

Improve Molding Quality

Heat Barrier Hat

Advancement Award for the Japan Society of Polymer Processing 2015

Encouragement Award for the 12th 'CHO' MONOZUKURI

Innovation Parts and Components 2015

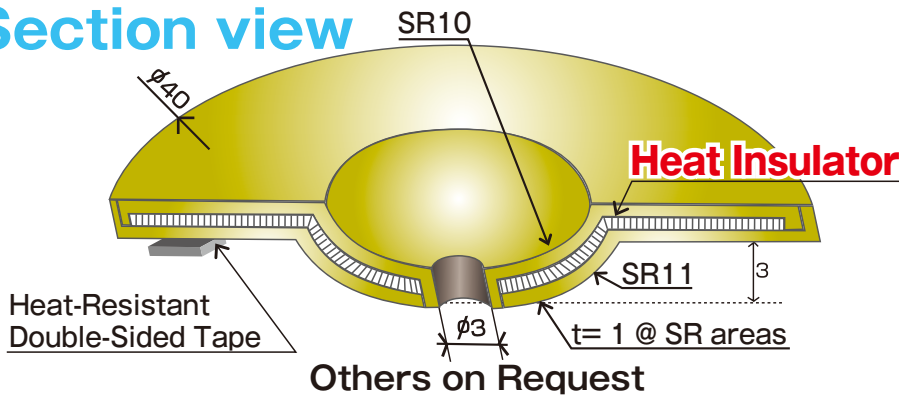
Selected for "MONOZUKURI" New Selection in KANSAI 2017



Photo of Real Thing

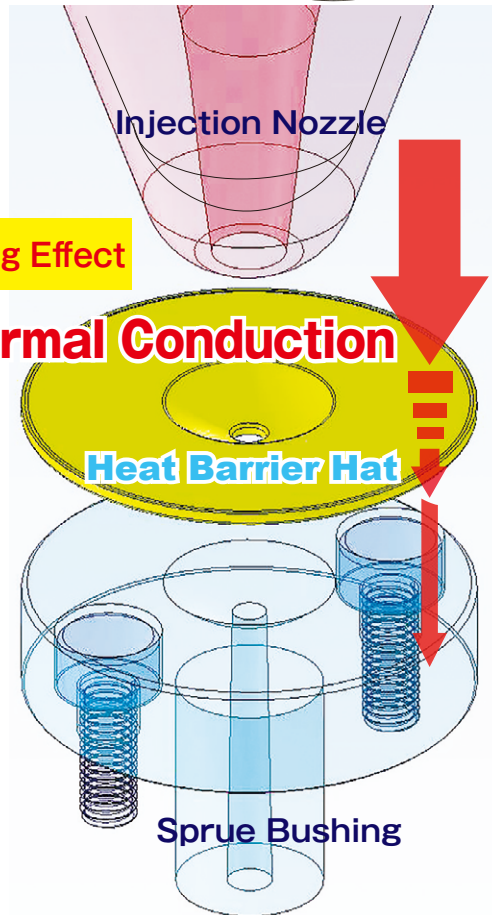
Heat Insulation between Injection Nozzle and Mold

Section view



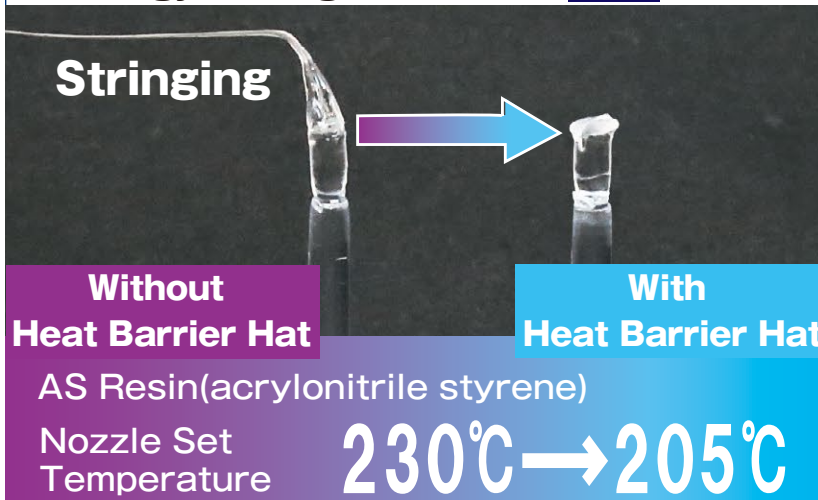
Energy-Saving Effect

Less Thermal Conduction

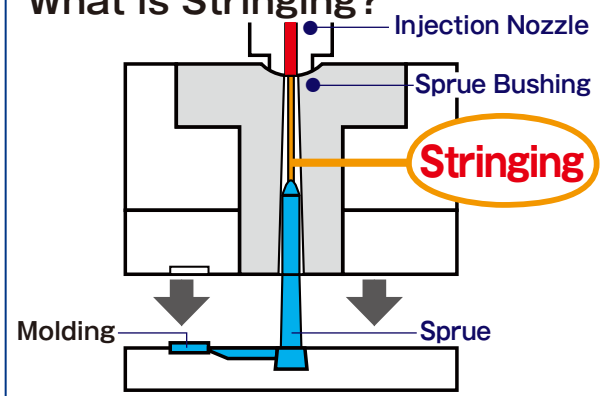


Higher Productivity by Lowering Defective Moldings

- ① Stringing Prevention (See Picture Below)
- ② Less Mold Heat Accumulation (Ref. to [Data①](#) on Overside)
- ③ Energy-Saving Effect (Ref. to [Data②](#) on Overside)



What is Stringing?



High Efficient Functional Mold Parts

Developed and Manufactured by
Shin-Nihon Tech Inc.
Plants - Osaka, Tottori, Okayama

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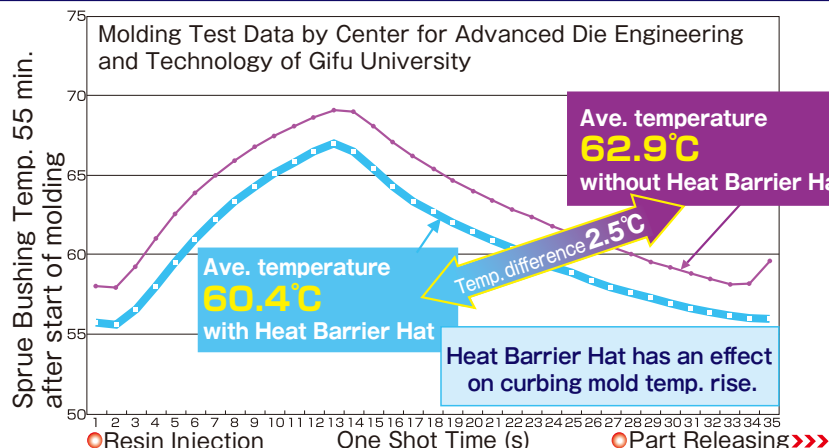
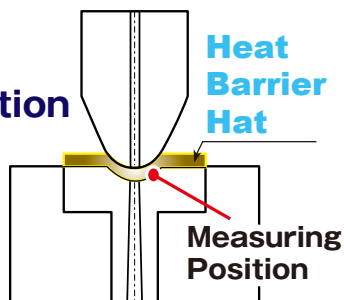
Customer Feedback (cf. overside)

Stringing was prevented with AS resin molded.
The same quality molding was achieved with the nozzle set temp. decreased from 230°C to 205°C
Resin flow was improved and molding pressure was reduced.

Data ①

Less Mold Heat Accumulation

ABS resin
@ 50°C mold
set temp.



Data ②

Energy-Saving Effect

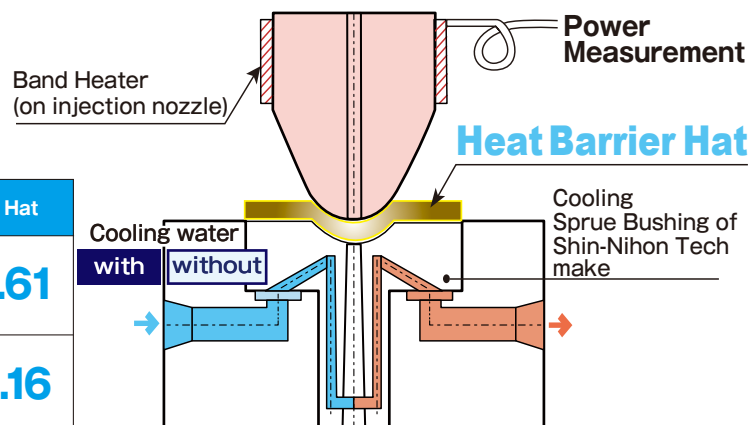
PMMA resin @ 105°C mold set temp.

Band Heater Power Consumption (Wh)

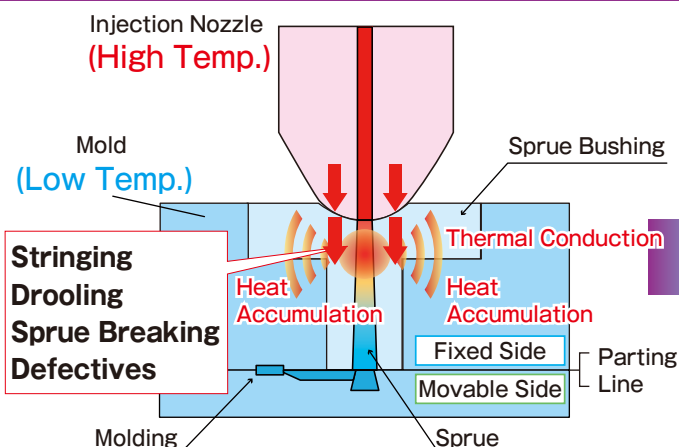
	Without Heat Barrier Hat	With Heat Barrier Hat
With cooling sprue bushing	47.16	36.61
Without cooling sprue bushing	41.35	39.16

Improvement!
about 22.4%

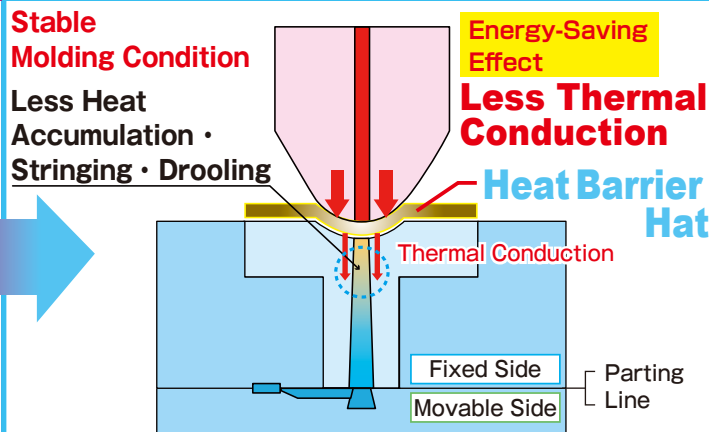
Improvement!
about 5.3%



Without Heat Barrier Hat



With Heat Barrier Hat



Effective Results

Customers	Hole (std. φ3)	Resin	Stringing Prevention	Nozzle Set Temperature (°C)	Saving	Others
Company A	φ2	Nylon 46 with additive 20%	○	Nozzle Temperature was decreased		Retraction of the nozzle at every injection was not required now.
Company B	φ3	Ceramic Compound	○	-		
Company C	φ3	Nylon 66	○	275 → 265		
Company D	φ3	-	○	-		Heat Barrier Hat was used every time stringing occurred with a number of resin types.
Company E	φ3	ABS	○	240 → 225		Molding peak pressure was decreased by 10 - 20 MPa.
Company F	φ3	AS	○	230 → 205		
Company G	φ3	PMMA	○	-		
Company H	φ3	Nylon system	○	-		
Company I	φ3	ABS / PP	○	- / 165 → 185		
Company J	φ3	PP	○	-	Defective reduction	Heat Barrier Hat prevented resin from winding around the injection machine.
Company K	φ3 φ2	PC	○	-		
Company L	φ3	PA6 (Nylon) / POM (Duracon)	○	220 → 240 / 180 → 190		The temperature of basic molding condition was achieved without stringing.
Company M	φ3	POM (Duracon)	○	190 → 180		
Company N	φ3	PA with additive 35%	○	310 → 305		
Company O	φ3	Nylon 66	○	300 → 280		Heat Barrier Hat acts as shock absorber to keep the nozzle from being broken.