

MILLING CUTTER

Design

- Optimized design for better chip evacuation;

Pocket

- Strong pocket design for better cutter body durability;
- Improved insert seat;

INSERT

Insert Width

- Large cross section;

Cutting edge

- Improved cutting edge;
- Improved wear resistance;

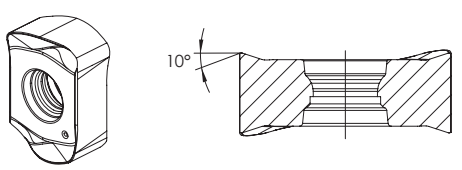
Double-sided insert

- Double-sided insert with 4 cutting edges;

XNKU 06T3



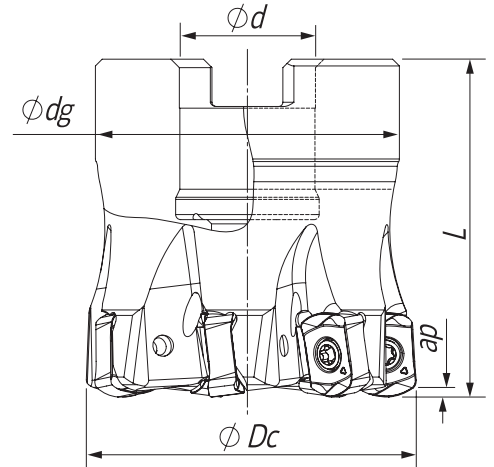
XNKU-MP



GEOMETRY FEATURES | Características geométricas | Características geométricas

Geometry	Features Características Características
Geometry MP General machining	Geometry with a reinforced cutting edge for general applications on different materials.

All information: Page - 84

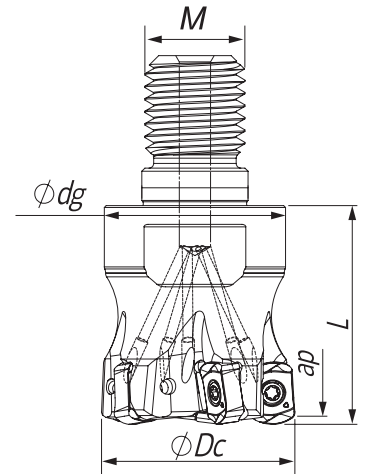


Arbor Mounting
 $K_r=20^\circ$ | $\gamma_p=-7^\circ$ | $R_p=1,8$

Order code Código	Reference Referência Referencia		Dimensions Dimensões Dimensiones (mm)				Kg	Specifications		Insert	Stock
			ϕDc	ϕd	ϕdg	L		Ap max (mm)	Arbor Type		
181152300	040A16320-07-07-016040		40	16	36	40	0,20	1,00	A	XNKU 06...	
181157500	050A16320-06-07-022040		50	22	42	40	0,25	1,00	A	XNKU 06...	
181152400	050A16320-08-07-022040		50	22	42	40	0,29	1,00	A	XNKU 06...	
181152500	052A16320-08-07-022040		52	22	42	40	0,39	1,00	A	XNKU 06...	
181152600	063A16320-09-07-022040		63	22	48	40	0,50	1,00	A	XNKU 06...	
NEW 181177800	080A16320-10-07-027050		80	27	60	50	0,95	1,00	A	XNKU 06...	

Stock item | Produto de stock | Itens de stock

Available under request (see page A-9) | Disponível sobre consulta (consulte a página A-9) | Disponible bajo consulta (mire pagina A-9)

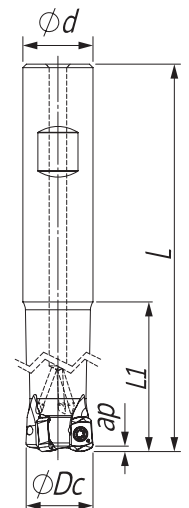
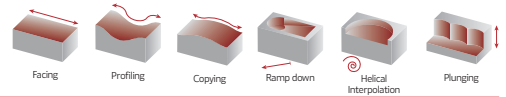


Threaded Coupling
 $K_r=20^\circ$ | $\gamma_p=-7^\circ$ | $R_p=1,8$

Order code Código	Reference Referência Referencia		Dimensions Dimensões Dimensiones (mm)				Kg	Specifications		Insert	Stock
			ϕDc	ϕM	ϕdg	L		Ap max (mm)	Arbor Type		
181151300	016R16320-02-07-M08025		16	M08	13	25	0,02	1,00	XNKU 06...		
181151400	020R16320-03-07-M10028		20	M10	18	28	0,05	1,00	XNKU 06...		
181151500	025R16320-04-07-M12035		25	M12	21	35	0,07	1,00	XNKU 06...		
181148000	032R16320-05-07-M16035		32	M16	29	35	0,16	1,00	XNKU 06...		
NEW 181178600	035R16320-05-07-M16035		35	M16	29	35	0,16	1,00	XNKU 06...		
181151600	035R16320-06-07-M16035		35	M16	29	35	0,17	1,00	XNKU 06...		
181151700	040R16320-05-07-M16045		40	M16	29	45	0,24	1,00	XNKU 06...		
NEW 181178500	040R16320-06-07-M16035		40	M16	29	35	0,23	1,00	XNKU 06...		
181151800	042R16320-07-07-M16035		42	M16	29	35	0,24	1,00	XNKU 06...		

Stock item | Produto de stock | Itens de stock

Available under request (see page A-9) | Disponível sobre consulta (consulte a página A-9) | Disponible bajo consulta (mire pagina A-9)



Weldon Shank
 $K_r=20^\circ$ | $\gamma_p=-7^\circ$ | $R_p=1,8$

Order code Código	Reference Referência Referencia		Dimensions Dimensões Dimensiones (mm)				Kg	Specifications		Insert	Stock
			ØDc	Ød	L	L1		Ap max (mm)			
181161000	016W16320-02-07-016150	2	16	16	150	50	0,19	1,00	XN KU 06...		
181151900	020W16320-03-07-020160	3	20	20	160	90	0,29	1,00	XN KU 06...		
181152000	025W16320-04-07-025180	4	25	25	180	100	0,40	1,00	XN KU 06...		
181152100	032W16320-05-07-032200	5	32	32	200	120	1,10	1,00	XN KU 06...		

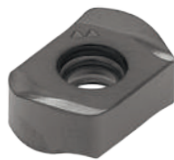
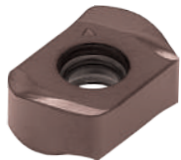
Stock item | Produto de stock | Itens de stock

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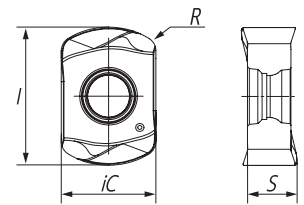
XN KU 06T3... || Inserts | Pastilhas | Plaquetas

XN KU-MP

XN KU-MS



XN KU-MP | MS



Geometry code	ISO Reference	P					M				K		S			Dimensions Dimensões Dimensiones (mm)				
		CVD		PVD			CVD		PVD		CVD	PVD	CVD	PVD	CVD	PVD	iC	S	I	R
		T9	X5	T1	P4	Z2	T9	X9	Z2	Z3	T9	T1	T9	X9	Z3					
⁽¹⁾		PHS740	PHP910	PHP920	PHP930	PHP530	PHS740	PHH930	PHP530	PHH530	PHS740	PHP920	PHS740	PHH930	PHH530					
1112802	XN KU 06T310-MP																			
NEW 1113209	XN KU 06T310-MS																			

First choice | Primeira opção | 1ª opción

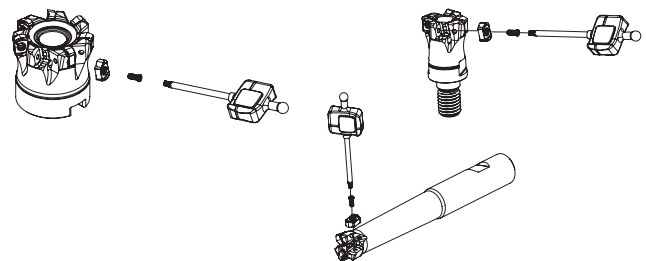
Stock item | Produto de stock | Itens de stock

Available under request (see page A-9) | Disponível sobre consulta (consulte a página A-9) | Disponible bajo consulta (mire pagina A-9)

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

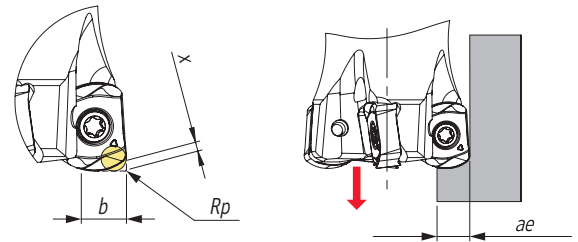
SPARE PARTS Acessórios | Repuestos

Cutter ØDc	Order separately			
	Insert Screw	Key (Torx)	Key (Torx - Nm)	Torque Value
A16320 - 40-80	PO250704	XT08	DT0812	1,20
R16320 - 20-42	PO250704	XT08	DT0812	1,20
W16320 - 20-32	PO250704	XT08	DT0812	1,20



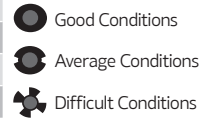
PROGRAMMING DATA | Dados para programação | Datos para la programación

Insert	Programming Data			
	Rp	X	b	ae
XNKU 06T3...	1,8	0,4	3,6	3,4



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

ISO	PSM	Material	HB (Brinell)	Grades						
				← Wear Resistance				Toughness →		
				PHP910	PHP920	PHP930	PHH930	PHS740	PHP530	PHH530
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				●	●		●
K	7	Malleable Cast Iron	130-230	●	●			●		
	8	Grey Cast Iron	180-245	●	●			●		
	9	Nodular Cast iron	160-250	●	●			●		
S	11	Heat Resistant Super Alloys	200-320				●	●		●



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

ISO	PSM	Material	HB (Brinell)	Vc (m/min)							Feed fz (mm/t)	
				← Wear Resistance				Toughness →			XNKU 06...-MP	XNKU 06...-MS
				PHP910	PHP920	PHP930	PHH930	PHS740	PHP530	PHH530		
P	1	Unalloyed Steel	125-220	180-250	180-250	160-230	-	160-230	180-340	-	0,50-1,50	0,50-1,50
	2	Low-Alloyed Steel	220-280	160-240	170-210	150-190	-	150-190	180-340	-	0,50-1,50	0,50-1,50
	3	High-Alloyed Steel	280-380	140-230	160-200	140-180	-	140-180	180-330	-	0,50-1,50	0,50-1,50
M	4	SS - Ferritic / Martensitic	200-330	-	-	-	130-170	120-180	150-270	170-280	0,50-1,40	0,50-1,40
	5	SS - Austenitic	200-330	-	-	-	100-160	100-150	-	160-280	0,50-1,40	0,50-1,40
	6	SS - Austenitic-ferritic (Duplex)	230-260	-	-	-	80-140	70-130	-	150-260	0,50-1,40	0,50-1,40
K	7	Malleable Cast Iron	130-230	180-300	180-320	-	-	160-300	-	-	0,50-1,50	-
	8	Grey Cast Iron	180-245	160-250	170-280	-	-	150-260	-	-	0,50-1,50	-
	9	Nodular Cast iron	160-250	150-210	100-240	-	-	80-220	-	-	0,50-1,50	-
S	11	Heat Resistant Super Alloys	200-320	-	-	-	30-75	30-70	-	30-150	0,50-1,30	0,50-1,30

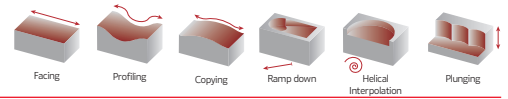
(Note 1) Cutting conditions $a_e/D_c=70\%$.

(Note 2) It's possible to occur vibrations in certain cases. Please reduce depth of cut and / or reduce cutting conditions in following cases:

- When using long shank;
- When using long tool overhang with arbor type;
- When application has poor clamping rigidity or when using a low rigidity machine.

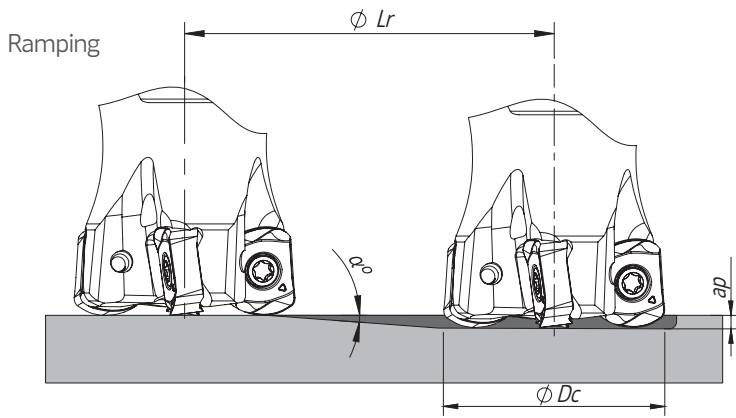
(Note 3) When using $\varnothing D_c=16\text{mm}$ apply 70% or less feed (fz) from the table.



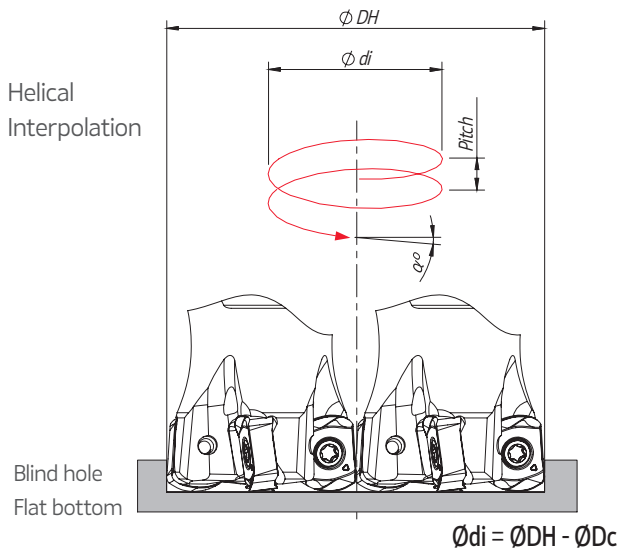


RAMPING AND HELICAL INTERPOLATION

Descida em rampa e interpolação helicoidal | Bajada en rampa e interpolación circular



Helical Interpolation

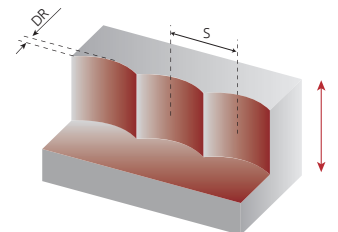


ØDc	Ramping			Helical Interpolation		
	Max Ramp α°	Max ap	Min Lr	ØDHmin	ØDHmax	Max Pitch/Rev.
16	2,00	1	28,6	24,8	-	0,96
20	1,30	1	44,1	32,8	28,4	1,00
25	0,90	1	63,7	42,8	36,4	0,91
32	0,65	1	88,1	56,8	46,4	1,00
35	0,55	1	104,2	62,8	60,4	0,88
40	0,50	1	114,6	72,8	66,4	1,00
42	0,45	1	127,3	76,8	76,4	0,83
50	0,35	1	163,7	92,8	80,4	0,94
52	0,35	1	163,7	96,8	80,4	0,89
63	0,30	1	191,0	118,8	96,4	0,82
80	0,20	1	286,5	152,8	100,4	0,89
					122,4	0,91
					156,4	0,97
						0,79
						0,83

Note: During helical interpolation do not exceed max ap.
 (*) Down cutting is recommended, tool pass rotation should be counter-clockwise.
 (*) In case of ramping and helical interpolation, apply 70% or less feed (fz) from recommended cutting conditions table.

PLUNGING | Mergulho | Plunge

L ≤ 3Dc	L > 3Dc	S max.
fz (mm/t)		
0,08-0,15	0,05 - 0,10	$S_{max} = \sqrt{Dc \cdot Dr - Dr^2}$



S max and DR corresponding cutting diameter Dc (mm)											
DR (mm)	Dc (mm) XNKU 06...										
	16	20	25	32	35	40	42	50	52	60	80
1	3,9	4,4	4,9	5,6	5,8	6,2	6,4	7,0	7,1	7,9	8,9
2	5,3	6,0	6,8	7,7	8,1	8,7	8,9	9,8	10,0	11,0	12,5
3	6,2	7,1	8,1	9,3	9,8	10,5	10,8	11,9	12,1	13,4	15,2

Note: Recommended for L ≤ 4 Dc for extra long tool this step and side cut must be reduced.