

Stand-alone system that integrates the singulation process of semiconductor wafers into a fully automated compact design.

半導体ウエハのチップ化工程をコンパクトなボディに集約した単体装置

Since the foundation of the company, MDI has developed a unique technology, SnB, which is now applied to the singulation process for cutting-edge semiconductor devices. This method addresses many issues found in conventional processing methods and achieves high productivity, high accuracy, low cost and environmentally friendly semiconductor device manufacturing.

創業以来の MDI 独自技術の SnB (スクライプ & ブレーク) 工法を最先端の半導体デバイスのチップ化工程に応用しました。これにより従来工法における多くの課題を解決し高生産性、高精度、低コストで環境にやさしい半導体デバイス製造が実現できます。

MDI's unique technology

Less Chipping

Narrow Kerf

High Productivity

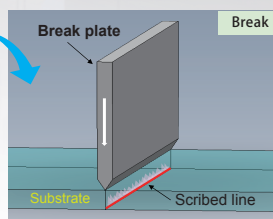
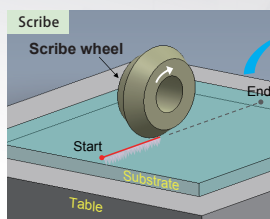
Dry Process

DB Series

DS Series



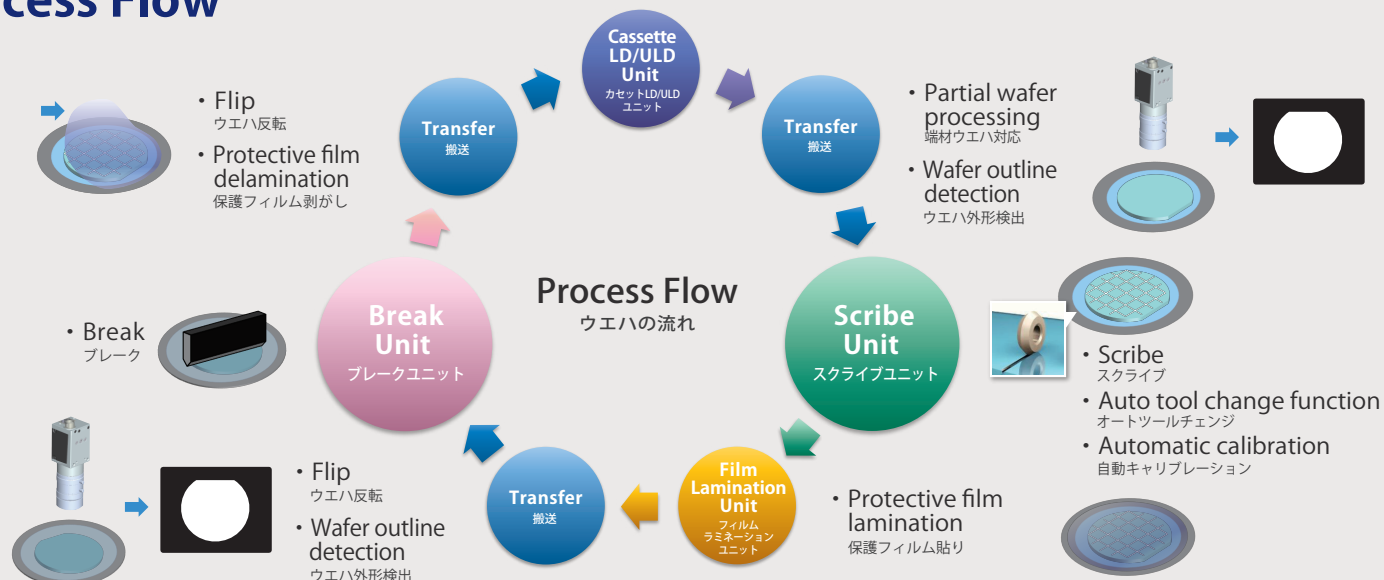
Scriber
Video



Breaker
Video



Process Flow



What is SnB

> **SnB** stands for **S**cribe and **B**reak.

SnB とは、Scribe and Break を略した分離工法の名称です。

> Same technology, new developments.

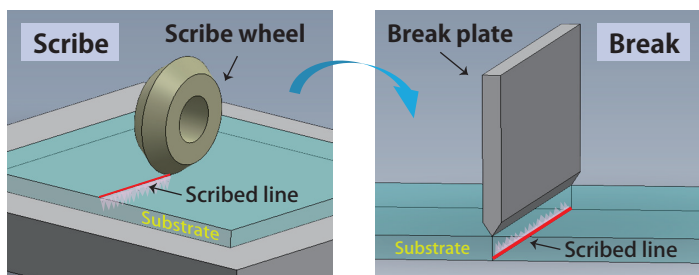
古くからある技術、現在も進化中です。

> Advantageous over conventional processes.

従来プロセスに対し、数々の優位性があります。



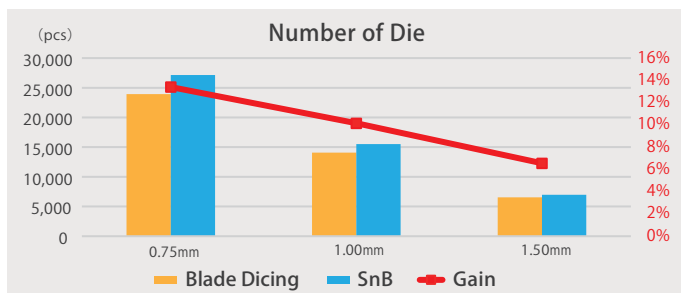
Flip Substrate



Number of Die Per Wafer

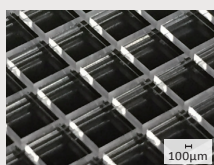
> **SnB** generates more dies with smaller die size.

ダイサイズが小さくなる程、SnB は優位になります。



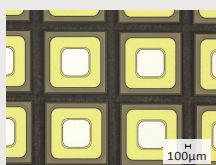
No	Die Size	Blade Dicing	SnB
	Saw street (w)	80 μ m	30 μ m
1	0.75 mm	23,936 pcs	27,144 + 13.4%
2	1.00 mm	14,076 pcs	15,504 + 10.1%
3	1.50 mm	6,536 pcs	6,964 + 6.5%

Sample



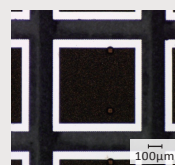
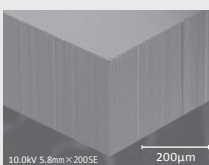
Glass

Tool: Scribe wheel
Chip size : 1mm $\times$ 1mm
Thickness : 0.7mm



SiC

Tool: Scribe wheel
Chip size : 1mm $\times$ 1mm
Thickness : 0.36mm



GaN

Tool: Scribe wheel
Chip size : 0.72mm $\times$ 0.72mm
Thickness : 0.1mm

■ **Material** 素材 ——— Glass、化合物半導体 (SiC, GaN, Ga₂O₃, GaAs, InP)、セラミック (HTCC, LTCC, MLCC)、AlN, Sapphire など

■ **Specifications for DIALOGIC Series** 仕様ダイヤロジック シリーズ (単体機)

Model

DS series

Frame Size	Wafer Size	Dimensions (W $\times$ D $\times$ H)	Weight
12	300mm	W1,130 $\times$ D1,800 $\times$ H1,840mm	1,420kg
8	100-200mm	W1,130 $\times$ D1,800 $\times$ H1,840mm	1,420kg
Power Supply	200-220 V ($\pm$ 10 % or less) AC 3 phase 50/60 Hz 20 A		
Air pressure	0.5 MPa 150 L/min(ANR) Φ 10 one-touch fitting ※Clean dry air is necessary (no mist)		
Vacuum air	-60 kPa or less 30 L/min (ANR) Φ 8 one-touch fitting		

DB series

Frame Size	Wafer Size	Dimensions (W $\times$ D $\times$ H)	Weight
12	300mm	W1,130 $\times$ D1,800 $\times$ H1,840(mm)	1,700kg
8	100-200mm	W1,130 $\times$ D1,800 $\times$ H1,840(mm)	1,700kg
Power Supply	200-220 V ($\pm$ 10 % or less) AC 3 phase 50/60 Hz 20 A		
Air pressure	0.5 MPa 100 L/min(ANR) Φ 10 one-touch fitting ※Clean dry air is necessary (no mist)		

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