

**Garant**
**Roughing end mill HSS-Co8, TiAlN, Ø k12 DC: 13mm**

**Order data**

Order number	192610 13
GTIN	4067263291107
Item class	11W

**Description**
**Version:**

**With relief ground knuckle profile.** The wide teeth lands permit multiple re-grinding without losing the profile.

End face geometry for plunging and unequal spacing of the teeth.

**Technical description**

Corner chamfer angle	45 degrees
Flute length $L_c$	53 mm
Tolerance nominal $\varnothing$	k12
Overall length $L$	110 mm
Corner chamfer width at 45°	0.5 mm
Feed $f_z$ for side milling in steel < 750 N/mm <sup>2</sup>	0.029 mm
Helix angle	30 degrees
Direction of infeed	horizontal, oblique and vertical
No. of teeth $Z$	4
Cutting edge $\varnothing D_c$	13 mm
Shank	DIN 1835 B to h6
Shank $\varnothing D_s$	12 mm
Coating	TiAlN
Tool material	HSS Co 8

Standard	DIN 844 B
Milling profile	NR
Spacing of the cutters	unequal spacing
Cutting width $a_e$ for milling operation	$0.15 \times D$ 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	100 m/min	N
Steel < 500 N/mm <sup>2</sup>	suitable	60 m/min	P
Steel < 750 N/mm <sup>2</sup>	suitable	45 m/min	P
Steel < 900 N/mm <sup>2</sup>	suitable	45 m/min	P
INOX < 900 N/mm <sup>2</sup>	suitable	13 m/min	M
INOX > 900 N/mm <sup>2</sup>	suitable only under restricted conditions	11 m/min	M
GG(G)	suitable only under restricted conditions	36 m/min	K
CuZn	suitable only under restricted conditions	73 m/min	N
Uni	suitable		
wet maximum	suitable		
dry	suitable only under restricted conditions		