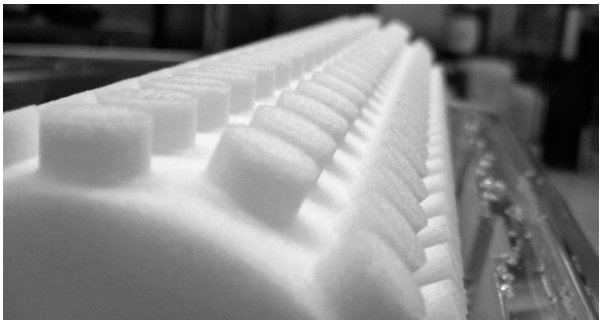
RIPPEY™
An ITW Company

# nanoShear PVA Brushes

## for post-CMP critical cleaning applications

**STI • PMD • Poly-Si • Metal Gate • Contact • ILD • Copper**



## Description

Designed specifically to meet the rigid demands of ≤28nm post-CMP cleaning, nanoShear cast-to-mandrel disposable PVA brushes provide unprecedented dimensional uniformity, product consistency, and on-tool reliability. nanoShear brushes are available in any commercially available PVA formulation and incorporate Rippey's proprietary flow-through cleaning process.

## Features

- **Brush Uniformity**

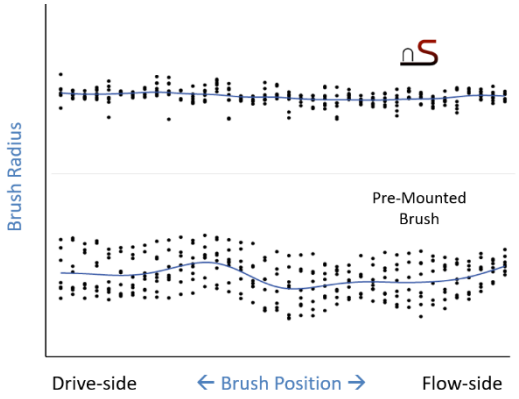
  Superior dimensional uniformity enables small gap processing without compromising particle removal efficiency.

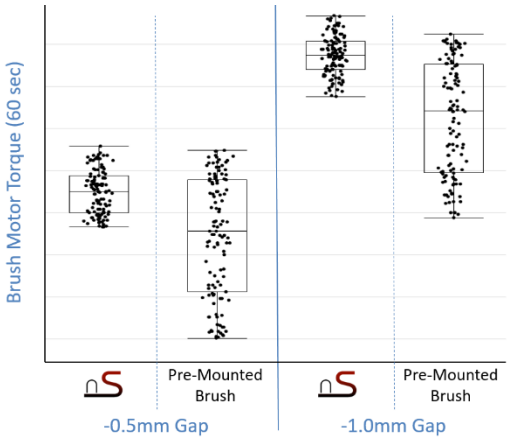
- **Torque Stability**

  Stable inter-locked brush-mandrel assembly provides low vibration and predictable, consistent torque performance.

- **Uniform Fluid Distribution**

  Uniform contact pressures result in more uniform fluid distribution which reduces point-of-use chemical concentration gradients across the wafer.

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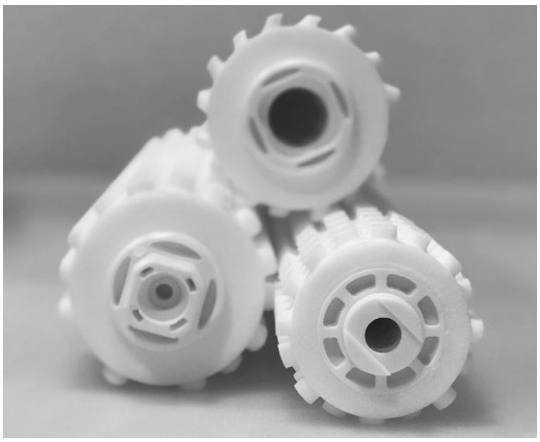


## Applications

Rippey nanoShear brushes are compatible with all major CMP OEMs. Mandrels and tool interfaces are designed for quick and simple exchange.

To prevent bacterial growth and ensure long shelf-life, brushes come preserved in $H_2O_2$ or $NH_4OH$, or can be e-beam sterilized.

Depending on the application and cleaning requirements, nanoShear brushes can be customized with various nodule formats.

| OEM | Applied Materials | Ebara | |
|---|---|---|---|
| System | Reflexion® LK, LK Prime™ | FREX 300S(2) | FREX 300X(3SC) |
| PN | *1F*N-70-31NM-0317 | *1F*N-38-18NM-0310 | *1F*Y-60-32NM-0310 |

NOTE: nanoShear brushes are only available in 300mm

✱ 1 F ✱ N

Preservation
- (H) 1.00%wt. $H_2O_2$
- (M) 0.25%wt. $NH_4OH$
- (E) e-beam

PVAc Formulation
- (S) Symmetry
- (2) F2
- (E) Eclipse
- (C) Eclipse HCS

## Quality

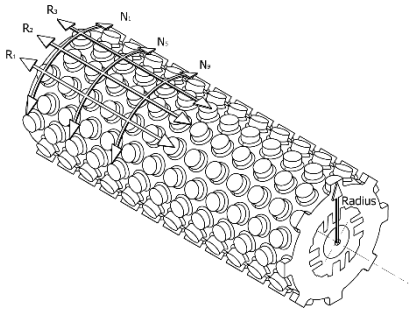
Every nanoShear brush is measured and characterized to assure 100% conformance of all products shipped.

Every nanoShear brush is individually processed on Rippey's proprietary flow-through cleaning systems. The cleanliness of each brush is quantified by effluent Liquid Particle Counts (LPCs).

All nanoShear brushes are shipped with a QR bar code label. This code uniquely defines the characteristics (CoA data) of that particular brush by its brush number.

| Metric | unit | Specification | Method |
|---|---|---|---|
| Radius Range | mm | <0.7 | vCMM |
| Torque Variation | % | <10%, 1σ | Rippey |
| Final LPC | - | <1000, Sum >0.2µm | Effluent |

NOTE: Brush physical properties and ionic contamination are PVAc formulation dependent. Contact Rippey Sales or Applications for specific product inquiries.




nanoshear

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