

**Garant**
**High-precision countersink, long 90°, TiAlN, External Ø Dc: 20,5mm**

**Order data**

Order number	150377 20,5
GTIN	4045197868022
Item class	11M

**Description**
**Version:**

**All countersinks have 3 cutting edges**, radially relief ground. Flutes ground from solid. High-precision countersink, produced to tight manufacturing tolerances similar to DIN335-C, **with long plain shank.**

**Special geometry with extremely unequal spacing** and matching cutting edge preparation. Newly developed, **special TiAlN coating** for long tool life.

**Application:**

High-precision countersinks for chatter-free production of **precise, round 90° countersunk surfaces.**

**Technical description**

External Ø	20.5 mm
smallest countersink Ø for holes from	3.5 mm
for countersunk screws DIN 7991	M10
Shank Ø D <sub>s</sub>	10 mm
Overall length L	114 mm
Pre-drill Ø	3.5 mm
Shank tolerance	h9
Number of cutting edges Z	3
Feed f in steel < 500 N/mm <sup>2</sup>	0.22 mm/rev.

Coating	TiAlN
Countersink tip angle	90 degrees
Tool material	HSS
Spacing of the countersink cutting edges	unequal spacing
Standard	Manufacturer's standard
Shank	Parallel shank to h9
Through-coolant	no
Colour ring	green
Type of product	Stepped drill and countersink

### User data

	Suitability	$V_c$	ISO code
Alu plastics	suitable	75 m/min	N
Aluminium (short chipping)	suitable	75 m/min	N
Alu > 10% Si	suitable	50 m/min	N
Steel < 500 N/mm <sup>2</sup>	suitable	65 m/min	P
Steel < 750 N/mm <sup>2</sup>	suitable	50 m/min	P
Steel < 900 N/mm <sup>2</sup>	suitable	30 m/min	P
Steel < 1100 N/mm <sup>2</sup>	suitable	18 m/min	P
Steel < 1400 N/mm <sup>2</sup>	suitable	8 m/min	P
Steel < 55 HRC	suitable only under restricted conditions	8 m/min	H
INOX < 900 N/mm <sup>2</sup>	suitable	16 m/min	M
INOX > 900 N/mm <sup>2</sup>	suitable	10 m/min	M
Ti > 850 N/mm <sup>2</sup>	suitable only under restricted conditions	12 m/min	S
GG(G)	suitable	25 m/min	K
CuZn	suitable	60 m/min	N

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