Mold Base Terminology - C

CAD (Computer Aided Design)
The use of a computer to develop the design of a product to be manufactured. Also, the use of the computer to develop the design and necessary NC programs for use by the manufacturing equipment that will produce a product.

CAM (Computer Aided Manufacturing)
The use of computers and computer technology to control, manage, operate, and monitor manufacturing processes.

Cast
The action of forming an object by pouring a fluid monomer-polymer solution into an open mold where it finishes polymerization. Also, forming film and sheet by pouring liquid resin into a moving belt or roll.

Cavity
This is the plate that has pockets milled to contain the cavities, or in the case of a round part the bored holes. It is located directly under the top clamp plate when the mold is in the storage position. When the mold is in the open position, it is the plate that will be visible when looking at the stationary side of the press. It also has the topside runner milled in if the mold is a cold runner. It will have waterlines drilled in it, contain the male taper lock pockets, and the leader pins holes. Vents and vent reliefs are usually located on the face of this plate for easy access for cleaning when required.

Cavity Plate
This is the bottom plate on the mold. This plate has knockout holes that interface with the press platens. It can also have clamp slots milled in to the sides if the rails are not recessed above.

Center Gate
In injection and transfer molding, the opening (gate) through which the plastic is injected and is positioned in the center of the cavity.

Clamping Area
Largest area an injection molding machine can hold closed under full pressure.

Clamping Plate
A mold plate fitted to the mold and used to fasten the mold to the machine.

Clamping Pressure
Pressure that is applied to an injection or transfer molding machine

Clamp Slots
The function of clamp slots is to provide a ledge for the clamp to hold the mold base in the press. The main problem we face with the clamp slots in the design of the mold is to make sure that mounting holes are in close proximity to allow the clamps to reach the edge of the slot. Platen holes used to be different in each press manufactures specification. The industry has now standardized these hole locations so molders can use presses made at different manufactures. Another problem we have had with clamp slots is how high they are in relation to the bottom and top of the mold. The designer must also take care to design the water patterns so the water lines do not fall in line with the bolt holes.

Clamp Tonnage
Rated clamping capacity of an injection or transfer molding machine.

Clamshell Molding
A variation of blow molding and thermoforming in which two preheated sheets of plastic are clamped between

the halves of a split mold. Each cavity by vacuum in the cavity and injection air between the sheets.

CNC Lathes

These are used for round work, diameters, grooves, faces, counter bores, and complex molding areas.

CNC Mills)Vertical)

These are used for making blocks, second operations to rounds, holes, pockets, channels, ribs, slots, bores, counter bores, screws, and complex molding areas.

Collapsible Core

This is an idea that has been revitalized for molding internal threads & undercuts. As illustrated below, a collapsible core is made of a central core pin surrounded by a slotted sleeve. The slotted sleeve is a spring steel that is cut form the impression of threads or undercuts on the inside of the plastic part. When the mold is closed, the center pin is pushed in, expanding the slotted sleeve to make its impression on the part. As the mold opens, the center pin extends, retracting the slotted sleeve. As the sleeve retracts, it clears the part's internal cuts or thread. The part is then ejected normally. Collapsible cores can produce many parts that used to be impossible. Machines with collapsible cores can run faster since there is no waiting for a cam to slide or a threaded core to unscrew from the part. However, due to lack of cooling some material may run slower.

Core

Male part of a mold that shapes the inside of a molded part.

Core Pin

The internal rod used to hold the inside of the preform (parison). This rod retains the resin during the injection molding steps as it is transferred through the cycle. The core is also the blowing pin where air or a blowing medium flows through the channels cut in the center of this core rod to expand the perform in the blowing mold.

Core Plate

This plate retains the cores and generally has pockets built in them for the cores. It also has the bottom side of the runner milled in if the mold is a cold runner. It will have leader bushings, holes, and return pin holes.

Core Pulls

Term used by press manufactures to describe hydraulically activated actions in a press that require either a sequential stop or start to make a multiple pate opening occur in the mold. Typically they are used to activate unscrewing hydraulic racks or internal pistons in a mold.

Crystalline

A state of molecular structure in some resins denoting uniformity and compactness of the molecular chains.

Cycle

One full sequence in a molding operation, from a point in the process to the same point in the next sequence.

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