

Tooling solutions
for Railway Industry



RAILWAY



SINCE 1916

RAILWAY INDUSTRY



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.

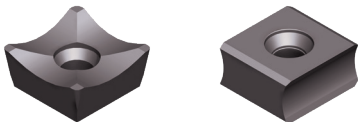
Palbit is constantly investing in new technologies, research and development of cutting tools for the railway industry to achieve the highest quality in order to ensure a maximum of operational safety.

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.

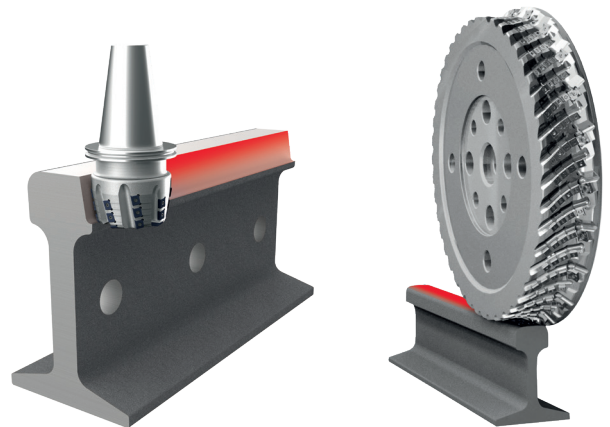
Palbit provides large range of tools as standard or tailor-made solution to support all the manufacturers of railways components. We can apply a large tool range in the course of the daily operation that varies between milling, drilling or turning.

TAILOR-MADE SOLUTIONS

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



TAILOR-MADE INSERTS



STANDARD SOLUTIONS

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.

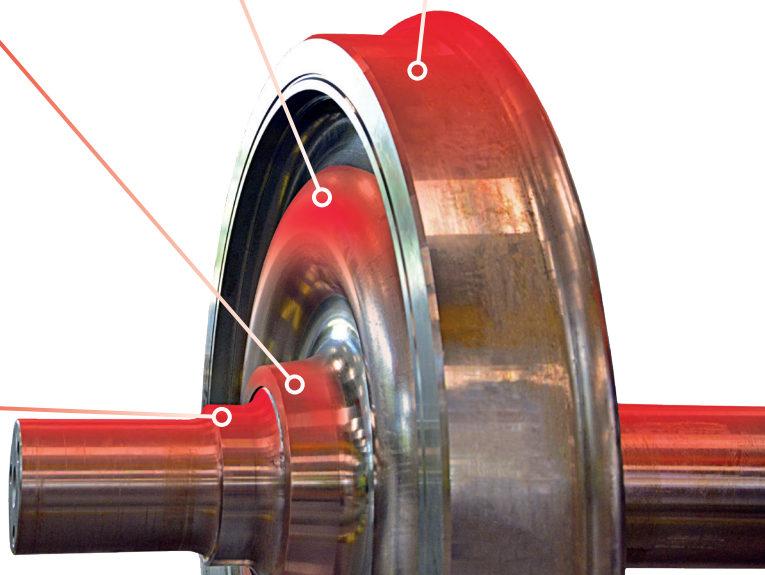
Palbit inserts are designed and tested to meet these standards with the highest reliability and spectacular performance.



CNMM

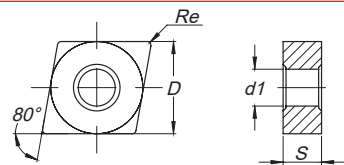


SNMM



CN = RHOMBIC 80° NEGATIVE

RÔMBICA 80° NEGATIVA | RÔMBICA 80° NEGATIVA



				P			M		K			Dimensions (mm) Dimensões (mm) Dimensiones (mm)				Cutting Conditions Condições de Corte Condiciones de Corte					
				CVD-MT			CVD-MT		CVD-MT												
Inserts Pastilhas Plaquitas	(1) Geometry code	(2) Grade code		R2	R3	V5	U4	V6	L5	L6	L9										
		ISO Reference	ANSI Reference	PHG115	PHG125	PHG140	PHS215	PHS240	PH5705	PH5320	PH5740	D	S	Re	d1	ap (mm)	Min	Max	fn (mm/rev)	Min	Max
 Heavy to Roughing	CNMM-HY 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
 Heavy to Roughing	CNMM-HZ 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

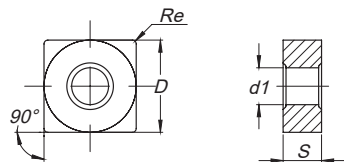
Ⓢ Stock Items | Itens de stock

○ 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



				P			M		K			Dimensions (mm) Dimensões (mm) Dimensiones (mm)				Cutting Conditions Condições de Corte Condiciones de Corte					
				CVD-MT			CVD-MT		CVD-MT												
Inserts Pastilhas Plaquitas	(1) Geometry code	(2) Grade code		R2	R3	V5	U4	V6	L5	L6	L9										
		ISO Reference	ANSI Reference	PHG115	PHG125	PHG140	PHS215	PHS240	PH5705	PH5320	PH5740	D	S	Re	d1	ap (mm)	Min	Max	fn (mm/rev)	Min	Max
 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
	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
 Heavy to Roughing	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

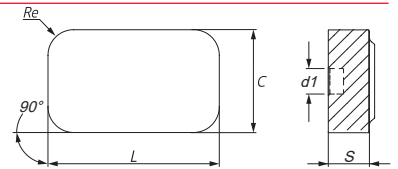
Ⓢ Stock Items | Itens de stock

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

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

LNUX = RECTANGULAR 90° NEGATIVE

RECTANGULAR 90° NEGATIVA | RETANGULAR 90° NEGATIVA



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												
		ISO Reference	ANSI Reference	T6 PHG105	R2 PHG115	R3 PHG125	V5 PHG140	L5 PH5705	L6 PH5320	L9 PH5740	L	C	Re	S	d1	ap (mm)	Min	Max	fn (mm/rev)	Min
LNUX-RMM																				
	1123640	LNUX 321248-RMM	LNUX 321248-RMM																	
Medium																				
LNUX-RRM																				
	1123639	LNUX 321248-RRM	LNUX 321248-RRM																	
Roughing																				
LNUX-RHR																				
	1123643	LNUX 321248-RHR	LNUX 321248-RHR																	
Heavy Roughing																				

 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

⊗ First choice | 1ª Escolha | 1ª Opción

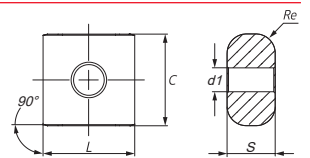
⊗ Stock Items | Itens de stock

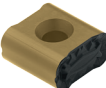
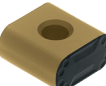
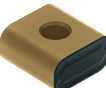
○ Available under request | Disponível sob consulta | Disponible bajo consulta

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

LNUX=T = TANGENTIAL 90° NEGATIVE

TANGENCIAL 90° NEGATIVA | TANGENCIAL 90° NEGATIVA



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														
		ISO Reference	ANSI Reference	T6 PHG105	R2 PHG115	R3 PHG125	V5 PHG140	L5 PH5705	L6 PH5320	L9 PH5740	L	C	Re	S	d1	ap (mm)	Min	Max	fn (mm/rev)	Min	Max	
LNUX-RMM-T																						
	1121953	LNUX 191940-RMM-T	LNUX 191940-RMM-T								19,05	19,05	4,00	10,00	6,35	2,50	1,60	8,00	0,80	0,30	1,50	
	1122005	LNUX 301940-RMM-T	LNUX 301940-RMM-T								30,00	19,05	4,00	10,00	6,35	4,50	1,60	13,00	0,80	0,30	1,50	
Medium																						
LNUX-RRM-T																						
	1120404	LNUX 191940-RRM-T	LNUX 191940-RRM-T								19,05	19,05	4,00	10,00	6,35	5,50	2,50	10,00	1,00	0,80	1,50	
	1123985	LNUX 301940-RRM-T	LNUX 301940-RRM-T								30,00	19,05	4,00	12,00	6,35	3,00	2,50	12,00	1,00	0,50	2,00	
Roughing																						
LNUX-RHR-T																						
	1191628	LNUX 191940-RHR-T	LNUX 191940-RHR-T								19,05	19,05	4,00	10,00	6,35	5,50	2,50	10,00	1,20	0,50	1,80	
	1191969	LNUX 301940-RHR-T	LNUX 301940-RHR-T								30,00	19,05	4,00	10,00	6,35	6,50	3,00	15,00	1,20	0,50	1,80	
Heavy Roughing																						

 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

⊗ First choice | 1ª Escolha | 1ª Opción

⊗ Stock Items | Itens de stock

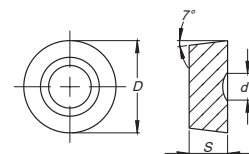
○ Available under request | Disponível sob consulta | Disponible bajo consulta

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

RC = ROUND R° POSITIVE

RELIEF ANGLE 7°

REDONDA R° POSITIVA | REDONDA R° POSITIVA

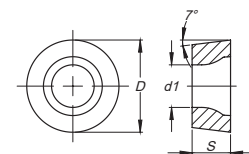


Inserts Pastilhas Plaquetas	(1) Geometry code	(2) Grade code		P			K			Dimensions (mm) Dimensões (mm) Dimensiones (mm)				Cutting Conditions Condições de Corte Condiciones de Corte					
				CVD-MT			CVD-MT			D	S	Re	d1	ap (mm)	Min	Max	fn (mm/rev)	Min	Max
		ISO Reference	ANSI Reference	R2	R3	V5	L5	L6	L9										
RCMR-RR Roughing to Medium	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

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
		ISO Reference	ANSI Reference	L7	R2	R3	V5	L5	L6	L9										
RCMX-ST Roughing to Medium	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
	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 Roughing to Medium	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
RCMX-RR Roughing to Medium	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

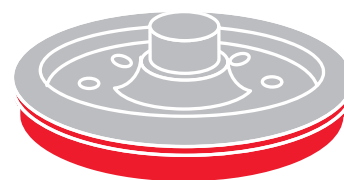
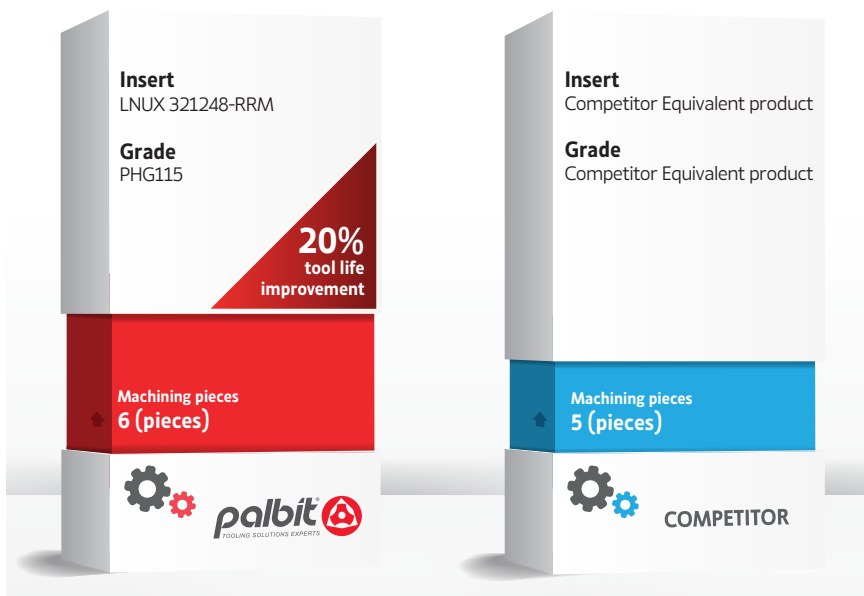
Ⓜ First choice | 1ª Escolha | 1ª Opción

Ⓜ Stock Items | Itens de stock

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

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

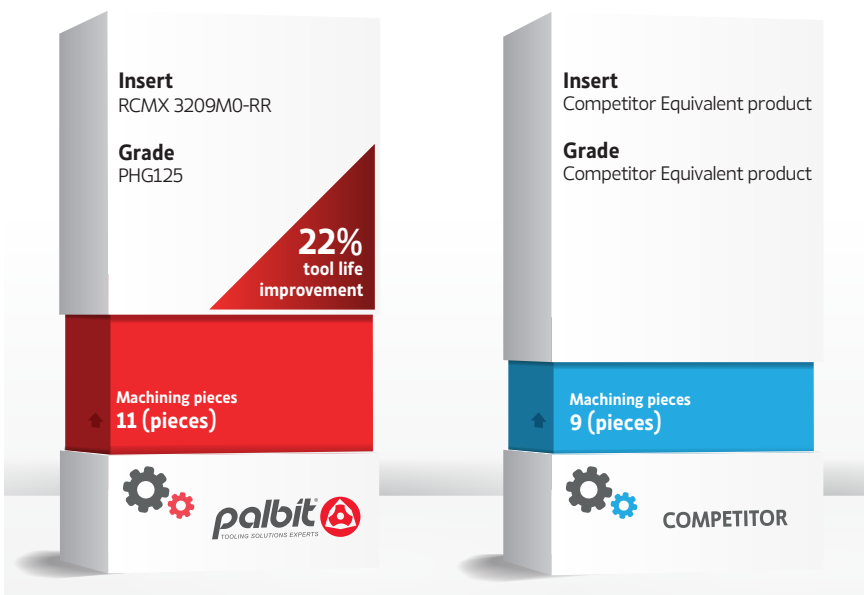
NEGATIVE INSERTS - RIM AND FLANGE TURNING



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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