

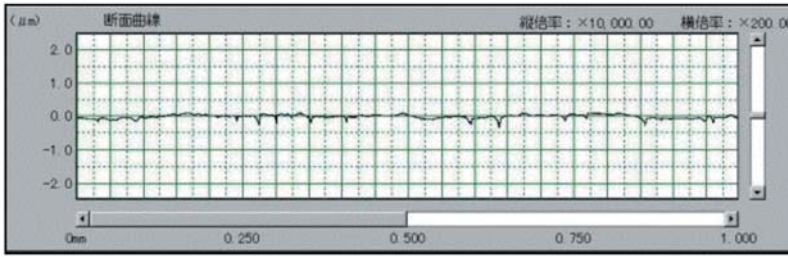
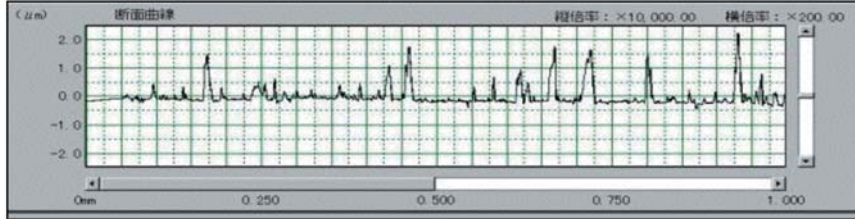
# TEST REPORT

## Surface Roughness Improvement **AERO LAP YT-300**

# Okamoto

Emerging Abrasives Technology

Pre-Lap		Post-Lap	
Ra	0.1950 $\mu\text{m}$ (8 $\mu\text{in.}$ )	Ra	0.0380 $\mu\text{m}$ (1.5 $\mu\text{in.}$ )
Rmax	2.6920 $\mu\text{m}$ (103 $\mu\text{in.}$ )	Rmax	0.4390 $\mu\text{m}$ (17 $\mu\text{in.}$ )
Rz	2.1418 $\mu\text{m}$ (84 $\mu\text{in.}$ )	Rz	0.3560 $\mu\text{m}$ (44 $\mu\text{in.}$ )



### CASE 1

Work Piece Material:

*Titanium Nitride (TiN)*

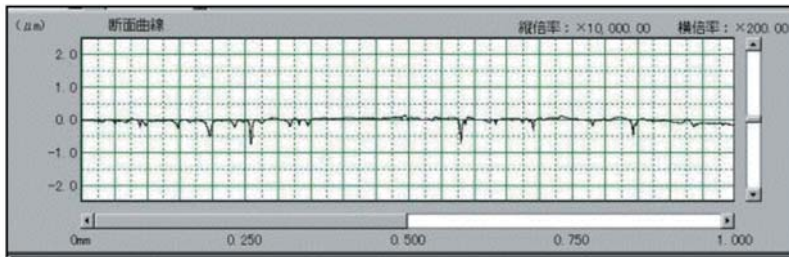
Work Piece Size: 0.5 in<sup>2</sup>

Process Lap Time: 20 Seconds

### Conclusion:

Ra 8  $\mu\text{in.}$  to 1.5  $\mu\text{in.}$  with  
20 seconds of lap time.

Pre-Lap		Post-Lap	
Ra	0.3084 $\mu\text{m}$ (12 $\mu\text{in.}$ )	Ra	0.0380 $\mu\text{m}$ (1.5 $\mu\text{in.}$ )
Rmax	5.0280 $\mu\text{m}$ (198 $\mu\text{in.}$ )	Rmax	0.8740 $\mu\text{m}$ (34 $\mu\text{in.}$ )
Rz	3.1090 $\mu\text{m}$ (123 $\mu\text{in.}$ )	Rz	0.6522 $\mu\text{m}$ (26 $\mu\text{in.}$ )



### CASE 2

Work Piece Material:

*Titanium Carbonitride (TiCN)*

Work Piece Size: 0.5 in<sup>2</sup>

Process Lap Time: 20 Seconds

### Conclusion:

Ra 12  $\mu\text{in.}$  to 1.5  $\mu\text{in.}$  with  
20 seconds of lap time.

## Surface Roughness Improvement AERO LAP YT-300

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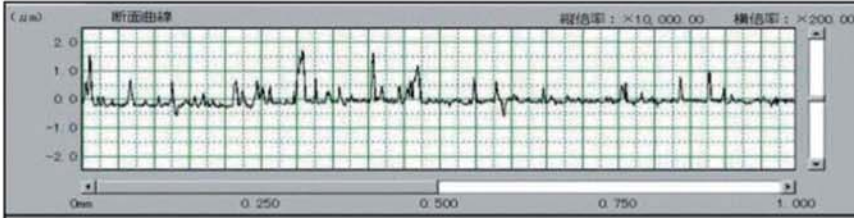
Pre-Lap		Post-Lap	
Ra	0.1417 $\mu\text{m}$ (5.6 $\mu\text{in.}$ )	Ra	0.0334 $\mu\text{m}$ (1.3 $\mu\text{in.}$ )
Rmax	2.2800 $\mu\text{m}$ (90 $\mu\text{in.}$ )	Rmax	0.5380 $\mu\text{m}$ (21 $\mu\text{in.}$ )
Rz	1.8080 $\mu\text{m}$ (71 $\mu\text{in.}$ )	Rz	0.3182 $\mu\text{m}$ (12.5 $\mu\text{in.}$ )

### CASE 1

Work Piece Material: *Chromium Nitride (CrN) A Ceramic Coating*  
 Work Piece Size: *0.5 in<sup>2</sup>*  
 Process Lap Time: *20 Seconds*

### Conclusion:

**Ra 5.6  $\mu\text{in.}$  to 1.3  $\mu\text{in.}$  with 20 seconds of lap time.**



### ROUGHNESS AVERAGE, Ra (1 $\mu\text{m}$ = 39.4 $\mu\text{in.}$ )

Microinches ( $\mu\text{in.}$ )	2000	1000	500	250	125	63	32	16	8	4	2	1
Micrometers ( $\mu\text{m}$ )	50	25	12.5	6.3	3.2	1.6	0.8	0.4	0.2	0.1	0.05	0.025

- Ra** Roughness Average  
**Rmax** Roughness Maximum measured at the peak point on the graph  
**Rz** Roughness Average measured over the 5 highest peaks and 5 lowest valleys

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