
International Standard



3364

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Indexable hardmetal (carbide) inserts with rounded corners, with cylindrical fixing hole — Dimensions

Plaquettes amovibles en métaux-durs (carbures métalliques) avec arrondi de pointe et trou de fixation cylindrique — Dimensions

Second edition — 1985-08-01

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UDC 621.91.025.7

Ref. No. ISO 3364-1985 (E)

Descriptors : tools, cutting tools, carbide tools, inserts, dimensions, designation, marking.

Price based on 9 pages

Indexable hardmetal (carbide) inserts with rounded corners, with cylindrical fixing hole — Dimensions

1 Scope and field of application

This International Standard specifies the dimensions of indexable hardmetal (carbide) inserts with rounded corners, with cylindrical fixing hole and with 0° normal clearance. These inserts are primarily intended to be mounted by top and hole, or hole alone, clamping on turning and boring tools.

2 References

ISO 513, *Application of carbides for machining by chip removal — Designation of the main groups of chip removal and groups of application.*

ISO 883, *Indexable hardmetal (carbide) inserts with rounded corners, without fixing hole — Dimensions.*

ISO 1832, *Indexable inserts for cutting tools — Designation.*

ISO 3365, *Indexable hardmetal (carbide) inserts with wiper edges, without fixing hole — Dimensions.*

ISO 6987/1, *Indexable hardmetal (carbide) inserts with rounded corners, with partly cylindrical fixing hole — Part 1: Dimensions of inserts with 7 degrees normal clearance.*

3 Types of inserts

The types of indexable hardmetal (carbide) inserts specified in this International Standard are the following:

- TN: triangular inserts, with 0° normal clearance;
- SN: square inserts, with 0° normal clearance;
- CN: rhombic inserts, with 0° normal clearance and 80° included angle;
- DN: rhombic inserts, with 0° normal clearance and 55° included angle.

Inserts dealt with in this International Standard are standardized with chip breakers on both faces, with chip breakers on one face only and with no chip breakers at all.

At present, neither the shape nor the dimensions of chip breakers are standardized. Thus, if necessary, special features have to be explained by means of a diagram or additional specifications.

Table 7 gives the range of sizes for these inserts.

4 Interchangeability

4.1 Tolerances

Indexable hardmetal (carbide) inserts specified in this International Standard are provided in tolerance class M in accordance with ISO 1832.

The values of the tolerances in accordance with ISO 1832 are given in annex A.

Other tolerances are given, either in table 1 for hole dimensions, or in tables 2 to 5 for insert dimensions.

7.1 Triangular inserts

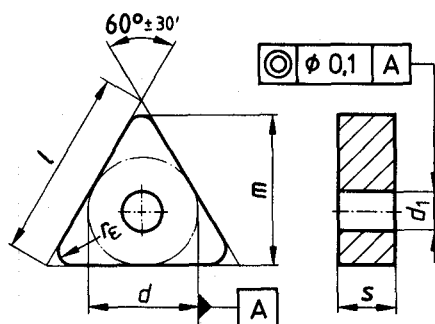
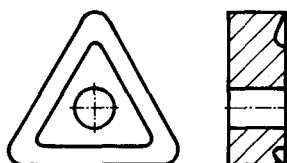
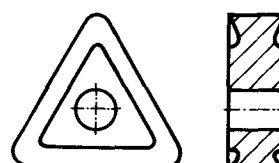
TNMA
without chip breakersTNMM
with chip breakers
on one face onlyTNMG
with chip breakers
on both faces

Table 2 — Dimensions of triangular inserts

Values in millimetres

Insert			L =	d 1)	s 1)	m 1)	r_E $\pm 0,10$	d_1 $\pm 0,08$
TNMA160404	—	TNMG160404	16,5	9,525	4,76	13,891	0,4	3,81
TNMA160408	TNMM160408	TNMG160408				13,494	0,8	
TNMA160412	TNMM160412	TNMG160412				13,097	1,2	
TNMA220408	TNMM220408	TNMG220408	22,0	12,70	4,76	18,256	0,8	5,16
TNMA220412	TNMM220412	TNMG220412				17,859	1,2	
TNMA220416	TNMM220416	TNMG220416				17,463	1,6	
—	TNMM270612	—	27,5	15,875	6,35	22,622	1,2	6,35
—	TNMM270616	—				22,225	1,6	

1) Tolerances in accordance with ISO 1832. See annex A.

7.3 Rhombic inserts with 80° included angle

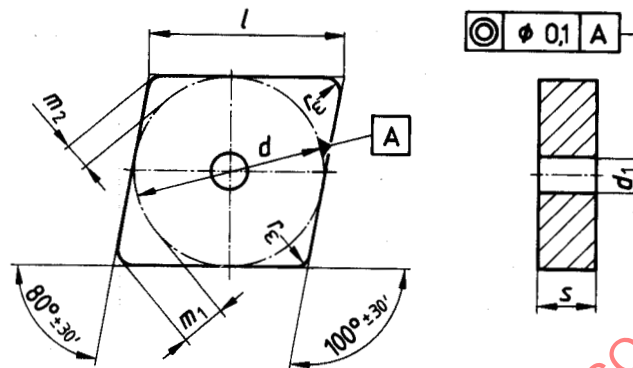
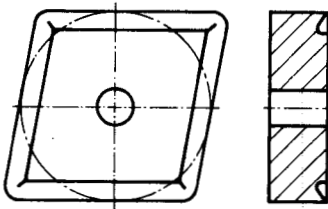
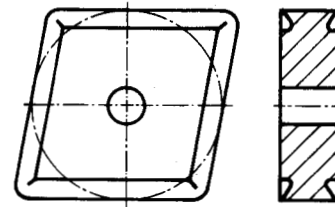
CNMA
without chip breakersCNMM
with chip breakers
on one face onlyCNMG
with chip breakers
on both faces

Table 4 — Dimensions of rhombic inserts with 80° included angle

Values in millimetres

Insert			l ≈	d 1)	s 1)	m_1 1)	m_2 1)	r_ϵ ± 0,10	d_1 ± 0,08
—	—	CNMG120404	12,9	12,70	4,76	3,308	1,818	0,4	5,16
CNMA120408	CNMM120408	CNMG120408				3,088	1,697	0,8	
CNMA120412	CNMM120412	CNMG120412				2,867	1,576	1,2	
—	CNMM160608	CNMG160608	16,1	15,875	6,35	3,970	2,182	0,8	6,35
—	CNMM160612	CNMG160612				3,749	2,061	1,2	
—	—	CNMG190608	19,3	19,05	6,35	4,852	2,667	0,8	7,94
CNMA190612	CNMM190612	CNMG190612				4,632	2,545	1,2	
CNMA190616	CNMM190616	CNMG190616				4,411	2,424	1,6	

1) Tolerances in accordance with ISO 1832. See annex A.