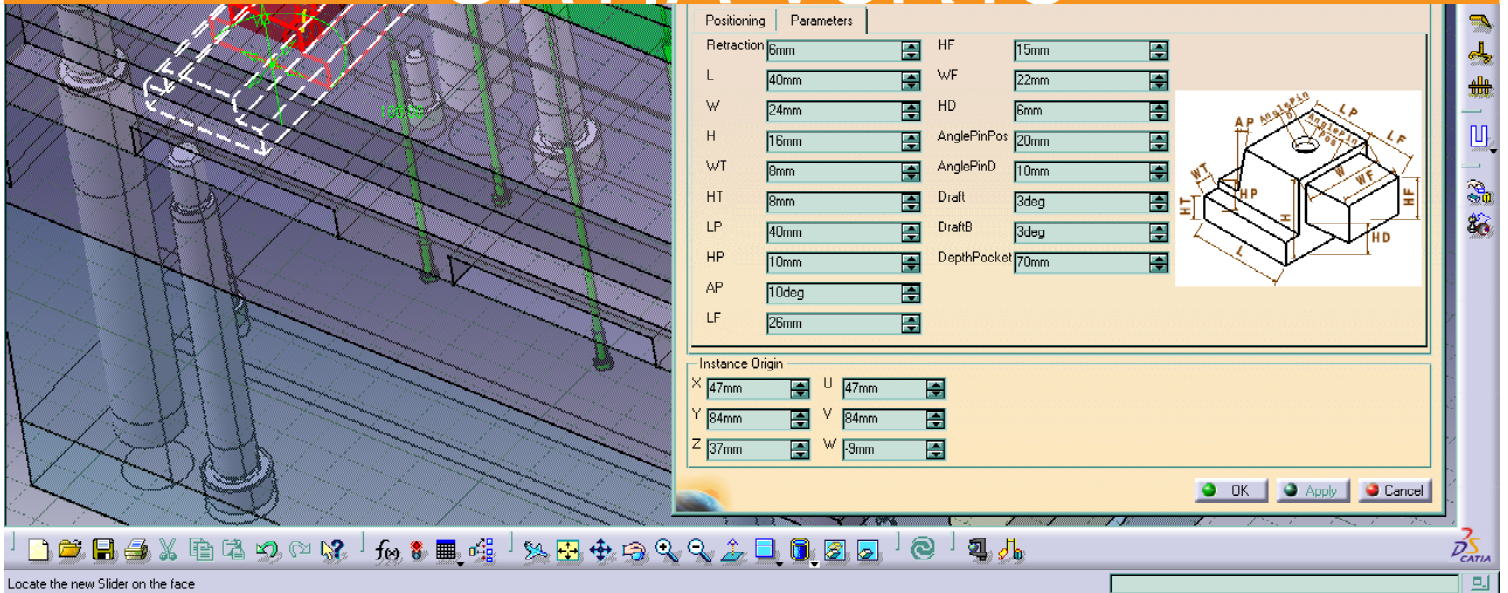


Mechanical Design

CATIA - Mold Tooling Design 2 (MTD)

CATIA V5R18





Mechanical Design

CATIA - Mold Tooling Design

Design of Complex Molds, together with associated drillings, in a highly productive and intuitive environment, with full associativity to the molded part and kinematics capabilities.

Product overview

CATIA - MOLD TOOLING DESIGN 2 Product is a generation design product which can be cooperatively used with any other current or future Design, Simulation, Deformation, Drafting, Manufacturing Application of CATIA V5, to offer a highly productive end to end solution from the design of the Molded Part to the manufacturing of the associated Mold Tooling, in a PLM context.

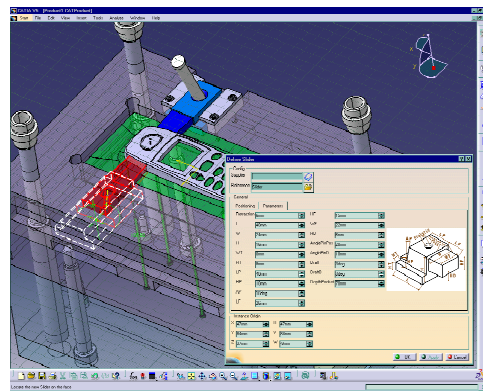
CATIA - MOLD TOOLING DESIGN 2 Product allows a rapid, cost effective, open solution for creation of Mold Tooling for the Plastic Injection Process, thanks to the availability of a wide array of :

- ❑ Dedicated Plastic Injection Mold Bases,
- ❑ Plastic Injection Components,
- ❑ Extensive General Mechanic Components,

all, either standard from Catalogs and/or User Defined and/or Mixed, completed by powerful and fully Associative Drilling Capabilities

And by:

- ❑ BOM capabilities,
- ❑ Kinematics Capabilities for the Mold Base.



Product Highlights

- ❑ Mold Tooling Design Workbench
- ❑ Extended capabilities for the definition of Mold Bases, Sliders, Retainers, (including kinematics capabilities), Cooling Systems, Gates and Runners for Plastic Injection, and Ejection systems
- ❑ Standard or User Defined Components (Guiding, Locating, Fixing, Injection, read from Catalogs and including powerful embedded Drilling capabilities
- ❑ Generation of dedicated and customizable Bills of Materials (BOMs) including specific attributes for Mold
- ❑ Standard catalogs supplied DME, DME-AMERICA , EOC, FUTABA , HASCO , MISUMI , RABOURDIN , STRACK , NATIONAL, MEUSBURGER, PCS, PEDROTTI

Product Key Customers Benefits

Mold Tooling Design Workbench

The mold designer is benefiting from a dedicated workbench to support all his tasks including Mold Base definition, Component instantiation, injection and cooling feature definition that are necessary to define a complete Mold Tooling.

Dedicated icon for Mold Component in the part specification tree.

Standard Mold Base read from catalog

Already defined Mold Base, made of a set of plates are available from catalog with respect to the main standards of the market (DME, DME-AMERICA , EOC, FUTABA , HASCO , MISUMI , RABOURDIN , STRACK , NATIONAL, MEUSBURGER, PCS, PEDROTTI). Plates are also customizable to create users plates. Users can access these catalogs, including many thousands configurations, and retrieve Standard Mold Base with their plates definition. They can also search those configurations and retrieve the appropriate ones thanks to a set of main parameters like Nomenclature, Mold Length and Width, Overhang value, etc. At the instantiation time the system will automatically configure each plate of the Mold in a consistent way with the general parameters of the Mold. Users can include, in the plate definition, some points that will be used later for the positioning of standard components as Leader Pin, Bushing, Sleeve, StopPin, Screw and Locating Ring.

Non Standard Mold base for cold and hot injection

The system propose an already defined Mold Base made of a set of plates (Clamping, Upper Bar, Cavity Support, Cavity, Core, Core Support, Riser, Setting, Ejector A, Ejector B) that can be kept or not. The main parameters of the plate can be managed by mold designer, with an easy user interface and pre-visualization capabilities.

A non standard Mold Base can also be created from a standard one. The user has the ability to remove association between a given parameter (e.g. core thickness) and to adapt it to his needs. The non standard Mold Base can be completed with some

standard or non-standard components (as Leader Pin, Bushing, etc.) and be stored in a user catalog that will be accessible as the standard one

Split of Core, Cavity plate, and insert with contextual menu

Using the contextual menu in the specification tree, the designer can perform a split of Core and Cavity plate and insert within the Mold Tooling Design Workbench. The system will detect automatically the right surface and the right orientation to be used for this operation

Split of Mold component with contextual menu

Using the contextual menu in the specification tree, the designer can perform a split of mold component directly within the Mold Tooling Design Workbench. The system will detect automatically the right surface and the right orientation to be used for this operation. Sprue Bushing and User component can be splitted using this contextual menu as well as Sprue Puller, Ejector, Ejector Pin, Flat Ejector, Ejector Sleeve, Core Pin and Slider.

Standard component catalogs

The designer can read from catalogs standard components managed with their associated Hole. These already defined component are available with respect to the main standards of the market (DME, DME-AMERICA , EOC, FUTABA , HASCO , MISUMI , RABOURDIN , STRACK , NATIONAL, MEUSBURGER, PCS, PEDROTTI). Thousands of configurations are available, in the standard catalogs, identified by some main parameters (Nomenclature, L, D,) are accessible by the catalog interface and that are specific to the type of component. At the instantiation time the system will configure the parameter of the component and will update the its nomenclature to be used in the BOM of the Mold assembly.

Multi positioning capabilities

The mold designer can predefine the mold

position by several ways. He can select pre-defined point that is provided with the standard Mold Base or defined by the user, select a face using a grid proposed by the system, which will be used to snap the position of the component or the positioning of the components can be associative with the selected object. In this case, an assembly constraint will be created at the right level of the assembly. An exact pre-visualization of the component is available during its positioning.

Catalog components managed with their associated Hole

User components can be created and stored within user catalogs. The user component can be of an already defined type (e.g. Leader, Pin or Ejector Pin) or no particular type, as a free form component. It can be useful for example for the definition of slider components. User components are managed with their associated holes as for the standard ones.

Generation of Bills of Materials

Mold designers can generate dedicated and customizable Bills of Materials (BOM's) including specific attribute of the mold (Material, Heat Treatment) and automatic Nomenclature from the configuration of the component. Textual format, HTML or XLS (Excel) formats can be generated interactively. BOM can be based on User-defined attributes. Attributes can be defined either externally via a file (.txt or .xls) or manually. Specific formats can also be defined (subset of user-defined attributes) and re-used for BOM generations. Listing Reports including assembly trees and attributes of each component can be generated.

New Locating, guiding and ejection components

New locating (Sleeve, locating Ring and Dowel Pin), guiding (Leader Pin and Bushing) and Ejection component (Ejector, Ejector Pin, Flat Ejector, Stop Pin, Angle Pin, Ejector Sleeve , Core Pin , Knock-Out) have been added to the MTD product.

Additional Injection Feature

A gate can be defined in both Core and Cavity plates or in one of it. Two types are supported: direct and side. Two types of profile are supported: round and rectangular. It can be handled as a simple 3D point by all the other application (GSD, WSF,)

A Runner can be defined in both Core and Cavity plates or in one of it. Two types of profile are supported: round and oval The runner definition is based on 2D Sketch that is projected to the Parting surface and that is used to create the related slot. The definition of both gate and runner is stored within the Molded Part and can be assemble with it to represent the plastic that will be injected within the Mold . The user can choose explicitly the surface that will be used to project the Sketch of the runner for the computation of its geometry and to define Submarine gate with 3 different types of profiles. Gates and runners can be selected by catalog.

Connection components

Cap Screw, Countersunk Screw and Locking Screw connecting components are available to the designer usage. Eyebolt was added as a miscellaneous component

Enhanced Cooling pipe

The cooling channel features are used to define the cooling system of the Mold. They are defined in dedicated Part (Core Cooling and Cavity Cooling) enabling Collision check analysis with the other component of the Mold. A contextual menu is available to edit the coolant channel definition within the Mold Tooling Design Workbench. All type of 3D point (3D point, vertices, projection,) can be taken into account to define the ends of the Hole, any type of line is also provided for cooling pipe creation. The coolant channel remains associative (Location, dimension) with the selected points. When user selects a sketch, chaining of cooling pipe is automatic.

Standard catalogs

Standard catalogs - DME, DME-AMERICA ,

EOC, FUTABA , HASCO , MISUMI , RABOURDIN , STRACK , NATIONAL, MEUSBURGER, PCS, PEDROTTI have been added, as well as enhancement of the existing ones.

Support Catalog access for standard parts or assemblies

The User interface of the application is based on the standard catalog access capabilities that has been enhanced to support automatic configuration of the used Parts and assemblies as well as hybrid instantiation of component with their associated Holes.

Productive and intuitive industry oriented Windows native User Interface for short training cycles

Icon based, flexible and scalable approach, from beginners & casual users using pull down menus and panels, to advanced users using contextual menus, keyboard shortcuts. Preview and direct mouse-based manipulations and specification during feature creation, modification and drag and drop. Full support of Windows user interface standards such as pull down menus, messaging, on-line help, select-action approach, multi-windowing, icon docking reorganization. Dynamic users interface including fast mouse-based 3D graphical manipulations and a copilot concept allowing the contextual pre-selection (by means of highlight) of allowed graphical entities. Contextual HTML documentation browser.

Dynamic movement of parts

It is possible to dynamically move constrained parts either by respecting the assembly constraints or freely in such a way that the constraints are no longer respected. In the latter case an assembly update is required to place the parts back in their correct position

ABOUT CATIA V5R18

CATIA is Dassault Systemes' PLM solution for digital product definition and simulation.

plm.3ds.com/CATIA

