

Made in Germany

ATEK

ANTRIEBSTECHNIK

Das Winkelgetriebe



Gear sets
Bevel Gear sets
Worm Gear sets



Miniature
bevel gearboxes

Bevel
gearboxes

Hygiene-design
gearboxes

Hybrid
gearboxes

Worm
gearboxes

Gearbox
motors

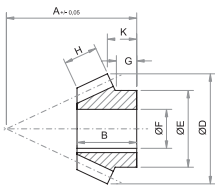
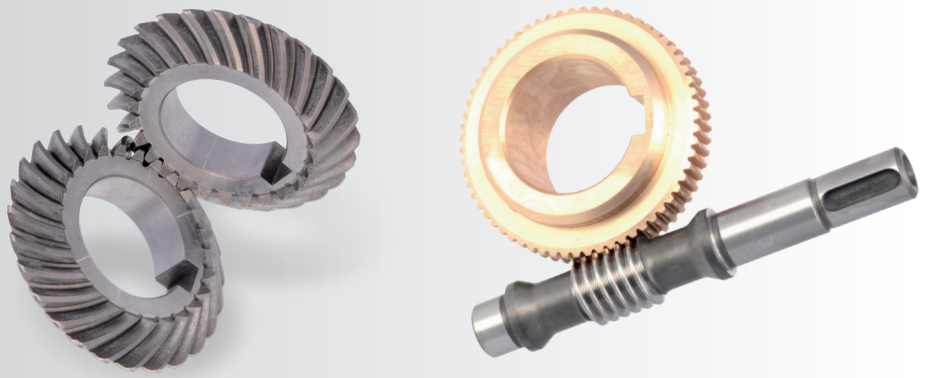
Servo gearboxes
(precision gearboxes)

Special
gearboxes

ATEX
gearboxes

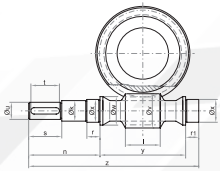
Gear sets

Service



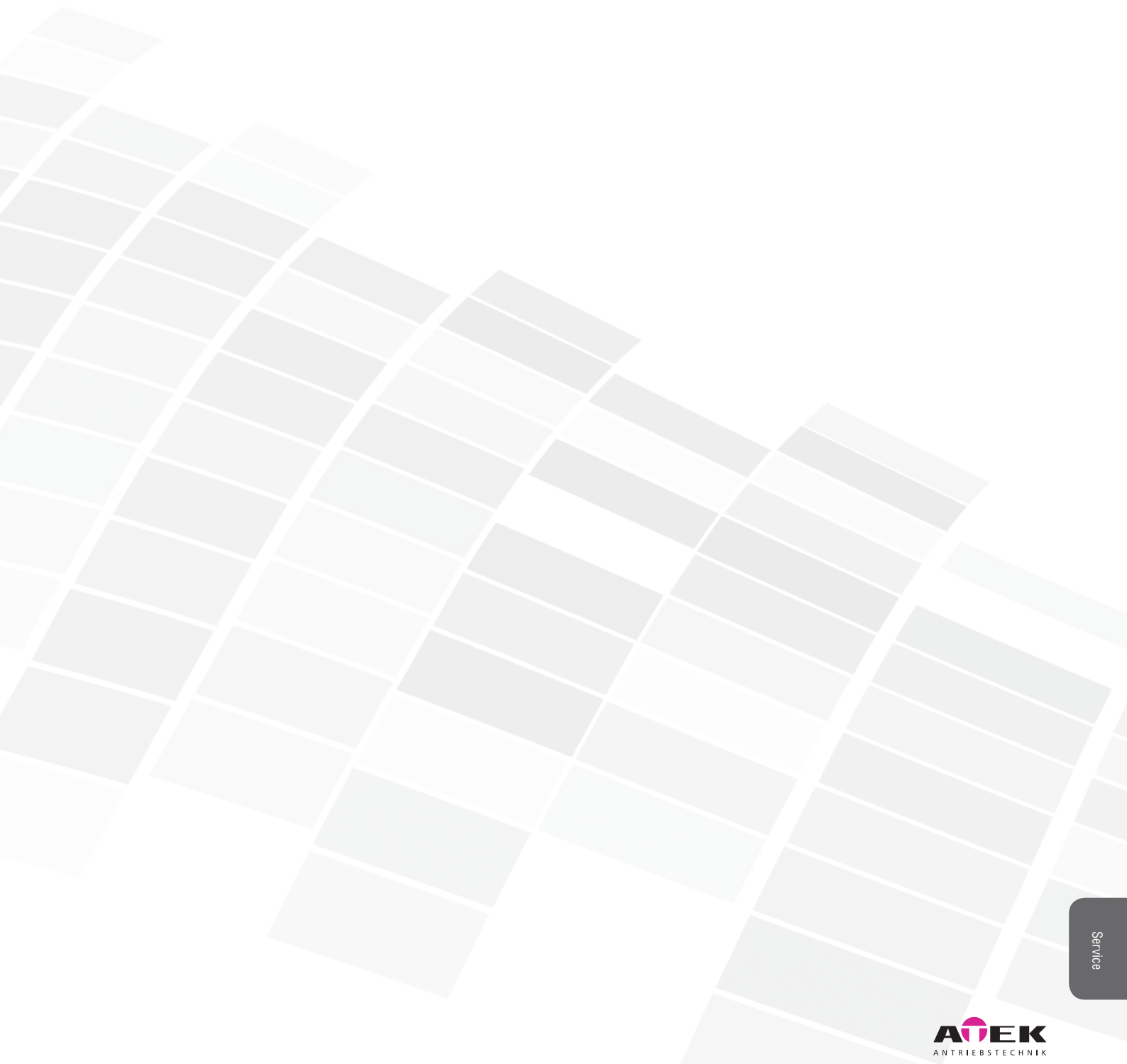
Bevel gear sets

Spiral tothing, case-hardened and lapped in pairs
Module 0.8 – 8.1
Gear ratios: $i = 1:1 - 1.5:1 - 2:1$
Max. output torques up to $T_{2max} = 5400 \text{ Nm}$



Worm gear sets

Gear set for tailored solutions



Service





14.1 Bevel gear sets

The housing dimensions of the gearboxes do not always fit, or the installation of a bevel gearbox as specified in the catalogue is made impossible or less useful by other circumstances. Then you can resort to ATEK bevel gear sets. ATEK delivers spiral-toothed bevel gear sets that are also used in the standard production gearboxes. The gear sets are manufactured according to the GLEASON® or KLINGELNBERG® method and are available from stock. Should you not find a suitable gear set in our dimension lists, please ask us nevertheless for a suitable set. In case of economically justifiable quantities (series application) we also develop and manufacture special gear sets – with all dimensions and gear ratios.

14.1.1 Housing

When designing the housings and bearing positions, attention must be paid that no inadmissible bending of the shafts can occur during operation. It is equally important that the housing and the parts to be installed are manufactured within the specified tolerances with respect to alignment, perpendicularity, fits/clearances, and smooth running.

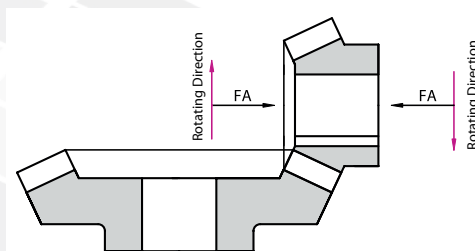
Permissible height difference between the two axes of the housing bores (bearing bores): ± 0.02 mm

Permissible deviation from shaft angle of 90° : ± 2 arcmin

The design should be constructed such that both the pinion and the gear can be adjusted to their required installation dimension. Moreover it is recommendable that the housing is designed such that at least one portion of the gear set in the installed condition can be observed for assessment of the tooth-contact pattern.

14.1.2 Support by bearings

For the selection of the correct support by bearings it is necessary to know the magnitude and direction of the tooth force and any potential additional external forces. For spiral-toothed bevel gears, the axial thrust forces resulting from the axial components of the tooth forces and acting on the bearings must be considered. The direction of the tooth forces depends on the bevel gears' direction of spiral and the rotational direction. On the standard bevel gear sets, the pinion has left-handed toothing, and the gear has right-handed toothing.

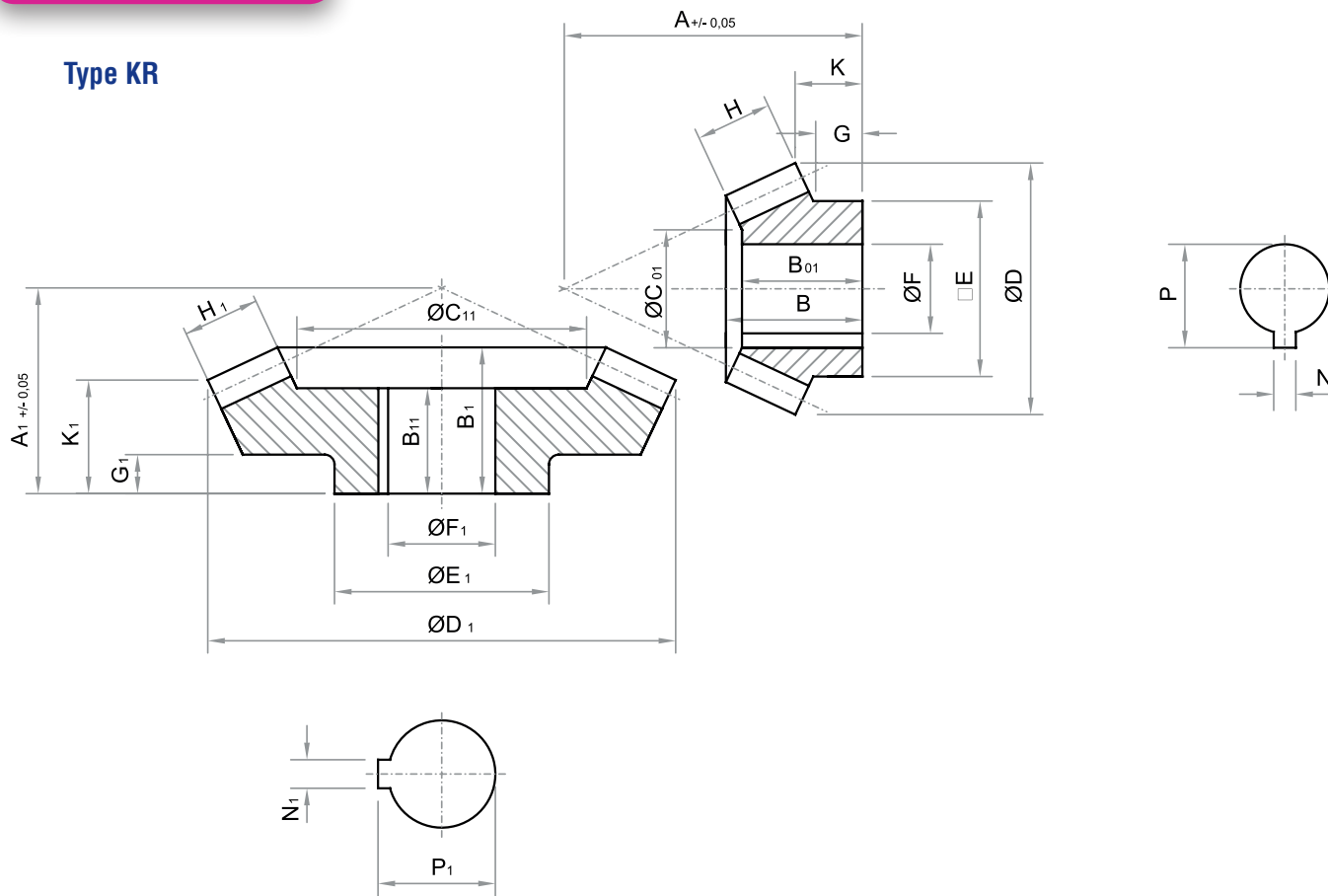


14.1.3 Circumferential backlash

The bevel gears are toothed for a predetermined backlash. The extent of the backlash depends on the module of the toothing. If the selected backlash is too large or too small, noise may develop and premature wear may occur.

Transverse module	Backlash [mm]
bis - 2,5	0,05 - 0,12
2,6 - 4,2	0,12 - 0,19
4,3 - 6,4	0,19 - 0,22
> 6,5	0,25 - 0,36

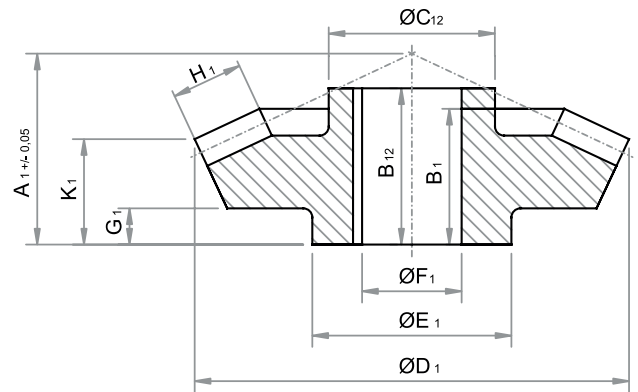
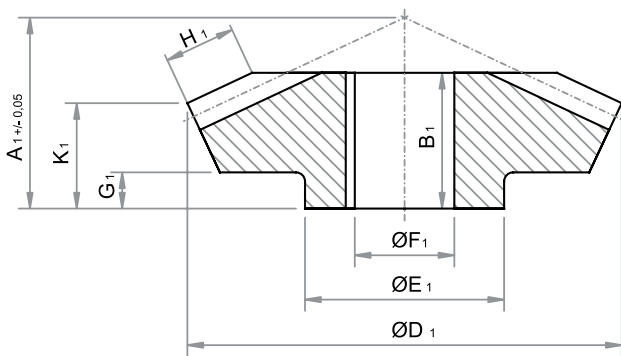
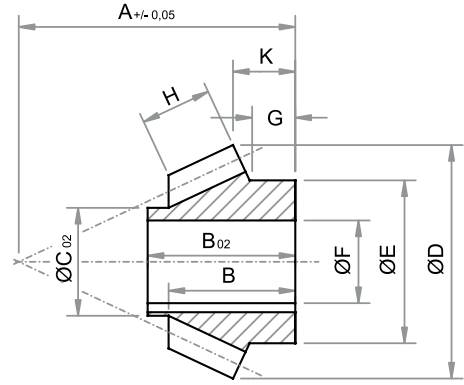
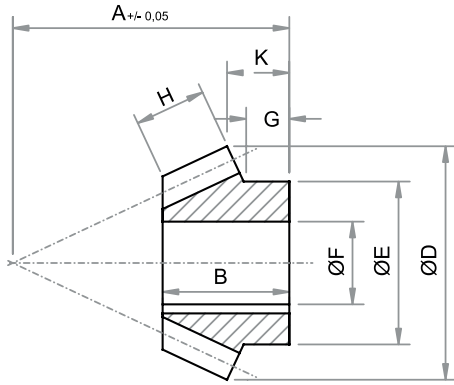
Type KR



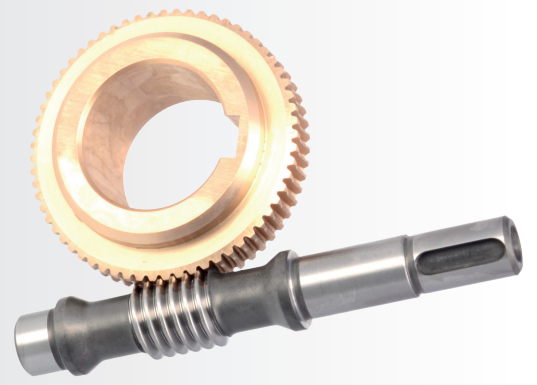
The measurement below are approximate values.
If required please ask for a single measurement sheet.

Tolerances:
Borings ($\varnothing F, F1$): ISO H6 - Keyways (N, N1): ISO P9

size	i	z1	z2	ms	T _{2N} [Nm]	A	B	B01	B02	C01	C02	D	E	F	G	H
065	1:1	27	27	1,5	18	27	15,4	14	-	23	-	44	25	17	4	12
088	1:1	26	26	2,3	50	35	14,6	12,5	-	38	-	62	42	30	3,5	12
	1,5:1	16	24	2,5	45	35	14,3	-	15,5	-	22	43	34	15	2	10
	2:1	18	36	1,5	25	35	15,5	-	-	-	-	30	22	15	2,5	9
110	1:1	30	30	2,7	130	50	23	19	-	46	-	82	36	25	7	20
	1,5:1	18	27	2,7	113	47	19,9	17	-	30	-	58	35	20	3	15
	2:1	15	30	2,7	80	47	19,5	17	-	28	-	46,5	35	20	5,8	14
140	1:1	30	30	3,2	220	56	22	-	25	-	52	98	56	40	1	18
	1,5:1	20	30	3,2	210	56	23,0	-	-	-	-	70	50	30	4	17
	2:1	18	36	2,7	180	56	23,4	21	-	29	-	53	47	20	7	16
156	1:1	30	30	4,9	380	62,5	24,7	-	30	-	60	115	60	40	0,5	25
	1,5:1	16	24	4,9	360	62,5	22,9	-	25	0	50	85	-	40	-	21
	2:1	16	32	4,8	320	65	27	-	27	-	28	64	50	25	6	21
200	1:1	32	32	4,8	750	83	34	-	40	-	75	157	75	55	0,5	35
	1,5:1	20	30	4,8	600	83	31,1	27	-	64	-	107	75	50	1	25
	2:1	15	30	4,8	530	83	28,2	25	-	50	-	84	65	35	1	23
230	1:1	30	30	5,8	900	98,5	38,5	-	50	-	90	181,3	100	65	1	40
	2:1	22	44	4	800	98,5	40	-	-	-	-	97,2	80	45	-	33
260	1:1	30	30	6,2	1750	110	48,8	-	60	-	80	186	80	65	1	42
	1,5:1	16	24	8,0	1000	110	46,1	40	-	80	-	139	80	45	5	37
	2:1	13	26	7,5	1200	110	44,5	40	-	52	-	106	80	45	7,6	34
350	1:1	32	32	7,5	3000	150	73,2	65	-	149,7	-	248,2	215	110	16,5	57
	1,5:1	20	30	8,1	2500	150	70	-	-	-	-	176,1	145	90	21,3	49

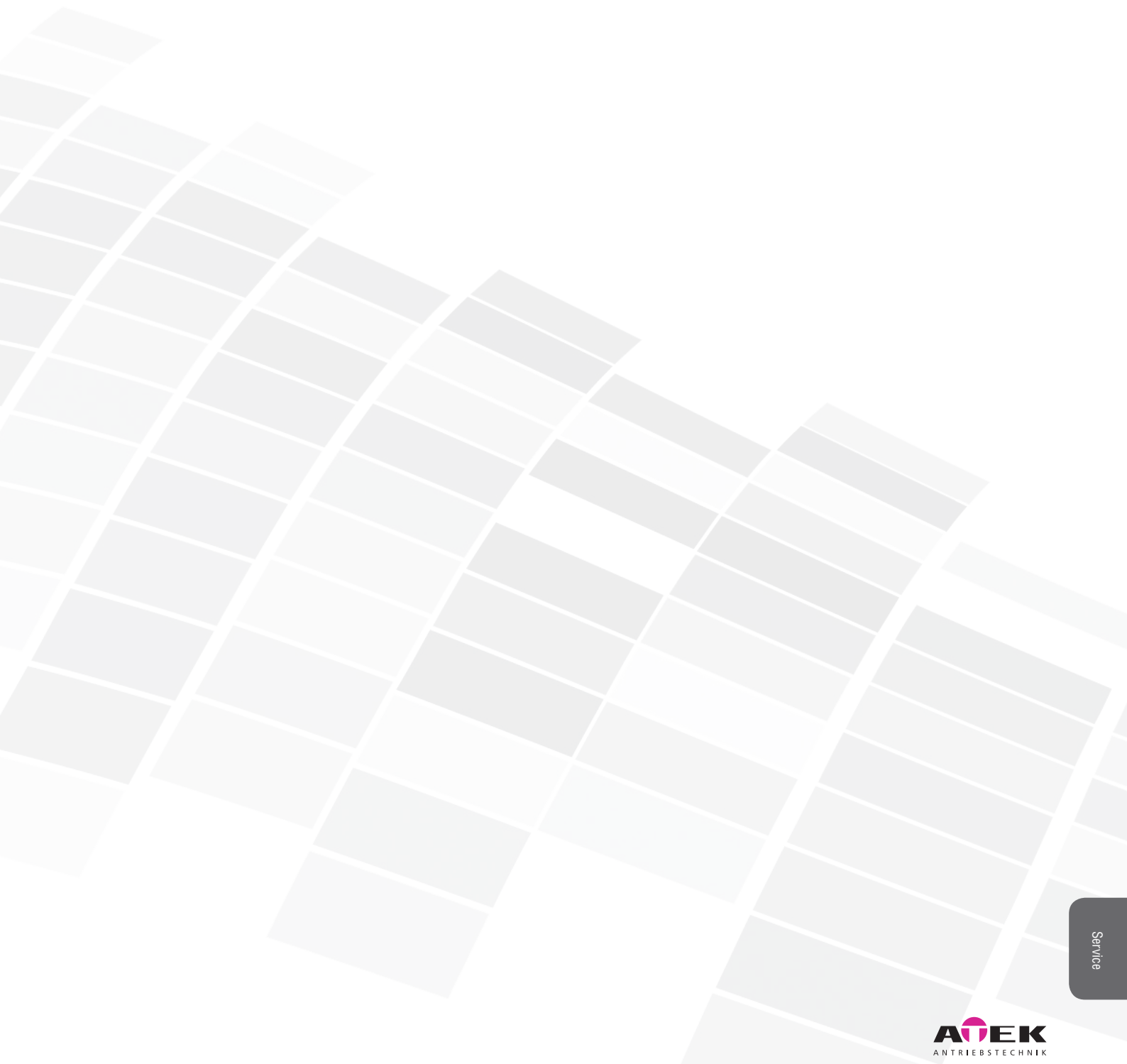


size	K	N	P	A1	B1	B11	B12	C11	C12	D1	E1	F1	G1	H1	K1	N1	P1
065	7,5	5	19,3	27	15,4	14	-	23	-	44	25	17	4	12	7,5	5	19,3
	6,1	8	33,3	35	14,6	12,5	-	38	-	62	42	30	3,5	12	6,1	8	33,3
088	6	5	17,3	35	21,5	12,5	-	38	-	62	42	30	3,5	10	16	8	33,3
	7,5	5	16,7	24	14,9	12,5	-	36	-	57	42	30	3,5	9	11	8	33,3
	11,5	8	28,3	44	18	-	19	-	48	82	55	40	1	18	3,8	12	43,3
110	8,3	6	22,8	44	26,1	19	-	48	-	82	52	40	1	15	18,5	12	43,3
	7,7	6	22,8	37	23,5	19	-	54	-	82	52	40	1	12	18,1	12	43,3
	9,8	12	43,3	55	21,5	-	-	-	-	98	65	50	1	18	8,8	14	53,8
140	8,9	8	33,3	55	34	25	-	58	-	100	65	50	1	17	24,5	14	53,8
	9	6	22,8	47,5	31,5	25	-	60	-	98	62	50	1	16	25	14	53,8
	8,3	12	43,3	62,5	25,8	-	30	-	60	115	60	40	0,5	25	7,5	12	43,3
156	5,6	12	43,3	62,5	37	30	-	76	-	115	65	40	12	21	25,1	12	43,3
	9,3	8	28,3	62,5	43,8	30	-	71	-	115	60	40	0,5	18	35,9	12	43,3
	10,3	16	59,3	83	33,5	-	41	-	85	154	75	55	0,5	33	11,2	16	59,3
200	10,2	14	53,8	83	50,2	45	-	100	-	155	75	55	1	25	36,3	16	59,3
	7,5	10	38,3	83	57,7	45	-	100	-	158	75	55	1	23	47,7	16	59,3
230	15,1	18	69,4	95	35	-	50	-	90	181,3	100	65	1	40	11,6	18	69,4
	12,8	14	48,8	95	66,7	50	-	96	-	177,9	100	65	11	33	52,8	18	69,4
	21	18	69,4	110	48,8	-	60	-	80	186	80	65	1	42	21,5	18	69,4
260	15,3	14	48,8	110	69,6	60	-	126	-	201	80	65	1	37	49,2	18	69,4
	14	14	48,8	110	80,4	60	-	117	-	200	80	65	1	35	65,1	18	69,4
350	34,1	28	116,4	150	73,2	65	-	149,7	-	248,2	215	110	16,5	57	34,1	28	116,4
	33,2	25	95,4	150	98,4	65	-	130	-	247,8	145	110	5	49	72,6	28	116,4



14.2 Worm gear Sets

You have the possibility to buy the worm gear sets we use.
Information can be found on our website www.attek.de in the Downloads section.



Service

