

SEAVAC

January 1st, 2025



SEAVAC

Name SEAVAC (USA) L.L.C.

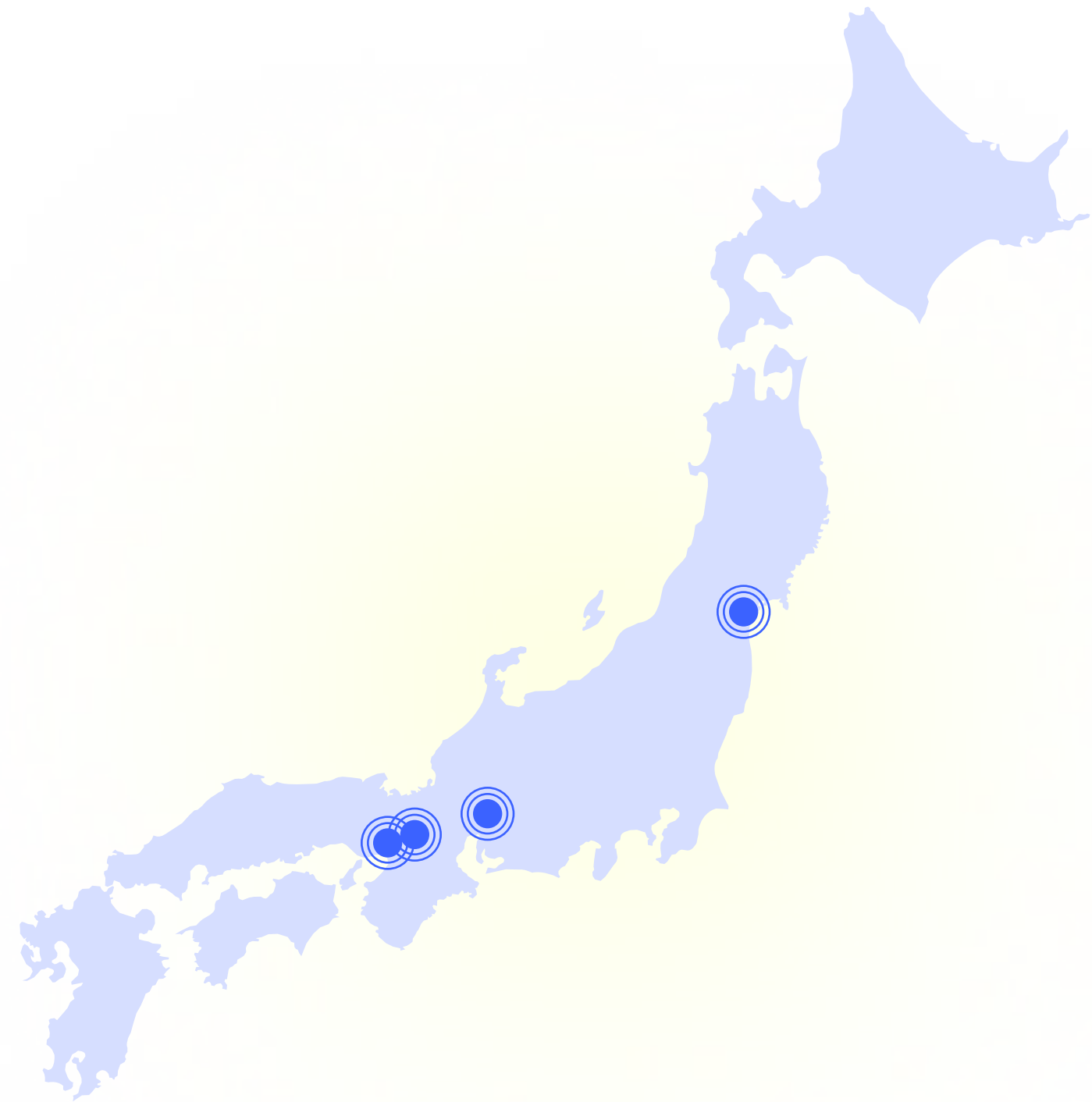
Year 2005

Parent Company

Name SEAVAC, Inc.

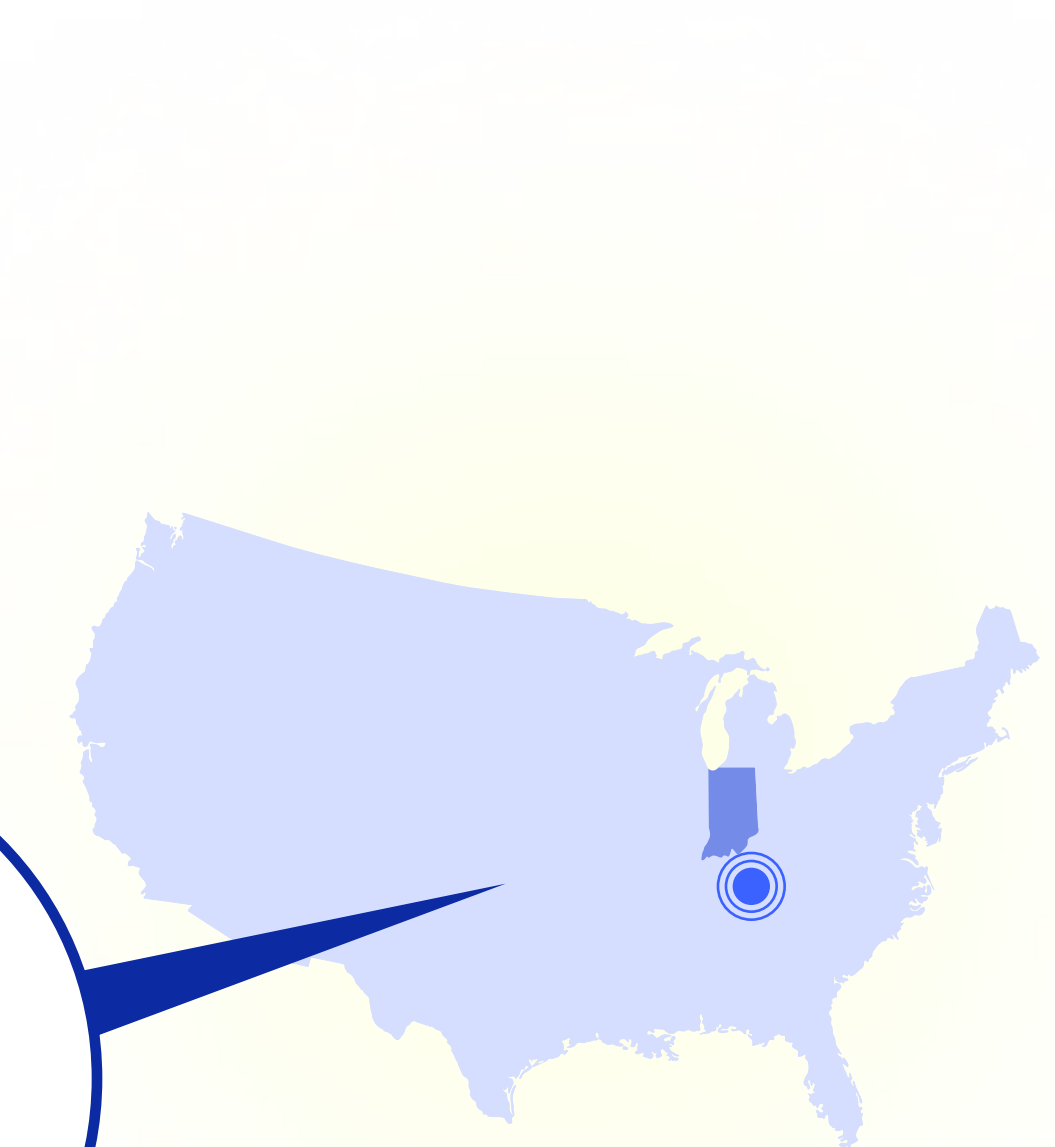
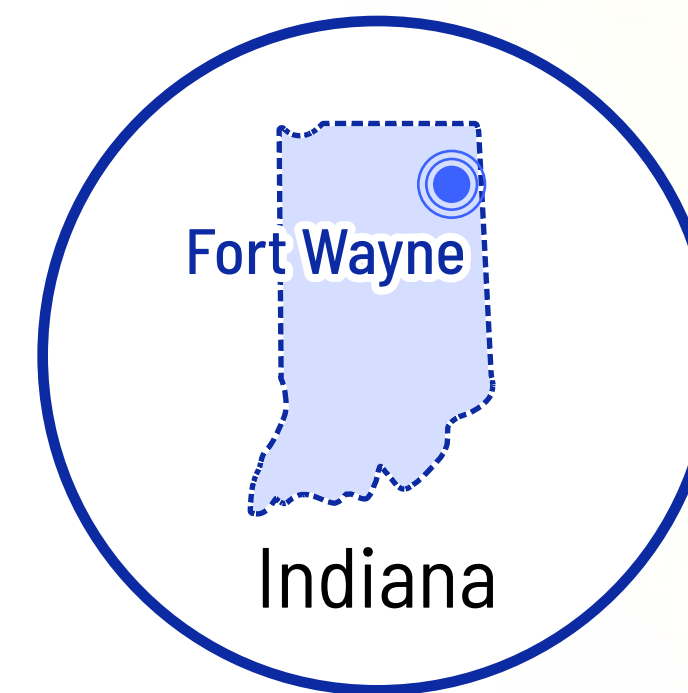
Year 1949

SEAVAC
Factories



HQ	Amagasaki, Hyogo
Kyoto	Kumiyama, Kyoto
Komaki	Komaki, Aichi
Sendai	Ohiramura, Miyagi

Fort Wayne, IN (Factory)
Bowling Green, KY (Sales Office)



Main Products



Cutting Tools : TiN / TiAlN / TH



Die & Die Parts : ZERO-I
TiAlN / S-PVD (TiN)



Maximum area and Weight

PAIC600	Φ600 mm x H 550 mm	400 kgs
	Φ23.6 "x H 21.6 "	881 lbs

- ※This will be varied depend on the items in the chamber
- ※Can be used for WC/SUS/High speed steel/Die steel

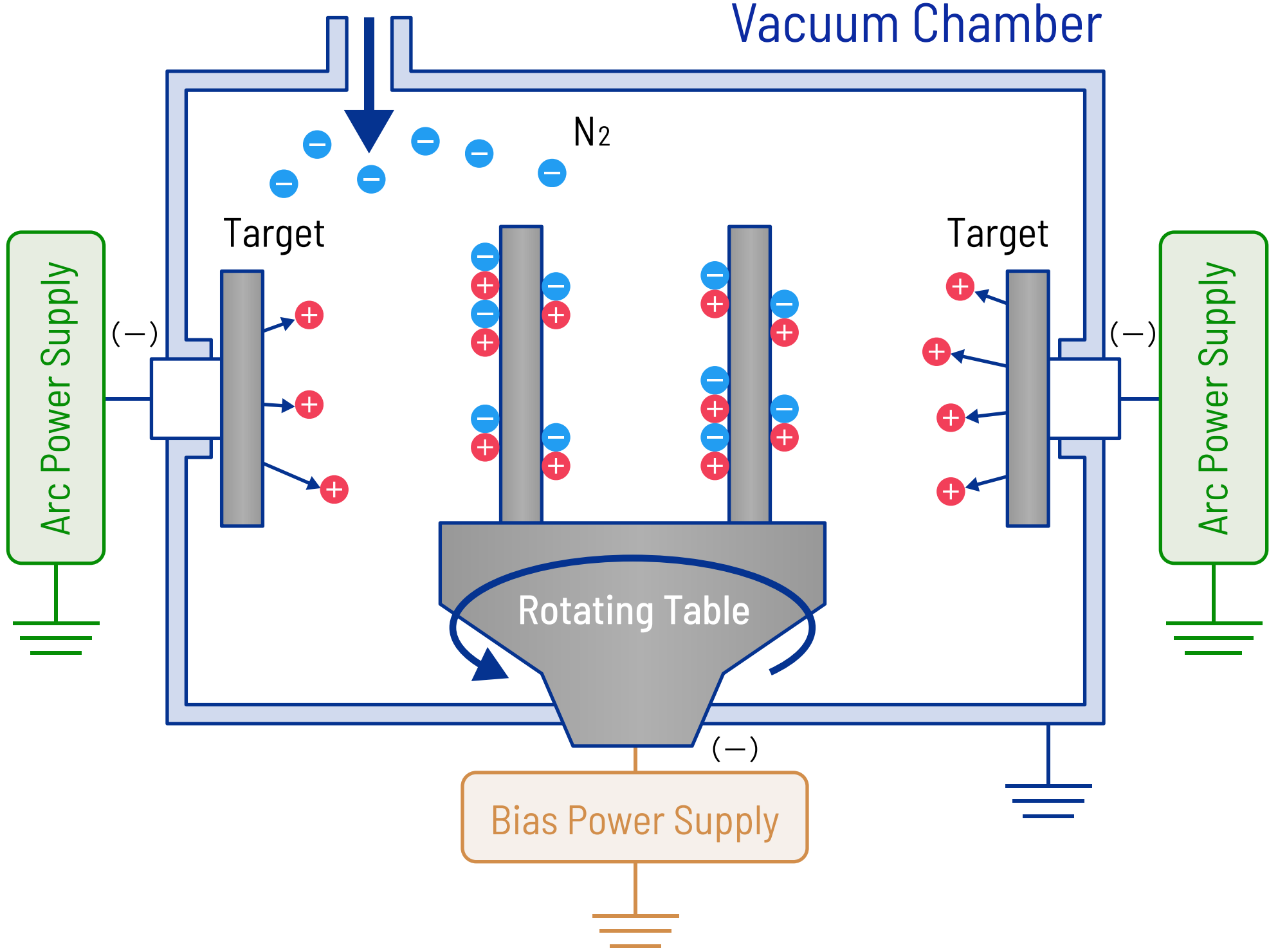
Washer
Instrument



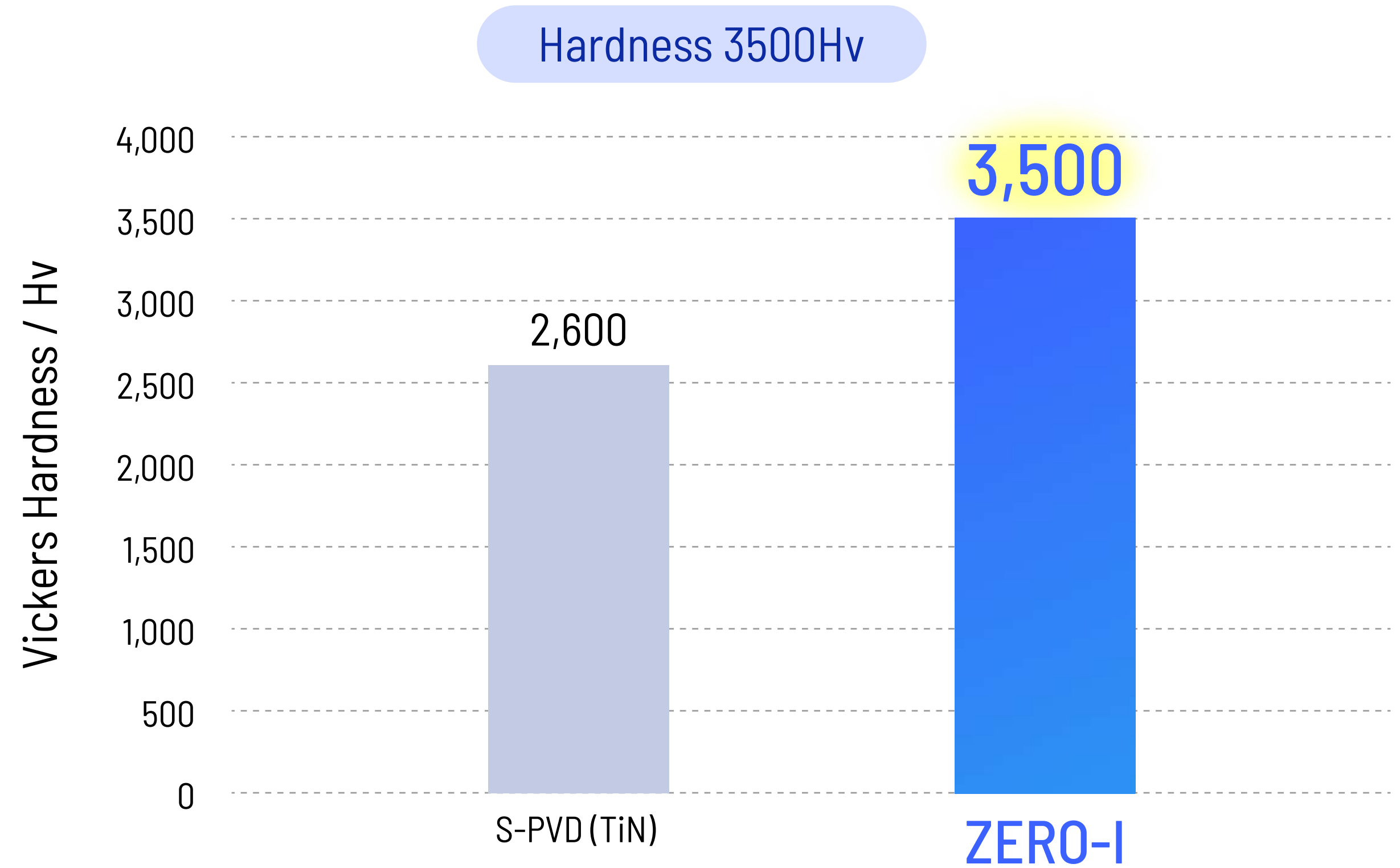
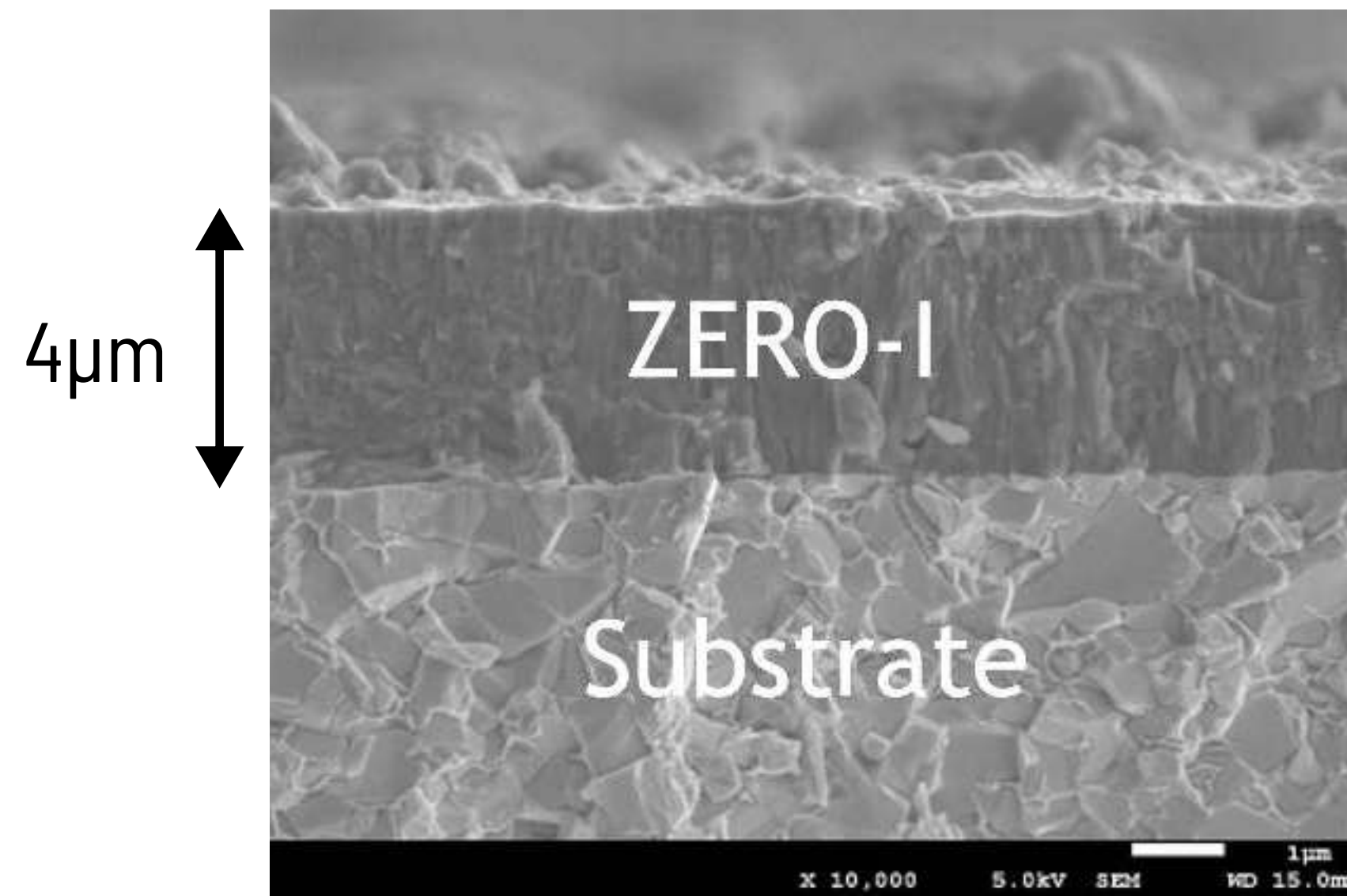
Sakura Seiki : F-1 Clean

Cathodic Arc Ion Plating

Arc Plasma



Superior Wear Resistance with the Hardness of 3500Hv



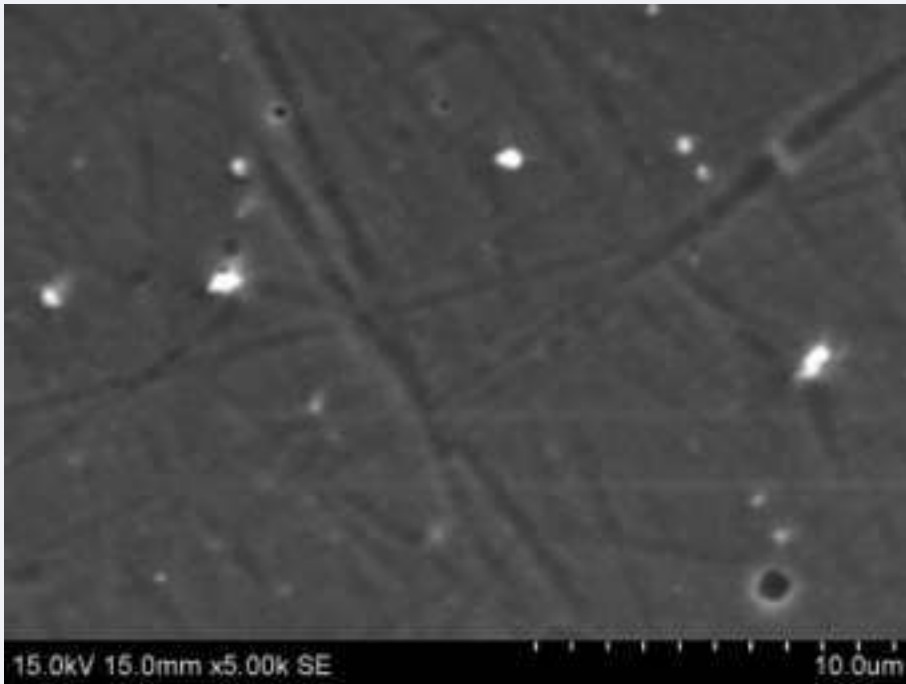
Stable Adhesion on the Steel and Carbide Substrate
with the combination of Pre-Treatment and PVD Process

PVD Coating
ZERO-I Property

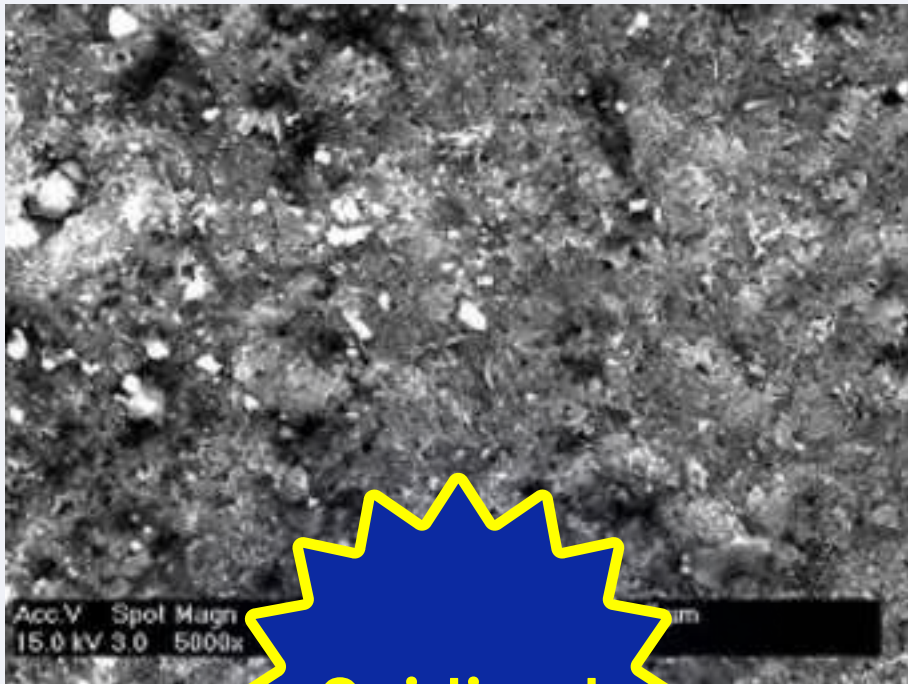
Heat Resistance up to 1000°C working Temperature

S-PVD (TiN)

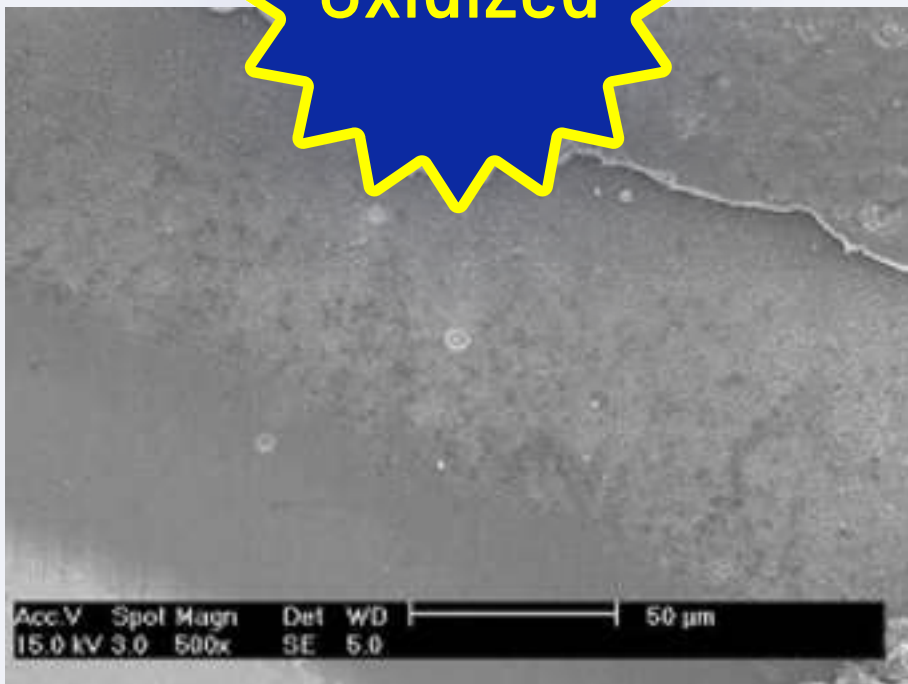
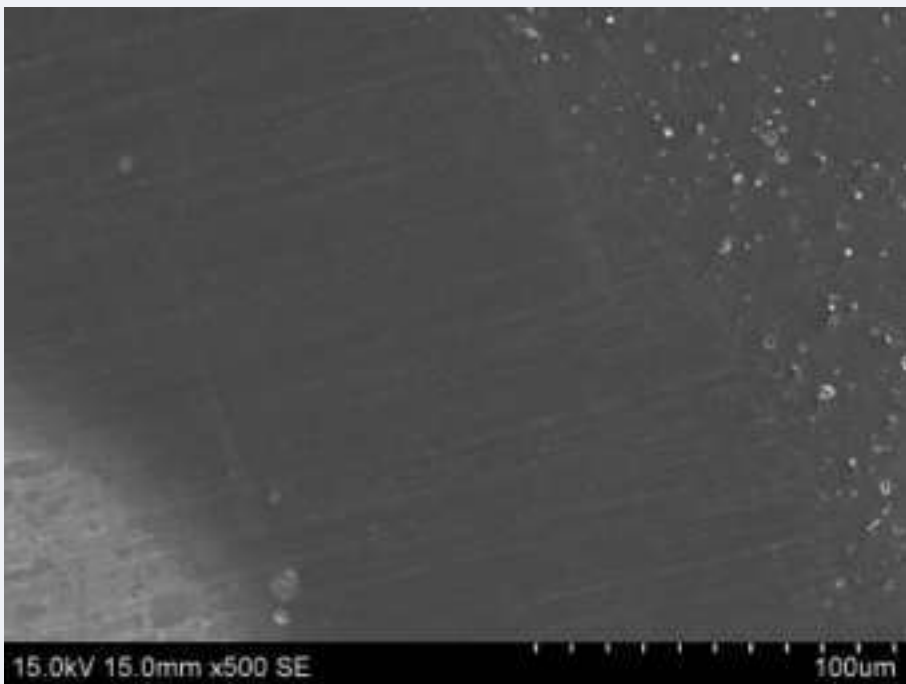
Room Temp.



900°C 1h

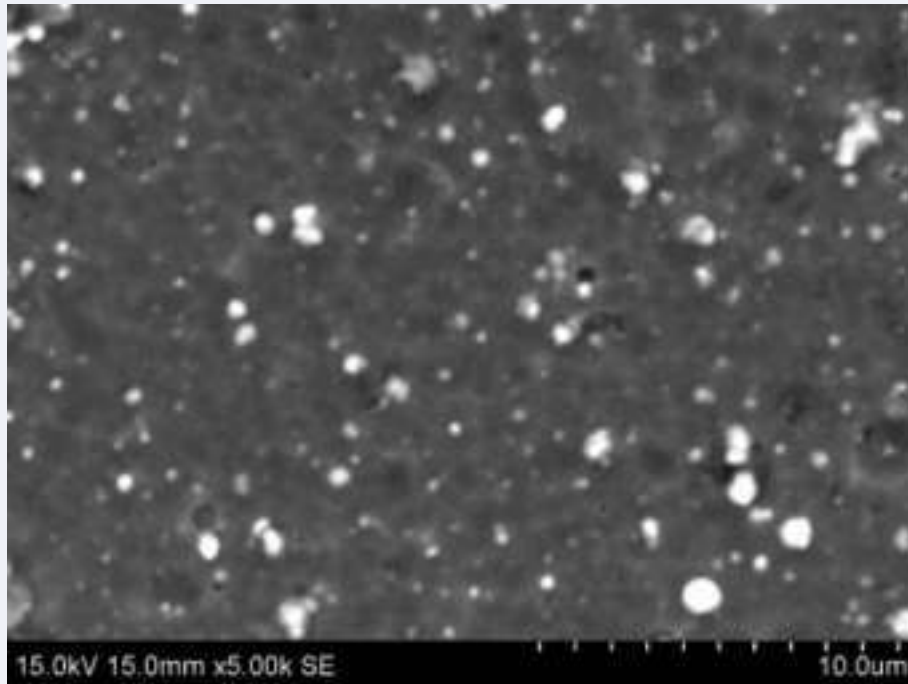


Oxidized

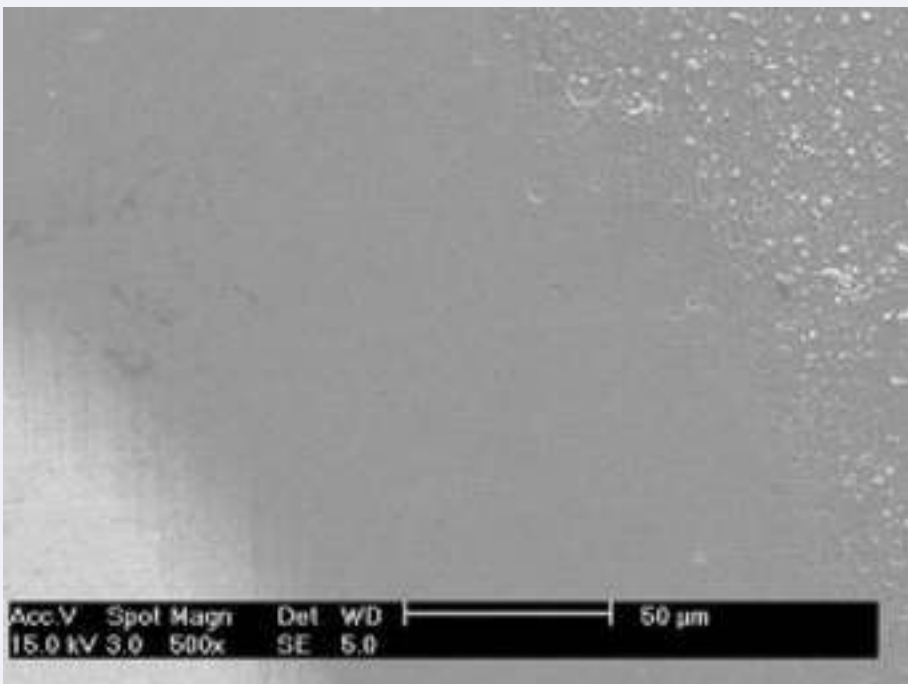
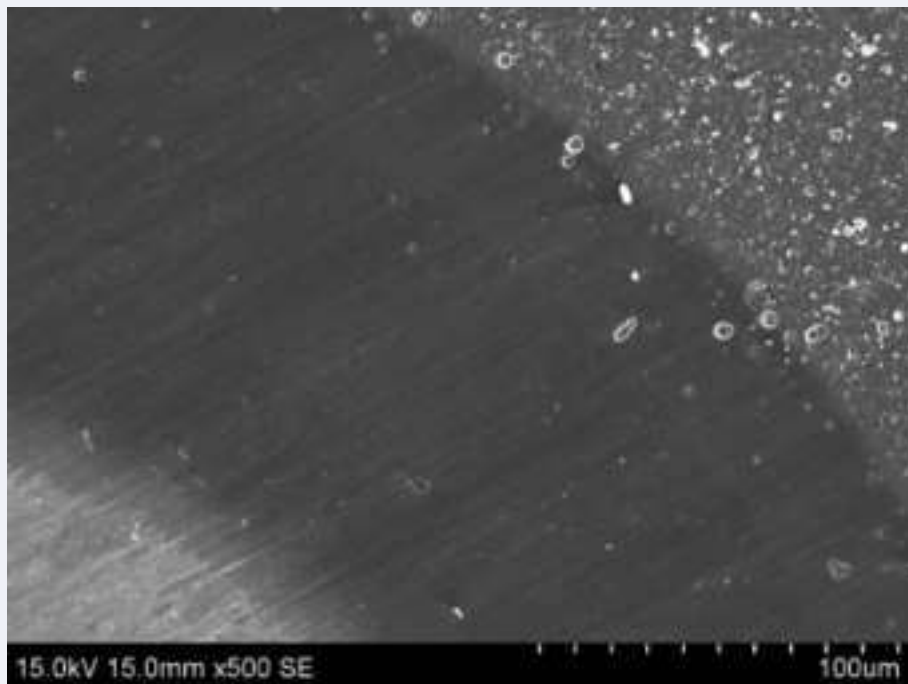
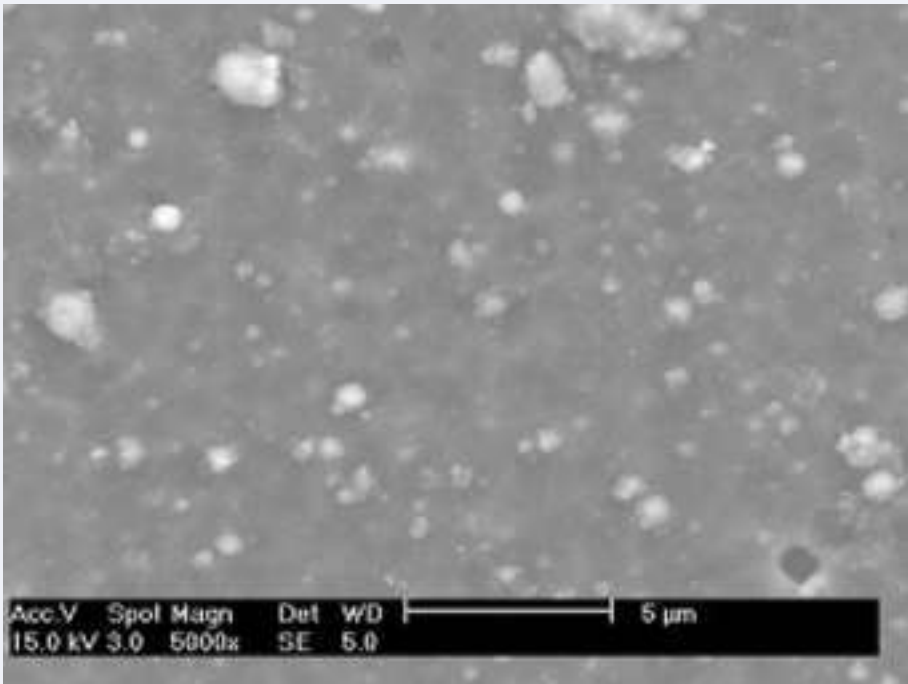


ZERO-I

Room Temp.

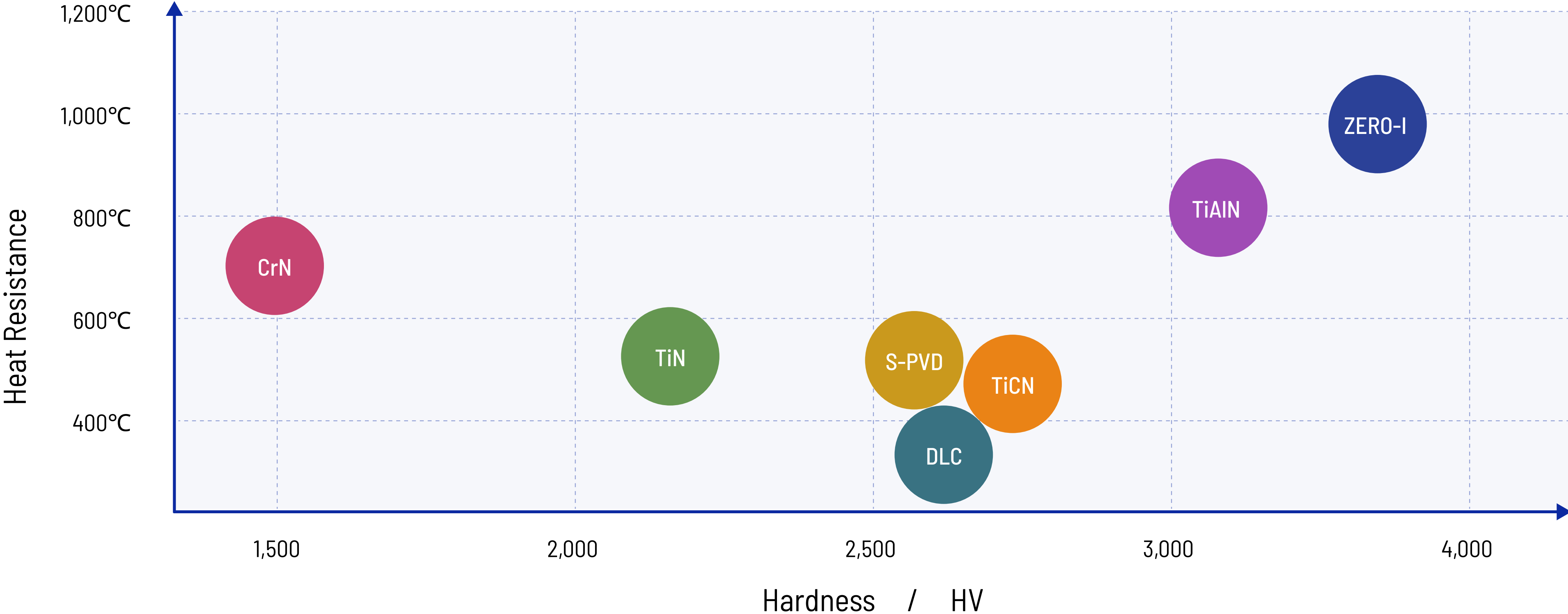


900°C 1h







PVD Coating Comparison

Hardness and Heat resistance has been improved in recent technologies



Each coatings

SEAVAC USA Coating Lineup for Dies and Punches

	S-PVD	S-TiAlN	CrN*	ZERO-I
Color	 Gold	 Gray	 Silver Gray	 Dark Gray
Hardness	Hv2,600	Hv2,800	Hv1,500	Hv3,500
Heat Resistance	550°C 1,022°F	800°C 1,652°F	650°C 1,202°F	1,000°C 1,832°F
Friction	0.45	0.55	0.50	0.60
Process Temp.	500°C / 932°F			
Friction	4~8µm	4~8µm	4~6µm	4~6µm

* CrN can be processed if requested

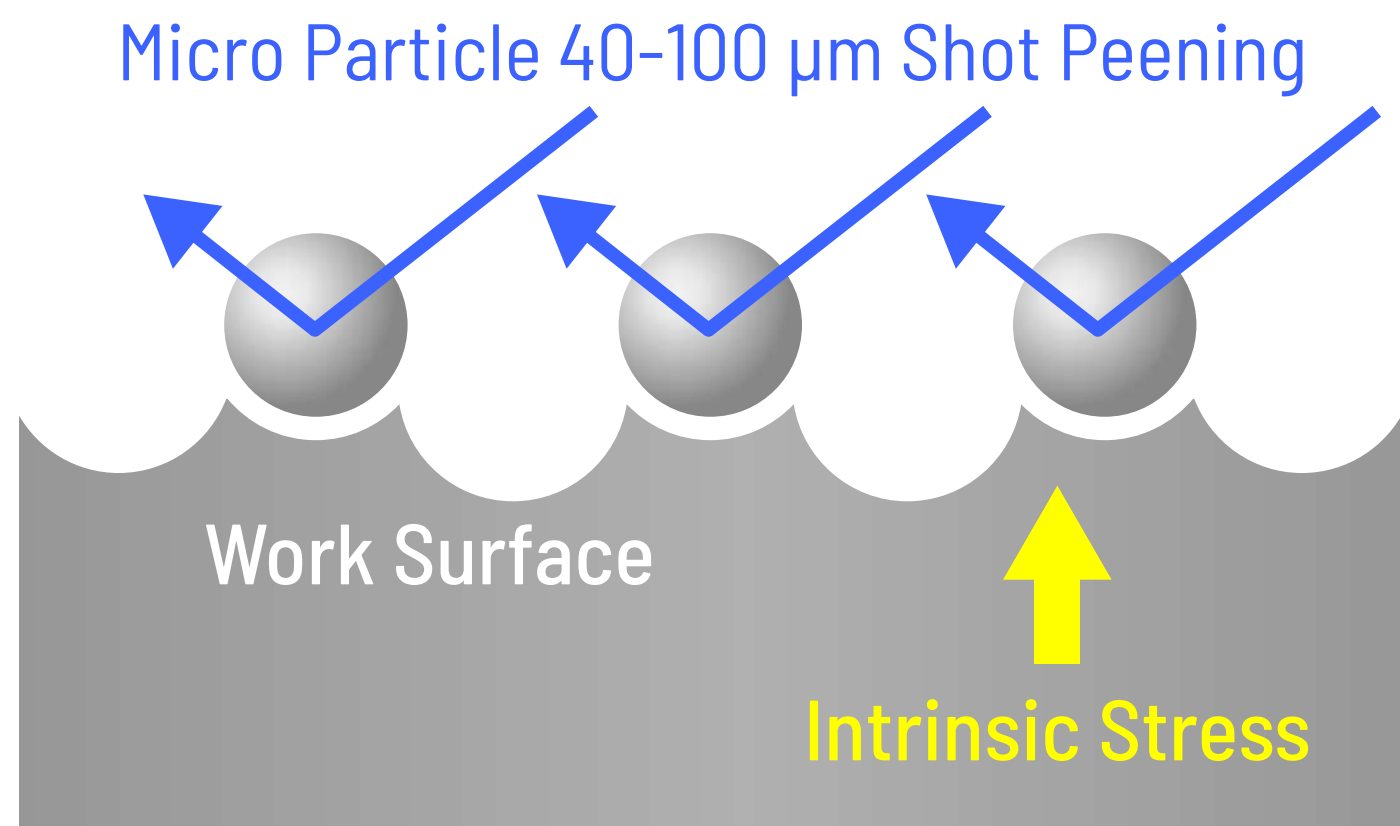
Area of Usage

For Dies and Punches

	S-PVD	S-TiAlN	CrN	ZERO-I
Color	 Gold	 Purple	 Gray	 Gray
Wear	★ ★	★ ★	★	★ ★ ★
Oxidation	★	★ ★	★ ★	★ ★ ★
High Tensile Steels	★ ★	★ ★	★	★ ★ ★
Aluminum	★	★	★ ★	★ ★

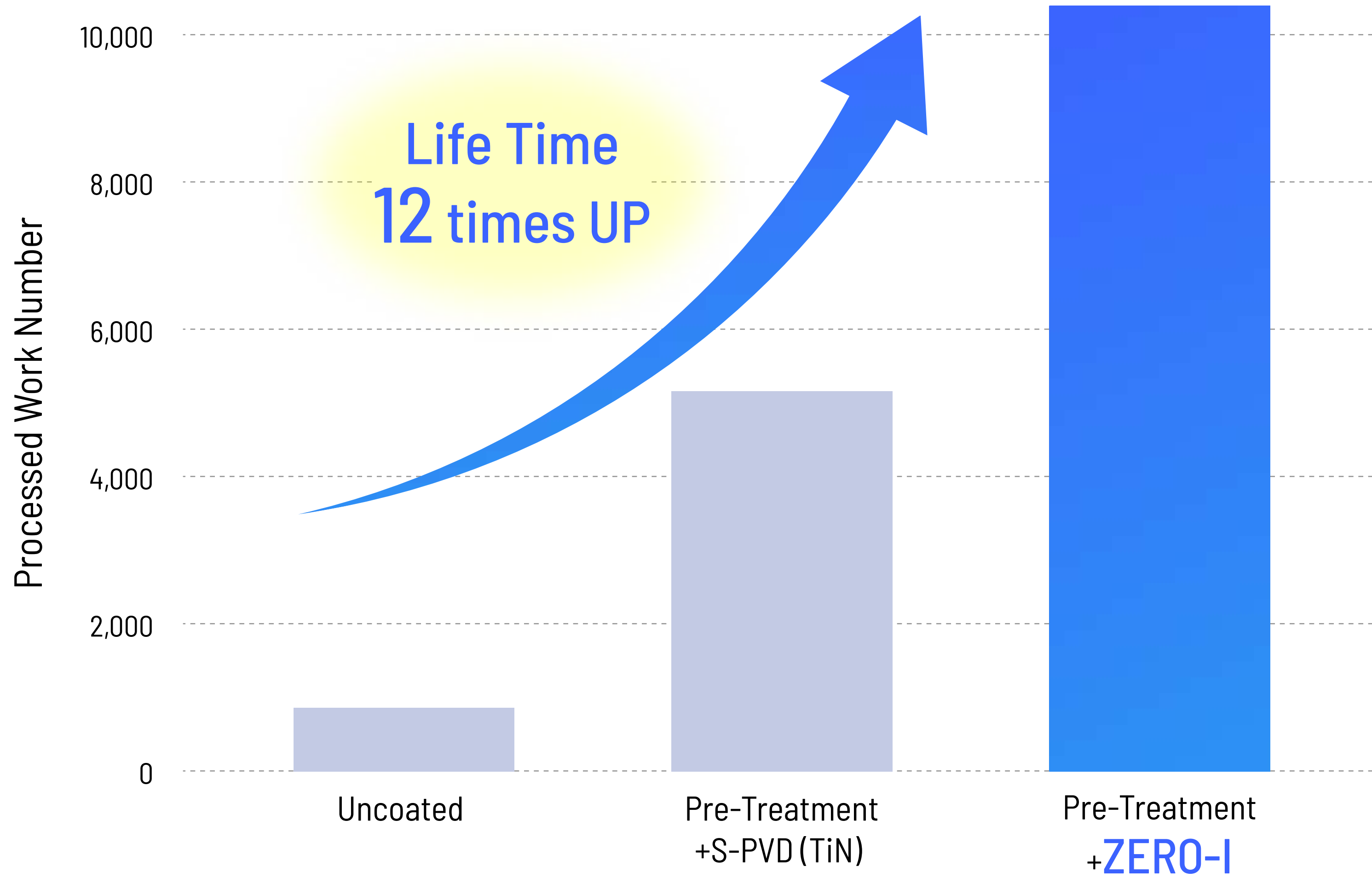
WPC

WPC (Fine shot peening), use 40-100 μ ceramic ball hit the surface in high speed, create the fine 凹凸 on the very top surface
 Increase the fatigue strength and it reduce the cracks on the surface by refinement



Powder Metal Steels (HAP40)	w/o WPC	w/ WPC
Retained austenite	15%	0-5%
Surface hardness Hv (10g load)	900	1300
Internal residual compressive stress (Mpa)	-300	-1500
Half-power band width	4.7	6
Bending strength (kgf/mm ²)	310	470
Charpy impact test (kgfm/cm ²)	2.2	2.5

ZERO-I Performance



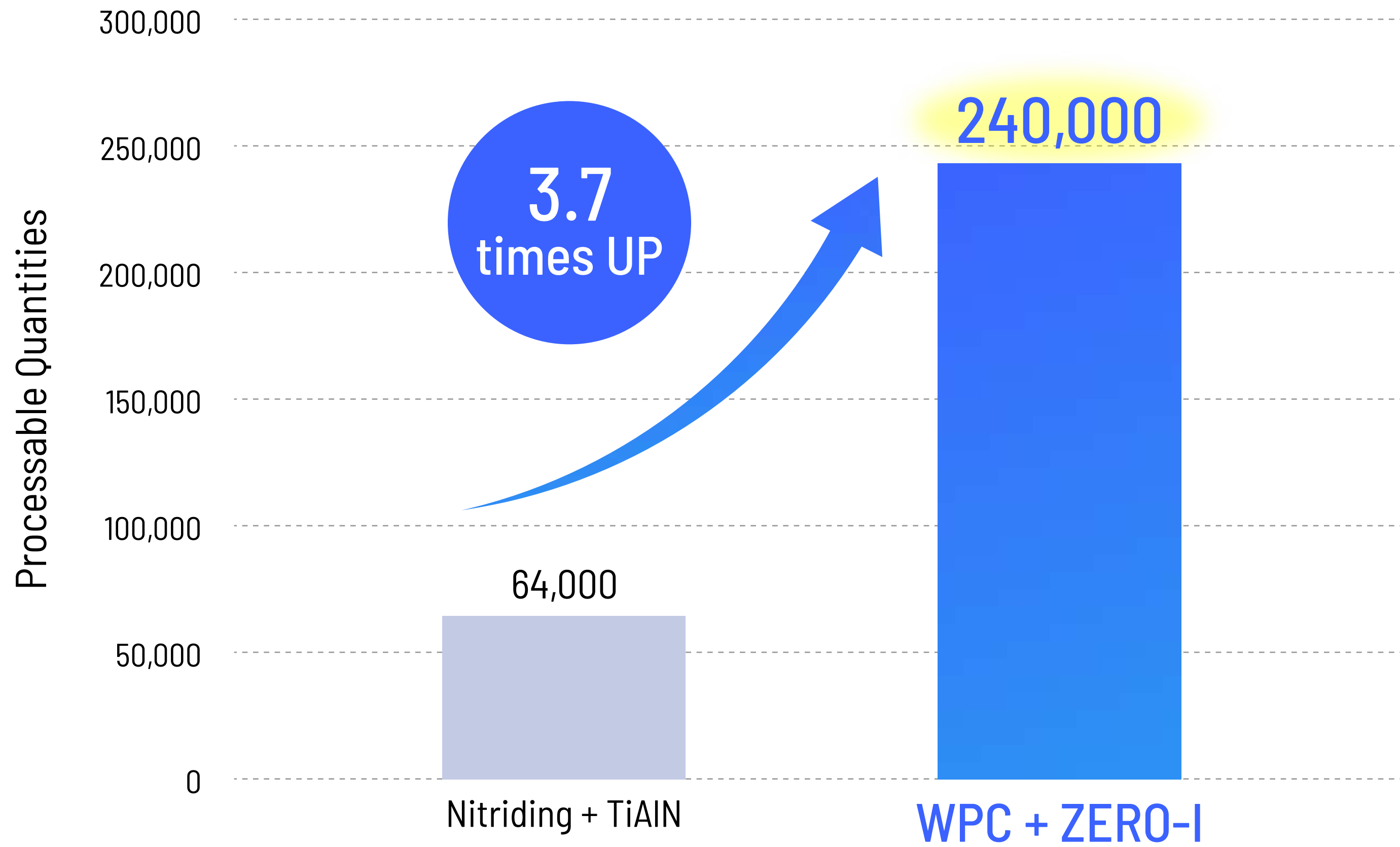
Punch φ60mm×149mm (AISI M2)



Automotive Parts (AISI 1025)

ZERO-I Performance

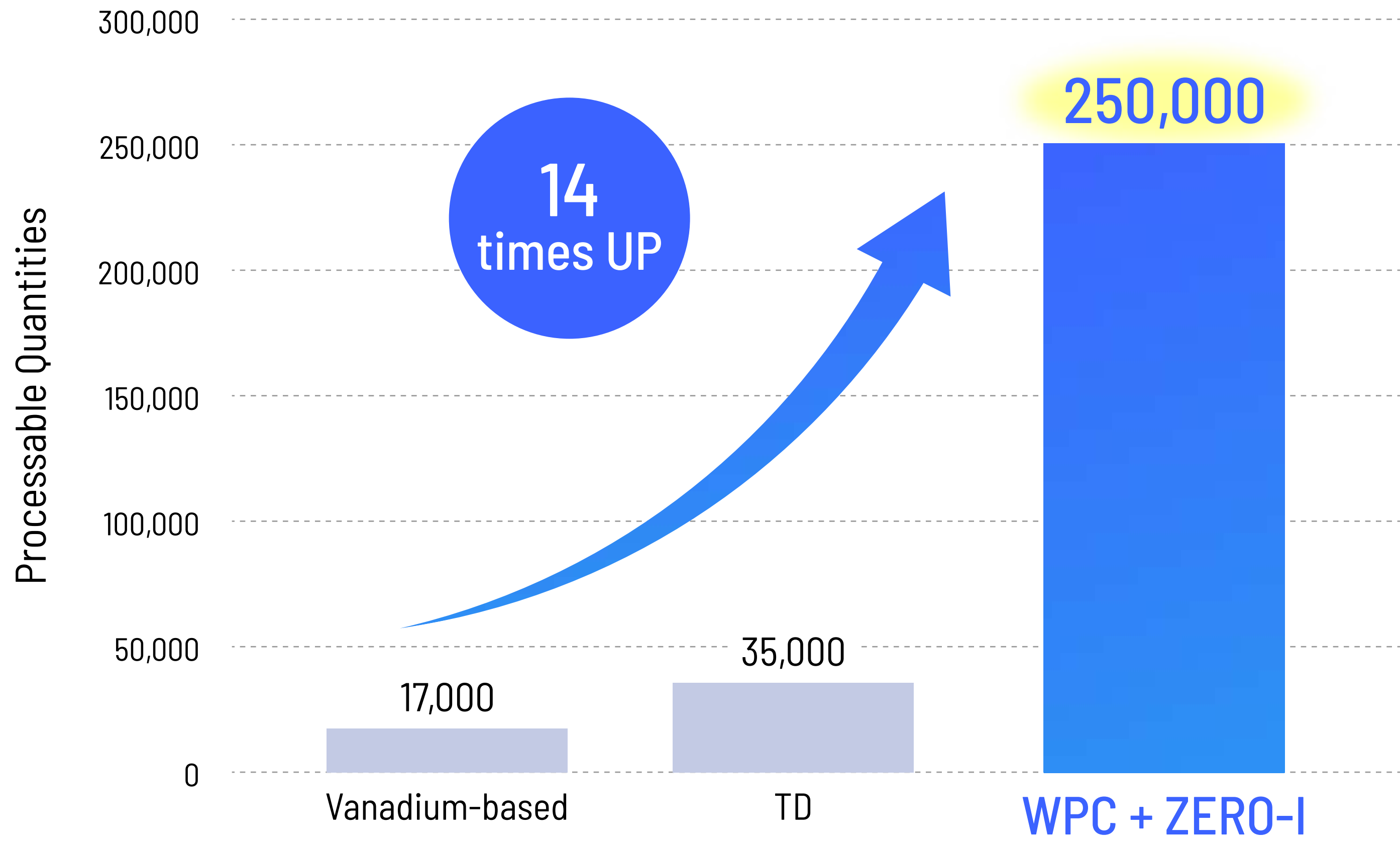
Bumper parts Bending



Material	SKD11
Workpiece	980MPa
Thickness	1.0mm
Condition	1,200t
Stroke	33spm

ZERO-I Performance

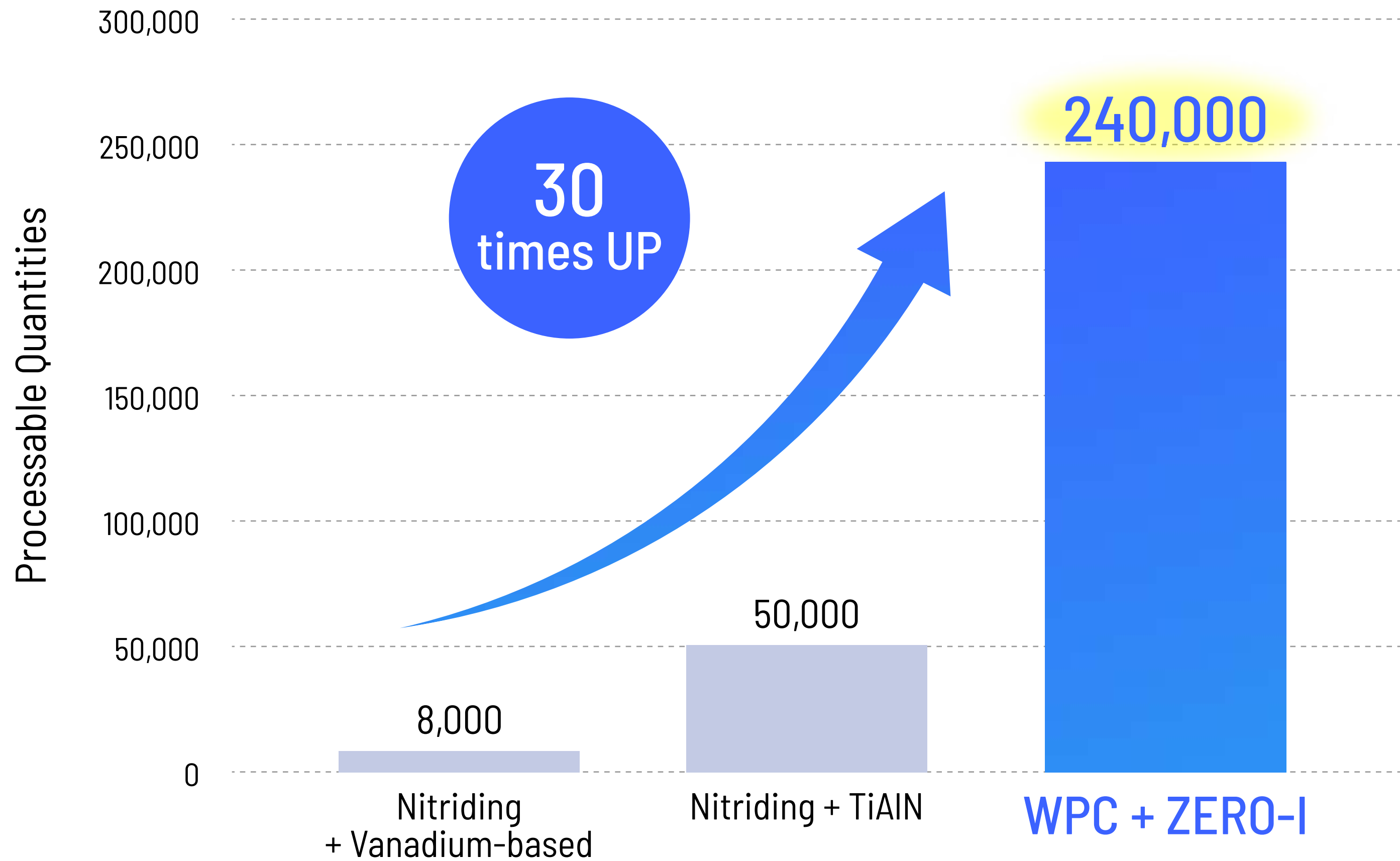
Draw Die



Material	SLD-M
Workpiece	SUS
Thickness	6mm

ZERO-I Performance

Bending Blade



Material	SKD11
Workpiece	1,180MPa
Thickness	1.2mm
Condition	1,200t
Stroke	33spm

ZERO-I Performance

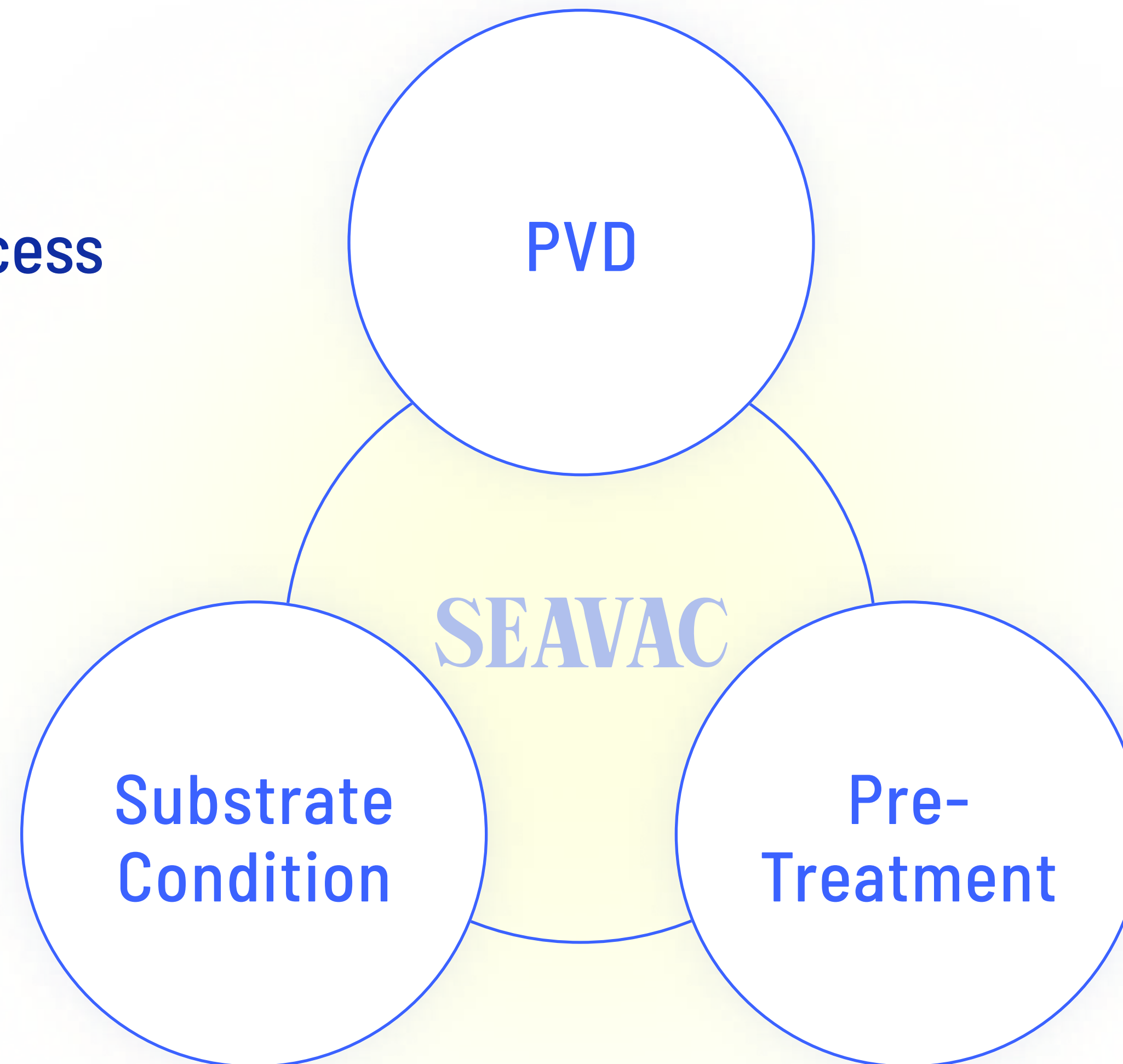
Seat part Bending



Material	SKD11
Workpiece	440MPa
Thickness	4mm (90degree)
Condition	1,200t press
Stroke	35spm

Be Your Best Partner !

SEAVAC USA proposes
Your Best Surface Process



SEAVAC

SEAVAC (USA) L.L.C.

9304 Yeager Lane,
Fort Wayne, Indiana 46809

 +1-260-747-7123

 Contactus@seavacusa.com

 <https://seavacusa.com>

