



- first choice
○ alternate choice

P	
M	
K	
N	●
S	
H	

■ High-Speed Cutting Inserts XDET-ALP

Order number	catalogue number	grade	cutting edges	LI (mm)	S (mm)	W (mm)	BS (mm)	Rø (mm)	RWP* (mm)	hm (mm)
6425772	XDET16M5PDFRALP	WN10HM	2	22,92	5,00	11,25	1,42	0,30	0,30	0,02
6425773	XDET16M504FRALP	WN10HM	2	23,02	5,00	11,25	1,27	0,40	0,40	0,02
6425774	XDET16M508FRALP	WN10HM	2	23,02	5,00	11,25	0,87	0,80	0,80	0,02
6425775	XDET16M520FRALP	WN10HM	2	23,02	5,00	11,25	0,58	2,10	2,00	0,02
6425776	XDET16M530ERALP	WN10HM	2	23,02	5,00	11,25	0,48	3,10	3,00	0,03
6425777	XDET16M530FRALP	WN10HM	2	23,02	5,00	11,25	0,48	3,10	3,00	0,02

NOTE: RWP* = Resultant workpiece radius.

■ Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
N1-N2	.F..ALP	WN10HM	.F..ALP	WN10HM	.E..ALP	WN10HM
N3	.F..ALP	WN10HM	.F..ALP	WN10HM	.E..ALP	WN10HM

■ Recommended Starting Speeds For Wet Machining [m/min]

Material Group		WN10HM		
N	1	2950	1800	875
	2	2950	1800	875
	3	1600	850	480

NOTE: FIRST choice starting speeds are in **bold** type.

As the average chip thickness increases, the speed should be decreased.

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
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Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)														Insert Geometry	
	5%			10%			20%			30%			40-100%			
.F..ALP	0,12	0,45	0,81	0,08	0,33	0,58	0,06	0,25	0,43	0,06	0,21	0,38	0,05	0,20	0,35	.F..ALP
.E..ALP	0,15	0,50	0,92	0,11	0,36	0,66	0,08	0,27	0,50	0,07	0,24	0,43	0,07	0,22	0,40	.E..ALP

NOTE: Use "Light Machining" values as starting feed rate.

Recommendations for High Speed Machining at 8000 RPM or above

- Check spindle condition:
 - Runout
 - Clamping of the attachment in traction
 - Marking and cleanliness
- Check that the tool is suitable for the required use.
- Inserts must be locked positively in the pocket and secured using the torx screw provided. The screw must be torqued to the correct value as indicated in the charts on the product pages.
- Because of heavy force to the screw, it is important to change the screw when changing the insert.
- Check the balancing of the assembled tool: cutter body, inserts, and attachment.
- Before start up, note the maximum RPM engraved on the tool. The maximum RPM is linked to a precise balancing value.
- Ensure that the field of application of the tool shown in our technical documents and technological parameters is observed:

Ae (mm)	Width of cut, lateral engagement (radial)
ap (mm)	Axial depth of cut
fz (mm/tooth)	mm per tooth
n (RPM)	Revolutions per minute



WIDIA™ cannot accept responsibility for misuse of this product due to:

- Non-observance of the above instructions
- Machine without casing
- Incorrect clamping of workpieces
- No safety device on the machine
- Any misuse or incorrect clamping

The optimum rotation must be determined by condition of the spindle. The spindle must be rigid to run at these higher RPMs.

Under no circumstances must any attempt be made to repair this tool. The only permitted maintenance is the indexing or replacement of the inserts.

When assembling the cutter to a Shrink Fit holder, the maximum protrusion cannot exceed 10% of the reach of tool.

Balancing:

- Cylindrical shank and HSK63A integral shanks are designed and balanced to G6.3 at 30000 RPM for diameters up to 50mm.
- Cylindrical shank tools mounted in a Shrink Fit holder or any other chuck mill holder + inserts + screws must be re-inspected for balance as an assembly by the end-user when at or exceeding 8000 RPM. End-user must balance the assembly at a G6.3 at 30000 RPM maximum.
- Shell mills are not balanced. These tools must be re-inspected for balance as an assembly, cutter + inserts + screws by the end-user for high speed machining at 8000 RPM or above. End-user must balance the assembly at a G6.3 value minimum.
- Balancing requires removing some material by drilling or milling operations.
- For each new shell mill installed on the same toolholder, re-balance the assembly.

Tighten the bolt between the shell mill and toolholder; with lubricant, apply the torque value of:

Thread sizes (mm)	Cutter Bore Size (mm)	Torque Values Nm
M6	13	10
M8	16	30
M10	22	50
M12	27	80
M16	32	110
M20	40	120