

Arbor Mounting

$K_r=90^\circ$ | $\gamma_p=+7^\circ \sim +8^\circ$

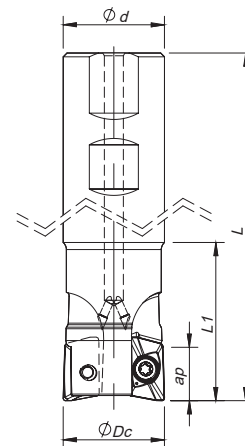
Order code Código	Reference Referência Referencia		Dimensions Dimensões Dimensiones (mm)				Kg	Specifications			Insert Pastilha Inserto	Stock
			ϕDc	ϕd	ϕdg	L		Arbor Type	Ap max (LP MP LS LN)	Ap max (LN Z1 Z1W)		
181090900	040A20290-04-07-016040	4	40	16	32	40	0,18	A	17,0	8,0	XPET 1706...	
181091000	050A20290-05-08-022040	5	50	22	42	40	0,29	A	17,0	8,0	XPET 1706...	
181091100	063A20290-06-08-027040*	6	63	27	52	40	0,53	A	17,0	8,0	XPET 1706...	
181091200	080A20290-07-08-027050	7	80	27	60	50	0,92	A	17,0	8,0	XPET 1706...	
181091300	100A20290-08-08-032050	8	100	32	80	50	1,68	A	17,0	8,0	XPET 1706...	
181091400	125A20290-09-08-040063	9	125	40	90	63	3,01	A	17,0	8,0	XPET 1706...	

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 página A-9)

Stock available until sold out | Stock disponível até acabar o stock | Stock disponible hasta acabar el stock

* For shank assembly a DIN 6912 screw is needed.



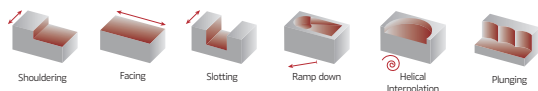
Weldon Shank

$K_r=90^\circ$ | $\gamma_p=+6^\circ \sim +7^\circ$

Order code Código	Reference Referência Referencia		Dimensions Dimensões Dimensiones (mm)				Kg	Specifications			Insert Pastilha Inserto	Stock
			ϕDc	ϕd	L	L1		Ap max (LP MP LS LN)	Ap max (LN Z1 Z1W)			
181090500	032W20290-02-06-032110	2	32	32	110	50	0,56	17,0	8,0	XPET 1706...		
181090600	032W20290-02-06-032200	2	32	32	200	60	1,10	17,0	8,0	XPET 1706...		
181090700	040W20290-03-07-032115	3	40	32	115	50	0,67	17,0	8,0	XPET 1706...		
181090800	040W20290-03-07-032200	3	40	32	200	60	1,19	17,0	8,0	XPET 1706...		

Stock item | Produto de stock | Itens de stock

Available under request (see page A-8) | Disponível sobre consulta (consulte a página A-8) | Disponible bajo consulta (mire página A-8)



XPET 1706... | Inserts | Pastilhas | Plaquetas

A

MILLING

Overview

Face milling

Hifeed milling

Shoulder milling

Profile milling

Hardmill

Center & Chamfer

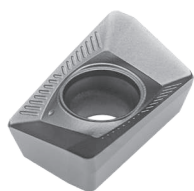
Spot face

Spare Parts

Technical Data

End Mills

XPET-LP



XPET-LS

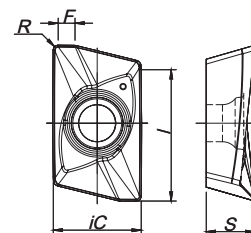
NEW



XPET-MP



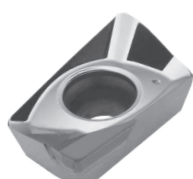
XPET-LP | LS | MP | LN



XPET-LN



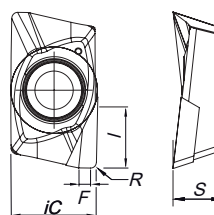
XPET-LN Z1



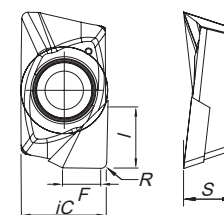
XPET-LN Z1W



XPET-LN Z1



XPET-LN Z1W

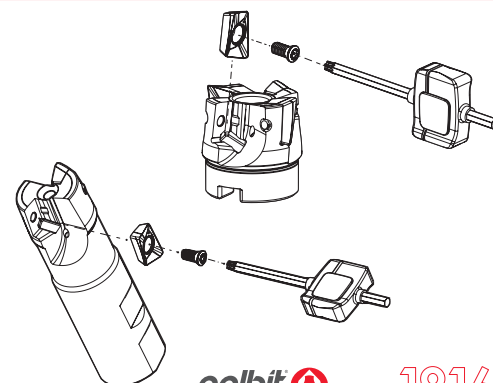


		P		M		K				N		S		Dimensions Dimensões Dimensiones (mm)					
		CVD	PVD	PVD	PVD	CVD	PVD	UNC	PCD	PVD			iC	S	I	R	F		
(2) Grade code		T9	T1	G6	X9	G6	L5	L9	T1	G6	10	D6	X9	G6					
(1) Geometry code	ISO Reference	PH5740	PHP920	PH7740	PHH930	PH7740	PH5705	PH5740	PHP920	PH7740	PH0910	PDP410	PHH930	PH7740					
1111986	XPET 170608 PDER-LP		⊗	⊗		⊗			⊗	⊗				⊗					
1111987	XPET 170616 PDER-LP		⊗	⊗		⊗			⊗	⊗				⊗					
NEW	1112223	XPET 170608 PDER-LS				⊗	⊗							⊗	⊗				
NEW	1113373	XPET 170612 PDER-LS				○								○					
NEW	1113361	XPET 170616 PDER-LS				⊗								⊗					
NEW	1113362	XPET 170620 PDER-LS				⊗								⊗					
NEW	1113363	XPET 170632 PDER-LS				⊗								⊗					
	1111988	XPET 170608 PDSR-MP	⊗	⊗	⊗			⊗	⊗	⊗									
	1111989	XPET 170616 PDSR-MP		⊗	⊗			⊗	⊗	⊗									
	1111990	XPET 170608 PDFR-LN										⊗							
	1111991	XPET 170620 PDFR-LN										⊗							
	1111992	XPET 170632 PDFR-LN										⊗							
	1113085	XPET 170608 PDFR-LN Z1										⊗							
	1113086	XPET 170608 PDFR-LN Z1W										⊗							

⊗ 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 página A-9)

SPARE PARTS | Acessórios | Repuestos

Cutter ØDc	Order separately				
	Insert Screw	Key (Torx)	Key (Torx - Nm)	Torque Value	Retaining Screw
W20290 - 32-40	P0451001	XT20	DT2050	5	-
A20290 - 40-80	P0451001	XT20	DT2050	5	-
A20290 - 100	P0451001	PT20	DT2050	5	D1603500
A20290 - 125	P0451001	PT20	DT2050	5	D2004000



Note: The toolholder is supplied with the XT/PT key. To order the DT key please check the page A-241.
Check the procedures for the clamping screws on the page A-241.

LINEPRO 20290

A

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

MILLING

ISO	PSM	Material	HB (Brinell)	Grades							PCD	
				← Wear Resistance					Toughness →			
				PH0910	PH5705	PHP920	PHP930	PHH930	PH5740	PHS740		PH7740
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		●	●	●			●	●	
N	10	Aluminium and Non Ferrous	30-130	●								●
S	11	Heat Resistant Super Alloys	200-320					●			●	

● Good Conditions ● Average Conditions ● Difficult Conditions

Overview

Face milling

CHIP-BREAKER SELECTION GUIDE | Guia para aplicações do quebra-apanas | Guía para aplicación del rompevirutas

ISO	PSM	Material	HB (Brinell)	Chip-Breaker Application	
				1st choice	Difficult Operations
				P	1
2	Low-Alloyed Steel	220-280	XPET 17... LP		XPET 17... MP
3	High-Alloyed Steel	280-380	XPET 17... MP		-
M	4	SS - Ferritic / Martensitic	200-330	XPET 17... LS	XPET 17... LP
	5	SS - Austenitic	200-330	XPET 17... LS	XPET 17... LP
	6	SS - Austenitic-ferritic (Duplex)	230-260	XPET 17... LS	XPET 17... LP
K	7	Malleable Cast Iron	130-230	XPET 17... LP	XPET 17... MP
	8	Grey Cast Iron	180-245	XPET 17... MP	-
	9	Nodular Cast iron	160-250	XPET 17... MP	-
N	10	Aluminium and Non Ferrous	30-130	XPET 17... LN LN Z1 LN Z1W	-
S	11	Heat Resistant Super Alloys	200-320	XPET 17... LS	XPET 17... LP

Hifeed milling

Shoulder milling

Profile milling

Hardmill

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

ISO	PSM	Material	HB (Brinell)	Vc (m/min)				
				← Wear Resistance				
				PH0910	PH5705	PHP920	PHP930	PHH930
P	1	Unalloyed Steel	125-220	-	-	180-250	160-230	-
	2	Low-Alloyed Steel	220-280	-	-	160-230	140-210	-
	3	High-Alloyed Steel	280-380	-	-	140-220	120-200	-
M	4	SS - Ferritic / Martensitic	200-330	-	-	-	-	140-210
	5	SS - Austenitic	200-330	-	-	-	-	120-170
	6	SS - Austenitic-ferritic (Duplex)	230-260	-	-	-	-	100-150
K	7	Malleable Cast Iron	130-230	-	160-290	160-270	-	-
	8	Grey Cast Iron	180-245	-	170-320	140-250	-	-
	9	Nodular Cast iron	160-250	-	140-200	120-210	-	-
N	10	Aluminium and Non Ferrous	30-130	100-2000	-	-	-	-
S	11	Heat Resistant Super Alloys	200-320	-	-	-	-	30-110

(Note 1) Cutting conditions ae/DC=70%
 (Note 2) Cutting conditions should be adjusted according to the machine and work rigidity.
 (Note 3):

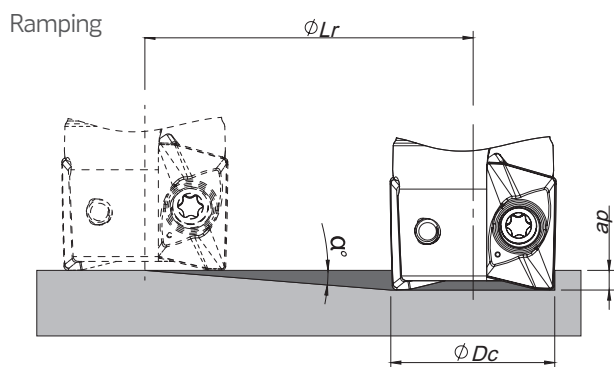
Operation	ae	Vc & fz	ap (mm)
Slotting	100%	<20%	2,0-6,0
Shouldering	<50%	>8%	7,0-13,0
	≤25%	>12%	13,0-16,0

(Note 4) 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.

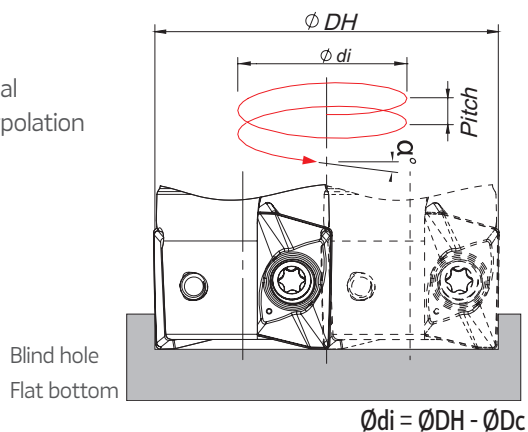
End Mills

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	Diameter for Blind Hole, Flat Bottom Face (1)		Max Pitch/Rev.
				ØDHmin	ØDHmax	
32	3,8	17,0	255,9	58,8 -	- 62,4	5,6 6,3
40	2,7	17,0	360,5	74,8 -	- 78,4	5,2 5,7
50	2,0	17,0	486,8	94,8 -	- 98,4	4,9 5,3
63	1,5	17,0	649,2	120,8 -	- 124,4	4,8 5,0
80	1,0	17,0	973,9	154,8 -	- 158,4	4,1 4,3
100	0,8	17,0	1217,5	194,8 -	- 198,4	4,2 4,3
125	0,7	17,0	1498,4	244,8 -	- 248,4	4,3 4,4

(1) using LP insert with radius 0,8 mm

Note: During helical interpolation do not exceed maximum pitch

When using HF insert or other different insert radius to calculate the ØDHmin and ØDHmax use the equation below:

- Minimum Diameter: $\text{ØDHmin} = 2 \times (\text{ØDc} - (\text{R corner radius} + \text{F width of edge wiper}))$

- Maximum Diameter: $\text{ØDHmax} = 2 \times (\text{ØDc} - \text{R corner radius})$

Vc (m/min)			PCD	Feed fz (mm/t)					
Toughness →									
PH5740	PH5740	PH7740	PDP410	XPET 17... LP	XPET 17... LS	XPET 17... MP	XPET 17... LN	XPET 17... LN Z1	XPET 17... LN Z1W
-	140-220	140-200	-	0,10-0,35	-	0,10-0,35	-	-	-
-	120-200	130-180	-	0,10-0,35	-	0,10-0,35	-	-	-
-	100-190	100-170	-	0,10-0,30	-	0,10-0,30	-	-	-
-	-	130-180	-	0,10-0,30	0,10-0,35	-	-	-	-
-	-	110-160	-	0,10-0,30	0,10-0,30	-	-	-	-
-	-	90-150	-	0,10-0,25	0,10-0,25	-	-	-	-
160-260	-	140-220	-	0,10-0,35	-	0,10-0,35	-	-	-
140-240	-	120-210	-	0,10-0,35	-	0,10-0,35	-	-	-
120-200	-	100-190	-	0,10-0,30	-	0,10-0,30	-	-	-
-	-	-	800-3000	-	-	-	0,10-0,35	0,10-0,35	0,10-0,35
-	-	30-100	-	0,10-0,20	0,10-0,20	-	-	-	-

