NX I-deas VGX Core/Cavity

Benefits
- Quick analysis and understanding of part geometry issues for moldability
- Easy modeling with needed design tools in one convenient location
- Fast construction of parting faces, shutoffs and other geometry needed to complete the mold design with specialized tools optimized for these tasks
- Associative mold pieces quickly update with new design data

Features
- Specialized analysis tools illustrate parting line and draft information
- Dynamic, interactive surface tools work from the parting line to produce parting and shutoff surfaces
- Associative splitting of multiple mold pieces

Summary
NX™ I-deas™ VGX Core/Cavity software provides a tool set specifically tailored for the mold designer. Draft and parting line analysis tools help jump start the mold design process. Unique interactive surfacing tools help the mold designer quickly develop the shutoff and parting surfaces that will best provide predictable mold action and effective flash control. Automatic tools split the mold into asso-ciative pieces which can respond quickly to later design changes.

Specialized tools for the development of core and cavity models
Molds require a great deal of specialized design work in order to produce the various core and cavity components that make up the finished molding surfaces. With the design part as a starting point, the mold designer may be required to:
- Scale
- Discover parting lines
- Draft
- Create shut-off surfaces
- Create parting surfaces
- Subdivide surfaces for side-pull or lifter pieces

VGX Core/Cavity provides specialized tools to support this specialized type of design work. These tools can significantly reduce cycle time for the mold designer.

Part interrogation
VGX Core/Cavity includes an advanced die lock check function that identifies and categorizes surfaces as one of:
- Sufficiently drafted A-side (cavity)
- Insufficiently drafted A-side
- Sufficiently drafted B-side (core)
- Insufficiently drafted B-side
- Vertical
- Undercut
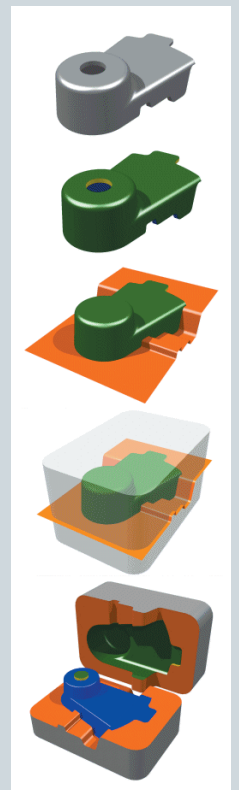
VGX Core/Cavity provides tools to support the entire process of mold core and cavity development.

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Surface categories are communicated clearly by applying surface colors to each group. Modeling problems are quickly identified. Draft issues are easy to understand, with separate A-side and B-side draft thresholds. Undercut surfaces are obvious. This tool is helpful for getting the mold design started.

Multiple pull vectors can be evaluated to discover the most effective molding strategy. Surface colors can be permanently saved for downstream use.

Part modification
VGX Core/Cavity conveniently provides the most frequently used modification tools right on its tear-away icon palette:
• Scale
• Draft
• Surface-by-boundary
• Silhouette curves

The mold designer often needs one or more of these tools to ensure that the part has a workable parting line and can in fact be molded.

Mold surfaces
Shut-off and parting surfaces are a critical part of the mold design. The underlying NURB geometry can be used to create shut-off surfaces in the interior of the part, providing for smooth and continuous surfaces inside the mold.

VGX Core/Cavity also includes a surface operator specifically developed to produce parting surfaces quickly and easily. This surface operator is flexible and interactive, allowing the user to achieve complex results quickly. Parting surfaces can automatically be generated from the parting line identified by the die lock check. These surfaces can be dynamically manipulated to create complete or partial parting surfaces associated to the part edges. Tangency and draft constraints can be met, providing the optimum parting faces for consistent mold action and flash control.

Electrodes and lifters can be easily modeled and kept associative to the mold blocks as well.

Core/cavity splitting
The ultimate aim of the mold design is to produce individual models of the core side, cavity side and any side action or lifter pieces. Once the parting surfaces have been created, VGX Core/Cavity automatically divides the insert block into the separate pieces that make up the mold volume. Again, this process is completely associative so that these pieces can each be brought up to date in case of a change to the original design part.