

76090 | 77090

ALUPRO

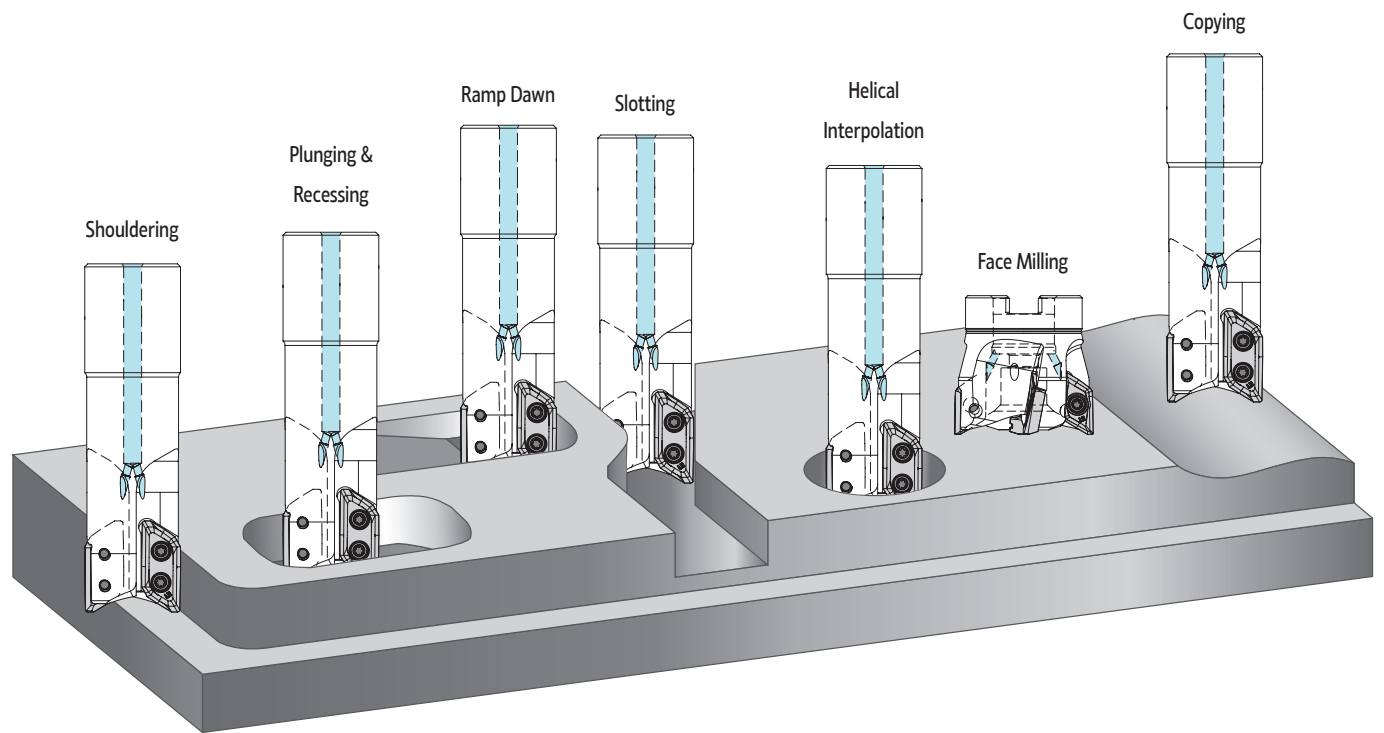
High performance milling for aluminium alloys

MILLING

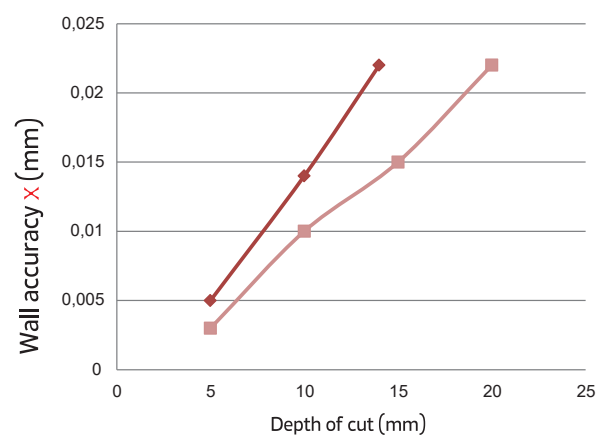
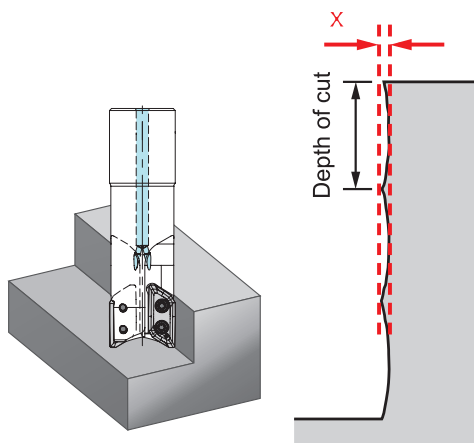
Shouldering | Facing | Slotting



MULTIFUNCTIONAL TOOL



WALL ACCURACY



ALUPRO

76090
77090

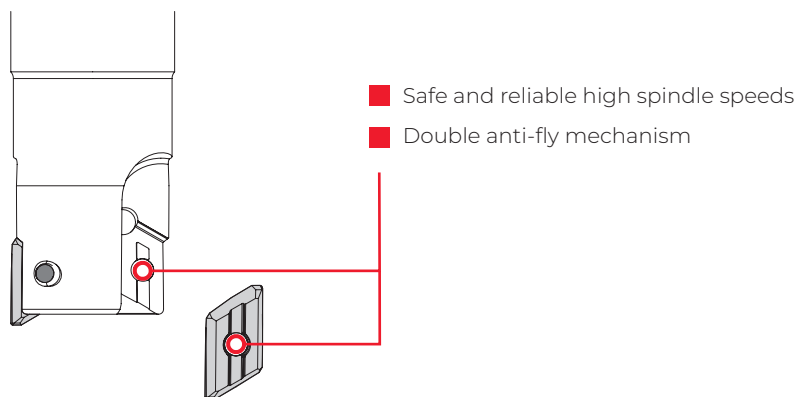
MAIN FEATURES

CUTTERS

Excellent multi functional milling tool for non-ferrous materials.

- High speed milling can be achieved due to double screw clamping & anti-fly system.
- High accuracy cutters to prevent vibrations at high speeds.

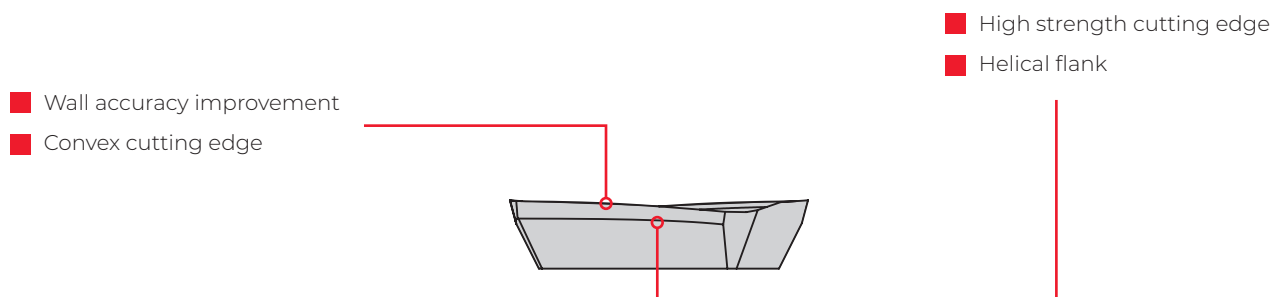
Anti-fly system



INSERTS

High rake angle geometry that provides a good surface finish and low cutting forces.

- Sharp cutting edge to produce good chip flow and reduce build up edge.
- High helical angle offers cutting edge strength.
- Excellent 90° wall accuracy.

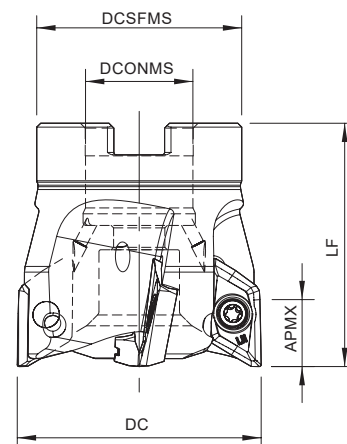


SPECIFICATIONS

- Geometry: 90° milling operations.
- Cutter diameters:
 - Arbor Mounting (A): Ø 40 mm to Ø 125 mm
 - Cylindrical (C): Ø 20 mm to Ø 40 mm
 - Threaded (R): Ø 25 mm to Ø 40 mm
- Workpiece materials: Aluminium & Non-ferrous alloys.



Arbor Mounting
KAPR=90° | GAMP=+11°



Order code Código	Reference Referência Referencia	CICT	Dimensions Dimensões Dimensiones (mm)				WT	Specifications			Insert radius Raio da pastilha Rayo del Inserto	Stock
			DC	DCONMS	DCSFMS	LF		Cutter Type	APMX (mm)	RPM max		
181094200	040A76090-03-11-016050-A	3	40	16	32	50	0,3	A	14,0	29 000	0,4~3,2	⊗
181083400	050A76090-04-11-022050-A	4	50	22	42	50	0,4	A	14,0	24 000	0,4~3,2	⊗
181085300	063A76090-05-11-022050-A	5	63	22	48	50	0,7	A	14,0	21 000	0,4~3,2	⊗
181094300	080A76090-05-11-027050-A	5	80	27	60	50	1,1	A	14,0	19 000	0,4~3,2	⊗
181094400	100A76090-06-11-032063-A	6	100	32	73	63	2,0	A	14,0	16 000	0,4~3,2	⊗
181094500	040A76090-03-11-016050-B	3	40	16	32	50	0,3	B	14,0	29 000	4,0~5,0	⊗
181094600	050A76090-04-11-022050-B	4	50	22	42	50	0,4	B	14,0	24 000	4,0~5,0	⊗
181094700	063A76090-05-11-022050-B	5	63	22	48	50	0,7	B	14,0	21 000	4,0~5,0	⊗
181094800	080A76090-05-11-027050-B	5	80	27	60	50	1,1	B	14,0	19 000	4,0~5,0	⊗
181094900	100A76090-06-11-032063-B	6	100	32	73	63	2,0	B	14,0	16 000	4,0~5,0	⊗

⊗ Stock item | Produto de stock | Itens de stock

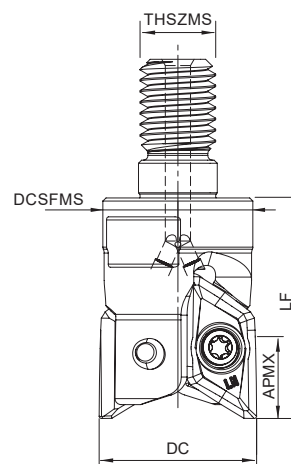
○ Available under request | Disponível sobre consulta | Disponible bajo consulta

Note: Type A cutters can only assemble inserts with a radius between 0,4 and 3,2. Type B cutters can only assemble inserts with a radius between 4,0 and 5,0.

NEW



Threaded Coupling
KAPR=90° | GAMP=+6°~+11°



Order code Código	Reference Referência Referencia	CICT	Dimensions Dimensões Dimensiones (mm)				WT	Specifications			Insert radius Raio da pastilha Rayo del Inserto	Stock
			DC	THSZMS	DCSFMS	LF		Cutter Type	APMX (mm)	rpm max		
181202400	025R76090-02-06-M12035-A	2	25	M12	21	35	0,07	A	14,0	38 000	0,4~3,2	⊗
181202500	032R76090-03-09-M16040-A	3	32	M16	29	40	0,14	A	14,0	33 000	0,4~3,2	⊗
181202600	040R76090-03-11-M16045-A	3	40	M16	29	45	0,20	A	14,0	29 000	0,4~3,2	⊗
181202700	025R76090-02-06-M12035-B	2	25	M12	21	35	0,07	B	14,0	38 000	4,0~5,0	○
181202800	032R76090-03-09-M16040-B	3	32	M16	29	40	0,14	B	14,0	33 000	4,0~5,0	○
181202900	040R76090-03-11-M16045-B	3	40	M16	29	45	0,20	B	14,0	29 000	4,0~5,0	○

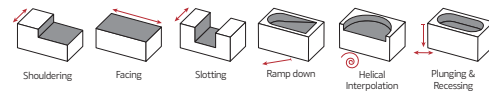
⊗ Stock item | Produto de stock | Itens de stock

○ Available under request | Disponível sobre consulta | Disponible bajo consulta

Note: Type A cutters can only assemble inserts with a radius between 0,4 and 3,2. Type B cutters can only assemble inserts with a radius between 4,0 and 5,0.

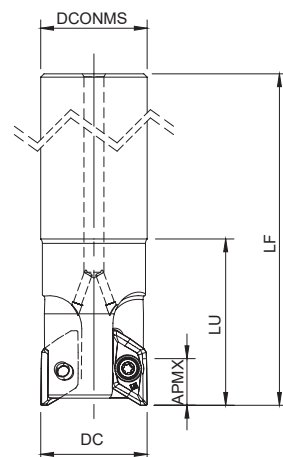
ALUPRO 76090

XDGX 15



Cylindrical Shank

KAPR=90° | GAMP=+6°~+11°



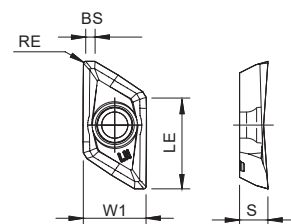
Order code Código	Reference Referência Referencia	CICT	Dimensions Dimensões Dimensiones (mm)				WT	Specifications			Insert radius Raio da pastilha Rayo del Inserto	Stock
			DC	DCONMS	LF	LU		Cutter Type	APMX (mm)	rpm max		
181095000	020E76090-01-06-020150-A	1	20	20	150	60	0,2	A	14,0	40 000	0,4~3,2	⊗
181095100	025E76090-02-09-025180-A	2	25	25	180	90	0,4	A	14,0	38 000	0,4~3,2	⊗
181095200	032E76090-02-09-032200-A	2	32	32	200	120	0,7	A	14,0	33 000	0,4~3,2	⊗
181095300	040E76090-03-11-032250-A	3	40	32	250	65	1,4	A	14,0	29 000	0,4~3,2	⊗
181095400	020E76090-01-06-020150-B	1	20	20	150	60	0,2	B	14,0	40 000	4,0~5,0	⊗
181095500	025E76090-02-09-025180-B	2	25	25	180	90	0,4	B	14,0	38 000	4,0~5,0	⊗
181095600	032E76090-02-09-032200-B	2	32	32	200	120	0,7	B	14,0	33 000	4,0~5,0	○
181095700	040E76090-03-11-032250-B	3	40	32	250	65	1,4	B	14,0	29 000	4,0~5,0	⊗

⊗ Stock item | Produto de stock | Itens de stock

○ Available under request | Disponível sobre consulta | Disponible bajo consulta

Note: Type A cutters can only assemble inserts with a radius between 0,4 and 3,2. Type B cutters can only assemble inserts with a radius between 4,0 and 5,0.

XDGX 15M5... Inserts | Pastilhas | Plaquetas



		N	Dimensions Dimensões Dimensiones (mm)					Cutter Type
		UNC						
		10						
(1) Geometry code	(2) Grade code	PH0910	W1	S	LE	RE	BS	
1111624	XDGX 15M504 PDFR-LN	⊗	11,20	5,00	16,0	0,40	1,70	A
1111625	XDGX 15M508 PDFR-LN	⊗	11,20	5,00	16,0	0,80	1,10	A
1111626	XDGX 15M512 PDFR-LN	⊗	11,20	5,00	16,0	1,20	0,70	A
1111627	XDGX 15M516 PDFR-LN	⊗	11,20	5,00	16,0	1,60	0,40	A
1111628	XDGX 15M520 PDFR-LN	⊗	11,20	5,00	16,0	2,00	0,20	A
1112154	XDGX 15M530 PDFR-LN	⊗	11,20	5,00	16,0	3,00	0,60	A
1111629	XDGX 15M532 PDFR-LN	⊗	11,20	5,00	16,0	3,20	0,60	A
1111630	XDGX 15M540 PDFR-LN	⊗	11,20	5,00	16,0	4,00	0,50	B
1111631	XDGX 15M550 PDFR-LN	⊗	11,20	5,00	16,0	5,00	0,40	B

⊗ First choice | Primeira opção | 1ª opción

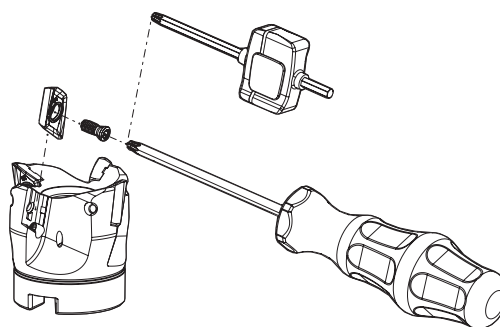
⊗ Stock item | Produto de stock | Itens de stock

○ Available under request | Disponível sobre consulta
Disponible bajo consulta

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

SPARE PARTS Acessórios | Repuestos

Cutter DC	Insert Screw	Key (Torx)	Order separately	
			Key (Torx - Nm)	Torque Value
A76090- 40-80	P0400900	XT15	DT1530	3,0
A76090 - 100	P0400900	PT15	DT1530	3,0
R76090 - 25	P0400803	XT15	DT1530	3,0
R76090 - 32-40	P0400900	XT15	DT1530	3,0
E76090 - 20-25	P0400803	XT15	DT1530	3,0
E76090 - 32-40	P0400900	XT15	DT1530	3,0



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

SHOULDERING

ISO	PSM	Material	HB (Brinell)	Vc (m/min)	Width of Cut ae (mm)	Depth of Cut AP (mm)	Feed fz (mm/t)
				PH0910			
N	10	Aluminium and Non Ferrous	30-130	350-3000	≤ 25% DC	≤5,0	0,35 - 0,40
						5,0 - 10,0	0,30 - 0,35
						10,0 - 15,0	0,25 - 0,30
					< 50% DC	≤5,0	0,35 - 0,40
						5,0 - 10,0	0,30 - 0,35
						10,0 - 15,0	0,25 - 0,30
					≤ 75% DC	≤5,0	0,30 - 0,35
						5,0 - 10,0	0,25 - 0,30
						10,0 - 15,0	0,20 - 0,25

SLOTING

ISO	PSM	Material	HB (Brinell)	Vc (m/min)	Width of Cut ae (mm)	Depth of Cut AP (mm)	Feed fz (mm/t)
				PH0910			
N	10	Aluminium and Non Ferrous	30-130	350-3000	100% DC	≤5,0	0,25 - 0,35
						5,0 - 10,0	0,20 - 0,30
						10,0 - 15,0	0,15 - 0,25

(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) Use internal coolant supply

OPERATIONAL GUIDE Guia operacional | Guía operativa

- The maximum allowable revolutions are shown in Table 1. Ensure that the cutter operates under the maximum allowable revolutions. The maximum allowable revolutions for safety purposes are determined in accordance with ISO 15641 (Milling Cutters for high speed machining – Safety requirements).

Table 1 - Maximum allowable revolutions:

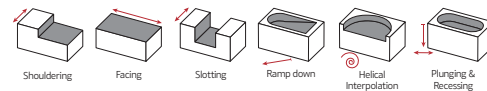
DC	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
RPM (min ⁻¹)	40000	38000	33000	29000	24000	21000	19000	16000

- Even when operating under the maximum allowable spindle speed, if the spindle speed is equal or higher than the values shown in Table 2, it is recommended that the balance quality (with the arbor or chuck) according ISO 1940.

Table 2 - Maximum revolutions when balancing with the arbor or chuck has not been achieved:

DC	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
RPM (min ⁻¹)	15000	12000	9500	8500	7600	6800	6000	5400

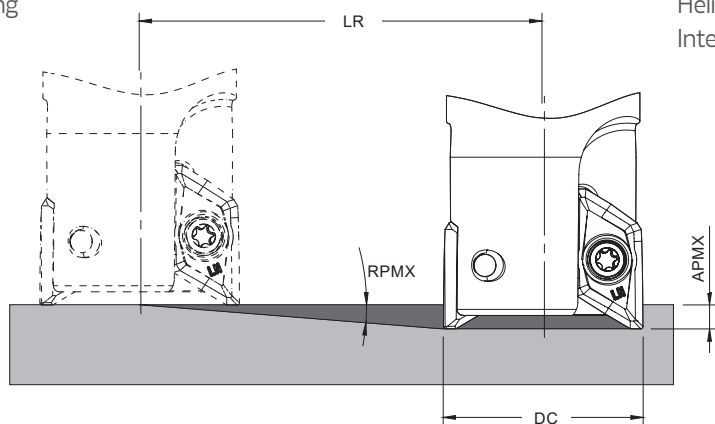
- When setting the spindle speed, take into consideration the maximum allowable revolutions of arbor or chuck.
- Use the specified set bolt when using the arbor type with internal coolant supply.



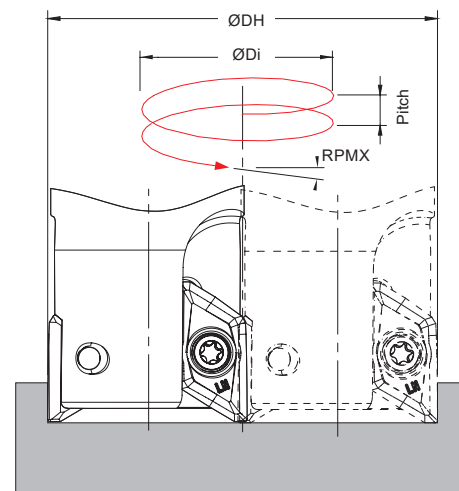
RAMPING AND HELICAL INTERPOLATION

Descida em rampa e interpolação helicoidal | Bajada en rampa e interpolación circular

Ramping



Helical Interpolation



$$\text{ØDi} = \text{ØDH} - \text{DC}$$

Cutter Type	DC	Ramping			Helical Interpolation		
					Diameter for Blind Hole, Flat Bottom Face (1)		Max Pitch/Rev.
		RPMX	APMX	Min LR	ØDHmin	ØDHmax	
A	20	23	15,0	35,3	36,2 -	- 38,4	21,6 24,5
	25	21	15,0	39,1	46,2 -	- 48,4	25,6 28,2
	32	15	15,0	56,0	60,2 -	- 62,4	23,7 25,6
	40	10	15,0	85,1	76,2 -	- 78,4	20,0 21,3
	50	8	15,0	106,7	96,2 -	- 98,4	20,4 21,4
	63	6	15,0	142,7	122,2 -	- 124,4	19,5 20,3
	80	4	15,0	214,5	156,2 -	- 158,4	16,7 17,2
	100	2,5	15,0	343,6	196,2 -	- 198,4	13,2 13,5
B	20	20	13,5	37,1	36,2 -	- 38,4	18,5 21,0
	25	18,5	13,5	40,3	46,2 -	- 48,4	22,3 24,6
	32	13,5	13,5	56,2	60,2 -	- 62,4	21,3 22,9
	40	8,5	13,5	90,3	76,2 -	- 78,4	17,0 18,0
	50	7	13,5	109,9	96,2 -	- 98,4	17,8 18,7
	63	5,5	13,5	140,2	122,2 -	- 124,4	17,9 18,6
	80	3,5	13,5	220,7	156,2 -	- 158,4	14,6 15,1
	100	2,5	13,5	309,2	196,2 -	- 198,4	13,2 13,5

(1) using insert radius 0,8 mm

Note: During helical interpolation do not exceed maximum pitch.

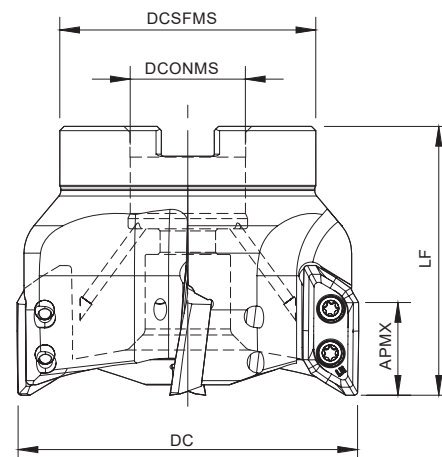
When using different insert radius to calculate the ØDHmin and ØDHmax use the equation below:

- Minimum Diameter: $\text{ØDHmin} = 2 \times (\text{DC} - (\text{R corner radius} + \text{F width of edge wiper}))$

- Maximum Diameter: $\text{ØDHmax} = 2 \times (\text{DC} - \text{R corner radius})$



Arbor Mounting
KAPR=90° | GAMP=+7°



Order code Código	Reference Referência Referencia	CICT	Dimensions Dimensões Dimensiones (mm)				WT	Specifications			Insert radius Raio da pastilha Rayo del Inserto	Stock
			DC	DCONMS	DCSFMS	LF		Cutter Type	APMX (mm)	rpm max		
181093000	050A77090-03-07-022050-A	3	50	22	42	50	0,4	A	21,5	30 000	0,8~3,2	⊗
181093100	063A77090-03-07-022050-A	3	63	22	42	50	0,5	A	21,5	25 000	0,8~3,2	⊗
181071600	080A77090-04-07-027063-A	4	80	27	60	63	1,2	A	21,5	23 000	0,8~3,2	⊗
181093200	100A77090-05-07-032063-A	5	100	32	70	63	1,8	A	21,5	19 000	0,8~3,2	⊗
181093300	125A77090-06-07-040063-A	6	125	40	100	63	2,7	A	21,5	16 000	0,8~3,2	⊗
181093400	050A77090-03-07-022050-B	3	50	22	42	50	0,4	B	21,0	30 000	4,0~5,0	⊗
181093500	063A77090-03-07-022050-B	3	63	22	42	50	0,5	B	21,0	25 000	4,0~5,0	⊗
181093600	080A77090-04-07-027063-B	4	80	27	60	63	1,2	B	21,0	23 000	4,0~5,0	⊗
181093700	100A77090-05-07-032063-B	5	100	32	70	63	1,8	B	21,0	19 000	4,0~5,0	⊗
181093800	125A77090-06-07-040063-B	6	125	40	100	63	2,7	B	21,0	16 000	4,0~5,0	⊗

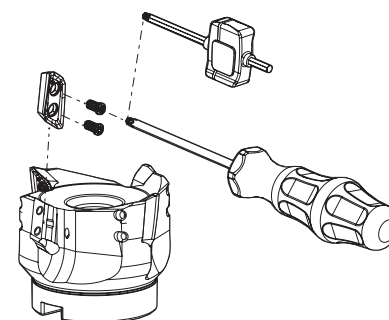
⊗ Stock item | Produto de stock | Itens de stock

○ Available under request | Disponível sobre consulta | Disponible bajo consulta

Note: Type A cutters can only assemble inserts with a radius between 0,4 and 3,2. Type B cutters can only assemble inserts with a radius between 4,0 and 5,0.

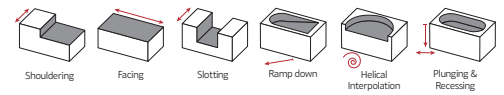
SPARE PARTS Acessórios | Repuestos

Cutter DC	Insert Screw	Key (Torx)	Order separately		Order separately	
			Key (Torx - Nm)	Torque Value	Screw	DIN 6368 Wrench
A77090 - 50-80	P0401200	XT15	DT1530	3,0	-	-
A77090 - 100	P0401200	PT15	DT1530	3,0	J0164110	SD6368-16
A77090 - 125	P0401200	PT15	DT1530	3,0	J0204610	SD6368-20
E77090 - 32-40	P0401200	XT15	DT1530	3,0	-	-

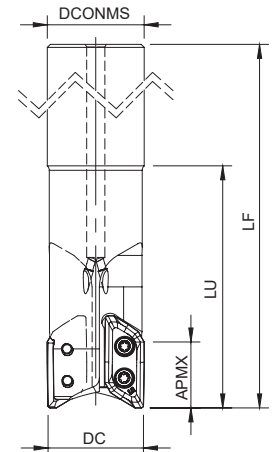


ALUPRO 77090

XDGX 22



Cylindrical Shank
KAPR=90° | GAMP=+6°



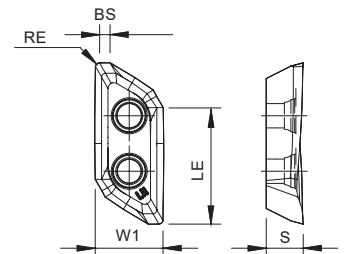
Order code Código	Reference Referência Referencia	CICT	Dimensions Dimensões Dimensiones (mm)				WT	Specifications			Insert radius Raio da pastilha Rayo del Inserto	Stock
			DC	DCONMS	LF	LU		Cutter Type	APMX (mm)	rpm max		
181069800	032E77090-02-06-032170-A	2	32	32	170	80	0,8	A	21.5	41 000	0,8~3,2	⊗
181093900	040E77090-02-06-040170-A	2	40	40	170	80	0,9	A	21.5	36 000	0,8~3,2	⊗
181094000	032E77090-02-06-032170-B	2	32	32	170	80	0,8	B	21.0	41 000	4,0~5,0	○
181094100	040E77090-02-06-040170-B	2	40	40	170	80	0,9	B	21.0	36 000	4,0~5,0	⊗

⊗ Stock item | Produto de stock | Itens de stock

○ Available under request | Disponível sobre consulta | Disponible bajo consulta

Note: Type A cutters can only assemble inserts with a radius between 0,4 and 3,2. Type B cutters can only assemble inserts with a radius between 4,0 and 5,0.

XDGX 22M7... Inserts | Pastilhas | Plaquetas



(1) Geometry code	(2) Grade code ISO Reference	N	Dimensions Dimensões Dimensiones (mm)					Cutter Type
		UNC						
		10						
PH0910	ISO Reference	PH0910	W1	S	LE	RE	BS	Cutter Type
			13,00	7,00	22,0	0,80	2,00	
			13,00	7,00	22,0	1,60	1,20	
			13,00	7,00	22,0	2,00	0,80	
			13,00	7,00	22,0	3,20	0,60	
			13,00	7,00	22,0	4,00	0,90	
1111618	XDGX 22M708 PDFR-LN	⊗	13,00	7,00	22,0	0,80	2,00	A
1111619	XDGX 22M716 PDFR-LN	⊗	13,00	7,00	22,0	1,60	1,20	A
1111620	XDGX 22M720 PDFR-LN	⊗	13,00	7,00	22,0	2,00	0,80	A
1111621	XDGX 22M732 PDFR-LN	⊗	13,00	7,00	22,0	3,20	0,60	A
1111622	XDGX 22M740 PDFR-LN	⊗	13,00	7,00	22,0	4,00	0,90	B
1111623	XDGX 22M750 PDFR-LN	⊗	13,00	7,00	22,0	5,00	0,40	B

⊗ 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

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

SHOULDERING

ISO	PSM	Material	HB (Brinell)	Vc (m/min)	Width of Cut ae (mm)	Depth of Cut AP (mm)	Feed fz(mm/t)
				PH0910			
N	10	Aluminium and Non Ferrous	30-130	350-3000	≤ 25% DC	≤5,0	0,35 - 0,40
						5,0 - 10,0	0,30 - 0,35
						10,0 - 15,0	0,25 - 0,30
					< 50% DC	≤5,0	0,35 - 0,40
						5,0 - 10,0	0,30 - 0,35
						10,0 - 15,0	0,25 - 0,30
					≤ 75% DC	≤5,0	0,30 - 0,35
						5,0 - 10,0	0,25 - 0,30
						10,0 - 15,0	0,20 - 0,25

SLOTING

ISO	PSM	Material	HB (Brinell)	Vc (m/min)	Width of Cut ae (mm)	Depth of Cut AP (mm)	Feed fz(mm/t)
				PH0910			
N	10	Aluminium and Non Ferrous	30-130	350-3000	100% DC	≤5,0	0,25 - 0,35
						5,0 - 10,0	0,20 - 0,30
						10,0 - 15,0	0,15 - 0,25

(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) Use internal coolant supply.

OPERATIONAL GUIDE Guia operacional | Guía operativa

- Only use the inserts and parts provided by Palbit with this tool. Use of the correct insert clamp screws is especially important to ensure overall tool safety. Do not use damaged or worn clamp screws.

- When tightening the clamp screws, follow the order in Figure 1. The recommended torque value is 3.5Nm.

- The maximum allowable revolutions are shown in Table 1. Ensure that the cutter operates under the maximum allowable revolutions.

The maximum allowable revolutions for safety purposes are determined in accordance with ISO 15641 (Milling Cutters for high speed machining-Safety requirements).

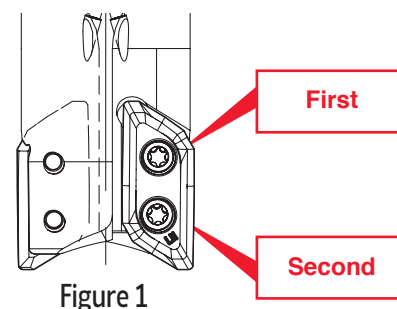


Figure 1

Table 1 - Maximum allowable revolutions:

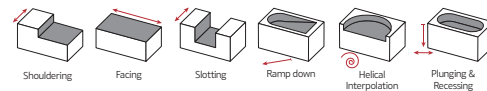
DC	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125
RPM (min ⁻¹)	41000	36000	30000	25000	23000	19000	16000

- Even when operating under the maximum allowable spindle speed, if the spindle speed is equal or higher than the values shown in Table 2., it is recommended that the balance quality (with the arbor or chuck) according ISO 1940.

Table 2 - Maximum revolutions when balancing with the arbor or chuck has not been achieved:

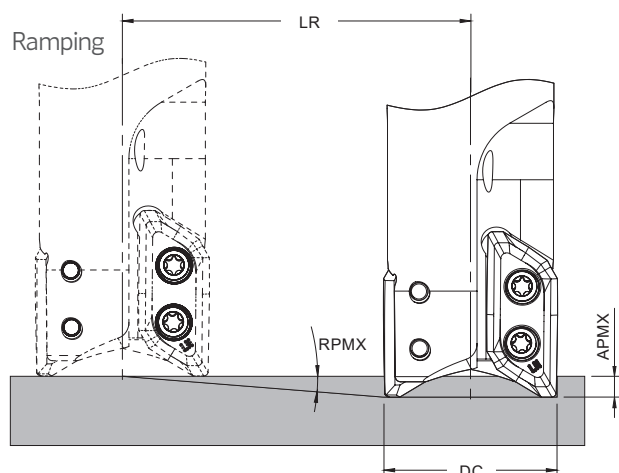
DC	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125
RPM (min ⁻¹)	9500	7600	6000	4800	3800	3000	2400

- When setting the spindle speed, take into consideration the maximum allowable revolutions of arbor or chuck.
- Use the specified set bolt when using the arbor type with internal coolant supply.

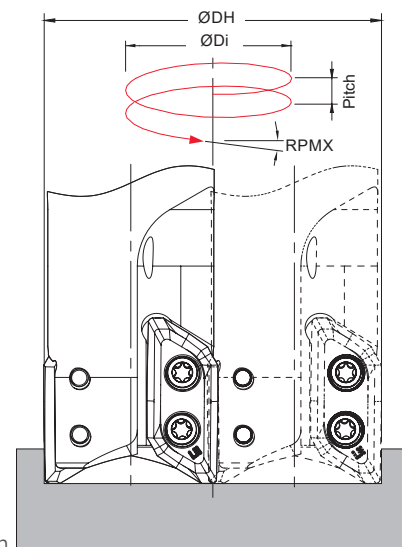


RAMPING AND HELICAL INTERPOLATION

Descida em rampa e interpolação helicoidal | Bajada en rampa e interpolación circular



Helical
Interpolation



$$\text{ØDi} = \text{ØDH} - \text{DC}$$

Cutter Type	DC	Ramping			Helical Interpolation		
					Diameter for Blind Hole, Flat Bottom Face (1)		Max Pitch/Rev.
		RPMX	APMX	Min LR	ØDHmin	ØDHmax	
A	32	19	21,5	62,4	60,0	-	30,3
	40	13	21,5	93,1	76,0	-	26,1
	50	9	21,5	135,7	96,0	-	22,9
	63	7	21,5	175,1	122,0	-	22,7
	80	5	21,5	245,7	156,0	-	20,9
	100	4	21,5	307,5	196,0	-	21,1
	125	3	21,5	410,2	246,0	-	19,9
B	32	18	21,0	64,6	60,0	-	28,6
	40	11	21,0	108,0	76,0	-	22,0
	50	8	21,0	149,4	96,0	-	20,3
	63	6	21,0	199,8	122,0	-	19,5
	80	4	21,0	300,3	156,0	-	16,7
	100	3	21,0	400,7	196,0	-	15,8
	125	2	21,0	601,4	246,0	-	13,3

(1) using insert radius 0,8 mm

Note: During helical interpolation do not exceed maximum pitch.

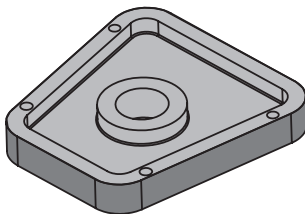
When using different insert radius to calculate the ØDHmin and ØDHmax use the equation below:

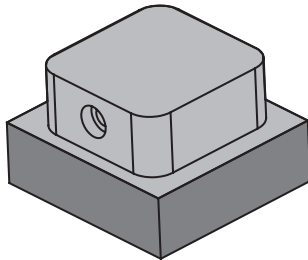
- Minimum Diameter: $\text{ØDHmin} = 2 \times (\text{DC} - (\text{R corner radius} + \text{F width of edge wiper}))$

- Maximum Diameter: $\text{ØDHmax} = 2 \times (\text{DC} - \text{R corner radius})$

TEST REPORT

Improved productivity and Tool Life / Shortened Machining Time

ALUPRO 76090		G-ALSi5Mg (3.2341)	
Plunging & Recessing DC = 25,4 mm 2 flutes Vc = 900 m/min (n = 11275 min ⁻¹) fz = 0,198 mm/t (Vf = 5,72 mm/min) APMX = 8 x 20 mm Wet XDGX 15M508 PDFR-LN (PH0910)			
ALUPRO 76090		9 workpieces done	+44% Productivity
Competitor A		4 workpieces done	
[Competitor A] DC = 25,4 mm 2 flutes Vc = 750 m/min (n = 9397 min ⁻¹) fz = 0,198 mm/t (Vf = 5,72 mm/min) APMX = 5 x 15 mm		[User Comments] “Compared with conventional products, tool rigidity is high, obtaining an excellent surface finish as well as cutting performance.”	

ALUPRO 77090		G-ALSi5Mg (3.2341)	
Shouldering Dc = 31,75 mm 2 flutes Vc = 1000 m/min (n = 10022min ⁻¹) fz = 0,198 mm/t (Vf = 5,72 mm/min) apxae = 15 x 8 mm Wet XDGX 22M708 PDFR-LN (PH0910)			
[User Comments] “With this solution we achived excellent results in wall accuracy. The accuracy of under 0,01 mm”			



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