

**Garant**
**Roughing end mill HSS-PM, TiAlN, Ø DC: 20mm**

**Order data**

Order number	192925 20
GTIN	4067263118855
Item class	11W

**Description**
**Version:**
**Relief ground fine pitch knuckle form profile.**

Centre cutting teeth for plunging.

For the most demanding metal removal rates.

**Advantage:**

Excellent results when milling dry.

**Technical description**

Overall length L	141 mm
No. of teeth Z	4
Feed $f_z$ for side milling in steel < 900 N/mm <sup>2</sup>	0.046 mm
Tolerance nominal Ø	k12
Flute length $L_c$	75 mm
Cutting edge Ø $D_c$	20 mm
Helix angle	30 degrees
Corner chamfer width at 45°	0.5 mm
Shank Ø $D_s$	20 mm
Corner chamfer angle	45 degrees
Shank	DIN 1835 B to h6
Direction of infeed	horizontal, oblique and vertical

Coating	TiAlN
Tool material	HSS PM
Standard	DIN 844
Milling profile	HR
Cutting width $a_e$ for milling operation	0.15×D for side milling
Through-coolant	no
Colour ring	without
Type of product	End / face mill

### User data

	Suitability	$V_c$	ISO code
Aluminium (short chipping)	suitable only under restricted conditions	138 m/min	N
Alu > 10% Si	suitable only under restricted conditions	110 m/min	N
Steel < 500 N/mm <sup>2</sup>	suitable	83 m/min	P
Steel < 750 N/mm <sup>2</sup>	suitable	64 m/min	P
Steel < 900 N/mm <sup>2</sup>	suitable	64 m/min	P
Steel < 1100 N/mm <sup>2</sup>	suitable	37 m/min	P
Steel < 1400 N/mm <sup>2</sup>	suitable	32 m/min	P
INOX < 900 N/mm <sup>2</sup>	suitable	23 m/min	M
INOX > 900 N/mm <sup>2</sup>	suitable only under restricted conditions	18 m/min	M
GG(G)	suitable only under restricted conditions	55 m/min	K
CuZn	suitable only under restricted conditions	110 m/min	N
Uni	suitable		
wet maximum	suitable		
dry	suitable		

