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Sales Promotion Material for SAG+α

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TOYO
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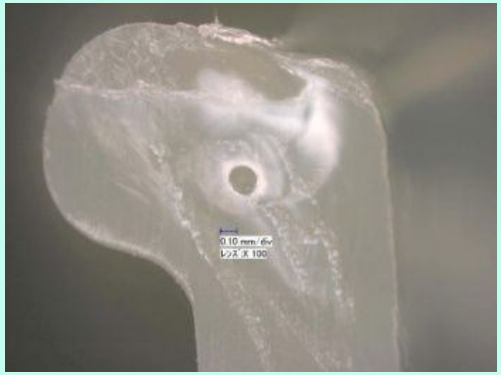
Combining a gas generation-suppressing SAG screw and a gas-vacuuming hopper having surprising degassing performance, SAG + α reduces gas-derived molding defects.

登録番号:2350-018101

Development Concept (1)

Gas-caused molding defects account for 50% of the total molding defects.


SAG（Screw Against Gas） screw

Gas generation due to overheating beyond melting temperature is suppressed.

SAG + α

In addition to above gases, those derived from low boiling-point organic substances and moisture can be eliminated also.

◎Drying time can be greatly reduced.

登録番号：2350-018201

Appearance of Vacuuming Device

Vacuuming hopper

+

Vacuum pump

Control

via molding machine

登録番号:2350-018301

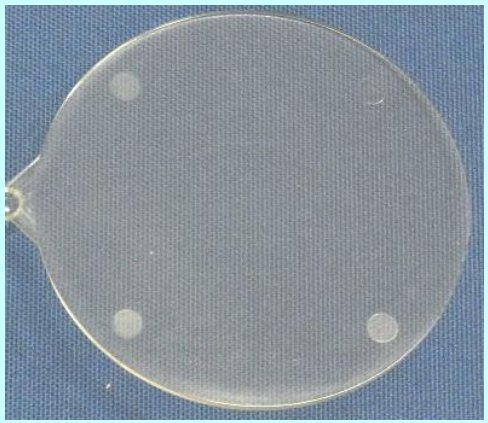
Specifications

Name	Specifications
① Vacuuming hopper	・Compressed air: 0.4 MPa ・External dimensions Vacuuming hopper）: 400W × 400D × 775H (mm) Carriage: 400W × 400D × 100H (mm)
② Vacuum pump	・Vacuum pump: DVSL-100C, 0.3/0.3 kW（50/60 Hz） ・Power: Single phase 100/120V（50/60Hz） ・External dimensions Vacuum pump: 250W × 472.3D × 368H (mm) Filter: 161.5W × 185D × 368H (mm)

登録番号:2350-018401

Advantage (1): Shorter Drying Time

Drying（for 1 hour at 120 ℃）



Standard screw requires 4 to 8 hours at 120 ℃.

Material: PC

Drying（for 30 min at 80 ℃）

Standard screw requires 2 to 5 hours at 80 to 90℃.

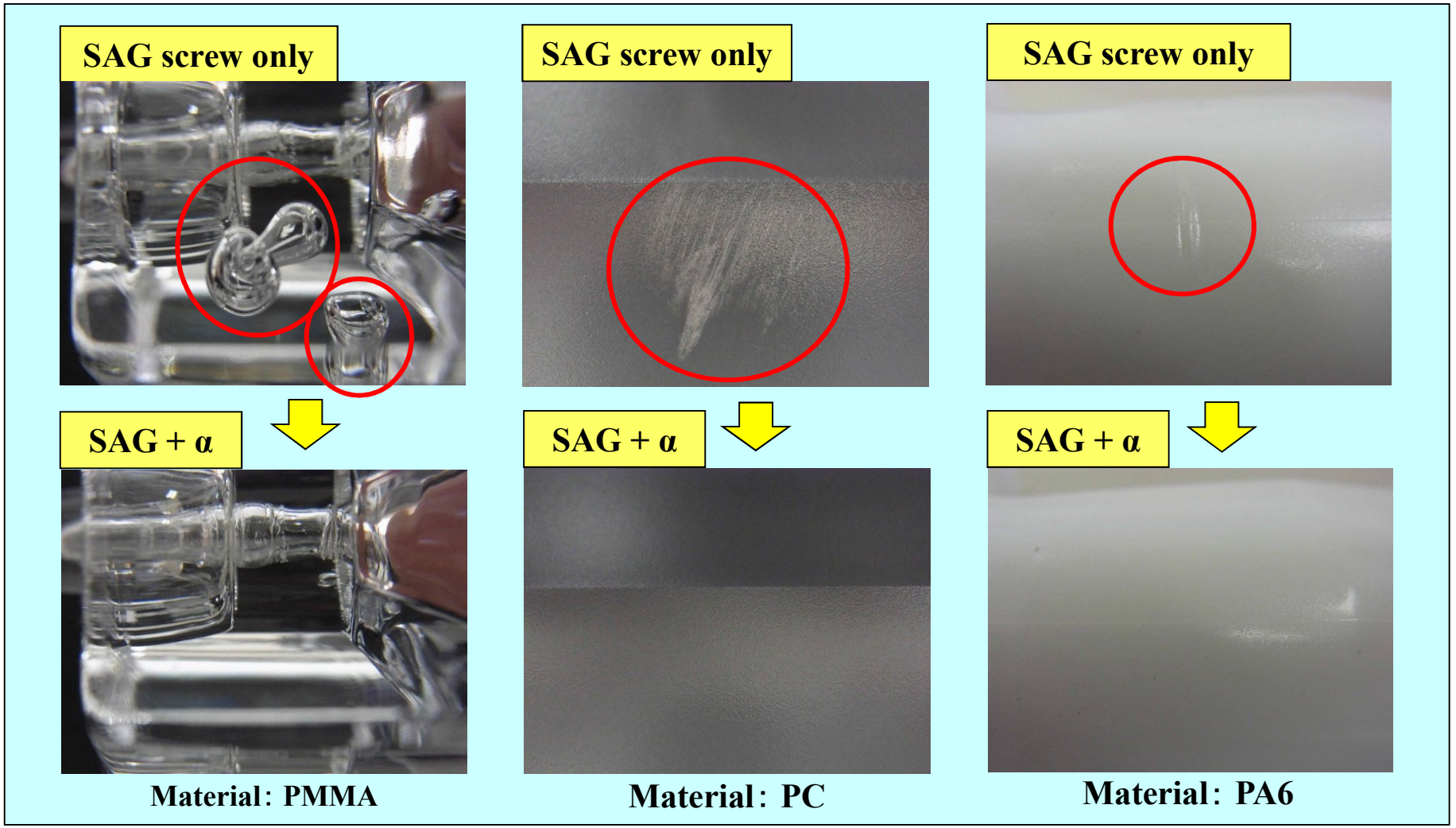
Material: ABS

SAG+α dramatically reduces drying time.

Great energy saving

登録番号:2350-018501

Advantage (2): Better Appearance of Product

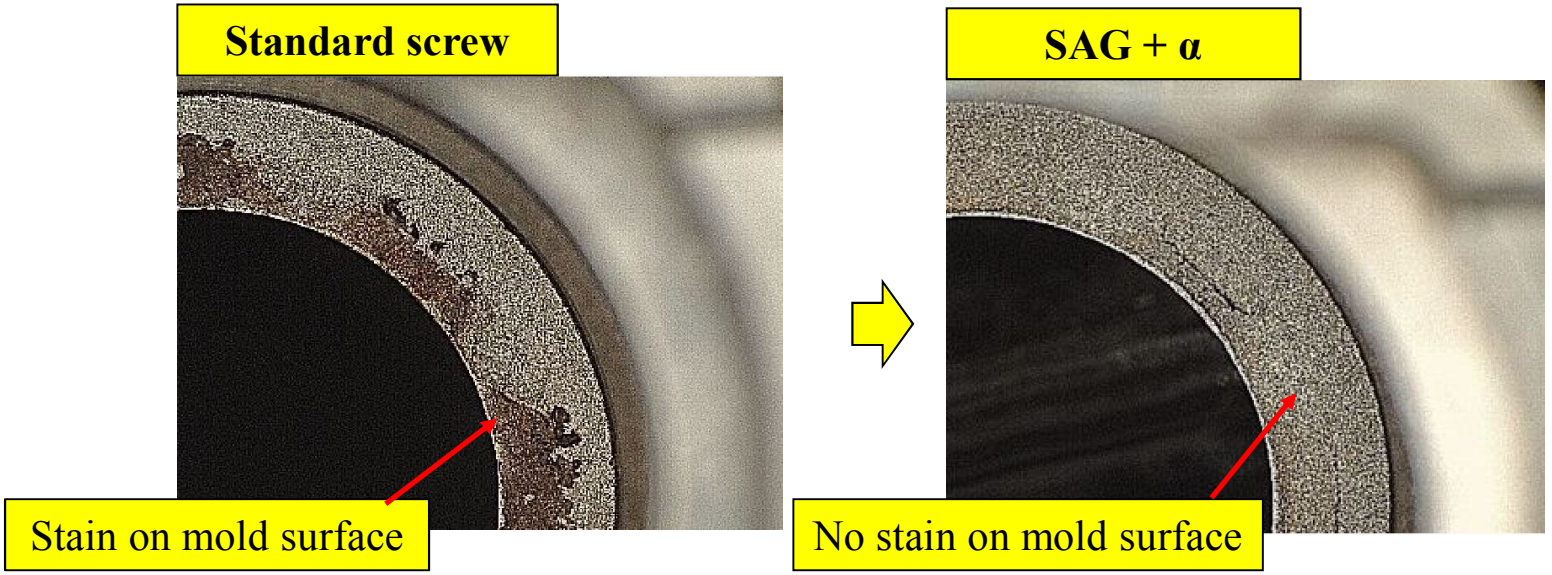


Outstanding degassing performance

登録番号:2350-018601

Advantage (3): Longer Mold Maintenance Cycle

- The use of ”SAG+α” makes the mold maintenance cycle much longer.



Material	Cycle time	Standard screw	SAG screw	SAG+α
PA66	16 s	Mold maintenance is needed every 14 to 17 hours.	Mold maintenance is needed every 32 to 42 hours.	Mold maintenance is not needed for 65 to 90 hours.
PPA	34 s	Mold maintenance is needed every 4 to 6 hours.	Mold maintenance is needed every 72 hours.	Mold maintenance is not needed for 275 hours or even longer.

Longer Mold Maintenance Cycle

Benefit Verification in Real Molding

Machine model: Si-180-6
Screw dia.: φ50
Resin: PC (not dried)
Product: Food container

SAG-design screw suppresses gas generation and degasses very efficiently.

Special hopper degasses with unique structure and high vacuum,

Many silvers!!

Standard screw

SAG screw

SAG+α

SAG+α eliminates drying process.

- **Low investment cost on equipment**
- **Low energy consumption**
- **Small installation space**

Note: Drying is required depending on products, material grades, and mold structures.

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Benefit Verification in Real Molding (Quantitative)

＜With no drying required＞

Low investment cost on equipment･･･No dryer cost needed: **-1200 k¥**
Low energy consumption･･･No power needed for dryer: **-345 k¥/year**
Small installation space･･･No space needed for dryer: **-1200 mm×650 mm**

Even if a dryer cannot be totally eliminated, a smaller dryer will do.

＜With smaller dryer installed＞

Low investment cost on equipment ･･･Smaller dryer(75kg→25kg): **-200 k¥**
Low energy consumption･･･Smaller power required by smaller dryer: **-140 k¥/year**
Small installation space ･･･Smaller space required by smaller dryer: **-25%**

Notes: Original dryer is a dehumidification dryer with a tank capacity of 75 kg.
Yearly power consumption is calculated at 15 yen/kW for 24 hours/day and 20 days/month.
Smaller-sized dryer has an assumed tank capacity of 25 kg.

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