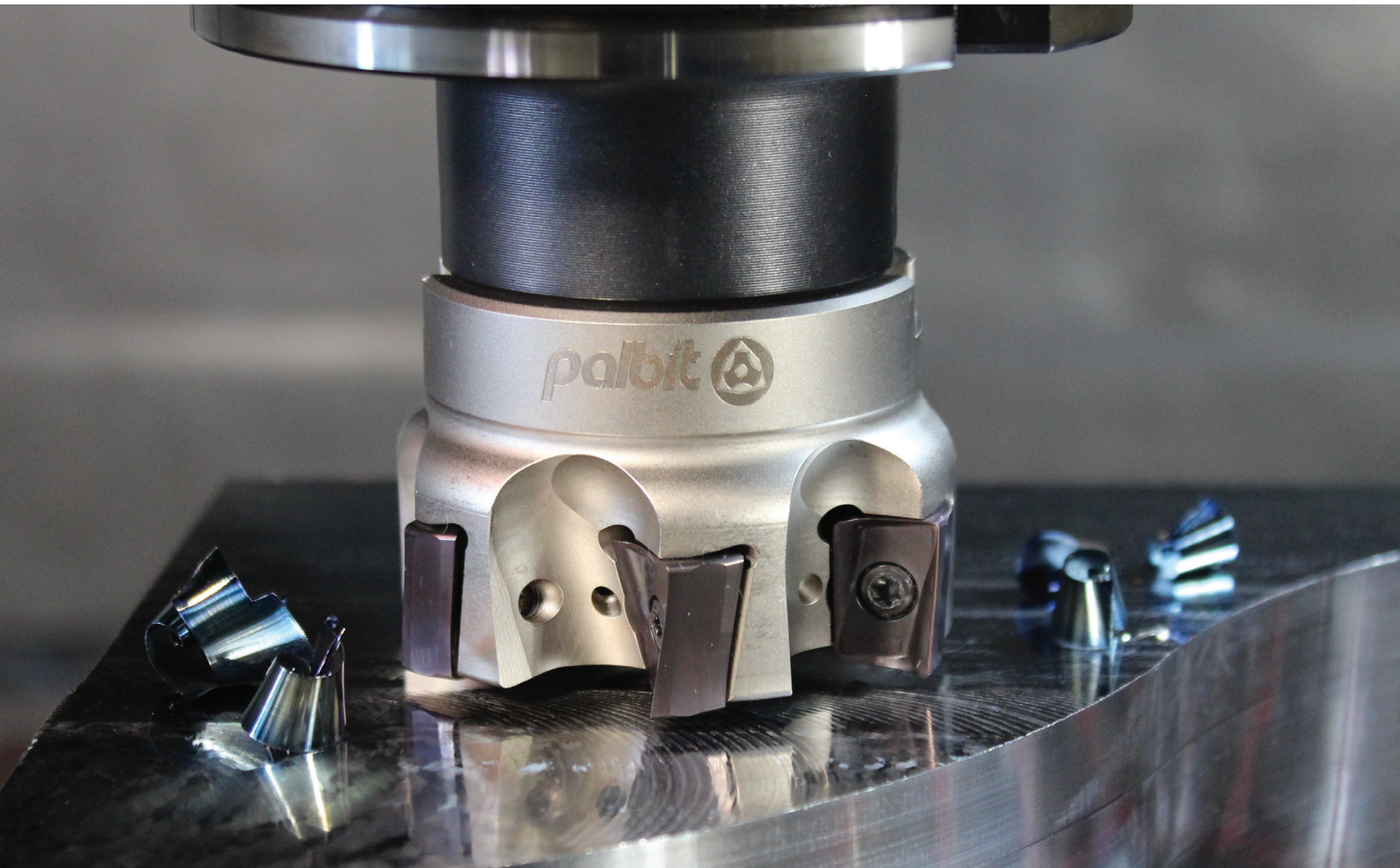


PLUS

18190 | ANHX 1607..

High cutting performance milling



Cutters

- Stable and powerful machining.
- Available in regular and fine pitch cutters performance.
- Excellent cutting performance with exceptionally economical.

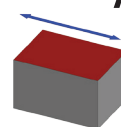
Inserts

- 4 corners insert with positive cutting edge.
- Variety of insert geometries is available for all applications.
- Helical cutting edge.

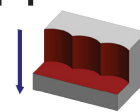
Specifications

- Geometry: 90° milling operations.
- Cutter diameters:
 - Weldon Shank (W): Ø32 & Ø40.
 - Threaded Coupling (R): Ø32 & Ø40.
 - Arbor Mounting (A): Ø50 till Ø160.
- Workpiece materials: Steel, cast iron & aluminium.

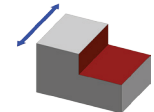
Applications



Facing

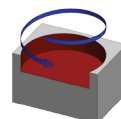


Plunging

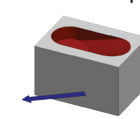


Shouldering

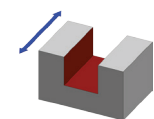
Weldon Shank additional operations:



Helical Interpolation



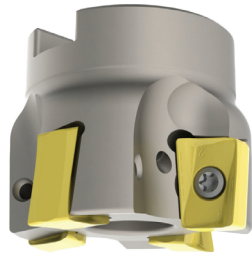
Ramp Down



Slotting

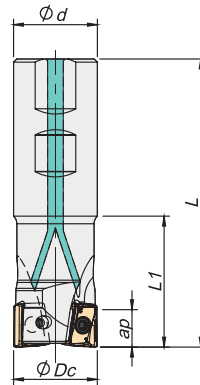
* Available also for Arbor Mounting - Ø50

18190 Cutters

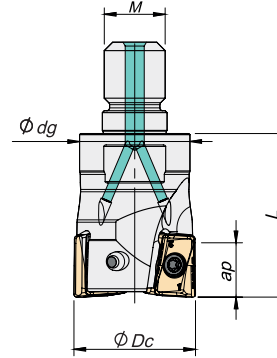


$K_r = 90^\circ$ | $\gamma_p = -4^\circ$

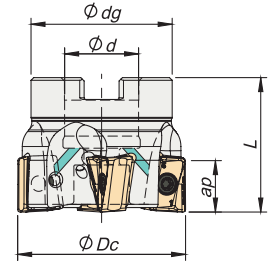
Weld on Shank



Threaded Coupling



Arbor Mounting

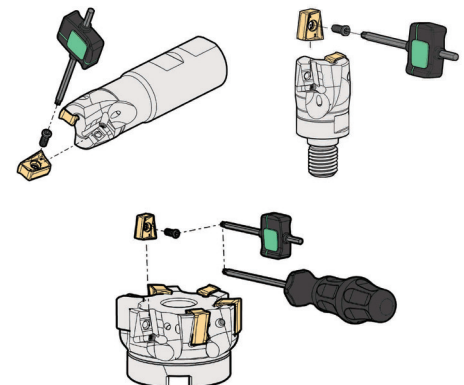


	Order Code	Reference		Dimensions (mm)						Specifications		Insert	Stock
				ΦDc	$\Phi d/M$	Φdg	L	L1		Arbor Type	a_p (mm)		
Weld on	181051600	032W18190-02-04-032110	2	32	32	-	110	50	0,580	-	15,0	ANHX 1607...	
	181067500	040W18190-03-04-032115	3	40	32	-	115	40	0,690	-	15,0	ANHX 1607...	
Thread.	181082800	032R18190-02-04-M16043	2	32	M16	29	43	-	0,200	-	15,0	ANHX 1607...	
	181082900	040R18190-03-04-M16043	3	40	M16	29	43	-	0,240	-	15,0	ANHX 1607...	
Arbor Mounting	181067600	050A18190-03-04-022040	3	50	22	42	40	-	0,300	A	15,0	ANHX 1607...	
	181067700	050A18190-04-04-022040	4	50	22	42	40	-	0,280	A	15,0	ANHX 1607...	
	181067800	063A18190-04-04-022040	4	63	22	52	40	-	0,520	A	15,0	ANHX 1607...	
	181067900	063A18190-06-04-022040	6	63	22	52	40	-	0,490	A	15,0	ANHX 1607...	
	181068000	080A18190-05-04-027050	5	80	27	60	50	-	0,900	B	15,0	ANHX 1607...	
	181051800	080A18190-07-04-027050	7	80	27	60	50	-	0,850	B	15,0	ANHX 1607...	
	181068100	100A18190-05-04-032050	5	100	32	80	50	-	1,620	B	15,0	ANHX 1607...	
	181068200	100A18190-08-04-032050	8	100	32	80	50	-	1,610	B	15,0	ANHX 1607...	
	181068300	125A18190-07-04-040063	7	125	40	90	63	-	2,990	B	15,0	ANHX 1607...	
	181068400	125A18190-10-04-040063	10	125	40	90	63	-	2,960	B	15,0	ANHX 1607...	
	181068500	160A18190-08-04-U040063	8	160	40	110	63	-	4,360	C	15,0	ANHX 1607...	
	181068600	160A18190-12-04-U040063	12	160	40	110	63	-	4,360	C	15,0	ANHX 1607...	

Stock items / Itens de stock Available under request / Disponibilidade sob consulta / Disponible bajo consulta

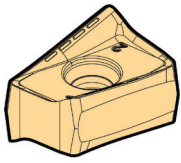
Screws & Keys

Cutter ΦDc	Order separately				
	Insert Screw	Key (Torx)	Torque Value Nm	Screw	DIN 6368 Wrench
W18190 – 32-40	P0401200	XT15	3,0	-	-
R18190 – 32-40	P0401200	XT15	3,0	-	-
A18190 – 50-63	P0401200	XT15	3,0	-	-
A18190 – 80	P0401200	XT15	3,0	J0123510	SD6368-12
A18190 – 100	P0401200	XT15	3,0	J0164110	SD6368-16
A18190 – 125	P0401200	PT15	3,0	J0204610	SD6368-20
A18190 – 160	P0401200	PT15	3,0	-	-

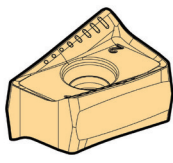


ANHX 1607.. Inserts

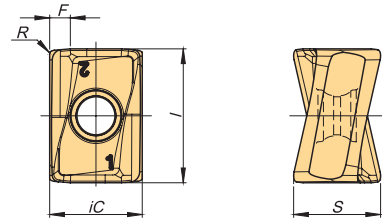
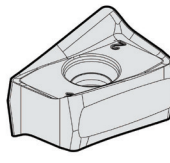
ANHX - LP



ANHX - MP



ANHX - LN



(1) Geometry Code	(2) Grade Code	Grades																Dimensions (mm)												
		P						M			K						N						S			H				
		M6	54	68	66	78	86	I5	68	66	I5	54	68	C2	66	D2	67	I5	10	D6	C2	68	I5	M6	D4	iC	S	I	R	F
1111519	ANHX 160708 PNER-LP	⊗	⊗	⊗	⊗								⊗	⊗	⊗	⊗										11,20	10,80	16	0,8	1,4
1111596	ANHX 160712 PNER-LP	⊗	⊗	⊗									⊗	⊗	⊗	⊗										11,20	10,50	16	1,2	1,2
1111595	ANHX 160708 PNER-MP	⊗	⊗	⊗	⊗								⊗	⊗	⊗	⊗										11,20	10,80	16	0,8	1,4
1111598	ANHX 160712 PNER-MP	⊗	⊗	⊗									⊗	⊗	⊗	⊗										11,20	10,50	16	1,2	1,2
1111659	ANHX 160708 PNFR-LN																		⊗							11,20	10,80	16	0,8	1,4
1111597	ANHX 160712 PNFR-LN																		⊗							11,20	10,50	16	1,2	1,2

⊗ First choice / 1ª escolha / 1ª opción ⊗ Stock items / Itens de stock ○ Available under request / Disponibilidade sob consulta / Disponible bajo consulta

Insert Order Code = (1) Geometry Code + (2) Grade Code

Chip Breakers

Chip Breaker	Features
Geometry LP Light machining of steels	Positive top rake angle to promote a good chip flow and reduce power consumption on low alloy steels.
Geometry MP General machining of steels	Chip-breaker with a reinforced chanfer for general applications on steels.
Geometry LN Alum. alloys & non-ferrous	High positive chip-breaker, polished for applications of non ferrous (aluminium, cooper and cooper alloys).

Rec. Cutting Conditions

ISO	Material	HB (Brinell) Grade	V _C (mm/min)					Feed f _z (mm/t)		
			← Wear Resistance			→ Toughness		ANHX 16... -LP	ANHX 16... -MP	ANHX 16... -LN
			PH0910	PH6910	PH6705	PH6920	PH6930			
P	Unalloyed steel	125-220	-	180-250	-	150-230	150-180	0,10-0,20	0,08-0,25	-
	Low-alloyed steel	220-280	-	170-210	-	140-220	140-170	0,10-0,22	0,08-0,25	-
	High-alloy steel	280-380	-	160-200	-	130-180	120-150	0,10-0,20	0,08-0,22	-
K	Malleable cast iron	130-230	-	170-300	160-295	150-280	140-230	0,10-0,25	0,08-0,25	-
	Grey cast iron	180-245	-	150-250	140-245	130-230	120-225	0,10-0,25	0,08-0,25	-
	Nodular cast iron	160-250	-	90-210	90-205	80-190	140-180	0,10-0,20	0,08-0,22	-
N	Alluminium and Non Ferrous	30-130	350-1000	-	-	-	-	-	-	0,10-0,40

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

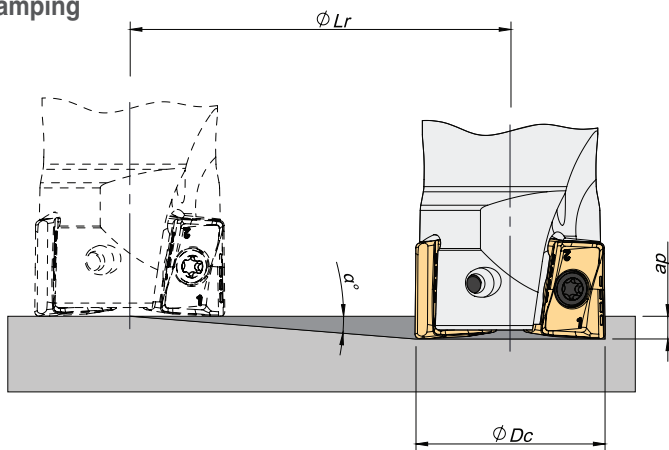
Operation	a _e	V _C & f _z	a _p (mm)
Slotting	100%	< 20%	2.0-3.5
Shouldering	< 50%	> 8%	3.0-6.0
	≤ 25%	> 12%	6.0-8.5

(Note 3) It's possible to occur vibrations in certain cases. Please reduce depth of cut and / or reduce cutting conditions in following cases:

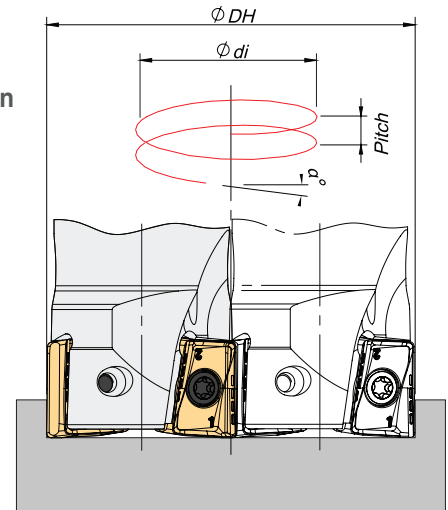
- When using long shank;
- When using long tool overhang with arbor type;
- When application has poor clamping rigidity or when using a low rigidity machine.

Ramping, helical Interpolation and Plunging

Ramping



Helical Interpolation



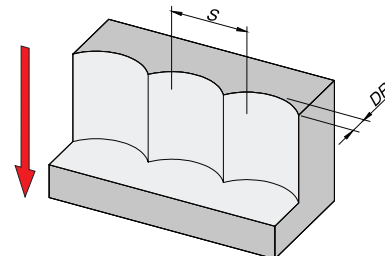
ϕ_{Dc}	Ramping			Helical Interpolation		
	Max Ramp α°	Max a_p	Min Lr	ϕ_{DHmin}	ϕ_{DHmax}	Max Pitch/Rev.
32	1,2	15,0	716,0	44,0	-	0,7
40	0,9	15,0	955,0	60,0	64,0	1,8
				-	80,0	1,7
50	0,8	15,0	1074,0	80,0	-	1,1
				-	100,0	1,9

Note: During helical interpolation do not exceed max Pitch.

Plunging

L $3D_c$	L $>3D_c$	S max.
f_z (mm/t)		
0,10-0,20	0,10-0,14	$S_{max.} = \sqrt{D_c \cdot a_e - a_{e2}}$

S max and DR corresponding cutting diameter Dc (mm)									
DR (mm)	Dc (mm)								
	32	40	50	63	80	100	125	160	
1,0	5,6	6,2	7,0	7,9	8,9	9,9	11,1	12,6	
2,0	7,7	8,7	9,8	11,0	12,5	14,0	15,7	17,8	
3,0	9,3	10,5	11,9	13,4	15,2	17,1	19,1	21,7	
4,0	10,6	12,0	13,6	15,4	17,4	19,6	22,0	25,0	
5,0	11,6	13,2	15,0	17,0	19,4	21,8	24,5	27,8	



Grades

Grades	Information
PH6910	PVD coated carbide with micro-grain substrate for light milling of steels or for hardened steels. Excellent for cast iron and high temperature alloys.
PH6920	Coated carbide grade for high cutting speed applications, excellent solution to massive production with stable conditions.
PH6930	Micro-grain carbide grade, suitable for applications with instability conditions. Excellent solution for medium cutting speed applications.
PH6705	PVD coated carbide grade with a hard substrate and smooth surface. Ideal for high speed cutting of cast irons.
PH0910	Uncoated carbide grade suitable for milling of aluminium alloys combined with high positive geometries.