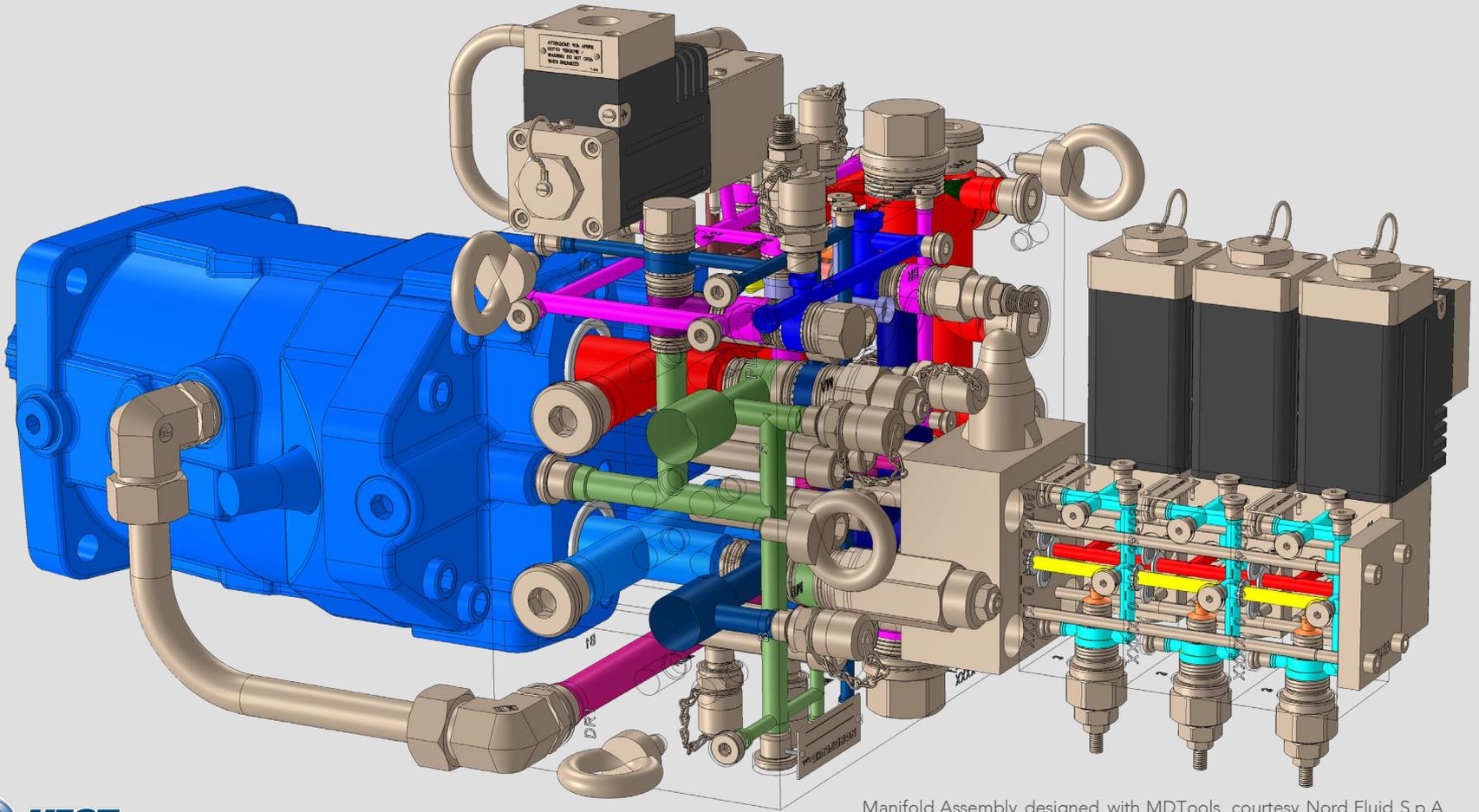# MDTools® 780

What's New

Manifold Assembly designed with MDTools, courtesy Nord Fluid S.p.A.

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MDTools® 780 What's New

Performance Improved

Improved Speed in Feature Mode

New Use of Inventor Features

Single Hole Feature

Large Manifold Color Options

Performance Optimized

Large Manifold Color Settings

Recommendation

Miscellaneous

Stretch and Incline Drill Options

Clearance from SF/CB to Working Area

Cavity Count and Design Mode Display

Precisely Position Engravings

Auto Scale Drawing Views

Balloons Placed Optimally

Assemble Valve using Bolt Holes Pattern
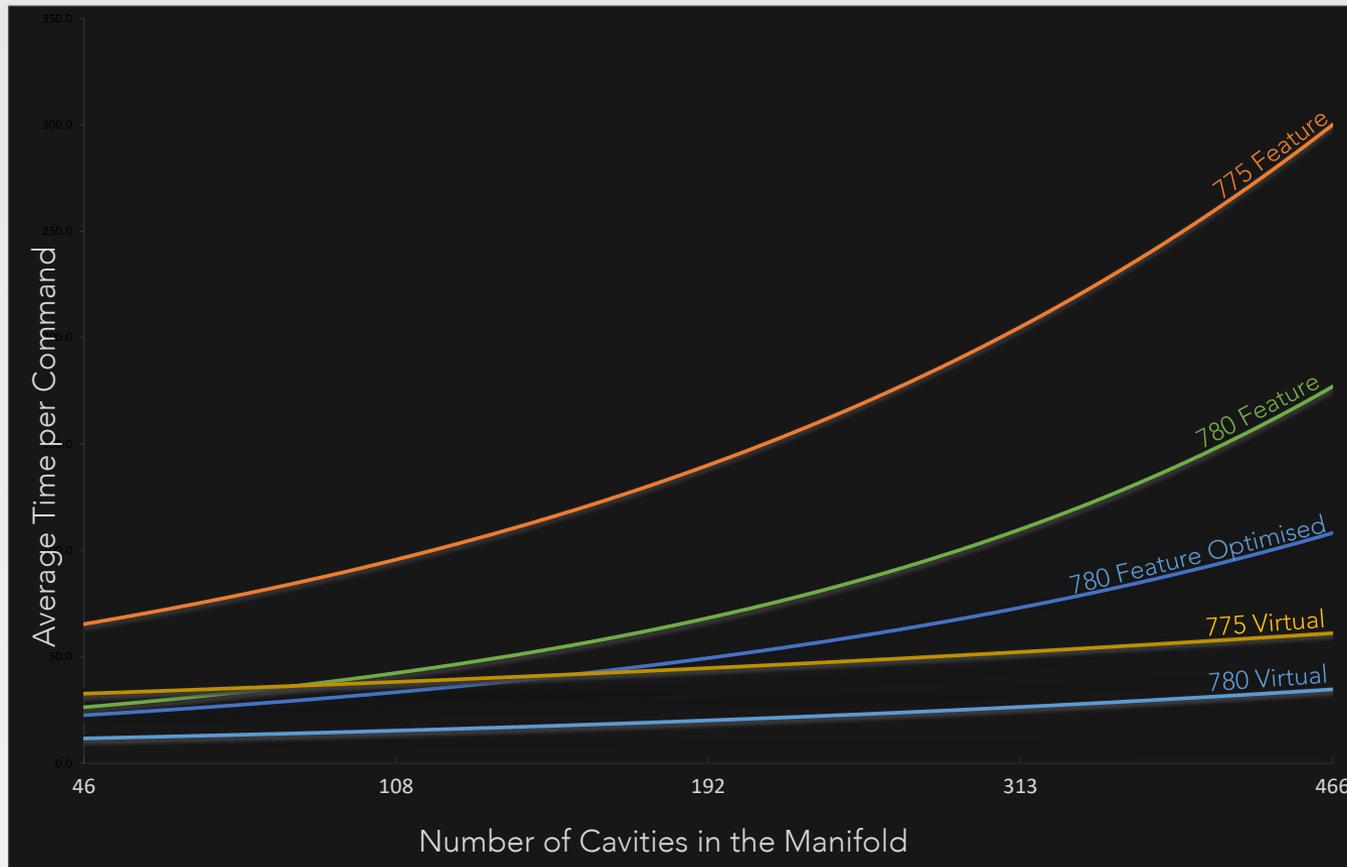
Autodesk Viewer Compatibility

Appendix

Performance Test Specifications

Caution

NEW

Performance Improved
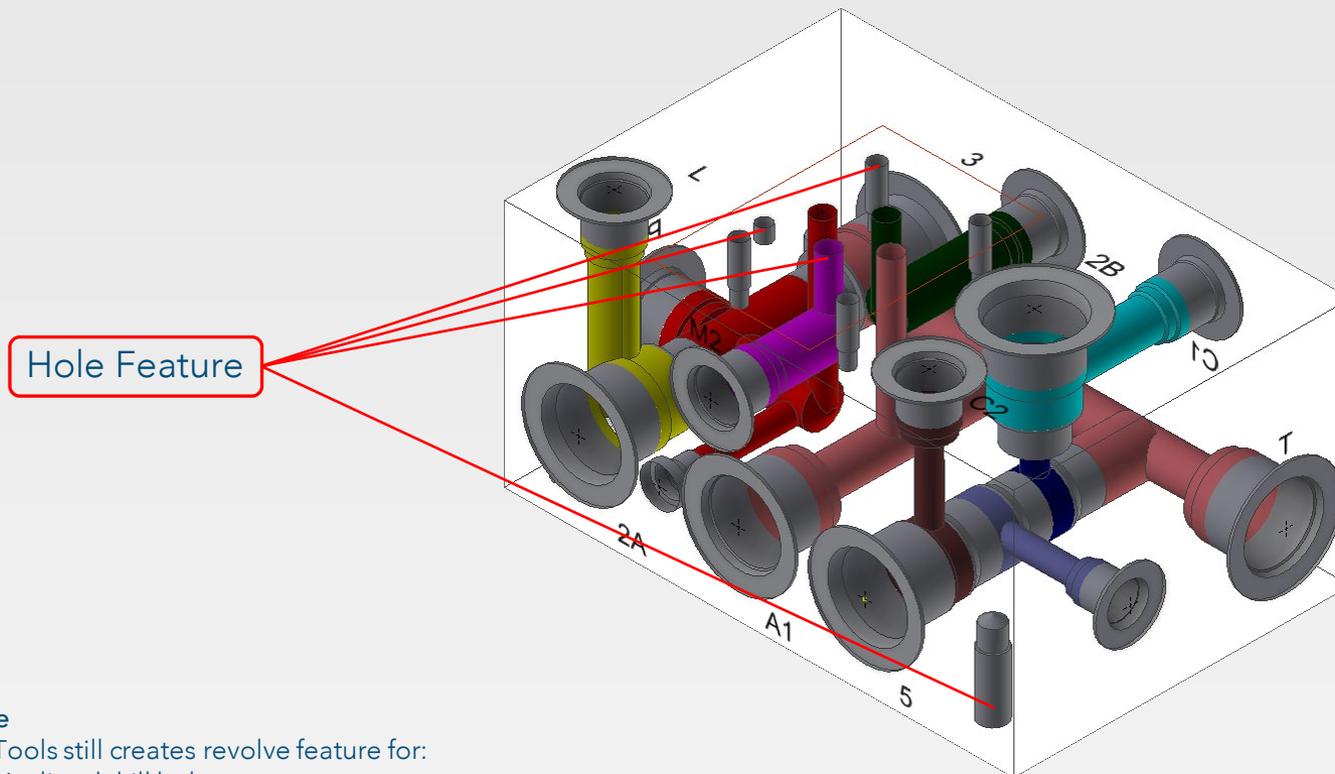
Manifold Design is now two to three times faster

Improved Speed in Feature Mode

All aspects of Inventor® and MDTools® leveraged
to achieve significant speed enhancement

VEST.

Inventor Hole feature introduced to
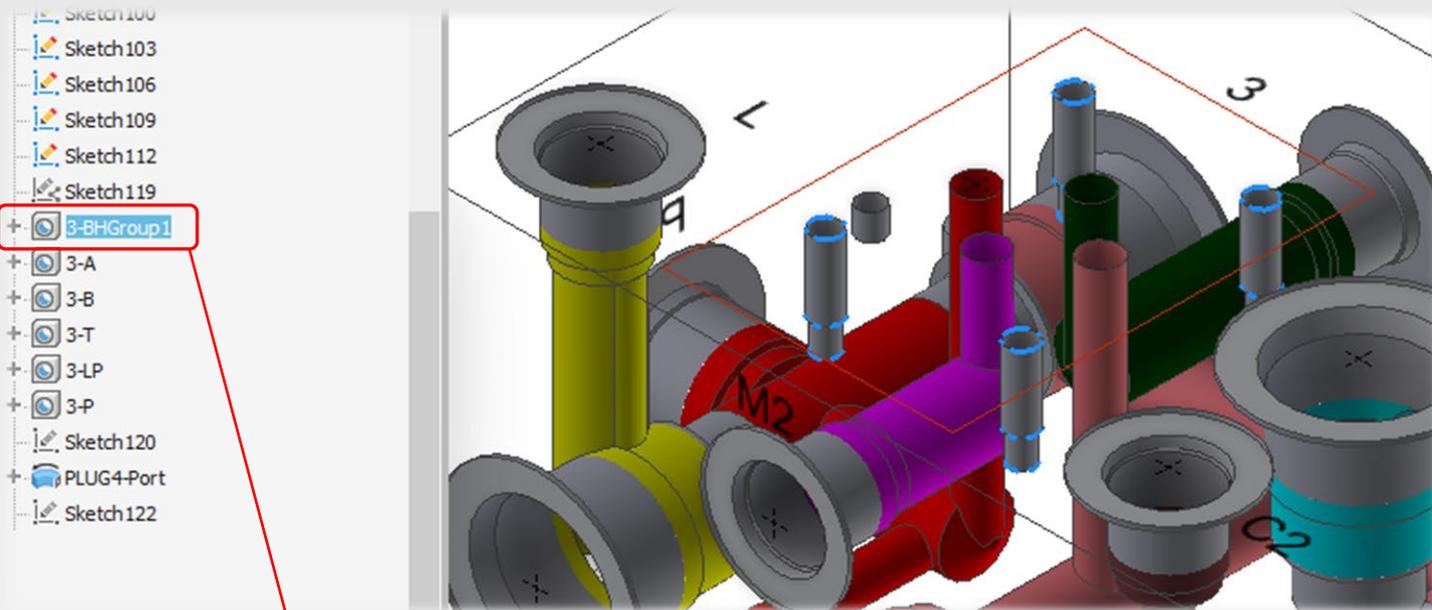simplify the model and speedup commands

Hole Feature

Note
MDTools still creates revolve feature for:
- Inclined drill holes
- Drill holes with multiple steps
- Cavities with more than two steps

NEW

Identical bolt holes in a footprint now uses a single Inventor Hole Feature to simplify feature complexity of the model

All four bolt holes as a single grouped Hole Feature

Note
    Any modification in bolt hole dimensions, automatically modifies all the related bolt holes, unless otherwise specified.

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Large Manifold Color Options

MDTools 780 introduces new visual options that can
expedite the design of large manifolds within Feature Mode.
These options sacrifice minor graphic details for enhanced performance.

Performance Optimized
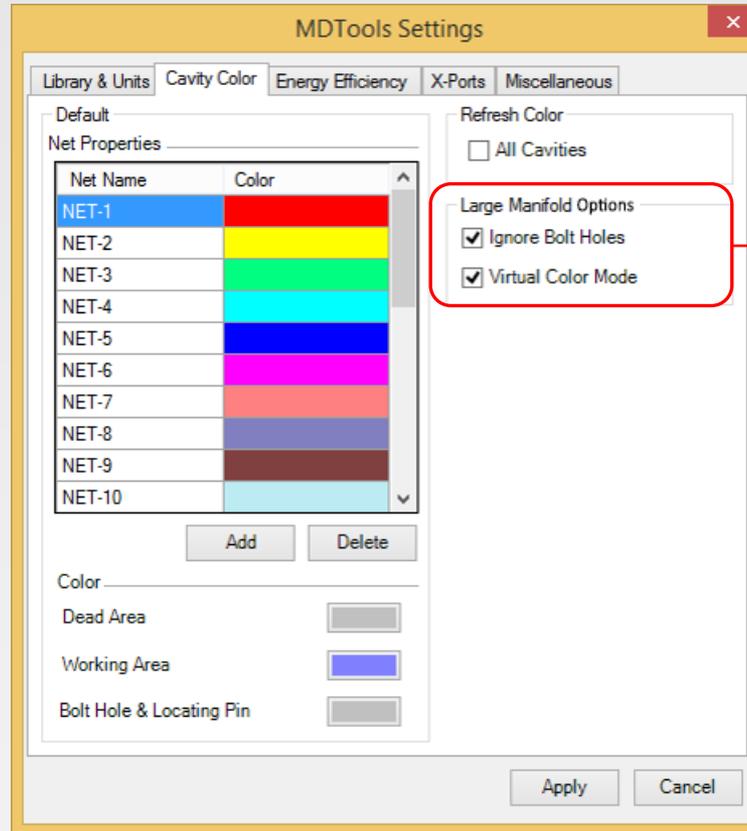
Large Manifold Design options introduced
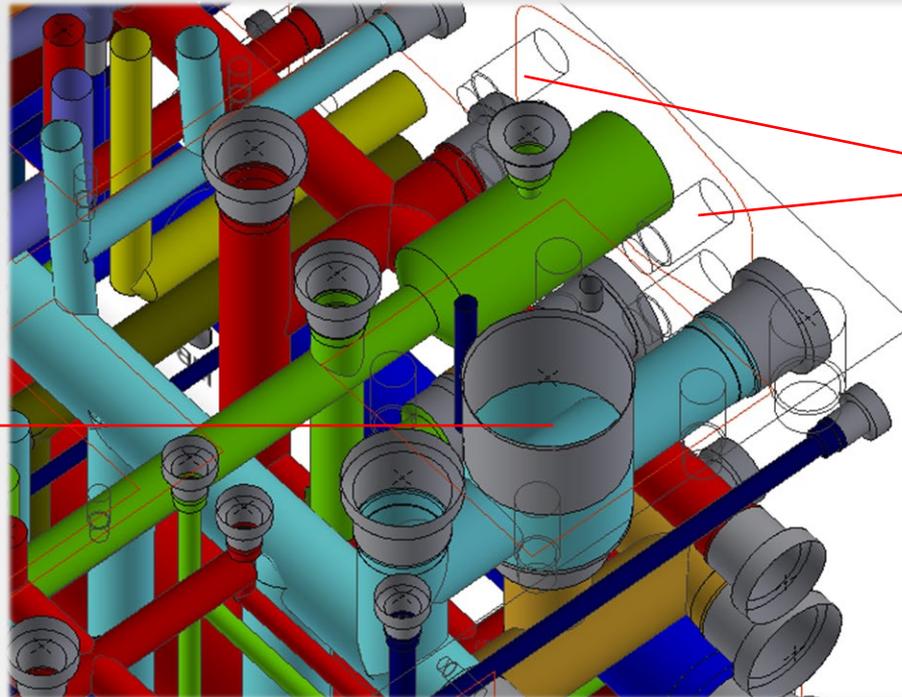
1 Cavities are colored using virtual color, to enhance speed

2 Bolt Holes are not colored, to enhance speed
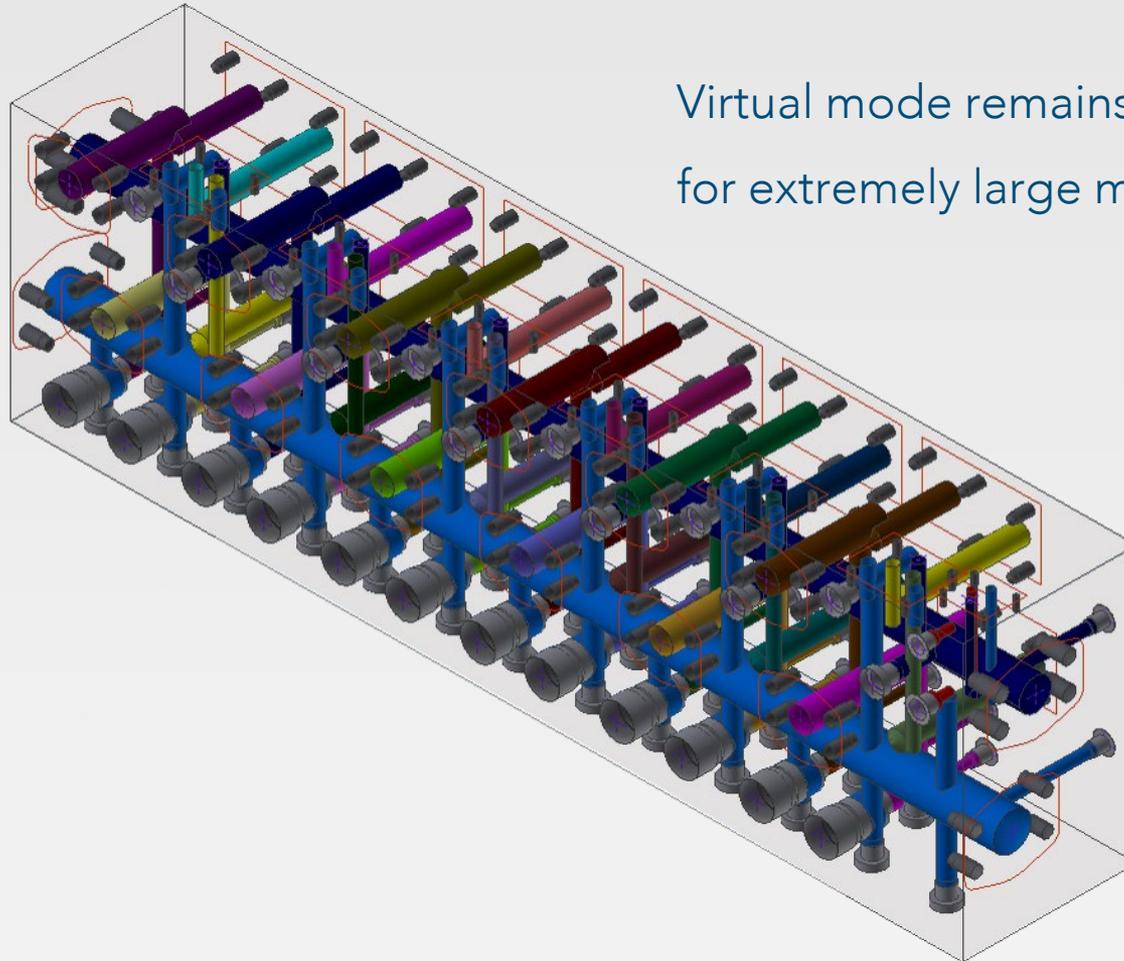
Large Manifold Color Settings

MDTools Settings > Cavity Color > Large Manifold Mode

Recommended when designing manifolds in excess of 300 holes

NEW

Designing large manifolds in Feature mode is now viable!

Virtual mode remains available

for extremely large manifolds.

Miscellaneous

….in addition to the main thrust to improve speed,
some new capabilities added

Stretch and Incline Drill Options

Control Stretch Drill settings

Min. Wall Thickness from Spot Face/Counterbore
to Working Area listed in a separate section
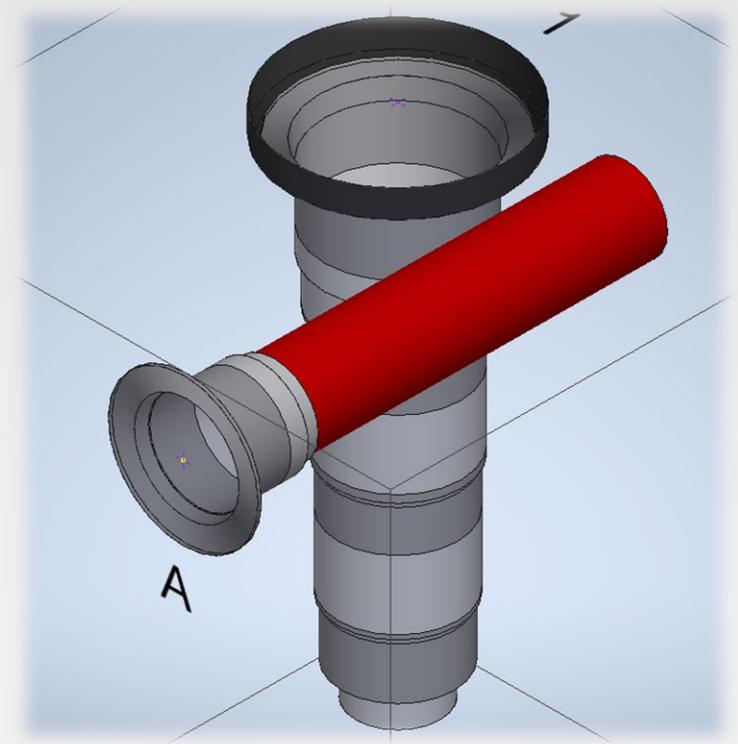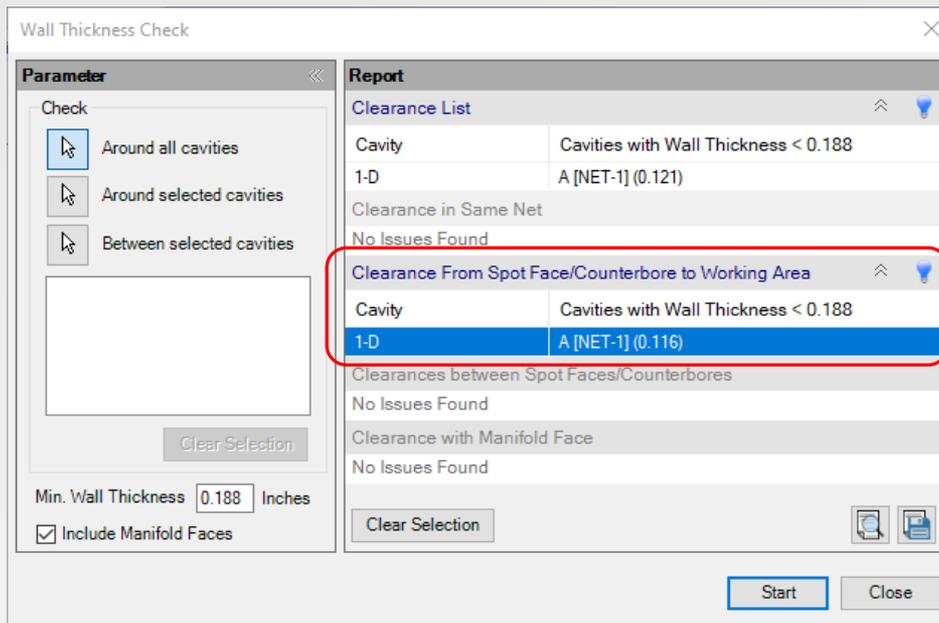
Cavity Count and Design Mode Display

Number of Cavities and the current Design Mode listed in Part File

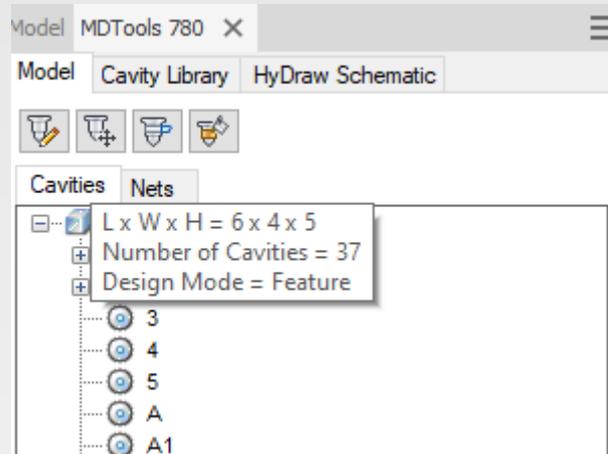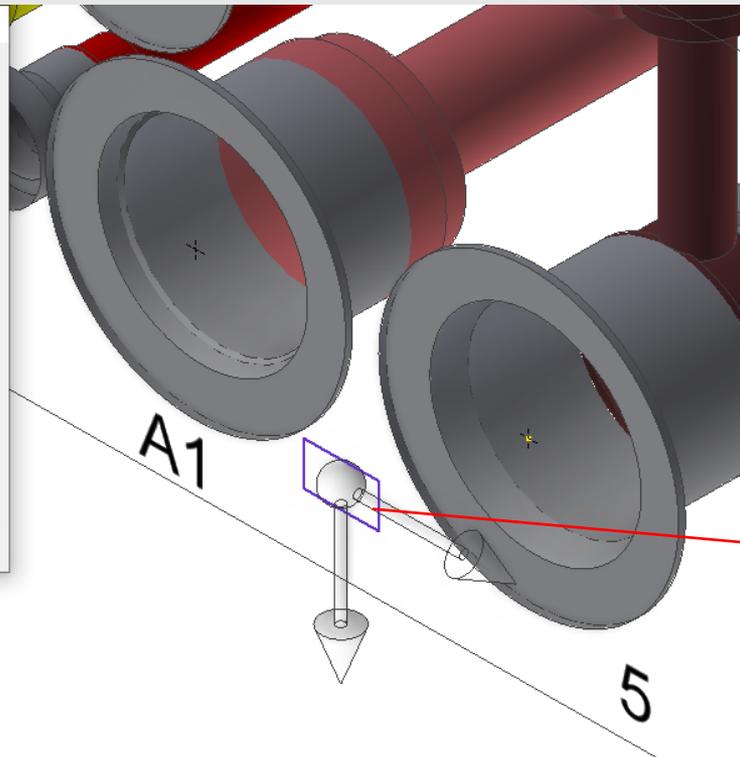# Precisely Position Engravings

Drag and relocate engravings
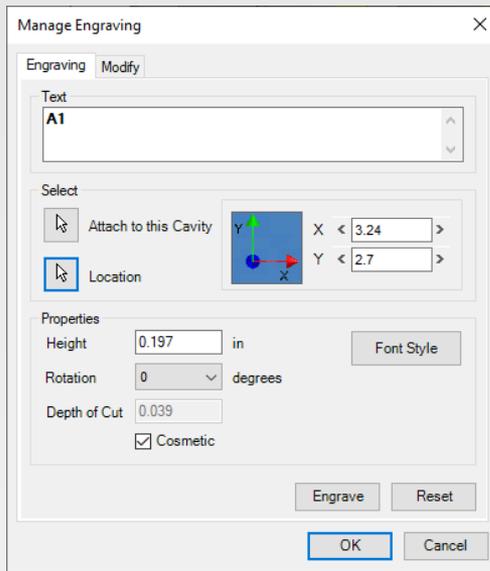
Preview of the new engraving position displayed within a purple box.

Auto Scale Drawing Views

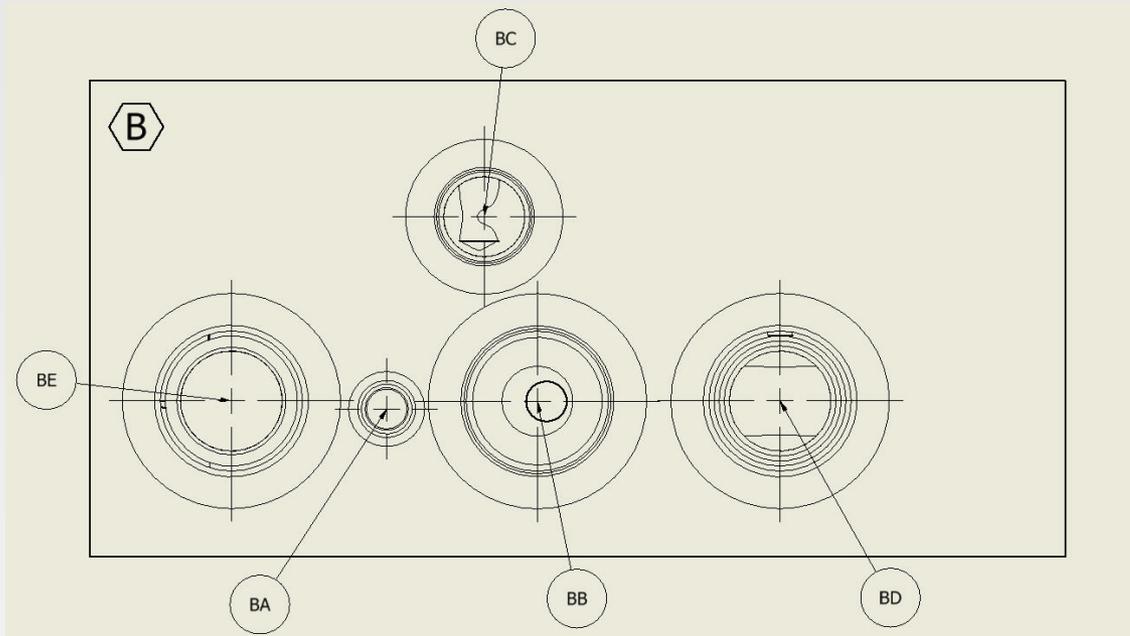## Option to automatically scale the view to the drawing size
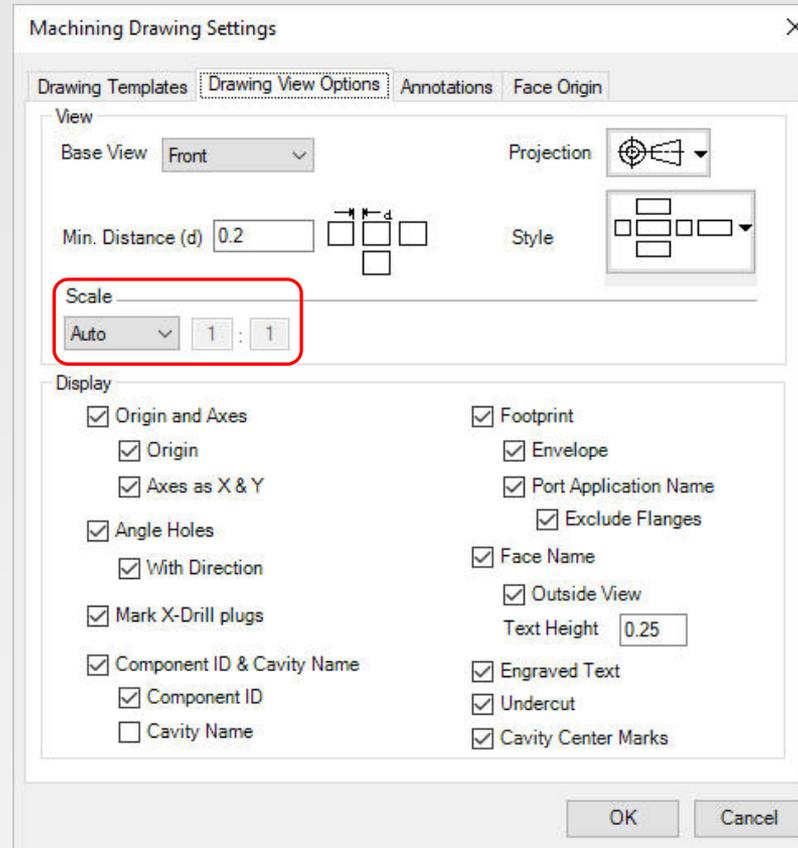
Balloons Placed Optimally

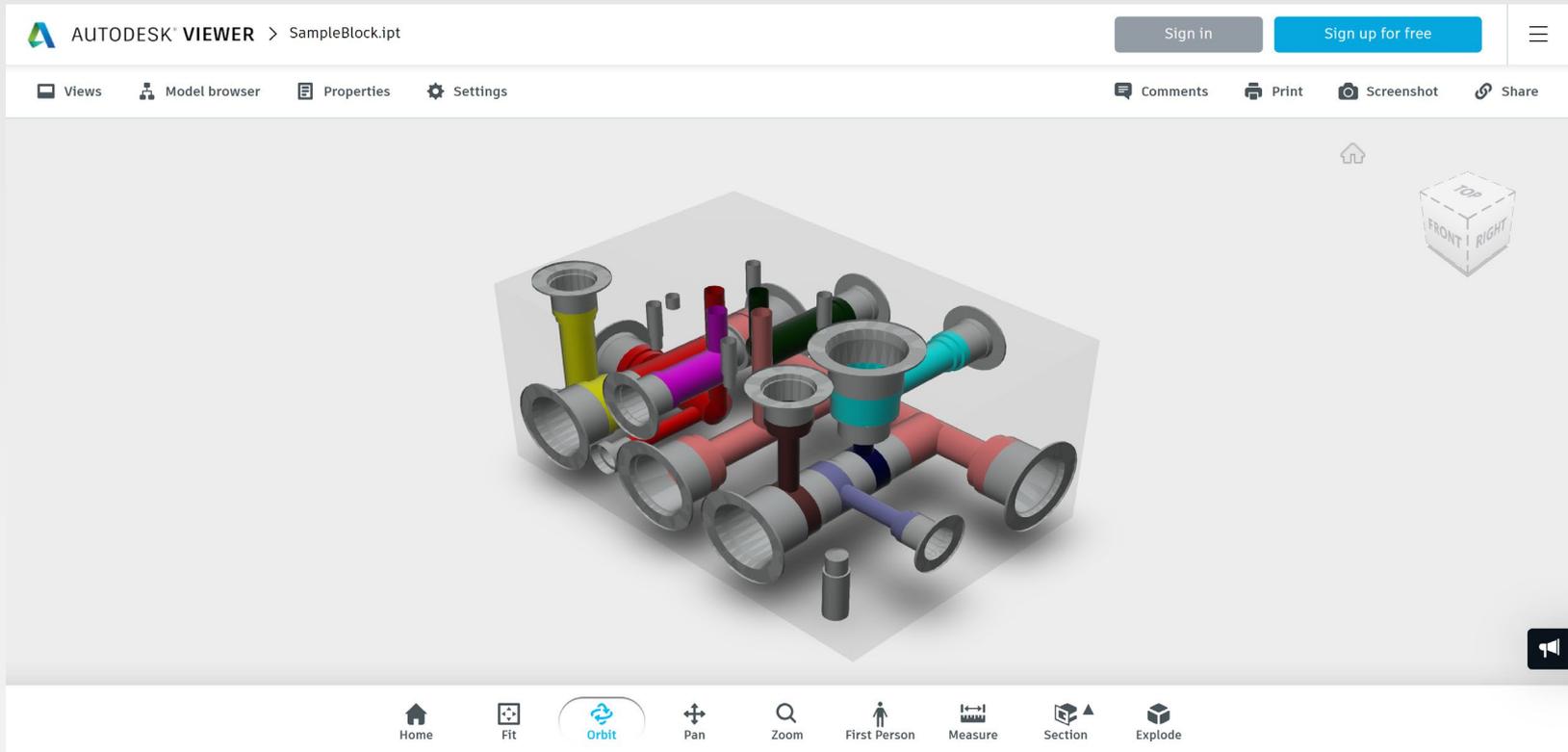## Balloons placed outside the face boundary with reduced overlapping

Valves located* using BH1 and BH2 as axis
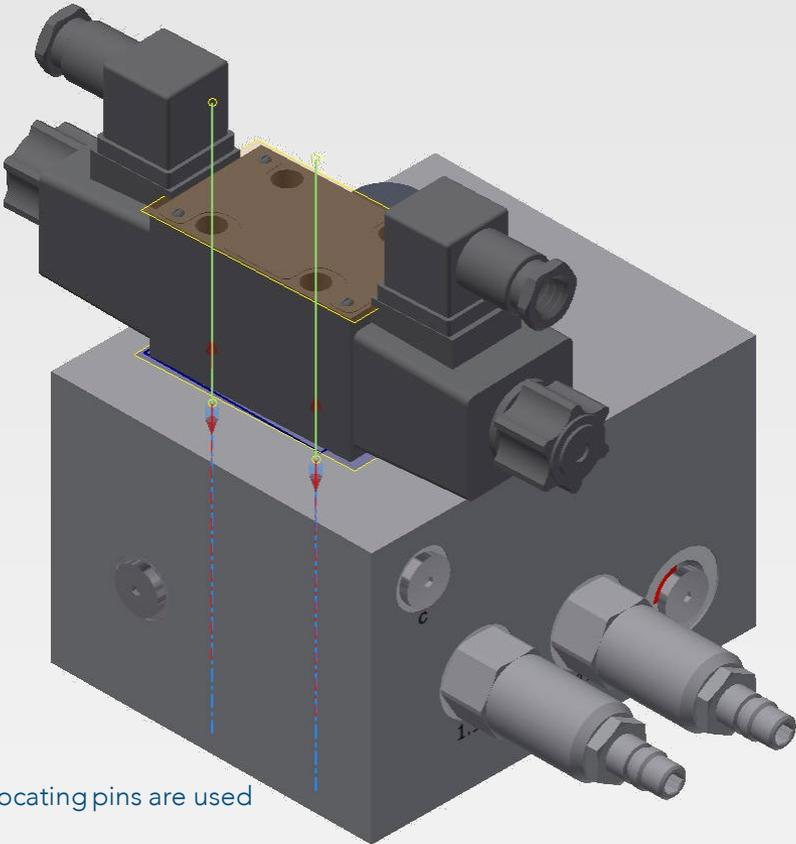
*irrespective of whether locating pins are used

Manifold net colors visible, when shared online in the Autodesk Viewer

Appendix

….performance test specifications and a note of caution

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Industrial Manifold
with 313 Cavities

Manifolds used

Sample Block	CVs	Ports	BHs	DHs	Total
Industrial Manifold - 99 Cavities	7	38	36	18	99
Industrial Manifold -192 Cavities	22	64	62	44	192
Industrial Manifold - 313 Cavities	12	64	164	73	313
Industrial Manifold - 466 Cavities	22	141	190	113	466
Mobile Manifold - 46 Cavities	14	30	2	-	46
Mobile Manifold -108 Cavities	25	65	4	14	108
Mobile Manifold -180 Cavities	11	137	17	15	180

Commands used

- Insert #6 SAE, C10-2, 1/2 Flange & D03
- Change Face C10-2 & 1/2 Flange
- Move Port, CV cavity, Flange
- Increase Manifold Length
- Color All Cavities

System Specification

- Inventor® 2020
- Windows® 10 Pro 64-bit
- 16 GB Memory
- Intel® Core™ i5-9400 CPU @ 4.1GHz

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Caution*

MDTools® 780* designed manifolds are not compatible with all previous versions of MDTools.

*If needed, export the MDTools 780 design in the MBXML format and then import into a previous version.

MDTools® 780

premier 3D manifold design software

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