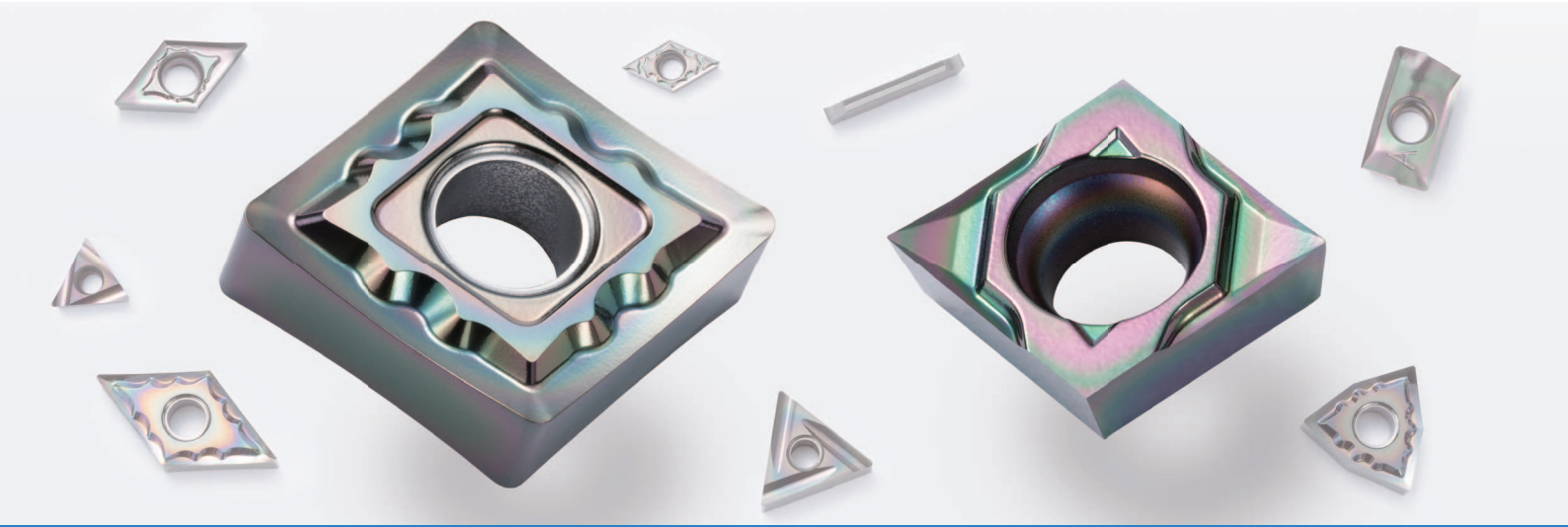
THE NEW VALUE FRONTIER
京瓷 创造新价值

KYOCERA

DLC涂层

PDL010/PDL025



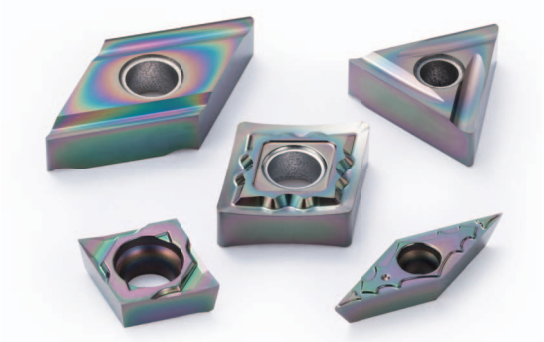
实现铝合金的高品位・长寿加工

接近金刚石的硬度实现长寿加工

耐铝溶着性优秀、卓越的加工面

对应车削、切断、铣削的丰富产品阵容

NEW 耐溶着性优异的
新涂层PDL010上市!

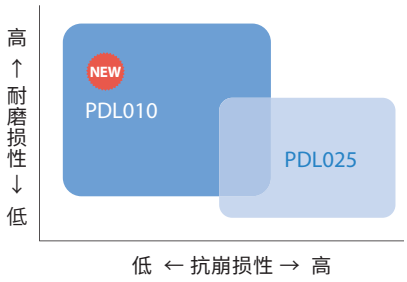


DLC涂层

PDL010/PDL025

接近金刚石的硬度实现长寿加工
可对应多种多样加工的丰富产品阵容

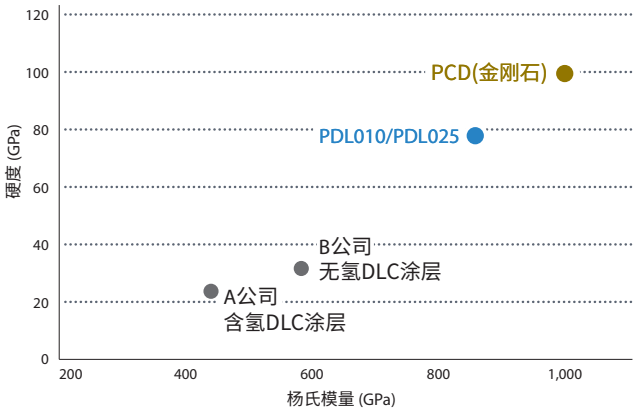
铝合金加工示意图



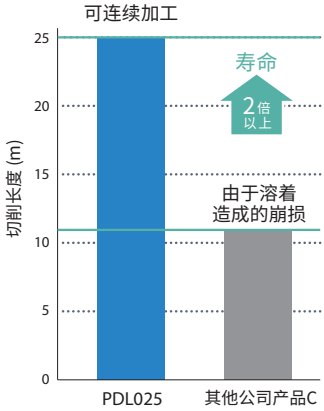
1 实现长寿加工

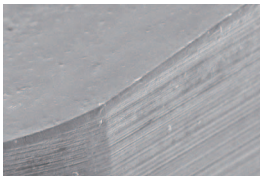
基于京瓷独有的无氢DLC涂层、硬度接近金刚石

涂层特性 (本公司对比)

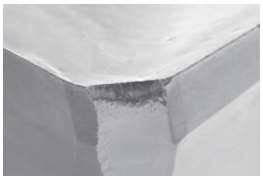


寿命测评 (本公司对比)





PDL025 切削长度 25 m



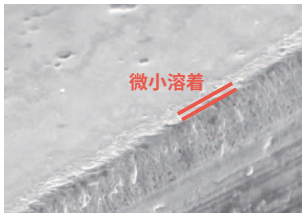
其他公司产品C 切削长度 11 m

切削条件：Vc = 500 m/min, fz = 0.2 mm/t, ap × ae = 3 × 5 mm, Dry
刀盘直径 ø25 mm 被加工材料：A7075

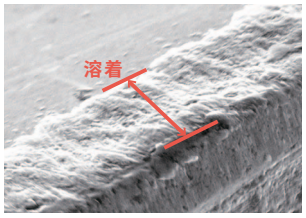
2 完美的加工面

通过优秀的耐铝溶着性实现光泽的加工面

耐溶着性对比 (本公司对比)



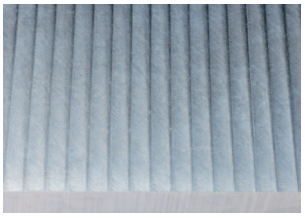
PDL025



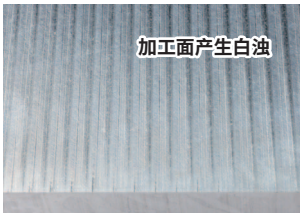
其他公司产品D

切削条件：Vc = 800 m/min, fz = 0.1 mm/t, ap × ae = 3 × 5 mm, Dry
刀盘直径 ø25 mm 被加工材料：A5052 切削长度：57 m

加工面对比 (本公司对比)



PDL025



其他公司产品E

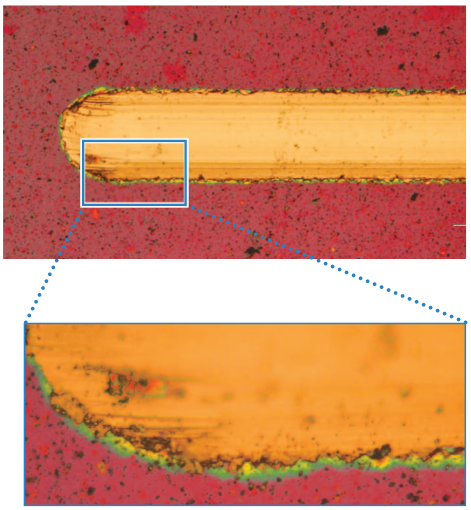
切削条件：Vc = 800 m/min, fz = 0.1 mm/t, ap × ae = 3 × 5 mm, Dry
刀盘直径 ø25 mm 被加工材料：A6061 切削长度：PDL025 (48 m),
其他公司产品E (14 m)

3 可实现稳定加工

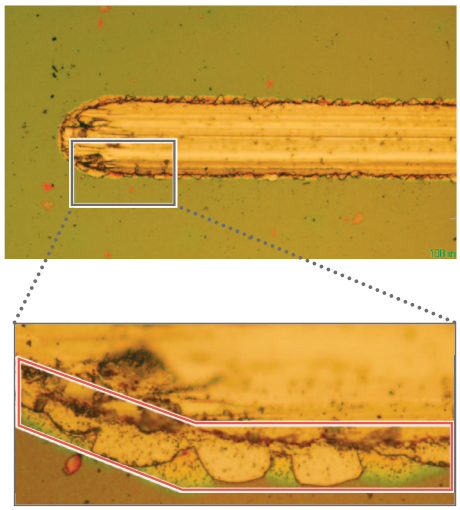
耐涂层剥离性能优秀实现稳定加工。基于高润滑性、切屑处理・排出性能提高

划痕测试：负荷80N后的涂层状态比较 (本公司对比)

PDL025



F社 DLC涂层



涂层剥离

切屑形态

PDL025

卷曲径小，排屑良好

硬质合金(无涂层)

切削条件：Vc = 800 m/min, fz = 0.1 mm/t,
ap × ae = 3 × 5 mm, Dry 刀盘直径 ø25 mm
BDGT11T304FR-JA 被加工材料：A5052

4 丰富的产品阵容

车削、切断、铣削产品系列化，可对应多种多样的加工

车削

(PDL010/PDL025)

切断

(PDL025)

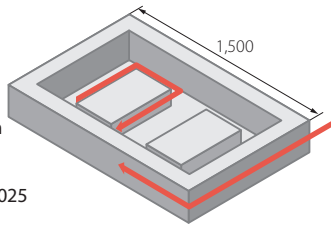
铣削

(PDL025)

加工实例

缸体 A5052

Vc = 450 m/min
fz = 0.15 mm/t
(Vf = 1,900 mm/min)
ap × ae = 2 × ～80 mm
Wet
MEC080R-11-7T (7枚刃)
BDGT11T308FR-JA PDL025



加工台数

寿命

PDL025 — 7个/刀尖 — 1.4倍

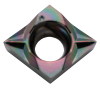
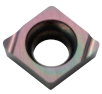
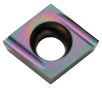
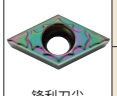
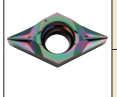
其他公司产品G (6枚刃) — 5个/刀尖

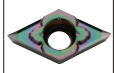
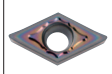
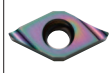
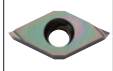
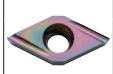
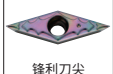
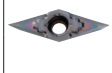
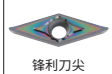
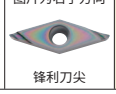
PDL025对于其他公司产品G来说、溶着少寿命提升1.4倍，壁面・底面加工面也良好。

(来自用户评价)

标准库存型号

切削 (正角)

形状		型号	尺寸(mm) 内接圆径	厚度	孔径	刀尖角 R(rε)	后角	DLC涂层 PDL 010	PDL 025
小切深	锋利刀尖 镜面规格	CCGT 030101MP-CF 030102MP-CF	3.5	1.4	1.9	<0.1 <0.2	7°	● ●	● ●
		CCGT 040101MP-CF 040102MP-CF	4.3	1.8	2.3	<0.1 <0.2	7°	● ●	● ●
精加工	 锋利刀尖 镜面规格	CCGT 060201MFP-SK 060202MFP-SK 060204MFP-SK	6.35	2.38	2.8	<0.1 <0.2 <0.4	7°	● ● ●	● ● ●
		CCGT 09T301MFP-SK 09T302MFP-SK 09T304MFP-SK	9.525	3.97	4.4	<0.1 <0.2 <0.4	7°	● ● ●	● ● ●
精加工	锋利刀尖 镜面规格	CCGT 060201MP-CK 060202MP-CK	6.35	2.38	2.8	<0.1 <0.2	7°	● ●	● ●
		CCGT 09T301MP-CK 09T302MP-CK	9.525	3.97	4.4	<0.1 <0.2	7°	● ●	● ●
精加工~半精加工	锋利刀尖	CCGT 09T304AH 09T308AH	9.525	3.97	4.4	0.4 0.8	7°	● ●	● ●
精加工~半精加工	图片为右手方向 锋利刀尖	CCGT 09T302R/L-A3 09T304R/L-A3 09T308R/L-A3	9.525	3.97	4.4	0.2 0.4 0.8	7°	● ● ●	● ● ●
		CCGT 120402R/L-A3 120404R/L-A3 120408R/L-A3	12.7	4.76	5.5	0.2 0.4 0.8	7°		● ● ●
精加工	图片为左手方向  锋利刀尖	CCET 0301005ML-F 030101ML-F 030102ML-F 030104ML-F	3.5	1.4	1.9	<0.05 <0.1 <0.2 <0.4	7°	L L L	L L L L
		CCET 040101ML-F 040102ML-F 040104ML-F	4.3	1.8	2.3	<0.1 <0.2 <0.4	7°	L L L	L L L
低进给	图片为右手方向  锋利刀尖	CCET 0602005MFR/L-U 060201MFR/L-U 060202MFR/L-U	6.35	2.38	2.8	<0.05 <0.1 <0.2	7°	● ●	● ● ●
		CCET 09T3005MFR/L-U 09T301MFR/L-U 09T302MFR/L-U 09T304MFR/L-U	9.525	3.97	4.4	<0.05 <0.1 <0.2 <0.4	7°	● ● ●	● ● ●
小切深	 锋利刀尖 镜面规格	DCGT 070201MP-CF 070202MP-CF	6.35	2.38	2.8	<0.1 <0.2	7°	● ●	● ●
		DCGT 11T301MP-CF 11T302MP-CF	9.525	3.97	4.4	<0.1 <0.2	7°	● ●	● ●
精加工	 锋利刀尖 镜面规格	DCGT 070201MFP-SK 070202MFP-SK 070204MFP-SK	6.35	2.38	2.8	<0.1 <0.2 <0.4	7°	● ● ●	● ● ●
		DCGT 11T301MFP-SK 11T302MFP-SK 11T304MFP-SK	9.525	3.97	4.4	<0.1 <0.2 <0.4	7°	● ● ●	● ● ●

形状		型号	尺寸(mm) 内接圆径	厚度	孔径	刀尖角 R(rε)	后角	DLC涂层 PDL 010	PDL 025
精加工	 锋利刀尖 镜面规格	DCGT 070201MP-CK 070202MP-CK	6.35	2.38	2.8	<0.1 <0.2	7°	● ●	● ●
		DCGT 11T301MP-CK 11T302MP-CK	9.525	3.97	4.4	<0.1 <0.2	7°	● ●	● ●
精加工~半精加工	 锋利刀尖	DCGT 11T304AH 11T308AH	9.525	3.97	4.4	0.4 0.8	7°	● ●	● ●
精加工~半精加工	图片为右手方向  锋利刀尖	DCGT 11T302R/L-A3 11T304R/L-A3 11T308R/L-A3	9.525	3.97	4.4	0.2 0.4 0.8	7°	● ● ●	● ● ●
精加工	图片为右手方向  锋利刀尖	DCET 0702005MR-F 070201MR/L-F 070202MR/L-F 070204MR/L-F	6.35	2.38	2.8	<0.05 <0.1 <0.2 <0.4	7°	 ● ● ●	R ● ● ●
		DCET 11T3005MR-F 11T301MR/L-F 11T302MR/L-F 11T304MR/L-F	9.525	3.97	4.4	<0.05 <0.1 <0.2 <0.4	7°	R ● ● ●	R ● ● ●
低进给	图片为右手方向  锋利刀尖	DCET 0702005MFR-U 070201MFR/L-U 070202MFR/L-U	6.35	2.38	2.8	<0.05 <0.1 <0.2	7°	 ● ●	R ● ●
		DCET 11T3005MFR-U 11T301MFR/L-U 11T302MFR/L-U 11T304MFR-U	9.525	3.97	4.4	<0.05 <0.1 <0.2 <0.4	7°	 ● ● R	R ● ● R
精加工~半精加工	图片为左手方向 锋利刀尖	TCGT 110302R/L-A3 110304R/L-A3 110308R/L-A3	6.35	3.18	2.8	0.2 0.4 0.8	7°	● ● ●	● ● ●
小切深	 锋利刀尖 镜面规格	VPGT 110301MP-CF 110302MP-CF	6.35	3.18	2.8	<0.1 <0.2	11°	● ●	● ●
精加工	 锋利刀尖 镜面规格	VPGT 080201MP-CK 080202MP-CK	4.76	2.38	2.3	<0.1 <0.2	11°	● ●	● ●
		VPGT 110301MP-CK 110302MP-CK	6.35	3.18	2.8	<0.1 <0.2	11°	● ●	● ●
精加工~半精加工	 锋利刀尖	VCGT 160404AH	9.525	4.76	4.4	0.4	7°	●	●
精加工~半精加工	图片为右手方向  锋利刀尖	VCGT 160404R/L-A3 160408R/L-A3	9.525	4.76	4.4	0.4 0.8	7°	● ●	● ●

・刀尖R(rε)尺寸用不等号(例≤0.1)表示的刀片，表示刀尖R(rε)为负公差产品。

●：标准库存
R：仅右手方向(R)有库存
L：仅左手方向(L)有库存

标准库存型号

切削 (负角)

形状 带方向刀片显示为右手方向(R)		型号	尺寸(mm)				DLC涂层	
			内接圆径	厚度	孔径	刀尖角 R(rε)	PDL 010	PDL 025
精加工～半精加工	锋利刀尖	CNGG 120404R/L-A3 120408R/L-A3	12.70	4.76	5.16	0.4 0.8	● ●	● ●
半精加工～粗加工	锋利刀尖	CNGG 120404AH 120408AH	12.70	4.76	5.16	0.4 0.8	● ●	● ●
半精加工～粗加工		CNMG 120404AH 120408AH	12.70	4.76	5.16	0.4 0.8	● ●	● ●
精加工～半精加工	锋利刀尖	DNGG 150404R/L-A3 150408R/L-A3	12.70	4.76	5.16	0.4 0.8	● ●	● ●
半精加工～粗加工	锋利刀尖	DNGG 150404AH 150408AH	12.70	4.76	5.16	0.4 0.8	● ●	● ●

形状 带方向刀片显示为右手方向(R)		型号	尺寸(mm)				DLC涂层	
			内接圆径	厚度	孔径	刀尖角 R(rε)	PDL 010	PDL 025
半精加工～粗加工		DNMG 150404AH 150408AH	12.70	4.76	5.16	0.4 0.8	● ●	● ●
精加工～半精加工	锋利刀尖	TNGG 160404R/L-A3 160408R/L-A3	9.525	4.76	3.81	0.4 0.8	● ●	● ●
半精加工～粗加工	锋利刀尖	TNGG 160404AH 160408AH	9.525	4.76	3.81	0.4 0.8	● ●	● ●
半精加工～粗加工		TNMG 160404AH 160408AH	9.525	4.76	3.81	0.4 0.8	● ●	● ●
半精加工～粗加工	锋利刀尖	WNGG 080404AH 080408AH	12.70	4.76	5.16	0.4 0.8	● ●	● ●

●：标准库存

切断 TKF

形状 带方向刀片显示为右手方向(R)		型号	尺寸(mm)						角度	DLC涂层
			W	øD max	rε	T	H	ød	θ	PDL025
带右导程角		TKF12R/L 100-S-16DR 125-S-16DR 150-S-16DR 200-S-16DR	1.0 1.25 1.5 2.0	12	0.03	3	8.7	5	16°	● ● ● ●
		TKF12R/L 050-S 070-S 100-S 125-S 150-S 200-S	0.5 0.7 1.0 1.25 1.5 2.0	5 8 12 12 12 12	0.03	3	8.7	5	0°	● ● ● ● ● ●
带右导程角		TKF16R/L 150-S-16DR 200-S-16DR	1.5 2.0	16	0.05	4	9.5	5	16°	● ●
		TKF16R/L 150-S 200-S	1.5 2.0	16	0.05	4	9.5	5	0°	● ●

●：标准库存

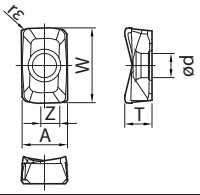
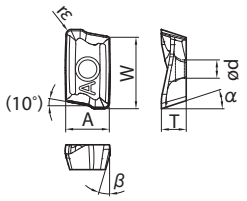
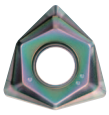
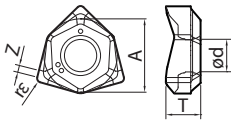
切断 GDG

形状		型号	尺寸(mm)					角度	DLC涂层
			刃宽(W)		rε	M	L	H	θ	PDL025
				公差						
低阻力 双刀尖规格		GDG 2020N-005PG	2.0	±0.02	0.05	1.7	20	4.3	0°	●
		2520N-005PG	2.5			2.1				●
		3020N-005PG	3.0			2.3				●
15°导程角 低阻力 双刀尖规格		GDG 2020R-005PG-15D	2.0	±0.02	0.05	1.7	20	4.3	15°	R
		2520R-005PG-15D	2.5			2.1				R
		3020R-005PG-15D	3.0			2.3				R

●：标准库存
R：仅右手方向(R)有库存

标准库存型号

铣削(MEW刀盘用)(MEC刀盘用)(MFWN刀盘用)

形状		型号	尺寸(mm)						角度		DLC涂层
			A	T	ød	W	Z	rε	α	β	PDL025
		LOGT 100408FR-AM	6.8	4.0	3.6	11.1	2.8	0.8	—	—	●
		LOGT 150508FR-AM	8.9	5.6	4.9	15.9	2.8	0.8	—	—	●
		BDGT 11T302FR-JA 11T304FR-JA 11T308FR-JA	6.7	3.8	2.8	11.0	—	0.2 0.4 0.8	18°	13°	● ● ●
		BDGT 170404FR-JA 170408FR-JA 170420FR-JA 170431FR-JA	9.6	4.9	4.4	17.0	—	0.4 0.8 2.0 3.1	18°	13°	● ● ● ●
		WNGT 080608FN-AM	14.02	6.65	6.2	—	1.5	0.8	—	—	●

●：标准库存

推荐切削条件表

车削	断屑槽	铝合金	切削速度 Vc (m/min)	送给 f (mm/rev)
负角	A3	Si 10 % 以下	400 – 500 – 800	0.1 – 0.3
	AH		200 – 300 – 600	0.1 – 0.35
正角	SK	Si 10 % 以下	100 – 150 – 300	0.03 – 0.12
	CK		100 – 150 – 300	0.03 – 0.12
	CF		100 – 150 – 300	0.02 – 0.15
	AH		100 – 200 – 300	0.05 – 0.25
	A3		100 – 200 – 300	0.05 – 0.2
	F	Si 10 % 以下 加工径ø10以上	100 – 250 – 500	0.03 – 0.2
		Si 10 % 以下 加工径ø10以下	100 – 200 – 300	0.03 – 0.2
	U	Si 10 % 以下 加工径ø10以上	100 – 250 – 500	0.03 – 0.2
		Si 10 % 以下 加工径ø10以下	100 – 200 – 300	0.03 – 0.2

切断	铝合金	切削速度 Vc (m/min)	送给 f (mm/rev)
TKF	Si 10 % 以下	200 – 500	0.01 – 0.03
GDG		200 – 500	0.01 – 0.05

铣削	铝合金	切削速度 Vc (m/min)	送给 fz (mm/t)
LOGT (MEW刀盘用)	Si 13 % 以下	200 – 900	0.05 – 0.3
	Si 13 % 以上	200 – 300	0.05 – 0.2
BDGT (MEC刀盘用)	Si 13 % 以下	200 – 900	0.05 – 0.3
	Si 13 % 以上	200 – 300	0.05 – 0.2
WNGT (MFWN刀盘用)	Si 13 % 以下	200 – 900	0.1 – 0.3
	Si 13 % 以上	200 – 300	0.1 – 0.2