



Pramet Tools

Seoul , Korea

TURNING



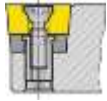
CHIPBREAKER FOR TURNING

GEOMETRIES

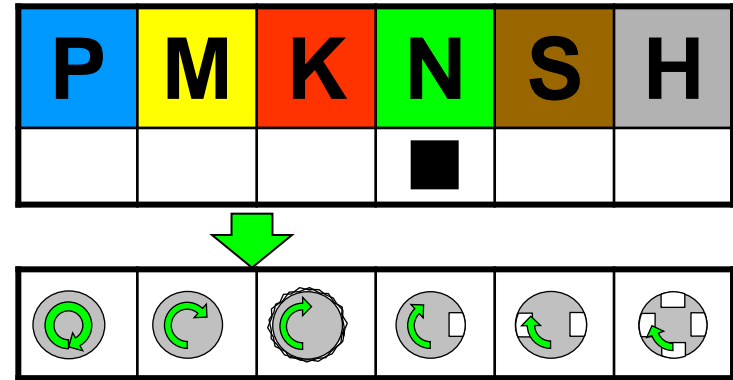
for

ISO „S“

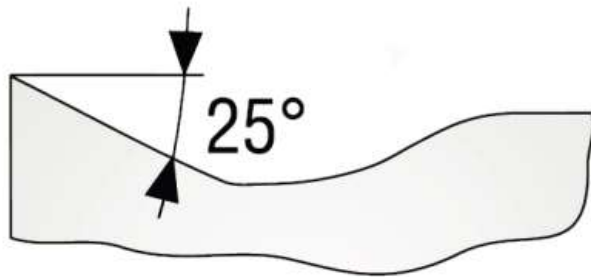
CLAMPING SYSTEM



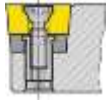
- HF7
- T0315
- T8310



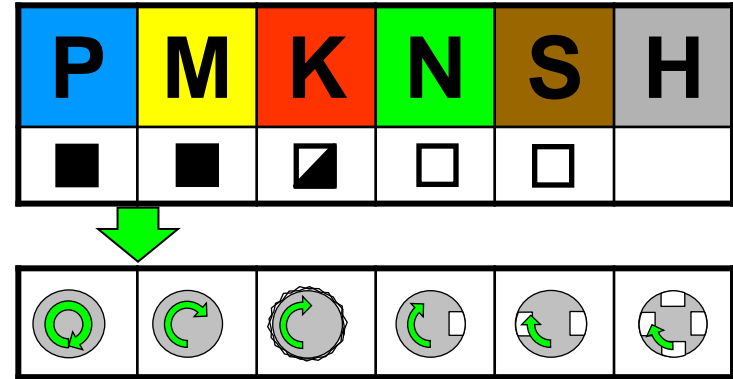
f= 0,05 – 0,60 mm/rev, a_p= 0,2 - 7,0 mm



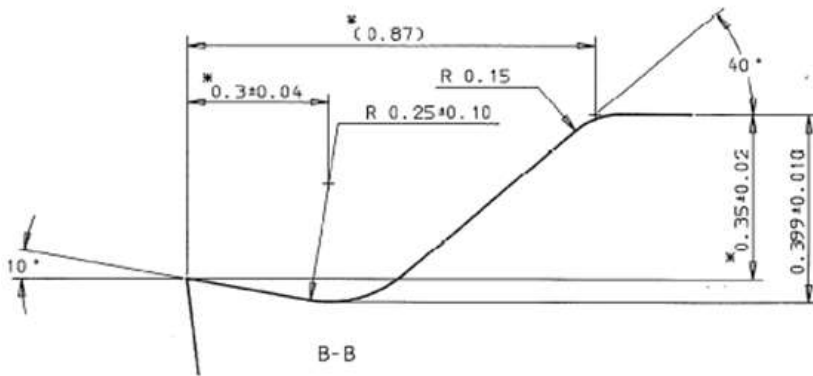
- high positive geometry with the sharp cutting edge
- very low cutting force
- (coated version) can be used for machining steel (very small depth of cut and feed)



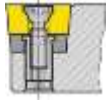
- T8315
- T8330



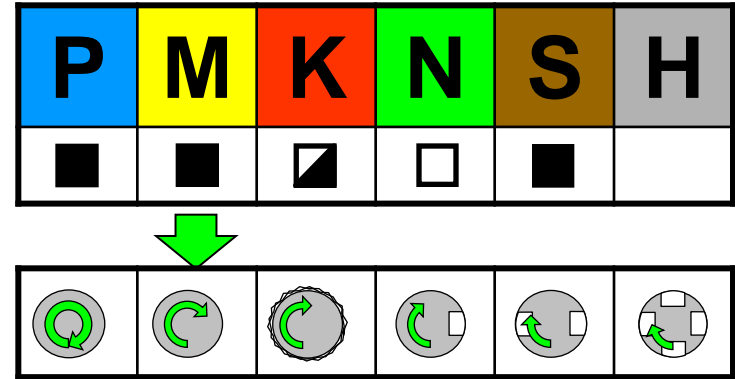
$f = 0,05 - 0,23$ mm/rev, $a_p = 0,2 - 2,0$ mm



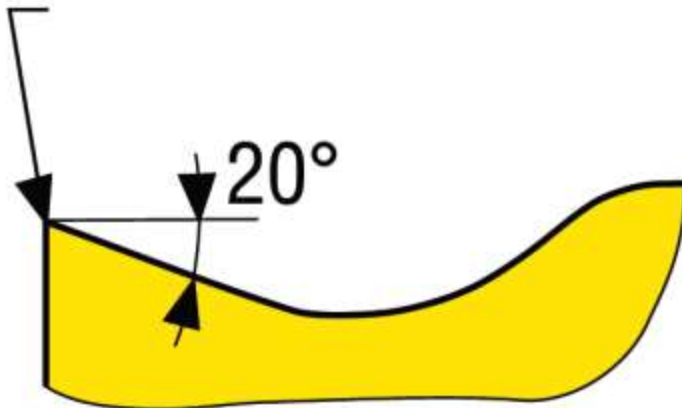
- straight cutting edge
- developed especially for fine finishing and boring
- very low cutting forces
- for the area, which is typical for cermets
- Good chip control in small cutting depth



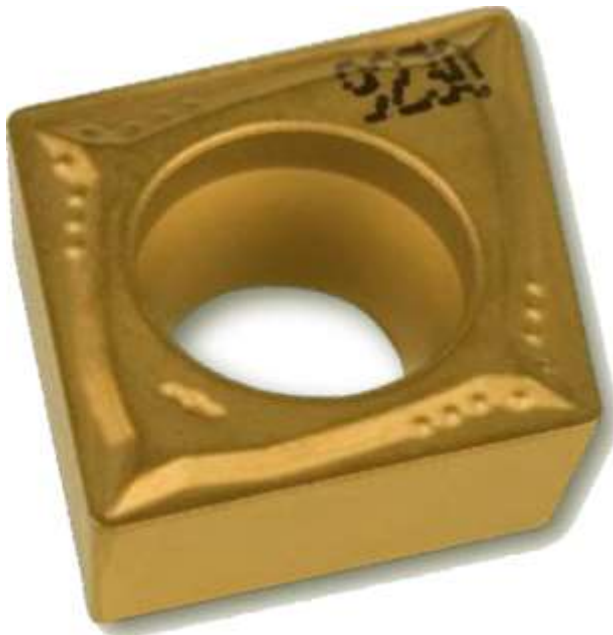
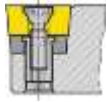
□ T8330



f = 0,08 – 0,45 mm/rev, a_p = 0,4 - 4,0 mm



- **minimal cutting resistance**
- **ideal for slim and thin-walled workpieces**



- T8315
- T8330
- T9315
- T9325
- T7335

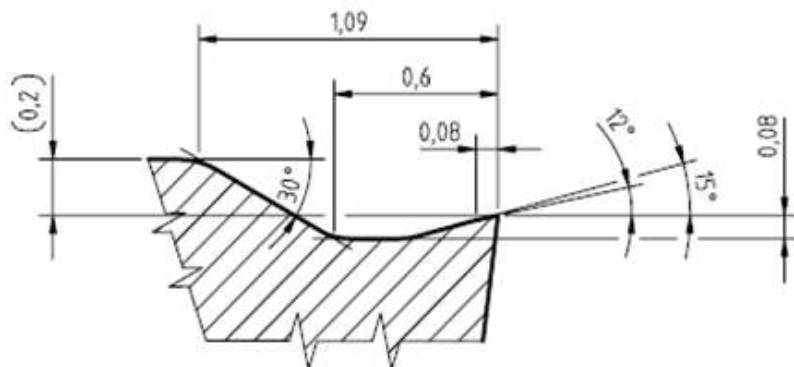
P	M	K	N	S	H
■	■	▣	□	□	□



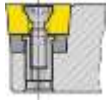
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f= 0,08-0,45 mm/rev, a_p= 0,2-4 mm

CCMT 09T304E-FM



- low cutting resistance
- Universal (first) solution
- full replacement of chipbreaker 46
- conditionally tolerates interrupted cuts



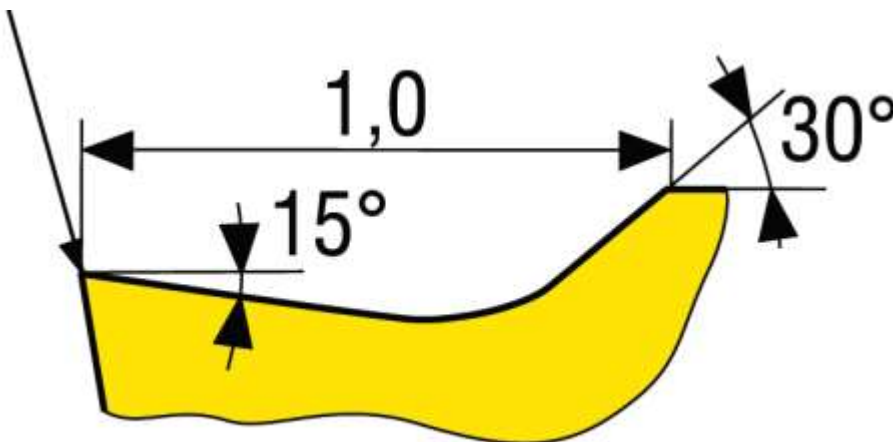
- T8315
- T8330
- T5315
- T7335
- T9315
- T9325
- TT310

P	M	K	N	S	H
■	■	■	□		

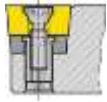


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$f = 0,10 - 0,40$ mm/rev, $a_p = 0,5 - 4,0$ mm

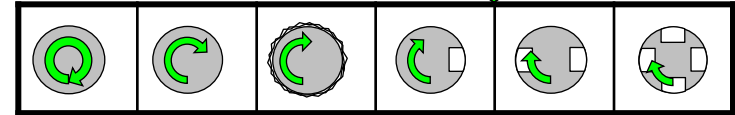


- very low (the lowest) cutting resistance
- Alternative chipbreaker for FM and Si (tolerate higher feed in stainless steel)
- large assortment
- Finishing chipbreaker



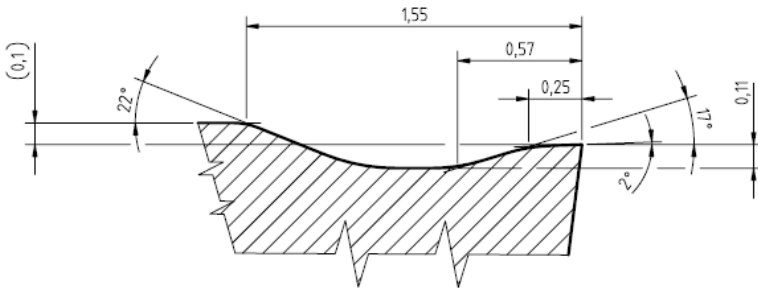
- T8330
- T5305
- T5315
- T7335
- T9315
- T9325

P	M	K	N	S	H
■	■	■	□	◻	□



$f_n = 0,1-0,5$ mm/rev, $a_p = 0,8-4,5$ mm

CCMT 09T308E-RM



- chipbreaking at feeds, which are smaller than the width of T land
- full replacement chipbreaker 47 (48)
- Strongest chipbreaker in positive insert



RM



UR



SI



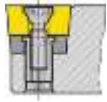
FM



AL



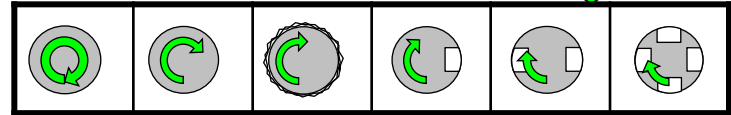
FF



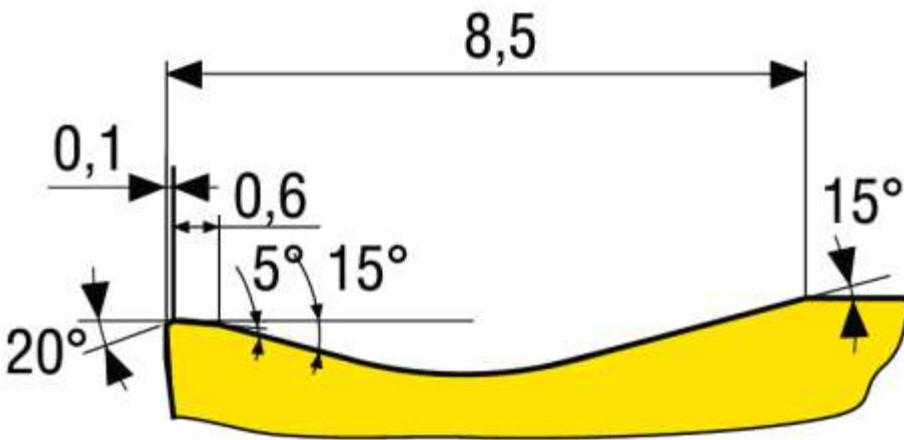
P	M	K	N	S	H
■	□	■			



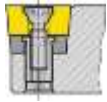
□ T9335



f= 0,60 – 1,4 mm/rev, a_p= 4,0 - 24 mm



- Main application in groups P and K
- good to soft steel
- Ideal for aligning pipes
- a_{p max} = 24mm
- SCMT 380932



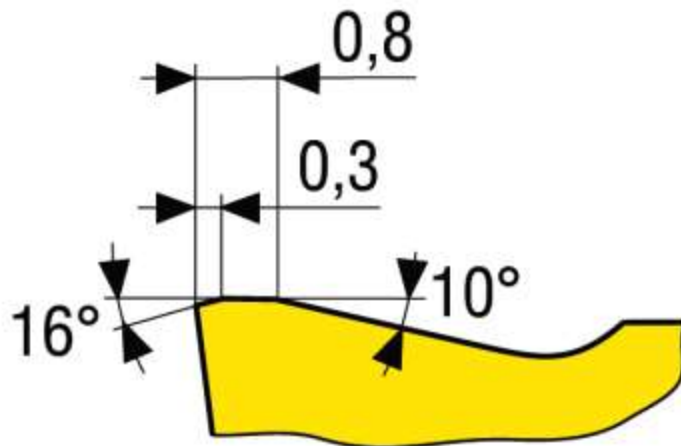
- T9325
- T9335

P	M	K	N	S	H
■	■	■			

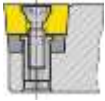
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f= 0,60 – 2,0 mm/rev, a_p= 3,0 - 24,0 mm



- excellent stability
- Main application in groups
P / M / K
- for very heavy cutting conditions
- For difficult machine condition
- **SCMT 38 / 25**

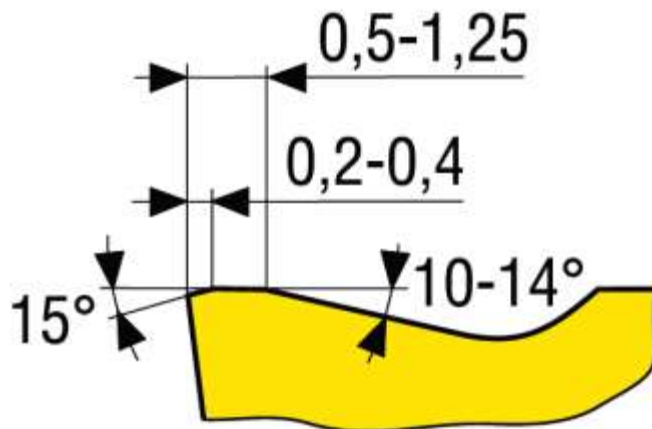


- T9325
- T9335

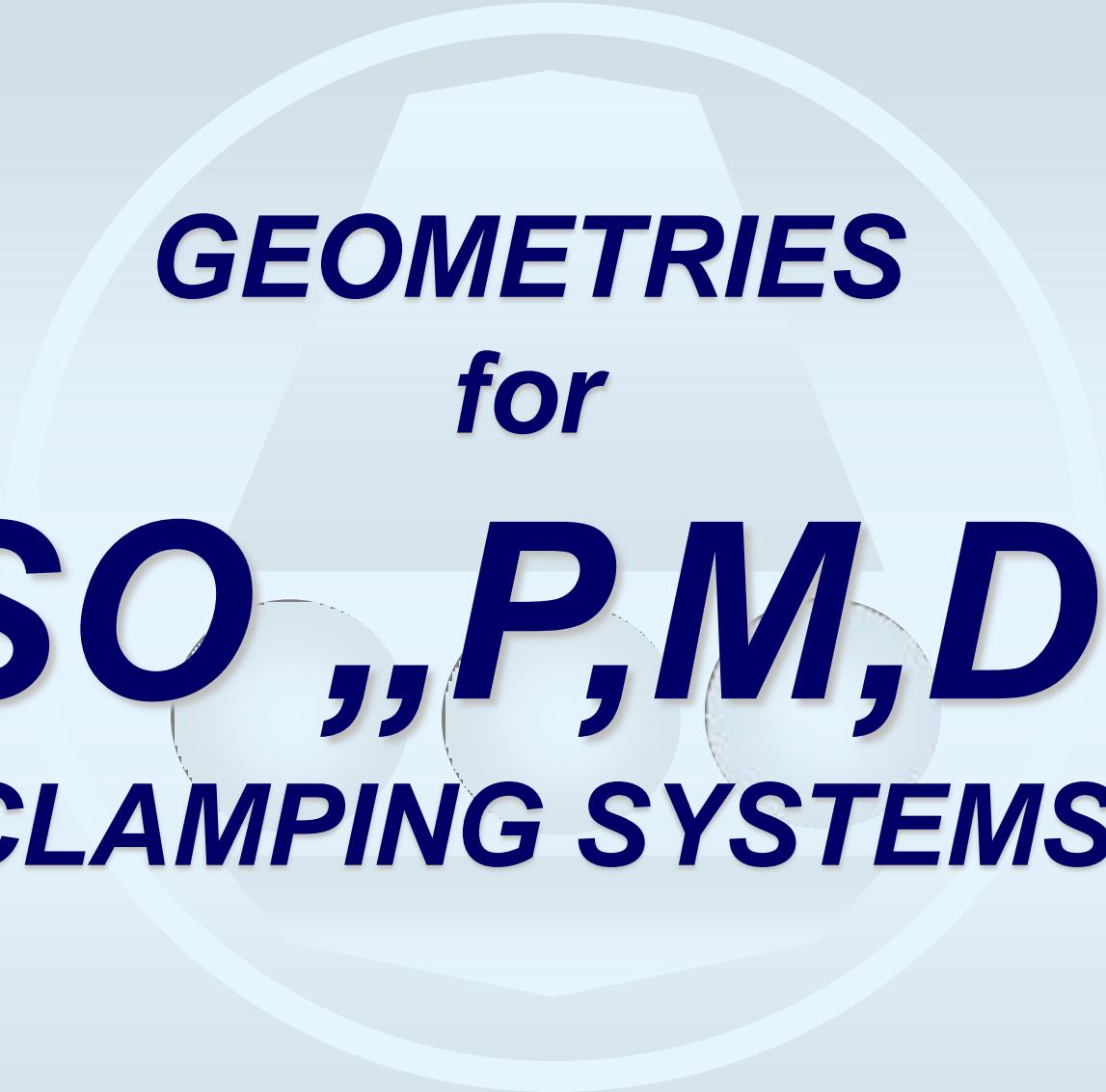
P	M	K	N	S	H
■	■	▣	□	□	□

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$f = 0,6 - 2,0 \text{ mm/rev}$, $a_p = 3,0 - 24,0 \text{ mm}$



- One of the best geometry for heavy roughing
- Main application in groups P and M
- lighter cut (comparing to SR)
- SCMT 38 / 25

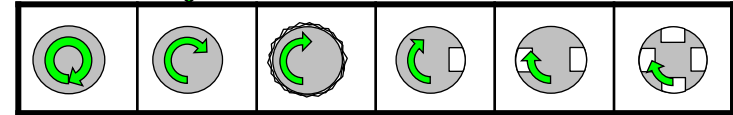


GEOMETRIES
for
ISO „P,M,D“
CLAMPING SYSTEMS

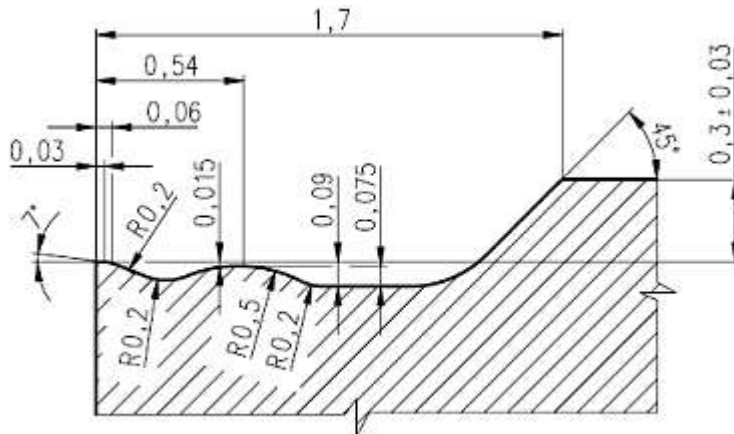


□ T8315

P	M	K	N	S	H
■	■	◼	□	□	□

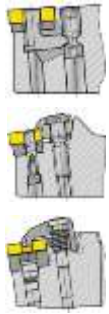


f= 0,06 – 0,20 mm/rev, a_p= 0,3 – 1,5 mm



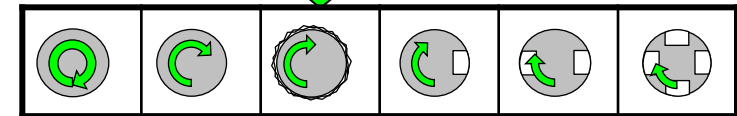
DETAIL D

- full grinding geometry
- very sharp edge
- low cutting resistance
- Main application for materials in group P and M
- for the area, which is typical for cermets

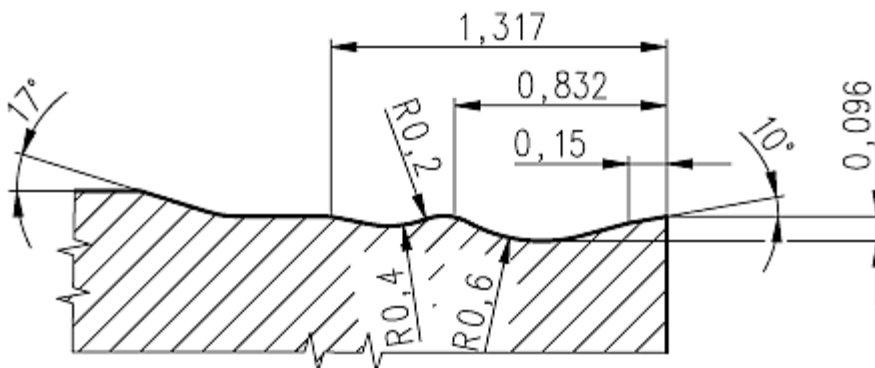


- T8315
- T8330
- T9310
- T9315
- T9325

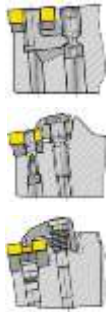
P	M	K	N	S	H
■	■	▣		□	



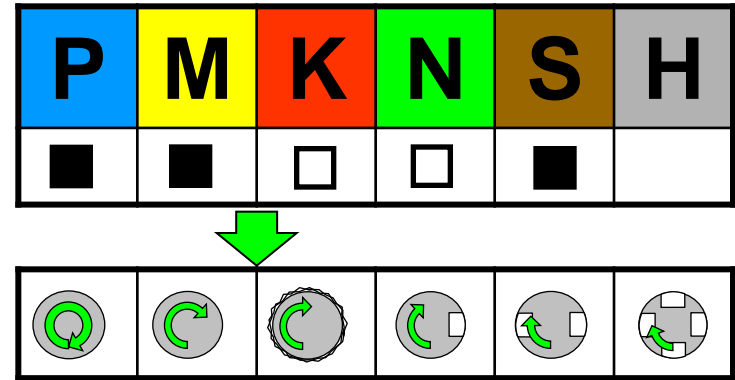
$f = 0,15 - 0,45$ mm/rev, $a_p = 0,5 - 3,0$ mm



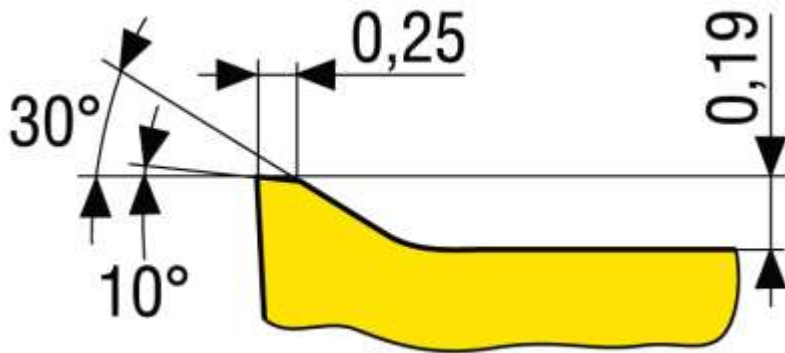
- **low cutting resistance**
- **Finishing to Semi-finishing**
- **Main application – machined materials in groups P and M**
- **Supplementary application – materials in group S**
- **conditionally for interrupted cut**



- T8330
- T7335
- T9325



$f = 0,15 - 0,50$ mm/rev, $a_p = 0,5 - 8,0$ mm

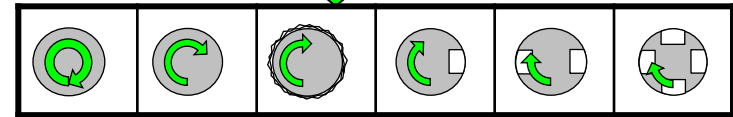


- very low cutting resistance
- for slim and thin-walled workpieces
- ideal for groups M and (S)
- Good performance when the cutting depth is 1- 3mm in stainless steel.

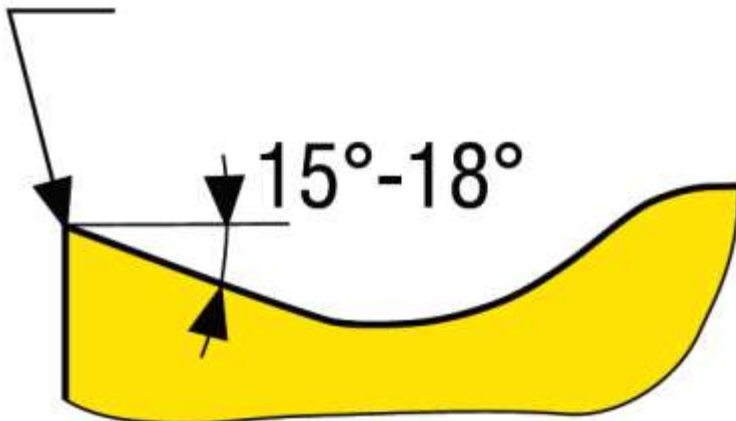


- T8330
- T7335
- T9325
- 6630

P	M	K	N	S	H
■	■	□	□	■	□



$f = 0,20 - 0,50$ mm/rev, $a_p = 0,8 - 5,0$ mm

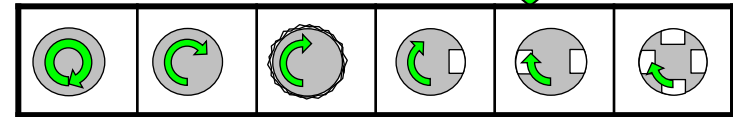


- very low cutting resistance
- for slim and thin-walled workpieces

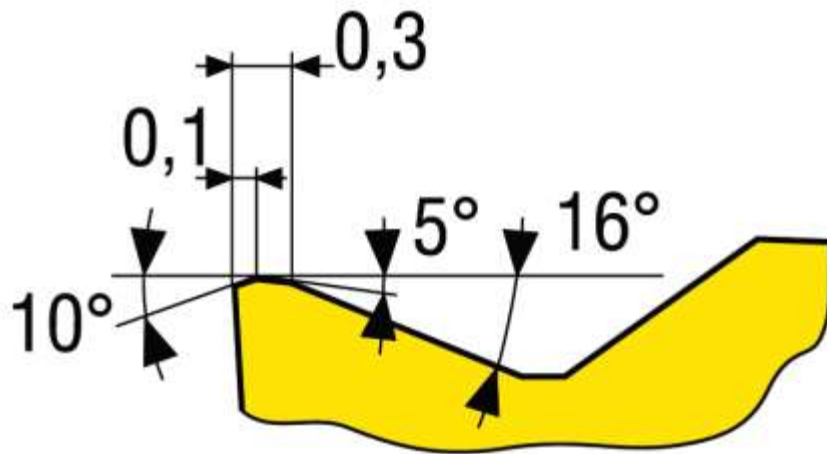


- T5305
- T5315
- T9310
- T9315
- T9325
- T9335

P	M	K	N	S	H
■	▣	■			□



$f = 0,17 - 0,80$ mm/rev, $a_p = 1,0 - 8,0$ mm

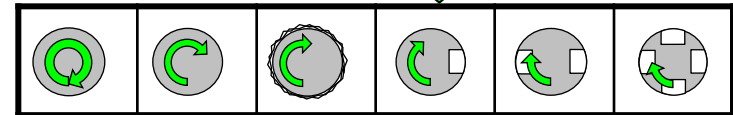


- **stable geometry**
- **benefit in interrupted cuts**
- **large assortment**
- **Main geometry in semi-finishing**
- **Can not use in soft material and stainless steel**

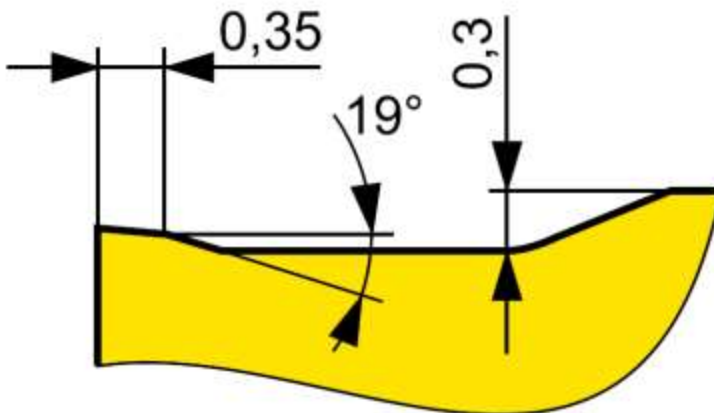


- T5305
- T5315
- T9310
- T9315
- T9325
- T9335
- T8315
- T8330

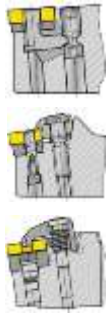
P	M	K	N	S	H
■	■	■	□	◻	□



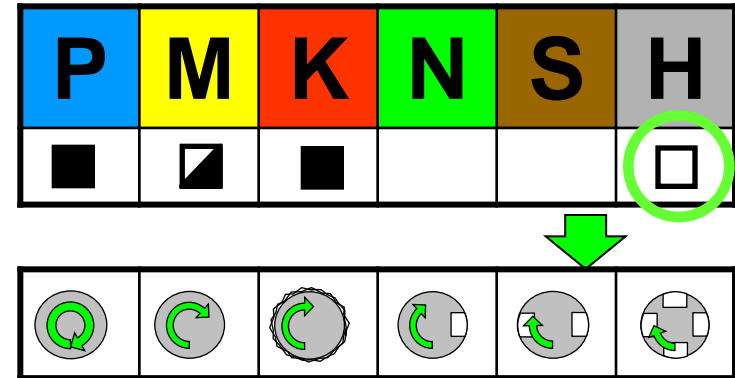
$f = 0,30 - 0,80 \text{ mm/rev}$, $a_p = 1,5 - 7,0 \text{ mm}$



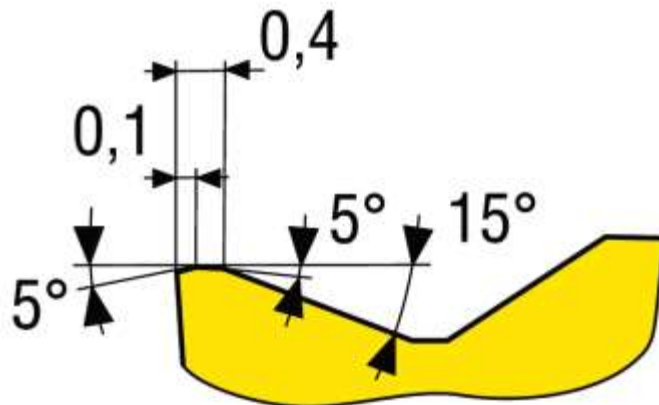
- Semi-roughing and roughing
- lower cutting resistance compare to R
- Ideal for mild steel
- works well in stainless steel



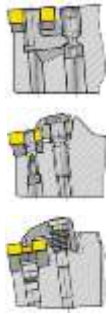
- T9315
- T9325
- T9335
- 6630
- 6640



$f = 0,17 - 0,80$ mm/rev, $a_p = 1,0 - 8,0$ mm

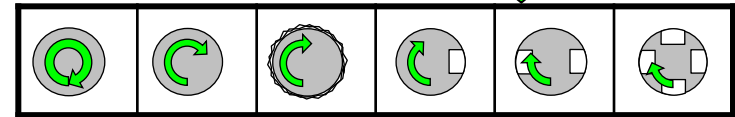


- Stable cutting edge - more than RM
- Strongest geometry in double side , negative insert
- first choice for hardened steel
- very good in cast iron

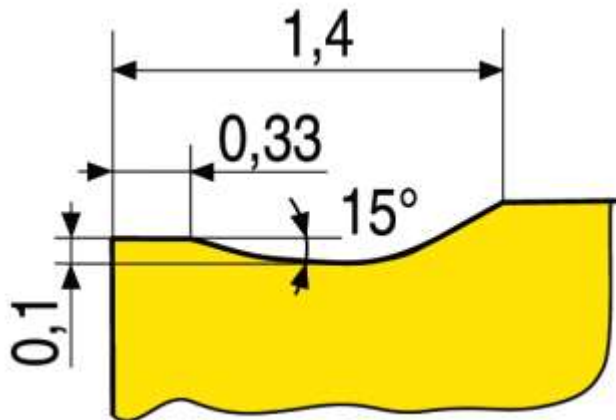


- T5305
- T5315

P	M	K	N	S	H
□		■			■



f= 0,30 – 0,80 mm/rev, a_p= 1,5 - 7,0 mm



➤ **special for cast iron**



FM



R



M



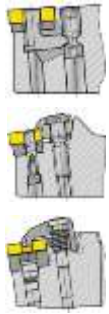
RM



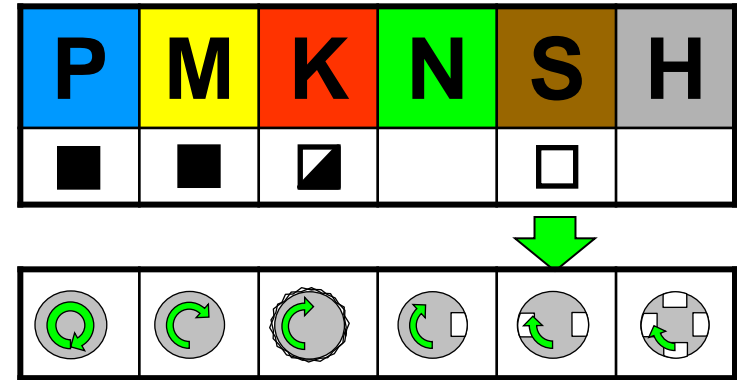
NM



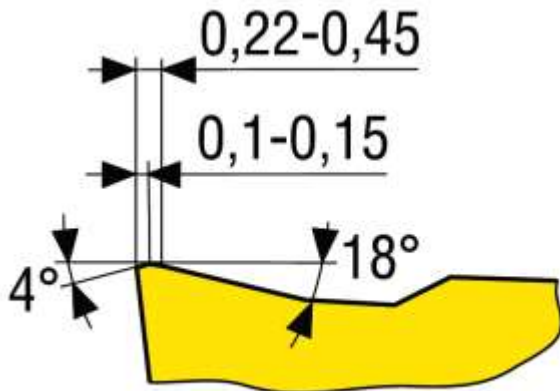
KR



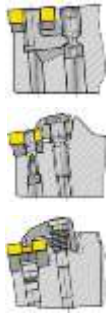
- T9315
- T9325
- T9335
- T8330
- T8345
- 6630
- 6640



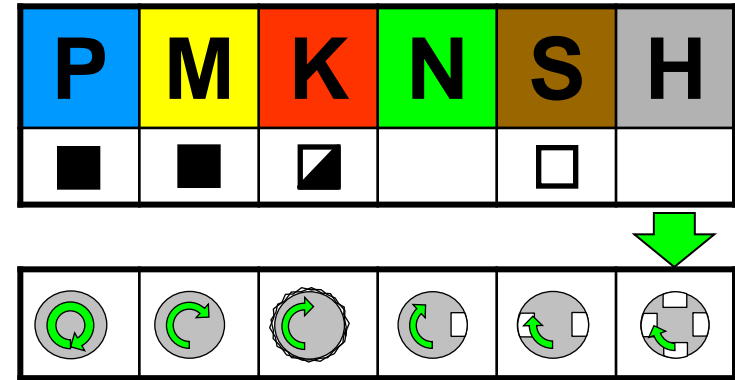
$f = 0,17 - 0,80$ mm/rev, $a_p = 1,0 - 8,0$ mm



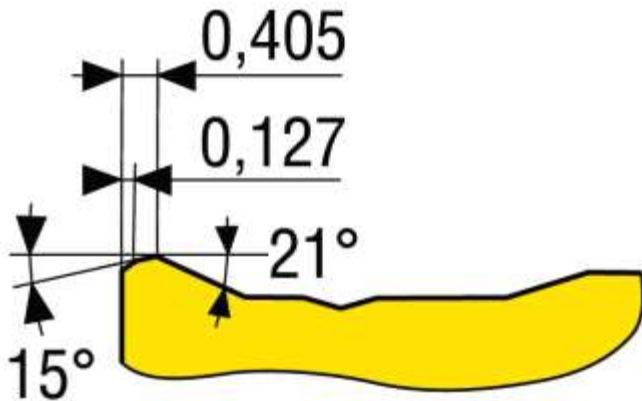
- one of the best geometry for roughing
- Lower cutting force and good chip control
- lighter cut (comparing to SR) alternative for NR 2
- works well in stainless steel



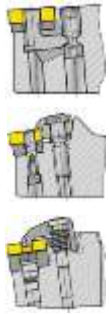
- T9325
- T7335
- T8330



$f = 0,25 - 1,20$ mm/rev, $a_p = 1,0 - 16,0$ mm



- **very stable cutting edge**
- **First choice in stainless steel**
- **for heavy cutting conditions**
- **Supplementary application in ISO S**

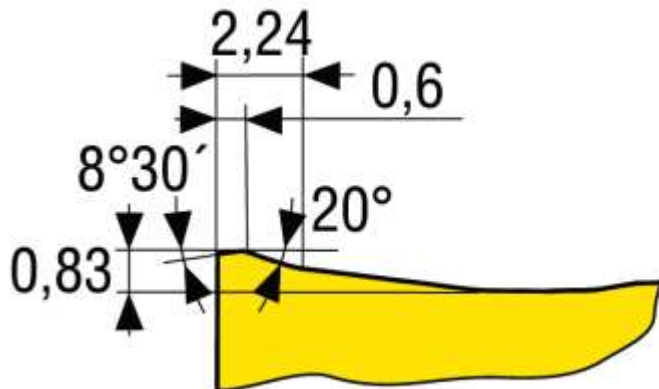


- T9335
- T8330
- T8345

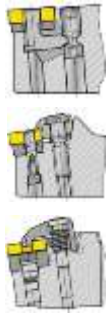
P	M	K	N	S	H
■	▣	▣			

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$f = 0,45 - 1,50 \text{ mm/rev}$, $a_p = 3,0 - 15,0 \text{ mm}$



- Strongest geometry in single side , negative insert
- hard materials
- very stable cutting edge for interrupt cutting
- tolerate bigger impacts



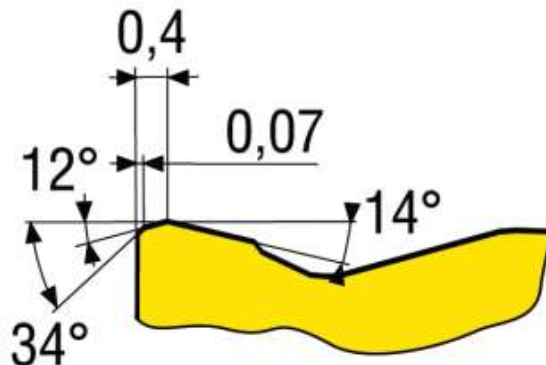
- T9325
- T9335
- T8345
- 6630
- 6640

P	M	K	N	S	H
■	▣	■		□	

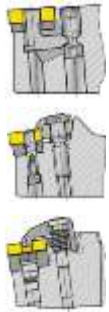


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$f = 0,50 - 1,40$ mm/rev, $a_p = 5,0 - 14,0$ mm

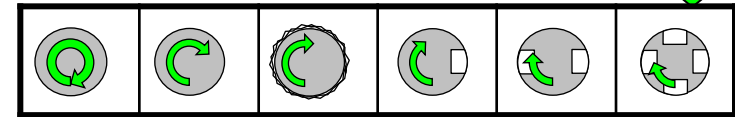


- for heavy interrupted cuts
- one of the most stable geometry
- Complete assortment
- Lower cutting force compare to 923

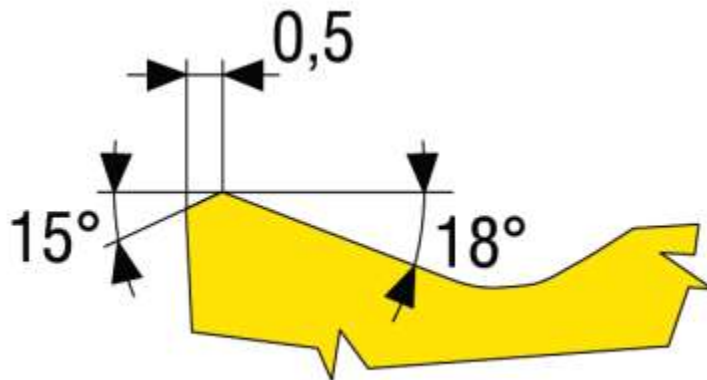


- T9325
- T9335
- T8345
- 6630

P	M	K	N	S	H
■	■	■			



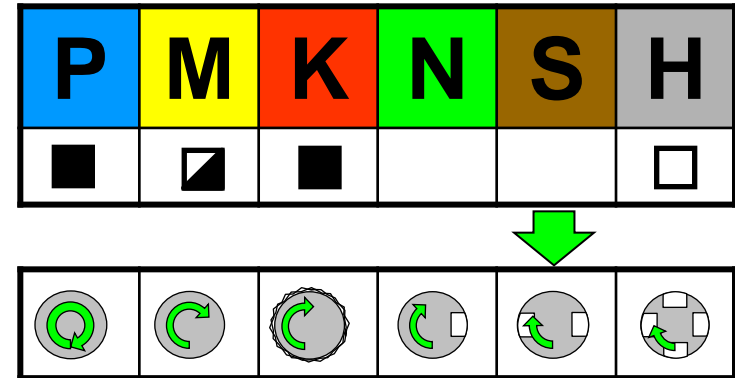
$f = 0,50 - 1,6$ mm/rev, $a_p = 5,0 - 16,0$ mm



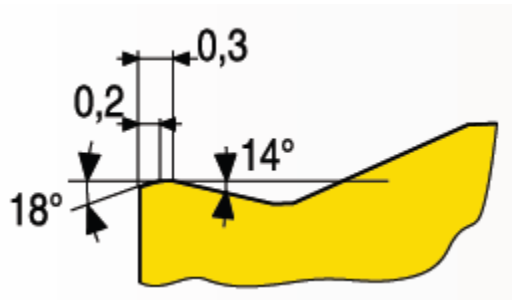
- **Special insert with standard Stock**
- **SNMX 251224S-SR**
- **For finishing or semi-finishing in heavy turning**



- T9310
- T9315
- T9325



f = 0,4 – 1,1 mm/rev, a_p = 2,0 – 5,0 (8,0) mm

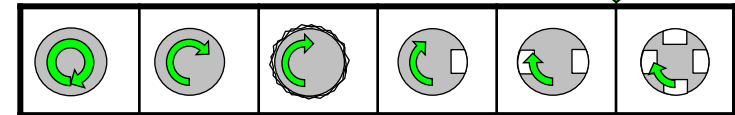


- chipbreaker designed for machining of railway wheels
- suitable for soft wheels
- medium cutting speed
- LNMX 19 / 30

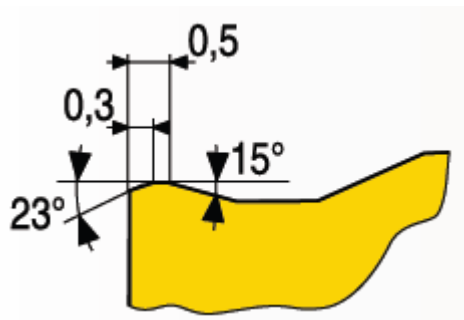


- T9310
- T9315
- T9325

P	M	K	N	S	H
■	▣	■			□



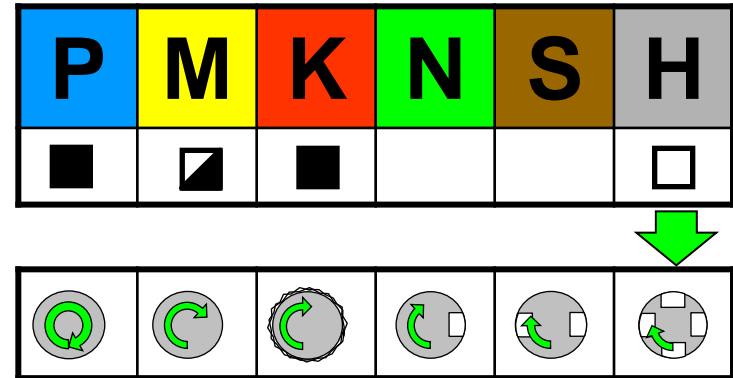
$f = 0,45 - 1,4 (1,8) \text{ mm/rev}$, $a_p = 2,0 - 5,0 (10,0) \text{ mm}$



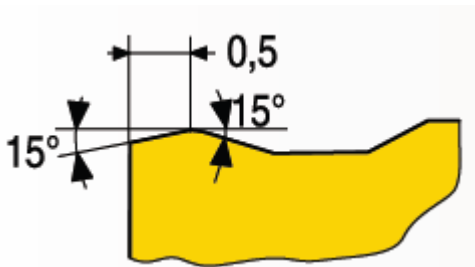
- chipbreaker designed for machining of railway wheels,
- suitable for soft and hard wheels
- medium cutting speed
- LNMX 19 / 30



- T9310
- T9315
- T9325



$f = 0,75 - 1,4 (1,8) \text{ mm/rev}$, $a_p = 2,0 - 12,0 \text{ mm}$

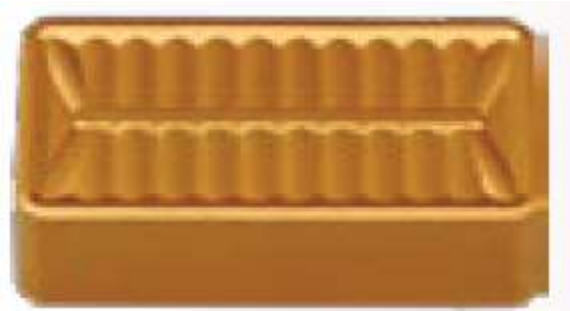


- chipbreaker designed for machining of railway wheels
- suitable for soft and hard wheels
- medium to high cutting speed
- LNMX 19 / 30

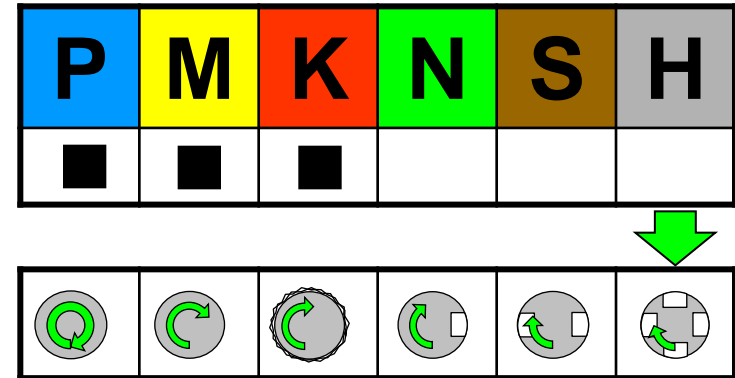
- Something for everyone...
- RCMX 2006MO – RF1; RM1
- RCMX 2507MO – RF1; RM1; RM2
- RCUM 3010MO – RR7
- RCMT 3009MO – RR4
- RCMH 3209MO – RM2; RR2 (Perfect fix)
- RCMX 3209MO – RM2; RR2 (ISO hole)
- RCMX 20; 25; 32; RCMH 32 - T9310; T9315; T9325
- RCUM 30 – Z: 6610; S30 RCMT 30 – Z: 9215 (both "30" -> T9310; T9315 – non stocked)



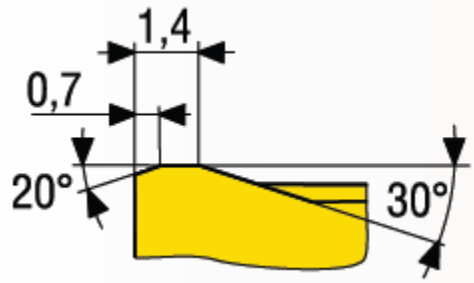
- 11 geometries
- 34 items



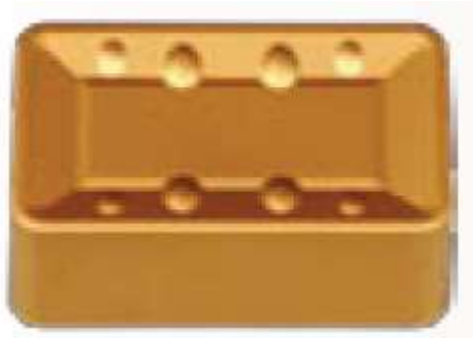
□ T9335



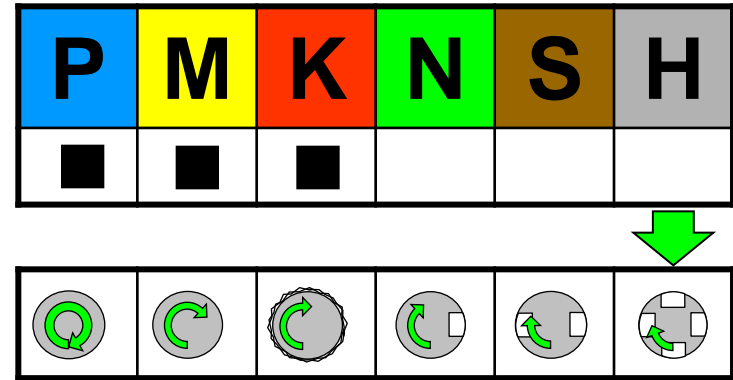
$f = 1,5 - 2,6 \text{ mm/rev}$, $a_p = 10,0 - 36,0 \text{ mm}$



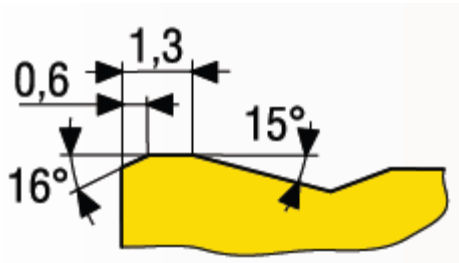
- heavy roughing, big cutting depth
- continuous but also heavily interrupted cut
- for the difficult cases roughing operations



□ T9325



$f = 1,2 - 2,5 \text{ mm/rev}$, $a_p = 10,0 - 36,0 \text{ mm}$



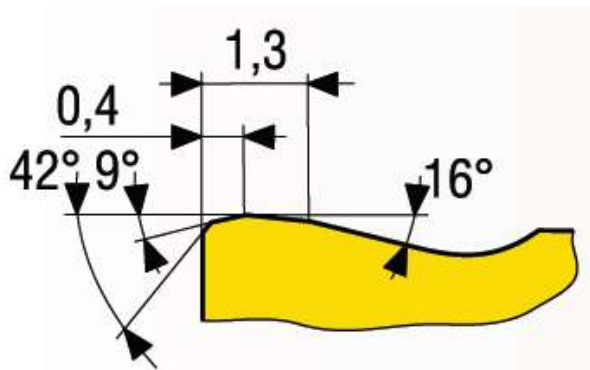
- Maximum depth for LNUX 50 is 36mm
- Maximum depth for LNUX 40 is 27mm
- open chipbreaker, lower cutting force than LNMX 50



□ T9335

P	M	K	N	S	H
■	■	■			

$f = 1,3 - 2,6 \text{ mm/rev}$, $a_p = 10,0 - 27,0 \text{ mm}$



- Maximum depth is 27mm
- First choice for soft material

HEAVY ROUGHING - DEFINITION

„COMMON“ ROUGHING

Feed	$f = 0,4 \div 0,8$	[mm/rev]
Depth of cut	$a_p = 4 \div 8$	[mm]
Material removal rate per minute	$Q = 300 \div 600$	[cm³/min]
Cutting forces	$F \approx 5\ 000 \div 10\ 000$	[N]

„SUPER“ ROUGHING

Feed	$f = 0,8 \div 2,0$ (and more)	[mm/rev]
Depth of cut	$a_p = 8 \div 25$ (and more)	[mm]
Material removal rate per minute	$Q = 800 \div 3000$	[cm³/min]
Cutting forces	$F \approx 10\ 000 \div 60\ 000$	[N]

Pramet Module structure for Heavy Turning

DKHR/L

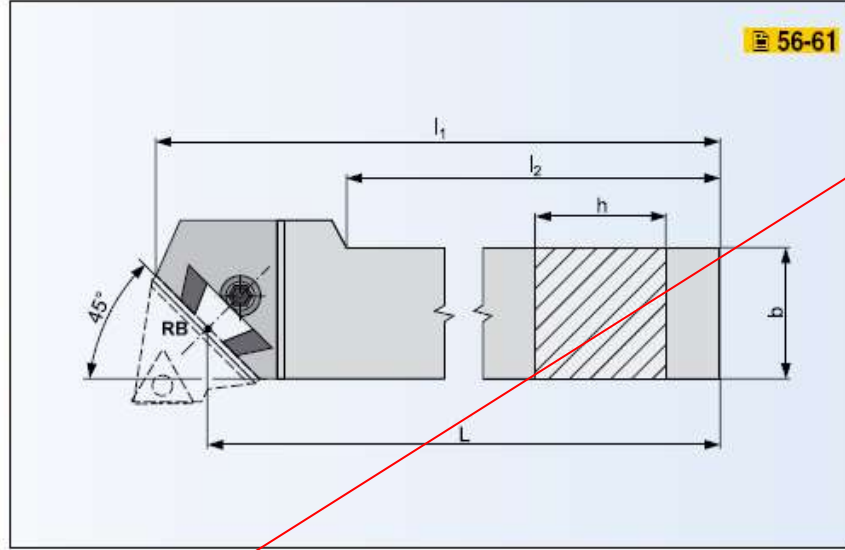
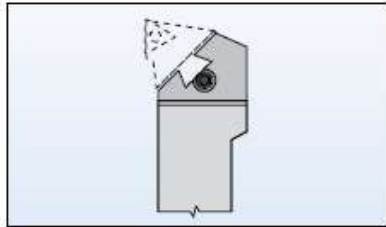
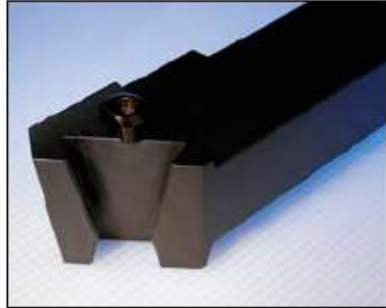


Pramet独特的模块结构

重型粗车切削刀杆 DKHR/L 为什么提高了刚性

DKH

EXTERNAL TURNING - HEADS
TORNEAMENTO EXTERNO - UNIDADES DE CORTE



Width is bigger than the height of the holder, Increasing the rigidity of the tool

HOLDERS FOR HEADS / PORTA-FERRAMENTAS PARA UNIDADES DE CORTE

ISO	R/l	Dimensions / Dimensões [mm]							λ_s°	γ_e°	kg	Spare parts Peças sobresseladas	Inserts Pastilhas
		A	B										
DKHR/L 4050 V	• / ○	40	50	400	425	325				7,80	DKH10	-	
DKHR/L 5060 W	• / ●	50	60	450	475	365				11,30	DKH10	-	
DKHR/L 6080 W-A	• / ●	60	80	450	485	395				20,50	DKH10	-	

HOLDERS FOR ROUGHING HEADS DKHR/L HEADS KHP + KHS

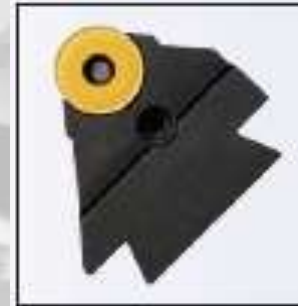
KHP-CLNR/L 25



KHP-LBNR/L 40



KHP-RSCR/L 25;32



KHP-CBNR/L 25



DKHR/L xx



KHP-SSNR/L 25



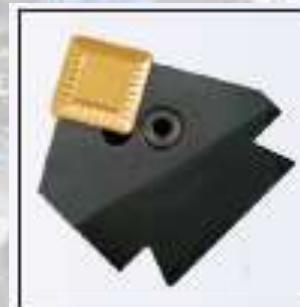
KHP-TGNR/L 27;33



KHS-SBCR/L 25;38



KHP-SBNR/L 25



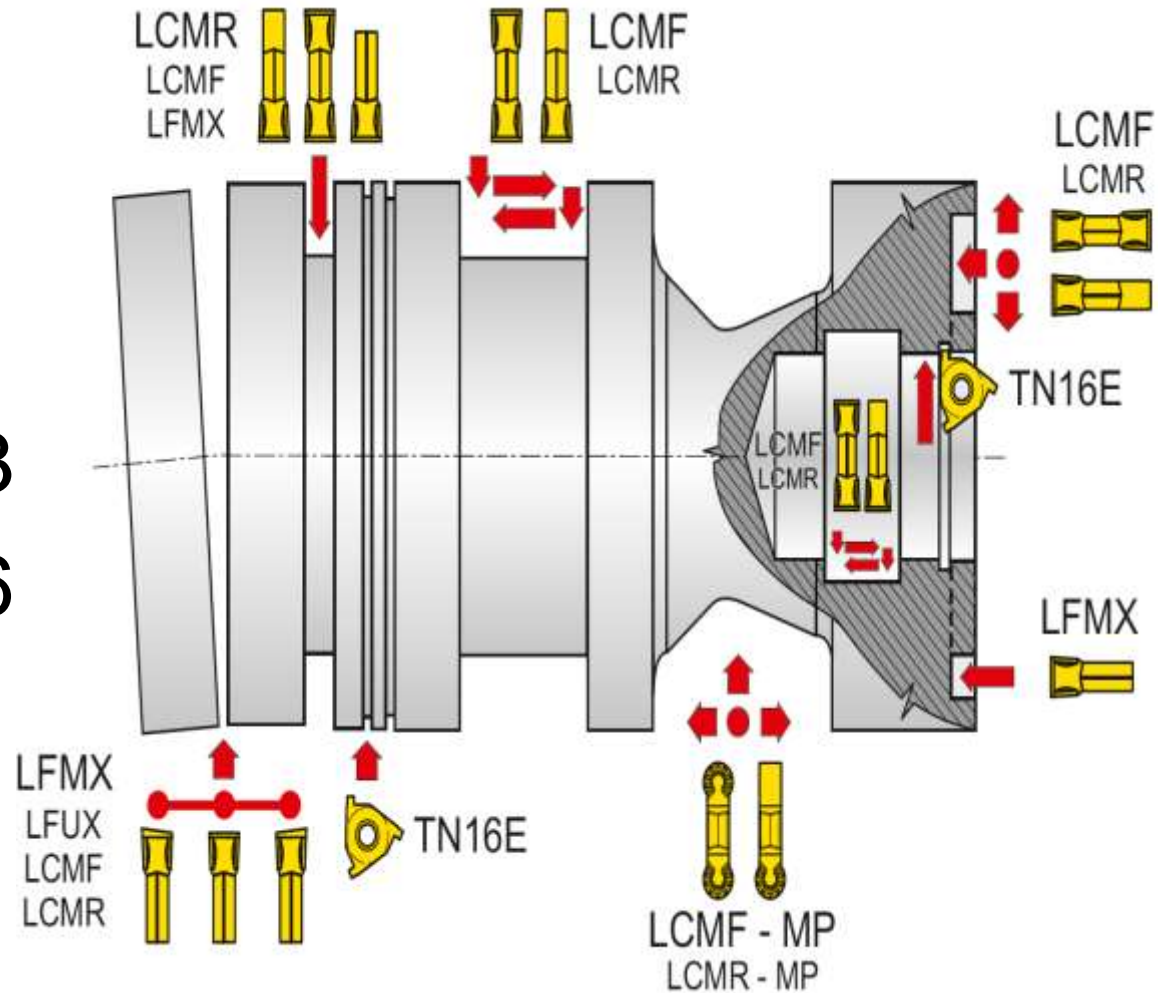


P&G Insert

Threading Insert

Grooving program overview

- LFUX
- LFMX
- LCMF/R 13
- LCMF/R 16
- LCMF 20
- TN-ZZ



CHIPBREAKERS OF INSERTS LCM.. 13,16



CM



**First choice for
parting off and
Grooving**

F



**For finishing
turning
and grooving**

M



**For rough
turning**

MO



**for profiling
(copy turning)**

CHIPBREAKERS OF INSERTS LCMF 20



F1



First choice for turning and finishing

L-M2



For parting off burr-free

M2



First choice for parting off and for grooving

R-M2



For parting off burr-free

MO



for profiling (copy turning)

TN-ZZ

- New inserts and holders for lock ring grooves

- TN11

- New internal holders for TN11 – without shim

- New widths 0,9 and 1,1 mm and R0,5 mm for TN11

- TN16

- New radius insert R0,5 and R1,0 mm for TN16

- TN22

- New widths 2,65; 3,15 and 4,15 mm and R1,5 mm for TN22



□ Cutting inserts TN 11(16,22)...

□ Metric 60° (ISO 965/1 1980)

□ WITWORTH 55° (ISO 228-1982)

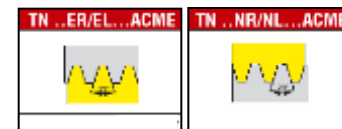
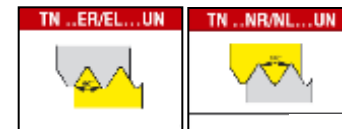
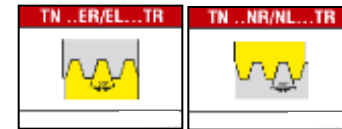
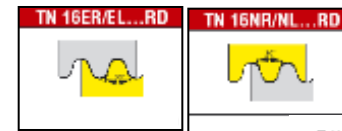
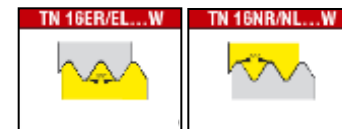
□ ROUND 30° (DIN 405-1981)

□ API RD

□ TR 30° (ISO 2901/3-1977)

□ AMERICAN UN 60° (ISO 5864-1978)

□ ACME (B1.5-1988)

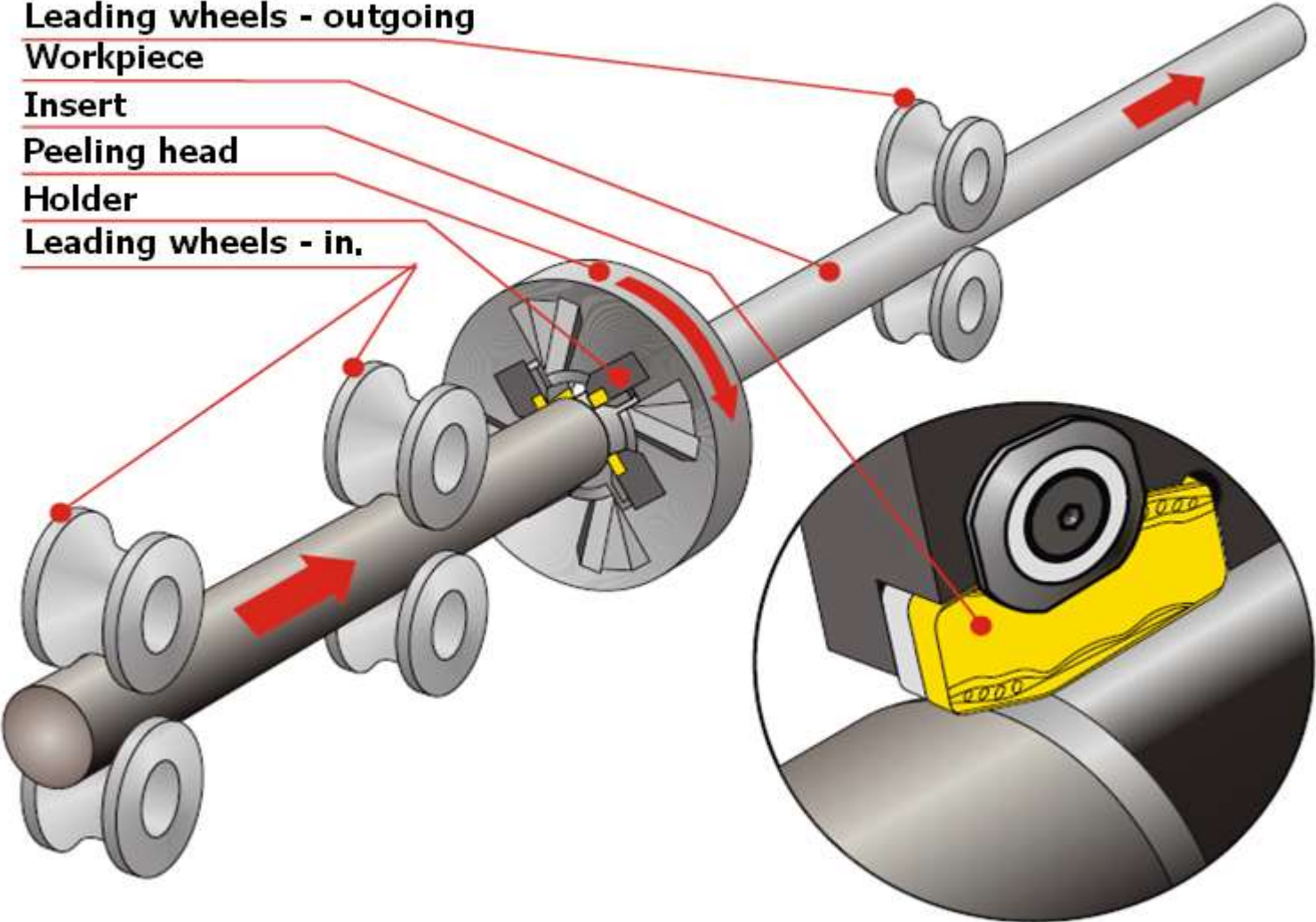




***BAR
PEELING***

Principle of bar peeling

- Leading wheels - outgoing
- Workpiece
- Insert
- Peeling head
- Holder
- Leading wheels - in,



Machined materials, diameters range

- carbon steels, annelaed or heat-treated steels
- tool steels
- creep-resistant steels
- range $\text{Ø}20 - 400$ mm

Roughness quality

- Bar peeling: $R_z = 4 - 8\mu\text{m}$; $R_a = 0,8 - 1,6\mu\text{m}$
- Bar peeling + rolling: $R_z = 0,8 - 1,6\mu\text{m}$; $R_a = 0,2 - 0,4\mu\text{m}$

Degree of precision, diameter tolerance

- Degree of precision IT9 – IT11
- Diameter tolerance : h9 – h11

Assortment, number of items

Inserts:

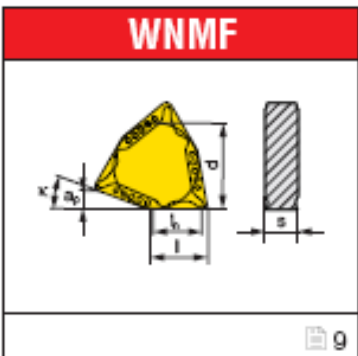
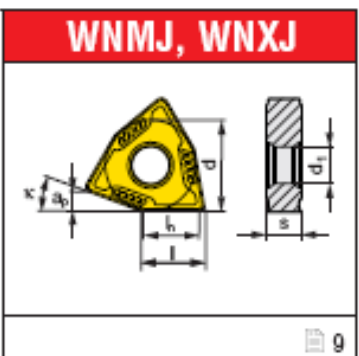
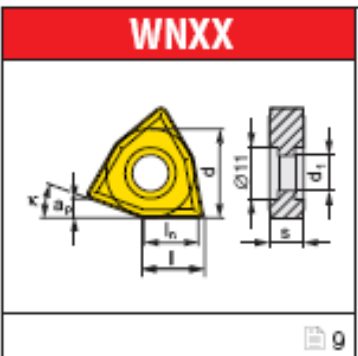
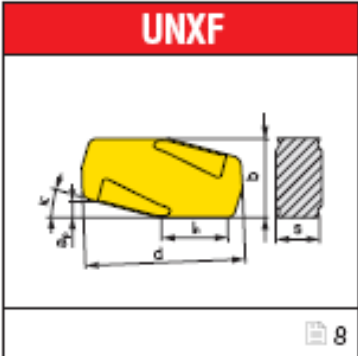
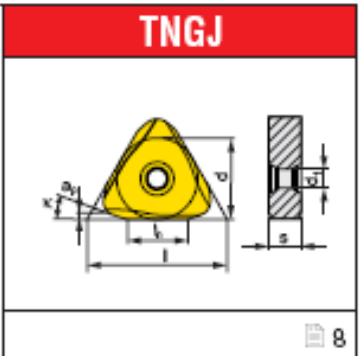
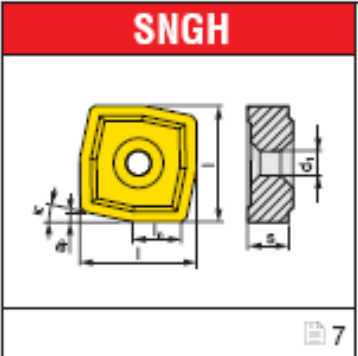
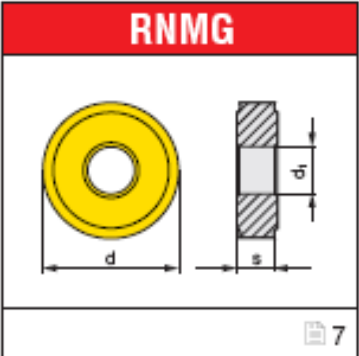
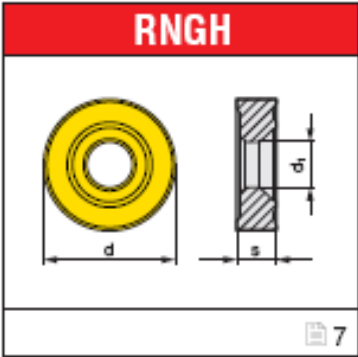
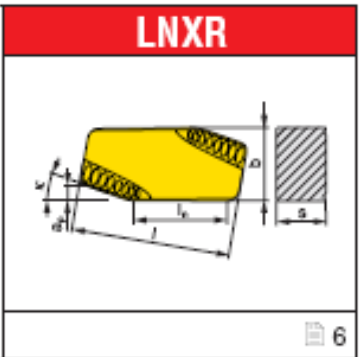
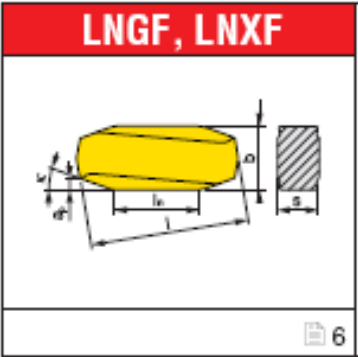
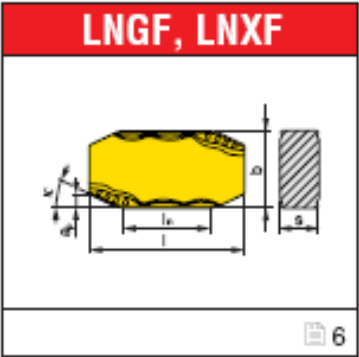
- stock assortment **26 items**
- non-stock assortment **24 items**

Tools, Cartridges:

- offer as special based on a customer request
- non-stock assortment - 1pc as sample



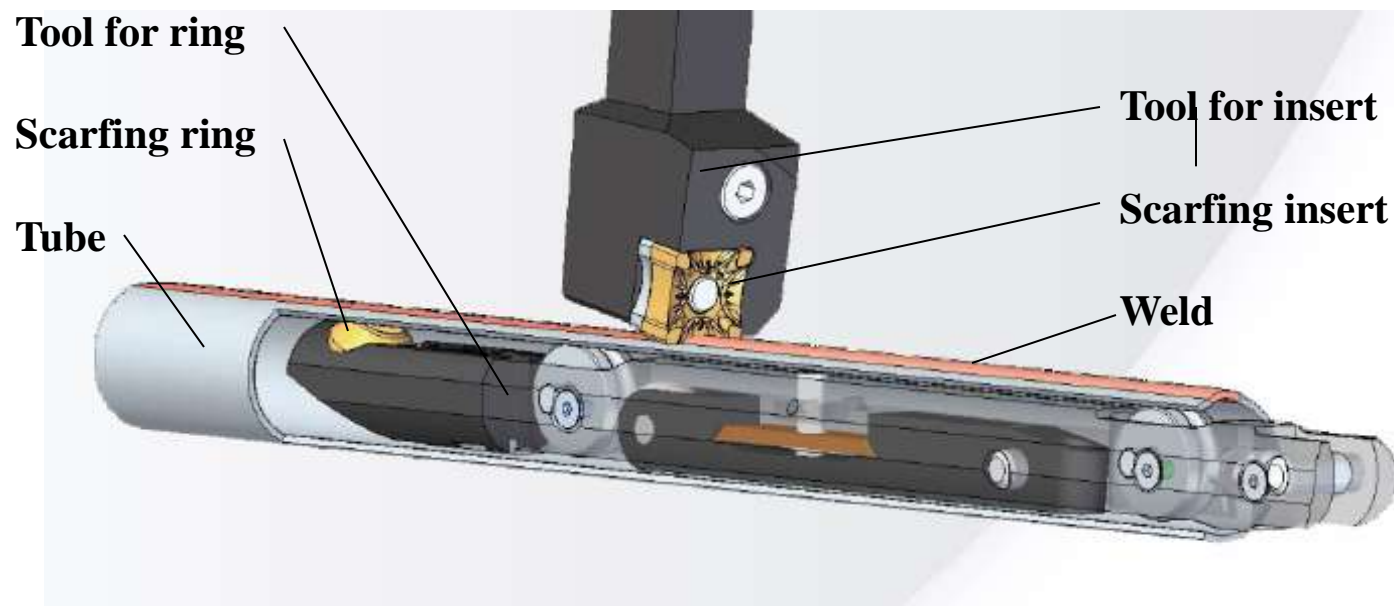
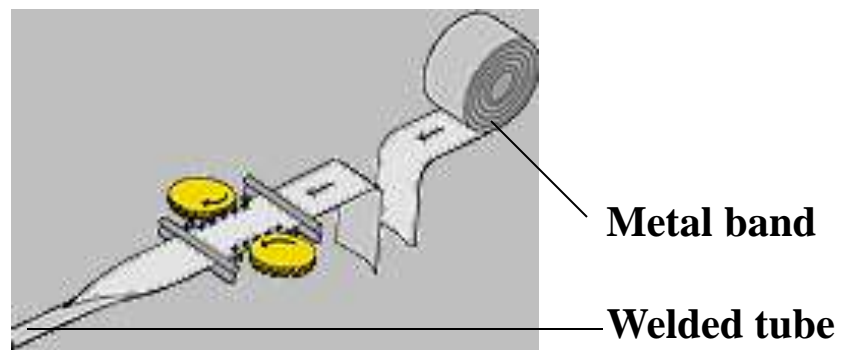
Inserts assortment



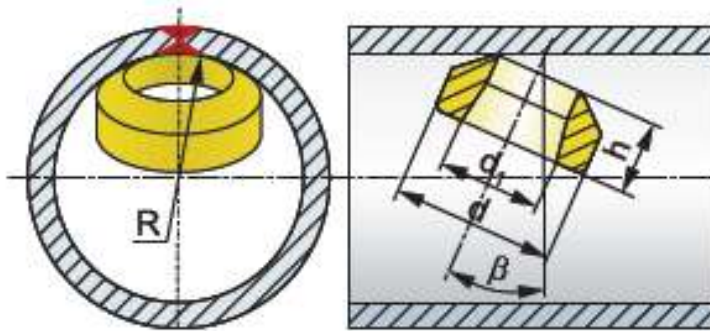


SCARFING

Principle of tube scarfing



Scarfing Ring function



Size of the working radius „R“

$$R = \frac{d_1}{2 \times \sin \beta}$$

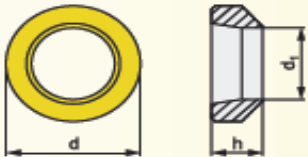


d_1 - internal diameter of ring
 β - angle of ring

usually $\beta = 26^\circ$



Internal scarfing - assortment

SCARFING RINGS

	ISO	GRADES						DIMENSIONS						
		5035	5040	S45				d	d ₁	h			working radius R	φ tube
	PSR0-R4.5	●	○	●				8	4	4			4,5	14-17
	PSR0-R6	●	○	●				10	5,5	4,5			6,2	16-19
	PSR0-R6.5	●	○	●				10	6	4,5			6,5	17-20
	PSR1-R7	●	○	●				13	6	5			6,8	20-22
	PSR1-R8	●	○	●				13	7	5			7,9	22-24
	PSR1-R9	●	○	●				13	8	5			9,1	24-26
	PSR2-R10	●	○	●				19	9	8			10,2	26-28
	PSR2-R11	●	○	●				19	10	8			11,4	29-30
	PSR2-R12	●	○	●				19	11	8			12,5	30-34
	PSR3-R14	●	○	●				22	12	10			13,7	32-41
	PSR3-R17	●	○	●				22	15	10			17,1	41-50
	PSR4-R23	●	○	●				30	20	12			22,8	46-72
	5-AL 25	○	○	●				35	22	12			25,1	70-85
	5-AL 28	○	○	●				35	25	12			28,5	85-100
	6-AL 34	○	○	●				45	30	15			34,2	100-130
	7-AL 39	○	○	●				50	35	15			39,5	125-140
	8-AL 46	○	○	●				55	40	18			45,6	150-160

Launching day :

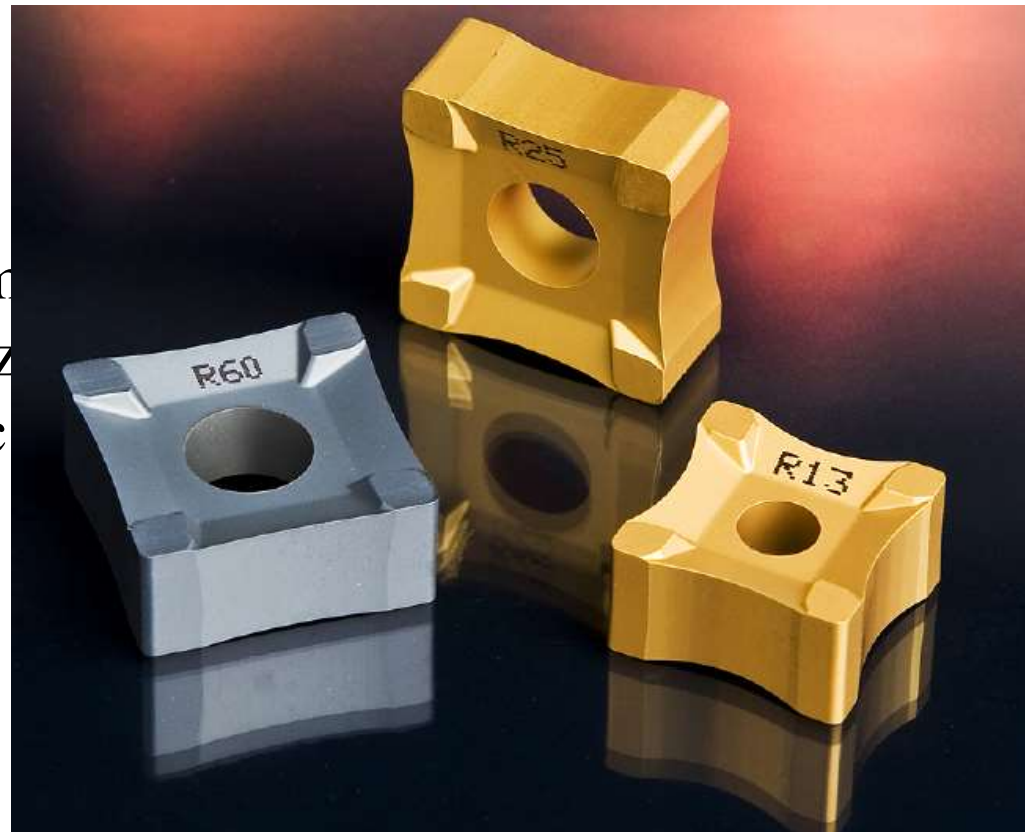
1.4.2010

External scarfing

Market potential of inserts: 2 mil.
pcs/year

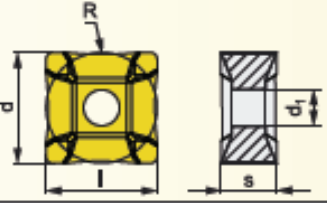

Producer:

Döhlerit (28 items)
eratiz
oo etc



External scarfing – assortment

Insert SNMX 15-Rxx

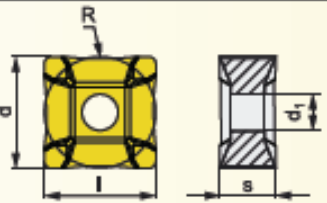

	ISO	GRADES					DIMENSIONS						
		6640					l	d	d ₁	s	R		
	SNMX 15-R07	●					15,875	15,875	5,16	8,15	7		
	SNMX 15-R09	●					15,875	15,875	5,16	8,15	9		
	SNMX 15-R11	●					15,875	15,875	5,16	8,15	11		
	SNMX 15-R13	●					15,875	15,875	5,16	8,15	13		
	SNMX 15-R15	●					15,875	15,875	5,16	8,15	15		
	SNMX 15-R18	●					15,875	15,875	5,16	8,15	18		
	SNMX 15-R20	●					15,875	15,875	5,16	8,15	20		
	SNMX 15-R22	●					15,875	15,875	5,16	8,15	22		
	SNMX 15-R25	●					15,875	15,875	5,16	8,15	25		
	SNMX 15-R27	●					15,875	15,875	5,16	8,15	27		
	SNMX 15-R30	●					15,875	15,875	5,16	8,15	30		
	SNMX 15-R35	●					15,875	15,875	5,16	8,15	35		
	SNMX 15-R40	●					15,875	15,875	5,16	8,15	40		
	SNMX 15-R45	●					15,875	15,875	5,16	8,15	45		
	SNMX 15-R50	●					15,875	15,875	5,16	8,15	50		
SNMX 15-R60	●					15,875	15,875	5,16	8,15	60			

Launching day :

1.4.2010

External scarfing – assortment

Insert SNMX 19-Rxx

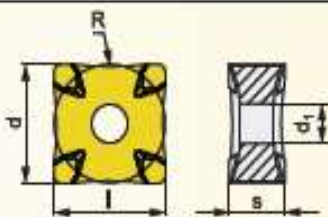

	ISO	GRADES					DIMENSIONS						
		6640					l	d	d ₁	s	R		
	SNMX 19-R10	●					19,05	19,05	7,95	8,15	10		
	SNMX 19-R12	●					19,05	19,05	7,95	8,15	12		
	SNMX 19-R15	●					19,05	19,05	7,95	8,15	15		
	SNMX 19-R20	●					19,05	19,05	7,95	8,15	20		
	SNMX 19-R25	●					19,05	19,05	7,95	8,15	25		
	SNMX 19-R30	●					19,05	19,05	7,95	8,15	30		
	SNMX 19-R35	●					19,05	19,05	7,95	8,15	35		
	SNMX 19-R40	●					19,05	19,05	7,95	8,15	40		
	SNMX 19-R45	●					19,05	19,05	7,95	8,15	45		
	SNMX 19-R50	●					19,05	19,05	7,95	8,15	50		
	SNMX 19-R55	●					19,05	19,05	7,95	8,15	55		
	SNMX 19-R60	●					19,05	19,05	7,95	8,15	60		
	SNMX 19-R65	●					19,05	19,05	7,95	8,15	65		
	SNMX 19-R80	●					19,05	19,05	7,95	8,15	80		
	SNMX 19-R90	●					19,05	19,05	7,95	8,15	90		
SNMX 19-R110	●					19,05	19,05	7,95	8,15	110			

Launching day :

1.4.2010

External scarfing – assortment

Insert SNMX 25-Rxx

	ISO	GRADES					DIMENSIONS						
		66-40					l	d	d ₁	s	R		
	SNMX 25-R50	●					25,40	25,40	9,12	12,20	50		
	SNMX 25-R80	●					25,40	25,40	9,12	12,20	80		
	SNMX 25-R100	●					25,40	25,40	9,12	12,20	100		
	SNMX 25-R120	●					25,40	25,40	9,12	12,20	120		
	SNMX 25-R140	●					25,40	25,40	9,12	12,20	140		
	SNMX 25-R160	●					25,40	25,40	9,12	12,20	160		
	SNMX 25-R180	●					25,40	25,40	9,12	12,20	180		
	SNMX 25-R200	●					25,40	25,40	9,12	12,20	200		

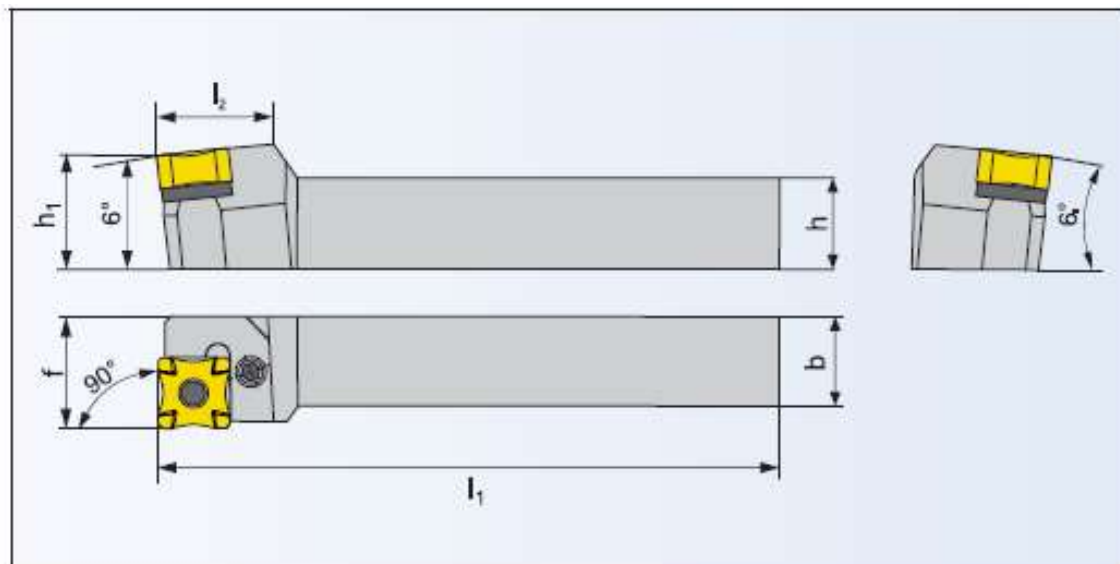
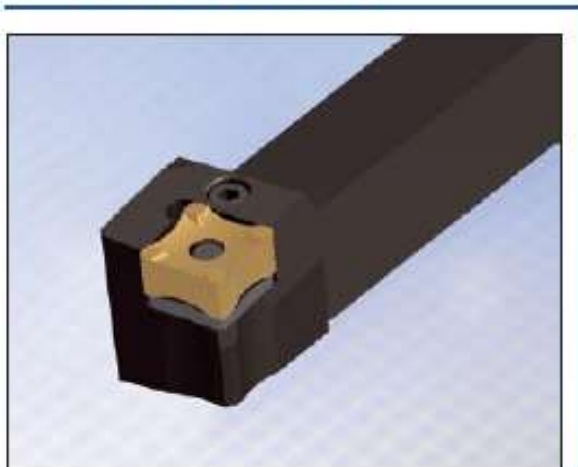
Launching day :

1.4.2010

External scarfing – holders

SNMX xx-Rxx

PXFNR/L



ISO	R/L	DIMENSIONS								kg	ND	VBD
		h=h ₁	b	f	l ₁	l _{2max}						
PXFNR/L 2525 R15	• / •	25	25	25	200	40				1,05	PX 40	SNMX 15-R..
PXFNR/L 2525 S19	• / •	25	25	25	250	45				1,30	PX 50	SNMX 19-R..
PXFNR/L 3232 S25	• / •	32	32	40	250	50				2,20	PX 60	SNMX 25-R..

Launching day :

1.4.2010

GRADES for rings and inserts

GRADES	P						M					
	P01	P10	P20	P30	P40	P50	M01	M10	M20	M30	M40	
for inserts												
6640			█						█			
for rings												
5035			█						█			
5040			█						█			
S45				█						█		

GRADES			
5035	5040	6640	S45
first choice for machining of carbon steel and stainless steels – high cutting condition	grade for alloyed steels	very tough grade for universal operations on carbon steel and stainless steels	very tough grade for carbon and stainless steels – low cutting condition



*I wish you every
success in the
application of
cutting rings
and inserts
for scarfing*