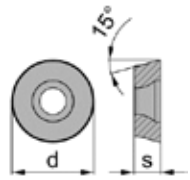
NEW ROUND INSERTS FOR STEEL CHIPPING

- A new generation of hard metals with a PCSR coating
- A tough base substrate for greater process reliability
- A thicker coating for longer tool lives as a result of increased wear volumes and increased holding strength
- Optimized post-treatment for a smoother surface layer leads to reduced friction and less temperature development
- Cost savings for customers
- New packaging with details concerning cutting data, the torque and accessories

Round inserts	Catalogue No.	DIN Specification	Carbide Grade	Coating	d	s	r	M
	02 10 8042	RDEX 1003 M0T	P 40	PCSR	10	3.18	5	M 3.5
	03 12 8042K	RDEX 12T3 M0T	P 40	PCSR	12	3.97	6	M 3.5
	04 16 8042	RDEX 1604 M0T	P 40	PCSR	16	4.76	8	M 4.5

Material to be machined: 1.2738

Inserts:	Round insert 04 16 842	New round insert 04 16 8042
Milling cutter body	80 300/7	80 300/7
Arbor	50 27 710	50 27 710
Cooling	Air	Air
Insert	**04 16 842**	**04 16 8042**
Carbide grade / Coating	PVSR	PCSR
v_c [m/min]	163	163
v_f [mm/min]	2000	2000
n(s) [min^{-1}]	650	650
d_c [mm]	80	80
f_z [mm]	0.51	0.51
a_p [mm]	2.0	2.0
a_e [mm]	64	64
Tool life [min]	**65**	**100**
Stock removal rate [cm^3/min]	256	256
Chip removal volume [cm^3]	**16.640**	**25.600 (+54%)**

Comparative photos of wear and tear

04 16 842 after 65 min of use

04 16 8042 after 100 min of use

The outcome could not be more apparent: with absolutely identical parameters, the tool life of the cutting insert and the chip removal volume increases by 54 %. A clear cost advantage and competitive advantage for users.

TECHNICAL INFORMATION

Cutting speed (V_c in m/min) | Feed per tooth (f_z in mm/tooth) | d.o.c. (a_p in mm)

Radius (r mm)	Dia-meter (d mm)	Material		Application*	V_c (m/min)		f_z (mm/tooth)		a_p (mm)	
		Major group	Miinor group		min	max	min	max	min	max
5	10	Steel	Free machining steel / Mild steel	**roughing**	**150**	**250**	**0.6**	**1**	**0.85**	**1.5**
				pre-finishing	**180**	**300**	**0.2**	**0.6**	**0.2**	**0.85**
			Normal tool steel / Steel castings	**roughing**	**130**	**220**	**0.45**	**0.9**	**0.85**	**1.35**
				pre-finishing	**150**	**250**	**0.2**	**0.45**	**0.2**	**0.8**
			Tool steel and steel castings, both difficult to machine	**roughing**	**140**	**180**	**0.3**	**0.8**	**0.85**	**1.2**
				pre-finishing	**150**	**220**	**0.2**	**0.45**	**0.2**	**0.75**
		Cast Iron	Grey Cast Iron	*roughing*	*160*	*220*	*0.5*	*0.8*	*0.7*	*1.2*
				pre-finishing	*190*	*250*	*0.3*	*0.6*	*0.4*	*0.9*
				finishing	*200*	*280*	*0.15*	*0.4*	*0.1*	*0.6*
			Spheroidal Graphite	*roughing*	*140*	*200*	*0.4*	*0.7*	*0.5*	*1*
				pre-finishing	*170*	*230*	*0.2*	*0.5*	*0.2*	*0.7*
				finishing	*200*	*260*	*0.1*	*0.3*	*0.1*	*0.4*
			Tempered Castings	*roughing*	*120*	*180*	*0.3*	*0.6*	*0.3*	*0.8*
				pre-finishing	*150*	*200*	*0.1*	*0.4*	*0.1*	*0.5*
				finishing	*180*	*220*	*0.1*	*0.2*	*0.1*	*0.2*
6	12	Steel	Free machining steel / Mild steel	**roughing**	**150**	**250**	**0.6**	**1**	**1.1**	**2**
				pre-finishing	**180**	**300**	**0.2**	**0.6**	**0.2**	**1.1**
			Normal tool steel / Steel castings	**roughing**	**130**	**220**	**0.5**	**0.9**	**1**	**1.8**
				pre-finishing	**150**	**250**	**0.2**	**0.5**	**0.2**	**0.9**
			Tool steel and steel castings, both difficult to machine	**roughing**	**140**	**180**	**0.5**	**0.8**	**0.9**	**1.6**
				pre-finishing	**150**	**220**	**0.2**	**0.5**	**0.2**	**0.8**
		Cast Iron	Grey Cast Iron	*roughing*	*160*	*220*	*0.5*	*1*	*0.8*	*1.5*
				pre-finishing	*190*	*250*	*0.2*	*0.6*	*0.6*	*1.2*
				finishing	*200*	*280*	*0.15*	*0.25*	*0.2*	*0.7*
			Spheroidal Graphite	*roughing*	*140*	*200*	*0.45*	*0.9*	*0.8*	*1.2*
				pre-finishing	*170*	*230*	*0.15*	*0.5*	*0.4*	*0.9*
				finishing	*200*	*260*	*0.15*	*0.25*	*0.2*	*0.5*
			Tempered Castings	*roughing*	*120*	*180*	*0.4*	*0.75*	*0.8*	*0.9*
				pre-finishing	*150*	*200*	*0.15*	*0.45*	*0.4*	*0.6*
				finishing	*180*	*220*	*0.15*	*0.25*	*0.2*	*0.4*
8	16	Steel	Free machining steel / Mild steel	**roughing**	**150**	**250**	**0.65**	**1**	**1.5**	**3**
				pre-finishing	**180**	**300**	**0.25**	**0.65**	**0.25**	**1.6**
			Normal tool steel / Steel castings	**roughing**	**130**	**220**	**0.55**	**0.9**	**1.3**	**2.7**
				pre-finishing	**150**	**250**	**0.25**	**0.55**	**0.25**	**1.4**
			Tool steel and steel castings, both difficult to machine	**roughing**	**140**	**180**	**0.5**	**0.8**	**1.1**	**2.4**
				pre-finishing	**150**	**220**	**0.25**	**0.5**	**0.25**	**1.2**
		Cast Iron	Grey Cast Iron	*roughing*	*160*	*220*	*0.6*	*1*	*1.5*	*3*
				pre-finishing	*190*	*250*	*0.3*	*0.7*	*0.7*	*1.6*
				finishing	*200*	*280*	*0.25*	*0.4*	*0.25*	*0.8*
			Spheroidal Graphite	*roughing*	*140*	*200*	*0.55*	*0.9*	*1.3*	*2.7*
				pre-finishing	*170*	*230*	*0.3*	*0.65*	*0.6*	*1.4*
				finishing	*200*	*260*	*0.25*	*0.4*	*0.25*	*0.7*
			Tempered Castings	*roughing*	*120*	*180*	*0.5*	*0.8*	*1.1*	*2.4*
				pre-finishing	*150*	*200*	*0.25*	*0.6*	*0.5*	*1.2*
				finishing	*180*	*220*	*0.25*	*0.35*	*0.25*	*0.6*

*** major application** *minor application*

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