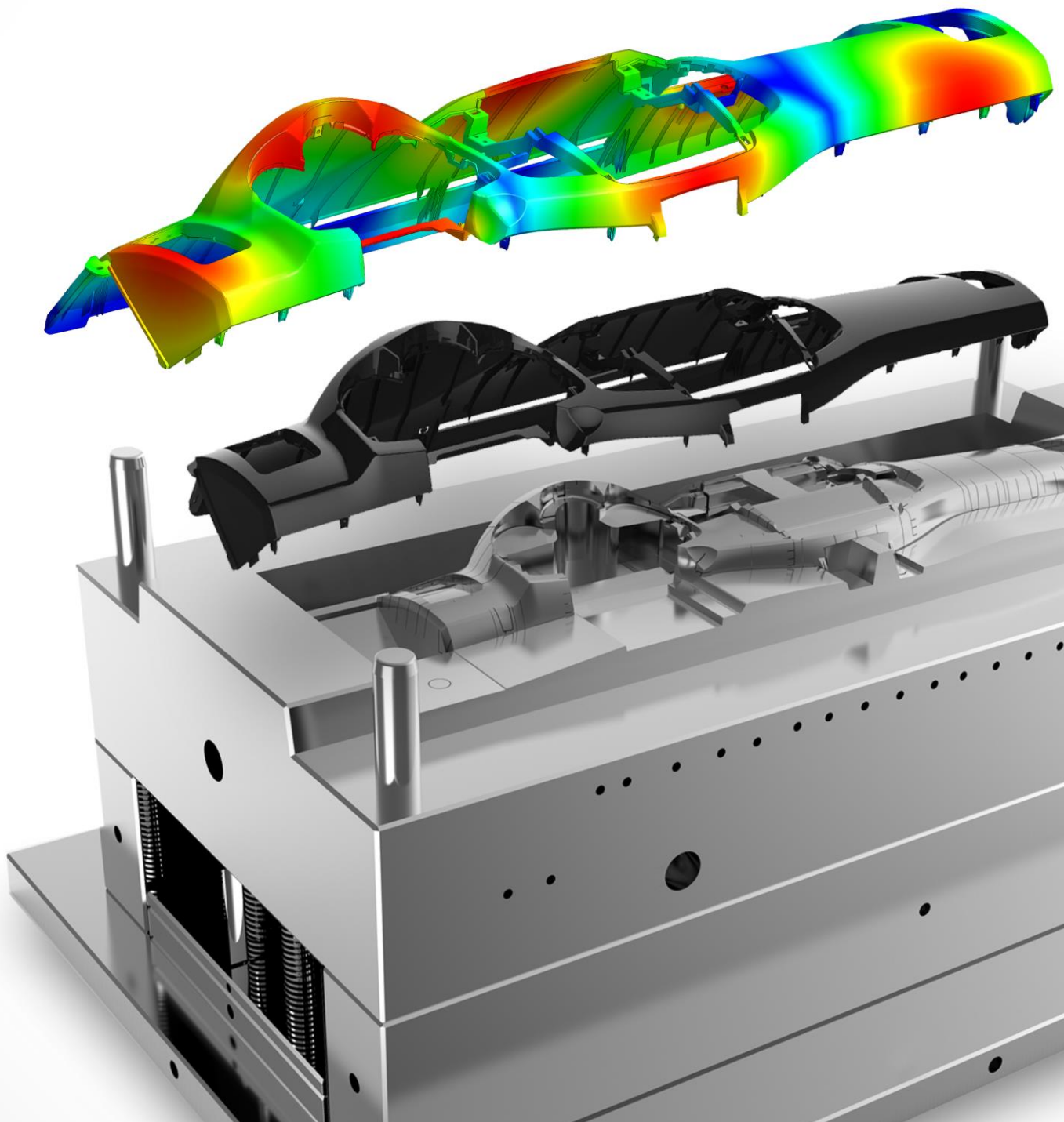


## Moldex3D R16 Release Note



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## Release Note of Moldex3D R16

Release Version: R16

Release Date: March, 2018

### Introduction

CoreTech continues to maintain and supply more stable programs for Moldex3D users. The major enhancements and bug fixes in this service pack are briefly listed as below:

### Supported Platform

#### A. System Requirements

Platform	OS	Remark
<b>Windows / x86-64</b>	Windows 10 family	Moldex3D R16 is certified for Windows 10
	Windows 8 family	
	Windows 7 family	
	Windows Server 2008	
	Windows HPC Server 2008	
	Windows Server 2012	
	Windows Server 2016	
<b>Linux / x86-64</b>	CentOS 6 family	Linux platform is used for calculation resource only. Moldex3D LM, Pre-processor and post-processor <b>do not support</b> Linux platform
	CentOS 7 family	
	RHEL 6 family	
	RHEL 7 family	
	SUSE Linux Enterprise	
	Server 11 SP2	

## B. Hardware Requirements

Minimum	
CPU	Intel® Core i7 processor
RAM	16 GB RAM
HDD	1 TB free space
Recommended	
CPU	Intel® Xeon® E5 processor*
RAM	32 GB RAM
HDD	2 TB free space

\* Intel Xeon E5-1620 is recommended and utilized for official benchmark (with 4x8G RAM). This CPU has four memory channels with maximum memory bandwidth of 51.2 GB/s. Each core in this CPU has one memory channel and average memory bandwidth of 12.8GB/s.

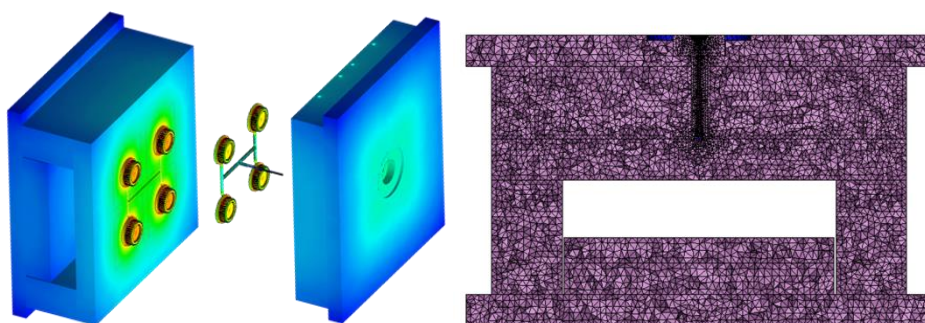
[http://ark.intel.com/products/64621/Intel-Xeon-Processor-E5-1620-10M-Cache-3\\_60-GHz-0\\_0-GTs-Intel-QPI](http://ark.intel.com/products/64621/Intel-Xeon-Processor-E5-1620-10M-Cache-3_60-GHz-0_0-GTs-Intel-QPI)

Note: In order to increase calculation efficiency and stability, it is recommended to switch off Hyper-Threading under RC/DMP structure.

## Function Enhancements

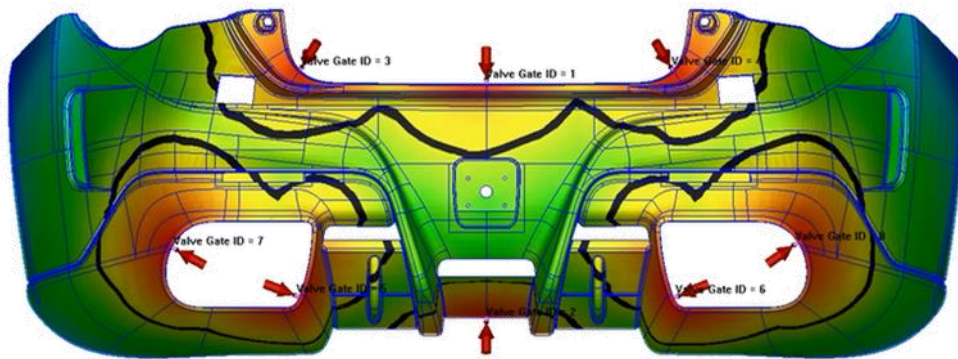
### Pre-processor

- [Designer] Enhance modeling capability for advanced molding simulation
  - [AHR] Support Auto-meshing for Pin Movement model defined by line elements
  - [Cool] Support full mold model modeling with mold plate components
  - [BLM] Improve meshing for connection defined with skew lines

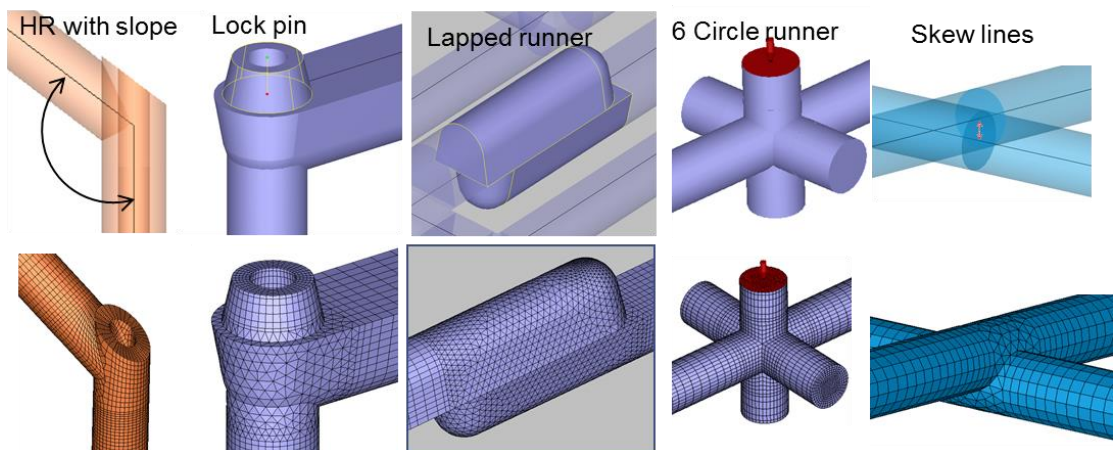


- [Designer] Enhance modeling tools for better performance and usability

- [Designer] Enhance L/t display on performance and usability
- [Designer] Improve data transfer for symmetry volume calculation
- [Designer] Support operation to copy, move and rotate mesh elements
- [Designer] Allow more flexible Edge gate setting



3. [BLM] Auto-adjust BLM offset ratio based on mesh size
4. [BLM] Enhance Hexa-based Runner and Cooling system mesh generation
  - [BLM] Add new format for gate mesh: Fan gate
  - [BLM] Add new format for runner mesh: Annular Joint (CirAnn\_I), Sloped Annular Joint (CirAnn\_Slope) , Lock Pin, Lapped runner, Orthogonal Joint (6Cir\_Ortho)
  - [BLM] Add new format for cooling channel mesh: Baffle, Bubbler



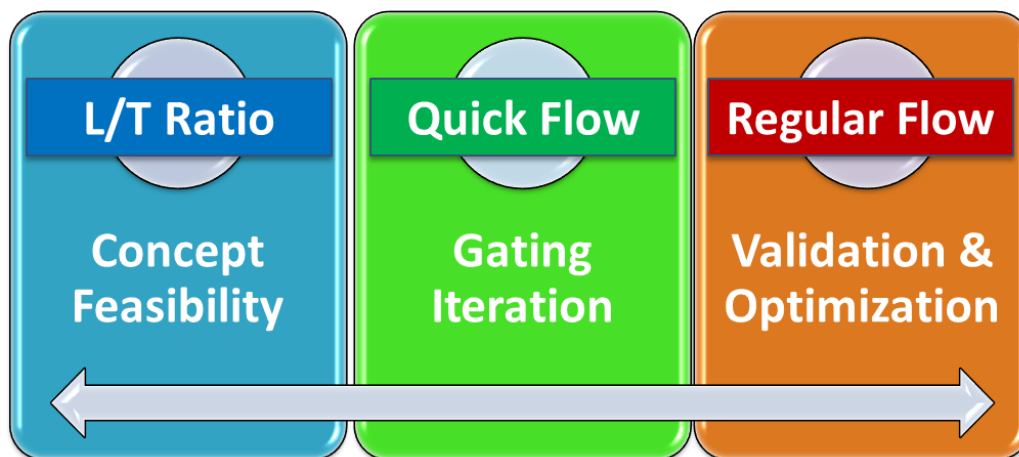
5. [BLM] Allow Non-matching mesh model between part and other components
  - [BLM] Improve gate rebuild performance and allow non-matching topology
  - [BLM] Allow non-matching mesh between solid mesh of part and cooling system
  - [BLM] Allow non-matching mesh cooling system with mold insert and hot

runner metal

6. [Material] Enhance Material Wizard with expanded database and usability
  - [Material] Add Two domain modified Tait as new PvTC model
  - [Material] Add Cross CastroMacosko Model (1) as the extended viscosity model
  - [Material] Enhance Material Wizard Usability: Modify history, information resource, search window size
7. [Process] Expand Select Injection Machine database for real process approach
  - [Process] Enable Maximum injection pressure in Simple mode
  - [Process] Support Machine Interface for 百塑 machines
8. [Computation] Support Import Venting BC and fiber mat orientation (KPT) together with MFE

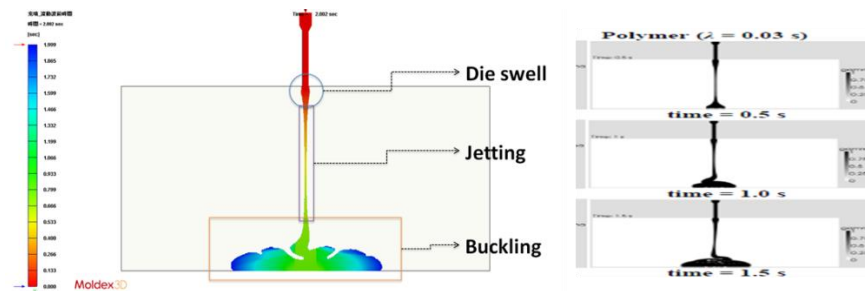
## Solvers

1. [Flow] Speed up simulation with shorter model-to-result time and resource
  - [Flow] Enhance regular computing speed by up to 30 percentage
  - [Flow] Add high speed analysis sequence of filling: Quick Flow
  - [Cool] Support Non-matching mesh of insert and cooling system

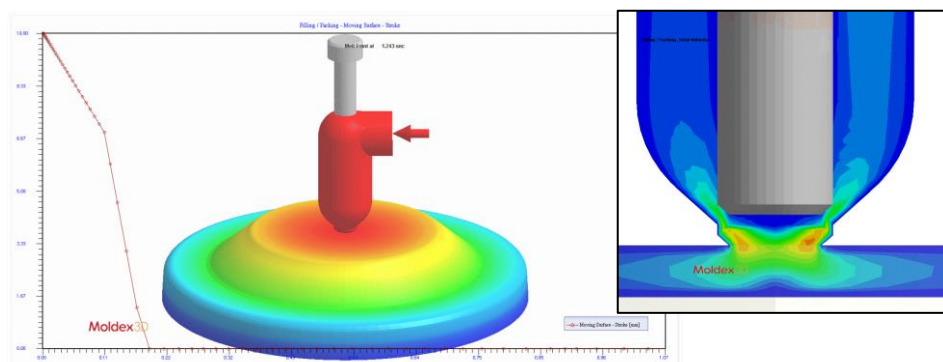


2. [Flow] Support new generation viscoelastic Flow Solver
  - [VE] Allow Coupled VE-Flow Analysis
  - [VE] Support Multi mode of PTT model and Giesekus model for non-linear parameters of VE property
  - [VE] Improve PTT model (Linear and Exponential) with Second Normal Stress Coefficient





3. [Flow] Enhance Flow solver capability for different user scenario
  - [Flow] Support mixed modes for valve gate control
  - [Flow] Output Clamping Force Centroid for mold balance evaluation
  - [Flow] Allow valve gate to close automatically when melt front pass by
  - [Flow] Allow time dependent pressure in air vent control
  - [Flow] Allow resume terminated analysis under Machine mode
4. [Flow] Enhance crystalline simulation and result performance
  - [Flow] Enable crystalline calculation by default
  - [Flow] Enable Relative Crystallinity result shown with sensor node
5. [Pack] Enable more option for flexible Packing analysis setting
  - [Pack] Support multiple time step output for extend pack
  - [Pack] Add option to close all valve gates in the Packing stage end (EOP)
6. [Cool] Rename Melting Core (Cooling Result) with Molten Core
7. [Expert] Enable more option for flexible optimization analysis and task
  - [Expert] Add option to stop all batch runs when one failed
  - [Expert] DOE support matrix mode setting and analysis
  - [Expert] Support optimization with PvT result of multiple sensor nodes
8. [AHR] Support Pin Movement simulation
  - [AHR] Support Valve Pin open/close control
  - [AHR] Support Pin Movement profile setting"



9. [WAIM] Support Push-back process in full-shot molding simulation
10. [BiIM/CoIM] Support Particle Tracer result for Bi-injection and Co-injection molding simulation



11. [CFM/FIM] Enable more simulation capability for Foaming process
  - [CFM] Support Cell Size and Cell Density calculation
  - [CFM] Support Mold Rotation simulation considering oscillating effect
  - [FIM] Rename Microcellular Injection Molding (MuCell) with Foam Injection Molding (FIM)
12. [RTM] Enhance Model Preparation workflow for better usability
  - [Mesh] Support RTM Wizard with interactive modeling function
  - [Warp] Support Warp analysis with composite mechanical properties
13. [Stress] Enable loading boundary condition of force and pressure for Annealing and Post-mold Curing analysis

## Post-processor

1. [Project] Enhance display and plotting capability of analysis result
  - [Fiber] Improve sketch performance of Fiber result item
  - [Cool] Allow to show node information on cooling channel by Selection
  - [Project] Allow history curve plotting for result in different time steps
  - [Project] Allow result plotting for thickness direction distribution with multiple time steps
  - [Project] Support model rotation with local coordinate system
  - [Project] Support clipping function together with warpage scale
  - [Project] Allow select function applied to part insert nodes
2. [Project] Allow more flexibility for project management
  - [Project] Preserve remark for copied or exported run

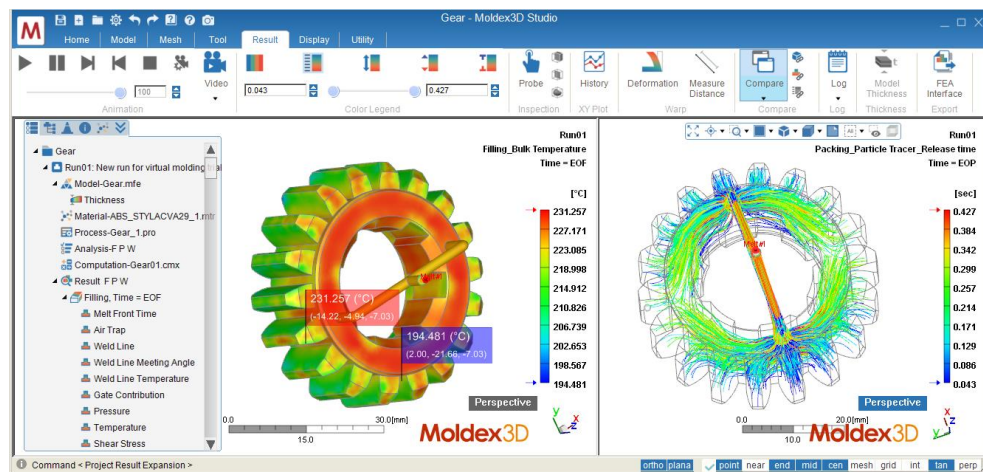


- [Project] Add option to show/hide run remark with XY Curve result
- [Project] Allow rename when exporting run as a new project
- [Project] Merge eDesign project (MVJ) into Solid (M3J)
- 3. [Project] Improve post-processing capability for Optics simulation
  - [Optics] Apply nm for Retardation result of Optics analysis
  - [Optics] Support Clip, Slicing and Isosurface function for Optics result items
- 4. [Report] Add customized summary page in PPT report
- 5. [FEA] Support 3D to Shell data mapping for ABAQUS solver
- 6. [RC] Improve project management for Remote Computing
  - [RC] Allow Computing Manager to output History results
  - [License] Enhance username management
- 7. [SYNC] Support Part Designer (PD) license for light version functionality
- 8. [SYNC] Renew UI with associated CAD style
  - [SYNC] Include style of NX, Creo and SolidWorks
  - [SYNC] Include UI of Parting Direction, Symmetry Ratio, Report Wizard, Modify Runner, Analysis, Plotting setting
- 9. [SYNC] Improve project setting workflow
  - [SYNC] Add maximum injection pressure as process condition
  - [SYNC] Allow to skip project type selection
- 10. [API] Enhance integration capability between Moldex3D solver and other interface

## Module Update

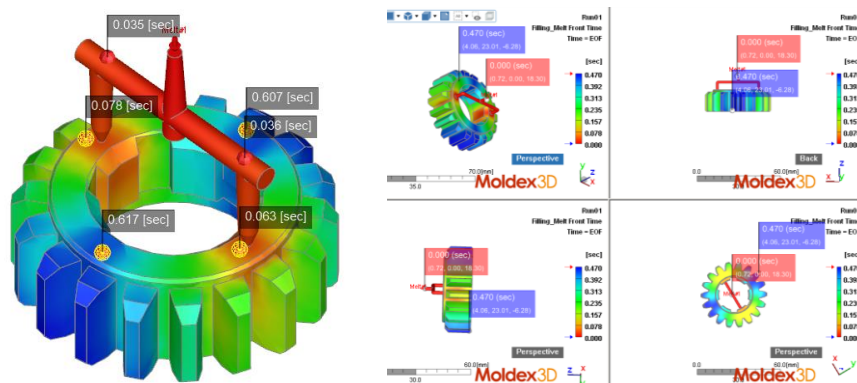
1. [Studio] Enable more simulation capability on Moldex3D Studio (Beta)
  - Support more functions such for Multi-Component Molding and FEA Interface modules
  - Support result plotting of history curve with multiple time steps and allow to add label and adjust range in XY Plot
  - Support Cloud Computing and to launch Computing Manager before summiting jobs
  - Support different types of Space Mouse, screens and DPI scenario
  - Allow to import different format CAD files in the same time
2. [Studio] Enhance modeling and analysis usability on Moldex3D Studio (Beta)
  - Improve Model Tree function for better group, appearance and show/hide

- Support multi-language UI (Language Packs) and unit system switch
- Allow customized platform setting for user preference and keep the visualization configuration used last time
- Support to place Max/Min value tooltips in display window and mark on color legend
- Enhance Tree function and provide run setting summary

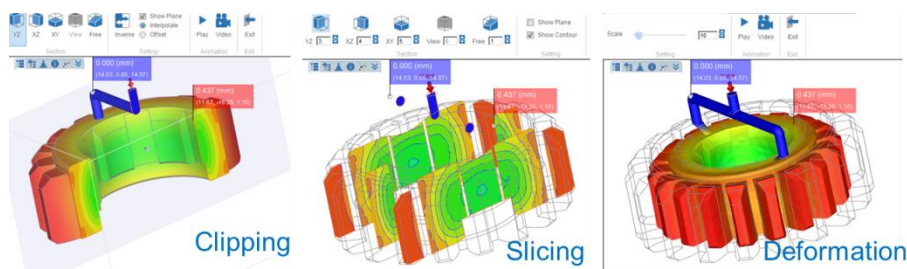


### 3. [Studio] Add more tools for better project management on Moldex3D Studio (Beta)

- Add Animation Wizard and Video generator to manage animation display and video generation
- Utilize Probe Node to replace Measure Node to display the local information of model and analysis result
- Support Result Advisor and two-point distance measurement for better analysis interpretation
- Support snapshot (Hot key: Ctrl+P) and multiple display window for different runs and results: sync of result items, legend range and view
- Allow run management with function to copy, delete, export and clear



4. [Studio] Improve post-processing performance on Moldex3D Studio (Beta)
  - Improve vector sketch efficiency for Fiber and Velocity result item
  - Display scaled deformation for Warpage and Sink mark result
  - Improve display efficiency on Clipping function
  - Add mark on color legend to show maximum and minimum values of result
  - Support to export PPT format report
  - Display model thickness on part solid mesh entities



## Database Update

1. [Material] Update material database
  - 31 thermoplastic materials are newly added
  - 0 thermoset is newly added
  - 11 material information is updated for properties including viscosity, PVT, specific heat and thermal conductivity
2. [Process] Add new injection machine to Moldex3D Machine Databank
  - Billion (New added): 367 GM.HERCULE.SELECT series machine
  - Toshiba: 63 EC-S Major Specifications series machine



3. [Help] Enhance Help usability with new web style skin

## Remark

Moldex3D provides a full version installation package that includes the newest version programs. The installation wizard will guide you to complete the installing procedures, and please close all the Moldex3D related programs before installation starts. For other product resource, please contact the local support