811	11-24 / 28-32	39 / 45	130	165	M10

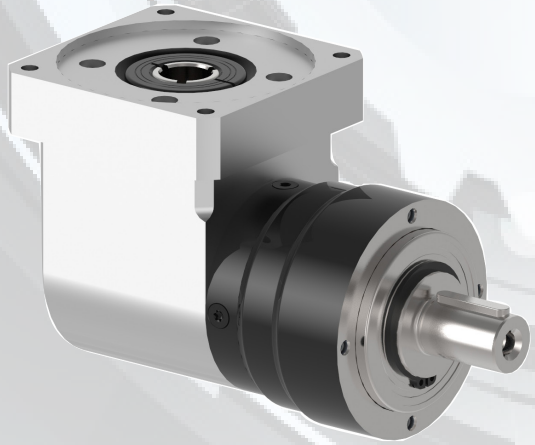
Other combinations on request!

Models BPCE



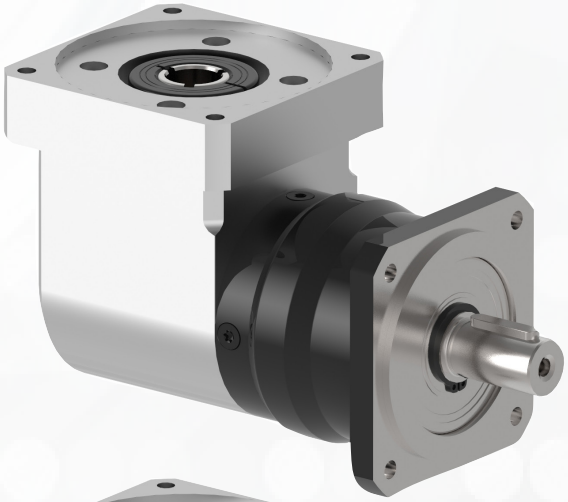
CO model with output shaft

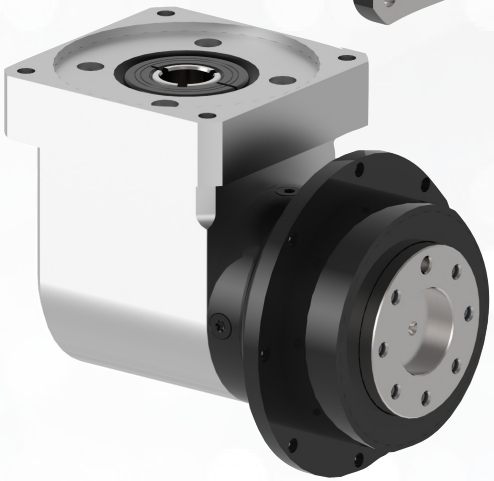
The ATEK right angle-bevel-planetary gearbox with output shaft features a very compact design.



COP model with output shaft, reinforced version

The ATEK right angle-bewel-planetary gearbox with reinforced output shaft and reinforced bearing allows higher radial and axial forces, with increased bendig moment compared to the CO version.





COQ model with square output flange

The ATEK right angle-bevel-planetary gearbox with square output flange allowing for easier mounting.

COF design with robot flange and maximum torsional stiffness

The ATEK right angle-bevel-planetary gearbox with compact flange output (robot flange). The standardized flange interface according to DIN makes it easy to mount for different applications and has a high torsional stiffness.

**The BPCE is easy to install, lifetime-lubricated and extremely low-noise due to the spiral toothing in the angle stage.
Version E combines all the advantages of our economy line.**

Models PCE

CO model with output shaft

The ATEK planetary gearbox with output shaft features a very compact design.

COP model with output shaft, reinforced version

The ATEK planetary gearbox with reinforced output shaft and reinforced bearing allows higher radial and axial forces, with increased bendig moment compared to the CO version.

COQ model with square output flange

The ATEK planetary gearbox with square output flange allowing for easier mounting.

COF design with robot flange and maximum torsional stiffness

The ATEK planetary gearbox with compact flange output (robot flange). The standardized flange interface according to DIN makes it easy to mount for different applications and has a high torsional stiffness.

The PCE is easy to install, lifetime-lubricated and compact. Version E combines all the advantages of our economy line.

BPCE - Technical performance data size 040

			1- stage					2- stage												
Ratio	**i**		**3**	**4**	**5**	**7**	**10**	**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Nominal output torque at n_1 = 4000 [6]	T_{2N}	Nm	oR	4	5	6	4	oR	oR	oR	9	10	11	13	oR	12	12	11	14	8
Max. acceleration torque at n_1 = 4000 [1] [6]	T_{2B}	Nm	oR	6,4	8	9,6	6,4	oR	oR	oR	14,4	16	17,5	20,8	oR	19,5	19,5	17,8	22,4	12,8
Emergency stop torque [2]	T_{2NOT}	Nm	oR	12	15	18	12	oR	oR	oR	27	29	29	29	oR	29	29	29	29	29
Nominal input speed	n_1	min^{-1}	4000																	
Output torque at n_{2ref} = 100 [5]	T_{2Nref}	Nm	oR	6	7,5	8,5	5	oR	oR	oR	20 [4]	20 [4]	18	20	oR	20	18	18	18	13
Max. acceleration torque at n_{2ref} = 100 [1] [5]	T_{2Bref}	Nm	oR	10	12	14	8	oR	oR	oR	32	32	29	32	oR	32	29	29	29	21
Reference speed	n_{2ref}	min^{-1}	100																	
Backlash	j_t	arcmin	< 21					< 25												
Efficiency at full load	η	%	94					93												
max. speed	n_{1max}	min^{-1}	8000																	
Noise [3]	Qg	db(A)	<= 68																	
Moment of inertia	j	$kg * m^2$	0,0615-0,0960					0,0614-0,0939												
Torsional stiffness	Cg	Nm/arcmin	2,677-4,866					3,115-6,006												

Mechanical performance data - note operating temperature.

Type			**CO**	**COP**	**COQ**	**COF**
permissible radial force	F_{r2}	N	200	588	-	-
permissible axial force	F_{a2}	N	200	800	-	-
Tilting moment	M_{K2}	Nm	5,5	14,9	-	-

[1] maximum 1.000 cycles per hour. T_{2B}- Occurance < 5% per lifetime
[2] maximum 1.000 times per lifetime
[3] at 1m distance und nominal speed n1, without load, i=5
[4] Deviating lifetime: 10.000 h
[5] Toothing lifetime: 20.000 h
[6] Lifetime: 20.000 h
oR = on request

PCE - Technical performance data size 040

			1- stage					2- stage												
Ratio	**i**		**3**	**4**	**5**	**7**	**10**	**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Nominal output torque at n_1 = 4000 [6]	T_{2N}	Nm	oR	6	7	7	4	oR	oR	oR	9	10	11	13	oR	12	12	11	14	8
Max. acceleration torque at n_1 = 4000 [1] [6]	T_{2B}	Nm	oR	9,6	11,2	11,2	6,4	oR	oR	oR	14,4	16	17,6	20,8	oR	19,5	19,5	17,8	22,4	12,8
Emergency stop torque [2]	T_{2NOT}	Nm	oR	18	21	21	12	oR	oR	oR	27	29	29	29	oR	29	29	29	29	29
Nominal input speed	n_1	min^{-1}	4000																	
Output torque at n_{2ref} = 100 [5]	T_{2Nref}	Nm	oR	6	7,5	8,5	5	oR	oR	oR	20 [4]	20 [4]	18	20	oR	20	18	18	18	13
Max. acceleration torque at n_{2ref} = 100 [1] [5]	T_{2Bref}	Nm	oR	10	12	14	8	oR	oR	oR	29	29	29	29	oR	29	29	29	29	21
Reference speed	n_{2ref}	min^{-1}	100																	
Backlash	j_t	arcmin	< 18					< 22												
Efficiency at full load	η	%	96					95												
max. speed	n_{1max}	min^{-1}	8000																	
Noise [3]	Qg	db(A)	<= 58																	
Moment of inertia	j	$kg * m^2$	0,1749-0,0662					0,0336-0,1839												
Torsional stiffness	Cg	Nm/arcmin	0,718-6,289					0,692-6,472												

Mechanical performance data - note operating temperature.

Type			**C0**	**C0P**	**C0Q**	**C0F**
Permissible radial force	F_{r2}	N	200	588	-	-
Permissible axial force	F_{a2}	N	200	800	-	-
Tilting moment	M_{K2}	Nm	5,5	14,9	-	-

[1] maximum 1.000 cycles per hour. T_{2B}- Occurance < 5% per lifetime
[2] maximum 1.000 times per lifetime
[3] at 1m distance und nominal speed n1, without load, i=5
[4] Deviating lifetime: 10.000 h
[5] Toothing lifetime: 20.000 h
[6] Lifetime: 20.000 h
oR = on request

BPCE - Technical performance data size 060

			1- stage					2- stage												
Ratio	**i**		**3**	**4**	**5**	**7**	**10**	**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Nominal output torque at n_1 = 3000 [6]	T_{2N}	Nm	9	11	14	20	18	17	34	35	38	41	43	45	30	47	51	49	45	37
Max. acceleration torque at n_1 = 3000 [1] [6]	T_{2B}	Nm	14	18	22	31	29	28	54	56	61	66	68	73	48	76	81	79	72	59
Emergency stop torque [2]	T_{2NOT}	Nm	26	33	42	59	54	52	85	85	85	85	85	85	85	85	85	85	85	85
Nominal input speed	n_1	min^{-1}	3000																	
Output torque at n_{2ref} = 100 [5]	T_{2Nref}	Nm	12	16	20	25	22	36 [4]	44 [4]	44 [4]	44	44	40	44	36	44	40	44	44	35
Max. acceleration torque at n_{2ref} = 100 [1] [5]	T_{2Bref}	Nm	19	26	32	40	35	58	70	70	70	70	64	70	58	70	64	70	70	56
Reference speed	n_{2ref}	min^{-1}	100																	
Backlash	j_t	arcmin	< 16					< 18												
Efficiency at full load	η	%	94					93												
max. speed	n_{1max}	min^{-1}	6000																	
Noise [3]	Qg	db(A)	<= 70																	
Moment of inertia	j	$kg * m^2$	0,3074-0,4670					0,3043-0,4834												
Torsional stiffness	Cg	Nm/arcmin	1,773-6,803					1,932-9,259												

Mechanical performance data - note operating temperature.

Type			**CO**	**COP**	**COQ**	**COF**
Permissible radial force	F_{r2}	N	419	1163	1163	636
Permissible axial force	F_{a2}	N	500	1350	1350	1200
Tilting moment	M_{K2}	Nm	15	48	48	14

[1] maximum 1.000 cycles per hour. T_{2B}- Occurance < 5% per lifetime
[2] maximum 1.000 times per lifetime
[3] at 1m distance und nominal speed n1, without load, i=5
[4] Deviating lifetime: 10.000 h
[5] Toothing lifetime: 20.000 h
[6] Lifetime: 20.000 h

PCE - Technical performance data size 060

			1- stage					2- stage												
Ratio	**i**		**3**	**4**	**5**	**7**	**10**	**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Nominal output torque at n_1 = 3000 [6]	T_{2N}	Nm	12	25	26	28	18	17	34	35	38	41	43	45	30	47	51	49	45	37
Max. acceleration torque at n_1 = 3000 [1] [6]	T_{2B}	Nm	19	40	42	45	29	28	54	56	61	66	68	73	48	76	81	79	72	59
Emergency stop torque [2]	T_{2NOT}	Nm	36	75	75	80	54	50	85	85	85	85	85	85	85	85	85	85	85	85
Nominal input speed	n_1	min^{-1}	3000																	
Output torque at n_{2ref} = 100 [5]	T_{2Nref}	Nm	22	38	40	43	30	36 [4]	44 [4]	44 [4]	44	44	40	44	36	44	40	44	44	35
Max. acceleration torque at n_{2ref} = 100 [1] [5]	T_{2Bref}	Nm	35	61	64	61	51	58	70	70	70	70	64	70	58	70	64	70	70	56
Reference speed	n_{2ref}	min^{-1}	100																	
Backlash	j_t	arcmin	< 12					< 14												
Efficiency at full load	η	%	96					95												
max. speed	n_{1max}	min^{-1}	6000																	
Noise [3]	Qg	db(A)	<= 58																	
Moment of inertia	j	$kg * m^2$	0,1136-0,7110					0,1137-0,6969												
Torsional stiffness	Cg	Nm/arcmin	1,996-8,772					2,014-10,101												

Mechanical performance data - note operating temperature.

Type			**CO**	**COP**	**COQ**	**COF**
Permissible radial force	F_{r2}	N	419	1163	1163	636
Permissible axial force	F_{a2}	N	500	1350	1350	1200
Tilting moment	M_{K2}	Nm	15	48	48	14

[1] maximum 1.000 cycles per hour. T_{2B}- Occurance < 5% per lifetime
[2] maximum 1.000 times per lifetime
[3] at 1m distance und nominal speed n1, without load, i=5
[4] Deviating lifetime: 10.000 h
[5] Toothing lifetime: 20.000 h
[6] Lifetime: 20.000 h

BPCE - Technical performance data size 080

			1- stage					2- stage												
Ratio	**i**		**3**	**4**	**5**	**7**	**10**	**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Nominal output torque at n_1 = 3000 [6]	T_{2N}	Nm	17	23	29	41	36	47	60	63	66	71	72	77	45	73	78	74	68	66
Max. acceleration torque at n_1 = 3000 [1] [6]	T_{2B}	Nm	27	37	46	66	58	75	96	101	106	113	115	123	72	117	125	118	109	106
Emergency stop torque [2]	T_{2NOT}	Nm	51	69	87	123	109	141	180	189	199	200	200	200	135	200	200	200	200	198
Nominal input speed	n_1	min^{-1}	3000																	
Output torque at n_{2ref} = 100 [5]	T_{2Nref}	Nm	30 [4]	40	50	65	38	87 [4]	95 [4]	86	76	76	71	76	86	72	76	72	65	43
Max. acceleration torque at n_{2ref} = 100 [1] [5]	T_{2Bref}	Nm	48	64	80	104	60	139	152	138	122	122	114	122	138	115	122	115	104	69
Reference speed	n_{2ref}	min^{-1}	100																	
Backlash	j_t	arcmin	< 13					< 15												
Efficiency at full load	η	%	94					93												
max. speed	n_{1max}	min^{-1}	6000																	
Noise [3]	Qg	db(A)	<= 73																	
Moment of inertia	j	$kg * m^2$	1,2121-1,9356					1,2121-1,4732												
Torsional stiffness	Cg	Nm/arcmin	3,565-10,101					3,683-12,346												

Mechanical performance data - note operating temperature.

Type			**CO**	**COP**	**COQ**	**COF**
Permissible radial force	F_{r2}	N	732	1315	1888	1958
Permissible axial force	F_{a2}	N	1000	2000	2500	2990
Tilting moment	M_{K2}	Nm	30	63	92	53

[1] maximum 1.000 cycles per hour. T_{2B}- Occurance < 5% per lifetime
[2] maximum 1.000 times per lifetime
[3] at 1m distance und nominal speed n1, without load, i=5
[4] Deviating lifetime: 10.000 h
[5] Toothing lifetime: 20.000 h
[6] Lifetime: 20.000 h

PCE - Technical performance data size 080

			1- stage					2- stage												
Ratio	**i**		**3**	**4**	**5**	**7**	**10**	**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Nominal output torque at n_1 = 3000 [6]	T_{2N}	Nm	24	44	45	44	36	47	60	63	66	71	72	77	45	73	78	74	68	66
Max. acceleration torque at n_1 = 3000 [1] [6]	T_{2B}	Nm	38	70	72	70	58	75	96	101	106	113	115	123	72	117	125	118	109	106
Emergency stop torque [2]	T_{2NOT}	Nm	72	132	135	132	109	141	180	189	199	200	200	200	135	200	200	200	200	198
Nominal input speed	n_1	min^{-1}	3000																	
Output torque at n_{2ref} = 100 [5]	T_{2Nref}	Nm	35 [4]	70	70	65	38	87 [4]	95 [4]	86	76	76	71	76	86	72	76	72	65	43
Max. acceleration torque at n_{2ref} = 100 [1] [5]	T_{2Bref}	Nm	56	112	112	104	61	139	152	138	122	122	114	122	138	115	122	115	104	69
Reference speed	n_{2ref}	min^{-1}	100																	
Backlash	j_t	arcmin	< 10					< 12												
Efficiency at full load	η	%	96					95												
max. speed	n_{1max}	min^{-1}	6000																	
Noise [3]	Qg	db(A)	<= 60																	
Moment of inertia	j	$kg * m^2$	0,6001-1,8191					0,6001-1,4113												
Torsional stiffness	Cg	Nm/arcmin	5,848-14,493					5,780-13,333												

Mechanical performance data - note operating temperature.

Type			**C0**	**C0P**	**C0Q**	**C0F**
Permissible radial force	F_{r2}	N	732	1315	1888	1958
Permissible axial force	F_{a2}	N	1000	2000	2500	2990
Tilting moment	M_{K2}	Nm	30	63	92	53

[1] maximum 1.000 cycles per hour. T_{2B}- Occurance < 5% per lifetime
[2] maximum 1.000 times per lifetime
[3] at 1m distance und nominal speed n1, without load, i=5
[4] Deviating lifetime: 10.000 h
[5] Toothing lifetime: 20.000 h
[6] Lifetime: 20.000 h

BPCE - Technical performance data size 120

			1- stage					2- stage												
Ratio	**i**		**3**	**4**	**5**	**7**	**10**	**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Nominal output torque at n_1 = 2600 [6]	T_{2N}	Nm	41	54	68	95	86	111	162	182	196	199	188	203	160	192	206	195	172	135
Max. acceleration torque at n_1 = 2600 [1] [6]	T_{2B}	Nm	65	86	108	151	137	178	259	290	314	319	301	324	256	307	329	311	275	216
Emergency stop torque [2]	T_{2NOT}	Nm	122	162	203	284	257	334	480	480	480	480	565	480	480	575	480	480	480	405
Nominal input speed	n_1	min^{-1}	2600																	
Output torque at n_{2ref} = 100 [5]	T_{2Nref}	Nm	60	80	100	135	95	180	200	188	200	200	188	164	220	164	200	188	164	94
Max. acceleration torque at n_{2ref} = 100 [1] [5]	T_{2Bref}	Nm	96	128	160	216	152	288	320	301	320	320	301	262	352	262	320	301	262	150
Reference speed	n_{2ref}	min^{-1}	100																	
Backlash	j_t	arcmin	< 13					< 15												
Efficiency at full load	η	%	94					93												
max. speed	n_{1max}	min^{-1}	4800																	
Noise [3]	Qg	db(A)	<= 75																	
Moment of inertia	j	kg * m^2	4,8318-7,6227					4,7966-6,5619												
Torsional stiffness	Cg	Nm/arcmin	12,077-48,077					11,792-33,333												

Mechanical performance data - note operating temperature.

Type			**CO**	**COP**	**COQ**	**COF**
Permissible radial force	F_{r2}	N	1890	2714	2440	2400
Permissible axial force	F_{a2}	N	2500	4000	2500	3300
Tilting moment	M_{K2}	Nm	108	180	109	109

[1] maximum 1.000 cycles per hour. T_{2B}- Occurance < 5% per lifetime
[2] maximum 1.000 times per lifetime
[3] at 1m distance und nominal speed n1, without load, i=5
[4] Deviating lifetime: 10.000 h
[5] Toothing lifetime: 20.000 h
[6] Lifetime: 20.000 h

PCE - Technical performance data size 120

			1- stage					2- stage												
Ratio	**i**		**3**	**4**	**5**	**7**	**10**	**9**	**12**	**15**	**16**	**20**	**25**	**28**	**30**	**35**	**40**	**50**	**70**	**100**
Nominal output torque at n_1 = 2600 [6]	T_{2N}	Nm	80	130	136	140	86	111	181	182	196	199	188	203	160	192	206	195	172	135
Max. acceleration torque at n_1 = 2600 [1] [6]	T_{2B}	Nm	128	208	217	224	137	178	289	290	314	319	301	324	256	307	329	311	275	216
Emergency stop torque [2]	T_{2NOT}	Nm	240	390	407	421	257	334	543	545	589	597	565	608	480	575	617	584	515	405
Nominal input speed	n_1	min^{-1}	2600																	
Output torque at n_{2ref} = 100 [5]	T_{2Nref}	Nm	153	200	189	164	102	136	202	187	202	202	189	202	136	187	200	187	163	108
Max. acceleration torque at n_{2ref} = 100 [1] [5]	T_{2Bref}	Nm	245	320	302	262	163	217	323	299	323	323	302	323	217	299	320	299	261	173
Reference speed	n_{2ref}	min^{-1}	100																	
Backlash	j_t	arcmin	< 13					< 15												
Efficiency at full load	η	%	94					93												
max. speed	n_{1max}	min^{-1}	4800																	
Noise [3]	Qg	db(A)	<= 65																	
Moment of inertia	j	$kg * m^2$	1,5776-4,9869					1,5428-3,6120												
Torsional stiffness	Cg	Nm/arcmin	12,315-67,568					11,848-56,818												

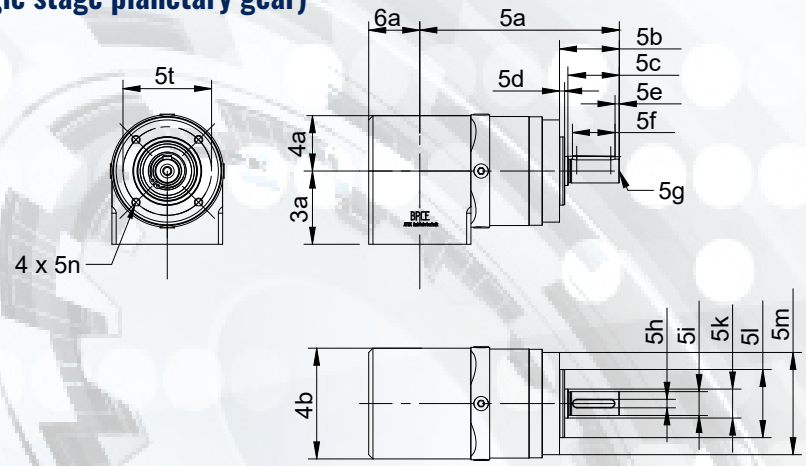
Mechanical performance data - note operating temperature.

Type			**C0**	**C0P**	**C0Q**	**C0F**
Permissible radial force	F_{r2}	N	1890	2714	2440	2400
Permissible axial force	F_{a2}	N	2500	4000	2500	3300
Tilting moment	M_{K2}	Nm	108	180	109	109

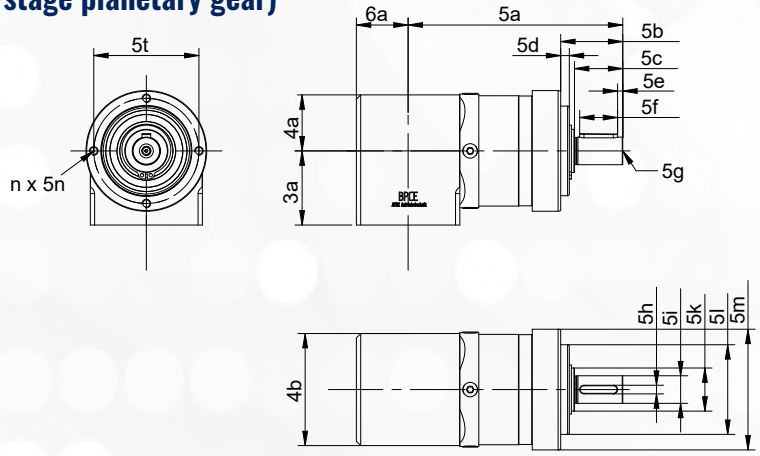
[1] maximum 1.000 cycles per hour. T_{2B}- Occurance < 5% per lifetime
[2] maximum 1.000 times per lifetime
[3] at 1m distance und nominal speed n1, without load, i=5
[4] Deviating lifetime: 10.000 h
[5] Toothing lifetime: 20.000 h
[6] Lifetime: 20.000 h

Dimensions BPCE right angle-bevel-planetary gearbox

Type CO (single stage planetary gear)



Type COP (single stage planetary gear)

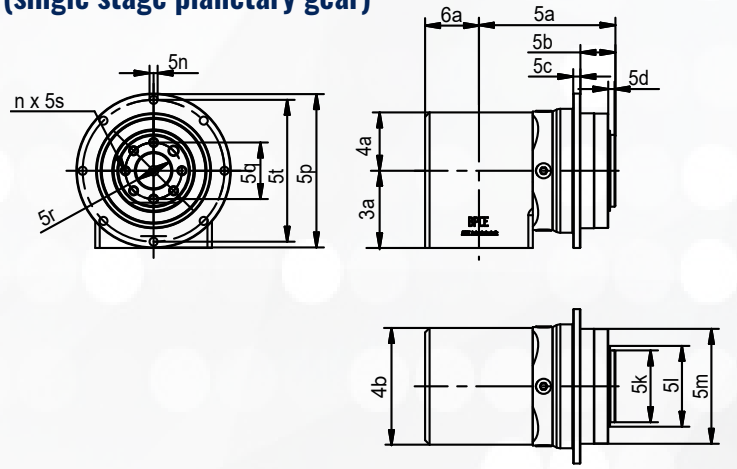


1-stage 2-stage

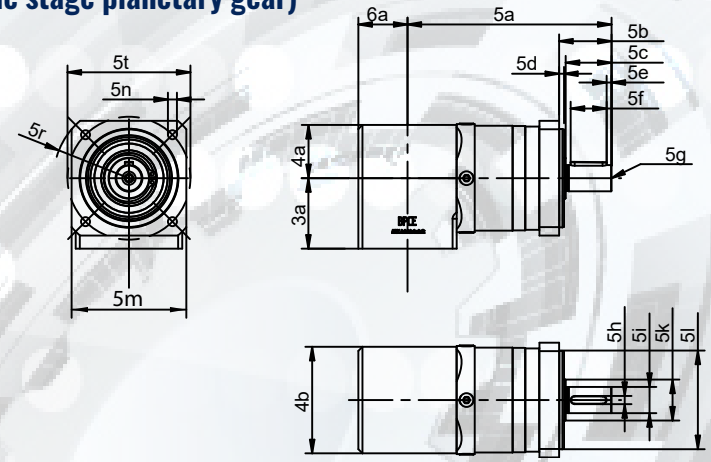
BA	BG	3a	4a	4b	5a[1]	5a[2]	5b	5c	5d	5e	5f	5g	5h	5i	5k	5l	5m	5n	5t	6a
CO	040	48,0	20,0	40,0	87,5	105.5	26,0	23,0	2,0	2,5	18,0	M3x9	3,0	10h7	12,0	26h7	40,0	M4x7	34,0	20,0
	060	43,0	32,5	65,0	117,0	137,0	35,0	30,0	3,0	2,5	25,0	M5x12	5,0	14h7	17,0	40h7	60,0	M5x8	52,0	30,0
	080	54,0	40,0	80,0	142,0	165,0	40,0	36,0	3,0	4,0	28,0	M6x16	6,0	20h7	25,0	60h7	80,0	M6x12	70,0	40,0
	120	70,0	60,0	120,0	187,0	220,0	55,5	50,0	4,0	5,0	40,0	M10x19	8,0	25h7	35,0	90h7	115,0	M8x16	100,0	57,5
COP	040	48,0	20,0	40,0	89,5	107,5	24,5	18,0	4,0	2,0	14,0	M4x10	4,0	12k6	17,0	35h7	50,0	M4x7	44,0	20,0
	060	43,0	32,5	65,0	124,5	144,5	36,0	28,0	5,0	2,0	25,0	M5x12	5,0	16k6	25,0	52h7	70,0	M5x8	62,0	30,0
	080	54,0	40,0	80,0	150,5	173,5	46,0	36,0	5,0	2,0	32,0	M8x19	6,0	22k6	40,0	68h7	90,0	M6x12	80,0	40,0
	120	70,0	60,0	120,0	201,0	234,0	68,0	58,0	5,0	4,0	50,0	M12x28	10,0	32k7	50,0	90h7	120,0	M8x20	108,0	57,5

Dimensions in mm

Model COF (single stage planetary gear)



Model COQ (single stage planetary gear)



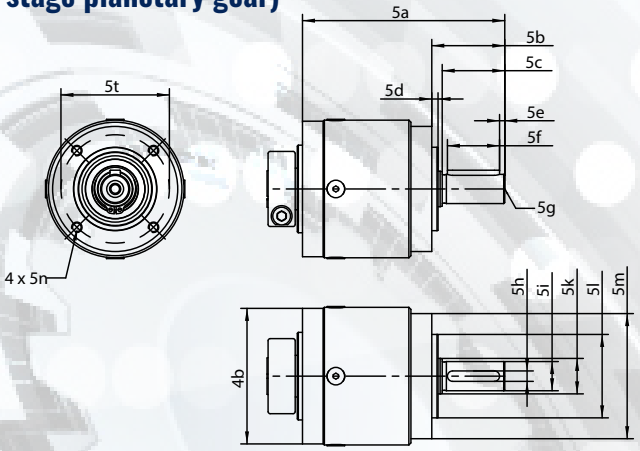
1-stage 2-stage

BA	BG	3a	4a	4b	5a[1]	5a[2]	5b	5c	5d	5e	5f	5g	5h	5i	5k	5l	5m	5n	5t	5p	5q	5r	5s	6a
COF	040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	060	43,0	32,5	65,0	76,0	96	19,5	4,0	4,0	-	-	-	-	-	40h7	45,0	64,0	D4,5	79,0	86,0	31,5	20,0	M5x7	30,0
	080	54,0	40,0	80,0	107,5	130,5	30,0	7,0	6,0	-	-	-	-	-	63h7	-	90,0	D5,5	109,0	118,0	50,0	32,0	M6x10	40,0
	120	70,0	60,0	120,0	148,0	181,0	29,0	8,0	6,0	-	-	-	-	-	80h7	-	110,0	D5,5	135,0	145,0	63,0	40,0	M6x12	57,5
COQ	040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	060	43,0	32,5	65,0	124,5	144,5	32,0	28,0	3,0	2,0	25,0	M5x12	5,0	16k6	25,0	60h7	70,0	D5,5	75,0	-	-	46,0	-	30,0
	080	54,0	40,0	80,0	152,0	175,0	40,0	36,0	3,0	4,0	28,0	M6x16	6,0	20h7	25,0	80h7	90,0	D6,5	100,0	-	-	58,0	-	40,0
	120	70,0	60,0	120,0	196,0	229,0	55,0	50,0	4,0	5,0	40,0	M10x22	8,0	25h7	35,0	110h7	130,0	D8,5	130,0	-	-	72,5	-	57,5

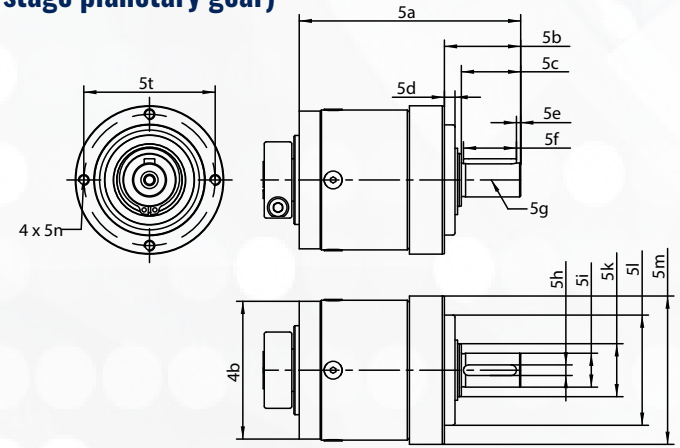
Dimensions in mm

Dimensions PCE planetary gearbox

Model CO (single stage planetary gear)



Model COP (single stage planetary gear)



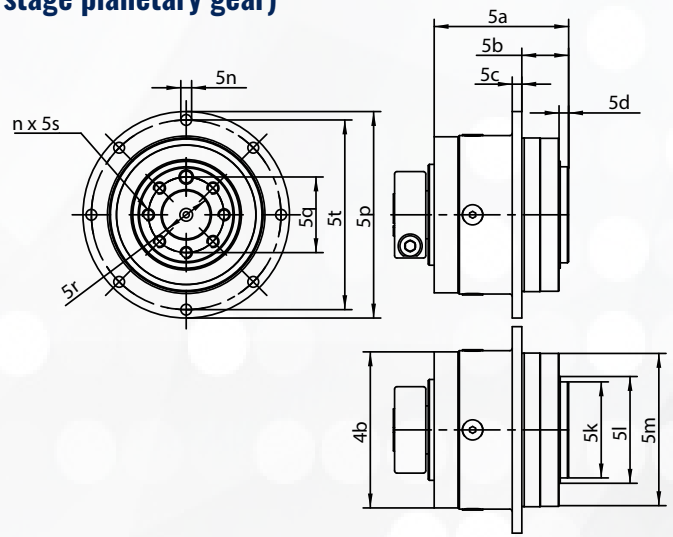
					1-stage	2-stage													
BA	BG	3a	4a	4b	5a[1]	5a[2]	5b	5c	5d	5e	5f	5g	5h	5i	5k	5l	5m	5n	5t	6a
CO	040	-	-	42,0	74,5	92,5	26,0	23,0	2,0	2,5	18,0	M3x9	3,0	10h7	12,0	26h7	40,0	M4x7	34,0	-
	060	-	-	65,0*1	97*2	117*2	35,0	30,0	3,0	2,5	25,0	M5x12	5,0	14h7	17,0	40h7	60,0	M5x8	52,0	-
	080	-	-	80,0	117	140	40,0	36,0	3,0	4,0	28,0	M6x16	6,0	20h7	25,0	60h7	80,0	M6x12	70,0	-
	120	-	-	120,0	156,0	188,5	55,5	50,0	4,0	5,0	40,0	M10x19	8,0	25h7	35,0	90h7	115,0	M8x16	100,0	-
COP	040	-	-	42,0	76,5	94,5	24,5	18,0	4,0	2,0	14,0	M4x10	4,0	12k6	17,0	35h7	50,0	M4x7	44,0	-
	060	-	-	65,0	104,5	124,5	36,0	28,0	5,0	2,0	25,0	M5x12	5,0	16k6	25,0	52h7	70,0	M5x8	62,0	-
	080	-	-	80,0	125,5	148,5	46,0	36,0	5,0	2,0	32,0	M8x19	6,0	22k6	40,0	68h7	90,0	M6x12	80,0	-
	120	-	-	120,0	170,0	203,0	68,0	58,0	5,0	4,0	50,0	M12x28	10,0	32k7	50,0	90h7	120,0	M8x20	108,0	-

*1 Mit KD 19 + 15

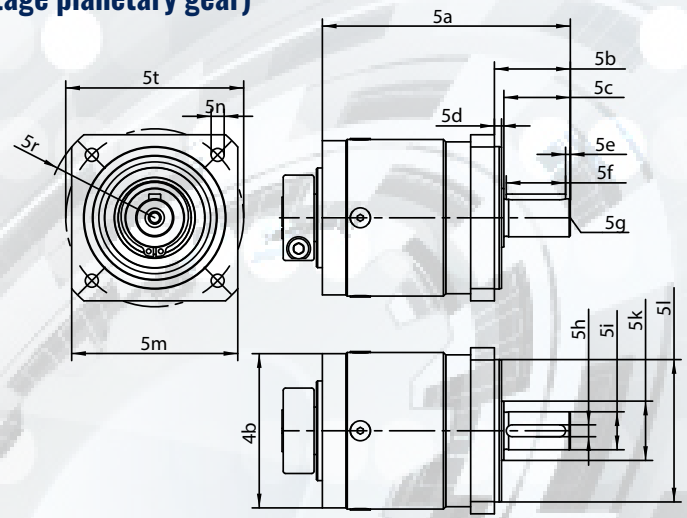
*2 Mit KD 19 + 16

Dimensions in mm

Model COF (single stage planetary gear)



Model COQ (single stage planetary gear)



					1-stage	2-stage																	
BA	BG	3a	4a	4b	5a[1]	5a[2]	5b	5c	5d	5e	5f	5g	5h	5i	5k	5l	5m	5n	5t	5p	5q	5r	5s	6a
COF	040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	060	-	-	65,0	56	76	19,5	4,0	4,0	-	-	-	-	-	40h7	45	64,0	D4,5	79,0	86,0	31,5	20,0	M5x7	-
	080	-	-	80,0	82,5	105,5	30,0	7,0	6,0	-	-	-	-	-	63h7	-	90,0	D5,5	109,0	118,0	50,0	31,5	M6x10	-
	120	-	-	120,0	117,0	150,0	29,0	8,0	6,0	-	-	-	-	-	80h7	-	110,0	D5,5	135,0	145,0	63,0	40,0	M6x12	-
COQ	040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	060	-	-	65,0	104,5	124,5	32,0	28,0	3,0	2,0	25,0	M5x12	5,0	16k6	25,0	60h7	70,0	D5,5	75,0	-	-	46,0	-	-
	080	-	-	80,0	127,0	150,0	40,0	36,0	3,0	4,0	28,0	M6x16	6,0	20h7	25,0	80h7	90,0	D6,6	100,0	-	-	58,0	-	-
	120	-	-	120,0	164,8	197,8	55,0	50,0	4,0	5,0	40,0	M10x22	8,0	25h7	35,0	110h7	130,0	D8,5	130,0	-	-	74,0	-	-

Dimensions in mm

ATEK worldwide representatives

Distributors are available all over the world. Please don not hesitate to contact us for further information.

email: bjoern.wiencke@atek.de
tel: +49 (0)4101 7953 - 13

Bjoern Wiencke - International Sales Manager

ATEK ANTRIEBSTECHNIK

ATEK Antriebstechnik Willi Glapiak GmbH
Siemensstrasse 47 • D-25462 Rellingen
Tel.: +49 - (0)4101 7953-0
E-Mail: atek@atek.de • Web: www.atek.de

Sales Dept.
Tel.: +49 - (0)4101 7953- 38 / -13
Fax: +49 - (0)4101 7953-21
E-Mail: sales@atek.de

Purchase Dept.
Tel.: +49 - (0)4101 7953-11
Fax: +49 - (0)4101 7953-21
E-Mail: purchase@atek.de