



Competence to the details

Innovation Day BBG 2019

Welcome at BBG

Bernhard Satzger
Senior Sales-/Project Manager

- PUR Gate Trimmer – PUR-Anguss-Trimmer
- Zigzag Venting Slider – Zickzack-Entlüftungsschieber

The gate is a necessary mold component which does not belong to the part.

- The liquid PUR will be injected through the gate into the closed cavity
- The gate should not adversely affect the design of the part
- The gate should prevent that at the end unmixed Poly / Iso-components get into the part
- The gate must be manually trimmed after ejection from the mold
- The gate is finally garbage, depending on size from about 30g - 200g

PUR Gate Trimmer

Samples:

Variantes of Gates:



PUR Gate Trimmer

Presentation of so-called "PUR bucket shot" in 3 variants:

Mixing Head Hennecke MT 12 - Austrag 250 g/s - Schusszeit 4,5 s

60 x 1,9=114mm²



30 x 3,8=114mm²

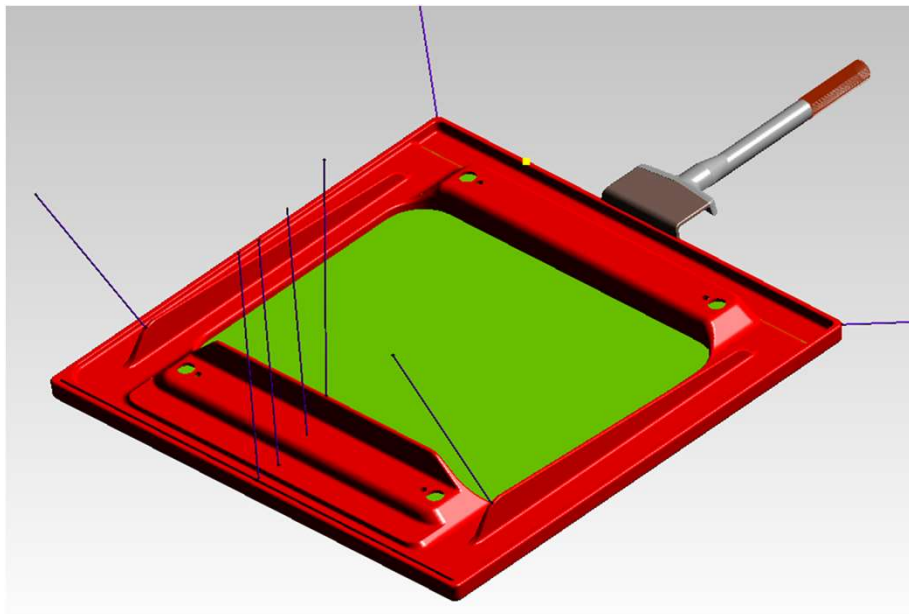


Ø 12=113mm²

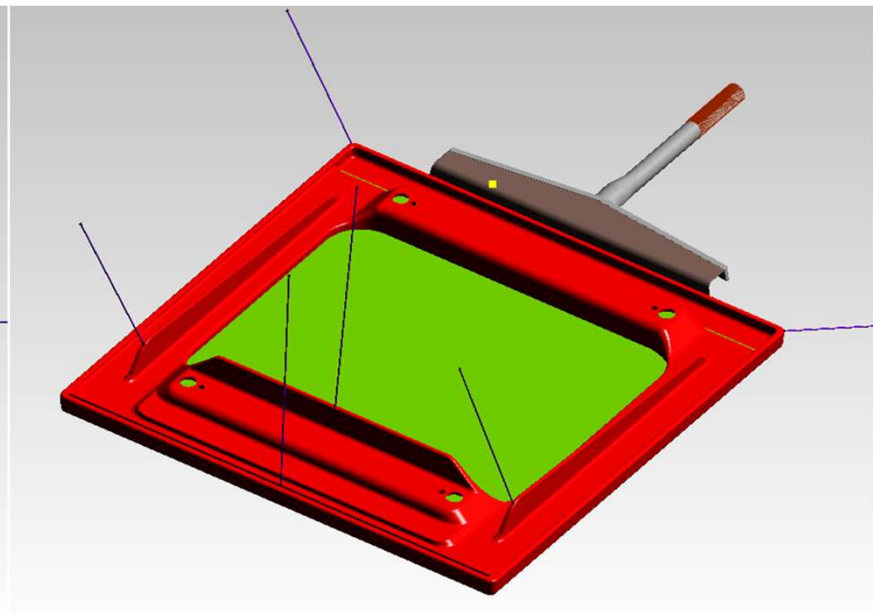


The gate is decisive for the quality of the part:
Sample of test glass encapsulation tool 300 mm x 300 mm.

Version 1: Gate short



Version 2: Gate long



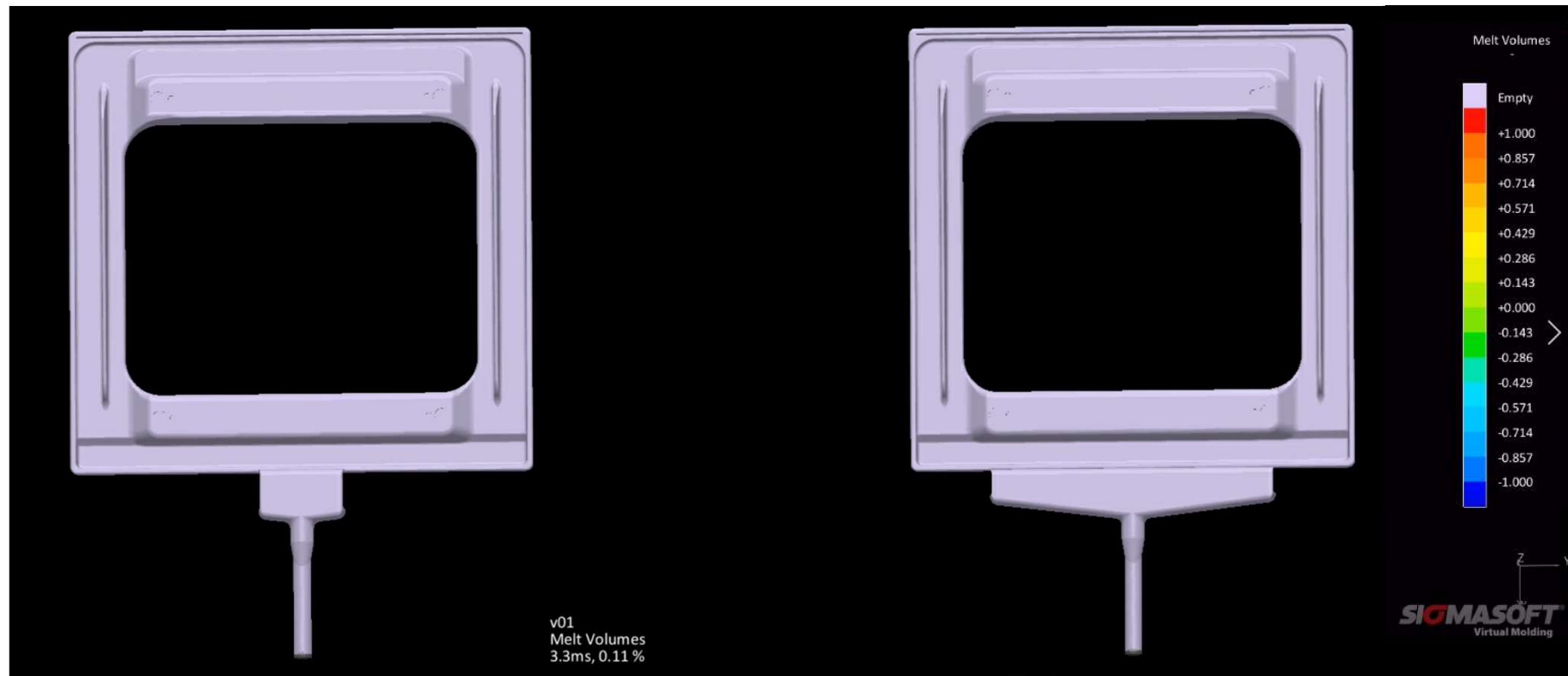
PUR Gate Trimmer

Gate cutter tool V1	
Position in mold	opposite car position (180° rotated)
Mold temperature	85°±5°
Shot time	3,1sec
Gate	2,0-2,0-2,0 (58,5mm)
Gate runner Ø	12mm
Volume Part	421,58cm ³
Volume Gate	18,37cm ³
Σ Volume	439,95cm ³
Create date	12.04.2019

Gate cutter tool V2	
Position in mold	opposite car position (180° rotated)
Mold temperature	85°±5°
Shot time	3,1sec
Gate	0,6-0,6-0,6 (200mm)
Gate runner Ø	12mm
Volume Part	421,58cm ³
Volume Gate	25,38cm ³
Σ Volume	446,96cm ³
Create date	12.04.2019

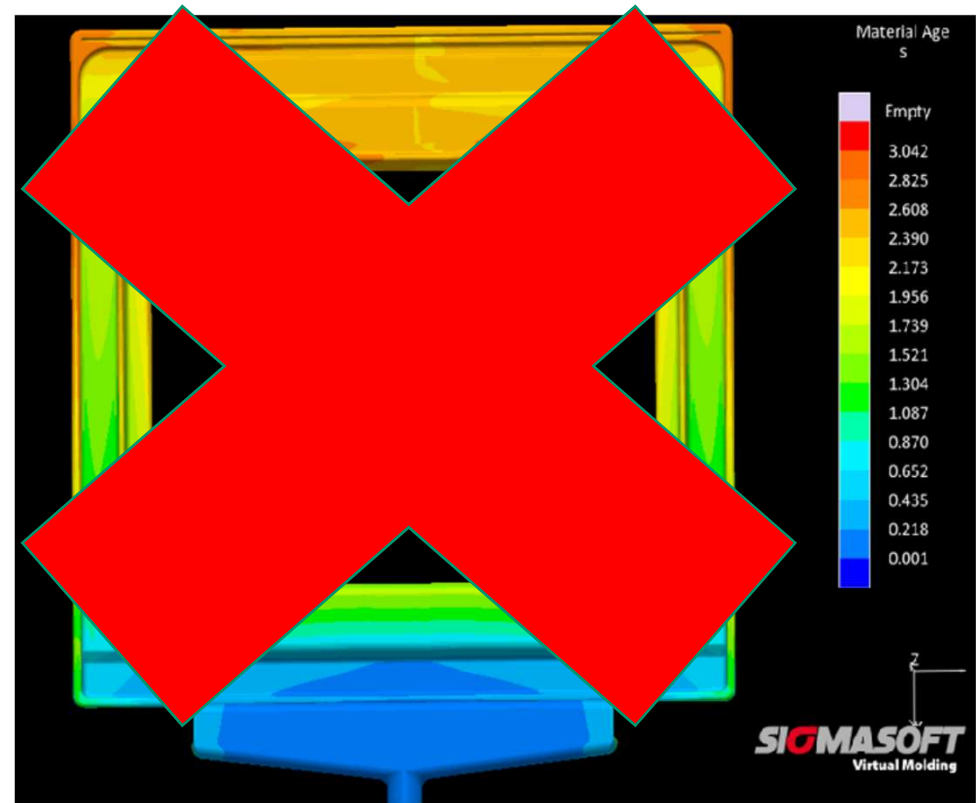
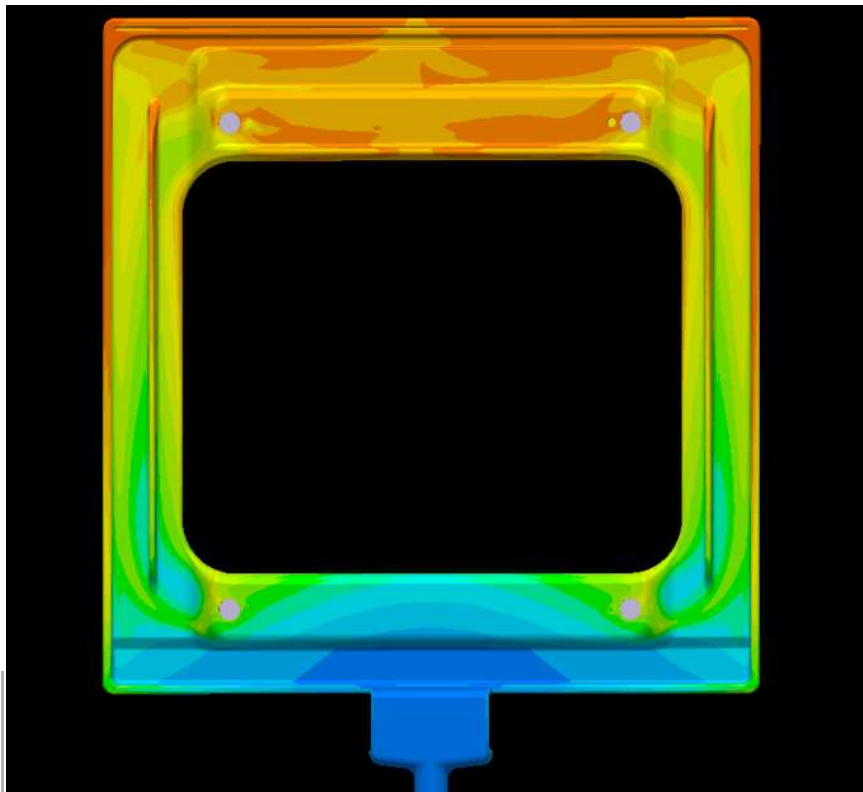
Version 1: Gate short

Version 2: Gate long



Version 1: Gate short

Version 2: Gate long



PUR Gate Trimmer

Trimming of the PUR Gate from the glass panel after ejection from the encapsulation tool



Standard Gate
Cut apart

Spout Mixing Head
Hennecke MT12

Length = 86mm

$V = 9,7 \text{ cm}^3$

→ 10 g PUR

Attention:

Unmixed PUR
material must not
get into the cavity.



Gate from Test tool with gate trimmer

Shortening of gate channel is possible

→ Saving of PUR-Material

Shortening of channel about 25 mm = 3 Gram

Comparison gate short/long from test tool 300x300 mm

= 7 Gram

→ = 10 Gram

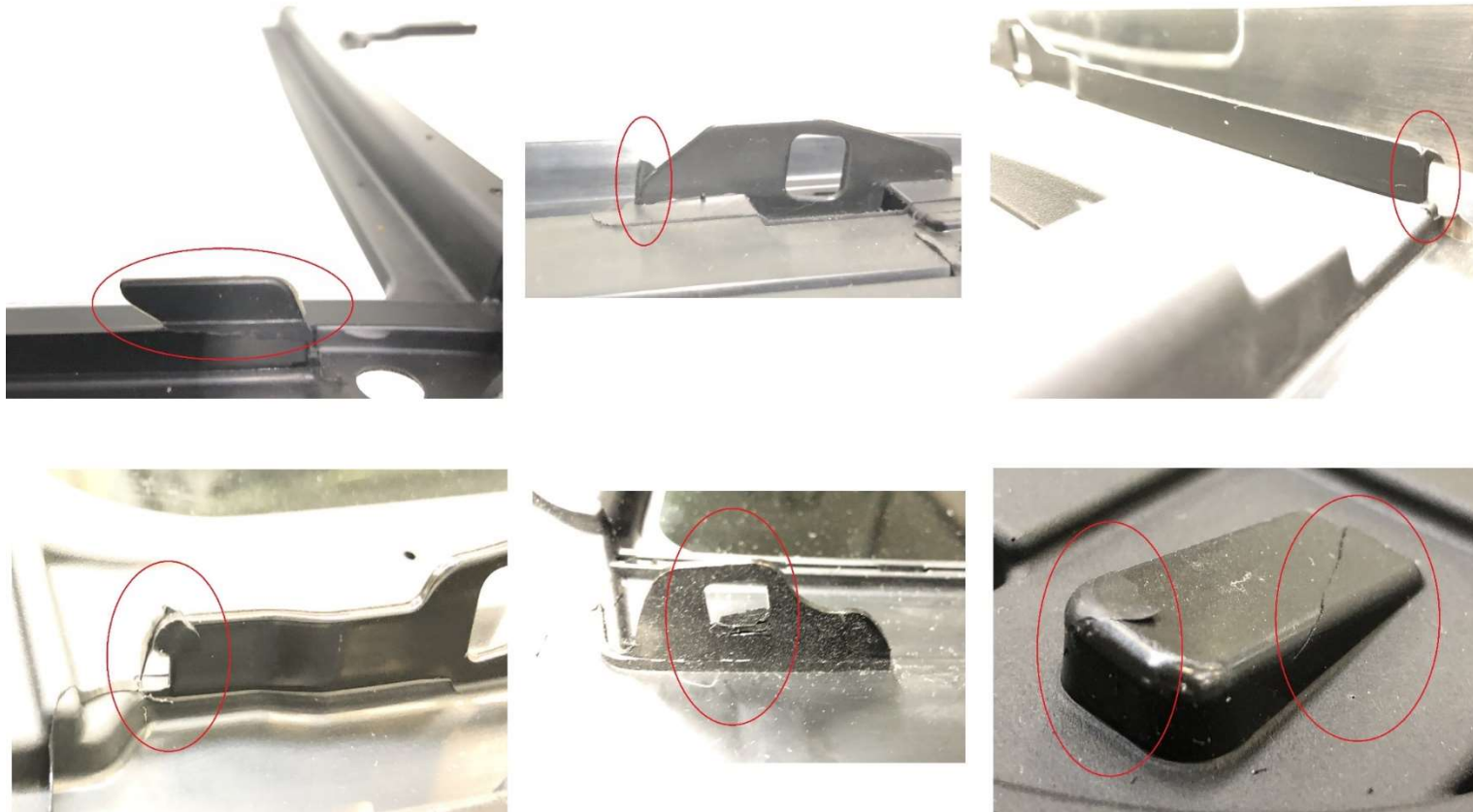
→ x 50.000 pc/p.a. x 5 years term = 2500 kg PUR



PUR Gate Trimmer

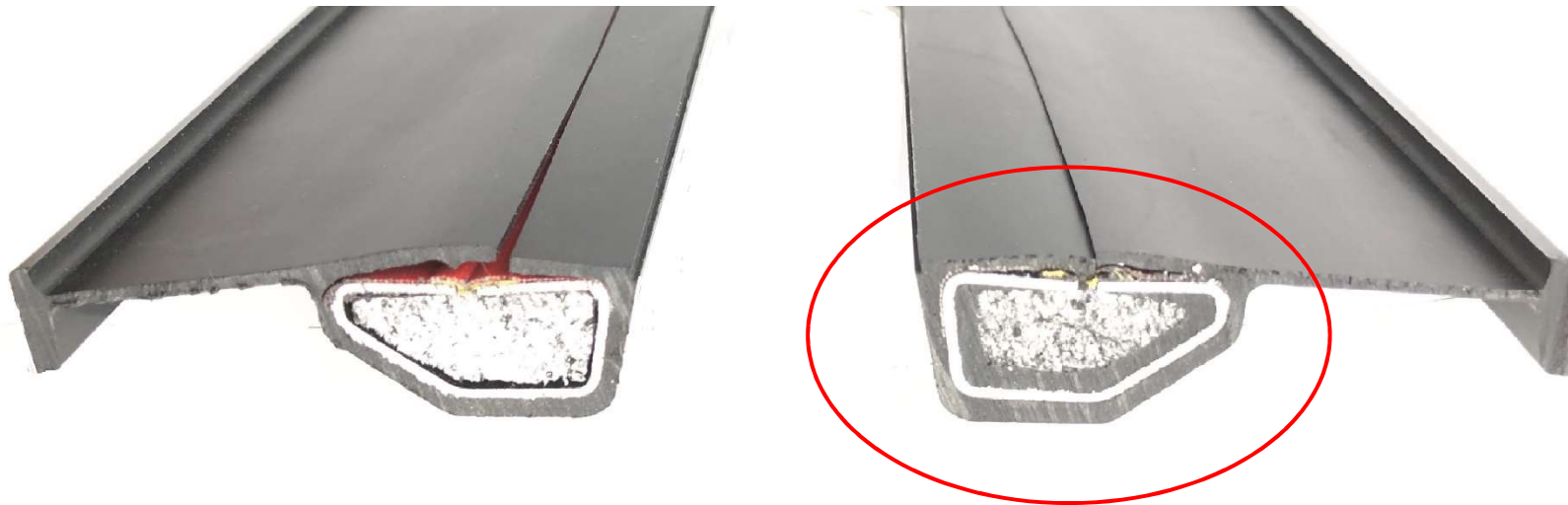
Defects were caused by the resulting pressure of the cleaning piston when the PUR material is pushed into the cavity

→ PUR Flushing of inserts, Glass, Brackets, Gliders etc.



Defects were caused by the resulting pressure of the cleaning piston when the PUR material is pushed into the cavity

→ Collapsing PS insert



PUR Gate Trimmer

Defects were caused by the resulting pressure of the cleaning piston when the PUR material is pushed into the cavity

→ PUR drain away and leaves a surface that looks like a leopard print



Cut trimm solution

VS.

Molded trimm solution



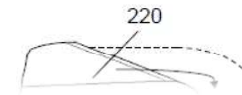
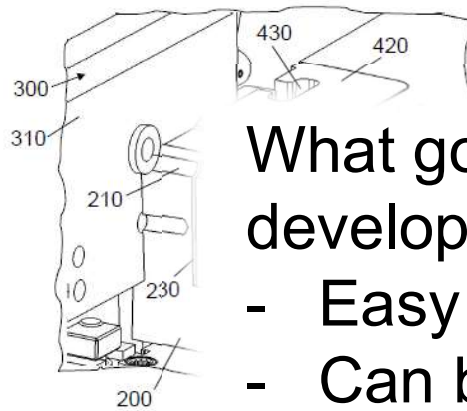
Design and function of the Gate-Trimmer

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What goals had I achieved myself to develop the PUR gate trimmer:

- Easy to manufacture
- Can be used with existing technology (Hydraulic free tools)
- Easy to handle and clean
- No wear on the trim device
- Ultimately improvement of part quality

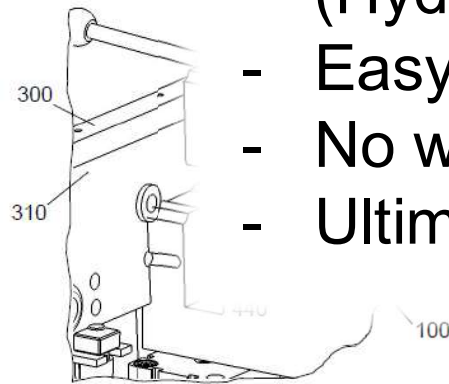


FIG. 6

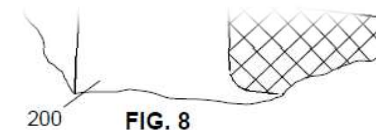


FIG. 8

Design and function of the Gate-Trimmer

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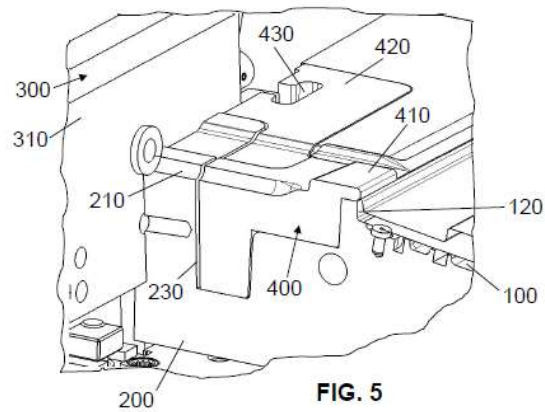


FIG. 5

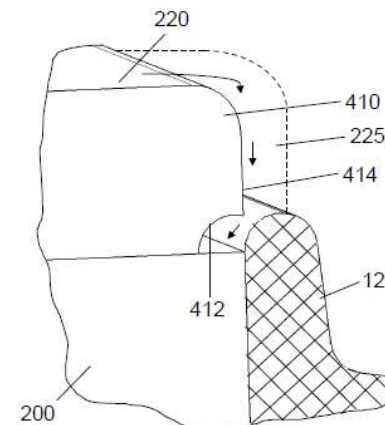


FIG. 7

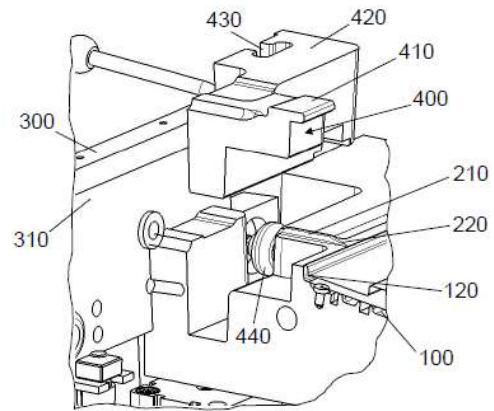


FIG. 6

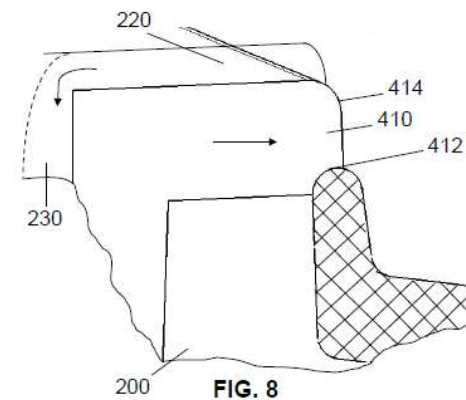
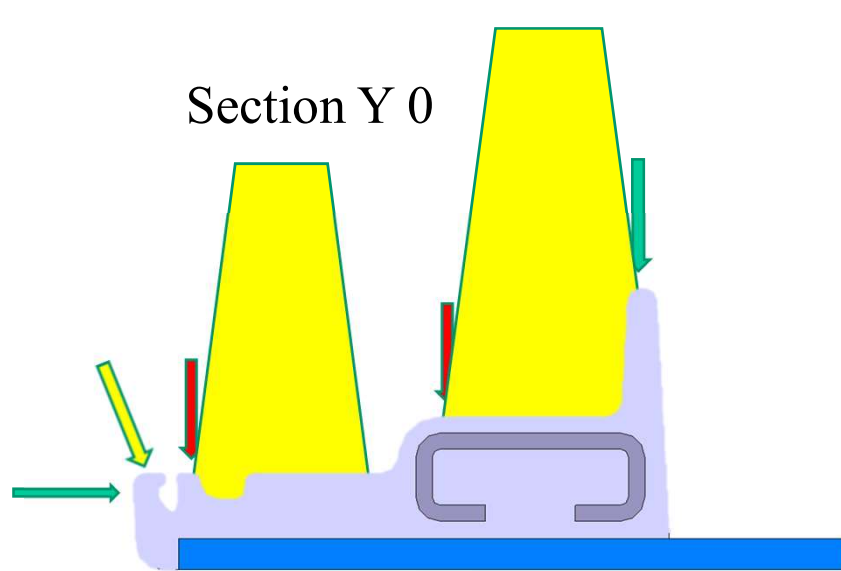


FIG. 8

Zigzag Venting Slider

The correct venting - selection and positioning of the venting slider

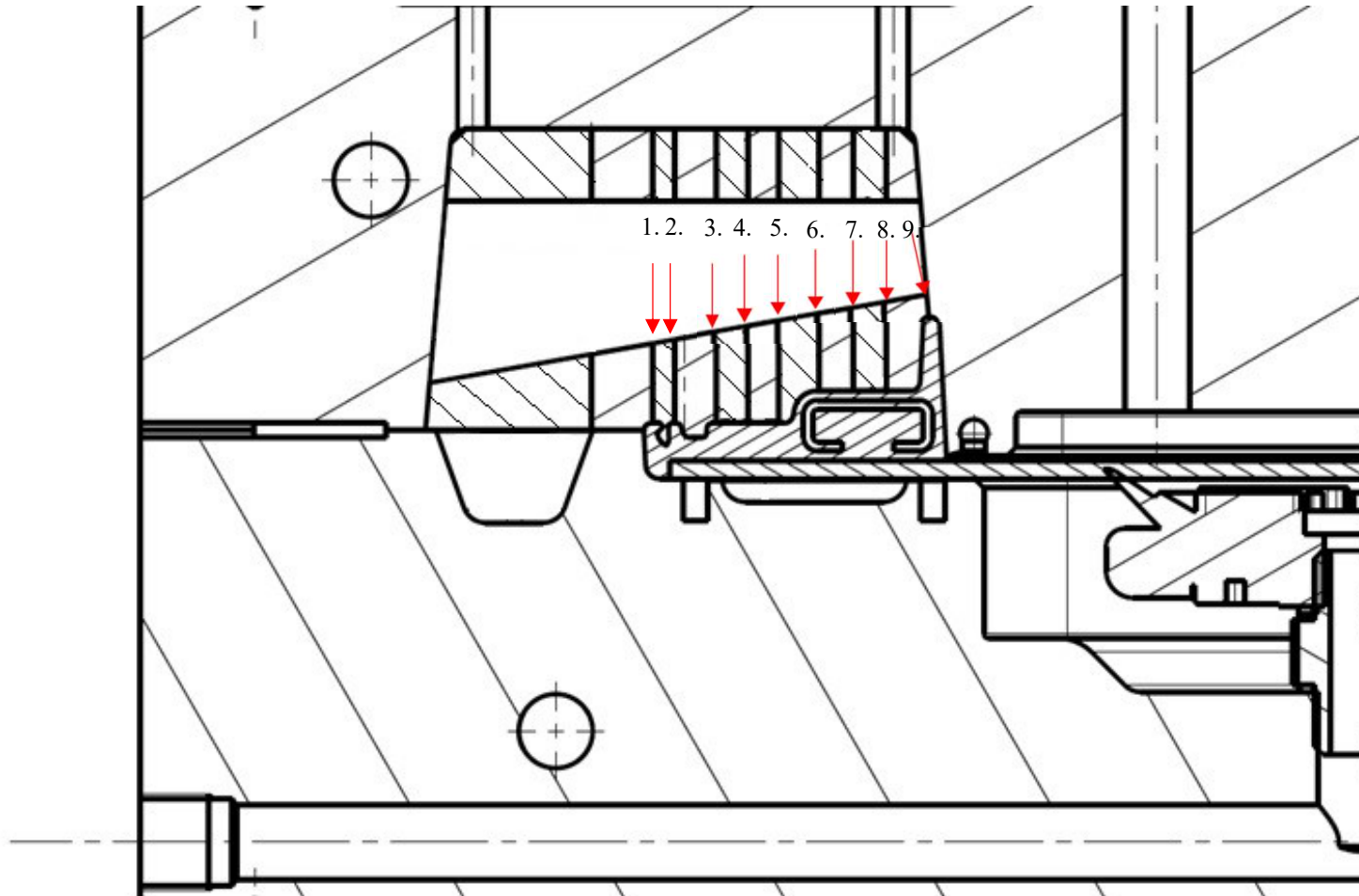


Bubble
Collector



Zigzag Venting Slider

The correct venting – Sample shows 9 options of choice and as needed !



Zigzag Venting Slider

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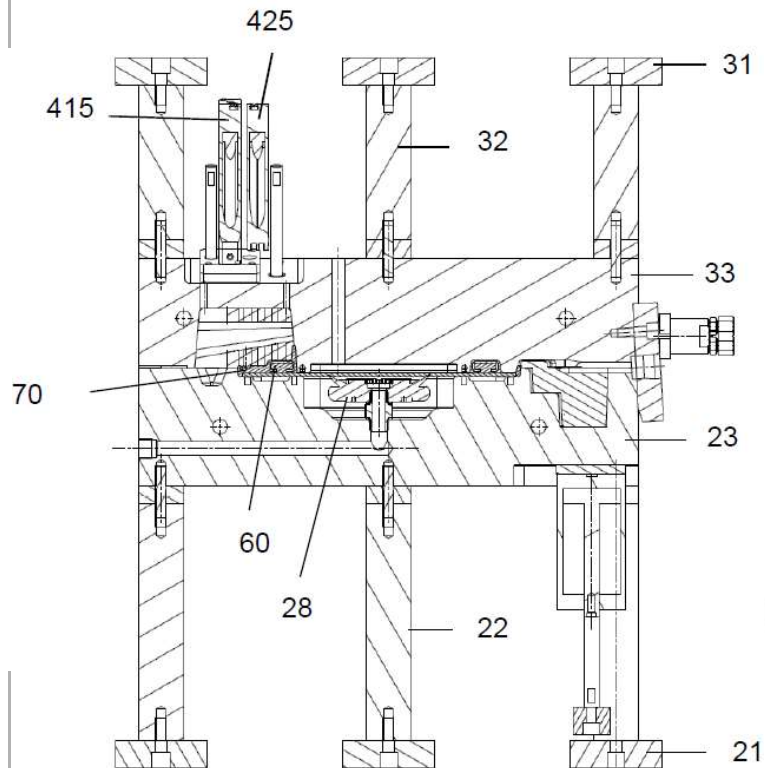


FIG. 3

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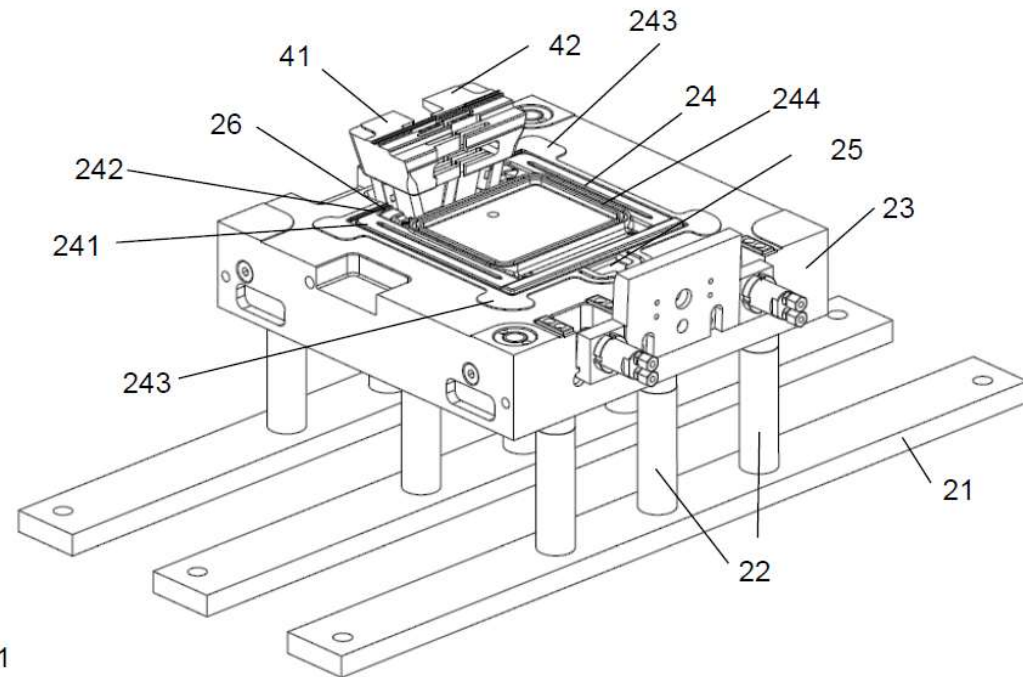


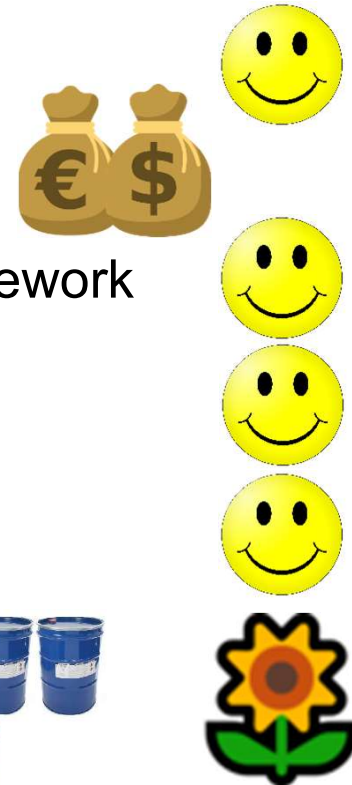
FIG. 5

Note:

Both inventions are not only applicable to PUR glass encapsulation as shown in our sample. These can also be used in all other RIM manufacturing processes or RTM processes where thermosets are injected into a closed cavity via a gate using a mixing head.

Summary of all benefits for you as our customer with these innovations:

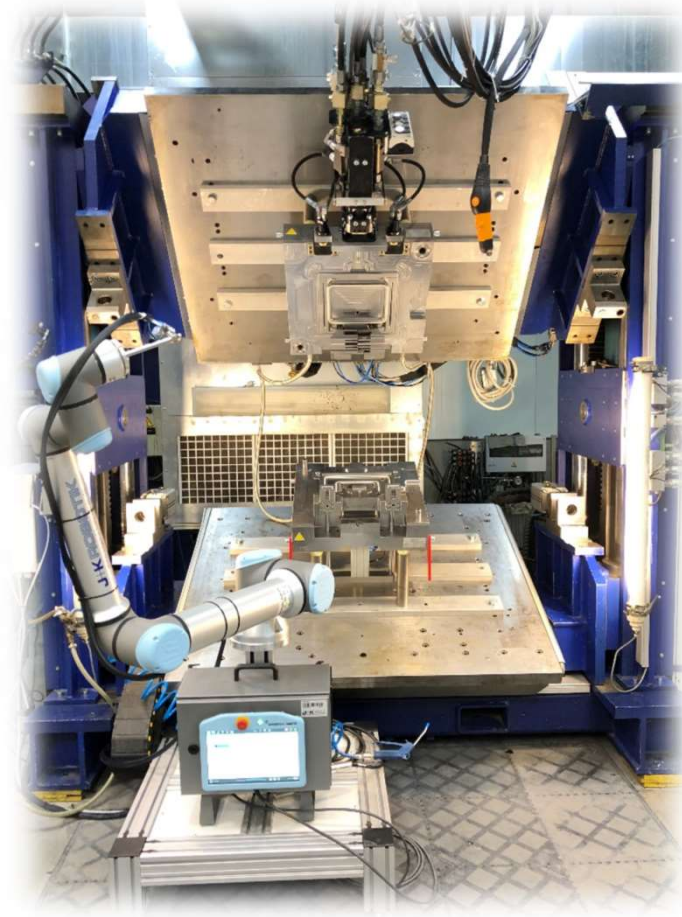
- Quality of Glass Panel nearly perfect
- Cost Savings
- Higher productivity according less trimming work or rework
 - Less scrap rate
 - Less waste
- Protection of our Environment



Life demonstration in our Pilot Shop at 1:30 pm and 3:45 pm

Apply release agent
by robot handling devices supported
through our partner companies:

Jahnke GmbH
Jugard+Künstner GmbH
ACMOS CHEMIE KG





Competence to the details

Innovation Day BBG 2019

Thank you for your attention

I wish you an interesting day
and interesting conversations

Bernhard Satzger
Senior Sales-/Project Manager