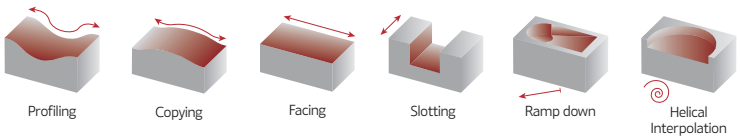
Super performance on Superalloy machining



palbit TOOLING SOLUTIONS EXPERTS SINCE1916

TURBOMILL NEW
34190 | 34290

PHP NEW GRADE

PHH NEW GRADE

PDF

VIDEO

SINCE 1916

NEW MILLING GRADES

NEW

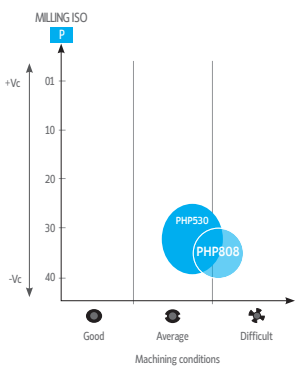
Novos graus de fresagem | Nuevos grados de fresado

With the new PHP and PHH PVD coating technology, Palbit has developed special grades for steel and superalloy machining. With these new grades we guarantee that our inserts will last longer.
Test results show an improvement of 180% in tool life in comparison with our previous grades when machining Stainless steel.

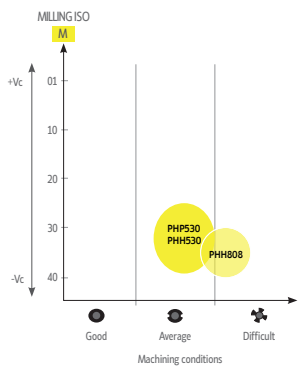
			Materials	Applications	Characteristics
NEW PVD GRADES	PHP530	P25-P40 M25-M40	New milling grade for steel with a coarse grain substrate	Exceptional solution for Alloy Steels and ferritic stainless steels	Extreme heat resistance
	PHP808	P30-P40		Great solution for Steel milling	
	PHH530	M25-M40 S25-S35	New milling grade for stainless steel with a coarse grain substrate	First choice for Stainless steel and HRSA milling	Extreme heat resistance
	PHH808	M30-M40 S30-S40		Great solution for stainless steel milling	
CVD GRADE	PHS740	P30-P50	CVD alternative when increased wear resistance is needed	Suited for removal of oxide layer	

PVD grades

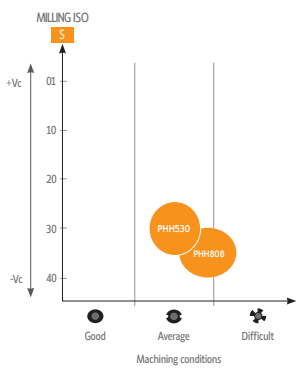
P - STEEL



M - STAINLESS STEEL

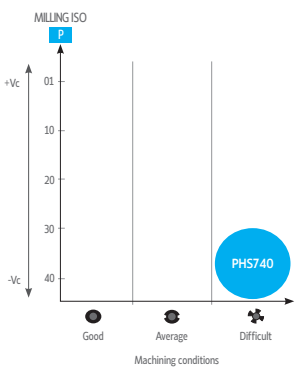


S - HEAT RESISTANT / TITANIUM ALLOYS



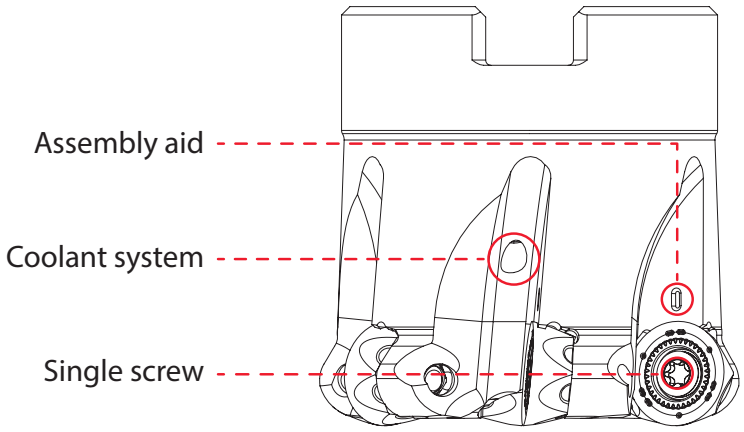
CVD grade

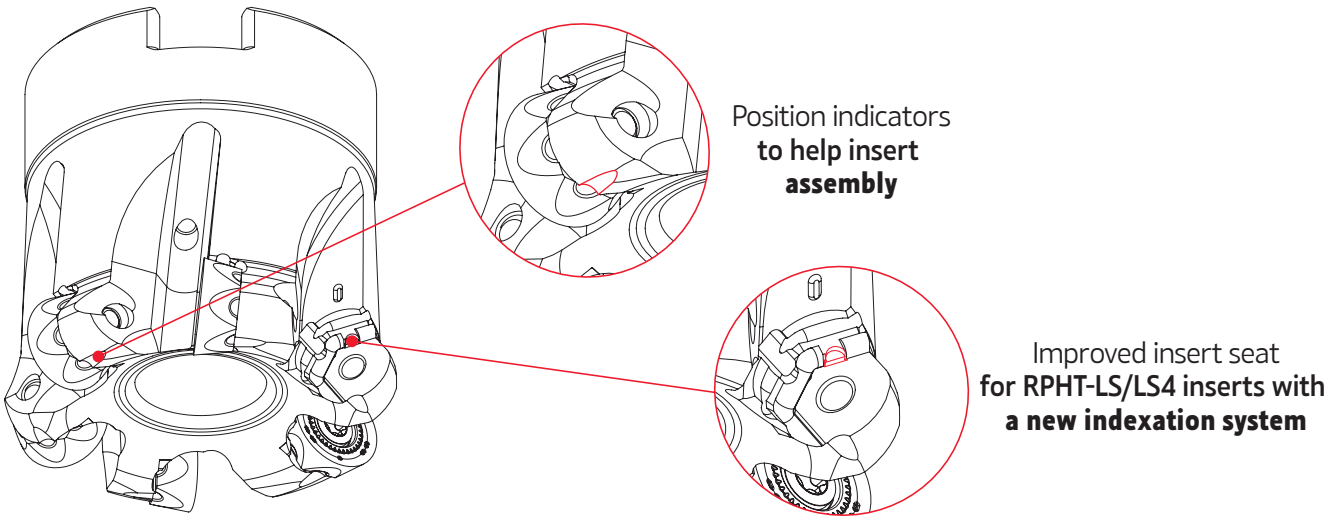
P - STEEL



NEW

Super performance on supper alloy machining.





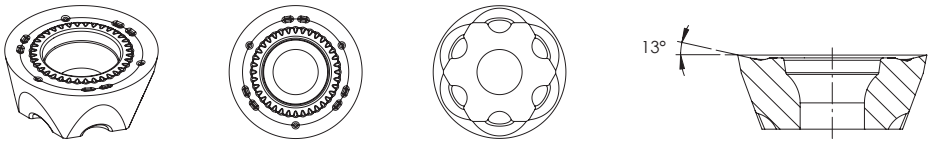
Position indicators
to help insert assembly

Improved insert seat
for RPHT-LS/LS4 inserts with a new indexation system

NEW

RPHT-LS

RPHT-LS



P M S

RPHT LS 10 | 12

NEW

RPHT-LS

6 cutting edges insert

- Insert with 6 cutting edges for a higher productivity.

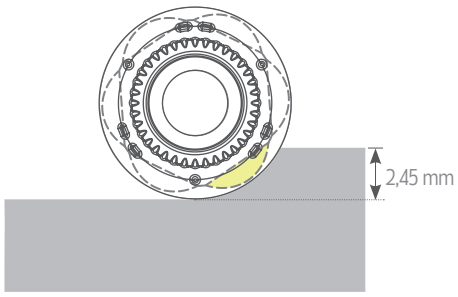
Insert Geometry

- Improved geometry for low cutting force;
- Positive insert with a brand new edge positioning system.

The maximum depth of cut using 6 cutting edges

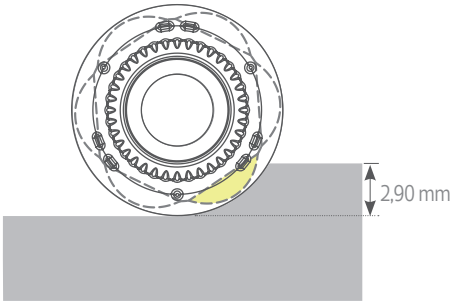
TURBOMILL 34190

RPHT 10T3M0E-LS



TURBOMILL 34290

RPHT 1204 M0E-LS



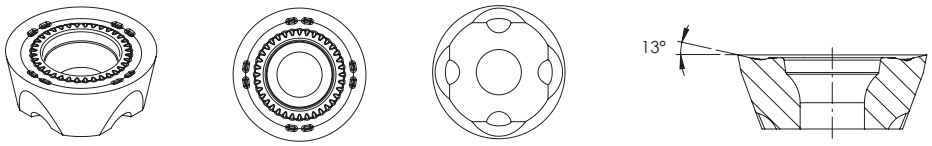
GEOMETRY FEATURES | Características geométricas | Características geométricas

Geometry	Features | Características | Características
Geometry LS General machining	Optimized geometry for stainless steel and HRSA. Suitable for alloy steel machining.

NEW

RPHT-LS4

RPHT-LS4



P M S

RPHT LS4 10 | 12

NEW

RPHT-LS4

4 cutting edges insert

- Insert with 4 cutting edges for higher depth of cut.

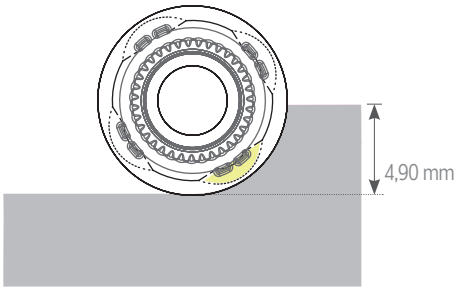
Insert Geometry

- Improved geometry for low cutting force;
- Positive insert with a brand new edge positioning system.

The maximum depth of cut using 4 cutting edges

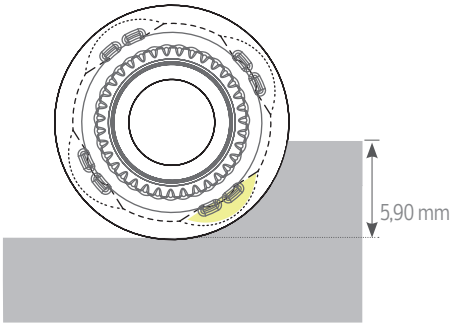
TURBOMILL 34190

RPHT 10T3M0E-LS4



TURBOMILL 34290

RPHT 1204 M0E-LS4

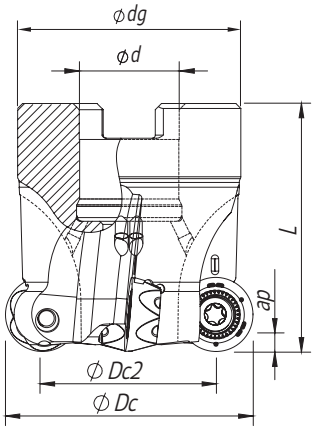


GEOMETRY FEATURES | Características geométricas | Características geométricas

Geometry	Features | Características | Características
Geometry LS4 General machining	Optimized geometry for stainless steel and HRSA. Suitable for alloy steel machining. 4 Cutting edges version.

TURBOMILL 34190

NEW



Arbor Mounting

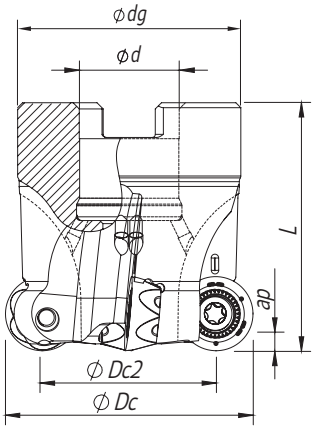
$\gamma_p = 5°$

Order code Código	Reference Referência Referencia		Dimensions | Dimensões | Dimensiones (mm)					Kg	Specifications		Insert	Stock
			ØDc	ØDc2	Ød	Ødg	L		Arbor Type	Ap max (mm)		
181160100	042A34190-06-05-016040	6	42	32	16	36	40	0,16	A	5	RPHT 10T3M0E-LS(4)	◉
181160200	050A34190-06-05-022039	6	50	40	22	42	40	0,26	A	5	RPHT 10T3M0E-LS(4)	◉
181160700	052 A34190-07-05-022040	7	52	42	22	42	40	0,30	A	5	RPHT 10T3M0E-LS(4)	◉

◉ Stock item | Produto de stock | Itens de stock ○ Available under request | Disponível sobre consulta | Disponible bajo consulta

TURBOMILL 34290

NEW



Arbor Mounting

$\gamma_p = 5°$

Order code Código	Reference Referência Referencia		Dimensions | Dimensões | Dimensiones (mm)					Kg	Specifications		Insert	Stock
			ØDc	ØDc2	Ød	Ødg	L		Arbor Type	Ap max (mm)		
181159600	040A34290-04-05-016040	4	40	28	16	36	40	0,15	A	6	RPHT 1204 M0E-LS(4)	◉
181186300	050A34290-05-05-022040	5	50	38	22	42	40	0,24	A	6	RPHT 1204 M0E-LS(4)	◉
181159500	052A34290-05-05-022040	5	52	40	22	42	40	0,25	A	6	RPHT 1204 M0E-LS(4)	◉
181160400	063A34290-06-05-022040	6	63	51	22	48	40	0,36	A	6	RPHT 1204 M0E-LS(4)	◉
181160500	066A34290-06-05-027050	6	66	54	27	48	50	0,40	A	6	RPHT 1204 M0E-LS(4)	◉
181160600	080A34290-07-05-027050	7	80	68	27	60	50	0,68	A	6	RPHT 1204 M0E-LS(4)	◉

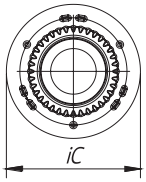
◉ Stock item | Produto de stock | Itens de stock ○ Available under request | Disponível sobre consulta | Disponible bajo consulta

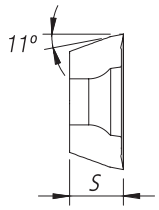
RPHT-LS | Inserts | Pastilhas | Plaquitas

RPHT-LS4 NEW

RPHT-LS NEW

RPHT-LS | LS4



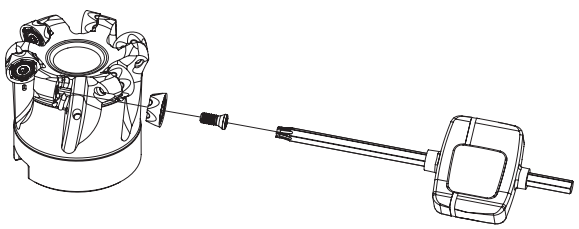


		P			M			S		Dimensions Dimensões Dimensiones (mm)	
		CVD	PVD		PVD			PVD			
	(2) Grade code	T9	Z1	Z2	Y2	Z2	Z3	Y2	Z3		
(1) Geometry code	ISO Reference	PHS740	PHP808	PHP530	PHH808	PHP530	PHH530	PHH808	PHH530	iC	S
1112772	RPHT 10T3M0E-LS	●	●	●	●	●	●	●	●	10,00	3,97
1113021	RPHT 10T3 M0E-LS4			●		●	●		●	10,00	3,97
1112766	RPHT 1204 M0E-LS	●	●	●	●	●	●	●	●	12,00	4,76
1113020	RPHT 1204 M0E-LS4			●		●	●		●	12,00	4,76

SPARE PARTS Acessórios | Repuestos

Order separately

Cutter ØDc	Insert Screw	Key (Torx)	Key (Torx - Nm)	Torque Value
				
A34190	P0300800	XT09	DT0914	1,40
A34290 - 40	P0350800	XT15	DT1530	3,00
A34290 - 50	P0351000	XT15	DT1530	3,00
A34290 - 52-80	P0350800	XT15	DT1530	3,00



GRADES SELECTION GUIDE | Guia para selecção de graus | Tabla para selección de calidades

ISO	PSM	Material	HB (Brinell)	Grades ← Wear Resistance — Toughness → PHP920	PHH930	PHP530	PHH530	PHP808	PHH808	PHS740
P	1	Unalloyed Steel	125-220	✓		✓		✓		✓
	2	Low-Alloyed Steel	220-280	✓		✓		✓		✓
	3	High-Alloyed Steel	280-380	✓		✓		✓		✓
M	4	SS - Ferritic / Martensitic	200-330		✓	✓	✓		✓	
	5	SS - Austenitic	200-330		✓		✓		✓	
	6	SS - Austenitic-ferritic (Duplex)	230-260		✓		✓		✓	
S	11	Heat Resistant Super Alloys	200-320		✓		✓		✓	

Good Conditions Average Conditions Difficult Conditions

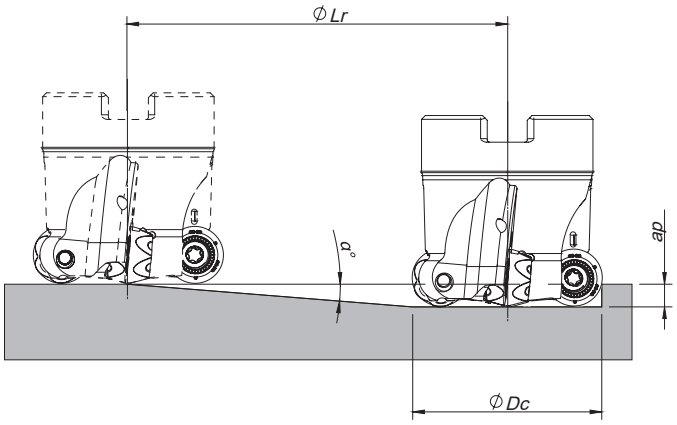
RECOMMENDED CUTTING CONDITIONS | Condições de corte recomendadas | Condiciones de corte recomendables

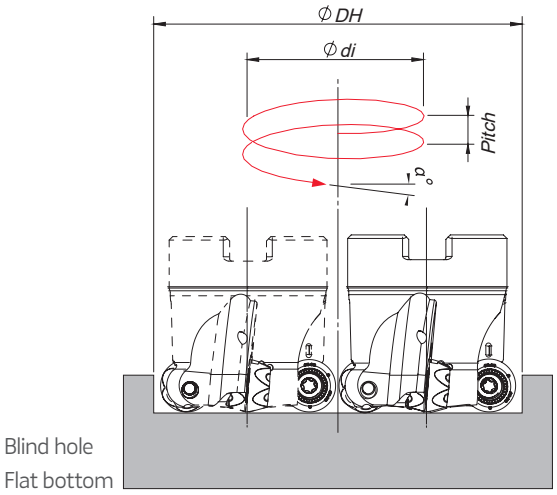
ISO	PSM	Material	HB (Brinell)	Vc (m/min) ← Wear Resistance — Toughness → PHP920	PHH930	PHP530	PHH530	PHP808	PHH808	PHS740
P	1	Unalloyed Steel	125-220	180-250	-	180-340	-	180-340	-	180-350
	2	Low-Alloyed Steel	220-280	160-230	-	180-340	-	180-340	-	180-340
	3	High-Alloyed Steel	280-380	140-220	-	180-330	-	180-330	-	180-340
M	4	SS - Ferritic / Martensitic	200-330	-	140-210	150-270	170-280	-	160-270	-
	5	SS - Austenitic	200-330	-	120-170	-	160-280	-	160-270	-
	6	SS - Austenitic-ferritic (Duplex)	230-260	-	100-150	-	150-260	-	150-250	-
S	11	Heat Resistant Super Alloys	200-320	-	30-110	-	30-150	-	30-140	-

ISO	PSM	Material	HB (Brinell)	Feed fz (mm/t) RPHT 10...	RPHT 12...
P	1	Unalloyed Steel	125-220	0,05-0,40	0,05-0,45
	2	Low-Alloyed Steel	220-280	0,05-0,40	0,05-0,45
	3	High-Alloyed Steel	280-380	0,05-0,35	0,05-0,40
M	4	SS - Ferritic / Martensitic	200-330	0,05-0,30	0,05-0,35
	5	SS - Austenitic	200-330	0,05-0,30	0,05-0,35
	6	SS - Austenitic-ferritic (Duplex)	230-260	0,05-0,30	0,05-0,35
S	11	Heat Resistant Super Alloys	200-320	0,05-0,25	0,05-0,30

(Note 1) Cutting conditions a_e/Dc=70%.

RAMPING AND HELICAL INTERPOLATION





Blind hole
Flat bottom

Ødi = ØDH - ØDc

Insert	ØDc	Ramping			Helical Interpolation		
		Max Ramp a°	Max a_p	Min Lr	ØDHmin	ØDHmax	Max Pitch/Rev.
34190							
RP... 10	42	5,0	5,0	57,2	74 -	- 84	8 11
	50	4,0	5,0	71,5	90 -	- 100	8 10
	52	3,0	5,0	95,4	94 -	- 104	6 8
34290							
RP... 12	40	8,0	6,0	42,7	68 -	- 80	12 17
	50	3,5	6,0	98,1	88 -	- 100	7 9
	52	3,0	6,0	114,5	92 -	- 104	6 8
	63	2,5	6,0	137,4	114 -	- 126	6 8
	66	2,5	6,0	137,4	120 -	- 132	7 9
	80	2,0	6,0	171,8	148 -	- 160	7 8

Note: During helical interpolation do not exceed max Pitch.

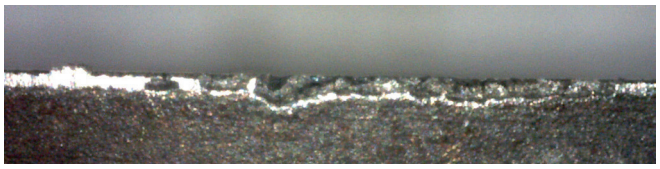
TEST REPORT | Relatório de teste | Informe de prueba

Cutter: 052A34290-05-05-022040

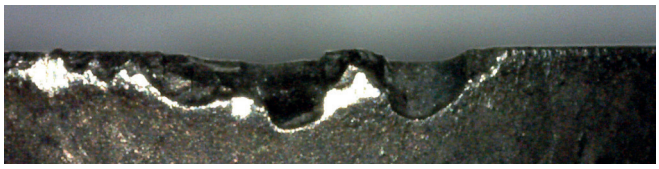
Insert: RPHT 1204 M0E-LS

Grade: PHH530

PHH
NEW
GRADE



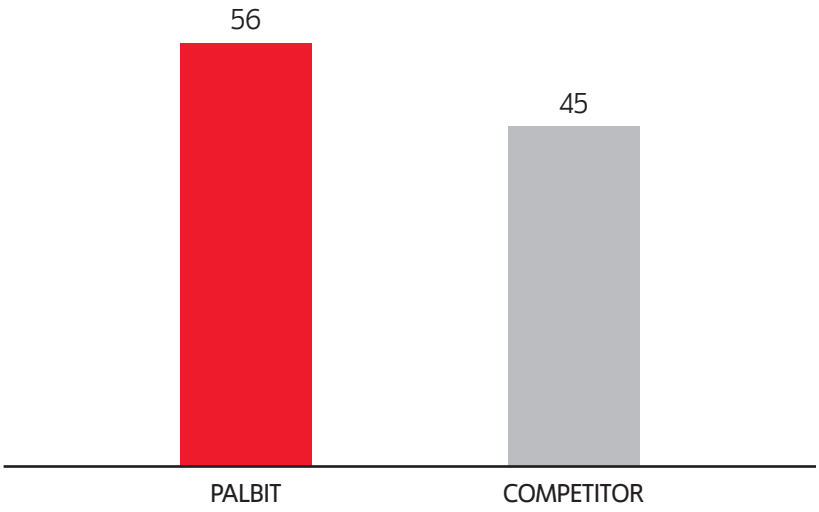
Palbit Insert



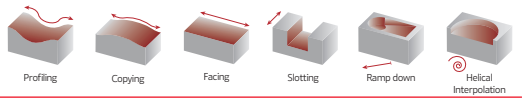
Competitor Insert

Workpiece material: AISI 316L - After 45 mins

Cutting speed: V_c	200 m/min
Feed per tooth: f_z	0,2 mm/tooth
Depth of cut: a_p	2,0 mm
Stepover : a_e	60%
Operation	Face milling
Coolant	Air



Tool life (min)



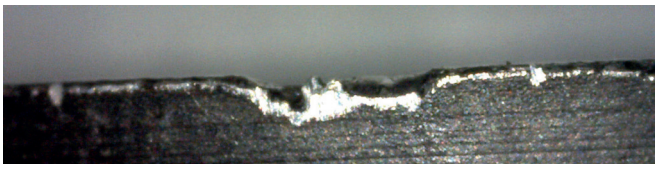
TEST REPORT | Relatório de teste | Informe de prueba

Cutter: 052A34290-05-05-022040

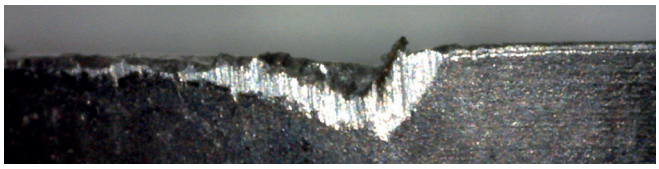
Insert: RPHT 1204 M0E-LS

Grade: PHP530

PHP
NEW
GRADE



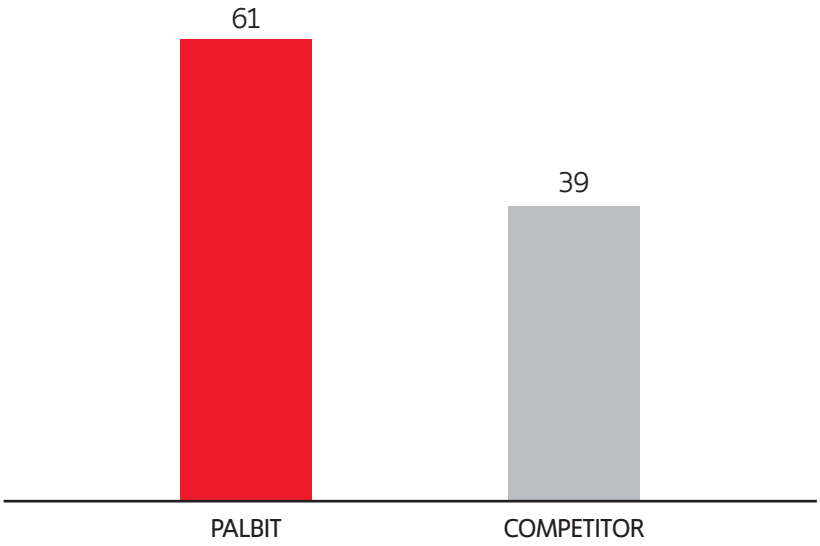
Palbit Insert



Competitor Insert

Workpiece material: X22CrMoV12-1 (1.4923) - After 39 mins

Cutting speed: V_c	315 m/min
Feed per tooth: f_z	0,2 mm/tooth
Depth of cut: a_p	2,0 mm
Stepover : a_e	60%
Operation	Face milling
Coolant	Air



Tool life (min)

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TOOLING SOLUTIONS EXPERTS
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NEW

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34190 | 34290

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