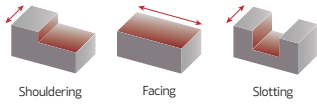


# High performance on tangential shoulder milling



TGPLUS  
90190 | 90390

NEW



INSERT SIZE  
**13** LNXT  
1306



NEW

INSERT SIZE  
**15** LNXT  
1506

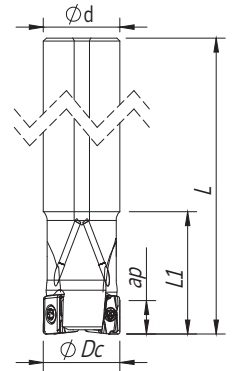


**100**  
YEARS  
SINCE 1916



### Cylindrical Shank

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



Order code Código	Reference Referência Referencia		Dimensions   Dimensões   Dimensiones (mm)					Kg	Specifications		Insert	Stock
			$\phi Dc$	$\phi d/M$	$\phi dg$	L	L1		$A_p$ max (mm)	Arbor Type		
181118500	025E90190-02-04-025200	2	25	25	-	200	40	0,66	11	-	LNXT 1306...	
181118600	032E90190-03-04-032250	3	32	32	-	250	50	1,37	11	-	LNXT 1306...	
181118700	040E90190-04-04-032250	4	40	32	-	250	50	1,42	11	-	LNXT 1306...	

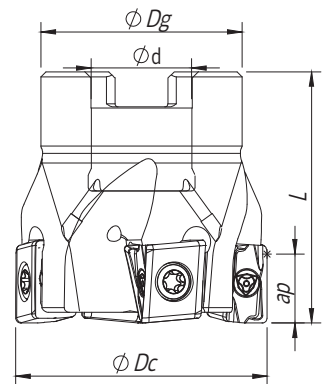
Stock item | Produto de stock | Itens de stock

Available under request | Disponível sobre consulta | Disponible bajo consulta



### Arbor Mounting

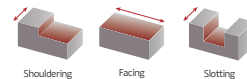
$K_r = 90^\circ$  |  $\gamma_p = -4^\circ$



Order code Código	Reference Referência Referencia		Dimensions   Dimensões   Dimensiones (mm)					Kg	Specifications		Insert	Stock
			$\phi Dc$	$\phi d/M$	$\phi dg$	L	L1		$A_p$ max (mm)	Arbor Type		
181118800	040A90190-04-04-016040	4	40	16	32	40	-	0,17	11	A	LNXT 1306...	
181118900	040A90190-05-04-016040	5	40	16	32	40	-	0,18	11	A	LNXT 1306...	
181111200	050A90190-05-04-022040	5	50	22	42	40	-	0,27	11	A	LNXT 1306...	
181111300	050A90190-06-04-022040	6	50	22	42	40	-	0,28	11	A	LNXT 1306...	
181119000	063A90190-06-04-022040	6	63	22	52	40	-	0,52	11	A	LNXT 1306...	
181119100	063A90190-08-04-022040	8	63	22	52	40	-	0,52	11	A	LNXT 1306...	
181119200	080A90190-07-04-027050	7	80	27	60	50	-	0,88	11	B	LNXT 1306...	
181119300	080A90190-10-04-027050	10	80	27	60	50	-	0,86	11	B	LNXT 1306...	
181119400	100A90190-09-04-032050	9	100	32	80	50	-	1,56	11	B	LNXT 1306...	
181119500	100A90190-13-04-032050	13	100	32	80	50	-	1,56	11	B	LNXT 1306...	
181119600	125A90190-11-04-040063	11	125	40	90	63	-	2,87	11	B	LNXT 1306...	
181119700	125A90190-16-04-040063	16	125	40	90	63	-	2,86	11	B	LNXT 1306...	

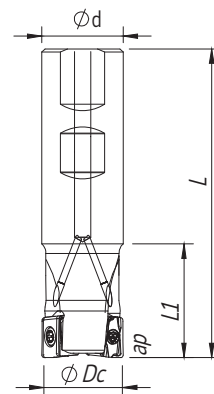
Stock item | Produto de stock | Itens de stock

Available under request | Disponível sobre consulta | Disponible bajo consulta



**Weldon Shank**

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



Order code Código	Reference Referência Referencia		Dimensions   Dimensões   Dimensiones (mm)					Kg	Specifications		Insert	Stock
			ØDc	Ød/M	Ødg	L	L1		Ap max (mm)	Arbor Type		
181118300	025W90190-02-04-025095	2	25	25	-	95	45	0,29	11	-	LNXT 1306...	
181109800	032W90190-03-04-032110	3	32	32	-	110	50	0,55	11	-	LNXT 1306...	
181118400	040W90190-04-04-032110	4	40	32	-	110	50	0,60	11	-	LNXT 1306...	

Stock item | Produto de stock | Itens de stock

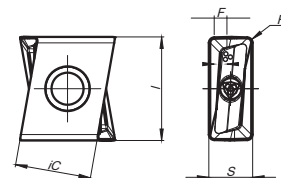
Available under request | Disponível sobre consulta | Disponible bajo consulta

**LNXT 1306** | Inserts | Pastilhas | Plaquetas

LNXT-MP



LNXT - MP



Geometry code	ISO Reference	P					M				K				N		S		H		Dimensions (mm)					
		PVD					CVD	PVD			CVD		PVD		UNC	PCD	PVD	PVD	CBN							
		P7	G1	G4	P3	G6	R1	G4	P3	G6	L5	L6	G1	G4	P3	G6	10	D6	P3	G6	P7	D4				
1112242	LNXT 130604 PNER-MP																					9,8	6,8	3,0	0,4	9,0
1112243	LNXT 130608 PNER-MP																					9,8	6,8	2,6	0,8	9,0

First choice | Primeira opção | 1ª opción

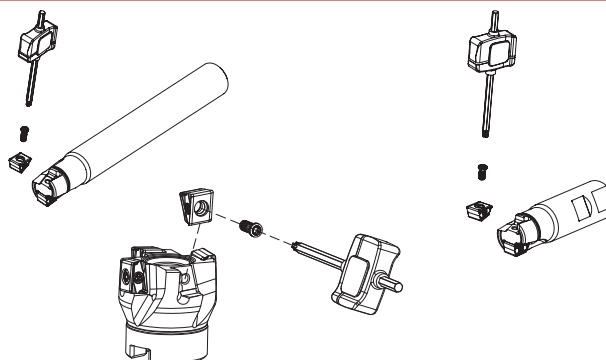
Stock item | Produto de stock | Itens de stock

Available under request | Disponível sobre consulta | Disponible bajo consulta




Insert order code = (1) Geometry Code + (2) Grade Code




**SPARE PARTS** Complementos | Complementos

Cutter ØDc	Insert Screw	Key (Torx)	Torque Value	Screw	DIN 6368 Wrench
E90190 - 25-40	P0400900	XT15	5,0	-	-
W90190 - 25-40	P0400900	XT15	5,0	-	-
A90190 - 40-63	P0400900	XT15	5,0	-	-
A90190 - 80	P0400900	XT15	5,0	J0123510	SD6368-12
A90190 - 100	P0400900	XT15	5,0	J0164110	SD6368-16
A90190 - 125	P0400900	XT15	5,0	J0204610	SD6368-20



## GRADES SELECTION GUIDE

ISO	PSM	Material	HB (Brinell)	Grades		
				← Wear Resistance		Toughness →
				PH5320 	PH7920 	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 / Duplex	200-330			✓
	6	SS - Duplex	230-260			✓
K	7	Malleable Cast Iron	130-230	✓	✓	✓
	8	Grey Cast Iron	180-245	✓	✓	✓
	9	Nodular Cast iron	160-250	✓	✓	✓

 Good Conditions  
 Average Conditions  
 Difficult Conditions

## RECOMMENDED CUTTING CONDITIONS

ISO	PSM	Material	HB (Brinell)	Vc (m/min)			Feed fz (mm/t)
				← Wear Resistance		Toughness →	
				PH5320	PH7920	PH7740	
P	1	Unalloyed Steel	125-220	-	180-250	140-170	0,10-0,35
	2	Low-Alloyed Steel	220-280	-	170-210	130-160	0,10-0,30
	3	High-Alloyed Steel	280-380	-	160-200	110-140	0,10-0,20
M	4	SS - Ferritic / Martensitic	200-330	-	-	120-180	0,10-0,30
	5	SS - Austenitic / Duplex	200-330	-	-	100-150	0,10-0,25
	6	SS - Duplex	230-260	-	-	70-130	0,10-0,20
K	7	Malleable Cast Iron	130-230	180-320	170-300	-	0,10-0,35
	8	Grey Cast Iron	180-245	160-270	150-250	-	0,10-0,30
	9	Nodular Cast iron	160-250	100-230	90-210	-	0,10-0,25

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

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

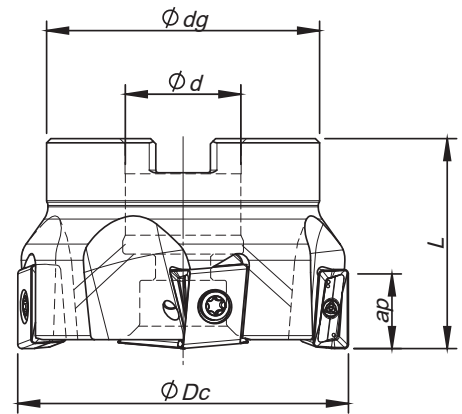
- When using long shank;
- When using long tool overhang with arbor type;
- When application has poor clamping rigidity or when using a low rigidity machine.

## CHIP-BREAKER SELECTION GUIDE

ISO	PSM	Material	HB (Brinell)	Chip-Breaker Application	
				1st choice	Difficult Operations
P	1	Unalloyed Steel	125-220	LNXT 13... MP	-
	2	Low-Alloyed Steel	220-280	LNXT 13... MP	-
	3	High-Alloyed Steel	280-380	LNXT 13... MP	-
M	4	SS - Ferritic / Martensitic	200-330	LNXT 13... MP	-
	5	SS - Austenitic / Duplex	200-330	LNXT 13... MP	-
	6	SS - Duplex	230-260	LNXT 13... MP	-
K	7	Malleable Cast Iron	130-230	LNXT 13... MP	-
	8	Grey Cast Iron	180-245	LNXT 13... MP	-
	9	Nodular Cast iron	160-250	LNXT 13... MP	-



**Arbor Mounting**  
 $K_r=90^\circ$  |  $\gamma_p=-5^\circ$



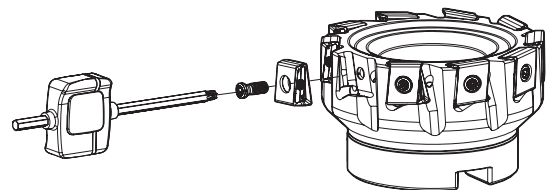
Order code Código	Reference Referência Referencia		Dimensions   Dimensões   Dimensiones (mm)				Kg	Specifications		Insert Pastilha Inserto	Stock
			ØDc	Ød	Ødg	L		Arbor Type	Ap max (mm)		
181069200	050A90390-05-05-022040		50	22	42	40	0,315	A	14,0	LNXT 1506...	
181066400	063A90390-05-05-022040		63	22	52	40	0,524	A	14,0	LNXT 1506...	
181051000	063A90390-08-05-022040		63	22	52	40	0,550	A	14,0	LNXT 1506...	
181066500	080A90390-07-05-027050		80	27	60	50	0,936	B	14,0	LNXT 1506...	
181052000	080A90390-10-05-027050		80	27	60	50	0,939	B	14,0	LNXT 1506...	
181066600	100A90390-08-05-032050		100	32	80	50	1,586	B	14,0	LNXT 1506...	
181051100	100A90390-12-05-032050		100	32	80	50	1,690	B	14,0	LNXT 1506...	
181066700	125A90390-09-05-040063		125	40	90	63	3,001	B	14,0	LNXT 1506...	
181051200	125A90390-15-05-040063		125	40	90	63	3,113	B	14,0	LNXT 1506...	
181051300	160A90390-10-05-U040063		160	40	110	63	4,470	C	14,0	LNXT 1506...	
181066800	160A90390-20-05-U040063		160	40	110	63	4,580	C	14,0	LNXT 1506...	

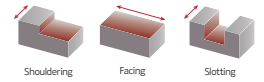
Stock item | Produto de stock | Itens de stock

Available under request | Disponível sobre consulta | Disponible bajo consulta

## SPARE PARTS | Complementos | Complementos

Cutter ØDc	Insert Screw	Key (Torx)	Torque Value	Screw	DIN 6368 Wrench
A90390 - 50 - 63	P0401200	XT15	3,0	-	-
A90390 - 80	P0401200	XT15	3,0	J0123510	SD6368-12
A90390 - 100	P0401200	XT15	3,0	J0164110	SD6368-16
A90390 - 125	P0401200	XT15	3,0	J0204610	SD6368-20
A90390 - 160	P0401200	XT15	3,0	-	-





# LNXT 1506... Inserts | Pastilhas | Plaquetas

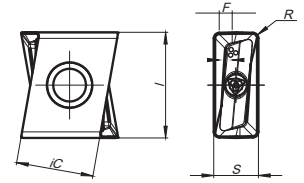
LNXT-MP



LNXT-HP



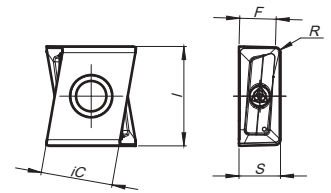
LNXT - MP/HP



LNXT - W



LNXT - W



(1) Geometry code	(2) Grade code	P					M				K			N		S		H		Dimensions (mm)							
		PVD					CVD	PVD			CVD			PVD	UNC	PCD	PVD	PVD	CBN								
		P7	G1	G4	P3	G6	R1	G4	P3	G6	L5	L6	L9	G1	G4	G6	10	D6	P3						G6	P7	D4
1111313	LNXT 150608 PNER-MP	⊗	⊗	⊗	⊗	⊗				⊗	○	⊗	⊗	⊗									11,0	6,35	15,0	0,8	1,8
1111590	LNXT 150612 PNER-MP			⊗	⊗	⊗				⊗	○	⊗	⊗	⊗									11,0	6,35	15,0	1,2	1,8
1111591	LNXT 150608 PNSR-HP			⊗	⊗	⊗								⊗	⊗								11,0	6,35	15,0	0,8	1,8
1111524	LNXT 150608 PNER-W	⊗								⊗	○	⊗	⊗	⊗									11,0	6,35	15,2	0,8	5,5

⊗ First choice | Primeira opção | 1ª opción    
 ⊗ Stock item | Produto de stock | Itens de stock    
 ○ Available under request | Disponível sobre consulta | Disponible bajo consulta    
 Insert order code = (1) Geometry Code + (2) Grade Code

## GRADES SELECTION GUIDE

ISO	PSM	Material	HB (Brinell)	Grades				
				← Wear Resistance			Toughness →	
				PH5705	PH7910	PH7920	PH5740	PH7740
P	1	Unalloyed Steel	125-220	●	●	●	●	●
	2	Low-Alloyed Steel	220-280		●	●		●
	3	High-Alloyed Steel	280-380		●	●		●
K	7	Malleable Cast Iron	130-230	●		●	●	●
	8	Grey Cast Iron	180-245	●		●	●	●
	9	Nodular Cast iron	160-250	●		●	●	●

● Good Conditions  
● Average Conditions  
● Difficult Conditions

## CHIP-BREAKERS

Geometry Breaker	Features
Geometry <b>MP</b> General Machining of steels	Chip-breaker with a reinforced chamfer for general applications on steels
Geometry <b>HP</b> Heavy machining of steels	Chip-breaker with a reinforced chamfer for Medium to heavy cutting conditions
Geometry <b>W</b> Wiper	Chip-breaker wiper for the best finishing solutions

## RECOMMENDED CUTTING CONDITIONS

ISO	PSM	Material	HB (Brinell)	Vc (m/min)				
				← Wear Resistance			Toughness →	
				PH5705	PH7910	PH7920	PH7740	PH5740
P	1	Unalloyed Steel	125-220	-	190-280	180-250	140-170	-
	2	Low-Alloyed Steel	220-280	-	180-240	170-210	130-160	-
	3	High-Alloyed Steel	280-380	-	170-220	160-200	110-140	-
K	7	Malleable Cast Iron	130-230	190-340	180-320	170-300	130-250	170-300
	8	Grey Cast Iron	180-245	180-300	170-280	150-250	110-220	150-260
	9	Nodular Cast iron	160-250	140-250	100-240	90-210	80-170	130-220

ISO	PSM	Material	HB (Brinell)	Feed fz (mm/t)		
				LNXT 15... MP	LNXT 15... HP	LNXT 15... W
P	1	Unalloyed Steel	125-220	0,10-0,30	0,10-0,30	0,10-0,35
	2	Low-Alloyed Steel	220-280	0,10-0,30	0,10-0,30	0,10-0,35
	3	High-Alloyed Steel	280-380	0,10-0,25	0,10-0,25	0,10-0,35
K	7	Malleable Cast Iron	130-230	0,10-0,40	0,10-0,40	0,10-0,50
	8	Grey Cast Iron	180-245	0,10-0,35	0,10-0,35	0,10-0,50
	9	Nodular Cast iron	160-250	0,10-0,30	0,10-0,30	0,10-0,50

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

(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.

## CHIP-BREAKER SELECTION GUIDE

ISO	PSM	Material	HB (Brinell)	Chip-Breaker Application	
				1st choice	Difficult Operations
P	1	Unalloyed Steel	125-220	LNXT 15... MP	LNXT 15... HP
	2	Low-Alloyed Steel	220-280	LNXT 15... MP	LNXT 15... HP
	3	High-Alloyed Steel	280-380	LNXT 15... MP	LNXT 15... HP
K	7	Malleable Cast Iron	130-230	LNXT 15... MP	LNXT 15... HP
	8	Grey Cast Iron	180-245	LNXT 15... MP	LNXT 15... HP
	9	Nodular Cast iron	160-250	LNXT 15... MP	LNXT 15... HP

## WIPER INSERTS

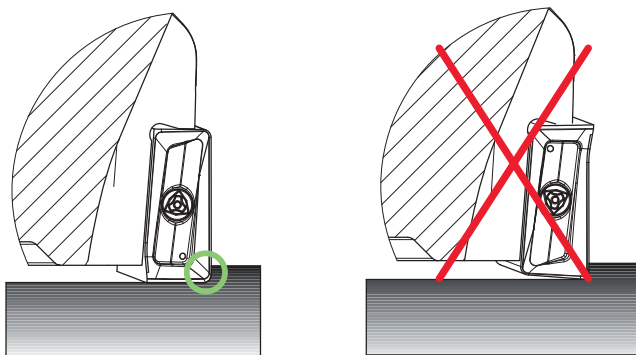
### Rec. Cutting Conditions

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

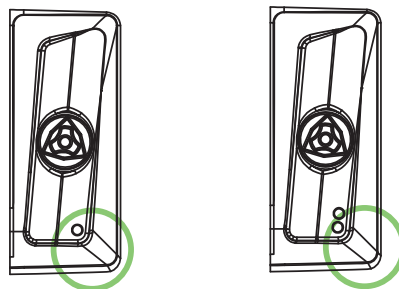
### Example:

- The width of the parallel land (F) of the insert is 1,8mm
- Width a cutter of 10 inserts and using a feed per tooth ( $f_z$ ) of 0,3mm, the feed per revolution ( $f_n$ ) will be 3mm, i.e. 40% bigger than the parallel land.
- To obtain a good surface finish, the feed per revolution should be a maximum of 80% of 1,8mm = 1,44mm.
- The wiper insert will have a parallel land ( $F_w$ ) with a width of approximately 5,5mm.
- Result: Feed per revolution ( $f_n$ ) could be increased from 0,8mm to 60% of 5,5mm = 3,3mm.

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



The points on the insert indicates the side that should be parallel to the workspace material.



Wiper insert with 2 Right-hand cutting edges.  
The side work of the insert it's indicated by points.