DATUM

STELLRAM™

NL37 Nitro-Lok™ Ultra

FEATURES & BENEFITS

- NL37 Nitro-Lok™ Ultra, the ultimate grade for high speed machining of steel and steel alloys.
- NL37 is our latest addition to the NL grade range that combines a unique substrate/ coating combination, using an advanced processing technique to deliver unmatched

PERFORMANCE BENEFITS

- Improved Tool Life – NL37's capability to resist heat and abrasion can increase tool life by as much as 200%.
- Reduced Component Costs – Cutting speeds can be increased by up to 30% to reduce cycle times.
- Better Machine Productivity – NL37 requires less frequent tool changes providing up to 100% improvement in machine run time.
- Higher Quality, Lower Scrap – NL37 resists edge breakdown, providing consistent surface finishes and maintaining dimensional tolerances.
- Lower Environmental Cost – NL37 can be used without coolant reducing disposal costs.
- Reduced Processing – NL37 can be used (under stable conditions) to machine hardened steels from 52 HRc to 56 HRc and at cutting speeds up to 65 meters per minute, eliminating the need for further costly material processes.

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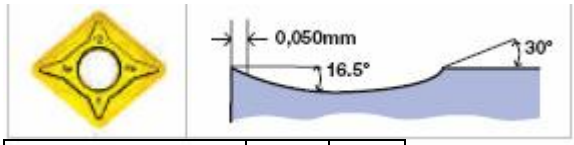
Insert Geometries

- 3M Geometry New

Semi – Finishing to Light Roughing: All purpose geometry suitable for precision forged and cast components, offering excellent chip control at varying depths of cut.

Profile

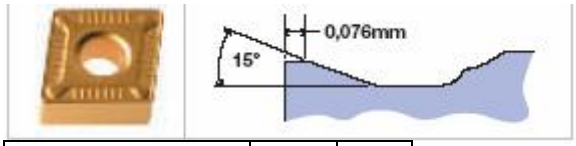


	Max	Min
Depth of cut (mm)	4,0	0,75
Feed (mm/rev)	0,40	0,12

- 3G Geometry

Medium to light roughing: A versatile geometry used at light depths of cuts and feed rates for trouble free machining, available in negative and positive geometries.

Profile

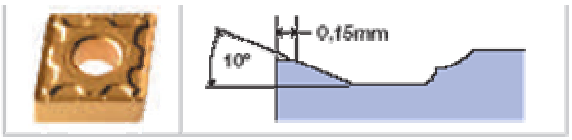


	Max	Min
Depth of cut (mm)	3,50	0,80
Feed (mm/rev)	0,35	0,20

- 2N Geometry

Medium Roughing: Universal geometry design to reduce cutting pressure in a variety of materials, offering good chip control over a wide range of cutting conditions and components.

Profile

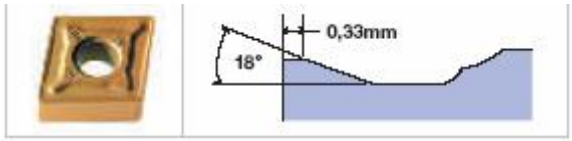


	Max	Min
Depth of cut (mm)	4,00	1,00
Feed (mm/rev)	0,45	0,15

- 4T Geometry

Roughing: The heavier edge condition of the 4T chip breaker lends itself to more demanding operations, for example; interrupted machining where the extra edge strength is needed.

Profile



	Max	Min
Depth of cut (mm)	5,00	1,20
Feed (mm/rev)	0,50	0,23

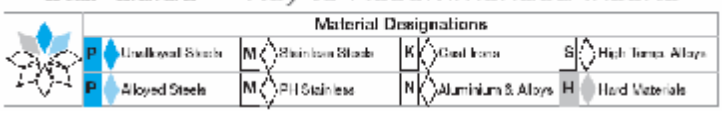
Cutting Speed m/min			Max—Min	
ISO	Family Material	R_m and Hardness	NL37	
P	Unalloyed Steels	600 N/mm^2 180HBN	425	160
		950 N/mm^2 280HBN	275	100
	Alloyed Steels	700 - 950 N/mm^2 200-280HBN	250	95
		950—1200 N/mm^2 280-355HBN	215	85
		1200—1400 N/mm^2 355-415HBN	120	60
H	Hard Steel	>1400 N/mm^2 >415HBN	65	45
	Chilled Cast Iron	1400 N/mm^2 400HBN	60	45

FIELD TEST

Customer increases production capacity by 60 hours. NL37 runs in continuous cut for 3 hours per edge, reducing the batch time for 150 parts by 60 hours

Component:	Forged shaft, 1 metre long x 270 mm diameter
Operation:	Turn face, profile outside and inside diameters with one tool
Material:	Steel 90Mn4 (1.1273)
Hardness:	HRc 32 – 36
Insert:	CNMG120412E-4T
Grade:	NL37 Ultra
Machine:	CNC Lathe
Cutting data:	Before **After**
Vc (m/min):	180 m/min **220 m/min**
Feed fn (mm/rev):	0,45mm **0,50mm**
D.O.C. (mm):	3,0mm **3,0mm**

Star Guide Key to Recommended Inserts



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