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Involute gear milling cutters

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Involute gear milling cutters

1 Scope This Japanese Industrial Standard specifies the involute gear milling cutters (hereafter, referred to as "milling cutters") to be used for gear cutting of involute spur gears and helical gears of 0.5 mm to 25 mm in module m and 20° in standard pressure angle α .

Remarks : The standards cited in this Standard are as given in the following:

- JIS B 0021 *Indications of geometrical tolerances on drawings*
- JIS B 0102 *Glossary of gear terms*
- JIS B 0172 *Glossary of terms for milling cutters*
- JIS B 0174 *Gear cutters – Vocabulary*
- JIS B 0401 *System of limits and fits*
- JIS B 0405 *General tolerances – Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*
- JIS B 0601 *Surface roughness – Definitions and designation*
- JIS B 0659 *Roughness comparison specimens*
- JIS B 1701 *Involute gear tooth profile and dimensions*
- JIS B 4201 *Cutter bores*
- JIS B 7503 *Dial gauges*
- JIS B 7513 *Precision surface plates*
- JIS B 7725 *Vickers hardness testing machines*
- JIS B 7726 *Rockwell and Rockwell superficial hardness testing machines*
- JIS G 4403 *High speed tool steels*
- JIS Z 2244 *Method of Vickers hardness test*
- JIS Z 2245 *Method of Rockwell and Rockwell superficial hardness test*

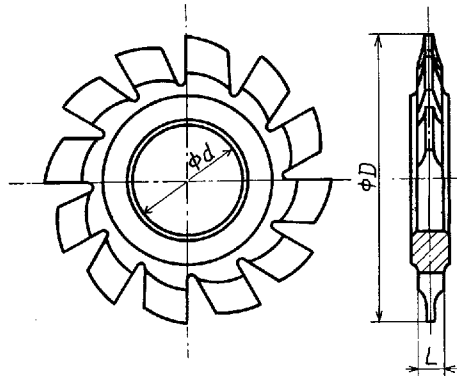
2 Definitions The definitions of main terms to be used in this Standard are in accordance with JIS B 0102, JIS B 0172 and JIS B 0174.

3 Shape and dimensions The shape and dimensions of the milling cutters shall be in accordance with Table 1.

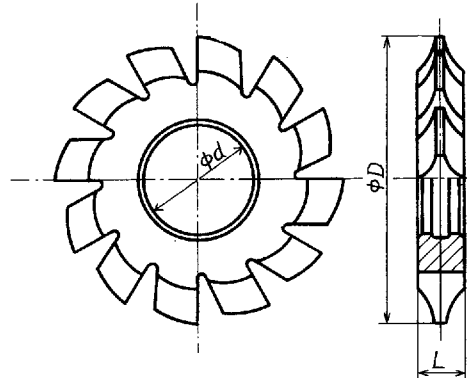
Further, the tooth profile of this milling cutter shall be the tooth profile produced by the composite tooth profile (the basic rack tooth profile composed of the tooth profile of involute gear and cycloid tooth profile). For informative reference, the tooth profile and dimensions of the forming gauge for the standard pressure angle α 20° are shown below.

Table 1 Shape and dimensions of milling cutter

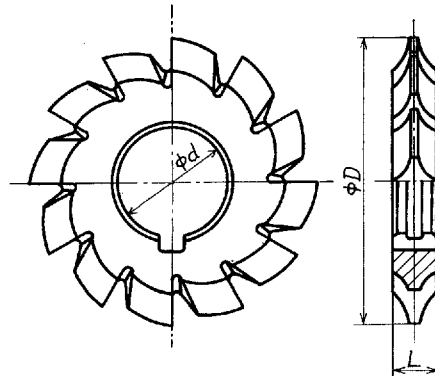
For module 0.5 mm to 1 mm



For module 1.25 mm to 4.5 mm



For module 5 mm or over



Remarks : For module 0.5 mm to 1 mm, the example of with boss is shown.

Unit : mm

Module <i>m</i>			Out- side dia- meter <i>D</i>	Bore diameter <i>d</i>		Width <i>L</i> (minimum)								Refer- ence		
Series ⁽¹⁾						No. of milling cutter								Flutes <i>Z</i>		
1	2	3				8	7	6	5	4	3	2	1			
Number of teeth of gear capable of being cut <i>z</i>																
				Type A	Type B ⁽²⁾	12 to 13	14 to 16	17 to 20	21 to 25	26 to 34	35 to 54	55 to 134	135 to rack			
0.5			40	22	22.225	4.4	4.4	4	4	4	3.6	3.6	3.6	12		
	0.55															
0.6																
		0.65	45													
	0.7															
	0.75															
0.8			50			4.8	4.8	4.4	4.4	4.4	4	4	4			
	0.9															
1																
	1.25		56		25.4	5.5	5.5	5.2	5.2	5.2	4.8	4.8	4.8			
1.5			63			6	6	5.5	5.5	5.5	5.2	5.2				
	1.75					6.5	6.5	6	6	6	5.5	5.5	5.5			



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