

Tooling solutions  
for Railway Industry



RAILWAY



SINCE 1916

# RAILWAY INDUSTRY

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RAILWAY

After thousands of kilometers on widely varying routes and carrying heavy loads, the stress and wear suffered in the train wheels and their set components are so high that their life cycle becomes extremely dependent on a high standard of manufacturing quality and normal servicing. The running surfaces of the wheels and tracks are responsible for comfort and safety of travel.

Palbit is constantly investing in new technologies, research and development of cutting tools for the railway industry to achieve the highest quality in order to ensure a maximum of operational safety.

Based on a wide know-how, Palbit supplies the highest efficiency machining of new rails and wheels, as well as re-profiling, crossing rails, joints, among others.

Palbit provides large range of tools as standard or tailor-made solution to support all the manufacturers of railways components. We can apply a large tool range in the course of the daily operation that varies between milling, drilling or turning.

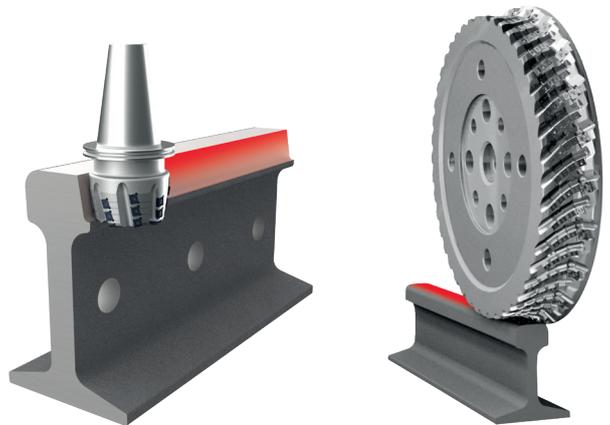
## TAILOR-MADE SOLUTIONS

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Palbit supplies tailor made-solutions for rail profiling and re-profiling with all types of customized inserts.



TAILOR-MADE INSERTS



## STANDARD SOLUTIONS

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Palbit offers a large variety of different standard solutions on drilling and turning for the machining of the wheel sets. The JET Drill program contains over 200 drilling solutions from Ø12 to Ø80 with inserts for stable and unstable conditions.



SPKX



WCKX

DRILLING INSERTS



# STANDARD INSERTS APPLICATIONS

## CENTER TURNING



The center of the wheel can have many different shapes.

Palbit offers a large range of geometries and sizes for all the shapes required.



CNMM



SNMM



RCMX/R

## RIM AND FLANGE TURNING



High standards are required in the re-profiling of the Rim and Flange of the wheel.

These standards are achieved with great reliability with specialized inserts, designed exclusively for this purpose.



LNUX



## HUB AND BOSS TURNING



The Hub and Boss may contain a high stock quantity to be removed.

This operation can be achieved in a single step.



CNMM



SNMM

## AXLE TURNING

The manufacturing of train axes requires high standards.

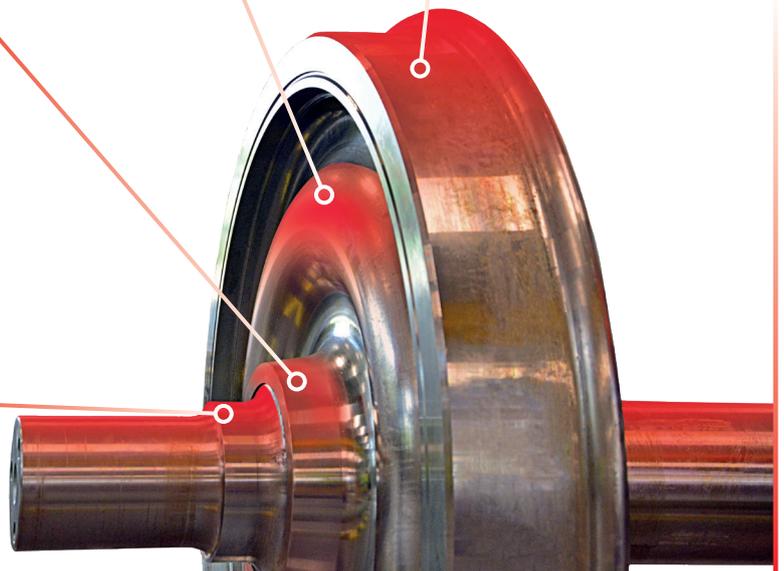
Palbit inserts are designed and tested to meet these standards with the highest reliability and spectacular performance.



CNMM

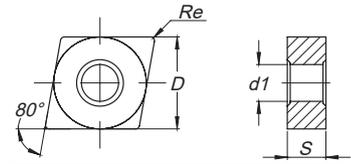


SNMM



# CN = RHOMBIC 80° NEGATIVE

RÔMBICA 80° NEGATIVA | RÓMBICA 80° NEGATIVA



Inserts Pastilhas Plaquitas	(1) Geometry code	(2) Grade code		P			M		K			Dimensions (mm) Dimensões (mm) Dimensiones (mm)				Cutting Conditions Condições de Corte Condiciones de Corte						
				CVD-MT			CVD-MT		CVD-MT			D	S	Re	d1	ap (mm)	Min	Max	fn (mm/rev)	Min	Max	
				R2	R3	V5	U4	V6	L5	L6	L9											
 CNMM-HY Heavy to Roughing	1121608	CNMM 190612-HY	CNMM 643-HY	⊗	⊗				⊗			19,05	6,35	1,20	7,94	6,00	2,00	12,00	0,50	0,35	0,80	
	1121252	CNMM 190616-HY	CNMM 644-HY	⊗	⊗				⊗			19,05	6,35	1,60	7,94	6,00	2,00	12,00	0,60	0,35	1,00	
	1121434	CNMM 190624-HY	CNMM 646-HY	⊗	⊗				⊗			19,05	6,35	2,40	7,94	6,00	2,00	12,00	0,60	0,35	1,20	
	1121248	CNMM 250924-HY	CNMM 866-HY	⊗	⊗				⊗			25,40	9,52	2,40	9,12	8,00	2,50	15,00	0,70	0,40	1,40	
 CNMM-HZ Heavy to Roughing	1121607	CNMM 190612-HZ	CNMM 643-HZ	⊗	⊗	⊗					⊗	⊗	19,05	6,35	1,20	7,94	10,00	2,40	12,00	0,65	0,50	0,80
	1121251	CNMM 190616-HZ	CNMM 644-HZ	⊗	⊗	⊗					⊗	⊗	19,05	6,35	1,60	7,94	10,00	2,40	12,00	0,80	0,50	1,10
	1121435	CNMM 190624-HZ	CNMM 646-HZ	⊗	⊗	⊗					⊗	⊗	19,05	6,35	2,40	7,94	10,00	3,20	12,00	1,00	0,60	1,60
	1121247	CNMM 250924-HZ	CNMM 866-HZ	⊗	⊗	⊗					⊗	⊗	25,40	9,52	2,40	9,12	10,00	3,20	17,00	1,00	0,60	1,60

⊗ First choice | 1ª Escolha | 1ª Opción

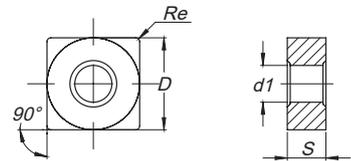
⊗ Stock Items | Itens de stock

○ Available under request | Disponível sob consulta | Disponible bajo consulta

Insert Order Code: (1) Geometry code + (2) Grade code

# SN = SQUARE 90° NEGATIVE

QUADRADA 90° NEGATIVA | ESQUADRA 90° NEGATIVA



Inserts Pastilhas Plaquitas	(1) Geometry code	(2) Grade code		P			M		K			Dimensions (mm) Dimensões (mm) Dimensiones (mm)				Cutting Conditions Condições de Corte Condiciones de Corte						
				CVD-MT			CVD-MT		CVD-MT			D	S	Re	d1	ap (mm)	Min	Max	fn (mm/rev)	Min	Max	
				R2	R3	V5	U4	V6	L5	L6	L9											
 SNMM-HY Heavy to Roughing	1121606	SNMM 190612-HY	SNMM 643-HY	⊗	⊗	⊗			⊗			19,05	6,35	1,20	7,94	6,00	2,00	12,00	0,60	0,35	0,90	
	1121250	SNMM 190616-HY	SNMM 644-HY	⊗	⊗	⊗			⊗			19,05	6,35	1,60	7,94	6,00	2,00	12,00	0,60	0,35	1,20	
	1121452	SNMM 190624-HY	SNMM 646-HY	⊗	⊗	⊗			⊗			19,05	6,35	2,40	7,94	6,00	2,00	12,00	1,00	0,60	1,60	
	1121160	SNMM 250724-HY	SNMM 856-HY	⊗	⊗	⊗			⊗			25,40	7,94	2,40	9,12	8,50	2,50	15,00	1,00	0,60	1,60	
 SNMM-HZ Heavy to Roughing	1121161	SNMM 250924-HY	SNMM 866-HY	⊗	⊗	⊗			⊗			25,40	9,52	2,40	9,12	8,50	3,00	15,00	1,00	0,60	1,60	
	1121605	SNMM 190612-HZ	SNMM 643-HZ	⊗	⊗	⊗					⊗	⊗	19,05	6,35	1,20	7,94	10,00	2,40	13,00	0,60	0,35	0,90
	1121249	SNMM 190616-HZ	SNMM 644-HZ	⊗	⊗	⊗					⊗	⊗	19,05	6,35	1,60	7,94	10,00	2,40	13,00	0,60	0,35	1,20
	1121440	SNMM 190624-HZ	SNMM 646-HZ	⊗	⊗	⊗					⊗	⊗	19,05	6,35	2,40	7,94	10,00	3,20	13,00	1,00	0,60	1,60
	1121158	SNMM 250724-HZ	SNMM 856-HZ	⊗	⊗	⊗			⊗		⊗	⊗	25,40	7,94	2,40	9,12	10,00	3,20	17,00	1,00	0,60	1,60
	1123786	SNMM 250732-HZ	SNMM 858-HZ	⊗	⊗	⊗					⊗	⊗	25,40	7,94	3,20	9,12	10,00	3,20	17,00	1,20	0,80	1,80
1121159	SNMM 250924-HZ	SNMM 866-HZ	⊗	⊗	⊗					⊗	⊗	25,40	9,52	2,40	9,12	10,00	3,20	17,00	1,00	0,60	1,60	

⊗ First choice | 1ª Escolha | 1ª Opción

⊗ Stock Items | Itens de stock

○ Available under request | Disponível sob consulta | Disponible bajo consulta

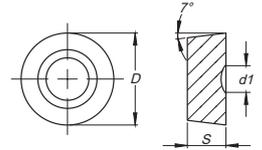
Insert Order Code: (1) Geometry code + (2) Grade code



# RC = ROUND R° POSITIVE

RELIEF ANGLE 7°

REDONDA R° POSITIVA | REDONDA R° POSITIVA

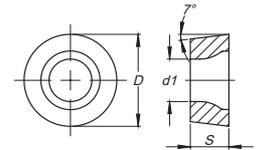


Inserts Pastilhas Plaquetas	(1) Geometry code	(2) Grade code		P			K			Dimensions (mm) Dimensões (mm) Dimensiones (mm)				Cutting Conditions Condições de Corte Condiciones de Corte						
				CVD-MT			CVD-MT			D	S	Re	d1	ap (mm)	Min	Max	fn (mm/rev)	Min	Max	
				R2	R3	V5	L5	L6	L9											
RCMR-RR 	1122009	RCMR 2507M0-RR	RCMR 2507M0-RR	⊗	⊗						25,00	7,94	-	9,00	5,00	3,20	8,00	1,80	0,80	2,50
	1122008	RCMR 3209M0-RR	RCMR 3209M0-RR	⊗	⊗						32,00	9,52	-	12,00	6,50	3,20	13,00	1,80	0,80	2,50
Roughing to Medium																				

# RC = ROUND R° POSITIVE

RELIEF ANGLE 7°

REDONDA R° POSITIVA | REDONDA R° POSITIVA



Inserts Pastilhas Plaquetas	(1) Geometry code	(2) Grade code		P				K			Dimensions (mm) Dimensões (mm) Dimensiones (mm)				Cutting Conditions Condições de Corte Condiciones de Corte						
				CVD-MT				CVD-MT			D	S	Re	d1	ap (mm)	Min	Max	fn (mm/rev)	Min	Max	
				L7	R2	R3	V5	L5	L6	L9											
RCMX-ST 	1121428	RCMX 2006M0-ST	RCMX 2006M0-ST		⊗	⊗			⊗			20,00	6,35	-	6,50	5,00	2,00	8,00	0,63	0,20	2,00
	1121429	RCMX 2507M0-ST	RCMX 2507M0-ST	⊗	⊗	⊗						25,00	7,94	-	7,20	6,30	2,50	10,00	0,79	0,25	2,50
	1123910	RCMX 3009M0-ST	RCMX 3009M0-ST		⊗	⊗						30,00	9,55	-	10,00	7,00	3,00	11,00	0,85	0,30	2,80
Roughing to Medium	1121430	RCMX 3209M0-ST	RCMX 3209M0-ST	⊗	⊗	⊗						32,00	9,52	-	9,50	8,00	3,20	12,80	1,01	0,32	3,20
RCMX-RM 	1123678	RCMX 3209M0-RM	RCMX 3209M0-RM		⊗	⊗			⊗			32,00	9,52	-	9,50	6,50	3,20	13,00	1,80	0,80	2,50
Roughing to Medium																					
RCMX-RR 	1123667	RCMX 2507M0-RR	RCMX 2507M0-RR		⊗	⊗						25,00	7,94	-	7,20	5,00	3,20	8,00	1,80	0,80	2,50
	1123666	RCMX 3209M0-RR	RCMX 3209M0-RR		⊗	⊗	⊗					32,00	9,52	-	9,50	6,50	3,20	13,00	1,80	0,80	2,50
Roughing to Medium																					

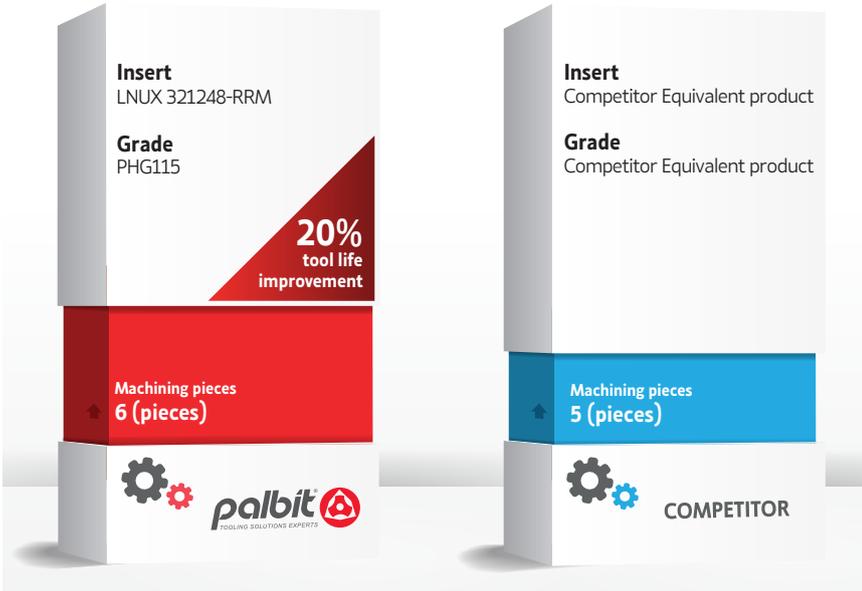
⊗ First choice | 1ª Escolha | 1ª Opción

⊗ Stock Items | Itens de stock

○ Available under request | Disponível sob consulta | Disponible bajo consulta

Insert Order Code: (1) Geometry code + (2) Grade code

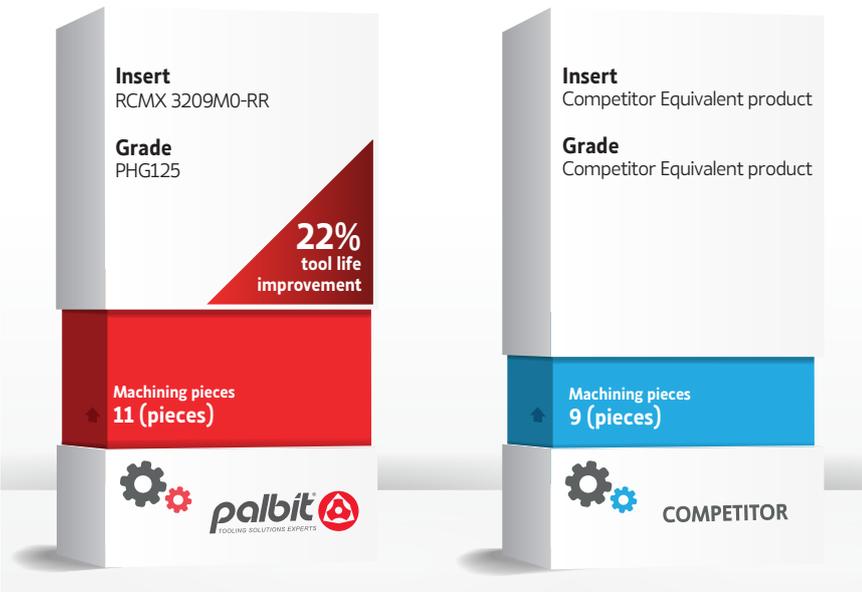
## NEGATIVE INSERTS - RIM AND FLANGE TURNING



Workpiece material: ER9 (Steel)

Cutting speed: Vc	20 m/min
Feed per rev: fn	0,20 rev/r
Depth of cut: ap	8,00 mm

## POSITIVE INSERTS - CENTER TURNING



Workpiece material: ER9 (Steel)

Cutting speed: Vc	100 m/min
Feed per rev: fn	1,30 rev/r
Depth of cut: ap	8,00 mm



## RAILWAY

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