

Garant
**High-precision solid carbide countersink with unequal spacing 90°, TiAlN,
External Ø Dc: 20,5mm**

Order data

Order number	150388 20,5
GTIN	4045197745606
Item class	11M

Description
Version:

All countersinks have 3 cutting edges. Special geometry with extremely unequal spacing and matching cutting edge preparation. Radially relief ground. Flutes ground from solid. Newly developed **special TiAlN coating** for long service life.

High-precision countersink, produced with tight manufacturing tolerances similar to DIN 335-C.

Advantage:

Very smooth cutting throughout the entire countersinking operation. Chatter-free running for perfect results and **optimum tool service life.**

Application:

High-precision countersinks for production of exactly round 90° countersunk surfaces. Very well suited to virtually all materials. Advantage in comparison to HSS countersinks especially in the field of high-tensile steels and because the working life is several times longer. **Shank tolerance h6** - suitable for mounting in hydraulic chucks or shrink-fit chucks.

Technical description

for countersunk screws DIN 7991	M10
smallest countersink Ø for holes from	3.5 mm
Number of cutting edges Z	3
Shank Ø D _s	10 mm
Overall length L	63 mm

External Ø	20.5 mm
Feed f in steel < 1100 N/mm ²	0.2 mm/rev.
Coating	TiAlN
Countersink tip angle	90 degrees
Tool material	Solid carbide
Spacing of the countersink cutting edges	unequal spacing
Standard	DIN 335 C
Shank	Plain shank with h6
Through-coolant	no
Colour ring	green
Type of product	Stepped drill and countersink

User data

	Suitability	V _c	ISO code
Alu plastics	suitable	80 m/min	N
Aluminium (short chipping)	suitable	80 m/min	N
Alu > 10% Si	suitable	60 m/min	N
Steel < 500 N/mm ²	suitable	65 m/min	P
Steel < 750 N/mm ²	suitable	60 m/min	P
Steel < 900 N/mm ²	suitable	50 m/min	P
Steel < 1100 N/mm ²	suitable	40 m/min	P
Steel < 1400 N/mm ²	suitable	10 m/min	P
Steel < 55 HRC	suitable	12 m/min	H
INOX < 900 N/mm ²	suitable	25 m/min	M
INOX > 900 N/mm ²	suitable	20 m/min	M
Ti > 850 N/mm ²	suitable	15 m/min	S
GG(G)	suitable	35 m/min	K
CuZn	suitable	70 m/min	N

Graphite, GRP, CRP	suitable only under restricted conditions
Uni	suitable
wet maximum	suitable
wet minimum	suitable
Air	suitable only under restricted conditions