

CENTER, CHAMFER &

# ENGRAVING

Tools range

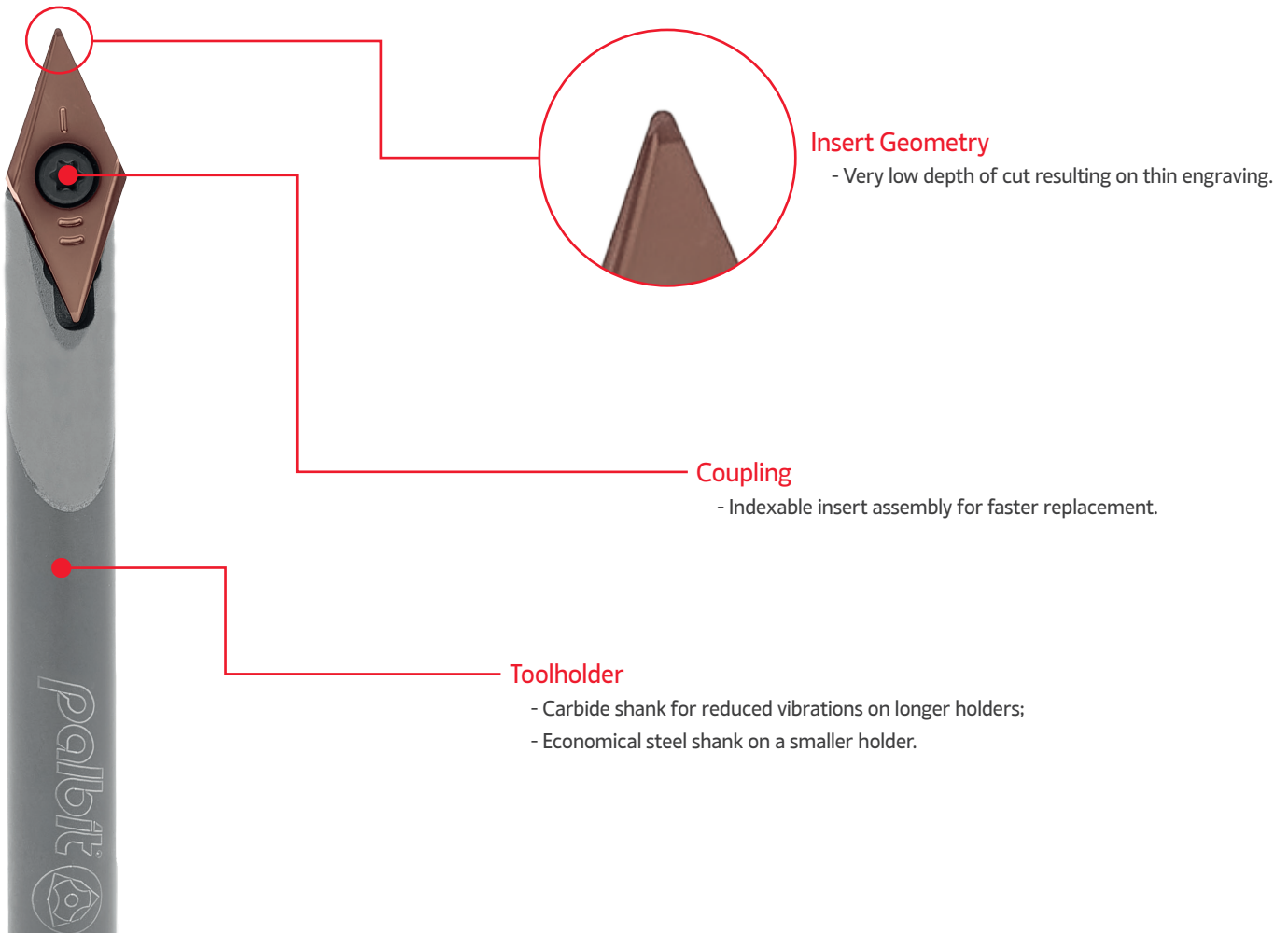
MILLING






# ENGRAVING 64067

## Higher performance and faster setup on engraving operations.

The biggest barrier in engraving is the time it takes to replace the tool. Focused on this, Palbit engineers developed a solution to overcome it. With the Indexable Line Engraving 64067, only the insert needs to be replaced. Consequently, the down time is sharply reduced, leading to a productivity boost!



## KEY FEATURES Características principais | Características principales

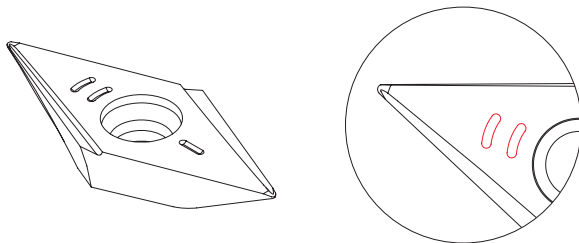
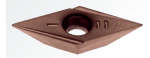
	Engraving 64067	Conventional Ball nose EndMill (r = 0,4mm)	Engraving Tool
Tool			
Cutting depth ( $a_p$ )	<b>0,2 mm</b>	0,5 mm	0,2 mm
Roughness ( $R_a$ )	<b>0,35 <math>\mu</math>m</b>	0,45 $\mu$ m	0,85 $\mu$ m
Setup time	<b>Low</b>	High	High
Tool life	<b>Long</b>	Short	Short

Note: Data obtained from trials with tool steel and hardness 210 HB

**VPGT-45LM**



VPGT-45LM



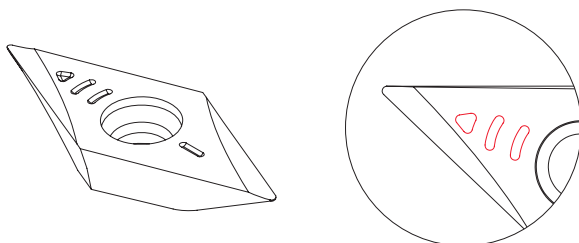
**Insert Geometry**

- Strong cutting edge with reinforced nose;
- Suitable for a wide range materials;
- Easy distinguishable as chip-breaker -LM by its two marks on top of the insert.

**VPGT-45LN**



VPGT-45LN



**Insert Geometry**

- Sharp geometry for sticky materials;
- Uncoated grade for non-ferrous materials;
- Easy distinguishable as chip-breaker -LN by its three marks on top of the insert.

**TEST REPORT** Relatório de Teste | Informe de Prueba

**Engraving CK45 Steel**

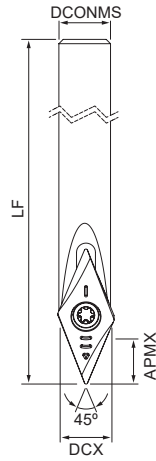


**Engraving AISI 316L**



Cutter: 002E64067-01-10-U006040		Insert: VPGT 060202-45LM		Grade: PHH920	
Material	Strategy	n (RPM)	f (mm/min)	a <sub>p</sub> (mm)	
CK 45	Lettering	10 000	100	0,3	
	Straight Slot	10 000	100	(1,6)	
	Curved Slot	10 000	100	(1,6)	
AISI 316L	Lettering	10 000	100	0,3	
	Straight Slot	10 000	100	(1,6)	
	Curved Slot	10 000	100	(1,6)	

# NEW ENGRAVING 64067



Type A: Steel Shank  
Type B: Carbide Shank

Order code Código	Reference Referência Referencia	CICT	Type	Dimensions   Dimensões   Dimensiones (mm)							WT	Insert Pastilha Inserto	Stock
				DCN	DCX	APMN	APMX	DCONMS	LF	KAPR			
181168500	002E64067-01-10-U006040	1	A	0,45~0,65	2,10	0,05~0,20	2,00	6	40	67,5°	0,011	VPGT 0602...	📦
181191300	002E64067-01-10-U006065	1	B	0,45~0,65	2,10	0,05~0,20	2,00	6	65	67,5°	0,024	VPGT 0602...	📦
181168700	002E64067-01-10-U006100*	1	B	0,45~0,65	2,10	0,05~0,20	2,00	6	100	67,5°	0,050	VPGT 0602...	📦

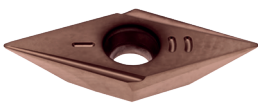
Order code Código	Reference Referência Referencia	Nº Toolholder	Holder designation	Nº inserts	Insert Pastilha Inserto	Stock
1410321Y3	PK VPGT 060202-45LM E64067-006040	1	002E64067-01-10-U006040	10	VPGT 060202-45LM	📦
1410322Y3	PK VPGT 060202-45LM E64067-006065	1	002E64067-01-10-U006065	10	VPGT 060202-45LM	📦
1410324Z5	PK VPGT 060202-45LN E64067-006040	1	002E64067-01-10-U006040	10	VPGT 060202-45LN	📦
1410325Z5	PK VPGT 060202-45LN E64067-006065	1	002E64067-01-10-U006065	10	VPGT 060202-45LN	📦
1410326Z5	PK VPGT 060202-45LN E64067-006100	1	002E64067-01-10-U006100*	10	VPGT 060202-45LN	📦

📦 Stock item | Produto de stock | Itens de stock

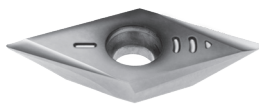
○ Available under request | Disponível sobre consulta | Disponible bajo consulta

\*Note: Recommended only for non-ferrous materials machining

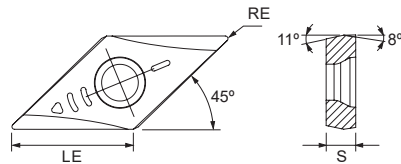
## VPGT 0602... Inserts | Pastilhas | Plaquetas



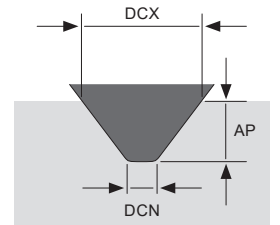
VPGT-45LM



VPGT-45LN



VPGT-45LM | 45LN



		P	M	N	S	Dimensions Dimensões Dimensiones (mm)						
		PVD	PVD	UNC	PVD							
(2) Grade code		Y3	Y3	Z5	Y3							
(1) Geometry code	ISO Reference	PHH920	PHH920	PH0610	PHH920	LE	S	RE	DCN	DCX	APMN	APMX
1113054	VPGT 060202-45LM	📦	📦	○	📦	6,35	2,00	0,20	0,65	2,10	0,20	2,00
1113055	VPGT 060202-45LN	○	○	📦	○	6,35	2,00	0,20	0,45	2,10	0,05	2,00

📦 First choice | Primeira opção | 1ª opción

📦 Stock item | Produto de stock | Itens de stock

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

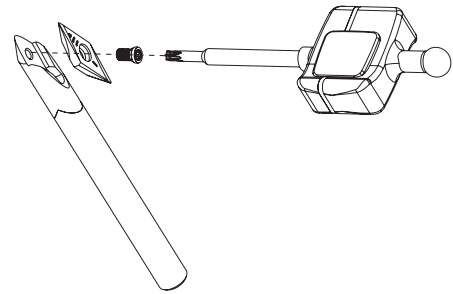
Insert order code = (1) Geometry Code + (2) Grade Code

# ENGRAVING 64067

VPGT 06

## SPARE PARTS Acessórios | Repuestos

Cutter DC	Order separately			
	Insert Screw	Key (Torx)	Key (Torx - Nm)	Torque Value
002E64067	P0220401	XT06	DT0606	0,6



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

ISO	PSM	Material	n (RPM)	f (mm/rev)	
				VPGT 060602-45LM	VPGT 060602-45LN
P	1	Carbon Steel	5 000 - 40 000	0,008 - 0,05	-
	3	Alloy Steel	5 000 - 40 000	0,008 - 0,03	-
M	5	SS - Austenitic	5 000 - 40 000	0,008 - 0,05	-
N	10	Aluminium and Non Ferrous	5 000 - 40 000	-	0,008 - 0,05
S	11	Heat Resistant Super Alloys	5 000 - 30 000	0,005 - 0,03	-

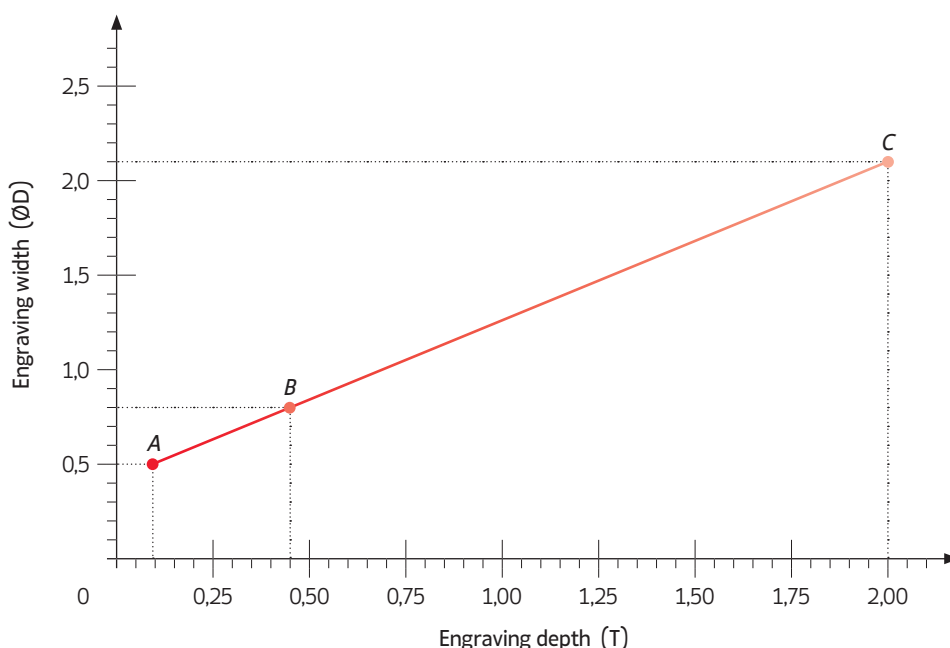
ap per step:

ISO	PSM	Material	AP (mm)							
			1st	2nd	3rd	4th	5th	6th	Next steps	Tmax: 2mm
P	1	Carbon Steel	0,70	0,70	0,30	0,20	0,10	-	-	0,10
	3	Alloy Steel	0,50	0,40	0,30	0,30	0,20	0,20	0,10	0,10
M	5	SS - Austenitic	0,50	0,40	0,20	0,30	0,20	0,20	0,10	0,05
N	10	Aluminium and Non Ferrous	1,00	0,80	0,20	-	-	-	-	0,10
S	11	Heat Resistant Super Alloys	0,50	0,40	0,20	0,30	0,20	0,20	0,10	0,05

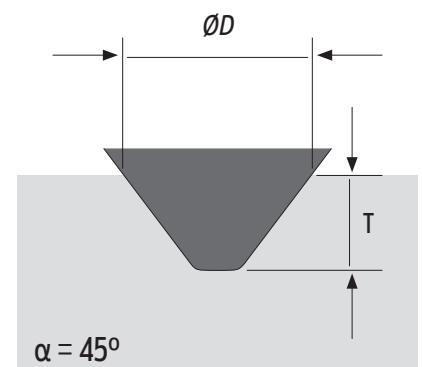
(Note 1) It is recommended to start engraving by steps according to the parameters on the table above.

(Note 2) Whenever possible, infeed should be done starting outside the workpiece being machined.

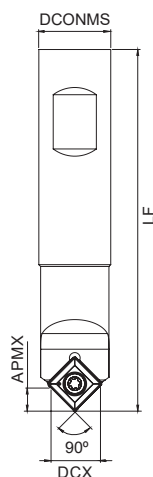
## REFERENCE CHART Gráfico de referência | Tabla de referencia



- **Point A:**  
Width = 0,5 mm x Depth = 0,08 mm
- **Point B:**  
Width = 0,8 mm x Depth = 0,45 mm
- **Point C:**  
Width = 2,1 mm x Depth = 2,00 mm



# CENTER & CHAMFER



Order code Código	Reference Referência Referencia	CICT	Dimensions   Dimensões   Dimensiones (mm)						WT	Insert Pastilha Inserto	Stock
			DCX	APMX	APMN	DCONMS	LF	KAPR			
181147400	CHT S16H N11-45	1	13	6,5	1,0	16	100	45°	0,146	SO..T 11T3..	☺
181147500	CHT S16M N11-45	1	13	6,5	1,0	16	150	45°	0,180	SO..T 11T3..	☺

Order code Código	Reference Referência Referencia	Nº Toolholder	Holder designation	Nº inserts	Insert Pastilha Inserto	Stock
1410286G4	PK SOMT 11T308 CHTS16H	1	CHT S16H N11-45	10	SOMT 11T308	☺
1410287G4	PK SOMT 11T308 CHTS16M	1	CHT S16M N11-45	10	SOMT 11T308	☺
1410318G4	PK SOGT 11T303 CHTS16H	1	CHT S16H N11-45	10	SOGT 11T303	☺
1410317G4	PK SOGT 11T303 CHTS16M	1	CHT S16M N11-45	10	SOGT 11T303	☺

☺ Stock item | Produto de stock | Itens de stock

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

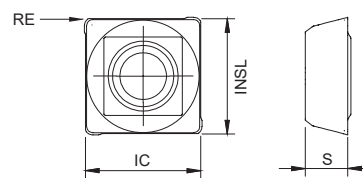
## SO...T 11T3... Inserts | Pastilhas | Plaquetas



SOMT



SOGT



SOMT | SOGT

		P	M	K	Dimensions Dimensões Dimensiones (mm)			
		PVD	PVD	PVD	IC	S	INSL	RE
(2) Grade code		G4	G4	G4				
(1) Geometry code	ISO Reference	PH7920	PH7920	PH7920				
1112425	SOMT 11T308	☺	☺	☺	10,85	4,02	11,00	0,80
1112973	SOGT 11T303	☺	☺	☺	10,85	4,00	11,00	(0,30)

☺ First choice | Primeira opção | 1ª opción

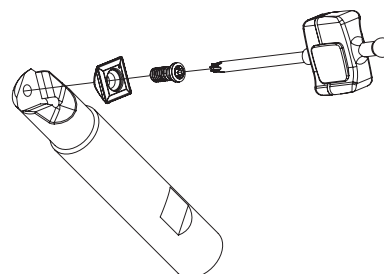
☺ Stock item | Produto de stock | Itens de stock

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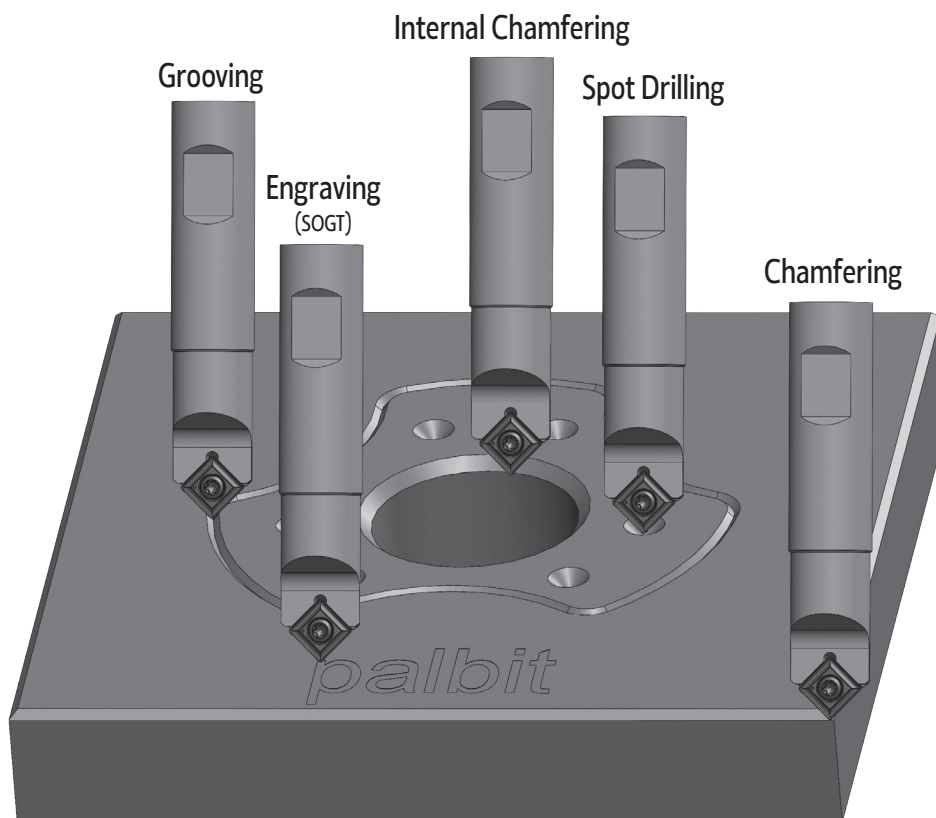
Insert order code = (1) Geometry Code + (2) Grade Code

## SPARE PARTS Acessórios | Repuestos

Cutter DC	Order separately			
	Insert Screw	Key (Torx)	Key (Torx - Nm)	Torque Value
CHT S16...	P0350800	XT15	DT1530	3,0



**TOOL SELECTION** Seleção de ferramenta | Selección de herramienta



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

ISO	PSM	Material	HB (Brinell)	Vc (m/min)			Feed fz (mm/t)	
				PH7920	SOMT 11T308	SOGT 11T303		
P	1	Unalloyed Steel	125-220	120-150	0,04-0,08	0,05-0,10		
	2	Low-Alloyed Steel	220-280	100-120	0,03-0,07	0,05-0,10		
	3	High-Alloyed Steel	280-380	60-100	0,03-0,06	0,04-0,08		
M	4	SS - Ferritic / Martensitic	200-330	100-150	0,04-0,07	0,03-0,06		
	5	SS - Austenitic	200-330	80-120	0,03-0,06	0,03-0,06		
	6	SS - Austenitic-ferritic (Duplex)	230-260	50-90	0,03-0,06	0,03-0,08		
K	7	Malleable Cast Iron	130-230	90-150	0,05-0,10	0,05-0,10		
	8	Grey Cast Iron	180-245	80-120	0,05-0,08	0,05-0,08		
	9	Nodular Cast iron	160-250	70-110	0,04-0,08	0,04-0,08		

How to decide S (rpm) and F (feed)

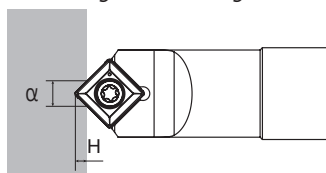
$$D = 2 \times H \times \tan(\alpha/2) \quad \text{mm}$$

$$S = 3,82 \times ((Vc \times 1000) / (D \times \pi)) \quad \text{rpm}$$

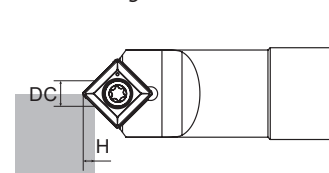
$$F = n \times f \times Ft \quad \text{mm/min}$$

- $\alpha$  = Point angle 90°
- H = Centering depth
- D = Effective diameter
- Vc = Cutting speed
- S = Spindle speed
- F = Feed rate
- f = Feed per rev.
- Ft = Feed rate factor

Centering and Grooving



Chamfering



\*\*Max. H Centering = 7mm  
Grooving = 5mm  
Chamfering = 7mm

CENTER, CHAMFER &

# ENGRAVING

Tools range



Check the QrCode for more information



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