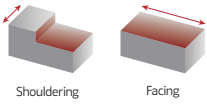


# Double-sided shoulder milling insert



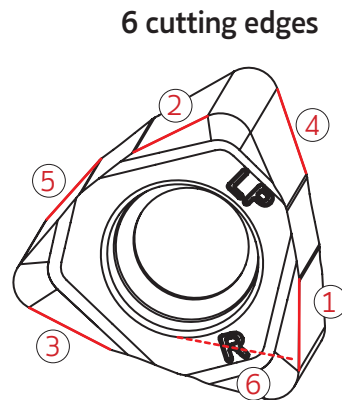
PLUS  
49090



SINCE 1916

# MAIN FEATURES

PLUS 49090 is a new milling line with a negative insert of 6 cutting edges.



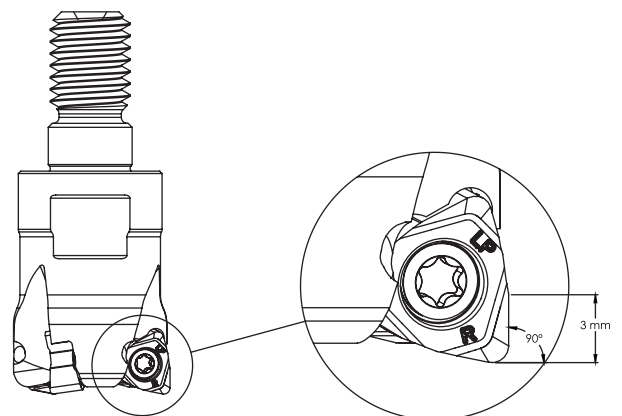
## Features

- 6-cornered design for economic advantage
- Fully effective cutting edge length in square shoulder milling
- Low cutting force even in large depth of cut
- Machining depth of cut up to 3mm
- Plus 49090 is well suited for small and medium sized milling machines

The 90° setting angle ensures a true 90° square in one operation, saving valuable production time.

## Benefits

- True 90 degrees
- High productivity
- Lower cost per edge
- High quality surface finish



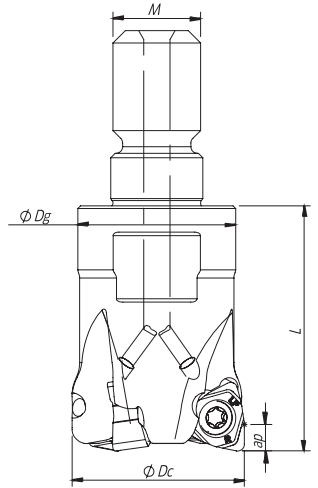
## Main operation:



Shouldering

## Working materials:





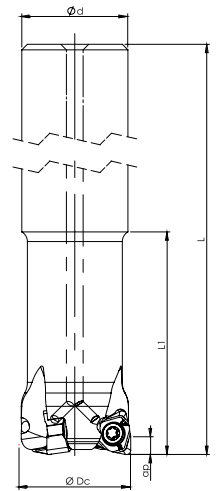
### Threaded coupling

$K_r=90^\circ$  |  $\gamma_p=-7^\circ$

Order code Código	Reference Referência Referencia		Dimensions   Dimensões   Dimensiones (mm)				Kg	Specification	Insert Pastilha Inserto	Stock
			ØDc	M	ØDg	L		Ap max (mm)		
181128300	020R49090-03-07-M10028	3	20	M10	18	28	0,052	3,00	WNHU 04T308-LP	
181110900	025R49090-04-07-M12030	4	25	M12	21	30	0,078	3,00	WNHU 04T308-LP	
181128400	032R49090-05-07-M16035	5	32	M16	29	35	0,150	3,00	WNHU 04T308-LP	

Stock item | Produto de stock | Itens de stock

Available under request | Disponível sobre consulta | Disponible bajo consulta



### Cylindrical Shank

$K_r=90^\circ$  |  $\gamma_p=-7^\circ$

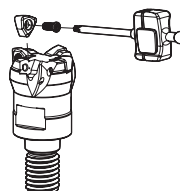
Order code Código	Reference Referência Referencia		Dimensions   Dimensões   Dimensiones (mm)				Kg	Specification	Insert Pastilha Inserto	Stock
			ØDc	Ød/M	L	L1		Ap max (mm)		
181136100	016E49090-02-07-U015150	2	16	15	150	32	0,185	3,00	WNHU 04T308-LP	
181136200	020E49090-03-07-U019150	3	20	19	150	40	0,292	3,00	WNHU 04T308-LP	
181136300	025E49090-04-07-U024150	4	25	24	150	50	0,471	3,00	WNHU 04T308-LP	

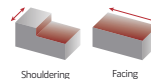
Stock item | Produto de stock | Itens de stock

Available under request | Disponível sobre consulta | Disponible bajo consulta

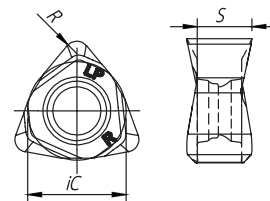
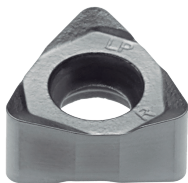
## SPARE PARTS | Complementos | Complementos

Cutter ØDc	Insert Screw	Key (Torx)	Torque Value
R49090 - 20-32	PO250704	XT08	1,2
E49090 - 16-25	PO250704	XT08	1,2





# WNHU 04T308 | Inserts | Pastilhas | Plaquetas



(1) Geometry code	(2) Grade code	P					M			K				N		S		H		Dimensions (mm)					
		PVD					CVD	PVD		CVD		PVD		UNC	PCD	PVD		PVD	CBN						
		M6	G1	G4	P3	G6	R1	G4	G6	L5	L9	G1	G4	P3	G6	10	D6	P3	G6						M6
1112277	WNHU 04T308 PNER-LP			⊗	⊗								⊗	⊗							ic	S	I	R	F
																					6,35	3,50	-	0,80	-

⊗ 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

## GRADES SELECTION GUIDE

ISO	PSM	Material	HB (Brinell)	Grades			
				← Wear Resistance		Toughness →	
				PH7920	PH7930	PH7920	PH7930
P	1	Unalloyed Steel	125-220	✓	✓		
	2	Low-Alloyed Steel	220-280	✓	✓		
	3	High-Alloyed Steel	280-380	✓	✓		
K	7	Malleable Cast Iron	130-230	✓	✓		
	8	Grey Cast Iron	180-245	✓	✓		
	9	Nodular Cast iron	160-250	✓	✓		

● Good Conditions  
 ⊗ Average Conditions  
 ⊕ Difficult Conditions

## RECOMMENDED CUTTING CONDITIONS

ISO	PSM	Material	HB (Brinell)	Vc (m/min)			
				← Wear Resistance		Toughness →	
				PH7920	PH7930	PH7920	PH7930
P	1	Unalloyed Steel	125-220	160-250	140-230		
	2	Low-Alloyed Steel	220-280	150-230	130-210		
	3	High-Alloyed Steel	280-380	140-200	120-180		
K	7	Malleable Cast Iron	130-230	170-290	150-270		
	8	Grey Cast Iron	180-245	140-250	120-230		
	9	Nodular Cast iron	160-250	90-220	70-200		

Insert	Feed fz (mm/t)		ap Rec.
	Roughing	Finishing	
WNHU 04T308-LP	0.15-0.30	0.10-0.25	0.50-3.00

(Note 1) Cutting conditions should be adjusted according to the machine and work rigidity.  
 (Note 2) If chattering occurs, reduce ap and Vc by 30% and keep the same fz per tooth.