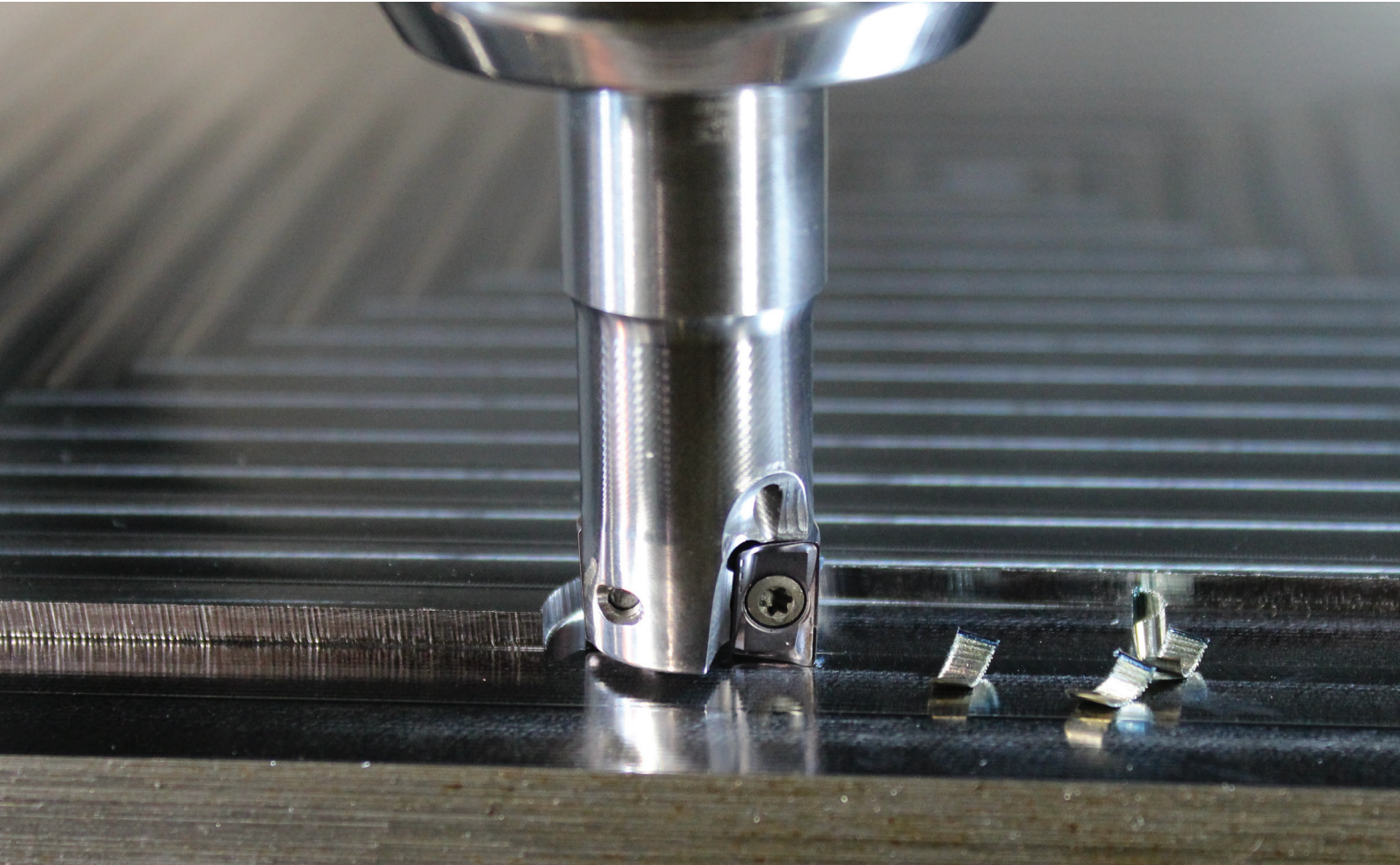


# PLUS 17190 | ANHX 1004..

Expansion of our line PLUS 18190  
New toolholders and inserts



## Cutters

- Stable and powerful machining.
- Available in regular and fine pitch cutters.
- Excellent cutting performance with exceptionally economical.
- Smaller diameters tools: 14 mm end mills, 40 mm face mills.

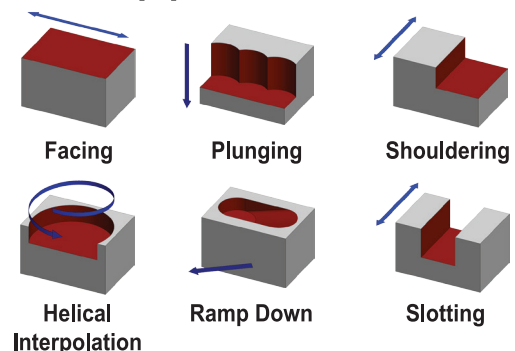
## Inserts

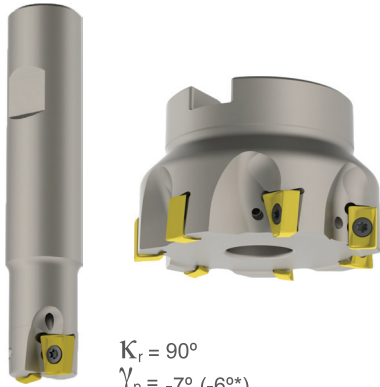
- Double-sided insert with 4 cutting edges.
- High rake angle chip breaker.
- Maximum depth of cut 9 mm.

## Specifications

- Geometry: 90° milling operations.
- Cutter diameters:
  - Weldon Shank (W): Ø14 till Ø40.
  - Arbor Mounting (A): Ø40 till Ø100.
- Workpiece materials: Steel, stainless steel, cast iron & HRSA.

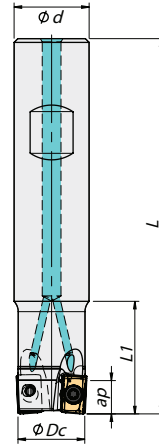
## Applications



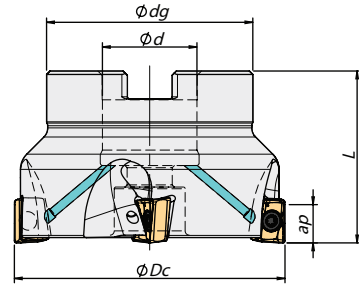


$K_r = 90^\circ$   
 $\gamma_p = -7^\circ (-6^{**})$

### Weldon Shank

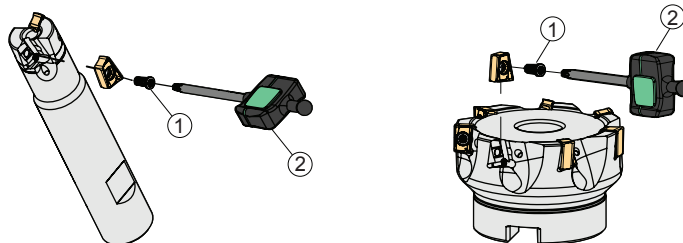


### Arbor Mounting



	Order Code	Reference		Dimensions (mm)				Specifications			Stock	
				$\phi D_c$	$\phi d/M$	$\phi D_g$	L	L1	Style	ap (max)		Kg
Weldon Shank	181075000	014W17190-01-06-016090*	1	14	16	-	90	23	-	9,0	0,118	
	181075100	016W17190-01-06-016090*	1	16	16	-	90	25	-	9,0	0,123	
	181075200	018W17190-02-06-016090*	2	18	16	-	90	23	-	9,0	0,125	
	181071400	020W17190-02-06-020100*	2	20	20	-	100	30	-	9,0	0,210	
	181071500	020W17190-03-06-020100*	3	20	20	-	100	30	-	9,0	0,206	
	181074400	025W17190-02-06-025115*	2	25	25	-	115	35	-	9,0	0,391	
	181074500	025W17190-03-06-025115*	3	25	25	-	115	35	-	9,0	0,387	
	181074600	032W17190-03-06-032125*	3	32	32	-	125	40	-	9,0	0,701	
	181074700	032W17190-04-06-032125*	4	32	32	-	125	40	-	9,0	0,698	
	181074800	040W17190-04-07-032130	4	40	32	-	130	40	-	9,0	0,780	
181074900	040W17190-05-07-032130	5	40	32	-	130	40	-	9,0	0,777		
Arbor Mounting	181075300	040A17190-04-07-016040	4	40	16	32	40	-	A	9,0	0,209	
	181075400	040A17190-05-07-016040	5	40	16	32	40	-	A	9,0	0,207	
	181075500	050A17190-05-07-022040	5	50	22	42	40	-	A	9,0	0,345	
	181075600	050A17190-07-07-022040	7	50	22	42	40	-	A	9,0	0,335	
	181075700	063A17190-07-07-022040	7	63	22	52	40	-	A	9,0	0,552	
	181075800	063A17190-09-07-022040	9	63	22	52	40	-	A	9,0	0,541	
	181075900	080A17190-08-07-027050	8	80	27	60	50	-	B	9,0	1,005	
	181076000	080A17190-10-07-027050	10	80	27	60	50	-	B	9,0	0,993	
	181076100	100A17190-09-07-032050	9	100	32	80	50	-	B	9,0	1,803	
	181076200	100A17190-12-07-032050	12	100	32	80	50	-	B	9,0	1,784	

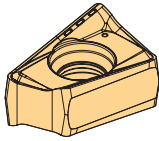
## Screws & Keys



Item	1	2		Order Separately	
		Insert Screw	Key (Torx)	Torque Value	Screw
W17190 – 14 - 40	P0300800	XT09	3,0	-	-
A17190 – 40 - 63	P0300800	XT09	3,0	-	-
A17190 – 80	P0300800	XT09	3,0	J0123510	SD6368-12
A17190 – 100	P0300800	XT09	3,0	J0164110	SD6368-16

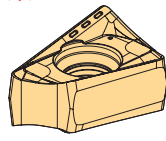
## ANHX 1004.. Inserts

ANHX - LP



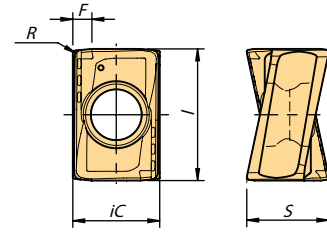
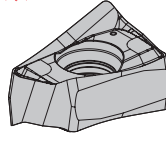
ANHX - LM

New



ANHX - LN

New



(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
1111652	ANHX 100405 PNR-LP	⊗	⊗	⊗							⊗	⊗		⊗												6,6	6,2	10	0,5	1,0
1111908	ANHX 100412 PNR-LP	⊗	⊗	⊗							⊗	⊗		⊗												6,6	6,2	10	1,2	1,0
1112005	ANHX 100405 PNER-LM		⊗	⊗	⊗																		⊗			6,6	6,2	10	0,5	1,0
1112103	ANHX 100412 PNER-LM		⊗	⊗	⊗																		⊗			6,6	6,2	10	1,2	1,0
1111997	ANHX 100405 PNR-LN																		⊗							6,6	6,2	10	0,5	1,0
1112102	ANHX 100412 PNR-LN																		⊗							6,6	6,2	10	1,2	1,0

⊗ 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

## Rec. Cutting Conditions

ISO	Material	HB (Brinell)  Grade	V <sub>c</sub> (mm/min)					Feed f <sub>z</sub> (mm/t)		
			PH0910	PH6910	PH6920	PH6930	PH6740	ANHX 10.. -LP	ANHX 10.. -LM	ANHX 10.. -LN
P	Unalloyed steel	125-220	-	180-250	150-230	150-180	130-160	0,10-0,20	0,08-0,20	-
	Low-alloyed steel	220-280	-	170-210	140-220	140-170	120-150	0,10-0,20	0,08-0,15	-
	High-alloy steel	280-380	-	160-200	130-180	120-150	100-130	0,10-0,15	0,08-0,15	-
M	SS - Ferritic/martensitic	200-330	-	-	120-160	90-150	100-120	0,10-0,20	0,08-0,20	-
	SS - Austenitic	200-330	-	-	100-150	80-130	80-110	0,10-0,15	0,08-0,15	-
	SS - Austenitic-ferretic (Duplex)	230-260	-	-	70-110	70-100	70-100	0,10-0,15	0,08-0,15	-
K	Malleable cast iron	130-230	-	170-300	150-280	140-230	130-250	0,10-0,25	0,08-0,20	-
	Grey cast iron	180-245	-	150-250	130-230	120-225	110-220	0,10-0,25	0,08-0,20	-
	Nodular cast iron	160-250	-	90-210	80-190	80-180	80-170	0,10-0,20	0,08-0,15	-
N	Aluminium and Non Ferrous	30-130	350-1000	-	-	-	-	-	-	0,10-0,40
S	Heat Resistant Super Alloys	200-320	-	-	-	-	20-80	0,07-0,10	0,08-0,10	-

(Note 1) Cutting conditions a<sub>e</sub>/D<sub>c</sub>=70%.

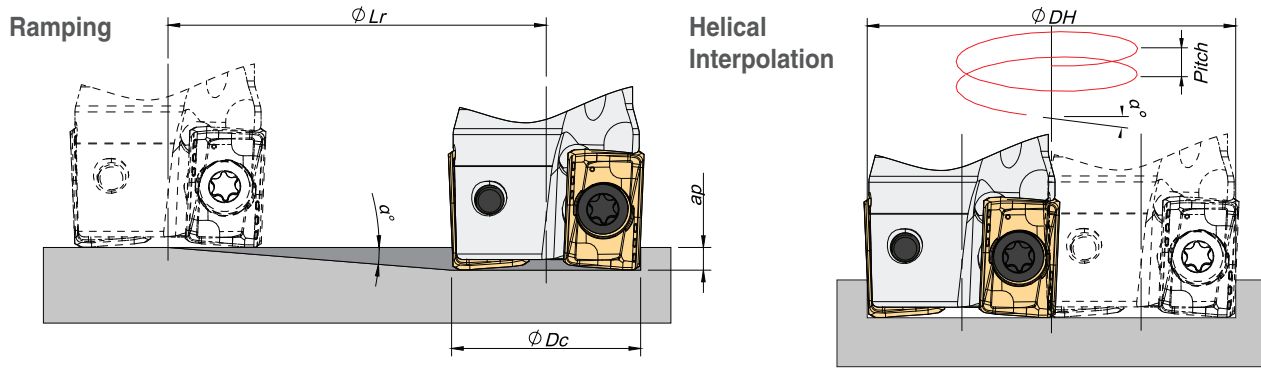
(Note 2)

Operation	a <sub>e</sub>	V <sub>c</sub> & f <sub>z</sub>	a <sub>p</sub> (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

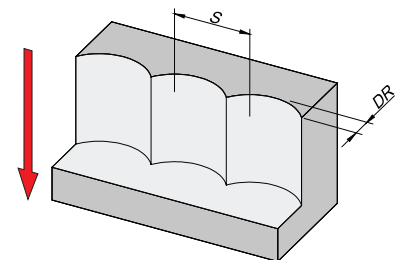


$\phi_{Dc}$	Ramping			Helical Interpolation		
	Max Ramp $\alpha^\circ$	Max $a_p$	Min $L_r$	$\phi_{DHmin}$	$\phi_{DHmax}$	Max Pitch/Rev.
14	5	9,0	102,9	25,4	-	3,1
				-	26,4	3,4
16	4,5	9,0	114,4	29,4	-	3,3
				-	31,0	3,7
18	3,6	9,0	143,1	33,4	-	3,0
				-	35,0	3,4
20	3	9,0	171,7	37,4	-	2,9
				-	39,0	3,1
25	2	9,0	257,7	47,4	-	2,5
				-	49,0	2,6
32	1,4	9,0	368,3	61,4	-	2,3
				-	63,0	2,4
40	1,1	9,0	468,7	77,4	-	2,3
				-	79,0	2,4
50	1	9,0	515,6	97,4	-	2,6
				-	99,0	2,7
63	0,6	9,0	859,4	123,4	-	2,0
				-	125,0	2,0
80	0,5	9,0	1031,3	157,4	-	2,1
				-	159,0	2,2
100	0,4	9,0	1289,1	197,4	-	2,1
				-	199,0	2,2

Note: During helical interpolation do not exceed max Pitch.

### Plunging

L $\leq 3Dc$	L $> 3Dc$	S max.						
$f_z$ (mm/t)								
0,10-0,20	0,10-0,14	$S_{max.} = \sqrt{DC \cdot a_e - a_e^2}$						
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



### 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.
PH6740	PVD (TiAlN SN) large thickness coated grade for heavy roughing applications. Can work on all type of materials and endures a lot of vibration.
PH0910	Uncoated carbide grade suitable for milling of aluminum alloys combined with positive geometries.