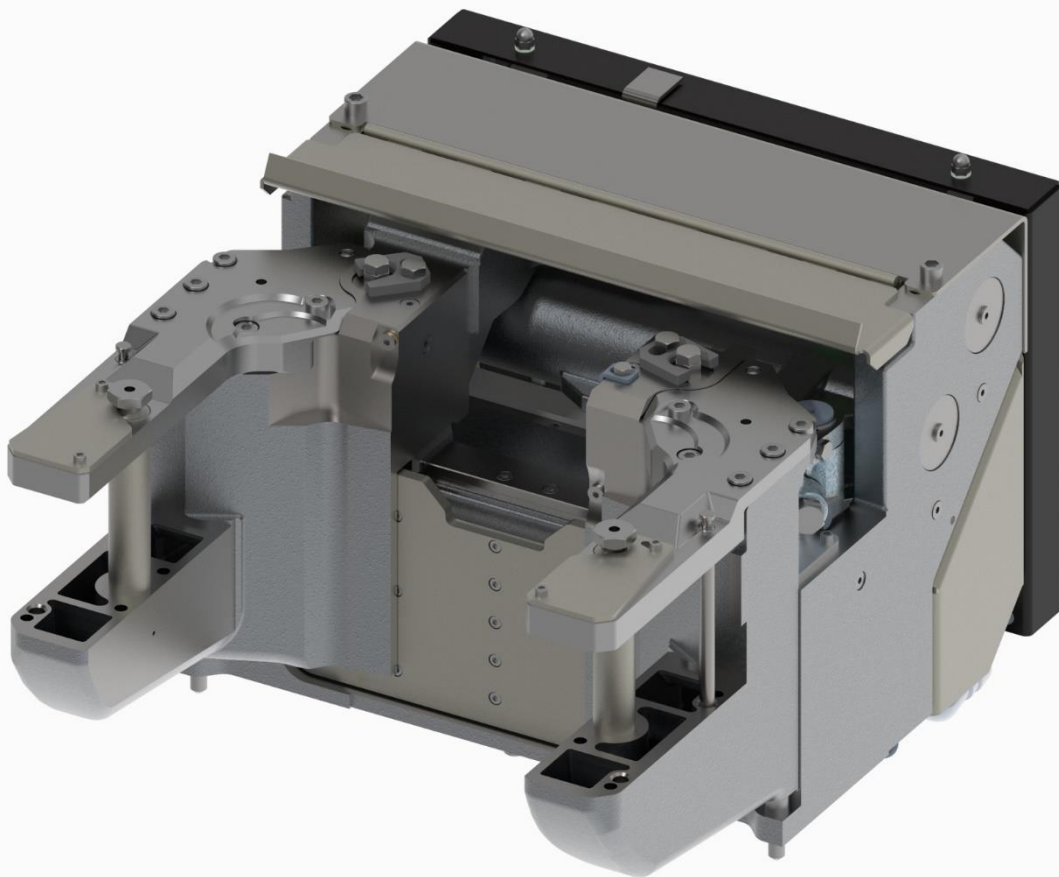


# Technical News Bulletin

Steinhausen, July 2024

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## **AIS Modular Blank Mold Support Mechanism**

- Extended cooling options with enhanced air flow
- IS molds compatible with AIS machines
- Suitable for small ware production

## Introduction

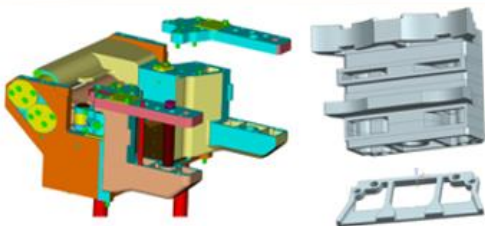
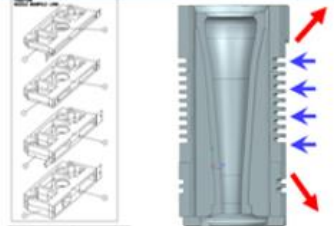
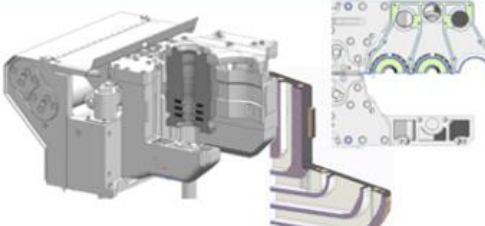
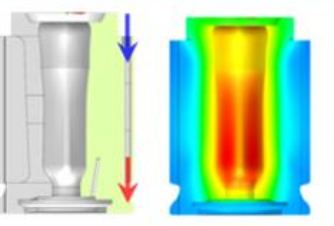
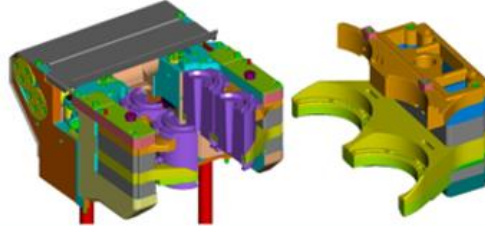
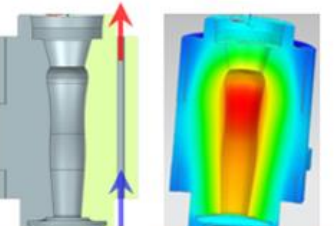
The AIS Modular Blank Mold Support Mechanism 210-2234 is the evolution of the existing 210-2110 mechanism. Its new modular and stiffer design allows:

- extended cooling options for blank molds with enhanced cooling air flow
- existing IS molds to be reused on AIS machine
- extension of the ware range for small ware production: articles manufactured with IS 4¼ DG can be produced on AIS 4¼ TG

## Description

The AIS Modular Blank Mold Support Mechanism can accommodate different cooling configurations:

- VertiFlow Blank
- InVertiFlow Blank
- the newly developed Traveling Radial Cooling, enabling the continued use of existing IS molds to ensure cross compatibility

	Principles	Typical Blank T °C distribution
<p><b>Traveling Radial Cooling</b></p> <ul style="list-style-type: none"> <li>• IS to AIS molds reusability</li> <li>• Individual cavity control (Temperature control closed loop)</li> <li>• Small ware applications</li> </ul>		
<p><b>VertiFlow Blank</b></p> <ul style="list-style-type: none"> <li>• Ideal for B&amp;B – WMPB</li> <li>• Individual cavity control (Temperature control closed loop)</li> <li>• Increased container quality (improving glass distribution)</li> </ul>		
<p><b>InVertiFlow Blank</b></p> <ul style="list-style-type: none"> <li>• Ideal for light weight NNPB</li> <li>• Individual cavity control (Temperature control closed loop)</li> <li>• Enhanced thermal profile</li> </ul>		

All these cooling options feature individual cavity control of the blank molds through enhanced design of cooling air channels, with the following advantages:

- |  |                                    |
|--|------------------------------------|
| • Higher cooling efficiency                            | → Improved container quality       |
| • Individual cooling of mold halves                    | → Optimized cooling conditions     |
| • Direct portability of IS blank molds on AIS machines | → Easier transition from IS to AIS |
| • Noise reduction                                      | → Improved environment             |
| • Reduced cooling air consumption                      | → Energy saving                    |

The design of the Traveling Radial Cooling feature permits to reuse:

- blank molds from IS 4-1/4 DG, 3" TG, and 85 mm TG with AIS TG setup.
- blank molds from IS 5" DG, 5-1/2" DG, and 6-1/4" DG with AIS DG setup.

Furthermore, the cooling nozzles can be configured into the nozzles-spacers stack to suit the individual container cooling requirements.

Traveling Radial Cooling setup 210-2273-7  
Reusing IS assembly #23 DG 5-1/2 in AIS-M DG



Traveling Radial Cooling setup 210-2274-26  
Reusing IS assembly #16 DG 4-1/4 in AIS-M TG



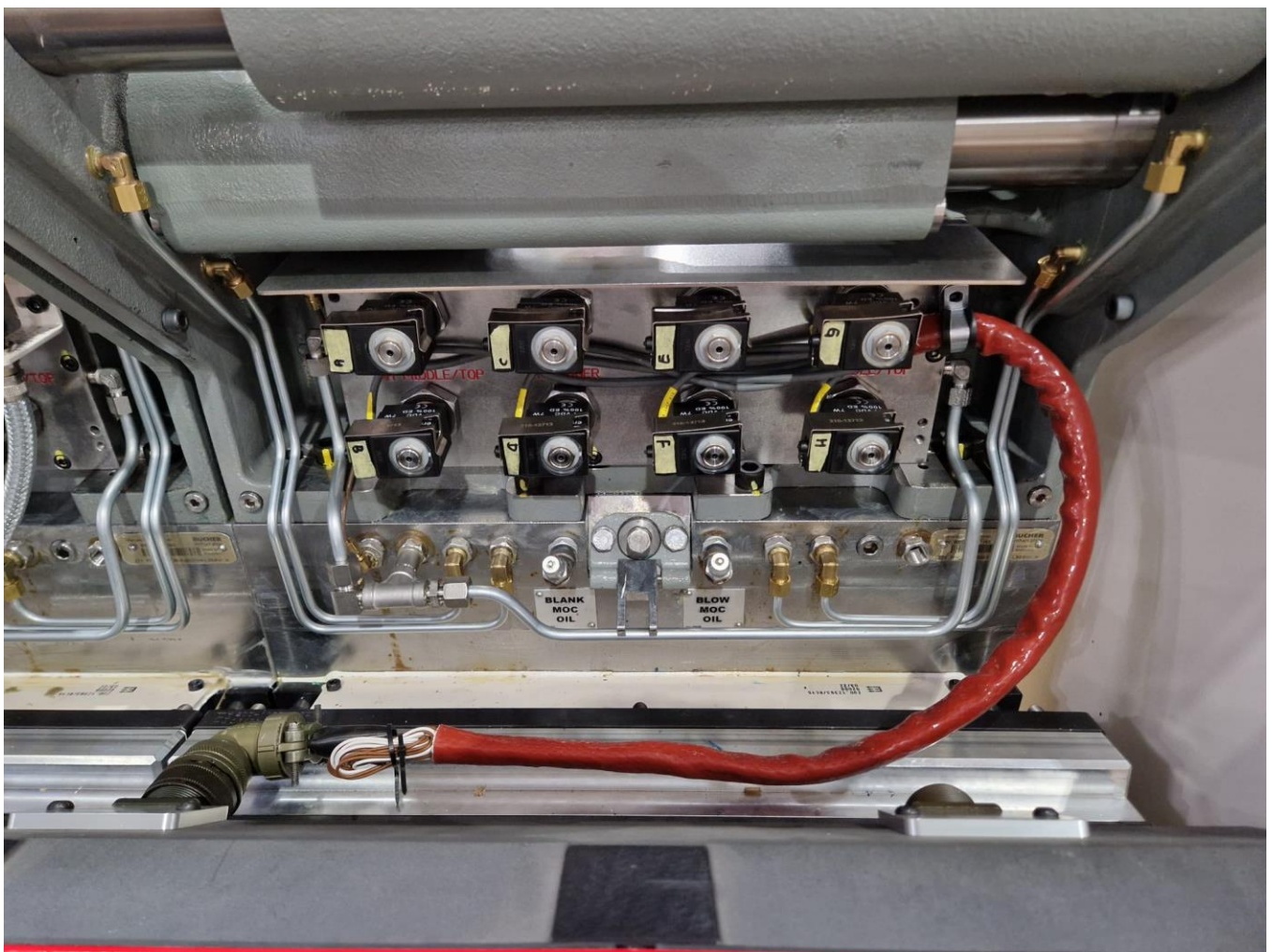
Traveling Radial Cooling setup 210-2276-1  
Reusing IS assembly #1 TG 85 in AIS-M TG



Traveling Radial Cooling setup 210-2293-3  
Reusing IS assembly #3 DG 4-1/4 in AIS-M DG

### Individual Cavity Control for cooling.

The solenoid valves for blank mold cooling control are located on the back of the modular bracket and are directly wired to the 26-lines electro-pneumatic valve block (EPVB). This allows to free up some valves of the EPVB and use them for Plunger Up Exhaust function, thus providing a more efficient plunger motion control.



Mold Design and Ware Range Limits

<b>AIS M - Mold design and Ware Range limits</b> (includes Servo Baffle and Servo Blow head mechanisms)							
Configuration	6 1/4" DG (includes "K" type)	4 1/4" TG	Single Gob "K" type	Single Gob "K" type, "extended"	3" QG (under construction)		
Section frame height	standard	standard	standard	+35mm packer	standard		
<b>Max. Body diameter</b>							
With Vacuum	120	76	178 (Stack) (156 with BW VertiFlow)		45		
<b>Ware range limits:</b> Height under Finish: Blank VertiFlow (VF) / InVertiFlow (/ Travelling Radial Cooling							
<b>Ware range limits:</b> Height under Finish: Blank VertiFlow (VF) / InVertiFlow (IVF) / Travelling Radial Cooling (TRC)	HuF.	VF / IVF / TRC	VF / IVF / TRC	VF / IVF / TRC	VF / IVF / TRC	TRC	
<b>Process</b>	B&B - 48mm	Min	120 / 120 / 73 *	110 / 110 / 68 *	125	195	
		Max	412	369	466	536	
	NNP&B - 38mm	Min	79 / 79 / 67 *	80 / 80 / 66 *	105	175	
		Max	380	350	406	441	
	<b>WMP&amp;B:</b>						
	70mm	Min	79 / --- / 67 *	80 / --- / 66 *	100	145	---
		Max	381	350	406	441	---
	83mm	Min	78 / --- / 78 *	---	---	---	---
		Max	352	---	No.2	No.2	---
	90mm	Min	78 / --- / 78	---	100	145	---
		Max	352	---	406	441	---
	105mm	Min	78 / --- / 78	---	---	---	---
		Max	344	---	No.3	No.3	---
	120mm	Min	---	---	100	145	---
Max		---	---	406	441	---	

\* With Travelling Radial Cooling and reusing existing IS molds, smaller height-under-finish containers can be produced by extending both bottom plate dovetail and flange heights.

## Specification

The AIS Modular Blank Mold Support Mechanism is standard for AIS machine. Its part number is 210-2234-1, which supersedes the 210-2110-00 family.

All AIS machines configured with the Modular Blank Mold Support Mechanism are identified with the name AIS-M.

Since the 210-2234-1 mechanism is designed to be used in combination with the 4000 series plunger mechanism, all AIS-M machines are supplied with 65 mm frame packer.

## Installation Requirements

All New AIS-M machines are equipped with the AIS Modular Blank Mold Support Mechanism.

Upgrade to AIS Modular Blank Mold Support Mechanism is possible via section frame exchange.

### Features

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Traveling Radial Cooling

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Individual Cavity Control Cooling

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VertiFlow / InVertiFlow

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Redesigned cooling air channels

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Ware range and production capacity extension

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### Benefits

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Blank molds from existing IS machines can be reused,

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Optimized thermal dissipation of the molds by temperature control closed loop

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The consolidated VertiFlow / InVertiFlow cooling technology allows enhanced cooling capacity, reducing cooling air consumption and environment noise

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Enhanced cooling air distribution between cavities

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The AIS Modular Blank Mold Support Mechanism, in combination with the Traveling Radial Cooling configuration, permits small ware production of typical IS DG 4-1/4 articles on the AIS TG 4-1/4 machine, thus increasing production capacity by 50%.

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