

KORLOY
**AEROSPACE
INDUSTRY**

AEROSPACE INDUSTRY

Aerospace which North America and Europe have mainly led seems to be more expanded according to join of China, India, Japan, Brazil and Russia in the industry.

Korloy supplies you appropriate tools based on the technique certified in the field of precision machining for manufacturing engine, turbine, wing, frame and landing gear etc.

Korloy will try to satisfy customers' needs with various and accurate total tooling.



Parts of Aerospace

Engine Part

- 01** Turbine Case - 06
- 02** Turbine Disk/Spool - 08
- 03** Turbine Shaft - 10
- 04** Disk - 12
- 05** Blisk - 14
- 06** Turbine Blade - 16

Landing Part

- 07** Landing Gear - 18

Wing Part

- 08** Wing Rib/Tail - 20
- 09** Flap Track - 22
- 10** CFRP Wing Tail - 24

***Turbine Case***

- Ni-based Superalloy -

***Turbine Spool***

- Ni-based Superalloy -

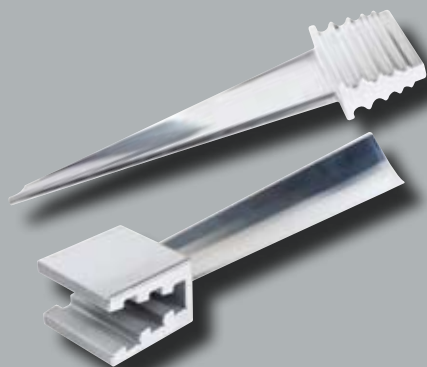
***Turbine Disk***

- Ni-based Superalloy -

Parts of Aerospace

***Turbine Blade***

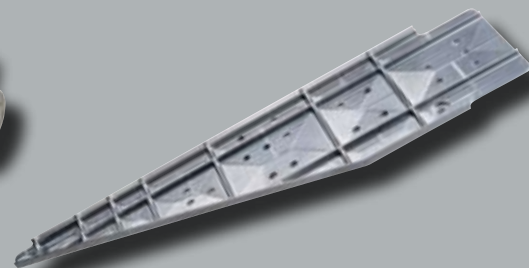
- Titanium alloy -

***Landing Gear***

- Titanium alloy -

***Wing Tail***

- Aluminum alloy -





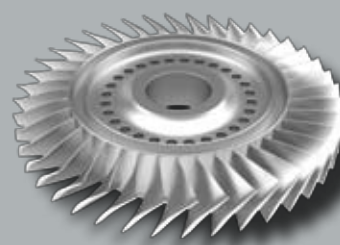
Turbine Shaft

- Ni-based Superalloy -



Disk

- Ni-based Superalloy -



Blisk

- Ni-based Superalloy -



Wing Rib

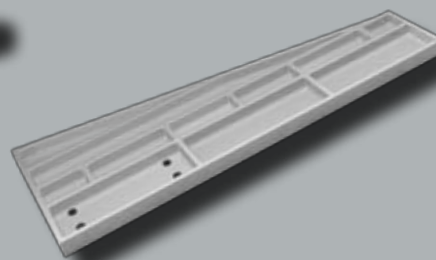
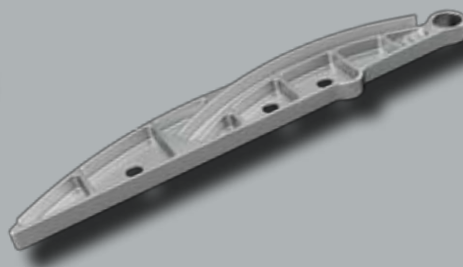
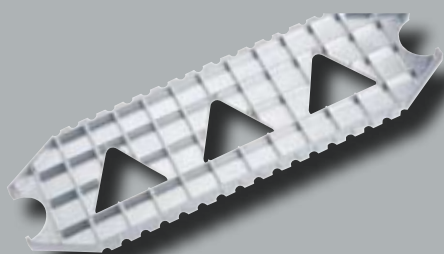
- Aluminum alloy -

Flap Track

- Titanium alloy -

Wing Tail_CFRP

- Titanium alloy -

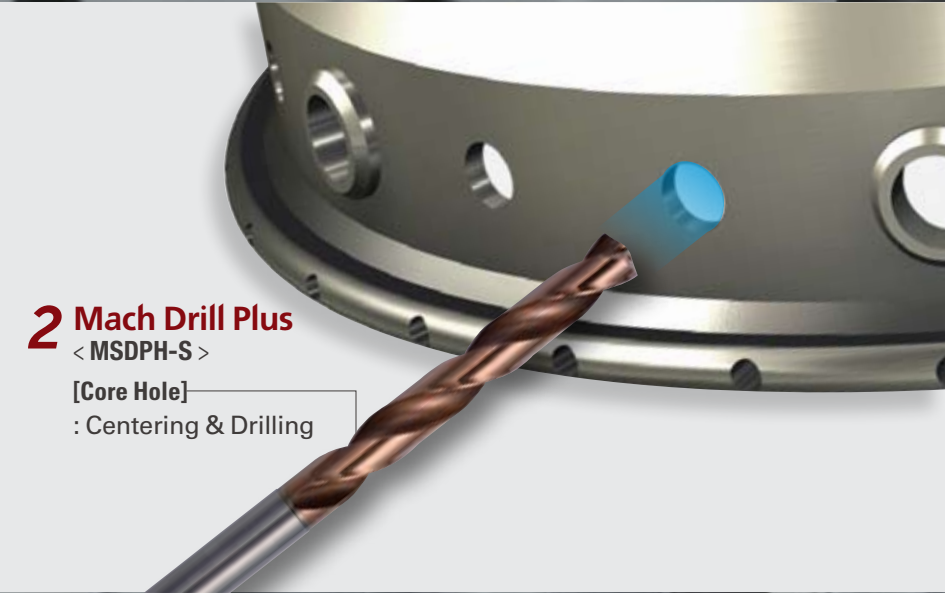




1 Alpha Mill / HRMDouble
< AMC / HRMDC >
[Boss Parts]
: Facing - Finishing / Roughing

01 Turbine Case

Ni-based Superalloy



2 Mach Drill Plus
< MSDPH-S >

[Core Hole]
: Centering & Drilling

3 MSB Tool

< MBCR >

[Hole]

: Chamfering - Finishing



<Single Edge type> <Twin Edge type>

4 Special Boring Bar

< FBH >

[Turbine Case Hole]

: ID Boring - Finishing

KORLOY
AEROSPACE
INDUSTRY

5 Solid Endmill

< VFE(Flat) >

[Side, Hole]

: Shouldering - Finishing



6 KGT Holder

< KGEHR(KGMN) >

[Turbine Case]

: Grooving - Finishing



<KGMN type>

1 KGT Holder
< KGFHR(KGMN) >

[Disk Boring Seat]
: Grooving - Finishing

02**Turbine Disk / Spool**

Ni-based Superalloy

2 Solid Endmill
< VFE(Flat) >

[Hole Half Side]
: Shouldering - Finishing

3 Boring Bar

< SDQCR(DCGT) >

[Turbine Disk]

: Internal Turning - Finishing

4 Mach Drill Plus

< MSDPH-S >

[Core Hole]

: Centering & Drilling

KORLOY
AEROSPACE
INDUSTRY

5 MGT Cartridge

< MCVL(Holder)/MCER(Cartridge) >

[Spool]

: Grooving - Roughing, Finishing

6 KGT Holder

< KGEHR(KGMN) >

[Disk Ring Seat]

: Grooving - Finishing

1 Solid Endmill

< VFE(Flat) >

[Turbine Shaft Hole Half Side]

: Shouldering - Finishing

**03****Turbine Shaft***Ni-based Superalloy***2 Straight Reamer**

< HRE >

[Hole & Guide]

: Reaming - Finishing



3 Lever Lock System Holder

< PRDCN(RCMX) >

[Shaft]

: External Turning - Roughing, Finishing

<RCMX type>

4 Lever Lock System Holder

< PSBNR(SNMG) >

[Shaft]

: External Turning - Roughing, Finishing

KORLOY
AEROSPACE
INDUSTRY

5 Exchangeable Drill

< TPDC >

[Turbine Shaft Hole]

: Centering & Drilling

<single Edge type > <Twin Edge type >

6 MSB Tool

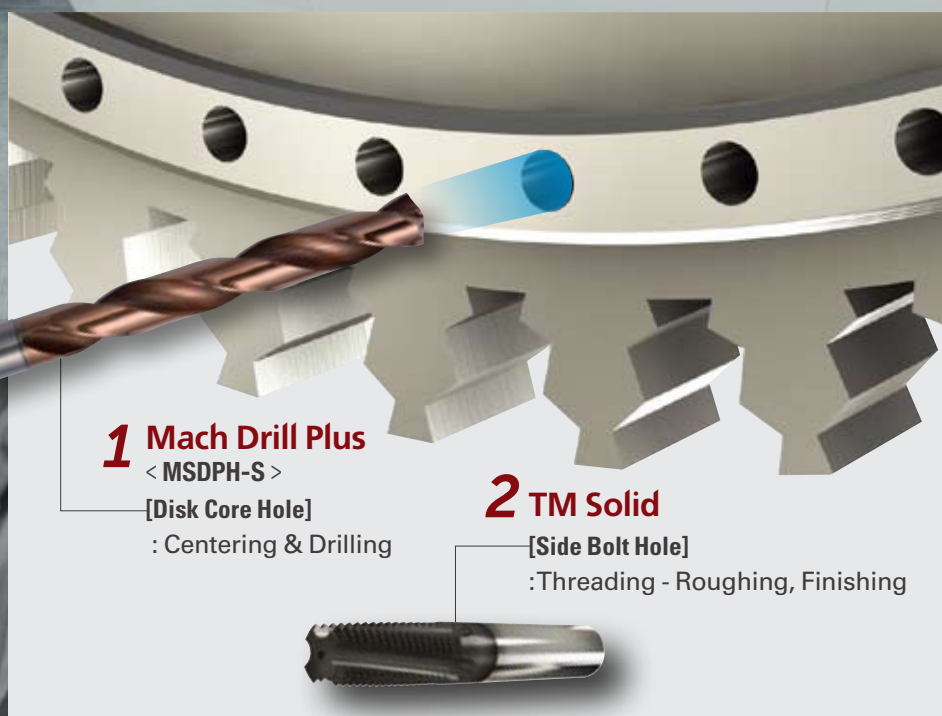
< MBCR >

[Hole]

: Chamfering - Finishing

04 Disk

Ni-based Superalloy



3 Double Clamp System Holder

< DVJNR(VNMG) >

[Disk Face, Shape]

: External Turning - Roughing

4 Indexable Drill

< KING DRILL >

[Disk Hole]

: Drilling

KORLOY
AEROSPACE
INDUSTRY

5 Boring Bar

< SDQCR(DCGT) >

[Disk]

: Internal Turning - Roughing, Finishing

6 Double Clamp System Holder

< DVJNR(VNMG) >

[Disk Face, Shape]

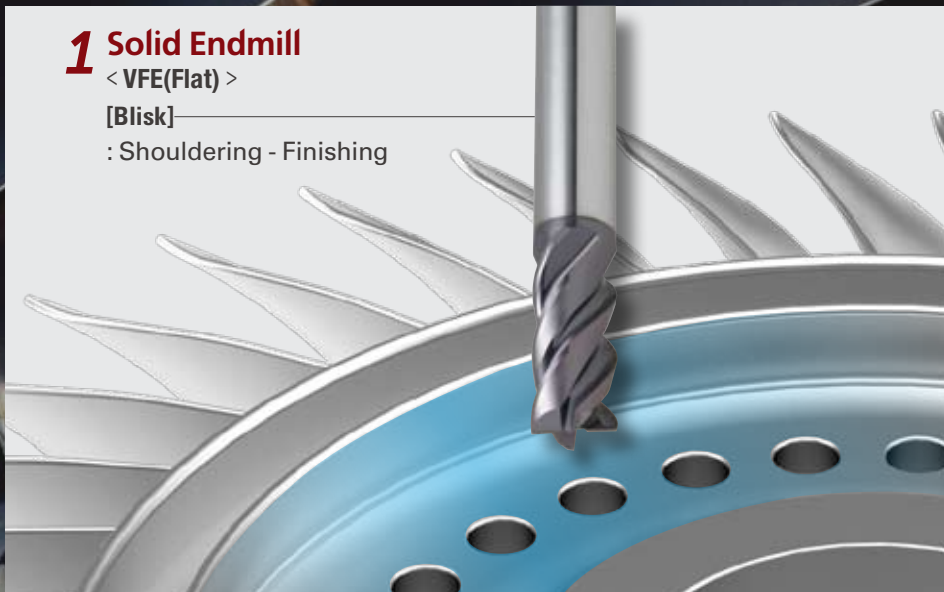
: External Turning - Roughing, Finishing

1 Solid Endmill

< VFE(Flat) >

[Blisk]

: Shouldering - Finishing



05

Blisk

Ni-based Superalloy

2 HFM(High Feed Mill)

< HFM1000 >

[Blisk Wing]

: Pocketing - Roughing



3 KGT Holder

< KGFHR(KGMN) >

[Blisk]

: Grooving - Roughing

4 Double Clamp System Holder

< DCLNR(CNMG) >

[Blisk]

: External Turning - Roughing, Finishing

KORLOY
AEROSPACE
INDUSTRY

5 Solid Ball Endmill

< ZBE(Ball) >

[Blisk Wing]

: Pocketing - Finishing

6 Mach Drill Plus

< MSDPH-S >

[Blisk Hole]

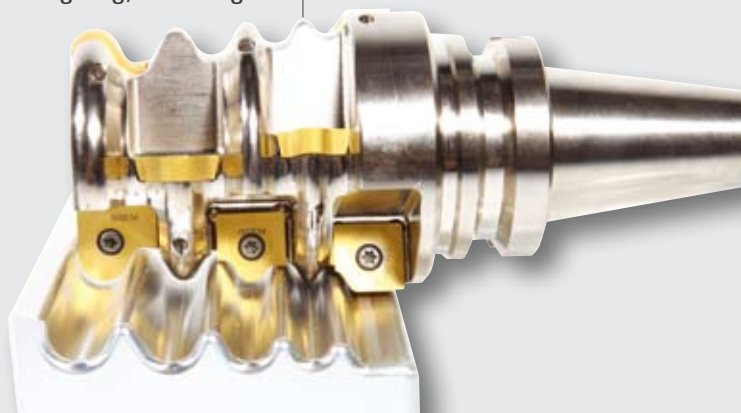
: Centering & Drilling

1 Special Cutter

< KFF-TB2-FIN, KTF-TB2-ROU >

[Blade Core]

: Copying - Roughing, Finishing



06

Turbine Blade

Titanium alloy

2 Future Mill

< FMR-P >

[Blade Face]

: Contouring - Roughing

3 Indexable Ball Endmill

< GBE, BRE >

[Blade Face]

: Contouring - Roughing



3 Solid Ball Endmill

< ZBE(Ball) >

[Blade Face]

: Contouring - Finishing

4 Mach Drill Plus

< MSDPH-S >

[Blade Core Hole]

: Centering & Drilling

KORLOY
AEROSPACE
INDUSTRY

5 Special Cutter

< KFF-TB2-FIN, KTF-TB2-ROU >

[Blade Core]

: Copying - Roughing, Finishing



1 HRMDouble < HRMDC >

[Landing Gear Boss]
: Facing - Roughing,
Finishing

07

Landing Gear

Titanium alloy



2 HSK/BT Tooling System < Multi-Edge Type >

[Landing Gear]
: Shouldering & Facing - Roughing

3 Double Clamp System Holder

< DVJNR(VNMG) >

[Landing Gear]

: External Turning - Roughing, Finishing

4 Lever Lock System Holder

< PSBNR(SNMG) >

[Landing Gear]

: External Turning - Roughing, Finishing

5 Boring bar

< SCLCL(CCMT) >

[Landing Gear]

: Internal Turning - Roughing, Finishing

KORLOY
AEROSPACE
INDUSTRY

6 Indexable Drill

< KING DRILL >

[Landing Gear Hole]

: Drilling

7 Straight Reamer

< HRE >

[Hole & Guide]

: Reaming - Finishing

8 Special Boring Bar

< FBH >

[Bore Hole]

: Boring - Finishing



08

Wing Rib / Tail

Aluminum alloy



4 HSK/BT Tooling System

< Multi-Edge Type >

[Wing Lib, Tail Face]

: Shouldering - Roughing

3 Brazed Spiral Long Endmill

< ZSEAL / ZSEXL(Special) >

[Wing Lib, Tail Face]

: Pocketing - Roughing

KORLOY
AEROSPACE
INDUSTRY

6 Pro-X Mill

< PAXS(XEKT) >

[Wing Lib, Tail Face]

: Shouldering & Facing -
Roughing, Finishing

5 Solid Endmill

< SSREA(Radius Special) >

[Wing Lib, Tail Face]

: Facing - Finishing

7 Mach Drill Plus

< MSDPH-N/ND >

[Wing Lib, Tail Face]

: Centering & Drilling

09 Flap Track

Titanium alloy

1 Indexable Drill
< KING DRILL >
[Flap Track Hole]
: Drilling



2 Solid Endmill

< VFE(Flat) >

[Flap Track Pocket]

: Pocketing - Roughing, Finishing

3 Alph Mill

< AMCM3000(APMT) >

[Flap Track Wall]

: Shouldering - Roughing

KORLOY
AEROSPACE
INDUSTRY

4 Rich Mill

< RM3(XNKT) >

[Flap Track Face]

: Shouldering &
Facing - Roughing

5 Indexable Drill

< KING DRILL >

[Flap Track Hole]

: Drilling

10

CFRP Wing Tail

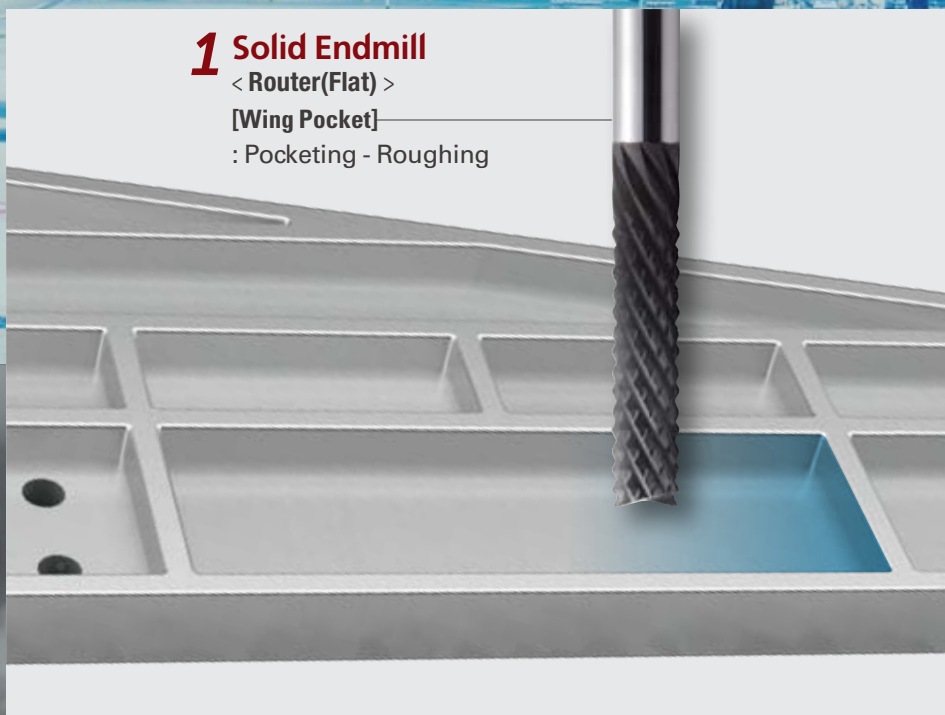
CFRP

1 Solid Endmill

< Router(Flat) >

[Wing Pocket]

: Pocketing - Roughing



2 Solid Endmill
< Up & Down Cutter(Flat) >
[Wing Pocket]
: Shouldering - Finishing

KORLOY
AEROSPACE
INDUSTRY

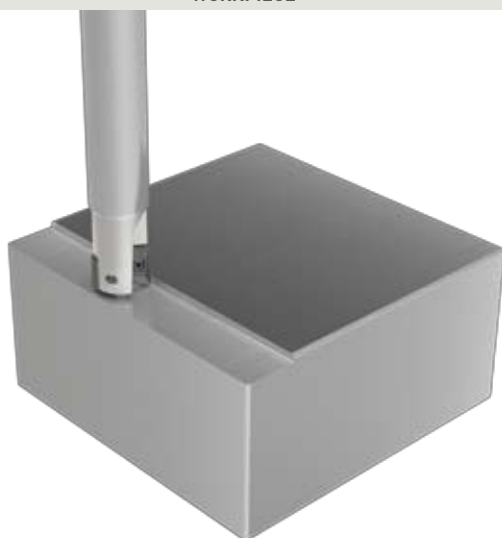
3 Mach Drill Plus
< MSDPH-C >
[Wing]
: Centering & Drilling

4 Solid Endmill
< Router(Flat) >
[Wing]
: Shouldering - Roughing

Inconel

Alpha Mill

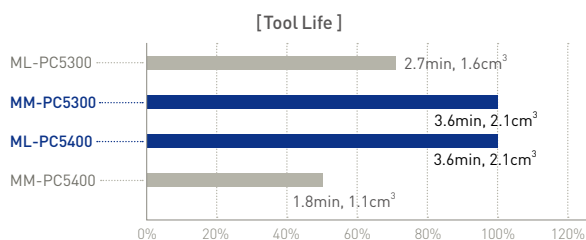
WORKPIECE



TOOL LIFE RESULT



Holder	AMS2016HS	
Insert	APMT11T3PDER-ML, APMT11T3PDSR-MM	
Grade	PC5300, PC5400	
MCT	HYUNDAI WIA VC750M, BT50	
Workpiece	Inconel 718(HrC 38~40)	
Cutting Speed	vc = 60[m/min]	
Feed Rate	fz = 0.06[mm/t]	
Depth	ap = 2.0mm, ae = 2.0mm	
Cutting Fluid	Method	Wet
	Pressure	30bar
	Concentration	6~8%



Alpha Mill

WORKPIECE



TOOL LIFE RESULT

ML-PC5400



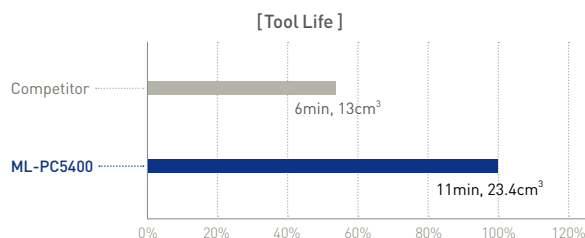
13cm³ after

Competitor



13cm³ after

Holder	AMS3032HS	
Insert	APMT1604PDER-ML	
Grade	PC5400	
MCT	HYUNDAI WIA VC750M, BT50	
Workpiece	Inconel 718(HRC 38~40)	
Cutting Speed	vc = 60(m/min)	
Feed Rate	fz = 0.06(mm/t)	
Depth	ap = 10.0mm, ae = 2.0mm	
Cutting Fluid	Method	Wet
	Pressure	30bar
	Concentration	6~8%



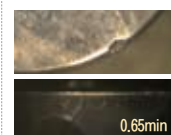
FMR P-positive

WORKPIECE



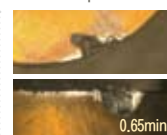
TOOL LIFE RESULT

M0S1-PC5300



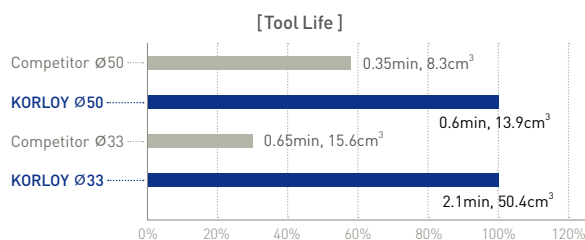
0.65min

Competitor

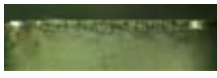


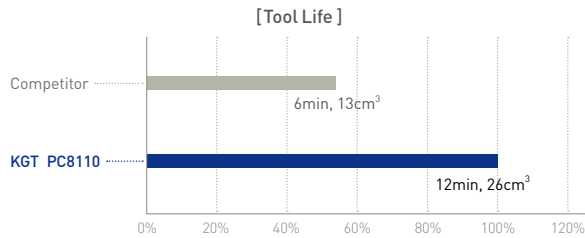
0.65min

Holder	FMR54033HRP-3L32 (Ø33, 3Flute, 250L)	FMR54050HRP-4 (Ø50, 4Flute, 250L)
Insert	RPMW1204M0S1	RPMW1204M0S1
Grade	PC5300	PC5300
Workpiece	Inconel 718(HrC 38-40)	Inconel 718(HrC 38-40)
Cutting Speed	vc = 40(m/min)	vc = 40(m/min)
Feed Rate	fz = 0.3(mm/t)	fz = 0.6(mm/t)
Depth	ap = 1 mm, ae = 20mm	ap = 1 mm, ae = 20mm
Cutting Fluid	Method	Wet
	Pressure	30bar
	Concentration	6-8%



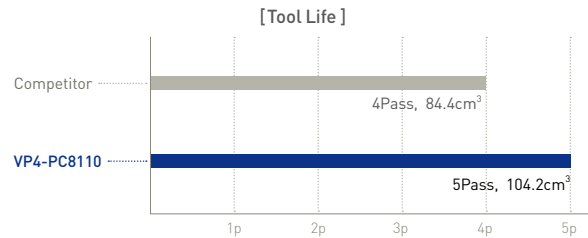
KGT

WORKPIECE		TOOL LIFE RESULT	
		KG MN400-08-T PC8110	
		Competitor	
Holder	KGEHR25250-4-T15		
Insert	KGMN400-08-T		
Grade	PC8110		
Workpiece	Inconel 718(HrC 38~40)		
Cutting Speed	vc = 60(m/min)		
Feed Rate	fn = 0.1(mm/rev)		
Depth	ap = 5.0mm		
Cutting Fluid	Method	Wet	
	Pressure	10bar	
	Concentration	6~8%	



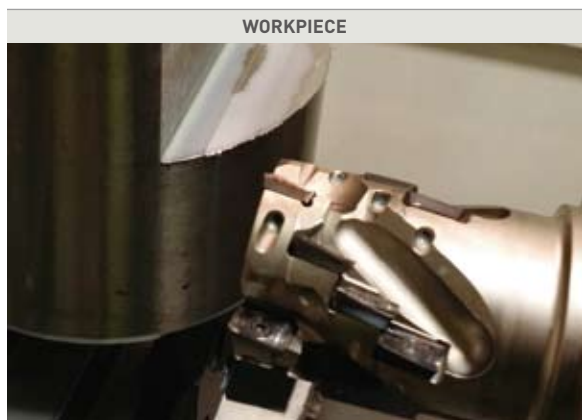
VP4 Chip Breaker

WORKPIECE		TOOL LIFE RESULT	
		CNMG120408-VP4 PC8110	
		Competitor	
Holder	DCLNR2525-M12		
Insert	CNMG120408-VP4		
Grade	PC8110		
Workpiece	Inconel 718(HrC 38~40)		
Cutting Speed	vc = 40(m/min)		
Feed Rate	fn = 0.35(mm/rev)		
Depth	ap = 3.0 mm		
Cutting Fluid	Method	Wet	
	Pressure	10bar	
	Concentration	6~8%	

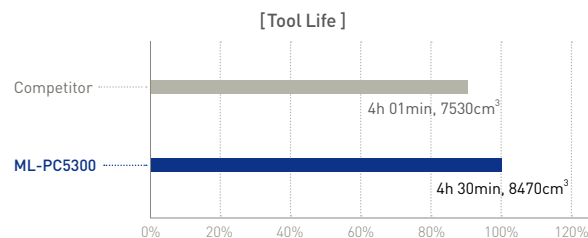


Titanium

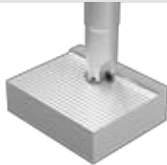
Alpha Mill

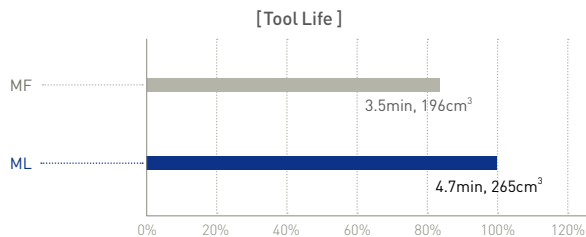


TOOL LIFE RESULT	
ML-PC5300	
Competitor	
Holder	BT50-AM3063057-4(Multi edge)
Insert	APMT1604PDER-ML
Grade	PC5300
MCT	MAZAK NEXUS6800-11
Workpiece	Ti-6Al-4V(HrC45~47)
Cutting Speed	vc = 40(m/min)
Feed Rate	fz = 0.1(mm/t)
Depth	ap = 50.0mm, ae = 10.0mm
Cutting Fluid	Method
	Pressure
	Concentration



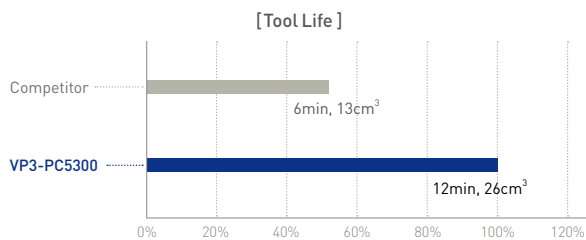
FMR P-positive

WORKPIECE		TOOL LIFE RESULT	
		RPET-ML  267cm ³	RPMT-MF  196cm ³
Holder	FMRCM4050HRP-5 (Ø50, 5Flute)		
Insert	RPMT1204M0E-MF, RPCT1204M0-ML RPET1204M0E-ML		
Grade	PC5300		
MCT	HYUNDAI WIA VC750M, BT50		
Workpiece	Ti-6Al-4V(HrC45~47)		
Cutting Speed	vc = 60(m/min)		
Feed Rate	fz = 0.5(mm/t)		
Depth	ap = 1.7mm, ae = 35mm		
Cutting Fluid	Method	Wet	
	Pressure	30bar	
	Concentration	6~8%	



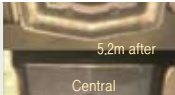
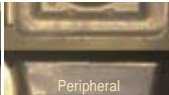
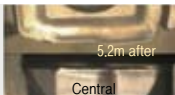
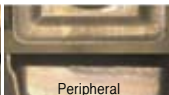
VP Chip Breaker

WORKPIECE		TOOL LIFE RESULT	
		VP3-PC5300 	Competitor 
Holder	Turning insert		
Insert	RNMG190600-VP3		
Grade	PC5300		
Workpiece	Ti829(HrC45~47)		
Cutting Speed	vc = 35~40(m/min)		
Feed Rate	fn = 0.4(mm/rev)		
Depth	ap = 2~4.5mm		
Cutting Fluid	Method	Wet	
	Pressure	10bar	
	Concentration	6~8%	

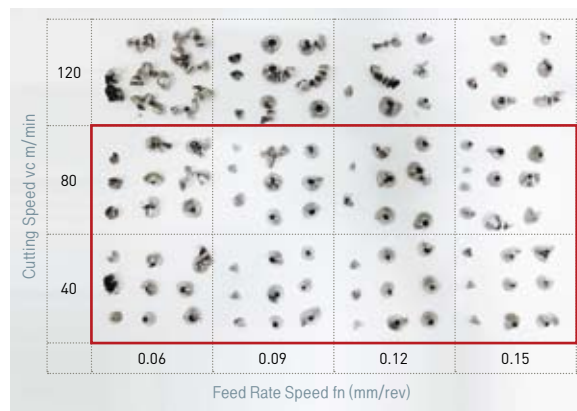


KING DRILL



LD-PC5335		
Competitor		
Holder	K3D20025-07	
Insert	SPMT07T208-LD XOMT07T205-LD	
Grade	PC5335	
Workpiece	Ti-6Al-4V(HrC45~47)	
Cutting Speed	vc = 60(m/min)	
Feed Rate	fn = 0.06(mm/rev)	
Depth	ap = 50mm	
Cutting Fluid	Method	Wet
	Pressure	30bar
	Concentration	6~8%

LD C/B Chip map



Competitor 5.2m/1corner

LD-PC5335 6m/1corner

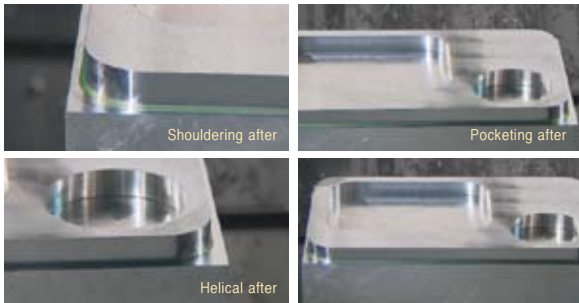
Aluminum

Alpha-Mill, Pro-X & Pro-L Mill

WORKPIECE



SURFACE ROUGHNESS



Holder	Pocketing : AMS3032HS(Ø32) Shouldering : PALS040HR-3S32(Ø40)	
Insert	Pocketing : APMT1604PDFR-MA Shouldering : LXET2504PEFR-40-MA	
Grade	H01	
Workpiece	A6061P (HB170~195)	
Cutting Speed	Pocketing : $vc = 700(\text{m/min})$ Shouldering : $vc = 800(\text{m/min})$	
Feed Rate	Pocketing : $fz = 0.3(\text{mm/t})$ Shouldering : $fz = 0.06(\text{mm/t})$	
Depth	Pocketing : $ap = 15\text{mm}$, $ae = 3\text{mm}$ Shouldering : $ap = 20\text{mm}$, $ae = 5\text{mm}$	
Cutting Fluid	Method	Wet
	Pressure	30bar
	Concentration	6~8%

Roughing



Alpha Mill APMT-MA
06~18mm

Medium



Pro-X XEKT-MA
19~25mm

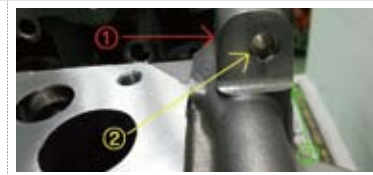
Finishing



Pro-L LXET-MA
25~34mm

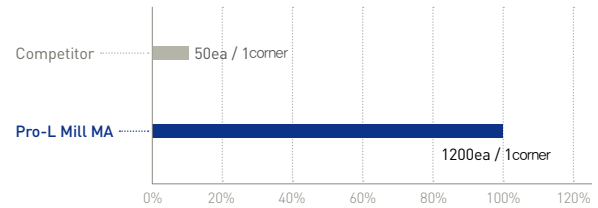
Pro-L Mill

WORKPIECE



Holder	PALS050HR-3S32(Ø50)	
Insert	LXET340532PEFR-50-MA	
Grade	H01	
Workpiece	A6061P(HB170~195)	
Cutting Speed	$vc = 1000(\text{m/min})$	
Feed Rate	$fz = 0.1(\text{mm/t})$	
Depth	$ap = 30\text{mm}$, $ae = 5\text{mm}$	
Cutting Fluid	Method	Wet
	Pressure	30bar
	Concentration	6~8%

[Tool Life]



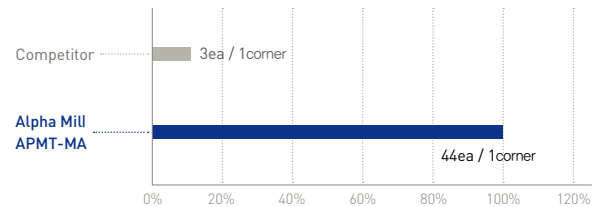
Alpha Mill(APMT-MA)

WORKPIECE



Holder	AMS2032M(Ø32)	
Insert	APMT1604PDFR-MA	
Grade	H01	
Workpiece	AC4CH / A6061P(HB55~80)	
Cutting Speed	$vc = 350(\text{m/min})$	
Feed Rate	$fz = 0.258(\text{mm/t})$	
Depth	$ap = 15\text{mm}$, $ae = 3\text{mm}$	
Cutting Fluid	Method	Wet
	Pressure	30bar
	Concentration	6~8%

[Tool Life]



www.korloy.com



Holystar B/D, 1350, Nambusunhwan-ro, Geumcheon-gu, Seoul, 08536, Korea
Tel : +82-2-522-3181 Fax : +82-2-522-3184, +82-2-3474-4744 Web : www.korloy.com E-mail : export@korloy.com



ANKARA BAYİİ
AKİFSAN MAK. HIRD. LTD. ŞTİ.
İVEDİK ORG. SAN. 1445 SOKAK NO:32 ANKARA-TURKEY
T. +90 (312) 395 1 601 E. info@akifsan.com www.takimdunyasi.com / www.akifsan.com