

Document version: **BN 405-008e -**

1 Objective

This standard specifies the geometric dimensions and tolerances of the internal gearing and the cambered external gearing for KBT and comparable gear couplings. They are valid unless otherwise specified on the associated drawing or in the purchase order. In case of ambiguities or contradictions, please contact DELLNER BUBENZER Germany GmbH (hereinafter referred to as "DBG").

2 Applicable documents

DIN 867	Basic rack tooth profiles for involute teeth of cylindrical gears for general engineering and heavy engineering
ISO 1328	Cylindrical gears - ISO system of flank tolerance classification - Part 1: Definitions and allowable values of deviations relevant to flanks of gear teeth
VDI 2612-6	Measurement and testing of gears - Testing and monitoring of devices for gear measurement

3 Gearing quality

The geometry is based on the basic rack tooth profiles DIN 867, but with the adaptations according to section 5 of this work standard. The gearing quality of the internal and external gearing is evaluated according to DIN ISO 1328. Flank tolerance class 8 applies to the coupling parts to be toothed for external and internal gearing, unless otherwise specified in the purchase order or on the component drawing. The evaluation of the gear concentricity can be related to one tooth flank side. The reference system can be found in the respective component drawing.

4 Names, symbols, and default values

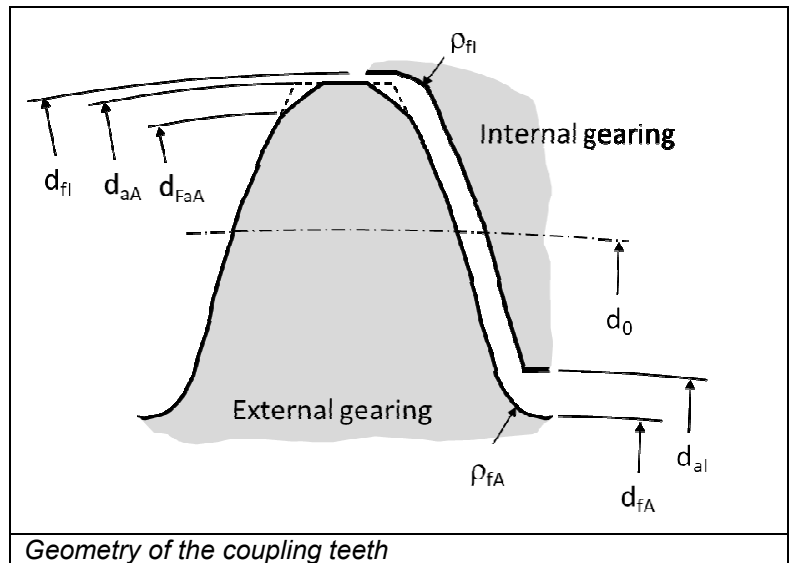
Name	Symbol	Unit
Standard module	m_n	mm
Pressure angle of the gearing	α_n	°
Number of teeth	Z	-
Pitch circle diameter	d_0	mm
Tip circle diameter of external gearing/internal gearing	$d_{a A/I}$	mm
Tip form circle diameter of the external gearing	d_{FaA}	mm
Root circle diameter of external gearing/internal gearing	$d_{f A/I}$	mm
Root radius of external gearing /internal gearing	$\rho_{f A/I}$	mm
Number of measuring teeth for the tooth width of the external gearing	k	-
Tooth width over k measuring teeth	W_k	mm
Measuring ball diameter for the inner gearing	D_M	mm
Diametrical two-ball dimension/two-roller dimension	M_{dk}	mm

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5 Gear geometry and tolerances

Standard values
$\alpha_n = 20^\circ$
$d_0 = m_n \cdot z$
$\rho_{fA} = (0,15 \text{ bis } 0,2) \cdot m_n$
$\rho_{fi} = (0,05 \text{ bis } 0,1) \cdot m_n$
$d_{aA} = \text{acc. to drawing}$
$d_{ai} = \text{acc. to drawing}$
Flank tolerance class = 8



Coupl. size	m_n	z	External gearing					Internal gearing			
			d_{FaA}	$d_{fA} -0,5$	k	$W_k \text{ max / min}$	$d_{fi} \text{ H8}$	D_M	$M_{dk} \text{ max / min}$		
65	1,8143	62	115,31	108,86	7	36,31	36,25	116,11	3,25	107,85	107,72
80	2,5	51	132,00	122,50	6	42,26	42,20	132,50	4,5	120,98	120,78
90	1,75	78	139,50	133,00	9	45,75	45,69	140,00	3,25	131,76	131,57
100	2,5	61	157,00	147,50	7	49,99	49,93	157,50	4,5	146,01	145,81
110	2,5	64	164,50	155,00	8	57,47	57,41	165,00	4,5	153,57	153,37
120	3	58	179,00	168,00	7	59,86	59,80	180,00	5,5	165,71	165,51
130	2,5	75	192,00	182,50	9	65,24	65,18	192,50	4,5	181,04	180,85
140	3,5	59	212,00	199,50	7	69,88	69,82	213,50	6	198,44	198,25
150	3,5	64	229,50	217,00	8	80,46	80,40	231,00	6	216,02	215,83
160	3,5	67	240,00	227,50	8	80,61	80,55	241,50	6	226,46	226,27
170	3,5	70	250,50	238,00	8	80,76	80,70	252,00	6	237,03	236,84
180	4	65	266,50	252,00	8	91,92	91,86	268,00	7	250,13	249,94
190	4	69	282,50	268,00	8	92,14	92,08	284,00	7	266,14	265,95
210	5	60	307,24	288,7	7	99,82	99,74	307,4	8	290,74	290,56

6 Measuring tools for gear measurement

The measuring equipment and the boundary conditions are to be selected in accordance with the required flank tolerance class and within the scope of VDI 2612 Sheet 6. In case of a deviating measuring method, DBG must be consulted.

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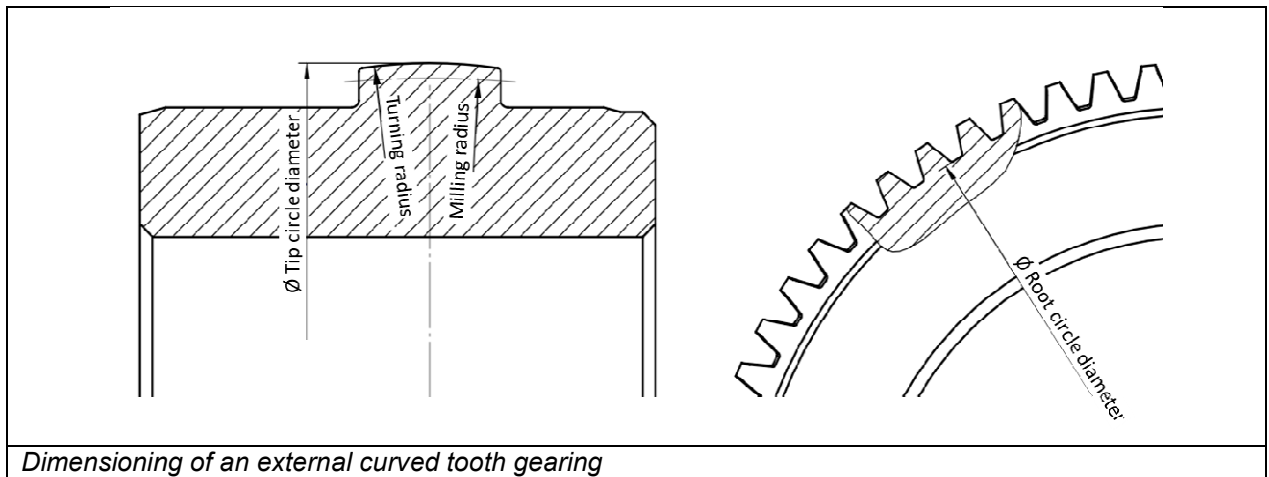
7 Drawing data

A table containing the required manufacturing data for gear manufacturing from section 5 of this work standard must be placed in the upper left-hand corner of the manufacturing drawing.

<i>External gearing</i>		
Module	m_n	
Number of teeth	Z	
Pressure angle	α_n	
Flank tolerance class	-	
<i>Tooth width</i>		
Number of measuring teeth	k	
Maximum	$W_{k \max}$	
Minimum	$W_{k \min}$	

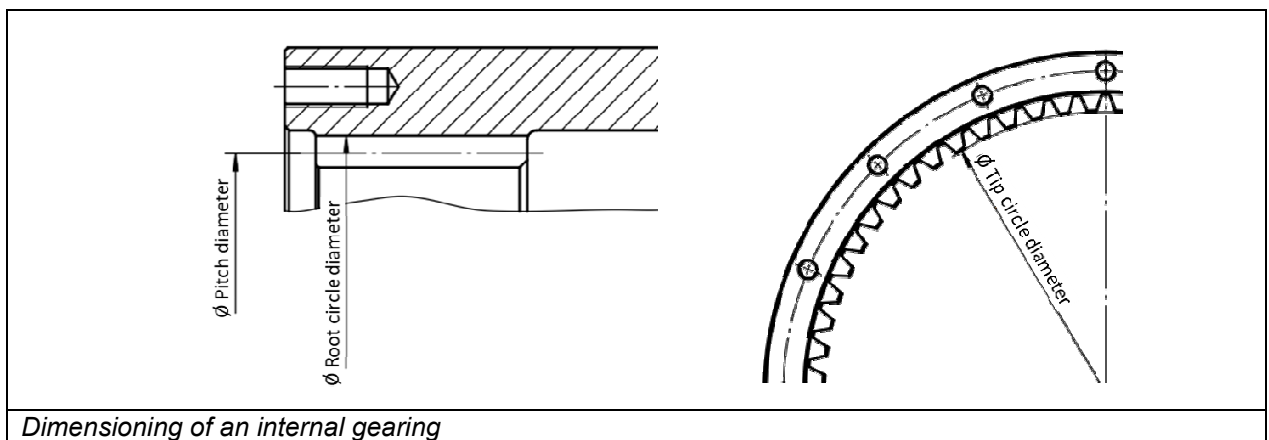
<i>Internal gearing</i>		
Module	m_n	
Number of teeth	Z	
Pressure angle	α_n	
Flank tolerance class	-	
<i>Roll size</i>		
Roll diameter	D_M	
Maximum	$M_{dk \max}$	
Minimum	$M_{dk \min}$	

The tip circle diameter, the turning radius at the tooth tip, the milling radius for producing the curved teeth, and the root circle diameter must be shown in the production drawing of the external gearing.



Dimensioning of an external curved tooth gearing

The production drawing of the internal gearing requires the root circle diameter and the tip circle diameter in addition to the gearing mark.



Dimensioning of an internal gearing

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