COMPANY PROFILE

JAPAN COATING CENTER CO., LTD

ABOUT US

JCC is one of Japan's leading providers of PVD coating services. We have our headquarters in Zama City, Kanagawa Prefecture, Japan, and has 7 other locations across the country. We make efforts to invent and improve their coating technology continuously in order to satisfy customer's various needs.

OUR TECHNOLOGY

Jcoat PVD

Our cathodic arc and hollow cathode ion plating equipment are able to treat the substrate at wide temperature range around 200℃ to 500℃, which is the most suitable temperature for coating and is able to minimize the distortion of shape or physical properties of the substrate thus able to meet a wide range of customer needs.

Jcoat DLC (Slick series)

Slick is a specialized DLC coating by means of ionization deposition method process developed using plasma process in vacuum environment. DLC coatings combine the hardness of diamond with the smoothness of a pen core. Our DLC-Slick series is processed using the optimal method tailored to the product shape and quantity.

ELIP (Electron Beam + Ion Press)

ELIP is a process where the raw material is heated to vaporize it and deposited onto a substrate to form a film. Simultaneously, plasma generated by irradiation from an Ion Source (IS) is used to compress the evaporated material, which results in dense and highly adherent films. This method allows for the coating of insulating materials and create layered films using several types of coatings.

Jnite (Plasma nitriding)

J nite is a process which starts by generating radicals which assists the nitriding reaction and also a low ion density plasma which contains extremely low content of nitrogen ions. The generation of compound layer and deterioration of surface roughness can be controlled by using this plasma generated.

Jcoat＋α

Jcoat+α is the excellent process combining ion plating process with Nitriding process, Shot peening process and so on in order to improve the function and compensate the weak point of traditional processes using high temperature such as CVD process.

APPLICATIONS

CUTTING TOOLS

FORMING/ MOLDING TOOLS

SEMICONDUCTOR

MACHINE COMPONENTS

+81-046-266-5800

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COATING PORTFOLIO

Coating	Color	Hardness*3	Friction coefficient*1	Thickness*2	Wear resistance	Corrosion resistance	Heat proof	Seize resistance
TiN		2000~2500	0.35~0.45	1.0~4.0	○	○	○	○
TiCN		3000~3500	0.30~0.40	1.0~4.0	◎	△	△	○
TiAlN		2300~2800	0.35~0.45	1.0~4.0	○	○	◎	○
Prime-T		3000~3500	0.35~0.45	1.0~4.0	◎	○	◎	◎
Prime-C		2300~2800	0.25~0.30	1.0~4.0	◎	◎	◎	◎
Hexal		2400~2900	0.45~0.50	1.0~4.0	○	○	◎	○
Mercury-W		3000~3500	0.35~0.45	1.0~4.0	◎	◎	◎	◎
Mercury		3000~3500	0.35~0.45	1.0~4.0	◎	◎	◎	◎
Jupiter		2500~3000	0.45~0.55	1.0~4.0	◎	◎	◎	◎
Zenith		3000~3500	0.35~0.45	1.0~2.0	◎	○	◎	◎
CrN		2000~2200	0.25~0.30	1.0~10.0	○	◎	◎	◎
Venus		3000~3500	0.35~0.45	1.0~4.0	◎	◎	◎	◎
Deluxe Venus		3000~3500	0.35~0.45	5.0~10.0	◎	◎	◎	◎
Lunass		2000~2400	0.25~0.45	1.0~10.0	○	◎	◎	◎
Forgis		2000~2500	0.45~0.55	1.0~10.0	○	◎	△	◎
ACT		2000~2500	0.35~0.45	1.0~4.0	○	◎	○	○
ACC		2000~2200	0.25~0.30	1.0~10.0	◎	◎	◎	◎
ZrN		2000~2200	0.35~0.45	1.0~4.0	○	○	△	△

*1 Dry Ball-on-Disk Test: SUJ-2 Load 5N *2 Standard Specification: 3±1μm, with thin film and thick film options available depending on the product. *3 Micro-Vickers Hardness Measurement: Load 25g

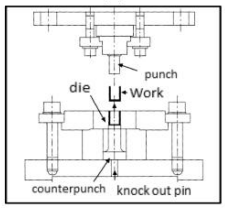
COATING PORTFOLIO (DLC)

Coating	Color	Hardness*4	Sheet resistance(Ω)	Temperrature (℃)	Friction coefficient*1	Thickness(μm)*2	Wear resistance	Heat proof*3	Seize resistance	Corrosion resistance
Neo Slick		1200~2800	10^6-10^9	<150	0.15~0.20	1.0~3.0	◎	×	◎	◎
Neo Slick C		1200~2200	10^3-10^6	<150	0.05~0.20	1.0~3.0	◎	×	◎	◎
THOR Slick		1000~2800	10^6-10^8	<150	0.15~0.20	1.0~3.0	◎	×	◎	◎
Slick nano		1000~3000	-	<100	0.10~0.20*3	0.05	◎	×	◎	◎
WINKOTE		1000~1500	10^5-10^{10}	<200	0.10~0.20	1.0~3.0 (10.0 special spec)	◎	×	◎	◎
TETRA Slick		4000~6000	10^5-10^6	<120	0.15~0.20	0.5~1.5	◎	△	◎	◎

*1 The color tone may vary depending on the film thickness. *2 Dry Ball-on-Disk Test: SUJ2, Load 5.1×10-1 kgf *3 Dry Ball-on-Disk Test: Al2O3, Load 1×10-1 kgf

PRESS TEST EVALUATION(VENUS COAT)

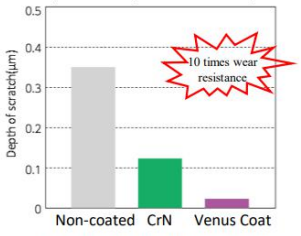
Illustration of equipment



Test condition

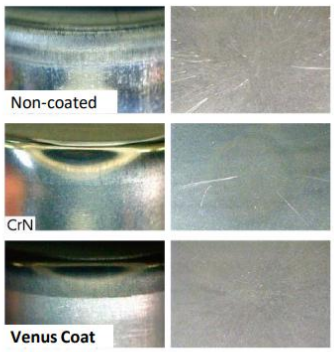
160t Knuckle joint press(KISTEC)
Punch material：SKH51+surface treatment
Work material：SS400(bonderized)

Comparison of depth of scratch after press



Object with Venus coat shows **10 times wear resistance** compared to non-coated object, and 3 times wear resistance compared to CrN coated object.

Note: Venus coat has high hardness of 3,000 HV, therefore applications which are applied with high pressure, such as press dies, duplex treatment is recommended.



The condition of the shoulder radius of the punch after 150 shots of cold forging and the condition of the surface after coating is observed.

Venus Coating Overseas

Our key product **"VENUS"** which has a strong track record in automotive industry is available overseas since 2022. Kindly contact us for more details.

Our coating technology is environmentally friendly which reduces environmental impact by improving the lifespan and performance of products.

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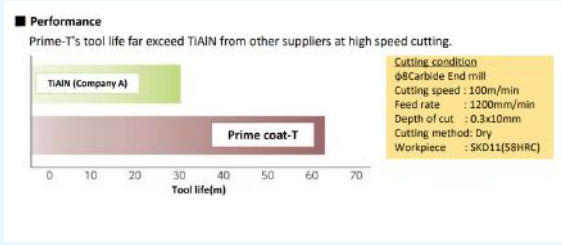
JCC Coating Performance (Selected)

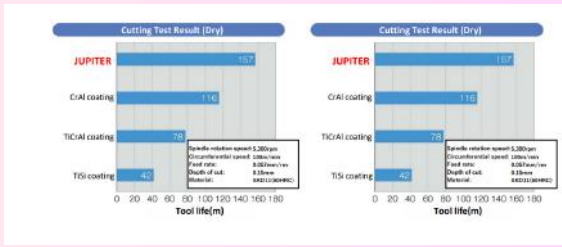
Prime-T

- High speed machining above 60 HRC
- Excellent in dry machining (Heat resistance above 1,100℃)
- Superior heatproof and cutting performance under high temperature



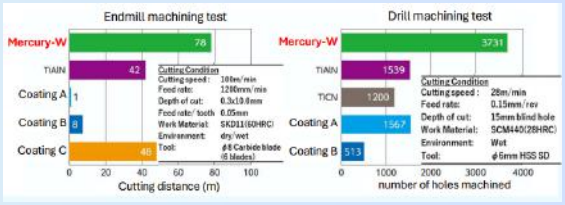
Jupiter

- Suitable for wide range of working materials and hardness
- Suitable for both dry and wet machining
- Improve the toughness of the cutting edge thus able to prevent chipping



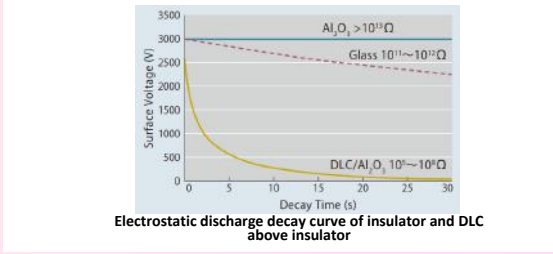
Mercury W

- Suitable for wide range of working materials(20~60HRC)
- Demonstrate superior cutting performance under high speed machining
- Excellent lubricity and chip disposal



THOR Slick

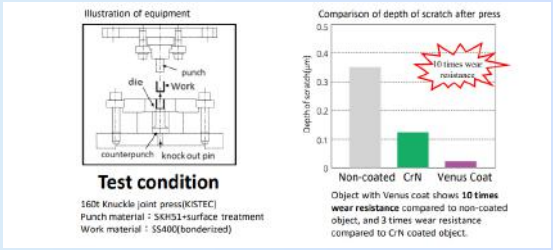
- Low deposition temperature providing excellent film adhesion and low dust generation
- Prevention of defection due to dust adhesion caused by static electricity
- Able to tackle a wide range of problems with diversification of ESD protection characteristics



Electrostatic discharge decay curve of insulator and DLC above insulator

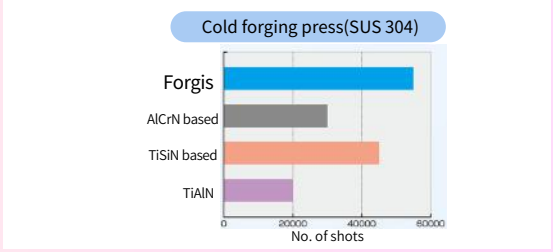
Venus

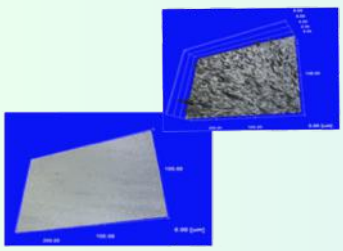
- Improve film's lifespan in high temperature region(heat resistance above 1,100℃)
- Improve wear resistance with film hardness of 3,000Hv
- Suitable for forming/molding applications that require high hardness



Forgis

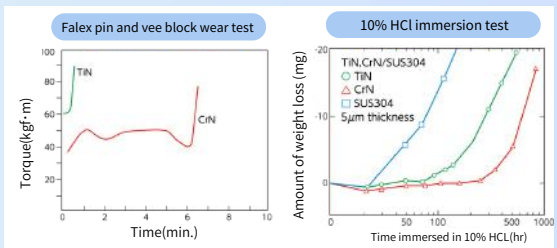
- Coating for small-sized objects and medium-scaled production
- Suitable for applications(forming/molding and machine components) that require smoothness
- Superior galling resistance





Lunass

- CrN for small-sized objects and medium-scaled production
- Smooth and able to maintain specularity of base material.
- Anti-scratch hard-type coating
- Enhance sliding properties and prevent galling



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