



Optimized drill design



新規開発ドリル加工事例

$\phi 0.2$ Micro-hole drilling performance

Work material: **MCL E-700G(R)** (halogen-free material)
t0.41(Double sided 12/12 μ mCu) **6 panels / stack**

Entry sheet: LE-G0612

N:200,000 min⁻¹ F:3.2 m/min f:16 μ m/rev

Set life:4,000 hits x 5 = Total 20,000 hits

Work material : Hitachi Chemical Co., Ltd.
Entry sheet : MITSUBISHI GAS CHEMICAL COMPANY, INC.



φ 0.2

application: FBGA / BGA / HDI etc...

φ 0.2mm 加工事例

用途: 半導体パッケージ、ビルドアップ用内層コア材 等



Drilling condition [加工条件]

Work material : **MCL E-700G(R)** t0.41 (Double sided 12/12 μ m Copper) **6 panels / stack**

Entry sheet : LE-G0612 Back-up board : SPB-W

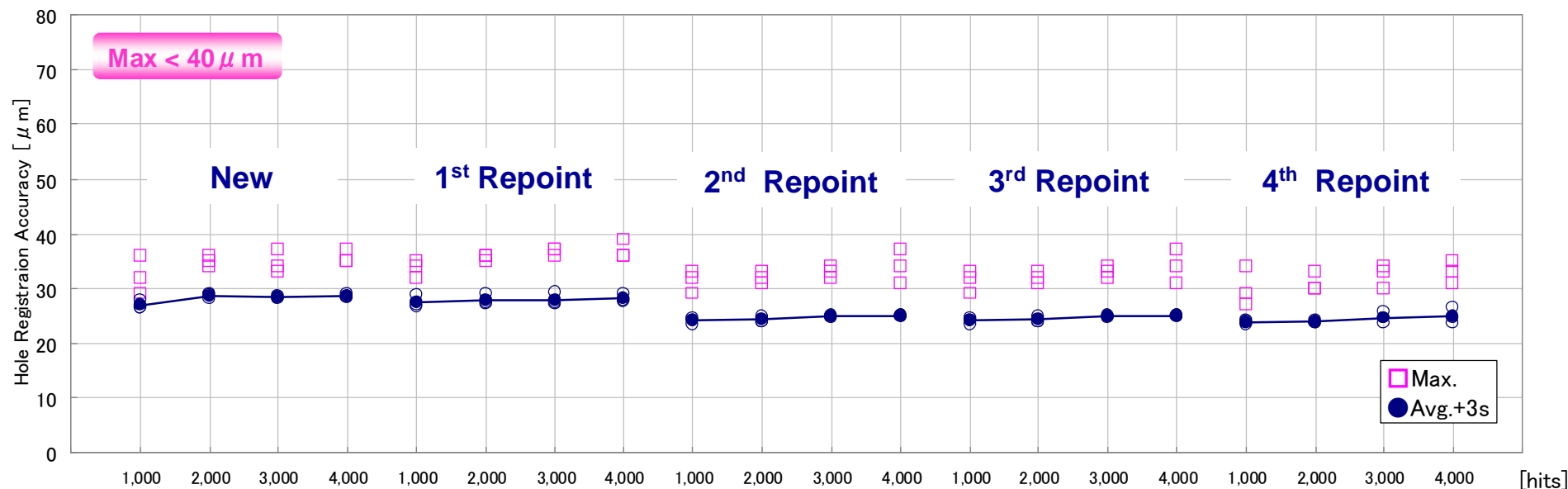
N : 200,000 min⁻¹ F : 3.2 m/min f : 16 μ m/rev

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Performance of optimized drill design [新規開発ドリルの性能]

Low-CTE material
Promising hole quality!
低熱膨張基板 (Low-CTE type) における
安定した品質の確保を実現

Hole registration accuracy [穴位置精度]





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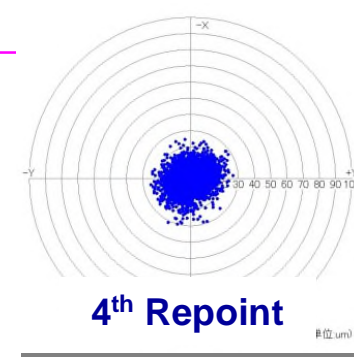
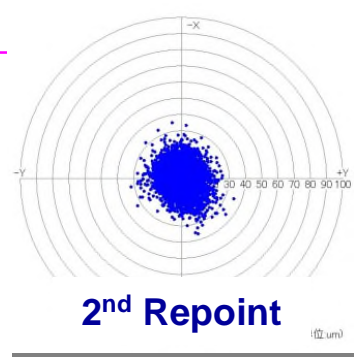
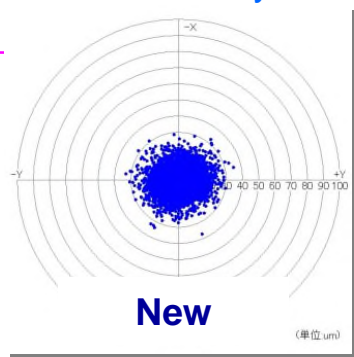
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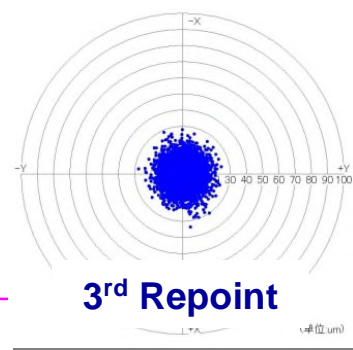
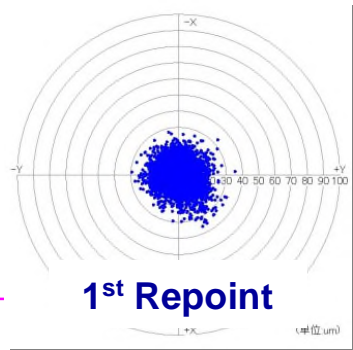
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Performance of optimized drill design [新規開発ドリルの性能]

■ Hole registration accuracy [穴位置精度]



Max < 40 μ m





φ 0.2

application: FBGA / BGA / HDI etc...

φ 0.2mm 加工事例

用途: 半導体パッケージ、ビルドアップ用内層コア材 等



Drilling condition [加工条件]

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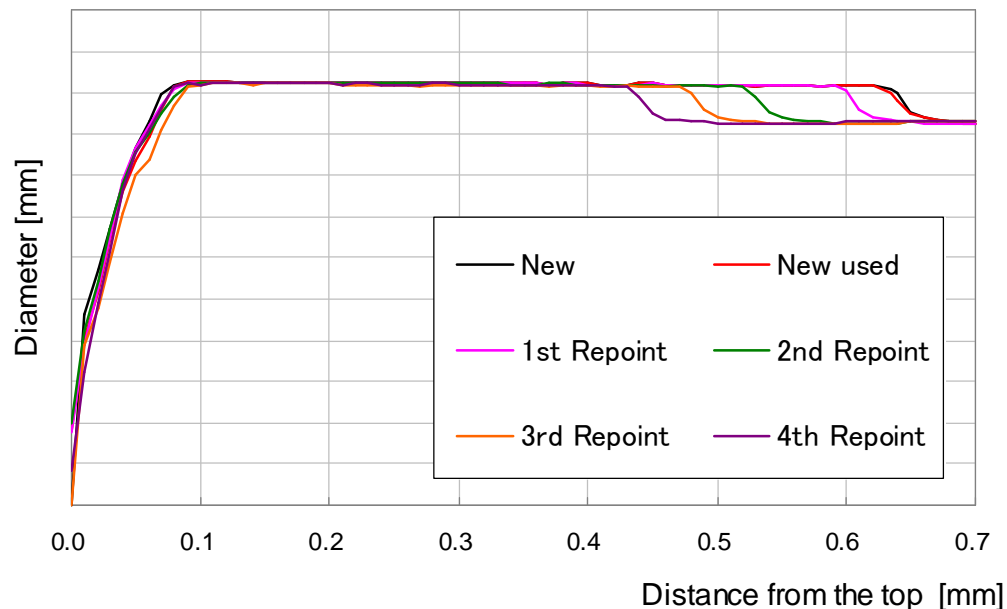
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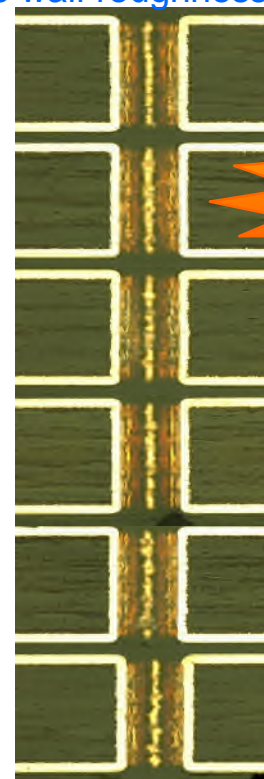
Performance of optimized drill design [新規開発ドリルの性能]

■ Drill diameter wear [外周摩耗]



■ Hole wall roughness [内壁粗さ]

Top



4th Repoint

Max < 10 μ m

Bottom

