

DORMER PRAMET

NEW PRODUCTS

2023.1





T9415

NEW GENERATION MT-CVD GRADE



SON06C

**ECONOMICAL 16-EDGE
FACE MILLING**

SLN12X

**PRODUCTIVE TANGENTIAL
SHOULDER MILLING**





DORMER PRAMET



ON TOP OF EFFICIENCY

T9415 | Our most advanced steel turning grade
verified by customers.



www.dormerpramet.com/T9415

PRAMET



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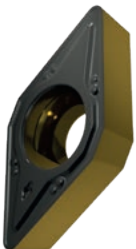
T9415

NEW GENERATION MT-CVD GRADE

INTRODUCTION

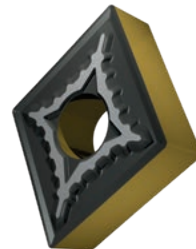


A new generation turning grade has been introduced offering one of the highest levels of productivity and versatility in the market today. The T9415 is our most advanced MT-CVD grade, bringing greater stability and performance in various cutting conditions. It covers a broad application range, replacing our previous T9310 and T9315 grades. In addition, it also partly overlaps with grade T9325, making T9415 the first choice for steel turning.



T9415

- Positive inserts
- Steels, cast irons, hard steels



T9415

- Negative inserts
- Steels, cast irons, hard steels

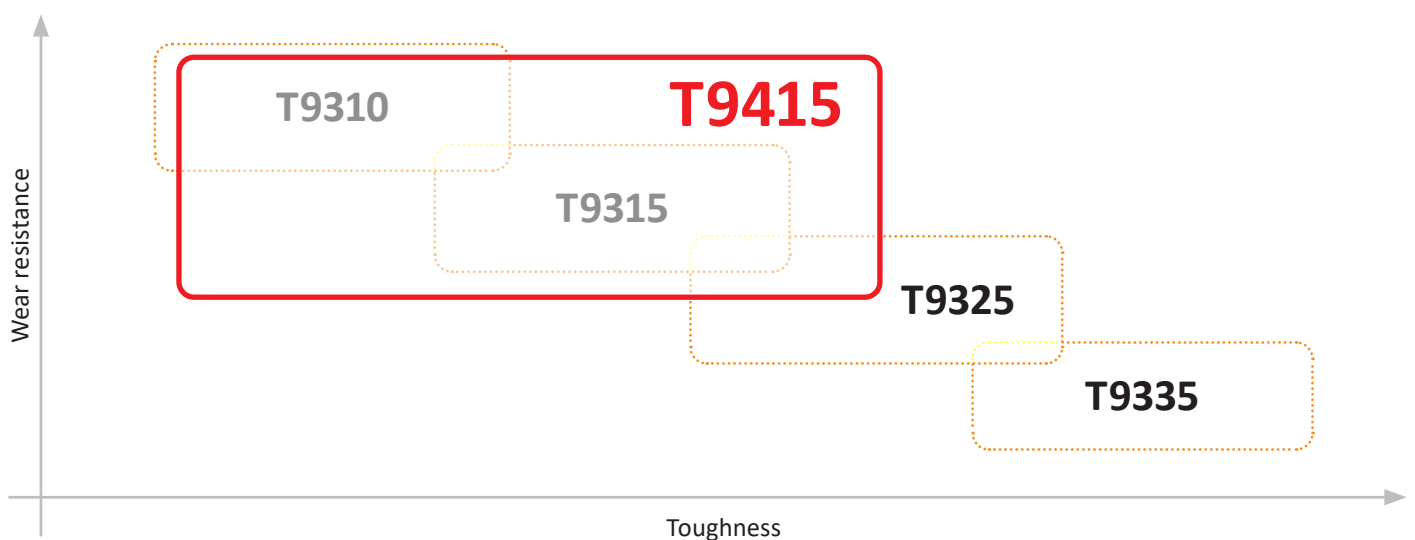


TURNING INSERTS

FEATURES & BENEFITS

- Greatly improved application range. **FIRST CHOICE GRADE**
for various steel (ISO-P) turning.
- New MT-CVD coating is 30 % thicker resulting in greater resistance to flank wear, crater wear and plastic deformation. **TOOL LIFE AND PRODUCTIVITY**
significantly increased compared to previous grades.
- Newly developed post-treatment process reinforces stability of cutting edge. **IMPROVED RELIABILITY,**
especially in unstable conditions.
- Inserts produced on state-of-the-art electronic presses. **HIGH PRECISION**
improves indexing accuracy and reduces idle time.
- Optimized cutting-edge geometry. **REDUCED CUTTING FORCES**
and enhanced performance.
- Insert seating face ground after coating provides larger contact area and enhances heat transfer away from the cutting zone. **BETTER SEATING STABILITY**
and improved overall tool life.
- Manufactured using the latest technologies. **SUSTAINABLE**
and environmentally friendly offer.
- TiN coated gold colored insert flanks. **EASIER WEAR DETECTION.**

APPLICATION AREA OF MT-CVD TURNING GRADES

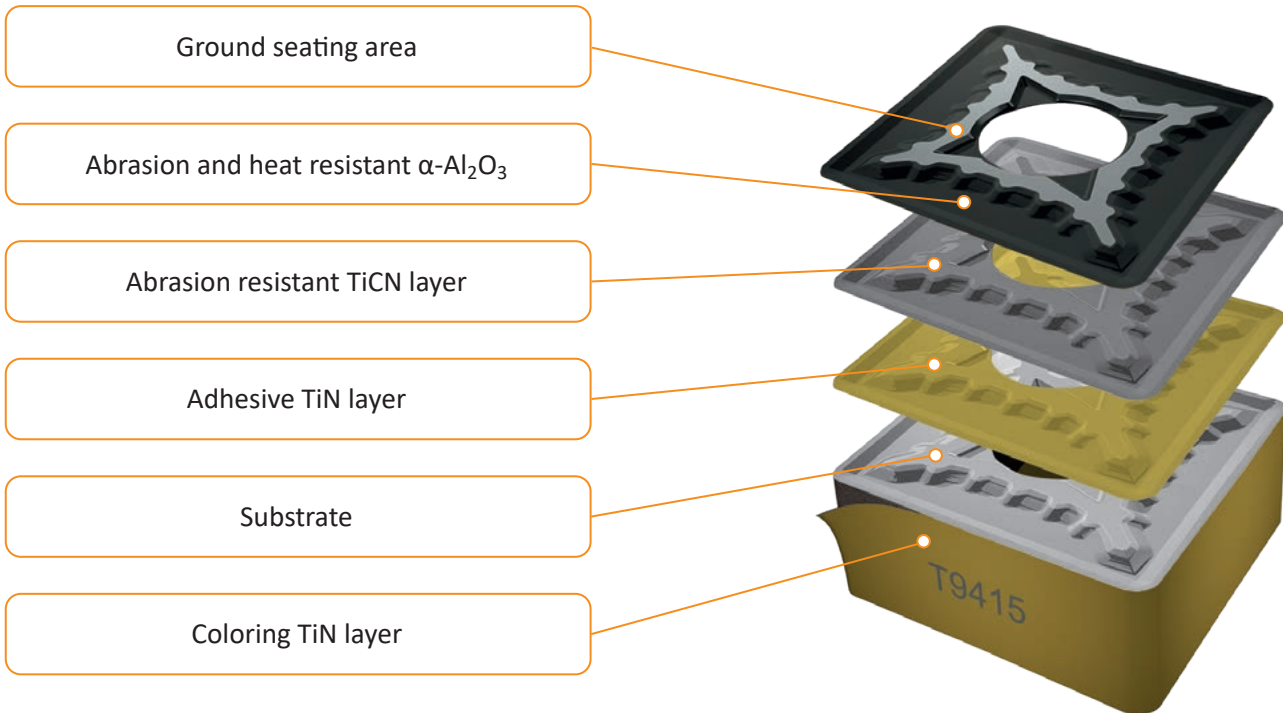




T9415

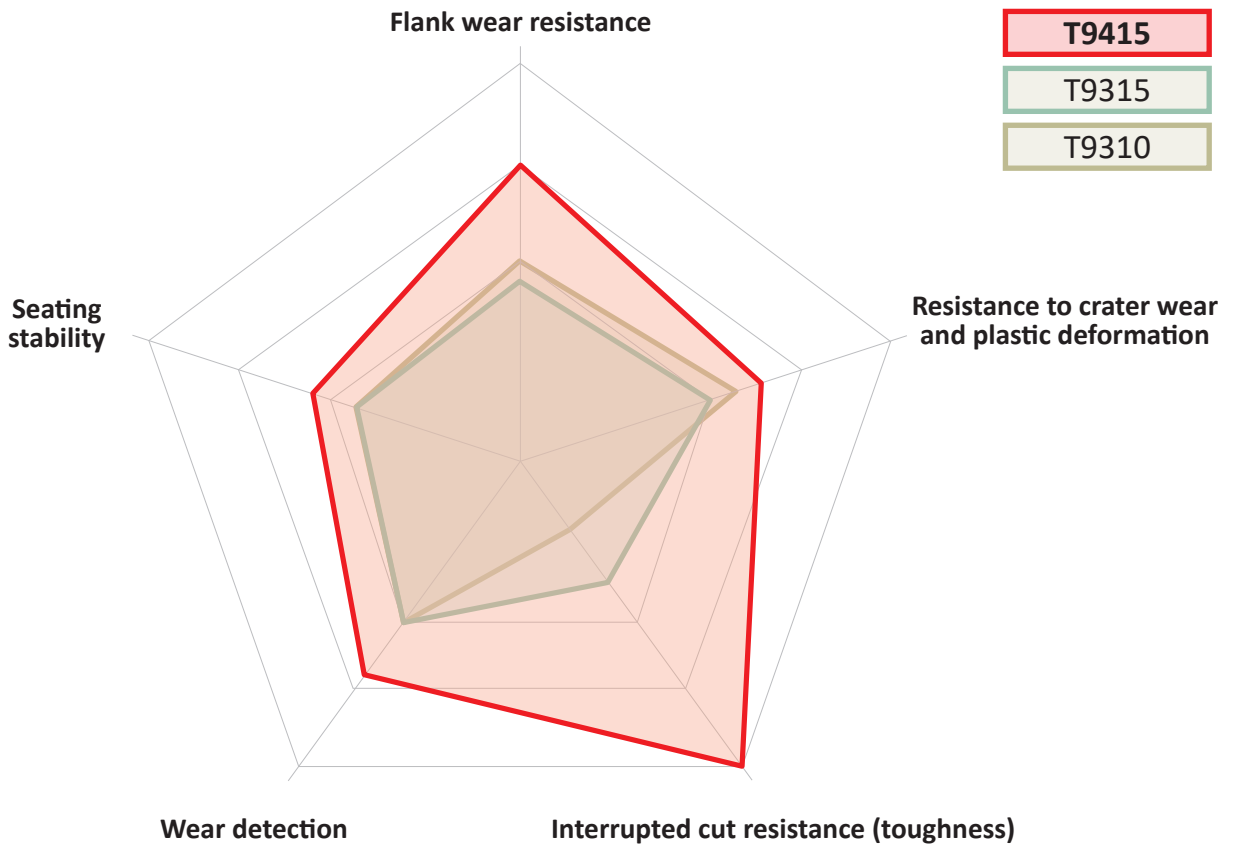
NEW GENERATION MT-CVD GRADE

GRADE COMPOSITION



New CVD coating is 30 % thicker compared to previous grade.

FEATURES SPIDER DIAGRAM





TURNING INSERTS

MACHINING EXAMPLES

Material: C45 (Medium carbon steel)
 Machining: Continuous cut
 Application: Longitudinal turning
 Coolant: Yes

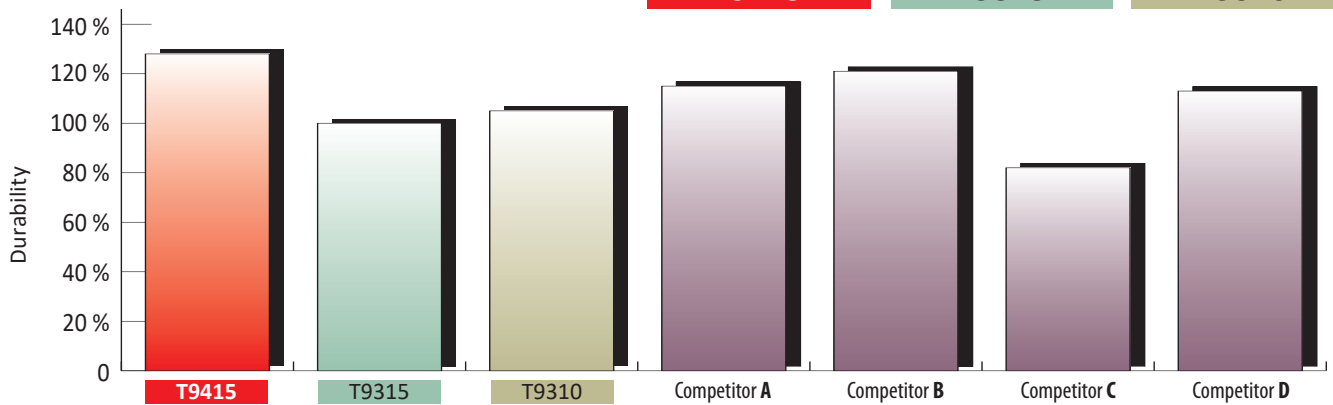
Cutting conditions

v_c	f_n	a_p
984 (300)	.010 (0.25)	.079 (2)

Insert

CNMG 432E-M (CNMG 120408E-M)

Photos from continuous cutting. All taken after 16 minutes.



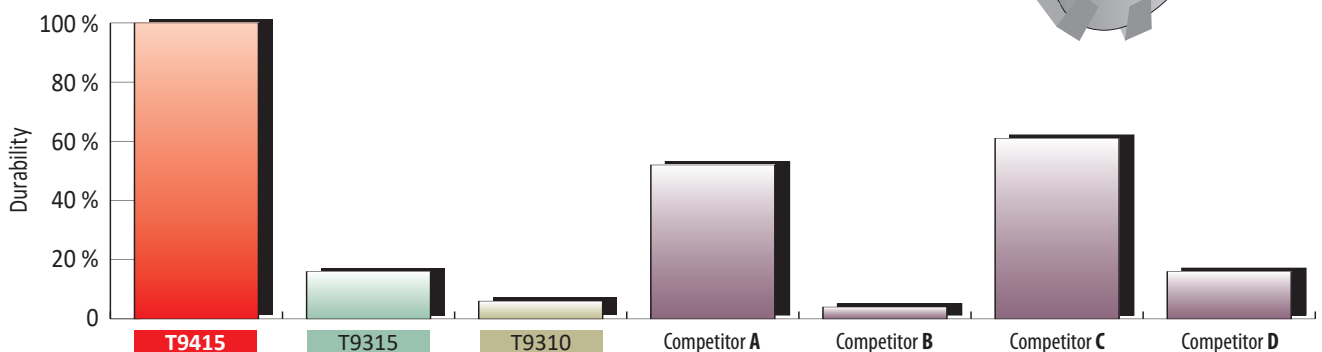
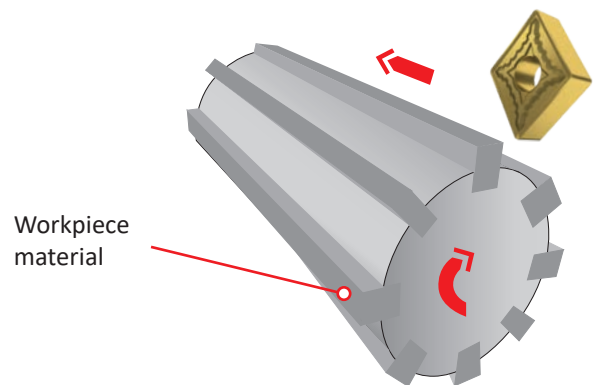
Material: 37Cr4 (Chromium steel)
 Machining: Interrupted cut
 Application: Longitudinal turning
 Coolant: No

Cutting conditions

v_c	f_n	a_p
394 (120)	.008 (0.2)	.038 (1)

Insert

CNMG 432E-M (CNMG 120408E-M)



v_c = cutting speed [sfm (m/min)], f_n = feed per revolution [in/r (mm/r)], a_p = depth of cut [in (mm)]



T9415

NEW GENERATION MT-CVD GRADE

SUCCESS STORIES – T9415

Company: Subcontractor for a leading Brazilian oil and gas company.

Component: Separator ring

Material: SAE 1045 (Carbon Steel)

Hardness: 250 HB

Application: Internal continuous turning. Workpiece is clamped directly into lathe through hydraulic clamping system.

Previous results: With previous competitor insert, five pieces were completed.

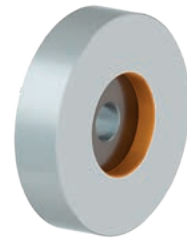
Result with T9415: A total of 10 pieces completed, doubling production.

Dormer Pramet solution

CNMG 433E-RM:T9415 (CNMG 120412E-RM:T9415)

Machining data

v_c	f_n	a_p
820 (250)	.012 (0.3)	.118 (3)



Company: Italian manufacturer of shaft locking devices for the power generation and process industries.

Material: C45N (Medium carbon steel)

Hardness: 172 – 242 HB

Coolant: Yes

Application: External continuous turning, short cuts

Previous result: External turning of part diameter was carried out by a competitor solution. The customer wanted better tool life, while still achieving high quality surface finish.

Result with T9415: Using the new grade resulted in a 20 % increase in tool life, bringing considerable savings to the customer.

Dormer Pramet solution

CNMG 433E-RM:T9415 (CNMG 120412E-RM:T9415)

Machining data

v_c	f_n	a_p
656 (200)	.014 (0.35)	.118 (3)



Company: Industrial valves producer in Italy

Component: Die

Material: DIN 1.2344 (Tool steel)

Hardness: Variable due to faulty heat treatment

Coolant: Yes

Application: Vertical lathe face turning operation with variable hardness of workpiece material.

Previous results: Durability of initial T9325 grade did not resist to the mix of hard and soft cutting conditions. This led to rapid extensive wear of insert and poor surface finish of workpiece.

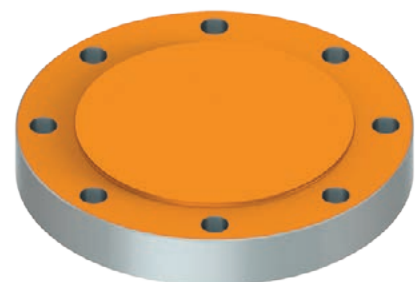
Result with T9415: The grade worked very well in low cutting speed and feed. It provided the best performance in roughing operations. With one cutting edge, a large component with a 2.500 mm diameter was machined.

Dormer Pramet solution

SNMM 866E-RM:T9415 (SNMM 250924-HR:T9415)

Machining data

v_c	f_n	a_p
131 (40)	.020 (0.5)	.315 (8)





TURNING INSERTS

Company: Czech manufacturer of quality precision parts for energy, building and automotive industries.

Component: Double end-stud

Material: 15142 (42CrMo4 alloy structural steel)

Coolant: Yes

Application: External continuous turning of slim workpiece

Previous result: The customer used a previous generation turning grade which completed three pieces per cutting edge.

Result with T9415: Applying the new grade, the customer was able to machine at a higher speed and completed six pieces with one cutting edge. This not only significantly increased productivity, but also doubled the life of the cutting tool.

Dormer Pramet solution		
TNMG 332-SM:T9415 (TNMG 160408-SM:T9415)		
Machining data		
v_c	f_n	a_p
820 (250)	.016 (0.4)	.118 (3)



Company: Chinese automotive engineering company

Component: Diesel engine balance block

Material: Q235 (plain carbon structural steel)

Hardness: 180 – 230HB

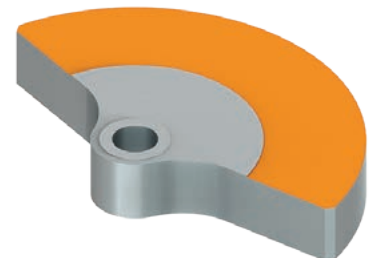
Coolant: No

Application: Heavily interrupted cut

Previous result: The customer used a competitor's grade that produced four pieces per cutting edge. The burrs on the workpiece were limiting the insert lifetime.

Result with T9415: New grade withstood existing cutting conditions, outperforming the previous option. It helped create six pieces with one cutting edge.

Dormer Pramet solution		
CNMG 644-RM:T9415 (CNMG 190616-RM:T9415)		
Machining data		
v_c	f_n	a_p
492 (150)	.014 (0.35)	.024 (0.6)









T9415

NEW GENERATION MT-CVD GRADE

WHAT GRADE TO CHOOSE?

					
	T9415	T9310	T9315	T9325	T9335
High cutting speed, high system rigidity (stable working conditions)				-	-
High cutting speed, system rigidity slightly limited (depth of cut changing)		-			-
Medium cutting speed, system rigidity limited (slightly interrupted cut)		-	-		
Low cutting speed, low system rigidity (interrupted cut)	-	-	-	-	

TECHNICAL INFORMATION

Grade identification	Area of application	Application	Feed	Cutting speed	Resistance to adverse working conditions	Coating	Colour	Substrate	Coolant benefit
T9415	P05 – P30	■				MT-CVD		FGM	++
	K05 – K25	▣							
	H10 – H20	▣							

Grade description:

Highly wear-resistant material designed primarily for finish turning of common carbon and alloy steels. Despite its high abrasion resistance, it is also suitable for interrupted cutting operations. We recommend this material as the first choice for most turning operations, especially in high production applications.



ISO INSERTS POSITIVE – CHIPBREAKER NAVIGATOR

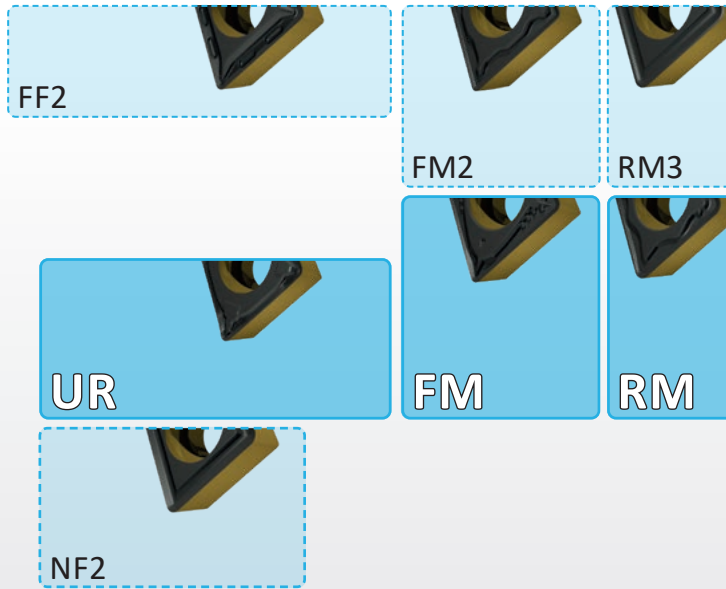
 Very unstable working conditions

 Unstable working conditions

 Stable working conditions

 Thin-walled and slim workpieces

-  1st choice for stable working conditions
-  Variants for different working conditions





ISO INSERTS NEGATIVE – CHIPBREAKER NAVIGATOR

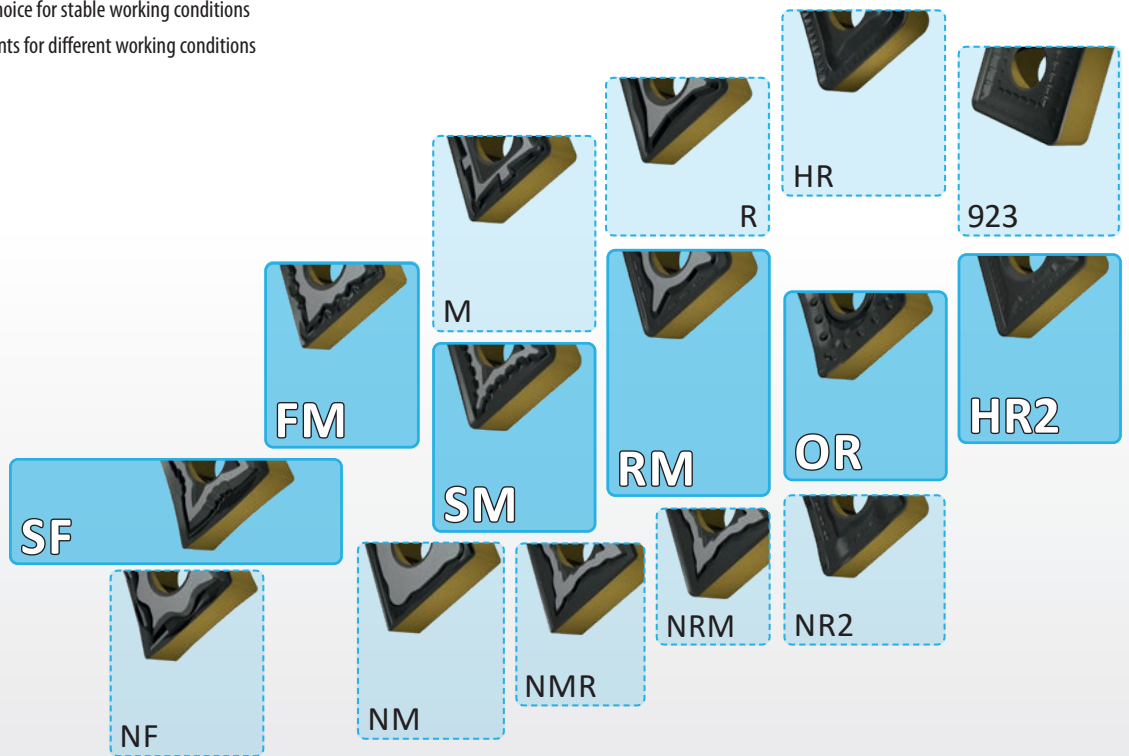
 Very unstable working conditions






 Unstable working conditions

 Stable working conditions

 Thin-walled and slim workpieces

-  1st choice for stable working conditions
-  Variants for different working conditions



					
f in/r (mm/r)	.002 – .008 (0.05 – 0.2)		.008 – .016 (0.2 – 0.4)	.016 – .039 (0.4 – 1.0)	> .039 (> 1.0)
a in (mm)	.002 – .079 (0.05 – 2)		.079 – .157 (2 – 4)	.157 – .394 (4 – 10)	> .394 (> 10)



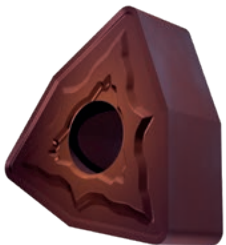
T8430

ADDITIONAL CHIPBREAKERS AND RADII

INTRODUCTION

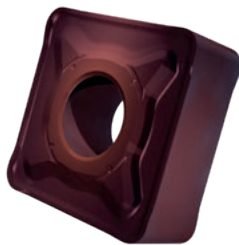


We are expanding the Pramet assortment of our flagship PVD grade T8430 – the most versatile grade for general turning, heavy roughing and unfavourable conditions. Excellent for steel and cast steel, the grade also performs well in stainless steel, cast iron and super alloys. The additions include negative inserts with chipbreakers NMR, NRM and RM, which are now available in bigger corner radii, increasing their application range, performance and tool life in rouging operations.



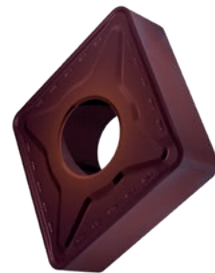
NMR

- Versatile geometry
- Soft steels, stainless steels
- Light to medium cuts



NRM

- Roughing geometry
- Soft steels, stainless steels
- Medium to rough cuts



RM

- Versatile geometry
- Steels, stainless steels, cast irons
- Medium to rough cuts



NEGATIVE TURNING INSERTS

FEATURES & BENEFITS

A multi-layered PVD coating.



VERSATILE

usage for a broad range of operations.

Unique TiBN top layer reduces build-up edge in lower cutting speeds.



TOOL LIFE

greatly improved, especially in steels.

Assortment expanded by bigger radii, increasing roughing capability.



PRODUCTIVITY

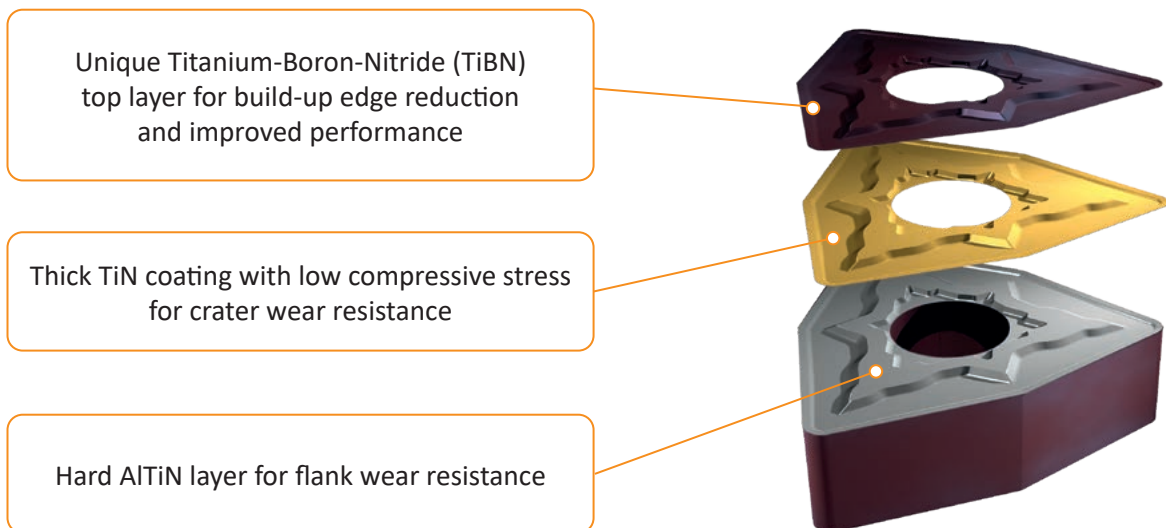
increased due to wider feed rate range.

Shallow geometries NMR, NRM and RM with wide positive T-land.

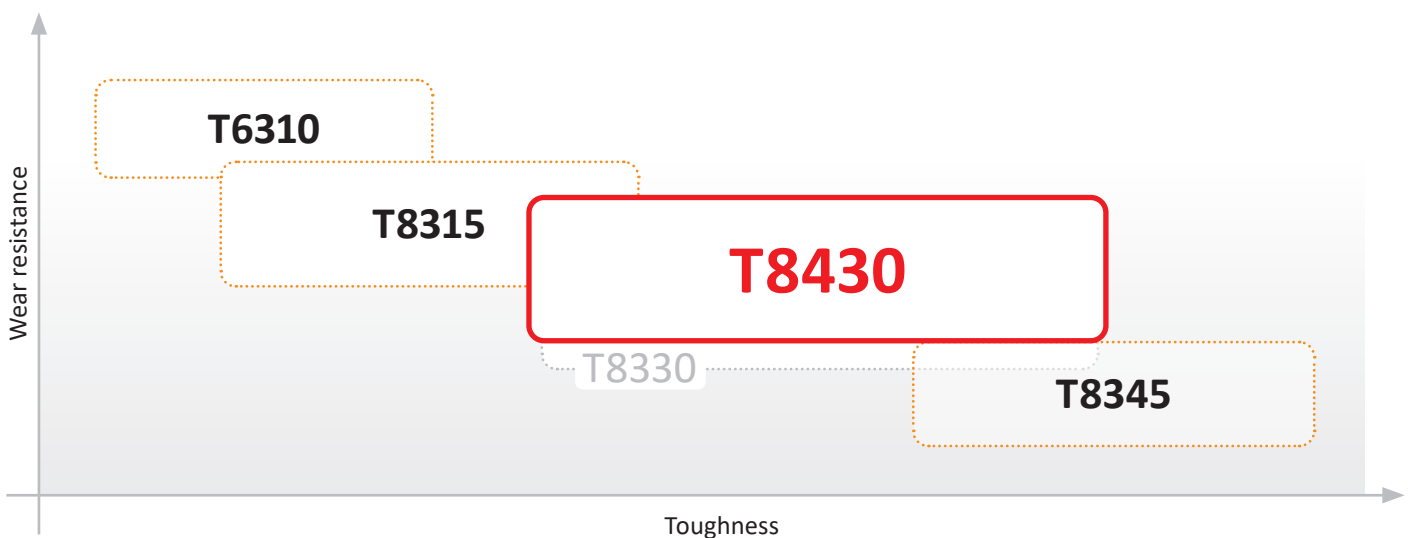


APPLICATION RANGE

expanded for most workpiece materials.



APPLICATION AREA OF PVD TURNING GRADES





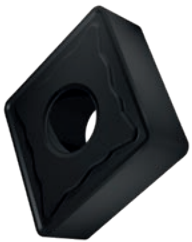
KR

CAST IRON TURNING EXPANSION

INTRODUCTION

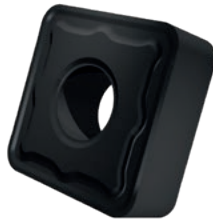


Our family of turning inserts for cast iron and abrasive materials has been expanded with new shapes and radii. All the newly added inserts feature a strong KR chipbreaker with a wide neutral T-land and secure rounding of the cutting edge, in combination with a thick coated MT-CVD T5315 grade.



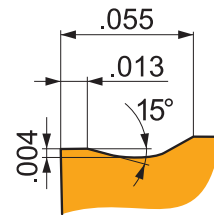
CVMG-KR

- Productive insert
- Cast irons, hard steels
- Medium to rough cuts



SNMG-KR

- Roughing insert
- Cast irons, hard steels
- Medium to rough cuts



KR

- Designed for semi-rough and rough machining, cast irons, potentially steel and hard materials, continuous and interrupted cuts.



NEGATIVE TURNING INSERTS

FEATURES & BENEFITS

Strong geometry KR with wide neutral T-land and rounded cutting edge.



RELIABLE AND SECURE
cutting process in cast iron turning.

Available in MT-CVD grade T5315 with thick TiCN and Al₂O₃ coating layers.



LONG TOOL LIFE
achieved in abrasive materials.

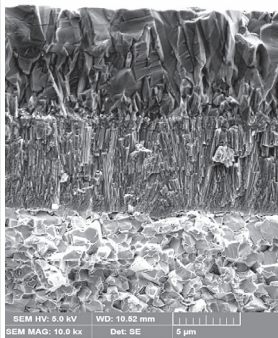
Assortment expanded by bigger radii, increasing roughing capability.



APPLICATION RANGE
expanded for heavier operations.

Stable cutting edge geometry

Thick MT-CVD coating



T5315

- MT-CVD grade
- Thick TiCN and Al₂O₃
- Abrasion resistance



DNMG-KR

- Versatile insert
- Cast irons, hard steels
- Light to rough cuts



TNMG-KR

- Economical insert
- Cast irons, hard steels
- Light to medium cuts



S TYPE

SLIDING HEAD TURNING TOOLS

INTRODUCTION



Small metric external turning tools dedicated for sliding head machines (or swiss type machines) have been added to the Pramet turning range. All tools have C lock ISO clamping style for small CC, DC, TC, VB and VC inserts. This makes them ideal for small parts machining. When a precise functional width is aligned to the shank side (WF = B), then indexing is even more accurate.



SCAC(RL)-S

- External tools for CC.. 09 inserts
- Shank sizes 12 × 12, 16 × 16 mm
- KAPR 90°



SCLC(RL)-S

- External tools for CC.. 09 inserts
- Shank sizes 12 × 12, 16 × 16 mm
- KAPR 95°



SDFC(RL)-S

- External tools for DC.. 07, 11 inserts
- Shank sizes 12 × 12, 16 × 16 mm
- KAPR 91°



SDJC(RL)-S

- External tools for DC.. 07, 11 inserts
- Shank sizes 12 × 12, 16 × 16 mm
- KAPR 93°

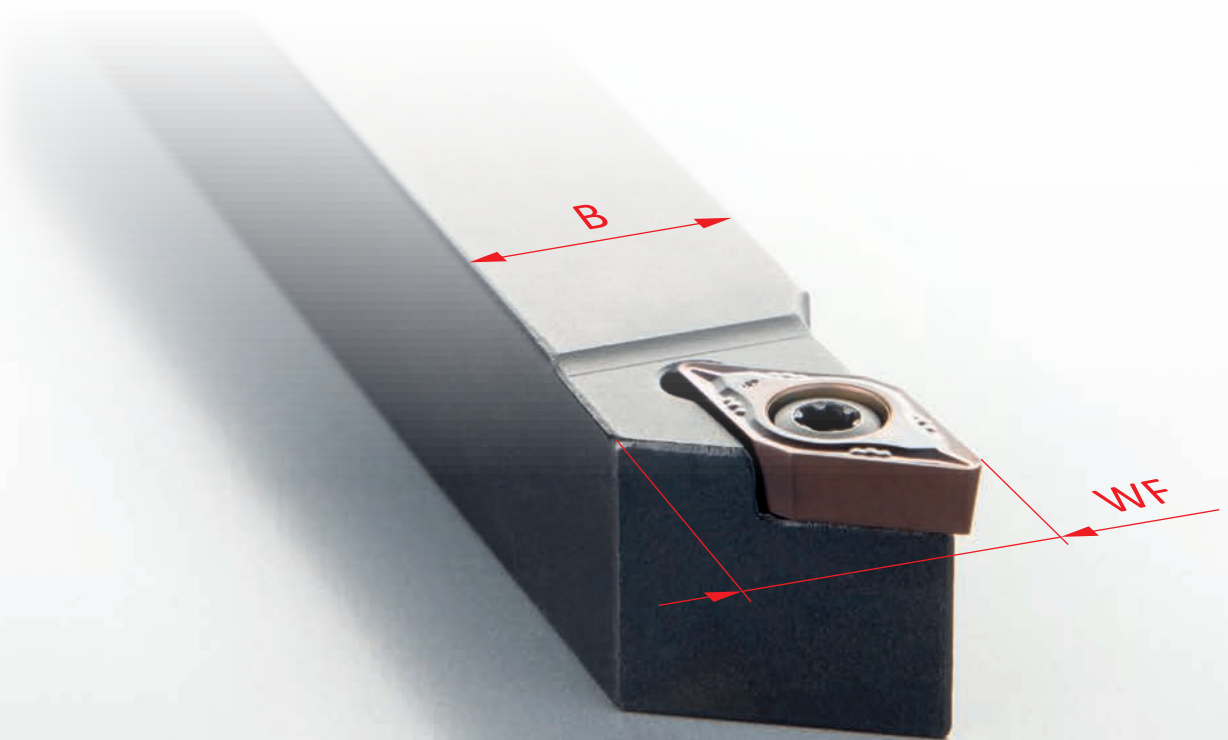


FEATURES & BENEFITS

Specifically designed tools for sliding head machines.



HIGH LEVEL OF PRECISION
when changing tools (where $WF = B$).



SDUCL-S

- External tools for DC.. 07 inserts
- Shank diameters 20 and 30 mm
- KAPR 93°



SDXC(RL)-S

- External tools for DC.. 07, 11 inserts
- Shank sizes 12 × 12, 16 × 16 mm
- KAPR 62.5°



STAC(RL)-S

- External tools for TC.. 11 inserts
- Shank sizes 12 × 12, 16 × 16 mm
- KAPR 91°



SVJB(RL)-S

- External tools for VB.. 11, VC.. 11
- Shank sizes 12 × 12, 16 × 16 mm
- KAPR 93°



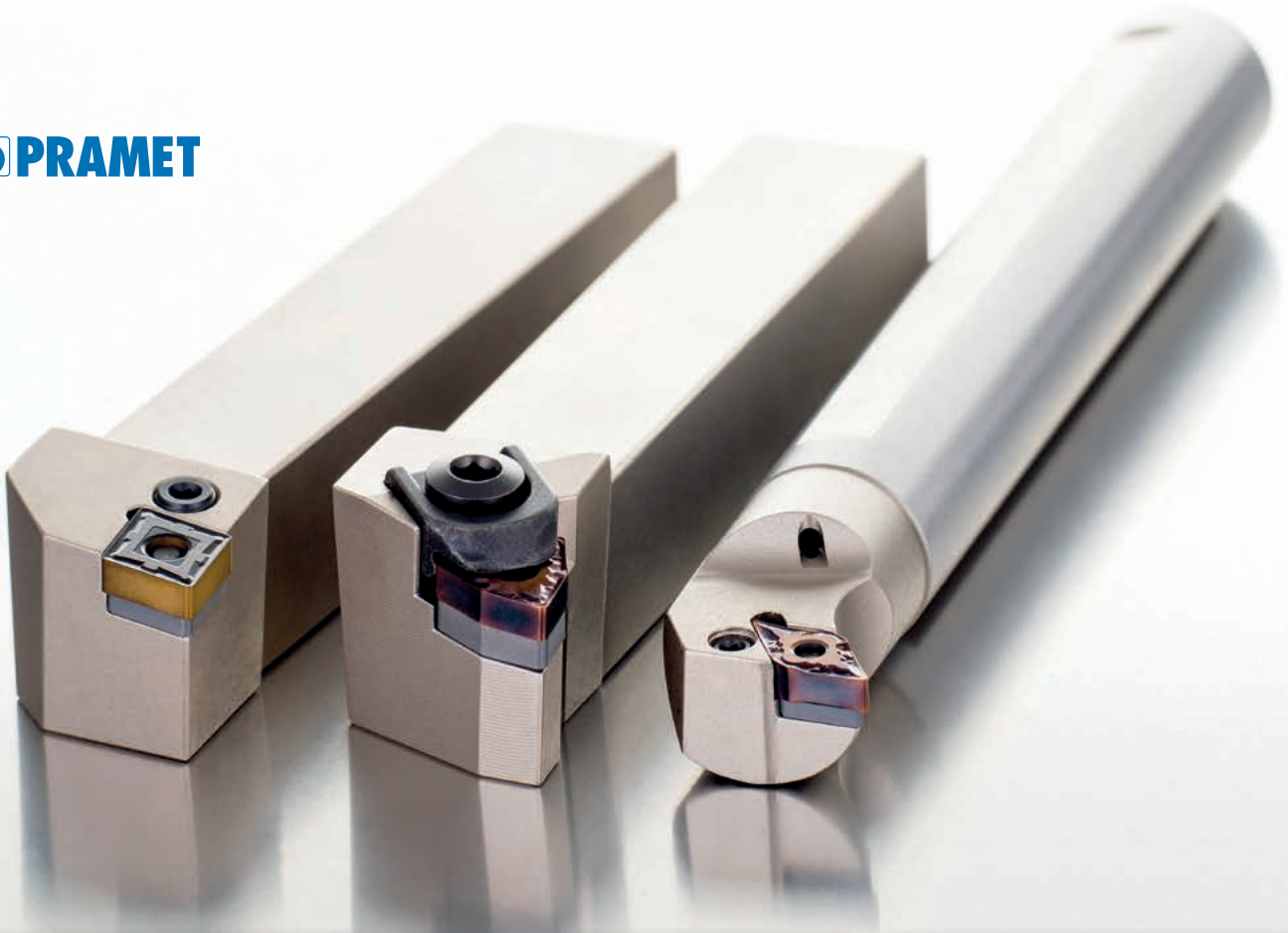
P & M

NEW LINE OF TOOLS FOR NEGATIVE INSERTS

INTRODUCTION



We are introducing a new line of type P (lever clamping style) and type M (wedge top clamping style) turning tools and boring bars with a new design and surface treatment. All holders are now nickelized for higher oxidation and wear resistance. Also, all boring bars have internal coolant channels for longer insert tool life and better chip evacuation. Important note: Some spare parts, dimensions or setting angles can be different than in previously available tools.



P (EXT)

- External tools with lever clamping



M (EXT)

- External tools with wedge top clamp



P (INT)

- Boring bars with lever clamping



FEATURES & BENEFITS

Nickelized tool bodies made of high quality tool steel.



HIGH DURABILITY
and oxidation resistance.

Internal coolant channels in all boring bars.



IMPROVED INSERT TOOL LIFE
due to reduced heat on cutting edge.



Nickelized tools for oxidation protection

Internal coolant channels



SON06C

ECONOMICAL 16-EDGED FACE MILLING

INTRODUCTION



A new highly economical face milling family has been launched. The latest Pramet range includes three variants of a 16-edged ONMX insert for depths of cut up to .157 inch (4 mm). This includes a specific wiper insert ONMX-W for high quality surface finish in high feeds, and two variants of 8-edged roughing insert SNMX for depths of cut up to .276 inch (7 mm). Several geometries and cutters are available for machining a wide range of materials.



ONMX-F

- Economical 16-edged pressed insert
- Steels, stainless steels and HRSA
- Light cuts



ONMX-M

- Economical 16-edged pressed insert
- Steels, hard steels, stainless steels, HRSA
- Medium cuts



ONMX-R

- Economical 16-edged pressed insert
- Steels, cast irons, hard steels
- Rough cuts



MILLING CUTTERS AND INSERTS

INSERTS FEATURES & BENEFITS

Octagonal, directly pressed negative inserts.



16 CUTTING EDGES

for even greater economy and cost saving.

Geometries F, M and R on inserts ONMX.



EASY TO SELECT

a geometry for light, medium or rough cuts.

Optimized combination of grades and geometries.



VERSATILE USE

in wide range of workpiece materials.

Square, directly pressed negative inserts.



8 CUTTING EDGES

insert SNMX for depth of cut up to .276 inch (7 mm).

High depth of cut capability on SNMX inserts.



HIGH METAL REMOVAL RATE

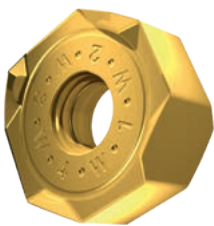
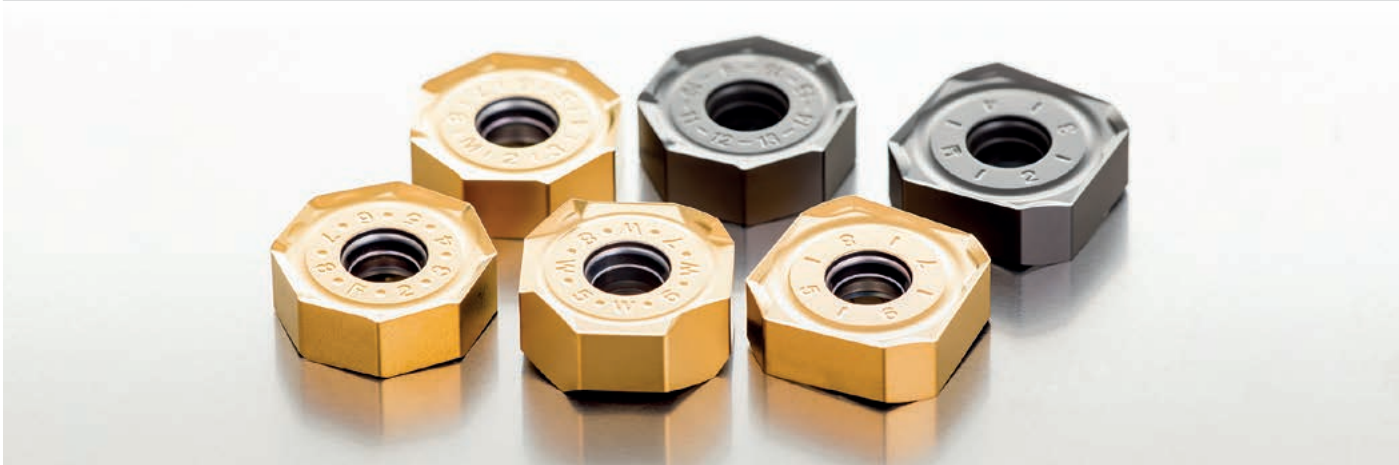
in economical solution.

Additional wiper insert ONMX-W available.



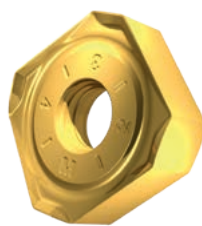
HIGH SURFACE QUALITY

in larger diameter cutters and higher feeds.



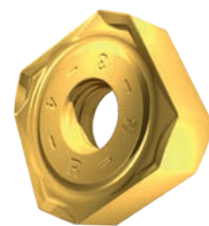
ONMX-W

- Wiper insert
- Steels, stainless steels
- High quality surface finish



SNMX-M

- Economical 8-edged roughing insert
- Steels, hard steels, stainless steels, HRSA
- Medium cuts



SNMX-R

- Economical 8-edged roughing insert
- Steels, cast irons, hard steels
- Rough cuts



SON06C

ECONOMICAL 16-EDGED FACE MILLING

CUTTERS SON06C – FEATURES & BENEFITS

Cutter body made of high quality, nickelized tool steel.



HIGH DURABILITY
of hardened cutter body.

Strong clamping screw and easily accessible hardened insert seat.



SIMPLE AND SAFE
clamping of insert.

Internal coolant on entire assortment, including large-sized diameters.



IMPROVED TOOL LIFE
and better chip evacuation, providing high surface quality and reliability.

Shell type cutters available in wide diameter range and various tooth pitches.



VARIOUS OPTIONS
for a broad range of applications.



SON06C

- Shell body
- DC range
2.00 – 6.00 in
(50 – 250 mm)



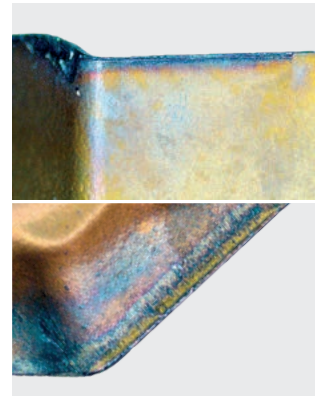
MILLING CUTTERS AND INSERTS

FACE MILLING EXAMPLES

Workpiece: Carbon steel plate (210 HB)
 Material: 1.1191 / C45
 Cutter: 63A06R-S45ON06-C
 Coolant: Compressed air

Cutting conditions			
v_c	f_z	a_p	a_e
820 (250)	.010 (0.25)	.079 (2)	1.969 (50)
Insert geometry test			Tool life (min)
ONMX 060508SR- M :M8330			42

ONMX 060508SR-**M**:M8330, 42 min

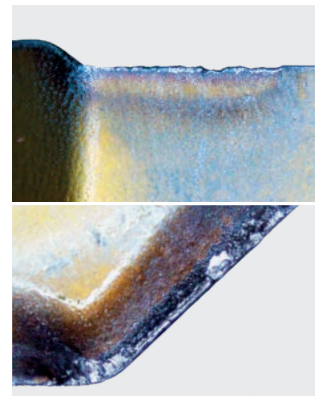


WMG P2.2

Workpiece: Stainless steel plate (145 HB)
 Material: 1.4404 / 316L
 Cutter: 63A06R-S45ON06-C
 Coolant: Compressed air

Cutting conditions			
v_c	f_z	a_p	a_e
524 (160)	.006 (0.15)	.079 (2)	1.969 (50)
Insert geometry test			Tool life (min)
ONMX 060508SR- F :M6330			58

ONMX 060508SR-**F**:M6330, 58 min

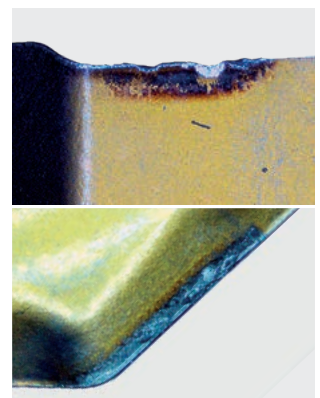


WMG M3.1

Workpiece: Stainless steel plate (145 HB)
 Material: 1.4404 / 316L
 Cutter: 63A06R-S45ON06-C
 Coolant: Soluble oil emulsion (~ 10%)

Cutting conditions			
v_c	f_z	a_p	a_e
262 (80)	.006 (0.15)	.079 (2)	1.969 (50)
Insert geometry test			Tool life (min)
ONMX 060508SR- F :M6330			56

ONMX 060508SR-**F**:M6330, 56 min

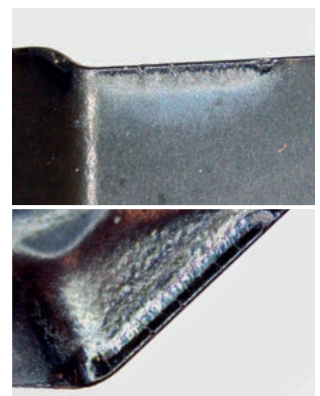


WMG M3.1

Workpiece: Cast iron plate (205 HB)
 Material: GG25 / FC250
 Cutter: 63A06R-S45ON06-C
 Coolant: Compressed air

Cutting conditions			
v_c	f_z	a_p	a_e
820 (250)	.016 (0.4)	.079 (2)	1.969 (50)
Insert geometry test			Tool life (min)
ONMX 060508SR- R :M5315			137+

ONMX 060508SR-**R**:M5315, 137 min



WMG K1.2



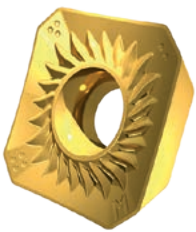
SSD13F

VERSATILE FACE MILLING

INTRODUCTION



A new face milling assortment for general engineering and maintenance, repair and operations has been launched. The latest Pramet range includes two economical and precise inserts (SDMT and SDET) for depths of cut up to .252 inch (6.4 mm). Several geometries and cutters are available for machining a wide range of materials.



SDMT-M

- Versatile pressed insert
- Steels, cast irons and hard steels
- Medium cuts



SDMT-R

- Versatile pressed insert
- Steels, cast irons and hard steels
- Rough cuts



MILLING CUTTERS AND INSERTS

INSERTS FEATURES & BENEFITS

Application-specific geometries and grades.



EASY TO SELECT AND USE
for a wide range of workpiece materials.

Geometries M and R on economical pressed insert (SDMT 13).



LIGHT, MEDIUM AND ROUGH CUTS
in steels, cast irons and hard steels.

Sharp geometry F on precision ground insert (SDET 13).



SECURE AND SAFE
machining in stainless steels and heat resistant super alloys (HRSA).

Polished and extra sharp geometry FA on specific ground insert (SDET 13).



PRODUCTIVE MILLING
in non-ferrous materials.

Wide wiper edge design on all geometries.

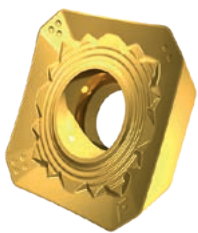


HIGH SURFACE QUALITY
across multiple applications, from heavy roughing to finishing.

Additional wiper insert XDET 13 available.

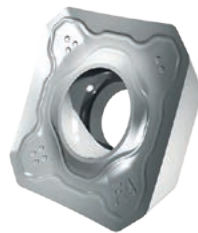


PRODUCTIVE AND HIGH SURFACE QUALITY
in larger diameter cutters.



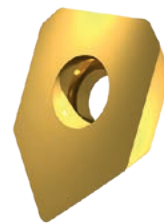
SDET-F

- Precision ground insert
- Stainless steels & HRSA
- Light to medium cuts



SDET-FA

- Precision ground insert
- Non-ferrous materials
- Light to rough cuts



XDET

- Wiper insert
- Steels, cast irons, stainless steels
- High quality surface finish



SSD13F

VERSATILE FACE MILLING

CUTTERS SSD13F – FEATURES & BENEFITS

Weldon and shell-style cutters in diameters 1.25 – 10.00 inch (32 – 250 mm).



MULTIPLE CHOICES
for a wide range of machine sizes.

Carbide shim on cutter seating place.

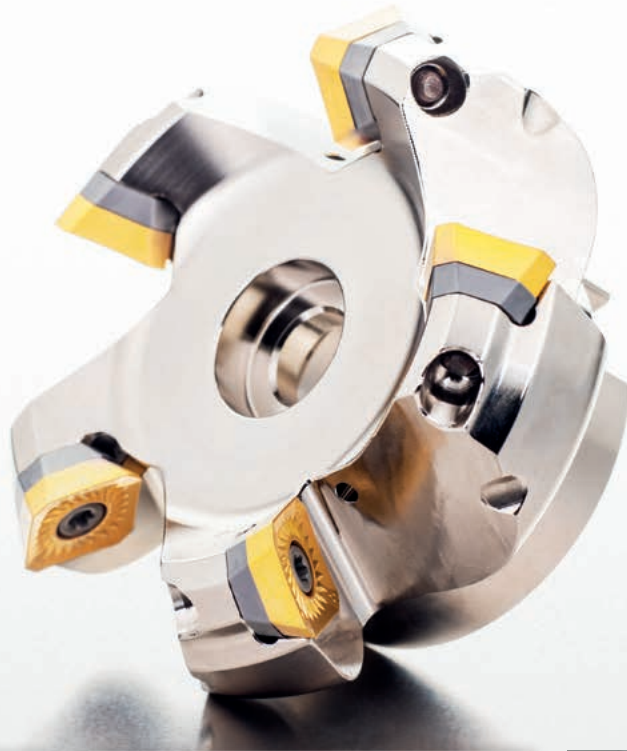


EXTRA PROTECTION FOR HIGH DURABILITY
of cutter body, while providing insert stability and process security.

Internal coolant on entire assortment, including large-sized diameters.



IMPROVED TOOL LIFE
and better chip evacuation, providing high surface quality and reliability.





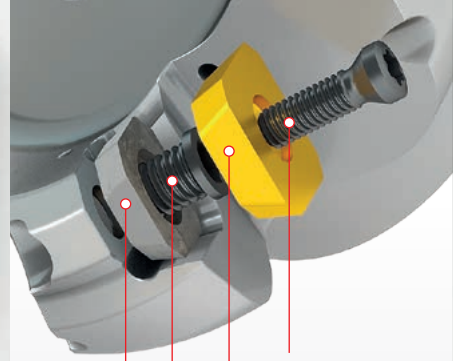
SSD13F

- Weldon shank
- DC range
1.25 – 1.50 in
(32 – 40 mm)




SSD13F

- Shell body
- DC range
1.50 – 10.00 in
(40 – 250 mm)



Insert screw
 Insert
 Shim screw
 Shim



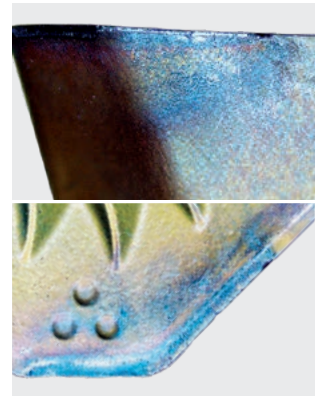
MILLING CUTTERS AND INSERTS

FACE MILLING EXAMPLES

Workpiece: Carbon steel plate (215 HB)
 Material: 1.1191 / C45
 Cutter: 63A05R-S45SD13F-C
 Coolant: Compressed air

Cutting conditions			
v_c (m/min)	f_z (mm)	a_p (mm)	a_e (mm)
820 (250)	.010 (0.25)	.079 (2)	1.969 (50)
Insert geometry			Tool life (min)
SDMT 13T3AFSN-M:M8330			97

SDMT 13T3AFSN-M:M8330, 97 min

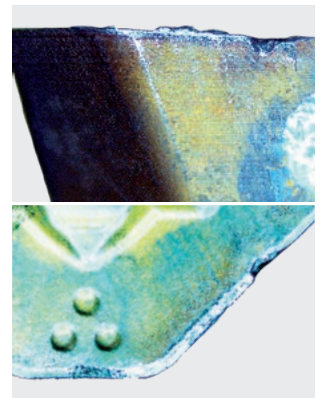


WMG P2.2

Workpiece: Stainless steel plate (145 HB)
 Material: 1.4404 / 316L
 Cutter: 63A05R-S45SD13F-C
 Coolant: Compressed air

Cutting conditions			
v_c (m/min)	f_z (mm)	a_p (mm)	a_e (mm)
394 (120)	.006 (0.15)	.079 (2)	1.969 (50)
Insert geometry			Tool life (min)
SDET 13T3AFSN-F:M6330			42

SDET 13T3AFSN-F:M6330, 42 min

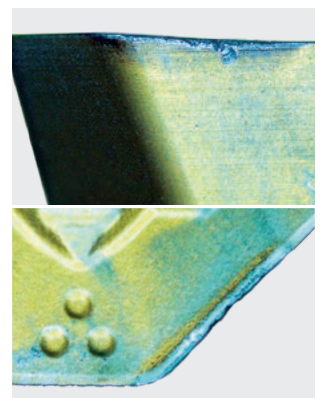


WMG M3.1

Workpiece: Stainless steel plate (145 HB)
 Material: 1.4404 / 316L
 Cutter: 63A05R-S45SD13F-C
 Coolant: Soluble oil emulsion (~ 10%)

Cutting conditions			
v_c (m/min)	f_z (mm)	a_p (mm)	a_e (mm)
262 (80)	.006 (0.15)	.079 (2)	1.969 (50)
Insert geometry			Tool life (min)
SDET 13T3AFSN-F:M6330			100

SDET 13T3AFSN-F:M6330, 100 min

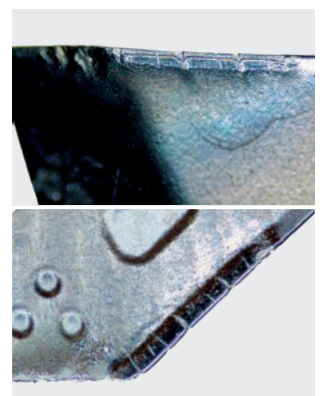


WMG M3.1

Workpiece: Cast iron plate (205 HB)
 Material: GG25 / FC250
 Cutter: 63A05R-S45SD13F-C
 Coolant: Compressed air

Cutting conditions			
v_c (m/min)	f_z (mm)	a_p (mm)	a_e (mm)
984 (300)	.016 (0.4)	.079 (2)	1.969 (50)
Insert geometry			Tool life (min)
SDMT 13T3AFSN-R:M5315			42

SDMT 13T3AFSN-R:M5315, 42 min



WMG K1.2



SLN12X

PRODUCTIVE TANGENTIAL SHOULDER MILLING

INTRODUCTION



A new assortment of LNEX 12 negative tangential inserts, with four cutting edges, provides a highly productive solution for a wide range of applications. The Pramet LNEX 12 insert has been designed for square shoulder milling, with a maximum depth of cut up to .394 inch (10 mm), offering stable clamping and a strong cutting edge. Its robust cutter body provides long tool life and excellent breakage resistance, while also reducing chatter.



LNEX-F

- Productive 4-edged ground insert
- Low carbon steels, soft stainless steels
- Light to medium cuts



LNEX-M

- Productive 4-edged ground insert
- Steels and cast irons, possibly hard steels
- Medium to rough cuts



MILLING CUTTERS AND INSERTS

INSERTS FEATURES & BENEFITS

Robust four-edged insert with two geometries M and F.



PRODUCTIVE SOLUTION

for a wide range of applications, with increased feed per tooth and depth of cut.

Positive rake angle on a tough tangential insert for low cutting forces.



SMOOTH CUTTING ACTION

reduced spindle load, excellent chip evacuation and process stability.

Peripherally ground and a highly precise square shoulder insert.



TRUE 90° CORNER

with improved wall accuracy and straightness.

Patented U-groove segment in corner geometry of insert for excellent chip forming.



IMPROVED CHIP EVACUATION

expands application range for low-power machines and small depths of cut.

Wide range of applications, with possibility for ramping, helical interpolation and plunge milling.



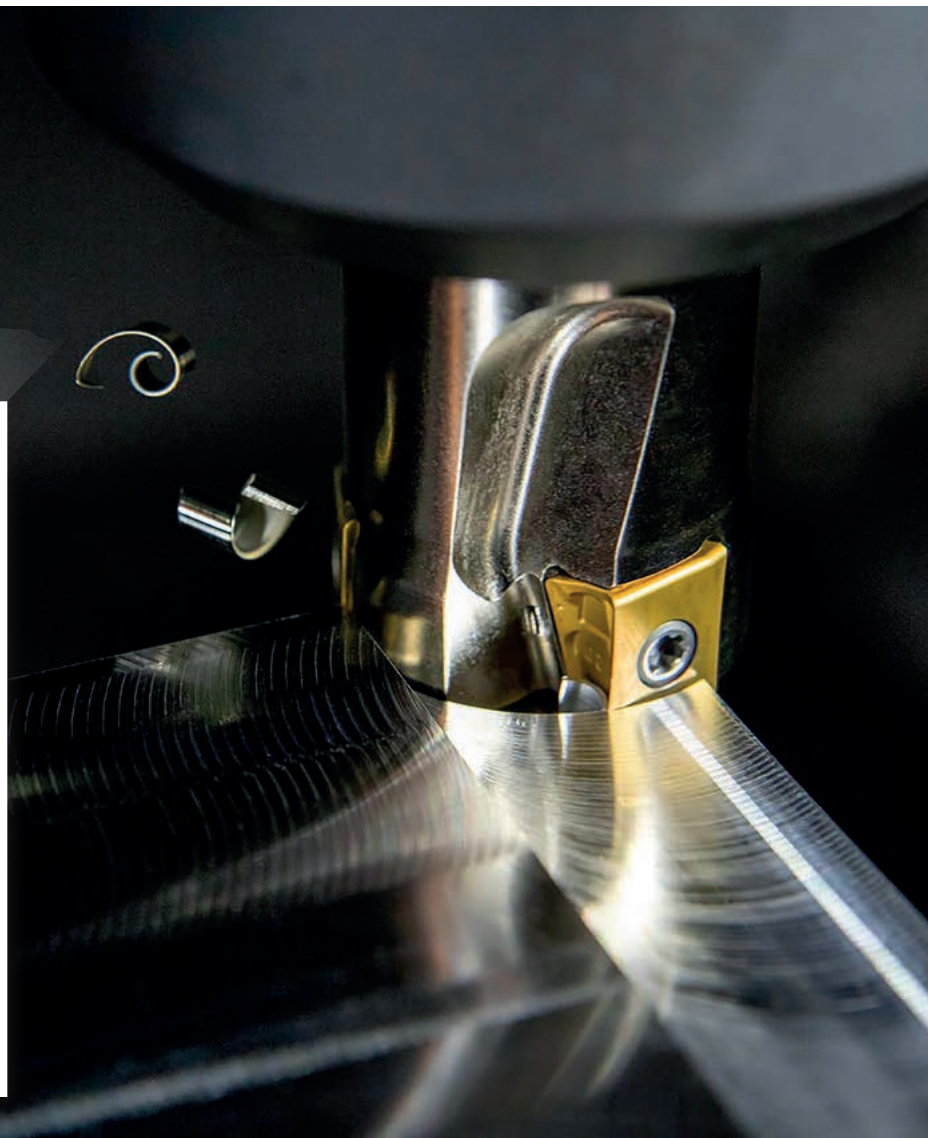
OPERATIONAL VERSATILITY

offering an economic solution.

Patented U-groove segment in corner geometry of insert for **excellent chip forming**.

Two-sided structure supports insert performance:

- Makes **ramping possible**
- Realizes good **surface finish**





SLN12X

PRODUCTIVE TANGENTIAL SHOULDER MILLING

CUTTERS SLN12X – FEATURES & BENEFITS

Improved body strength and thick cutter core for enhanced rigidity.



RELIABLE CUTTING PROCESS

with low vibrations and long tool life for both insert and cutter.

Easily accessible large clamping screws.



SIMPLE INDEXING

and handling of insert.



SLN12X

- Cylindrical shank
- DC range
1.00 – 1.50 in
(25 – 40 mm)



SLN12X

- Weldon shank
- DC range
1.00 – 1.50 in
(25 – 40 mm)



SLN12X

- Shell body
- DC range
1.50 – 5.00 in
(40 – 125 mm)



MILLING CUTTERS AND INSERTS

SHOULDER MILLING EXAMPLES

Workpiece: Structural steel forging – Door hinge (220 HB)
 Material: 1.0553 / 345A / S355JO
 Cutter: 50A05R-S90LN12X-C
 Coolant: Soluble oil emulsion (~ 8%)

Cutting conditions				
v_c	f_z	a_p	a_e	TOH
695 (212)	.004 (0.09)	.276 (7)	1.181 (30)	2.283 (58)
Insert geometry		Tool life (pcs)		
LNEX 121008SR-F:M8340		2200		

Geometry F is very effective, lowest power consumption.
 Perfect surface finishing, better than all the competitors.
 Stable cutting edge wear, very homogeneous flank wear.
 No burrs all along the tool life => possible to skip deburring.

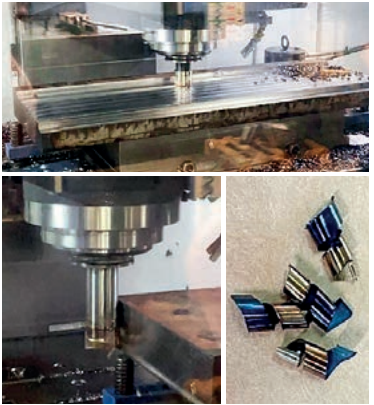


WMG P2.1

Workpiece: Carbon steel plate (220 HB)
 Material: 1.1186 / 1040 / C40
 Cutter: 50A05R-S90LN12X-C
 Coolant: No

Cutting conditions				
v_c	f_z	a_p	a_e	TOH
371 (113)	.007 (0.18)	.197 (5)	.138 (3.5)	5.433 (138)
387 (118)	.011 (0.28)	.118 (3)	1.181 (30)	3.307 (84)
Insert geometry		Tool life (min)		
LNEX 121008SR-F:M8340		48+		

Excellent surface quality in roughing contouring operations.
 Good accuracy of 90° wall even with overhang of 138 mm.
 No vibrations with overhang of 85 mm and $f_z = 0.28$ mm.
 Perfect chip evacuation. After 48 min no evident wear.



WMG P2.2

Workpiece: Carbon steel forging – Axle yoke (~ 210 HB)
 Material: EN8D / 1045 / CK45
 Cutter: 32A3R042B32-SLN12X-C
 Coolant: Soluble oil emulsion (~ 6%)

Cutting conditions				
v_c	f_z	a_p	a_e	TOH
725 (221)	.009 (0.23)	.394 (10)	.394 (10)	2.401 (61)
Insert geometry		Tool life (pcs)		
LNEX 121008SR-M:M8310		127		

Cycle time reduction with LNEX12-M is 48 %.
 Tool life improvement with LNEX12-M is 59 %.
 We observe only little wear after 18 min in cut.



WMG P2.3

Workpiece: Stainless steel forging – 3-way valve (~ 190 HB)
 Material: 1.4401 / 316 / X5CrNiMo17-12-2
 Cutter: 25A2R042B25-SLN12X-C
 Coolant: No

Cutting conditions				
v_c	f_z	a_p	a_e	TOH
328 (100)	.008 (0.2)	.118 (3)	.236 (6)	1.772 (45)
Insert geometry		Tool life (min)		
LNEX 121008SR-F:M8340		82		

Cycle time reduction with LNEX12-F is 20 %.
 Tool life improvement with LNEX12-F is 30 %.
 Only slight flank wear after 16 min in cut.



WMG M3.1



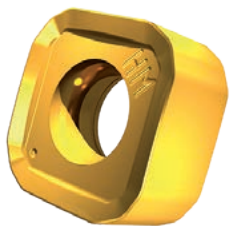
SNGX 11

STRONG HIGH FEED GEOMETRY – HM

INTRODUCTION



A new strong HM geometry has been launched to support the current Pramet high feed SSN11 cutters and SNGX 11 inserts. The geometry is specifically for hard steel and cast iron. It is the latest addition to the economical double-sided SNGX inserts, which have eight cutting edges.



SNGX-HM

- 8-edged HFC insert
- Hard steels, cast irons
- Medium and rough cuts





MILLING CUTTERS AND INSERTS

FEATURES & BENEFITS

Material specific strong geometry.



FOR HARD STEELS AND CAST IRONS

extending application range of SSN11 cutter family.

Highly negative T-land providing cutting-edge protection, improving durability and process security.



PROLONGED TOOL LIFE

by up to 50 % compared to previous assortment.

Positive rake and narrow T-land for reduced cutting forces.



IMPROVED PROCESS STABILITY

with lower spindle load, reduced vibrations and smoother cutting action.

Balanced ratio of sharpness and edge protection.



VERSATILE OPTION

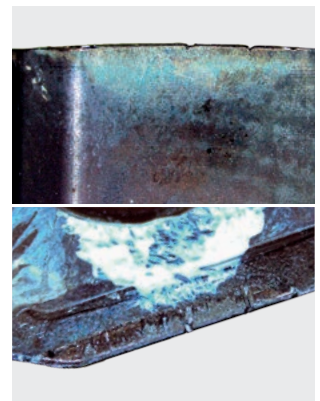
for high feed milling as suitable for machines with less-torque and rigidity.

HFC FACE MILLING EXAMPLES

Workpiece: Tool steel Die (310 HB)
 Material: 1.2343 / H11 / SKD6
 Cutter: 50A05R-SMOSN11-C
 Coolant: No

Cutting conditions				
v_c	f_z	a_p	a_e	TOH
492 (150)	.047 (1.2)	.059 (1.5)	1.299 (33)	2.441 (62)
Insert geometry comparison		Tool life (min)		
SNGX 110416SR-		M:M8310	78	
		HM:M8310	105	

SNGX 110416SR-HM:M8310, 105 min

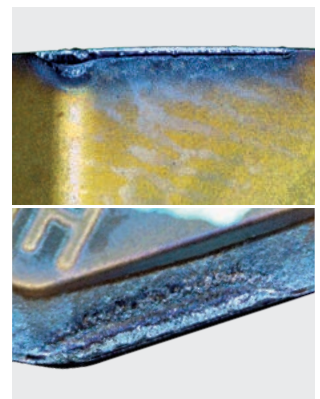


WMG P4.2

Workpiece: Cast iron plate (210 HB)
 Material: GG25 / FC250
 Cutter: 50A05R-SMOSN11-C
 Coolant: No

Cutting conditions				
v_c	f_z	a_p	a_e	TOH
590 (180)	.039 (1)	.039 (1)	1.299 (33)	2.441 (62)
Insert geometry comparison		Tool life (min)		
SNGX 110416SR-		M:M8330	27	
		HM:M8330	42	

SNGX 110416SR-HM:M8330, 42 min



WMG K1.2



SBN10

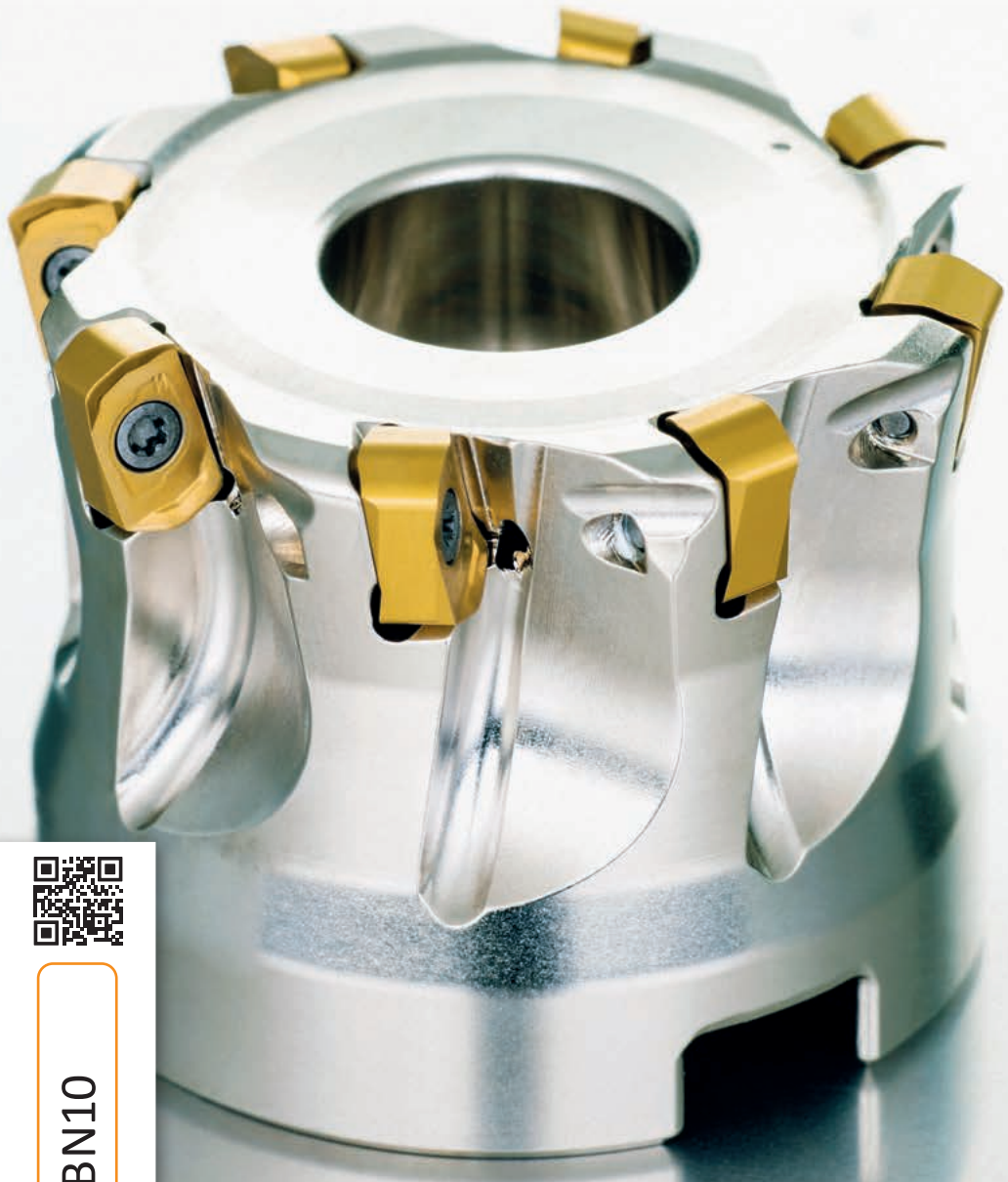
ADDITIONAL SHELL MILL CUTTERS

INTRODUCTION



Several new shell mill cutters have been added to the SBN10 high feed milling range. The latest update includes cutter diameter 2 inch (50 – 66 mm) with two different number of teeth. All the new cutters have different setting angles of insert seating, resulting in ideal chip evacuation when using BNGX 10 inserts for productive HFC milling.

 PRAMET



SBN10

- Shell body
- DC range newly:
1.50 – 2.00 in
(40 – 66 mm)



SHELL MILLS SBN10 – FEATURES & BENEFITS

Cutter body made of high quality, nickelized tool steel.



HIGH DURABILITY
of hardened cutter body.

Different setting angles on new shell mills prevent over-cutting of chips.



LONG INSERT TOOL LIFE
due to ideal chip evacuation.

Shell type cutters available in larger diameters and various tooth pitches.



COMPETITIVE RANGE
of all SBN10 cutters for broader usage.

New setting angles prevent chips over-cutting.

New cutters with $KAPR = 29^\circ$ are compatible with all BNGX 10 inserts, but not with ANHX 10.



BNGX-M

- 4-edged HFC insert
- Steels, cast irons
- Medium cuts



BNGX-MM

- 4-edged HFC insert
- Stainless steels, HRSA
- Light cuts



BNGX-HM

- 4-edged HFC insert
- Cast irons, hard steels
- Heavy cuts



SWN04C

HIGH PRECISION CUTTERS REVAMPED

INTRODUCTION



A major upgrade of all SWN04C cutter bodies. These modular cutters have a new design of clamping cylinder (DCON MS), which has a very steep cone with a natural self-centering capability. Also, all SWN04C cutters are now blackened instead of nickelized, reducing tolerances of insert clamping and indexing. Both upgrades result in high precision clamping and reduced radial run-out to almost zero, while still remaining compatible with common modular holders!



SWN04C

- Modular head
- DC range:
16 – 35 mm



SWN04C

- Cylindrical shank
- DC range:
16 – 32 mm



MODULAR CUTTERS SWN04C – FEATURES & BENEFITS

New clamping design with self-centering capability, still compatible with common modular holders!



HIGH PRECISION CLAMPING
of all modular cutters.

Blackening instead of nickelizing makes all tolerances even tighter.



IMPROVED RADIAL RUNOUT
within just a few microns.

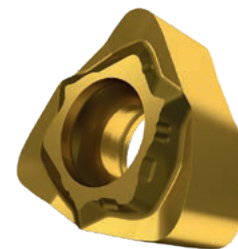
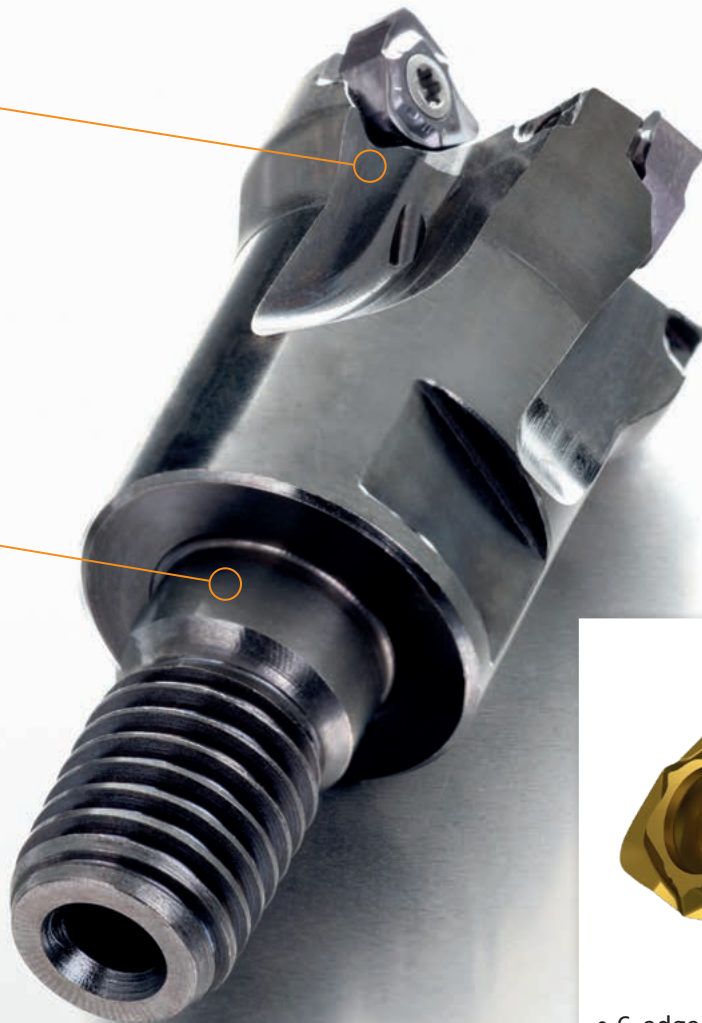
Cutter body made of high quality, blackened tool steel.



HIGH DURABILITY
of hardened cutter body.

Blackened cutter body for higher precision of seating place and modular connection.

Specific precision grinded cone shape clamping with self-centering capability.



WNHX

- 6-edged finishing insert
- Hard steels, cast irons, steels and cast steels
- Finishing wall and face with long overhang







SIMPLY RELIABLE

As a professional you can judge the quality of work by just looking at the chip. Our chip is a clean and uncomplicated shape that in itself tells a story. It is a clear and consistent signal and that's why we use it as a symbol for being **Simply Reliable**.

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