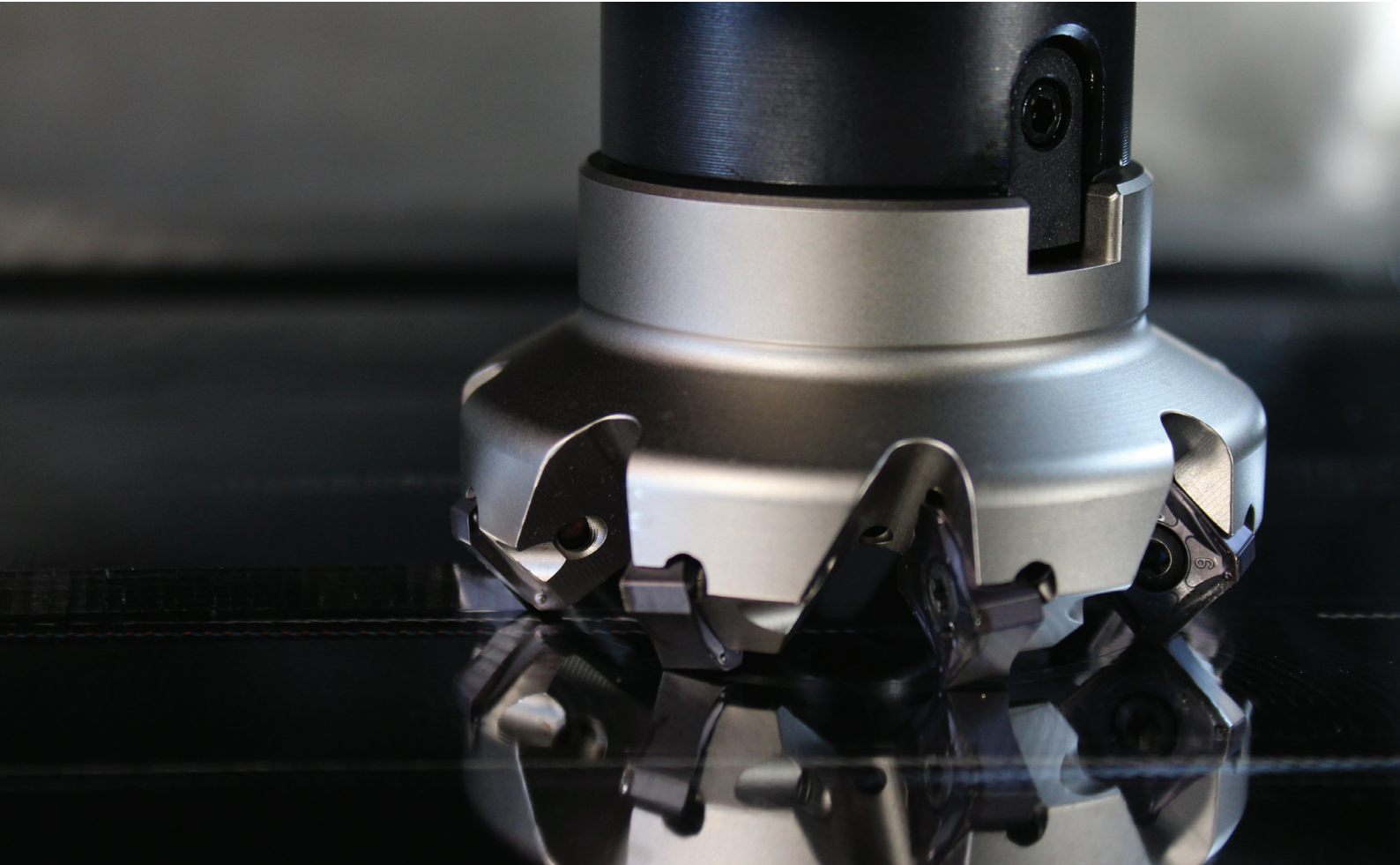


# PLUS

## 90945 | SNHX 1206..

High performance face milling



## Cutters

- Excellent surface finishing.
- High feed rates & cost-efficiency.
- Available in regular and fine pitch cutters.
- Large chip gullets ensure the efficient chip evacuation.
- Internal coolant supply up to 125 mm.

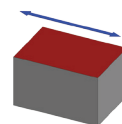
## Inserts

- Insert with high rake angle allows a positive setting on the tool for lower cutting forces.
- Innovative chip breaker design for improved tool life and better chip evacuation.
- Helical cutting edge.

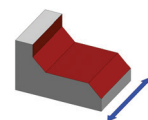
## Specifications

- Geometry: 45° face milling.
- Cutter diameters:
  - Arbor Mounting (A): Ø50 till Ø250
- Workpiece materials: Steels, stainless steel, cast iron, high-temp alloy, aluminium, non-ferrous and HRSA.

## Applications

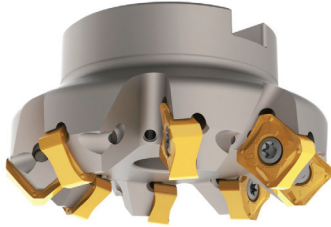


Facing



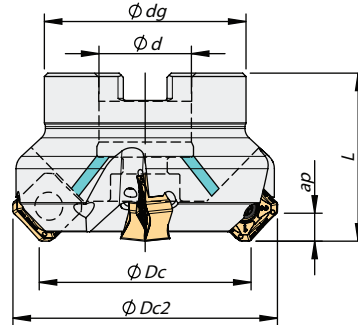
Slanted Shoulder  
&  
Chamfer

## 90945 Cutters



$K_r = 45^\circ$   
 $\gamma_p = -6^\circ$

### Arbor Mounting

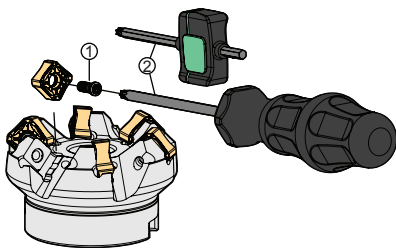


Order Code	Reference		Dimensions (mm)					Arbor Style	$a_p$ Max.	Stock
			$\phi Dc$	$\phi Dc2$	$\phi d$	$\phi dg$	L			
181048200	050A90945-04-06-022040	4	050	063	22	48	40	A	6,0	
181067000	050A90945-06-06-022040	6	050	063	22	48	40	A		
181048300	063A90945-06-06-022040	6	063	076	22	52	40	A		
181067100	063A90945-08-06-022040	8	063	076	22	52	40	A		
181048400	080A90945-07-06-027050	7	080	093	27	60	50	B		
181067200	080A90945-10-06-027050	10	080	093	27	60	50	B		
181048500	100A90945-08-06-032050	8	100	113	32	80	50	B		
181067300	100A90945-12-06-032050	12	100	113	32	80	50	B		
181048600	125A90945-10-06-040063	10	125	138	40	90	63	B		
181048700	160A90945-12-06-U040063*	12	160	173	40	110	63	C		
181052800	200A90945-14-06-U060063*	14	200	213	60	172	63	C		
181064700	250A90945-16-06-U060063*	16	250	263	60	172	63	C		

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

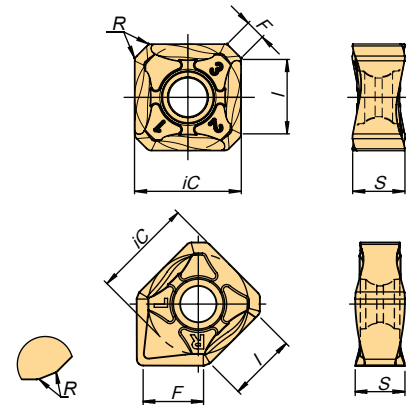
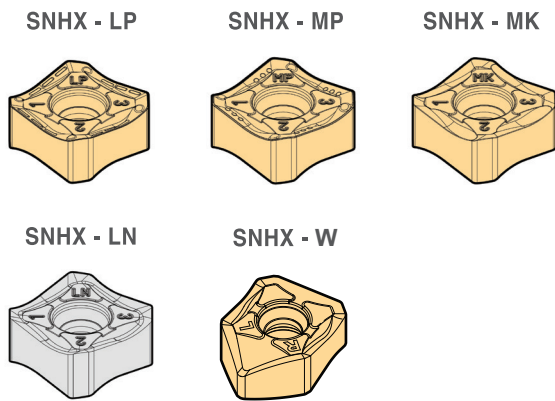
\* Cutters without internal coolant supply

## Screws & Keys



Item	1	2		Order Separately	
		Insert Screw	Key (Torx)	Torque Value	Screw
A90945 – 50 - 63	P0401200	XT15	3,0	-	-
A90945 – 80	P0401200	XT15	3,0	J0123510	SD6368-12
A90945 – 100	P0401200	PT15	3,0	J0164110	SD6368-16
A90945 – 125	P0401200	PT15	3,0	J0204610	SD6368-20
A90945 – 160 - 250	P0401200	PT15	3,0	-	-

## SNHX 1206 AN... Inserts



(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
1111452	SNHX 1206 ANEN-LP	PH6103	PH6910	PH6920	PH6930	PH6125	PH6135	PH6740	PH6920	PH6930	PH6740	PH6910	PH6920	PHC920	PH6930	PH6705	PH6325	PH6740	PH0910	PDP410	PHC920	PH6920	PH6740	PH6103	PBH910	12,70	6,35	9,3	0,8	2
1111502	SNHX 1206 ANSN-MP																									12,70	6,35	9,3	0,8	2
1111503	SNHX 1206 ANEN-MK																									12,70	6,35	9,3	0,8	2
1111504	SNHX 1206 ANFN-LN																									12,70	6,35	9,3	0,8	2
1111899	SNHX 1206 ANFN-W*																									12,70	6,30	9,3	0,4	7,6

\* Wiper inserts with 2 rights and 2 left-hand cutting edges.

⊗ 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)	V <sub>C</sub> (mm/min)					Feed f <sub>z</sub> (mm/t)			
			← Wear Resistance			→ Toughness		SNHX 12... -LP	SNHX 12... -MP	SNHX 12... -MK	SNHX 12... -LN
			Grade	PH0910	PH6910	PH6920	PH6930				
P	Unalloyed steel	125-220	-	180-250	150-230	150-180	130-160	0,10-0,35	0,10-0,35	-	-
	Low-alloyed steel	220-280	-	170-210	140-220	140-170	120-150	0,10-0,35	0,10-0,35	-	-
	High-alloy steel	280-380	-	160-200	130-180	120-150	100-130	0,10-0,30	0,10-0,30	-	-
M	SS - Ferritic/martensitic	200-330	-	-	120-160	90-150	100-120	0,10-0,30	-	-	-
	SS - Austenitic	200-330	-	-	100-150	80-130	80-110	0,10-0,30	-	-	-
	SS - Austenitic-ferritic (Dup.)	230-260	-	-	70-110	70-100	70-100	0,10-0,25	-	-	-
K	Malleable cast iron	130-230	-	170-300	150-280	140-230	130-250	-	0,10-0,20	0,10-0,40	-
	Grey cast iron	180-245	-	150-250	130-230	120-225	110-220	-	0,10-0,20	0,10-0,40	-
	Nodular cast iron	160-250	-	90-210	80-190	80-180	80-170	-	0,10-0,15	0,10-0,35	-
N	Aluminium and Non Ferrous	30-130	350-1000	-	-	-	-	-	-	-	0,10-0,40
S	Heat Resistant Super Alloys	200-320	-	-	20-90	-	-	0,07-0,15	0,08-0,10	-	-

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

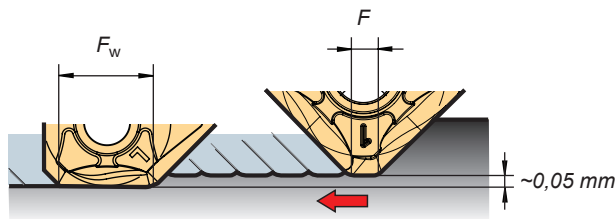
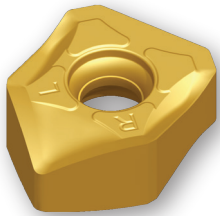
(Note 2) It's possible to occur vibrations in certain cases. Please reduce depth of cut and / or reduce cutting conditions in following cases:

- 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.

## 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 carbide 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 aluminium alloys combined with high positive geometries.

## Wiper Inserts



### Features

Excellent surface finishing can be achieved with the combination of standard inserts and one or more wiper inserts. Wiper inserts can be used in the most materials to produce a good surface finishing, even under unfavorable conditions. The feed per revolution can be increased four times the normal. When using larger cutter diameters with higher number of inserts, it becomes essential to use wiper inserts to obtain a good surface finish.

### Rec. Cutting Conditions

- $F_w$  at least 40% larger than  $f_n$  ( $f_n = f_z \times Z$ );
- Axial depth of cut is 0,5 - 0,8 mm;

Example:

- The width of the parallel land ( $F$ ) of the insert is 2 mm.
- With a cutter of 10 inserts and using a feed per tooth ( $f_z$ ) of 0,3 mm, the feed per revolution ( $f_n$ ) will be 3 mm, i.e. 33% bigger than the parallel land.
- To obtain a good surface finish, the feed per revolution should be a maximum of 80% of 2 mm = 1,6 mm.
- The wiper insert will have a parallel land ( $F_w$ ) with a width of approximately 7,6 mm.
- Result: Feed per revolution ( $f_n$ ) could be increased from 1,6 mm to 60% of 7,6 mm = 4,56 mm.

Note: Other limitations, such as machine power, must be taken into consideration.

### How to use a wiper insert

- Since wiper is one corner use for standard cutters, please attach the insert with the parallel land down to the workpiece cutting surface;

