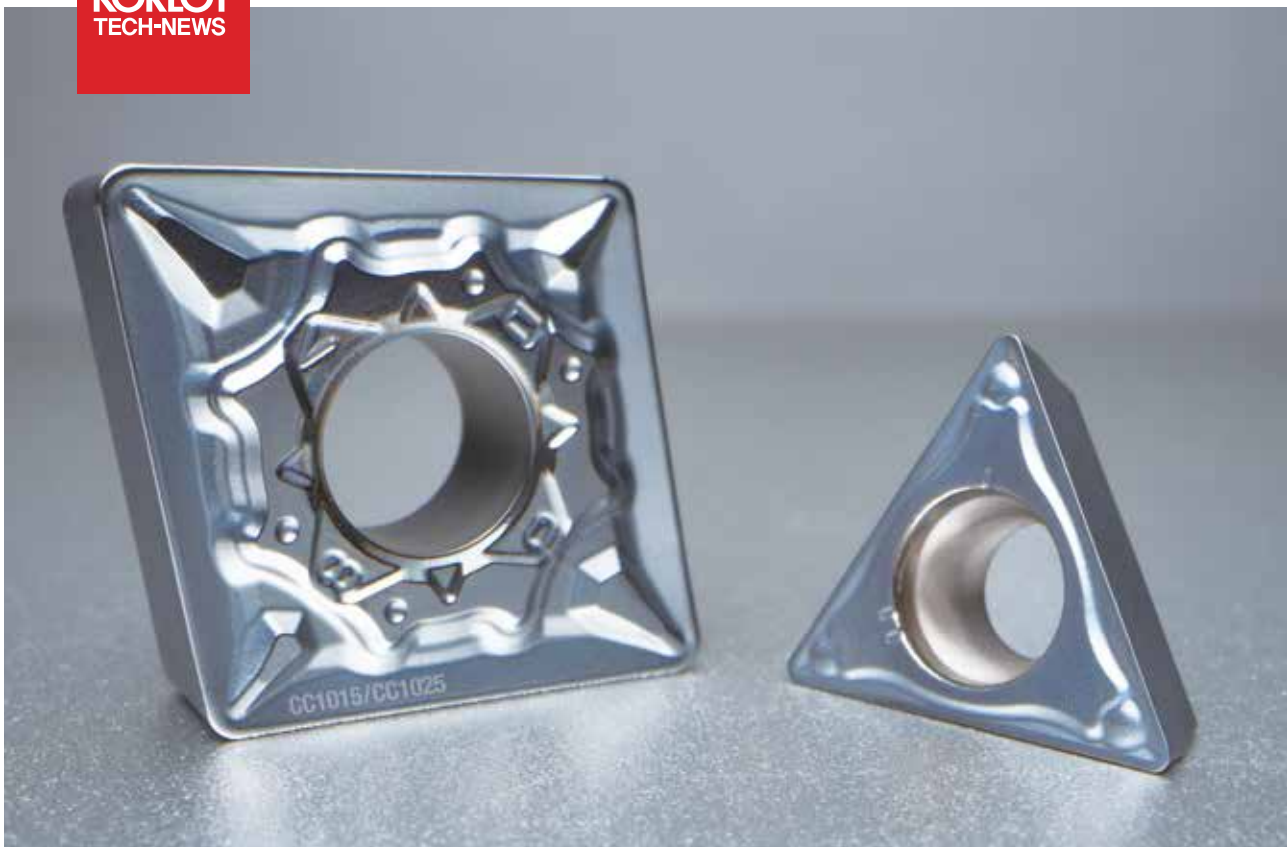


PVD coated Cermet turning grade for Steel Turning

CC1015/CC1025

KORLOY
TECH-NEWS



- Stable cutting performance and good surface finish due to applying the PVD Lubrix- Tech™ and Edge-Tech™
- PVD coated Cermet turning grade optimized for medium and finishing Steel parts which requires high quality surface roughness

PVD coated Cermet grade for Steel Turning

CC1015/CC1025

With its excellent surface roughness performance, Cermet is widely applied for medium cutting and finishing of various Steel parts in Automotive and Ship building industries and the tool life stability demand keeps increasing with the generalization of the unmanned line and automation of the facilities.

KORLOY launched new grades, **CC1015** and **CC1025** for various Steel (Carbon steel, Alloy steel, Sintered metal and so on) workpieces with the increased surface finish and cutting stability.

CC1015/CC1025 applied the exclusive Lubrix-Tech™ (high hardness lubrication PVD coating technology) and Edge-Tech™ (high lubrication cutting edge treatment technology) on the Cermet substrate with the high hardness surface and high toughness microstructure which functions inclination. It has excellent flank wear resistance and shows high quality surface roughness with its superior coating with welding resistance and chipping resistance especially when it does Steel Turning.

The **CC1015** and **CC1025** provide customers' higher productivity and cutting stability in finishing of Steel Turning.



High quality of surface finish

- Ensured high quality of surface finish and stable tool life due to applying exclusive Lubrix-Tech™ and Edge-Tech™.

Applicable for non-coated Cermet range

- Available for cutting range of non-coated Cermet due to keeping surface finish from beginning of cutting to end of cutting.

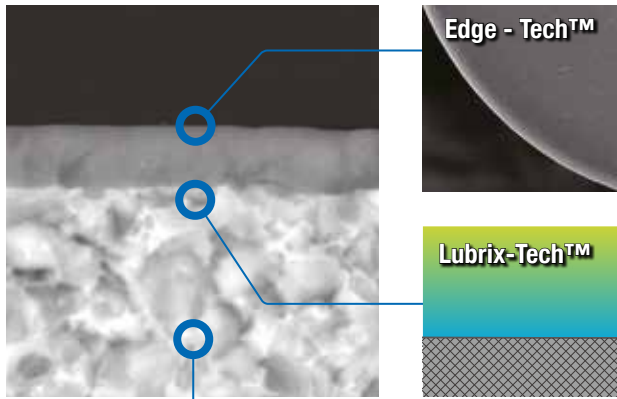
Optimal for finishing of various workpiece cutting

- Optimal for medium cutting and finishing of automobile and ship parts from its excellent surface finish and stable cutting.

Features

- Optimally designed PVD coated Cermet grade for turning of various medium and small parts
- Ensured stable tool life from applying Lubrix-Tech™ (high hardness and lubrication PVD coating technology) for increasing flank wear resistance on nose radius
- Smooth cutting surface from applying Edge-Tech™ (high lubrication cutting edge treatment technology) to prevent welding and chipping

Applying exclusive PVD Lubrix-Tech™ and Edge-Tech™ technology

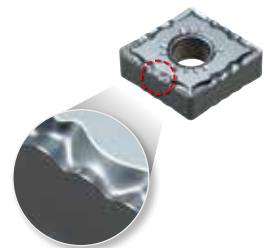


Edge - Tech™

- High lubrication cutting edge treatment technology
- Reducing welding, chipping and unexpected fracture and increasing tool life and stability

Lubrix-Tech™

- AlCrN series high hardness lubrication coating technology
- Coating layer's growth direction controlling technology

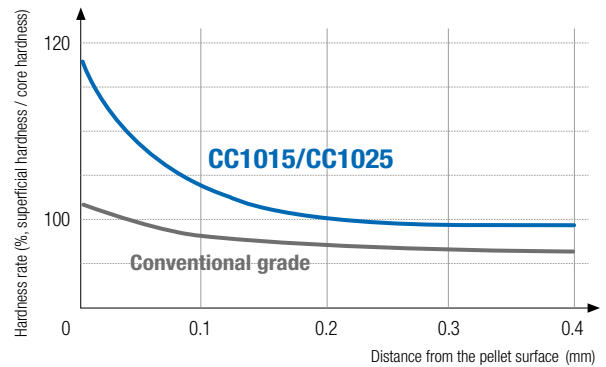


Inclination functional substrate

Hardness rate comparison chart

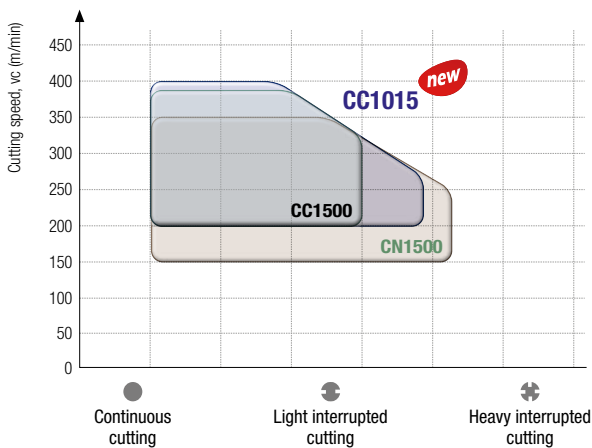


- Inclination functional layer creation with the surface and internal composition's microstructure control
- High chipping resistance and stable tool life

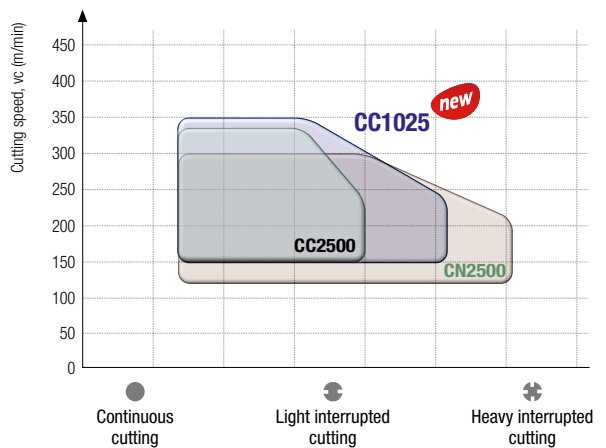


Application range

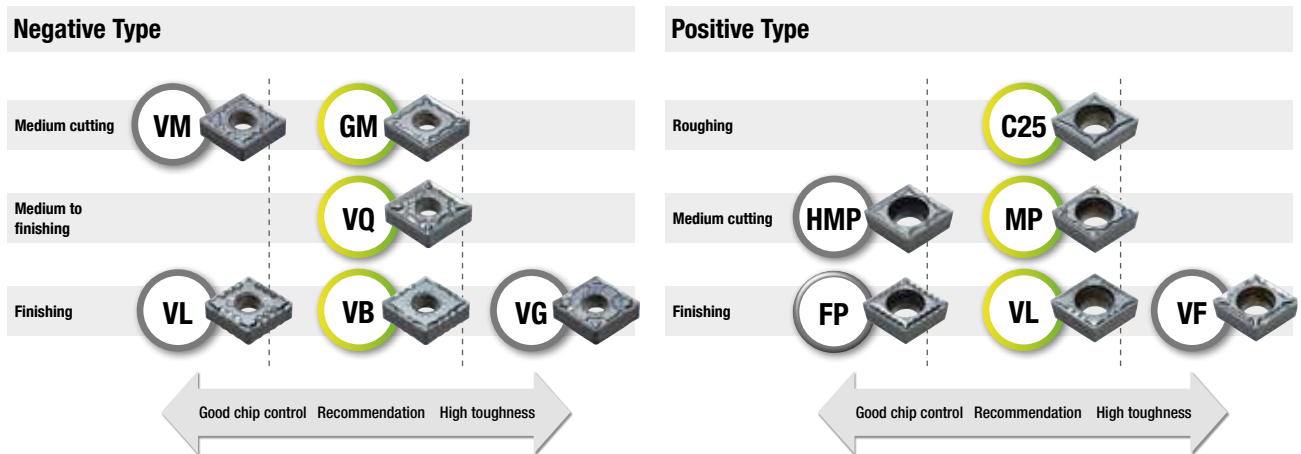
P Steel (P10-P20)



P Steel (P15-P25)



Chip breaker line-up



Recommended cutting conditions

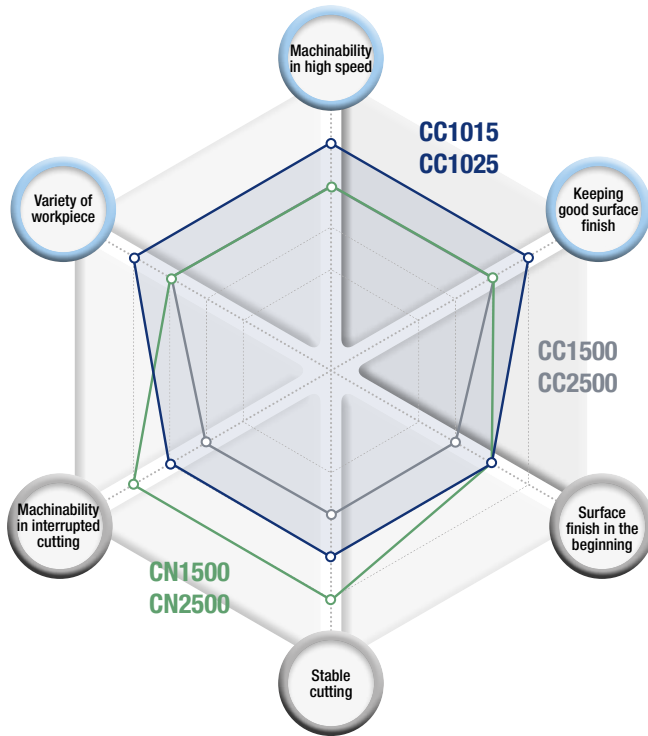
* Q und Wärmebehandelter Stahl

ISO	Workpiece			Specific cutting force (N/mm ²)	Brinell hardness (HB)	HRC	Recommended cutting condition		
	Workpiece material	ISO	AISI				vc (m/min)		fn (mm/rev)
							CC1015	CC1025	
P	Low carbon steel	C15	1015	1500	120-210	3-16	200	150	0.25
		C25	1025				350	270	0.15
		C35	1035				450	400	0.05
	High carbon steel	C45	1045	1700 1820*	140-250 200-290*	4-24 13-30*	200	150	0.25
		C53	1050				300	250	0.15
		C55	1055				400	350	0.05
	Alloy steel	20Cr4	5120	1700 2000*	170-270 220-360*	6-27 18-39*	180	120	0.25
		42CrMo4	4140				270	220	0.15
		21NiCrMo2	8615				350	300	0.05
	Bearing steel (Alloy tool steel)	(X100CrMoV5 1)	D2	1950 3100*	200-320 480-650*	13-34 49-60*	200	150	0.25
		X40CrMoV5-1	H13				250	200	0.15
		HS6-5-2	M2				300	250	0.05
	Sintered metal	-	-	-	-	HRB30 HRB83 HRB50	150	130	0.25
		-	-	-	-	HRB30 HRB83 HRB50	200	180	0.15
		-	-	-	-	HRB30 HRB83 HRB50	250	230	0.05

Application industries

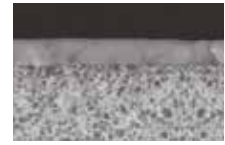


Cermet Turning grade selection guide



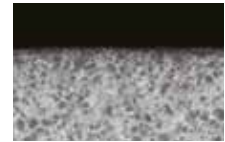
CC1015/CC1025 ^{new}

- Good wear resistance and high cutting performance in high speed cutting
- Keeping good surface finish



CN1500/CN2500

- High cutting performance in interrupted cutting
- Good surface finish in the beginning of cutting



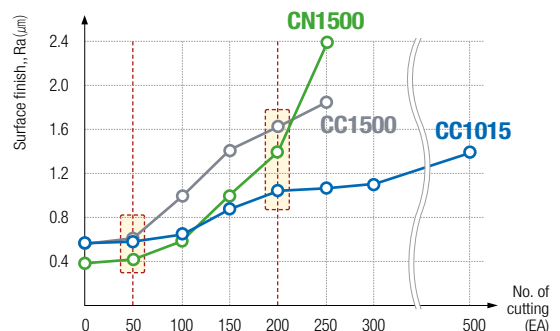
Typ	CC1015/CC1025 ^{new} Coated Cermet	CC1500/CC2500 Coated Cermet	CN1500/CN2500 Cermet
Machinability in high speed	★★★★	★★★☆☆	★★★
Keeping good surface finish	Beginning - in the middle	★★★★	★★★★
	In the middle - the latter	★★★★ VB less wear	★★★ VB more wear
Stable cutting	★★★	★★	★★★
Surface finish in the beginning	★★★	★★	★★★★
Machinability in interrupted cutting	★★★	★★	★★★★
Variety of workpiece	★★★★ Carbon steel, Alloy steel, Sintered metal	★★★ Carbon steel, Alloy steel	★★★ Carbon steel, Alloy steel

Performance evaluation

Surface finish of workpiece

Workpiece Carbon steel (C45)
Cutting conditions $vc = 200 \text{ m/min} \cdot fn = 0,2 \text{ mm/rev} \cdot ap = 0,5 \text{ mm} \cdot \text{wet}$
Tool **Insert** CNMG120408-VQ (CC1015) **Holder** PCLNR2525-M12

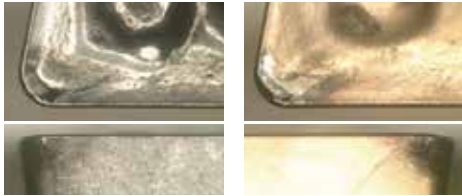
Type	CC1015	CC1500	CN1500
After cutting 50EA	 Ra : 0.6 μm	 Ra : 0.7 μm	 Ra : 0.4 μm
After cutting 200EA	 Ra : 1.0 μm	 Ra : 1.6 μm	 Ra : 1.4 μm



Performance evaluation

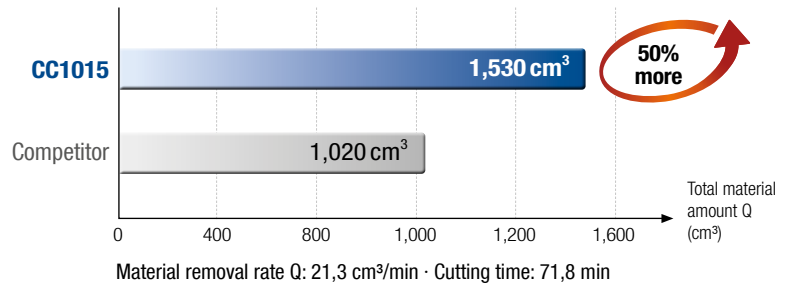
Wear resistance

Workpiece Carbon steel (C45)
Cutting conditions $vc = 200 \text{ m/min} \cdot fn = 0,12 \text{ mm/rev} \cdot ap = 0,4 \text{ mm} \cdot \text{wet}$
Tool **Insert** CCMT09T304-MP(CC1015) **Holder** SCLCR1616-H09



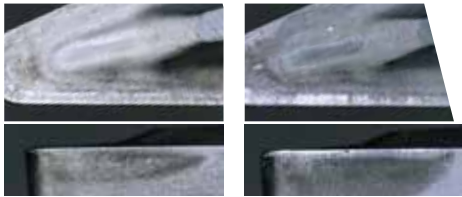
CC1015

Competitor



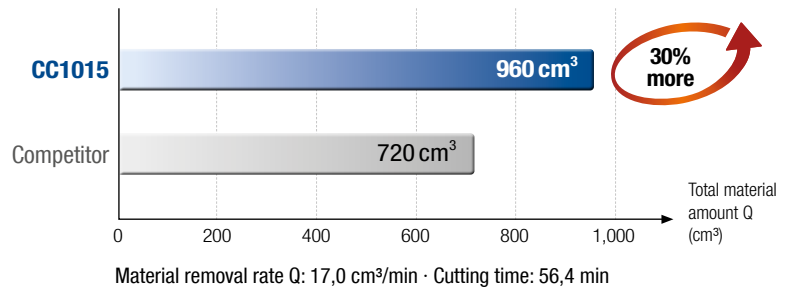
Wear resistance

Workpiece Alloy steel (SMF4040)
Cutting conditions $vc = 250 \text{ m/min} \cdot fn = 0,1 \text{ mm/rev} \cdot ap = 0,5 \text{ mm} \cdot \text{wet}$
Tool **Insert** VBMT160404-VL(CC1015) **Holder** SVJBL2020-K16



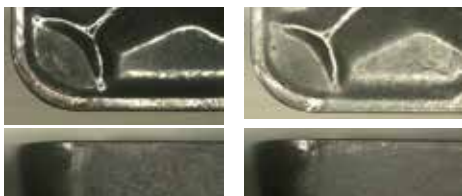
CC1015

Competitor



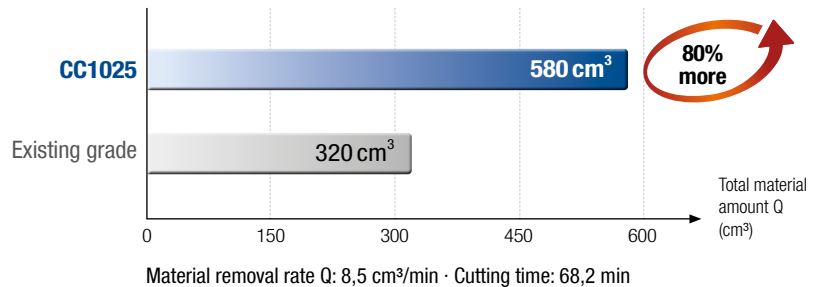
Chipping resistance

Workpiece Sintered metal (SMF4040)
Cutting conditions $vc = 160 \text{ m/min} \cdot fn = 0,12 \text{ mm/rev} \cdot ap = 0,2 \text{ mm} \cdot \text{wet}$
Tool **Insert** SCMT09T308-HMP (CC1025) **Holder** SSBRCR1616-H09



CC1025

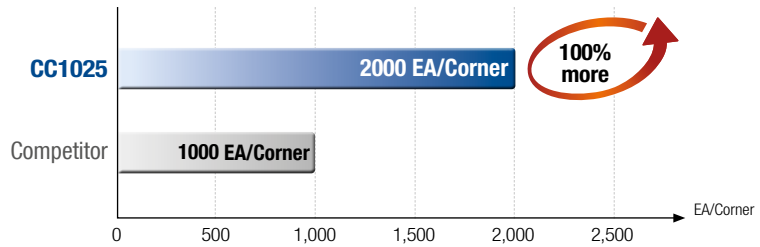
Competitor



Application examples

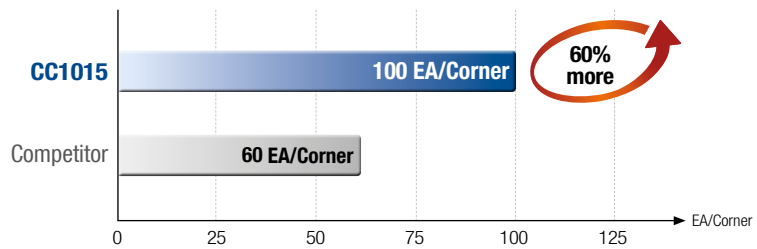
Carbon steel (C20)

Workpiece Pocket
Cutting conditions $vc = 240 \text{ m/min} \cdot fn = 0,18 \text{ mm/rev} \cdot ap = 0,5 \text{ mm} \cdot \text{wet}$
Tool **Insert** WNMG080408-VQ (CC1025) **Holder** MWLNR3232-P08



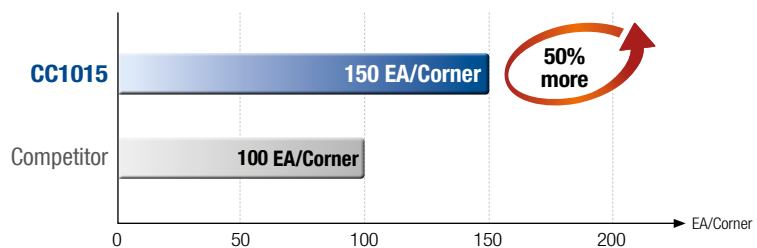
Alloy steel (42CrMo4)

Workpiece Valve
Cutting conditions $vc = 200 \text{ m/min} \cdot fn = 0,2 \text{ mm/rev} \cdot ap = 1,0 \text{ mm} \cdot \text{wet}$
Tool **Insert** CCMT09T304-VF (CC1015) **Holder** SCLCR1616-H09


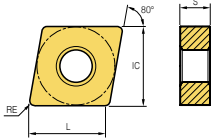

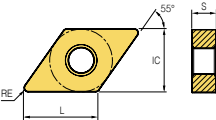

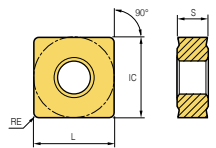

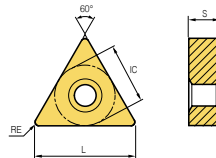

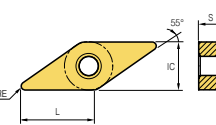
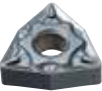
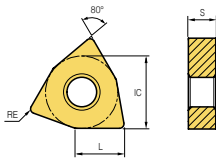


Sintered metal (SMF 4040)

Workpiece Sprocket
Cutting conditions $vc = 200 \text{ m/min} \cdot fn = 0,12 \text{ mm/rev} \cdot ap = 0,4 \text{ mm} \cdot \text{wet}$
Tool **Insert** TPMT110304-MP (CC1015) **Holder** S12M-STFPR-11




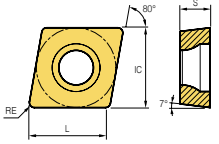

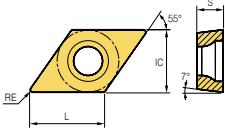
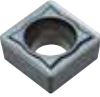
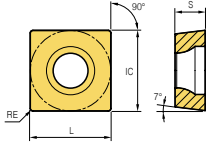

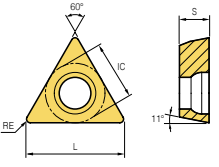

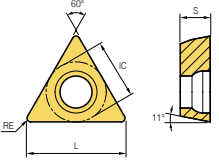
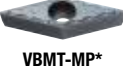
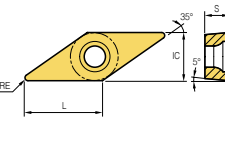
Stock items (Negative)

Shape	Designation		Coated		Dimension (mm)				Cutting condition		Geometry
			CC1015	CC1025	L	IC	S	RE	fn (mm/rev)	ap (mm)	
 CNMG-VB*	CNMG	120404-VB	●	●		12.7	4.76	0.397	0.12 (0.20-0.05)	1.00 (0.50-1.50)	
		120408-VB	●	●		12.7	4.76	0.397	0.15 (0.25-0.10)	1.20 (0.50-2.00)	
		120404-VQ		●		12.7	4.76	0.397	0.12 (0.20-0.05)	1.20 (0.50-2.00)	
		120408-VQ	●	●		12.7	4.76	0.397	0.15 (0.25-0.10)	1.50 (0.50-2.50)	
 DNMG-VB*	DNMG	150404-VB	●	●		12.7	4.76	0.397	0.15 (0.25-0.05)	1.00 (0.30-1.50)	
		150408-VB	●			12.7	4.76	0.794	0.20 (0.30-0.10)	1.20 (0.50-2.00)	
		150604-VB	●			12.7	6.35	0.397	0.15 (0.25-0.05)	1.00 (0.30-1.50)	
		150608-VB		●		12.7	6.35	0.794	0.20 (0.30-0.10)	1.20 (0.50-2.00)	
		150404-VQ	●			12.7	4.76	0.397	0.15 (0.25-0.05)	1.20 (0.30-2.00)	
		150604-VQ		●		12.7	6.35	0.397	0.20 (0.30-0.10)	1.20 (0.50-2.00)	
		150608-VQ	●			12.7	6.35	0.794	0.20 (0.30-0.10)	1.50 (0.50-2.50)	
 SNMG		120404-VB		●	12.7	12.7	4.76	0.397	0.15 (0.25-0.05)	1.50 (0.50-2.50)	
 TNMG-VB*	TNMG	160404-VB	●	●	16.498	9.525	4.76	0.397	0.15 (0.25-0.05)	1.00 (0.50-1.50)	
		160408-VB	●	●	16.498	9.525	4.76	0.794	0.17 (0.30-0.05)	1.00 (0.50-1.50)	
		160404-VQ	●	●	16.498	9.525	4.76	0.397	0.15 (0.25-0.05)	1.20 (0.50-2.00)	
		160408-VQ	●	●	16.498	9.525	4.76	0.794	0.17 (0.30-0.05)	1.50 (0.50-2.50)	
 VNMG-VB*	VNMG	160404-VC	●		16.606	9.525	4.76	0.397	0.12 (0.20-0.05)	1.20 (0.50-2.00)	
		160404-VB	●	●	16.606	9.525	4.76	0.397	0.12 (0.20-0.05)	1.50 (0.50-2.50)	
		160408-VB	●		16.606	9.525	4.76	0.794	0.17 (0.25-0.10)	1.50 (0.50-2.50)	
		160404-VQ	●	●	16.606	9.525	4.76	0.397	0.20 (0.30-0.10)	1.70 (0.50-3.00)	
 WNMG		080408-VQ	●		8.687	12.7	4.76	0.794	0.17 (0.30-0.05)	1.50 (0.50-2.50)	

*: Standard insert shape

▲ : Stock item Europe ● : Stock item Korea ○ : Production on demand

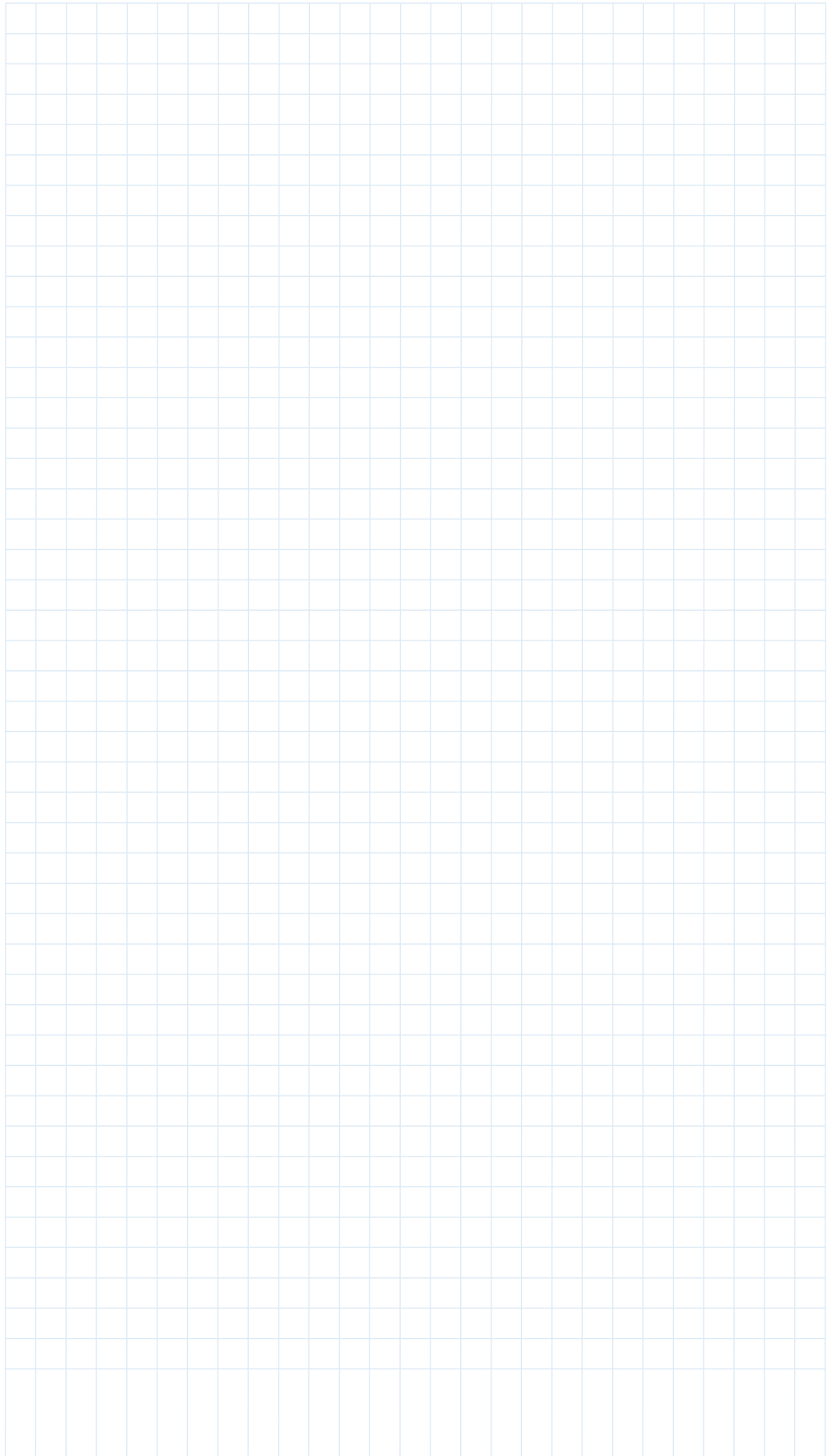
Stock items (Positive)

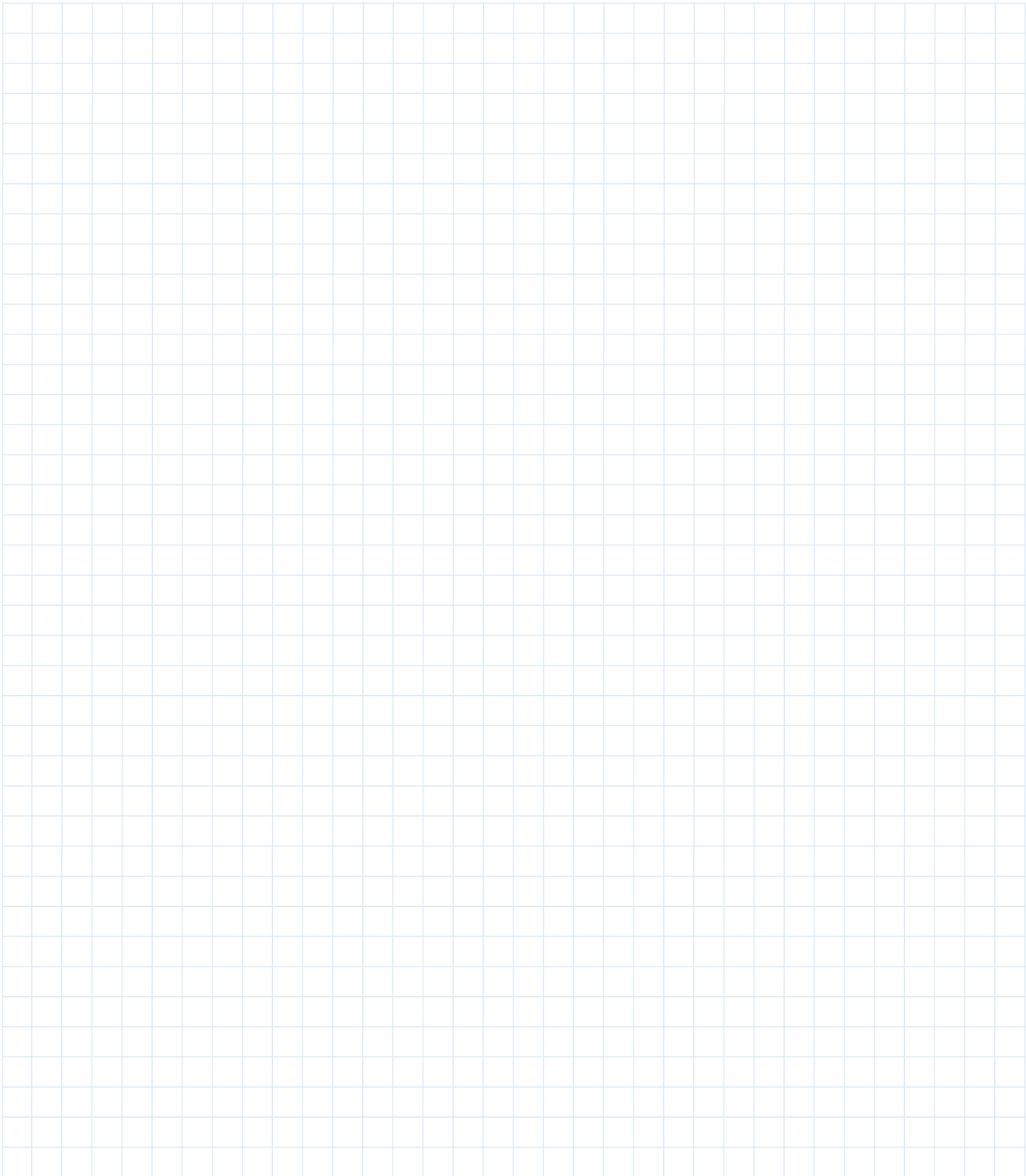
Shape	Designation		Coated		Dimension (mm)				Cutting condition		Geometry
			CC1015	CC1025	L	IC	S	RE	fn (mm/rev)	ap (mm)	
 CCMT-MP*	CCMT	060204-FP	●		6.448	6.35	2.38	0.397	0.05 (0.10~0.01)	0.06 (0.05~0.08)	
		060204-VL	●		6.448	6.35	2.38	0.397	0.05 (0.10~0.01)	0.50 (0.10~1.00)	
		09T304-VL	●		9.6719	9.525	3.97	0.397	0.12 (0.20~0.05)	1.20 (0.50~2.00)	
		09T308-VL	●		9.6719	9.525	3.97	0.794	0.16 (0.25~0.07)	1.20 (0.50~2.00)	
		060204-MP	●	●	6.448	6.35	2.38	0.397	0.10 (0.15~0.05)	0.50 (0.10~1.00)	
		09T304-MP		●	9.6719	9.525	3.97	0.397	0.16 (0.25~0.08)	1.50 (0.50~2.50)	
		09T308-MP	●		9.6719	9.525	3.97	0.794	0.20 (0.30~0.10)	1.50 (0.50~2.50)	
		060204-C25	●	●	6.448	6.35	2.38	0.397	0.10 (0.15~0.05)	0.90 (0.60~1.50)	
 DCMT-MP*	DCMT	070204-FP	●		7.7519	6.35	2.38	0.397	0.05 (0.10~0.01)	0.40 (0.10~0.90)	
		11T304-FP	●		11.6279	9.525	3.97	0.397	0.05 (0.10~0.01)	0.50 (0.10~1.00)	
		070204-VL	●	●	7.7519	6.35	2.38	0.397	0.12 (0.20~0.05)	0.50 (0.20~1.00)	
		11T304-VL	●	●	11.6279	9.525	3.97	0.397	0.14 (0.20~0.08)	0.70 (0.30~1.20)	
		11T308-VL	●	●	11.6279	9.525	3.97	0.794	0.16 (0.22~0.10)	0.90 (0.30~1.50)	
		070202-MP		●	7.7519	6.35	2.38	0.198	0.10 (0.18~0.03)	0.90 (0.30~1.50)	
		070204-MP		●	7.7519	6.35	2.38	0.397	0.12 (0.20~0.05)	0.90 (0.30~1.50)	
		070208-MP	●	●	7.7519	6.35	2.38	0.794	0.15 (0.22~0.07)	1.20 (0.50~2.00)	
		11T302-MP	●	●	11.6279	9.525	3.97	0.198	0.10 (0.15~0.05)	1.20 (0.50~2.00)	
		11T304-MP	●	●	11.6279	9.525	3.97	0.397	0.12 (0.17~0.08)	1.20 (0.50~2.00)	
		11T308-MP		●	11.6279	9.525	3.97	0.794	0.15 (0.20~0.10)	1.20 (0.50~2.00)	
		070204-C25		●	7.7519	6.35	2.38	0.397	0.12 (0.20~0.05)	1.00 (0.50~1.50)	
		11T304-C25	●		11.6279	9.525	3.97	0.397	0.15 (0.22~0.08)	1.50 (0.50~2.50)	
		11T308-C25	●		11.6279	9.525	3.97	0.794	0.17 (0.24~0.10)	1.50 (0.50~2.50)	
 SCMT	SCMT	09T308-C25		●	9.525	9.525	3.97	0.794	0.12 (0.20~0.05)	1.10 (0.30~2.00)	
 TCMT-MP*	TCMT	16T304-VL	●		16.498	9.525	3.97	0.397	0.15 (0.20~0.08)	1.10 (0.30~2.00)	
		16T308-MP	●		16.498	9.525	3.97	0.794	0.17 (0.25~0.10)	1.50 (0.50~2.50)	
		090204-C25	●	●	9.63	5.56	2.38	0.397	0.12 (0.18~0.06)	1.50 (0.40~2.50)	
		110204-C25	●	●	10.999	6.35	2.38	0.397	0.15 (0.20~0.10)	1.70 (1.00~2.50)	
		110208-C25		●	10.999	6.35	2.38	0.794	0.18 (0.25~0.12)	1.70 (1.00~2.50)	
		16T308-C25		●	16.498	9.525	3.97	0.794	0.17 (0.25~0.10)	2.00 (1.00~3.00)	
 TPMT-MP*	TPMT	110304-VL	●	●	10.999	6.35	3.18	0.397	0.12 (0.20~0.05)	0.50 (0.10~1.00)	
		110304-MP	●		10.999	6.35	3.18	0.397	0.15 (0.20~0.08)	0.70 (0.10~1.50)	
 VBMT-MP*	VBMT	160404-FP		●	16.606	9.525	4.76	0.397	0.05 (0.10~0.01)	0.40 (0.10~0.80)	
		160404-VL	●	●	16.606	9.525	4.76	0.397	0.07 (0.10~0.05)	0.50 (0.10~1.00)	
		160408-VL	●		16.606	9.525	4.76	0.794	0.10 (0.13~0.08)	0.70 (0.30~1.20)	
		160404-MP	●	●	16.606	9.525	4.76	0.397	0.10 (0.15~0.05)	0.80 (0.30~1.50)	
		160408-MP	●	●	16.606	9.525	4.76	0.794	0.13 (0.18~0.08)	1.00 (0.50~1.50)	

*: Standard insert shape

▲: Stock item Europe ●: Stock item Korea ○: Production on demand

Notes





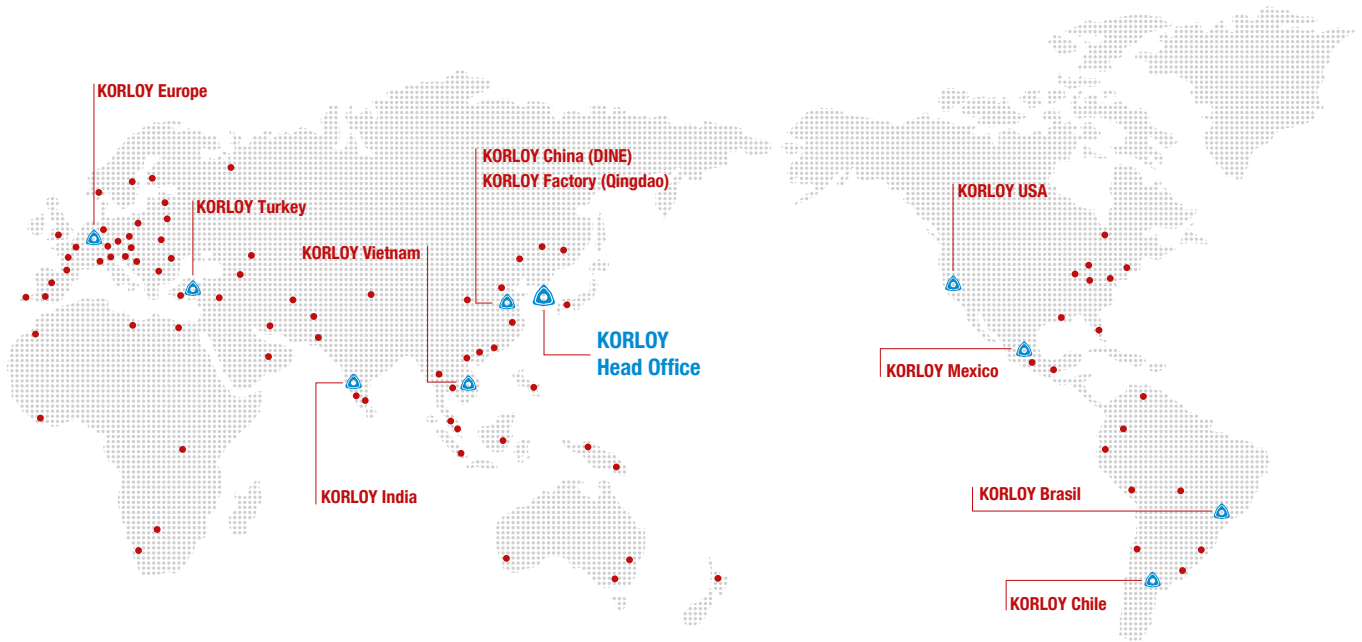
⚠ For the safe metalcutting

- Use safety supplies such as protective gloves to prevent possible injury while touching the edge of tools.
- Use safety glasses or safety cover to hedge possible dangers. Inappropriate usage or excessive cutting condition may lead tool's breakage or even the fragment's scattering.
- Clamp the workpiece tightly enough to prevent its movement while its machining.

Properly manage the tool change phase because the inordinately used tool can be easily broken under the excessive cutting load or severe wear, and it may threat the operator's safety.

- Use safety cover because chips evacuated during cutting are hot and sharp and may cause burns and cuts. To remove chips safely, stop machining, put on protective gloves, and use a hook or other tools.

- Prepare for fire prevention measures as the use of the non-water soluble cutting oil may cause fire.
- Use safety cover and other safety supplies because the spare parts or the inserts can be pulled out due to centrifugal force while high speed machining.



KORLOY

Head Office

Holystar B/D, 326, Seocho-daero, Seocho-gu, Seoul, 06633, Korea,
Web: www.korloy.com

Cheongju Factory

55, Sandan-ro, Heungdeok-gu, Cheongju-si,
Chungcheongbuk-do, 28589, Korea

Jincheon Factory

54, Gwanghyewonsandan 2-gil, Gwanghyewon-myeon,
Jincheon-gun, Chungcheongbuk-do, 27807, Korea

R & D Institute Seoul

Holystar B/D, 326, Seocho-daero, Seocho-gu, Seoul, 06633, Korea

R & D Institute Cheongju

55, Sandan-ro, Heungdeok-gu, Cheongju-si,
Chungcheongbuk-do, 28589, Korea

Gurgaon Factory

Plot No.415, Sector 8, IMT Manesar, Gurgaon 122051, Haryana, India

KORLOY EUROPE

Gablonz Str. 25-27 · D-61440 Oberursel Germany · Phone +49-6171-27783-0 · Fax +49-6171-27783-59 · Mail: info@korloyeurope.com · Web: www.korloyeurope.eu

KORLOY AMERICA

620, Maple Avenue, Torrance, CA 90503, USA

KORLOY BRASIL

Av. Aruana 280, conj.12, WLC, Alphaville, Barueri, CEP06460-010, SP, Brasilien

KORLOY CHILE

Av. Providencia 1650, Office 1009, 7500027 Providencia-Santiago, Chile

KORLOY INDIA

Ground Floor, Property No. 217, Udyog Vihar Phase 4, Gurgaon 122016, Haryana, India

KORLOY TURKEY

Serifali Mahallesi, Burhan Sokak NO: 34 Dudullu OSB/Umraniye/Istanbul, 34775, Turkey

KORLOY VIETNAM

No. 133 Le Loi street, Hoa Phu ward, Thu Dau Mot city, Binh Duong proviende, Vietnam

KORLOY MEXICO

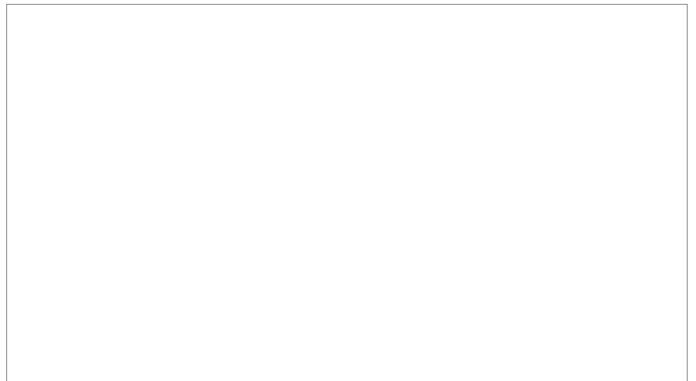
Calle R. M. Clemencia Borja Taboada 522, Jurica Acueducto, 76230 Juriquilla, Qro. Mexico

KTS - Korloy Tooling Solution



Get our FREE App

Just download, install and use.



20230630

TN108-EN-02