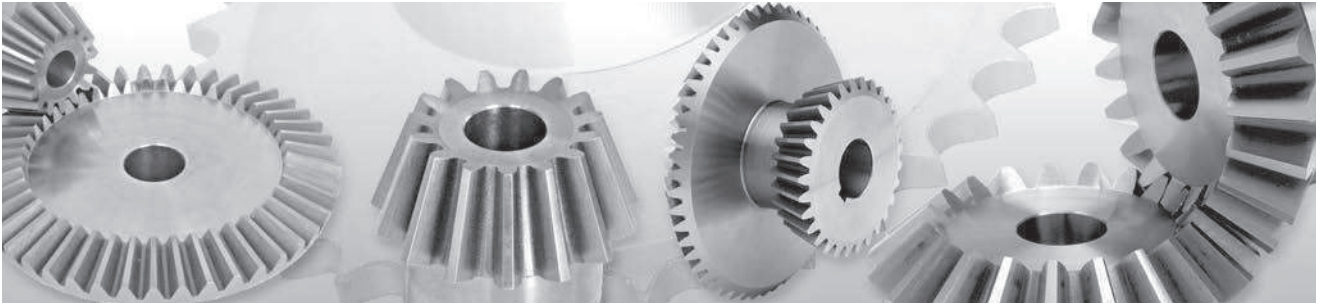


Kegelräder

Bevel Gears



Lagerprogramm

Kegelräder - Verzahnungsgeometrie
Kegelräder
Kegelräder Acetalharz gespritzt

G 1
G 2 - G 8
G 9 - G 10

stock programme

Bevel Gears - Toothing Geometry
Bevel Gears
Moulded Bevel Gears

Sonderanfertigungen

Auf Anfrage

made to order

on request

Bogenverzahnte Kegelräder

Klingenberg-Zyclo-Palloid-Verzahnung
auch HPG, max. Werkstück-Ø 500 mm
Modul 2-8

spiral bevel gears

Klingenberg-Zyclo-Palloid-toothing also
HPG, max. diameter 500 mm
modules 2-8

Kegelräder

geradverzahnt ballige Zahnflanken, wälz-
gefräst Rad-Ø bis 300 mm $i = 1:1$
Rad-Ø bis 400 mm $i = 1:10$
Zahnbreite bis 63 mm
Modul 0,5-8



bevel gears

straight teeth, localized tooth bearing,
hobbed gear-Ø up to 300 mm $i = 1:1$
gear-Ø up to 400 mm $i = 1:10$
width of teeth up to 63 mm
modules 0,5-8

Kegelräder

gerad- oder schrägverzahnt
ballige Zahnflanken, wälzgestoßen
Rad-Ø bis 425 mm $i = 1:1$
Rad-Ø bis 600 mm $i = 1:10$
Zahnbreite bis 90 mm
Modul 1-8



bevel gears

straight or helical teeth
localized tooth bearing,
hobbed gear-Ø up to 425 mm $i = 1:1$
gear-Ø up to 600 mm $i = 1:10$
width of teeth up to 90 mm
modules 1-8

Kegelräder

einbaufertig bearbeitet, Einbaumaße,
Übersetzungsverh. entsprechend Ihren
Wünschen, Warmbehandlung u. Lappen
laut Zeichnung

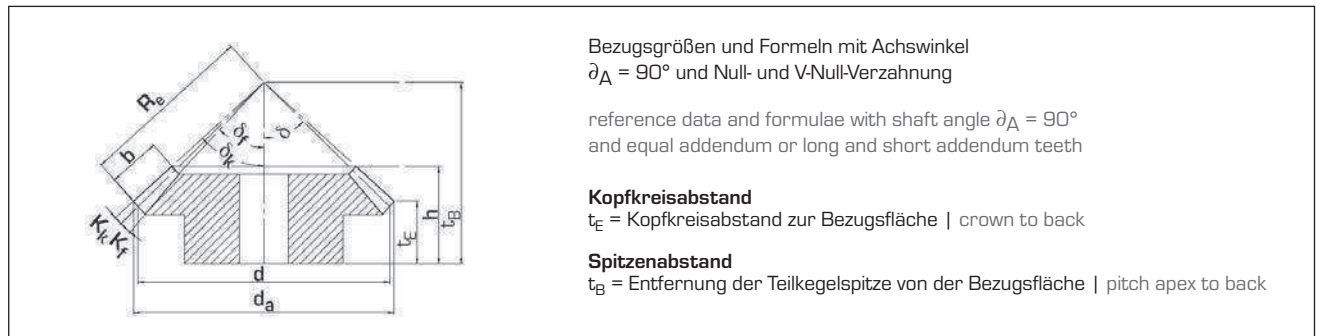
bevel gears

finished, dimensions, ratios to your
order, heat treated and lapped
to your drawing



Kegelräder - Information

Bevel Gears - Information



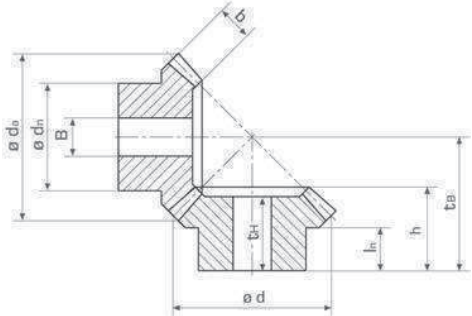
Benennung	description	Zeichen / Formel symbol / formula	Einheit dimension
Modul	module	$m = \frac{d}{z}$	mm
Zähnezahl	number of teeth	$z = \frac{d}{m}$	
Teilkreisdurchmesser	pitch diameter	$d = z \cdot m$	mm
Eingriffswinkel	pressure angle	$\alpha = 20^\circ$ (DIN 687)	
Übersetzungsverhältnis	ratio	$i = \frac{z_2}{z_1} = \frac{d_2}{d_1} = \frac{n_1}{n_2}$	
Achsenwinkel	shaft angle	$\delta_A = \delta_1 + \delta_2$	
Zahnbreite	width of tooth	$b \approx \frac{m \cdot z}{6 \sin \delta}$	mm
Äußere Teilkegellänge	external cone distance	$R_e \approx \frac{d}{2 \sin \delta}$	mm
Teilkegelwinkel	dedendum angle	$\tan \delta = \frac{z_1}{z_2}$	
Kopfkegelwinkel	face angle	$\delta_k = \delta + K_k$	
Kopfkreisdurchmesser	outside diameter	$d_a = d + 2h_a \cdot \cos \delta$	mm
Fußkegelwinkel	root (cone) angle	$\delta_f = \delta - K_f$	
Zahnkopfwinkel	addendum angle	$\tan K_k = \frac{2}{\sqrt{z_1^2 + z_2^2}}$ (für $\delta_a = 90^\circ$)	
Zahnfußwinkel	dedendum angle	$\tan K_f = \frac{h_f}{R_e}$	
Zahnkopfhöhe	addendum height	h_a	mm
Zahnfußhöhe	dedendum height	h_f	mm

WMH-Standard Kegelräder aus Werkstoff 1.0503 (C45) werden mit längsballigen Zahnflanken in Qualität 9 nach DIN 3962, 3963 und 3967 hergestellt. Die Kegelräder sind austauschbar. Für höhere Beanspruchungen können diese Kegelräder nachträglich auf 52 ± 2 HRC induktiv gehärtet oder auf $850 - 900$ [N/mm²] vergütet werden. Beim Einbau ist darauf zu achten, dass die Axialdrücke mit entsprechend tragfähigen Lagern aufgefangen werden.

WMH-Standard Bevel gears made out of material steel 1.0503 (C45) are manufactured with crowned flanks in quality classified as no 9 acc. to DIN 3962, 3963 and 3967. The bevel gears are interchangeable. For higher loads, the bevel gears can be heat treated to $850 - 900$ [N/mm²] or induction-hardened to 52 ± 2 HRC. When installing take care, that the axial pressures will be absorbed with appropriate carrying bearings.

Kegelräder

Bevel Gears



Übersetzung | Ratio **i = 1:1**

geradverzahnt | straight teeth

Eingriffswinkel | pressure angle **20°**

Achsenwinkel | shaft angle **90°**

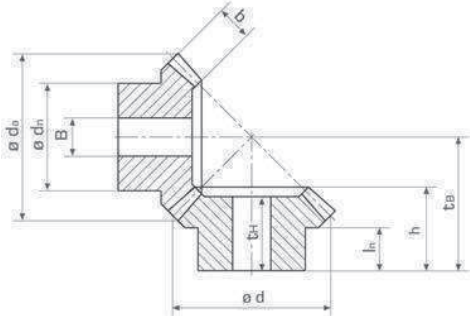
mit balligtragenden Zahnflanken
with crowned tooth bearing

Material | material **1.0503 [C45]**

Modul Module	Zähnezahl No. teeth	d_a	d	b	l_H	d_n	B	t_B	h	t_H	t_E	[kg]	Bestell Nr. Part No.
1,0	16	17,41	16,0	4,0	8,0	14,0	5,0	17,0	12,3	11,0	9,71	0,012	151-110-016
	19	20,41	19,0	4,5	8,0	16,0	6,0	19,0	13,2	12,0	10,21	0,018	151-110-019
	22	23,41	22,0	5,0	9,5	19,0	6,0	22,0	15,0	13,5	11,71	0,027	151-110-022
	26	27,41	26,0	6,0	10,0	22,0	8,0	25,0	16,7	15,5	12,71	0,042	151-110-026
	30	31,41	30,0	7,0	10,5	25,0	8,0	28,0	18,4	17,0	13,71	0,061	151-110-030
1,5	16	26,11	24,0	6,0	10,0	20,0	8,0	24,0	16,9	15,0	13,06	0,032	151-115-016
	19	30,62	28,5	6,5	10,5	24,0	8,0	27,0	18,0	16,0	13,81	0,053	151-115-019
	22	35,12	33,0	7,5	11,0	26,0	8,0	31,0	20,5	18,5	15,56	0,077	151-115-022
	26	41,12	39,0	8,5	13,0	28,0	10,0	35,0	22,2	20,5	16,56	0,105	151-115-026
	30	47,12	45,0	10,0	13,5	30,0	10,0	39,0	24,3	22,5	17,56	0,150	151-115-030
2,0	16	34,83	32,0	8,0	12,0	26,0	10,0	31,0	21,5	19,0	16,41	0,072	151-120-016
	19	40,83	38,0	9,0	12,0	30,0	10,0	35,0	23,3	21,0	17,41	0,115	151-120-019
	22	46,83	44,0	10,0	13,0	32,0	12,0	39,0	25,0	23,0	18,41	0,155	151-120-022
	26	54,83	52,0	11,5	14,0	36,0	12,0	45,0	28,1	26,0	20,41	0,242	151-120-026
	30	62,83	60,0	13,5	15,0	40,0	14,0	50,0	30,5	28,0	21,41	0,340	151-120-030
2,5	16	43,54	40,0	10,0	13,0	32,0	12,0	37,0	25,2	22,0	18,77	0,132	151-125-016
	19	51,04	47,5	11,0	14,5	38,0	12,0	43,0	28,2	25,0	21,02	0,220	151-125-019
	22	58,54	55,0	12,5	16,0	40,0	14,0	48,0	30,5	28,0	22,27	0,298	151-125-022
	26	68,54	65,0	14,5	17,0	45,0	16,0	54,0	33,0	30,0	23,27	0,433	151-125-026
	30	78,54	75,0	16,5	18,0	50,0	18,0	60,0	35,4	32,0	24,27	0,602	151-125-030
3,0	16	52,24	48,0	12,0	14,0	38,0	14,0	43,0	28,9	25,0	21,12	0,218	151-130-016
	19	61,24	57,0	13,5	16,0	40,0	14,0	49,0	31,4	28,0	22,62	0,315	151-130-019
	22	70,24	66,0	15,0	18,0	45,0	16,0	56,0	35,0	31,0	25,12	0,457	151-130-022
	26	82,24	78,0	17,0	20,0	52,0	18,0	65,0	39,5	36,0	28,12	0,737	151-130-026
	30	94,24	90,0	19,5	22,0	60,0	20,0	73,0	43,3	39,0	30,12	1,08	151-130-030
3,5	16	60,95	56,0	14,0	16,5	45,0	16,0	50,0	33,5	29,0	24,48	0,353	151-135-016
	19	71,45	66,5	16,0	18,0	50,0	16,0	57,0	36,7	32,0	26,22	0,540	151-135-019
	22	81,95	77,0	17,5	20,0	55,0	18,0	64,0	39,6	35,0	27,98	0,745	151-135-022
	26	95,95	91,0	20,0	21,0	60,0	20,0	73,0	43,4	39,0	29,98	1,11	151-135-026
	30	109,95	105,0	23,0	23,0	70,0	22,0	83,0	48,5	44,0	32,98	1,70	151-135-030

Kegelräder

Bevel Gears



Übersetzung | Ratio **i = 1:1**

geradverzahnt | straight teeth

Eingriffswinkel | pressure angle **20°**

Achsenwinkel | shaft angle **90°**

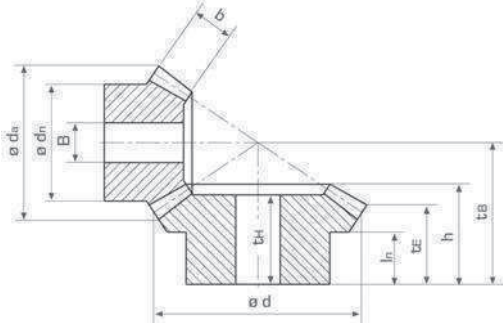
mit balligtragenden Zahnflanken
with crowned tooth bearing

Material | material **1.0503 [C45]**

Modul Module	Zähnezahl No. teeth	d_a	d	b	l_n	d_n	B	t_B	h	t_H	t_E	[kg]	Bestell Nr. Part No.
4,0	16	69,66	64,0	16,0	18,0	50,0	18,0	57,0	38,1	33,0	27,83	0,512	151-140-016
	19	81,66	76,0	18,0	20,0	55,0	18,0	65,0	41,6	37,0	29,83	0,775	151-140-019
	22	93,66	88,0	20,0	22,0	60,0	20,0	73,0	45,0	40,0	31,83	1,08	151-140-022
	26	109,66	104,0	23,0	23,0	70,0	22,0	82,0	48,2	44,0	32,83	1,65	151-140-026
	30	125,66	120,0	26,0	25,0	80,0	25,0	92,0	52,4	48,0	34,83	2,41	151-140-030
4,5	16	78,36	72,0	18,0	21,0	58,0	20,0	64,0	42,8	38,0	31,18	0,755	151-145-016
	19	91,86	85,5	20,0	21,0	60,0	22,0	72,0	45,5	40,0	32,43	1,02	151-145-019
	22	105,36	99,0	22,5	23,0	70,0	25,0	81,0	49,6	44,0	34,68	1,54	151-145-022
	26	123,36	117,0	25,5	25,0	80,0	28,0	92,0	53,7	48,0	36,68	2,32	151-145-026
	30	141,36	135,0	29,0	28,0	85,0	30,0	104,0	59,2	54,0	39,68	3,26	151-145-030
5,0	16	87,07	80,0	20,0	22,5	65,0	22,0	70,0	46,4	41,0	33,54	1,03	151-150-016
	19	102,07	95,0	22,0	23,0	70,0	25,0	79,0	49,4	44,0	35,04	1,44	151-150-019
	22	117,07	110,0	25,0	25,0	80,0	28,0	89,0	54,1	48,0	37,54	2,12	151-150-022
	26	137,07	130,0	29,0	29,0	85,0	30,0	103,0	60,9	55,0	41,54	3,14	151-150-026
	30	157,07	150,0	32,0	32,0	90,0	35,0	116,0	66,1	60,0	44,54	4,25	151-150-030
6,0	16	104,49	96,0	22,5	24,0	80,0	25,0	80,0	50,7	44,0	36,24	1,69	151-160-016
	19	122,49	114,0	26,0	25,0	85,0	28,0	90,0	54,2	48,0	37,24	2,77	151-160-019
	22	140,49	132,0	30,0	26,0	95,0	30,0	100,0	58,1	51,0	38,24	4,10	151-160-022
	26	164,49	156,0	35,0	30,0	105,0	35,0	116,0	65,6	58,0	42,24	6,08	151-160-026
	30	188,49	180,0	40,0	33,0	120,0	40,0	132,0	73,2	66,0	46,24	9,16	151-160-030

Kegelräder

Bevel Gears



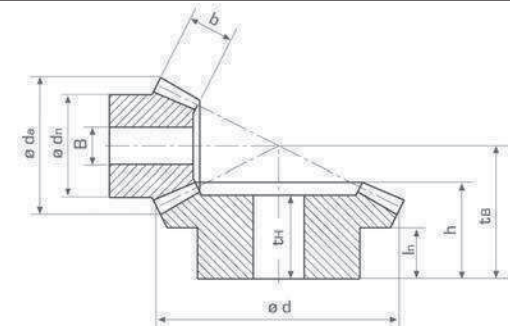
Übersetzung | Ratio **i = 1:1,5**

geradverzahnt | straight teeth
 Eingriffswinkel | pressure angle **20°**
 Achsenwinkel | shaft angle **90°**
 mit balligtragenden Zahnflanken
 with crowned tooth bearing
 Material | material **1.0503 [C45]**

Modul Module	Zähnezahl No. teeth	d_a	d	b	l_n	d_n	B	t_B	h	t_H	t_E	[kg]	Bestell Nr. Part No.
1,0	16	17,66	16,0	4,5	7,2	13,5	5,0	20,0	12,1	11,0	8,55	0,011	151-210-016
	24	25,11	24,0	4,5	9,7	21,0	6,0	20,0	15,1	13,5	12,83	0,035	151-210-024
1,5	16	26,50	24,0	7,0	10,6	20,0	8,0	30,0	18,4	17,0	12,83	0,036	151-215-016
	24	37,66	36,0	7,0	12,0	26,0	8,0	27,0	19,7	17,5	16,25	0,080	151-215-024
2,0	16	35,33	32,0	10,0	12,0	26,0	10,0	38,0	23,0	21,0	15,11	0,080	151-220-016
	24	50,22	48,0	10,0	15,0	35,0	12,0	35,0	25,6	23,0	20,66	0,185	151-220-024
2,5	16	44,16	40,0	12,5	13,3	32,0	12,0	46,0	27,3	25,0	17,39	0,146	151-225-016
	24	62,77	60,0	12,5	16,0	42,0	14,0	42,0	30,2	27,0	24,08	0,340	151-225-024
3,0	16	53,00	48,0	14,5	15,3	40,0	14,0	54,0	31,2	28,0	19,66	0,255	151-230-016
	24	75,33	72,0	14,5	18,0	50,0	16,0	49,0	34,7	30,0	27,50	0,555	151-230-024
3,5	16	61,82	56,0	17,0	17,0	47,0	16,0	62,0	35,4	32,0	21,94	0,400	151-235-016
	24	87,88	84,0	17,0	21,0	58,0	18,0	57,0	40,3	36,0	31,91	0,905	151-235-024
4,0	16	70,66	64,0	19,0	18,7	54,0	18,0	70,0	39,3	35,0	24,22	0,584	151-240-016
	24	100,44	96,0	19,0	24,0	66,0	20,0	65,0	45,8	40,0	36,33	1,330	151-240-024
4,5	16	79,49	72,0	21,5	21,0	60,0	20,0	79,0	44,5	40,0	27,50	0,833	151-245-016
	24	113,00	108,0	21,5	26,0	75,0	25,0	73,0	51,4	45,0	40,74	1,88	151-245-024
5,0	16	88,32	80,0	24,0	23,0	65,0	22,0	88,0	49,8	45,0	30,77	1,13	151-250-016
	24	25,55	120,0	24,0	28,0	85,0	30,0	80,0	56,1	49,0	44,16	2,55	151-250-024
6,0	16	105,98	96,0	28,5	24,7	80,0	25,0	102,0	55,9	50,0	33,33	2,05	151-260-016
	24	150,66	144,0	28,5	32,0	105,0	35,0	90,0	61,1	52,5	46,99	4,18	151-260-024

Kegelräder

Bevel Gears



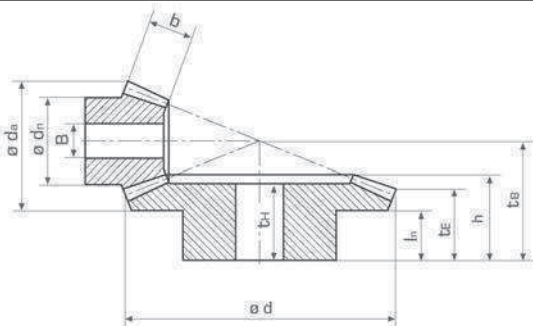
Übersetzung | Ratio **i = 1:2**

geradverzahnt | straight teeth
 Eingriffswinkel | pressure angle **20°**
 Achsenwinkel | shaft angle **90°**
 mit balligtragenden Zahnflanken
 with crowned tooth bearing
 Material | material **1.0503 [C45]**

Modul Module	Zähnezahl No. teeth	d_a	d	b	l_n	d_n	B	t_B	h	t_H	t_E	[kg]	Bestell Nr. Part No.
1,0	15	16,79	15,0	5,0	7,4	12,5	5,0	23,0	12,8	12,0	8,45	0,010	151-310-015
	30	30,89	30,0	5,0	9,0	22,0	8,0	20,0	15,4	14,0	13,40	0,044	151-310-030
1,5	15	25,18	22,5	8,0	10,6	19,0	8,0	34,0	19,1	18,0	12,17	0,032	151-315-015
	30	46,34	45,0	8,0	13,0	32,0	10,0	28,0	21,2	19,0	18,09	0,133	151-315-030
2,0	15	33,58	30,0	11,5	11,8	25,0	10,0	43,0	23,9	22,0	13,89	0,071	151-320-015
	30	61,79	60,0	11,5	15,0	40,0	14,0	35,0	26,3	23,0	21,79	0,278	151-320-030
2,5	15	41,97	37,5	14,5	13,9	31,0	12,0	53,0	29,2	27,0	16,62	0,140	151-325-015
	30	77,24	75,0	14,5	17,0	50,0	18,0	42,0	31,2	27,0	25,49	0,510	151-325-030
3,0	15	50,37	45,0	17,0	16,3	38,0	14,0	63,0	34,1	32,0	19,34	0,245	151-330-015
	30	92,68	90,0	17,0	19,0	60,0	20,0	49,0	35,9	31,0	29,18	0,880	151-330-030
3,5	15	58,76	52,5	19,5	18,4	44,0	16,0	73,0	39,0	36,0	22,06	0,38	151-335-015
	30	108,13	105,0	19,5	22,0	70,0	22,0	57,0	41,6	36,0	33,88	1,41	151-335-030
4,0	15	67,16	60,0	22,0	20,5	50,0	18,0	83,0	43,9	41,0	24,79	0,56	151-340-015
	30	123,58	120,0	22,0	25,0	80,0	25,0	65,0	47,2	42,0	38,58	2,13	151-340-030
4,5	15	75,55	67,5	25,0	22,4	55,0	20,0	93,0	49,2	46,0	27,51	0,78	151-345-015
	30	139,02	135,0	25,0	28,0	90,0	30,0	73,0	53,1	47,0	43,27	2,99	151-345-030
5,0	15	83,94	75,0	28,0	24,3	60,0	22,0	103,0	54,5	51,0	30,23	1,06	151-350-015
	30	154,47	150,0	28,0	30,0	100,0	35,0	80,0	58,0	51,0	46,97	3,98	151-350-030
6,0	15	100,73	90,0	32,5	26,3	75,0	25,0	120,0	60,9	56,0	32,68	1,82	151-360-015
	30	185,37	180,0	32,5	33,0	120,0	40,0	90,0	63,2	54,0	50,37	5,84	151-360-030

Kegelräder

Bevel Gears



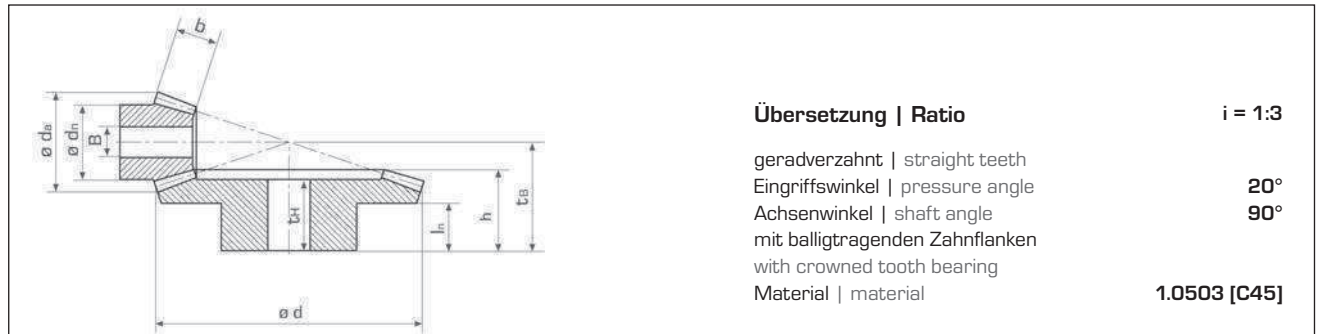
Übersetzung | Ratio **i = 1:2,5**

geradverzahnt | straight teeth
 Eingriffswinkel | pressure angle **20°**
 Achsenwinkel | shaft angle **90°**
 mit balligtragenden Zahnflanken
 with crowned tooth bearing
 Material | material **1.0503 [C45]**

Modul Module	Zähnezahl No. teeth	d_a	d	b	l_n	d_n	B	t_B	h	t_H	t_E	[kg]	Bestell Nr. Part No.
1,0	16	17,86	16,0	6,0	7,5	13,5	5,0	28,0	13,8	13,0	8,37	0,013	151-410-016
	40	40,74	40,0	6,0	9,0	25,0	8,0	21,0	15,9	14,0	13,93	0,075	151-410-040
1,5	16	26,79	24,0	9,0	11,2	20,0	8,0	42,0	20,8	19,5	12,56	0,041	151-415-016
	40	61,11	60,0	9,0	13,5	38,0	12,0	30,0	22,3	20,0	19,39	0,232	151-415-040
2,0	16	35,71	32,0	13,5	13,8	26,0	12,0	55,0	28,0	26,0	15,74	0,091	151-420-016
	40	81,49	80,0	13,5	18,0	50,0	18,0	39,0	29,3	26,0	24,86	0,515	151-420-040
2,5	16	44,64	40,0	17,0	15,4	32,0	14,0	67,0	33,4	32,0	17,93	0,174	151-425-016
	40	101,86	100,0	17,0	20,0	60,0	20,0	46,0	33,9	30,0	28,32	0,930	151-425-040
3,0	16	53,57	48,0	20,0	17,4	40,0	16,0	79,0	38,3	36,0	20,11	0,305	151-430-016
	40	122,23	120,0	20,0	23,0	70,0	22,0	55,0	40,3	36,0	33,78	1,63	151-430-040
3,5	16	62,50	56,0	23,5	18,8	45,0	18,0	91,0	43,7	41,0	22,30	0,47	151-435-016
	40	142,60	140,0	23,5	26,0	80,0	25,0	62,0	45,0	40,0	37,25	2,37	151-435-040
4,0	16	71,43	64,0	27,0	21,6	52,0	20,0	104,0	50,1	47,0	25,49	0,72	151-440-016
	40	162,97	160,0	27,0	30,0	90,0	30,0	72,0	52,6	46,0	43,71	3,56	151-440-040
4,5	16	80,36	72,0	30,0	23,6	60,0	22,0	116,0	55,0	52,0	27,67	1,04	151-445-016
	40	183,34	180,0	30,0	34,0	100,0	35,0	81,0	59,0	52,0	49,18	4,98	151-445-040
5,0	16	89,28	80,0	33,0	26,0	65,0	25,0	129,0	60,9	58,0	30,86	1,37	151-450-016
	40	203,71	200,0	33,0	36,0	110,0	40,0	88,0	63,5	56,0	52,64	6,60	151-450-040
6,0	16	107,14	96,0	36,5	26,8	80,0	25,0	150,0	65,5	62,0	32,23	2,48	151-460-016
	40	244,46	240,0	36,5	34,0	125,0	40,0	95,0	64,5	55,0	52,57	12,35	151-460-040

Kegelräder

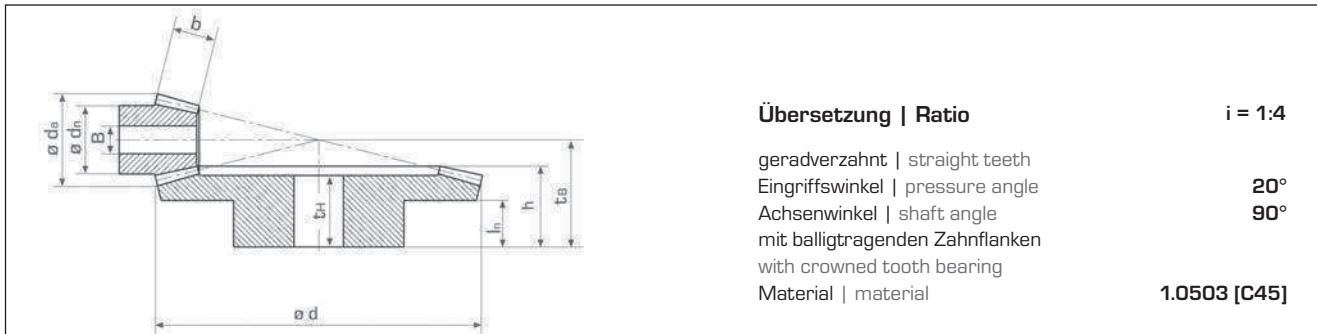
Bevel Gears



Modul Module	Zähnezahl No. teeth	d_a	d	b	l_n	d_n	B	t_B	h	t_H	t_E	[kg]	Bestell Nr. Part No.
1,0	15	16,90	15,0	7,0	8,1	12,5	5,0	31,0	15,4	14,5	8,82	0,012	151-510-015
	45	45,63	45,0	7,0	10,0	28,0	10,0	22,0	17,4	15,5	15,45	0,102	151-510-045
1,5	15	25,35	22,5	10,0	11,7	19,0	8,0	46,0	22,1	21,0	12,72	0,039	151-515-015
	45	68,45	67,5	10,0	14,5	40,0	14,0	31,0	23,9	21,5	21,17	0,300	151-515-045
2,0	15	33,79	30,0	14,0	14,2	25,0	12,0	60,0	28,7	27,0	15,63	0,082	151-520-015
	45	91,26	90,0	14,0	20,0	50,0	18,0	41,0	31,8	28,0	27,90	0,632	151-520-045
2,5	15	42,24	37,5	17,5	15,7	31,0	14,0	73,0	33,9	32,0	17,54	0,155	151-525-015
	45	114,08	112,5	17,5	22,0	60,0	20,0	48,0	36,4	32,0	31,62	1,15	151-525-045
3,0	15	50,69	45,0	21,0	17,3	38,0	16,0	86,0	39,1	37,0	19,45	0,275	151-530-015
	45	136,90	135,0	21,0	25,0	70,0	22,0	56,0	42,1	37,0	36,35	1,90	151-530-045
3,5	15	59,14	52,5	24,5	19,8	44,0	18,0	100,0	45,3	43,0	22,36	0,44	151-535-015
	45	159,71	157,5	24,5	28,0	80,0	25,0	64,0	47,8	42,0	41,07	2,95	151-535-045
4,0	15	67,59	60,0	28,0	22,3	50,0	20,0	114,0	51,4	49,0	25,26	0,65	151-540-015
	45	182,53	180,0	28,0	32,0	90,0	30,0	73,0	54,5	48,0	46,79	4,32	151-540-045
4,5	15	76,04	67,5	31,0	24,7	55,0	22,0	128,0	57,2	54,0	28,17	0,91	151-545-015
	45	205,35	202,5	31,0	35,0	105,0	35,0	81,0	60,1	53,0	51,52	6,18	151-545-045
5,0	15	84,49	75,0	34,0	27,0	60,0	25,0	142,0	62,9	60,0	31,08	1,21	151-550-015
	45	228,16	225,0	34,0	38,0	120,0	40,0	89,0	65,6	58,0	56,24	8,66	151-550-045
6,0	15	101,38	90,0	41,0	27,5	75,0	25,0	165,0	70,3	66,0	31,90	2,42	151-560-015
	45	273,79	270,0	41,0	35,0	140,0	45,0	98,0	70,0	60,0	58,69	17,51	151-560-045

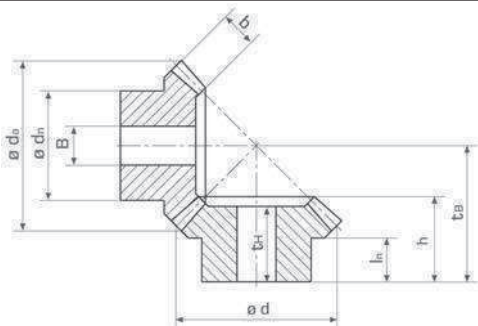
Kegelräder

Bevel Gears



Modul Module	Zähnezahl No. teeth	d_a	d	b	l_H	d_n	B	t_B	h	t_H	t_E	[kg]	Bestell Nr. Part No.
1,0	15	16,94	15,0	9,0	7,7	12,5	5,0	38,0	16,9	16,5	8,24	0,012	151-710-015
	60	60,49	60,0	9,0	10,0	35,0	12,0	23,0	18,1	16,5	16,47	0,195	151-710-060
1,5	15	25,41	22,5	12,0	11,6	19,0	8,0	57,0	23,9	23,0	12,36	0,042	151-715-015
	60	90,73	90,0	12,0	15,5	50,0	16,0	33,0	25,7	23,0	23,21	0,570	151-715-060
2,0	15	33,88	30,0	16,0	14,4	25,0	12,0	75,0	30,9	30,0	15,48	0,092	151-720-015
	60	120,97	120,0	16,0	22,0	65,0	20,0	45,0	35,3	32,0	31,94	1,335	151-720-060
2,5	15	42,35	37,5	20,0	17,2	31,0	14,0	93,0	37,9	36,0	18,60	0,180	151-725-015
	60	151,21	150,0	20,0	25,0	80,0	22,0	53,0	40,9	36,0	36,68	2,37	151-725-060
3,0	15	50,82	45,0	24,0	20,1	38,0	16,0	111,0	44,8	43,0	21,73	0,325	151-730-015
	60	181,46	180,0	24,0	28,0	95,0	28,0	62,0	47,5	42,0	42,41	4,06	151-730-060
3,5	15	59,29	52,5	28,0	22,9	44,0	18,0	129,0	51,8	50,0	24,85	0,515	151-735-015
	60	211,70	210,0	28,0	30,0	110,0	32,0	69,0	52,1	46,0	46,15	6,16	151-735-060
4,0	15	67,76	60,0	32,0	23,5	48,0	20,0	145,0	56,8	55,0	25,97	0,860	151-740-015
	60	241,94	240,0	32,0	35,0	125,0	35,0	80,0	60,6	53,0	53,88	9,06	151-740-060
4,5	15	76,23	67,5	36,0	25,4	55,0	22,0	162,0	62,7	60,0	28,09	1,24	151-745-015
	60	272,18	270,0	36,0	37,0	140,0	40,0	88,0	66,2	57,0	58,62	12,95	151-745-060
5,0	15	84,70	75,0	40,0	28,1	60,0	25,0	180,0	69,7	67,0	31,21	1,76	151-750-015
	60	302,42	300,0	40,0	38,0	160,0	45,0	95,0	70,8	62,0	62,35	17,82	151-750-060
6,0	15	101,64	90,0	45,0	28,1	75,0	25,0	210,0	74,7	71,0	31,45	2,42	151-760-015
	60	362,91	360,0	45,0	38,0	180,0	50,0	103,0	73,3	62,0	63,82	25,15	151-760-060

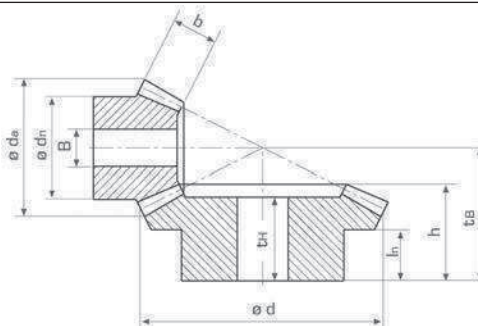
Kegelräder Kunststoff gespritzt

Moulded Bevel Gears


Übersetzung | Ratio **i = 1:1**

geradverzahnt | straight teeth
 Eingriffswinkel | pressure angle **20°**
 Achsenwinkel | shaft angle **90°**
 mit balligtragenden Zahnflanken
 with crowned tooth bearing
 Azetalharz | injection moulded
 gespritzt | acetal resin **[Hostaform C]**

Modul Module	Zähnezahl No. teeth	d_a	d	b	l_n	d_n	B	t_B	h	t_H	[kg]	Bestell Nr. Part No.
0,5	16	8,7	8,0	2,0	6,0	7,0	3,0	10,5	8,0	8,0	0,001	159-105-016
1,0	16	17,6	16,0	4,7	8,0	12,0	5,0	18,4	13,6	13,6	0,002	159-110-016
	30	31,4	30,0	7,4	7,4	15,0	6,0	24,8	15,3	12,9	0,006	159-110-030
1,5	16	26,4	24,0	7,0	10,0	18,5	8,0	25,8	18,4	16,2	0,006	159-115-016
2,0	16	34,9	32,0	10,0	9,6	21,9	10,0	30,4	21,2	18,3	0,011	159-120-016
2,5	16	43,5	40,0	12,3	11,5	25,2	12,0	37,0	25,5	22,9	0,019	159-125-016
3,0	16	52,3	48,0	13,8	13,2	28,8	14,0	43,0	29,2	25,8	0,030	159-130-016
3,5	16	61,4	56,0	15,8	14,4	33,3	18,0	49,5	33,1	28,1	0,048	159-135-016



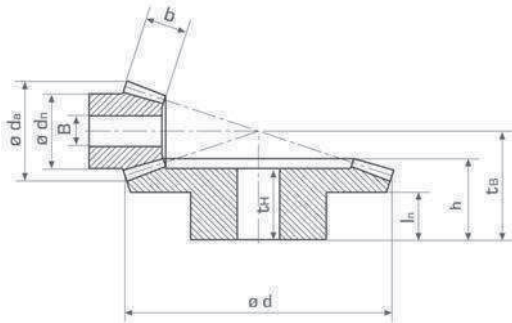
Übersetzung | Ratio **i = 1:2**

geradverzahnt | straight teeth
 Eingriffswinkel | pressure angle **20°**
 Achsenwinkel | shaft angle **90°**
 mit balligtragenden Zahnflanken
 with crowned tooth bearing
 Azetalharz | injection moulded
 gespritzt | acetal resin **[Hostaform C]**

Modul Module	Zähnezahl No. teeth	d_a	d	b	l_n	d_n	B	t_B	h	t_H	[kg]	Bestell Nr. Part No.
1,0	15	16,8	15,0	6,6	10,6	12,2	5,0	26,4	17,0	17,0	0,002	159-310-015
	30	31,1	30,0	6,6	9,1	18,0	8,0	20,9	16,2	14,8	0,007	159-310-030
1,5	15	25,4	22,5	10,5	11,5	17,0	8,0	35,8	22,8	22,8	0,007	159-315-015
	30	46,4	45,0	10,5	9,6	23,4	10,0	26,2	19,5	17,5	0,018	159-315-030
2,0	15	33,6	30,0	14,6	11,8	22,5	10,0	44,2	27,0	26,0	0,013	159-320-015
	30	62,2	60,0	14,6	11,8	30,2	12,0	32,6	24,2	22,6	0,040	159-320-030
2,5	15	42,0	37,5	17,3	13,0	26,5	12,0	53,3	31,2	29,6	0,023	159-325-015
	30	77,3	75,0	17,3	15,0	36,1	16,0	40,5	29,5	27,5	0,077	159-325-030
3,0	15	50,3	45,0	20,5	14,8	31,2	14,0	63,3	36,3	35,0	0,037	159-330-015
	30	93,0	90,0	20,5	19,0	45,0	18,0	49,5	37,0	34,2	0,135	159-330-030

Kegelräder Kunststoff gespritzt

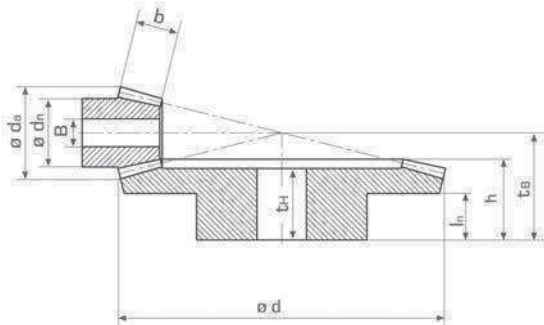
Moulded Bevel Gears



Übersetzung | Ratio **i = 1:3**

geradverzahnt | straight teeth
 Eingriffswinkel | pressure angle **20°**
 Achsenwinkel | shaft angle **90°**
 mit balligtragenden Zahnflanken
 with crowned tooth bearing
 Azetalharz | injection moulded
 gespritzt | acetal resin **[Hostaform C]**

Modul Module	Zähnezahl No. teeth	d_a	d	b	l_n	d_n	B	t_B	h	t_H	[kg]	Bestell Nr. Part No.
1,0	15	16,6	15,0	9,2	11,0	12,3	5,0	34,3	20,4	20,4	0,003	159-510-015
	45	46,1	45,0	9,2	9,6	23,4	10,0	22,7	18,2	16,5	0,018	159-510-045
1,5	15	25,1	22,5	14,0	12,5	17,2	8,0	47,9	26,8	26,8	0,008	159-515-015
	45	68,8	67,5	14,0	11,5	30,4	12,0	29,4	23,0	21,5	0,048	159-515-045
2,0	10	24,0	20,0	12,5	12,0	16,6	6,0	43,7	25,0	25,0	0,006	159-520-010
	30	61,7	60,0	12,5	11,5	30,3	12,0	28,0	22,5	20,2	0,038	159-520-030
2,5	10	29,7	25,0	15,7	13,0	18,8	8,0	52,4	28,8	28,8	0,010	159-525-010
	30	77,2	75,0	15,7	15,5	36,1	18,0	35,7	29,0	25,2	0,067	159-525-030



Übersetzung | Ratio **i = 1:4**

geradverzahnt | straight teeth
 Eingriffswinkel | pressure angle **20°**
 Achsenwinkel | shaft angle **90°**
 mit balligtragenden Zahnflanken
 with crowned tooth bearing
 Azetalharz | injection moulded
 gespritzt | acetal resin **[Hostaform C]**

Modul Module	Zähnezahl No. teeth	d_a	d	b	l_n	d_n	B	t_B	h	t_H	[kg]	Bestell Nr. Part No.
1,0	10	12,0	10,0	8,2	9,3	7,8	4,0	30,1	17,7	17,7	0,001	159-710-010
	40	40,8	40,0	8,2	10,8	23,4	10,0	20,1	17,0	15,7	0,013	159-710-040
1,5	10	18,0	15,0	12,3	10,9	11,3	5,0	41,7	23,5	23,5	0,003	159-715-010
	40	61,2	60,0	12,3	12,8	30,4	12,0	26,2	21,7	20,0	0,031	159-715-040
2,0	10	23,8	20,0	16,3	12,8	14,3	6,0	54,0	28,9	28,9	0,006	159-720-010
	40	81,5	80,0	16,3	16,6	36,0	18,0	32,5	27,0	24,7	0,062	159-720-040

