

ALUREK

Positive shoulder milling, high precision and high productivity

Application

- Shoulder milling
 - Long overhang milling
 - Profiling and Pocketing
 - Linear and helical ramping
- Fresatura di spallamento
 - Fresatura con lunghe sporgenze
 - Profilatura ed esecuzione di tasche
 - Lavorazioni in rampa lineare ed elicoidale
- Eckfräser
 - Fräsen mit langen Auskragungen
 - Profilierung und Taschenfraesen
 - Lineare und spiralförmige Rampenbearbeitung
- Surfaçage Dressage
 - Usinage avec longs porte à faux
 - Rainurage et usinage de poches
 - Usinages en ramping et interpolation hélicoïdale

Application range - ISO 513

N



Features and benefits

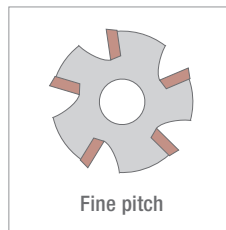
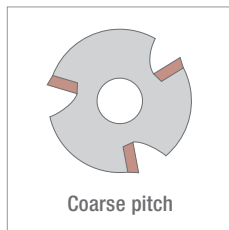
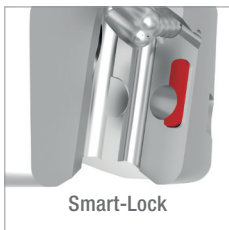
- 90° helical geometry insert for high precision shouldering
 - Transparent-looking advanced PVD coated carbide inserts provides excellent wear-resistance and anti-adhesion, can be an optimal alternative solution to PCD milling.
 - Different radii of inserts available.
 - Smart-Lock at the back of the insert and on the cutter seats, guarantees a more reliable machining process and better surface finishing.
 - Wide range of milling holders (shell type, cylindrical shank, screw-on+extension arbors) with coolant through.
 - 10xD extension arbors available in both steel and carbide.
- Inserti con geometria 90° elicoidale per spallamenti precisi.
 - Il rivestimento PVD avanzato dall'aspetto trasparente sull'inserto di metallo duro offrono un'eccellente resistenza all'usura e all'adesione e possono rappresentare una soluzione alternativa ottimale alla fresatura PCD.
 - Disponibili in diversi raggi.
 - Il sistema Smart-Lock sul retro dell'inserto e nelle sedi assicura maggiore affidabilità del processo e migliore finitura superficiale.
 - Vasta gamma di corpi fresa (a manicotto, gambo cilindrico e testine filettate con prolungha) con refrigerazione interna.
 - Prolungha 10xD disponibili in acciaio e metallo duro.
- Wendeschneidplatten mit spiralförmiger Geometrie ermöglichen die Herstellung hochpräziser gerader Eckfräsungen.
 - Die fortgeschrittene durchsichtige PVD Beschichtung erzielt eine hervorragende Verschleiss- und Aufklebebeständigkeit, und kann somit als optimaler Ersatz von PKD betrachtet werden.
 - In verschiedenen Radien erhältlich.
 - Das Smart-Lock-System auf der Rückseite der Wendeschneidplatte und in den Aufnahmen sorgt für eine höhere Prozesssicherheit sowie eine bessere Oberflächenqualität.
 - Fräskörper mit regulären Abmessungen mit zylindrischer Aufnahme, mit Gewinde und mit Hülse, alle mit innerer Kühlmittelzufuhr.
 - Erweiterungshülsen 10xD aus Stahl und Hartmetall erhältlich.
- Des plaquettes à géométrie hélicoïdale pour un usinage de haute précision à 90°.
 - Les plaquettes en carbure revêtues d'un PVD avancé d'aspect transparent offrent une excellente résistance à l'usure et anti-adhérence, et peuvent constituer une solution alternative optimale au fraisage PCD.
 - Disponibles avec différents rayons.
 - Le système Smart-Lock à l'arrière de la plaquette et dans les logements assure une plus grande fiabilité de l'usinage et une meilleure finition de surface.
 - Large choix de type de montage, mandrin, queue cylindrique, embout vissé avec rallonge, avec arrosage interne.
 - Rallonges 10xD disponibles en acier et carbure.

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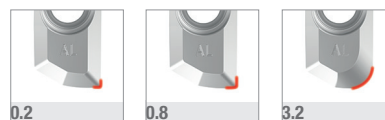
Milling holders

- Shell mill type
 - Cylindrical shank type (up to 10xD)
 - Screw-in type
 - Extension arbors (steel/carbide 10xD)
 - From D25 to D50
- Hülsenaufnahme
 - Aufnahme zylindrisch (bis 10xD)
 - Gewindeaufnahme
 - Erweiterungshülsen (Stahl/Hartmetall 10xD)
 - D25 bis D50
- Attacco a manicotto
 - Attacco cilindrico (fino a 10xD)
 - Attacco filettato
 - Prolunghe (acciaio/metallo duro 10xD)
 - Da D25 a D50
- type mandrin
 - Queue cylindrique (jusqu'à 10xD)
 - embout vissé
 - Rallonge (acier/carbure 10xD)
 - Du D25 à D50



Inserts

- 2 cutting edges
 - Edge length 19
 - PVD coated carbide grade, specific for ISO N
 - Geometries: AL
 - With Smart-Lock
- 2 Schneidkanten
 - Länge der Schneidkante 19
 - PVD-beschichtete Hartmetallqualität speziell für Materialien der ISO N-Gruppe
 - Geometrien: AL
 - Mit Smart-Lock
- 2 taglienti
 - Lunghezza del tagliente 19
 - Grado in metallo duro rivestito PVD specifico per materiali del gruppo ISO N
 - Geometrie: AL
 - Con Smart-Lock
- 2 arêtes de coupe
 - Taille de plaquette 19
 - Nuance carbure revêtue PVD spécifique aux matériaux du groupe ISO N
 - Géométries : AL
 - Avec Smart-Lock



INDEXABLE

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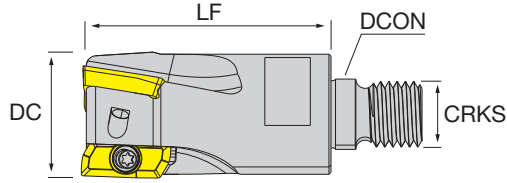
G - SPARE PARTS

NT-ALU90

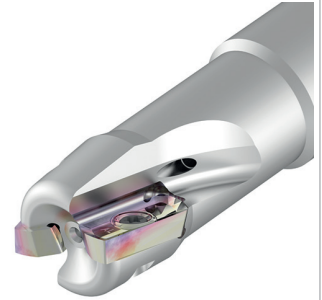
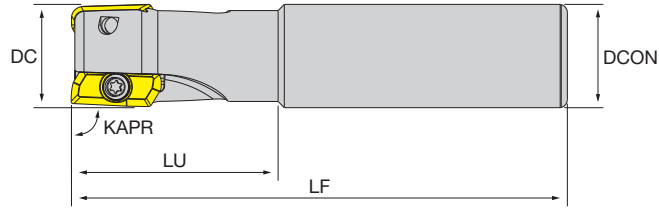
AluRek

- Highly positive and fine polished precision shoulder milling system tailored for aluminum and non-ferrous materials
- All with coolant through
- With Nikko smart-lock at the back of the insert and on the seat, offering better reliability and surface finishing
- Tolerance of tool diameter (with Nikko inserts installed) 0/-0.2

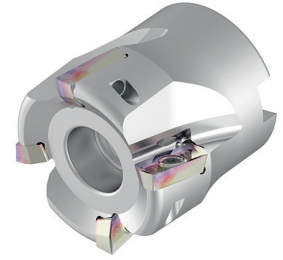
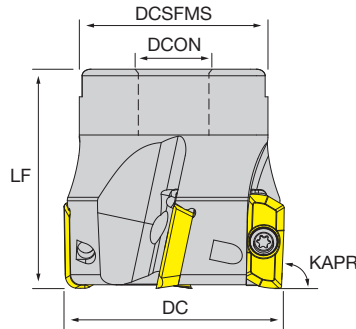
Screw-in



Cylindrical



Arbor



| Designation | DC | CICT | DCON | LF | LU | DCSFMS | CRKS | WT | MIID | Stock |
|---------------------------|----|------|------|-----|----|--------|------|----|------------|-------|
| SCREW-IN | | | | | | | | | | |
| NT-ALU9019 D025-M12-Z2 | 25 | 2 | 12.5 | 50 | - | - | M12 | - | NT-ALU9019 | ● |
| NT-ALU9019 D032-M16-Z3 | 32 | 3 | 17 | 60 | - | - | M16 | - | NT-ALU9019 | ● |
| CYLINDRICAL SHANK | | | | | | | | | | |
| NT-ALU9019 D025-S25-Z2 | 25 | 2 | 25 | 120 | 50 | - | - | - | NT-ALU9019 | ● |
| NT-ALU9019 D032-S32-Z3 | 32 | 3 | 32 | 130 | 60 | - | - | - | NT-ALU9019 | ● |
| ARBOR MOUNTING | | | | | | | | | | |
| NT-ALU9019 D040-F16-Z3 | 40 | 3 | 16 | 50 | - | 33 | - | - | NT-ALU9019 | ● |
| NT-ALU9019 D050-F22-Z3 | 50 | 3 | 22 | 50 | - | 43 | - | - | NT-ALU9019 | ● |
| NT-ALU9019 D050-F22-Z4-H2 | 50 | 8 | 22 | 60 | - | 43 | - | 32 | NT-ALU9019 | ⊙ |
| NT-ALU9019 D050-F22-Z4 | 50 | 4 | 22 | 50 | - | 43 | - | - | NT-ALU9019 | ● |

★ 1st choice, ☆ suitable, ● stock standard, ⊙ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

| Spare parts | Insert screw | Flag wrench |
|-------------------------|---------------|-------------|
| NT-ALU9019 D000-000-Z00 | NT-ST40090T15 | NT-FTB15 |

| ISO 513 | MATERIAL | HARDNESS HB | ae/DC | JP6525 | | | | |
|---------|--|-------------|-------|--------|-------|------|--|--|
| | | | | min | start | max | | |
| N1 | Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA) | | 100% | 400 | 500 | 600 | | |
| | | | 30% | 600 | 800 | 1000 | | |
| | | | 10% | 800 | 1100 | 1400 | | |
| N2 | Aluminium alloys Si > 12% (ex. 3.2382/G-AISI12) | | 100% | 200 | 350 | 500 | | |
| | | | 30% | 300 | 450 | 600 | | |
| | | | 10% | 400 | 550 | 700 | | |

ae: radial depth of cut; DC: milling cutter diameter
Complete workpiece materials p. H1.

| DESIGNATION | ae/DC | DEPTH OF CUT | | | FEED RATE | | |
|-------------------|-------|--------------|-------------|-------|-------------|-------------|------|
| | | ap (mm) | | | fn (mm/rev) | | |
| | | min | start | max | min | start | max |
| NT-ALU9019RooH-AL | 100% | 1.00 | 4.00 | 7.00 | 0.06 | 0.10 | 0.14 |
| | 30% | 1.00 | 9.00 | 17.00 | 0.08 | 0.15 | 0.22 |
| | 10% | 1.00 | 9.00 | 17.00 | 0.10 | 0.20 | 0.30 |

Parameters for ramping

| | ALU9019 | | | | | |
|--|---------|------|-----|--|--|--|
| | DC | RMPX | L | | | |
| | 25 | 3.4° | 3.0 | | | |
| | 32 | 2.5° | 2.9 | | | |
| | 40 | 1.4° | 2.1 | | | |
| | 50 | 0.7° | 1.4 | | | |

RMPX: max. ramping angle; L: max. ramping path

Parameters for helical milling

| | ALU9019 R0.2 | | | ALU9019 R0.8 | | | ALU9019 R3.2 | | |
|--|--------------|---------|---------|--------------|---------|---------|--------------|---------|---------|
| | DC | DH min. | DH max. | DC | DH min. | DH max. | DC | DH min. | DH max. |
| | 25 | 32 | 49 | 25 | 33 | 48 | 25 | 37 | 47 |
| | 32 | 46 | 63 | 32 | 47 | 62 | 32 | 51 | 61 |
| | 40 | 62 | 79 | 40 | 63 | 78 | 40 | 67 | 77 |
| | 50 | 82 | 99 | 50 | 83 | 98 | 50 | 87 | 97 |

DH min.: min. cutting dia.; DH max.: max. cutting dia.

Peck milling

| | Pd maximum pecking depth | | | |
|--|--------------------------|-----------|--|--|
| | | Pd = 1 mm | | |

| ISO 513 | MATERIAL | HARDNESS HB | ae/DC | JP5520 | | | | |
|---------|---|-------------|-------|--------|-------|------|--|--|
| | | | | min | start | max | | |
| P1 - P2 | Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45) | ≤ 200 | 100% | 100 | 150 | 200 | | |
| | | | 30% | 160 | 210 | 260 | | |
| | | | 10% | 220 | 250 | 280 | | |
| P3 - P4 | Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6) | 200 ÷ 300 | 100% | 90 | 130 | 170 | | |
| | | | 30% | 130 | 170 | 210 | | |
| | | | 10% | 190 | 210 | 230 | | |
| P5 - P6 | High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®) | 300 ÷ 400 | 100% | 80 | 110 | 140 | | |
| | | | 30% | 120 | 150 | 180 | | |
| | | | 10% | 160 | 190 | 220 | | |
| ISO 513 | MATERIAL | HARDNESS HB | ae/DC | JU6520 | | | | |
| N1 | Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA) | | 100% | 300 | 400 | 500 | | |
| | | | 30% | 400 | 600 | 800 | | |
| | | | 10% | 500 | 800 | 1100 | | |
| N2 | Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12) | | 100% | 200 | 250 | 300 | | |
| | | | 30% | 300 | 350 | 400 | | |
| | | | 10% | 400 | 450 | 500 | | |

ae: radial depth of cut; DC: milling cutter diameter
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| DESIGNATION | ae/DC | DEPTH OF CUT | | | FEED RATE | | |
|-----------------|-------|--------------|-------------|-------|-----------|-------------|------|
| | | ap (mm) | | | fz (mm) | | |
| | | min | start | max | min | start | max |
| APKT1003PDSR-GP | 100% | 1.00 | 2.50 | 4.00 | 0.06 | 0.11 | 0.16 |
| | 30% | 1.00 | 4.00 | 7.00 | 0.08 | 0.14 | 0.20 |
| | 10% | 1.00 | 4.00 | 7.00 | 0.10 | 0.16 | 0.22 |
| APKT1604PDSR-GP | 100% | 1.00 | 4.00 | 7.00 | 0.08 | 0.14 | 0.19 |
| | 30% | 1.00 | 7.00 | 13.00 | 0.10 | 0.17 | 0.24 |
| | 10% | 1.00 | 7.00 | 13.00 | 0.12 | 0.20 | 0.28 |
| APKT1003PDFR-AL | 100% | 1.00 | 2.50 | 4.00 | 0.08 | 0.14 | 0.20 |
| | 30% | 1.00 | 4.00 | 7.00 | 0.10 | 0.17 | 0.24 |
| | 10% | 1.00 | 4.00 | 7.00 | 0.12 | 0.20 | 0.28 |
| APKT1604PDFR-AL | 100% | 1.00 | 4.00 | 7.00 | 0.08 | 0.16 | 0.24 |
| | 30% | 1.00 | 7.00 | 13.00 | 0.10 | 0.20 | 0.30 |
| | 10% | 1.00 | 7.00 | 13.00 | 0.12 | 0.24 | 0.36 |