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

ISO	PSM	Material	HB (Brinell)	Vc (m/min) ← Wear Resistance					Vc (m/min) Toughness →			Feed fz (mm/t)				
				PH0910	PH5705	PH7910	PH7920	PH7930	PH5740	PHS740	PH7740	SNHX 12... LP	SNH(K)X 12... MP	SNH(K)X 12... MK	SNHX 12... LN	SNHX 12... W
P	1	Unalloyed Steel	125-220	-	-	190-280	180-250	160-220	-	140-170	140-170	0,10-0,35	0,10-0,35	-	-	0,10-0,35
P	2	Low-Alloyed Steel	220-280	-	-	180-240	170-210	150-180	-	130-160	130-160	0,10-0,35	0,10-0,35	-	-	0,10-0,35
P	3	High-Alloyed Steel	280-380	-	-	170-220	160-200	130-160	-	110-140	110-140	0,10-0,30	0,10-0,30	-	-	0,10-0,30
M	4	SS - Ferritic / Martensitic	200-330	-	-	-	-	120-180	-	-	-	0,10-0,30	-	-	-	-
M	5	SS - Austenitic	200-330	-	-	-	-	100-160	-	-	-	0,10-0,30	-	-	-	-
M	6	SS - Austenitic-ferritic (Duplex)	230-260	-	-	-	-	70-140	-	-	-	0,10-0,25	-	-	-	-
K	7	Malleable Cast Iron	130-230	-	190-340	180-320	170-300	160-280	170-300	-	130-250	0,10-0,35	-	0,10-0,35	-	0,10-0,40
K	8	Grey Cast Iron	180-245	-	180-300	170-280	150-250	140-240	150-260	-	110-220	0,10-0,35	-	0,10-0,35	-	0,10-0,40
K	9	Nodular Cast iron	160-250	-	140-250	100-240	90-210	90-200	130-220	-	80-170	0,10-0,30	-	0,10-0,30	-	0,10-0,40
N	10	Aluminium and Non Ferrous	30-130	350-1200	-	-	-	-	-	-	-	-	-	-	0,10-0,35	-
S	11	Heat Resistant Super Alloys	200-320	-	-	-	-	30-75	-	-	-	0,07-0,20	-	-	-	-

(Note 1) Cutting conditions a_e/Dc=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) PH5... and PHS... can be used wet or dry. PH7... use only air.

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

ISO	PSM	Material	HB (Brinell)	Grades ← Wear Resistance					Toughness →		
				PH0910	PH5705	PH7910	PH7920	PH7930	PH5740	PHS740	PH7740
P	1	Unalloyed Steel	125-220			✓	✓	✓		✓	✓
P	2	Low-Alloyed Steel	220-280			✓	✓	✓		✓	✓
P	3	High-Alloyed Steel	280-380			✓	✓	✓		✓	✓
M	4	SS - Ferritic / Martensitic	200-330					✓			
M	5	SS - Austenitic	200-330					✓			
M	6	SS - Austenitic-ferritic (Duplex)	230-260					✓			
K	7	Malleable Cast Iron	130-230		✓		✓		✓		
K	8	Grey Cast Iron	180-245		✓		✓		✓		
K	9	Nodular Cast iron	160-250		✓		✓		✓		
N	10	Aluminium and Non Ferrous	30-130	✓							
S	11	Heat Resistant Super Alloys	200-320					✓			

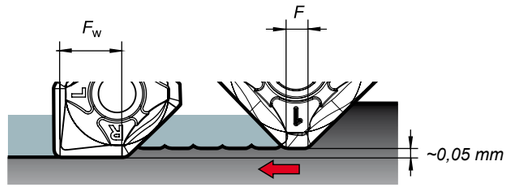
● Good Conditions
◕ Average Conditions
◔ Difficult Conditions

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

ISO	PSM	Material	HB (Brinell)	Chip-Breaker Application	
				1st choise	Dificult Operations
P	1	Unalloyed Steel	125-220	SNHX 12... LP	SNH(K)X 12... MP
P	2	Low-Alloyed Steel	220-280	SNHX 12... LP	SNH(K)X 12... MP
P	3	High-Alloyed Steel	280-380	SNH(K)X 12... MP	-
M	4	SS - Ferritic / Martensitic	200-330	SNHX 12... LP	-
M	5	SS - Austenitic	200-330	SNHX 12... LP	-
M	6	SS - Austenitic-ferritic (Duplex)	230-260	SNHX 12... LP	-
K	7	Malleable Cast Iron	130-230	SNH(K)X 12... MK	-
K	8	Grey Cast Iron	180-245	SNH(K)X 12... MK	-
K	9	Nodular Cast iron	160-250	SNH(K)X 12... MK	-
N	10	Aluminium and Non Ferrous	30-130	SNHX 12... LN	-
S	11	Heat Resistant Super Alloys	200-320	SNHX 12... LP	-

WIPER INSERTS

Rec. Cutting Conditions:
- F_W at least 40% larger than f_n (f_n-f_2xZ);
- Axial deepth of cut 0,5 - 0,8mm.



Example:
- The width of the parallel land (F) of the insert is 2,0mm.
- Width a cutter of 10 inserts and using a feed per tooth (f_z) of 0,3mm, 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 2mm = 1,6mm.
- Then wiper insert will have a parallel land (F_W) with a width of approximately 7,6mm.
- Result: Feed per revolution (f_n) could be increased from 1,6mm to 60% of 7,6mm = 4,56mm.

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

How to use a wiper insert:
- Since wiper is one corner use to standard cutters, please attach the insert with the parallel land down to the workspace cutting surface.

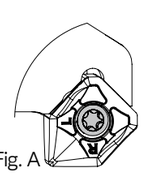


Fig. A

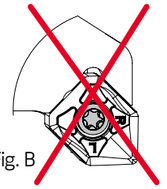
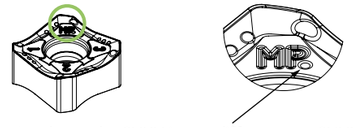


Fig. B

When using wiper insert, install the insert as shown on Fig. A if the insert is installed as shown on Fig. B breakage of the insert is inevitable and normal surface finish can not been obtained.



This point shows the SNKX insert difference to SNHX

Put the same side of insert in each pocket for best radial and axial runout when using SNKX.