

Broad Range of Benefits

Simple Design

The revolutionary design and engineering of the Expandable Core saves steps and solves problems that have complicated plastics molding for years. In addition to simplifying new tooling design, it can be retrofit to existing molds.

More Reliable

Complete reliability of the Expandable Core is assured, not only by the simplicity of the design, but also by the use of superior materials and proven proprietary processing techniques. It has been field tested over several million cycles.

More Compact

Using the DME Expandable Core allows you to design more cavities in each mold.

Speeds Molding Process

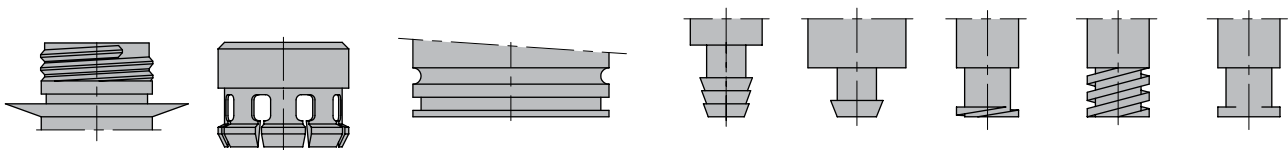
The Expandable Core concept completely eliminates the need for side-action mechanisms and the additional machining steps they require.

Speeds Development

The Expandable Core concept simplifies the engineering required to design and manufacture a new Core.

Lowers Development & Processing Costs

The Expandable Core saves money at every step from initial tooling to processing to maintenance. Items such as complex design details, core slides and required mechanical components.



Bottle tops Snap fit covers/lenses

O-ring grooves

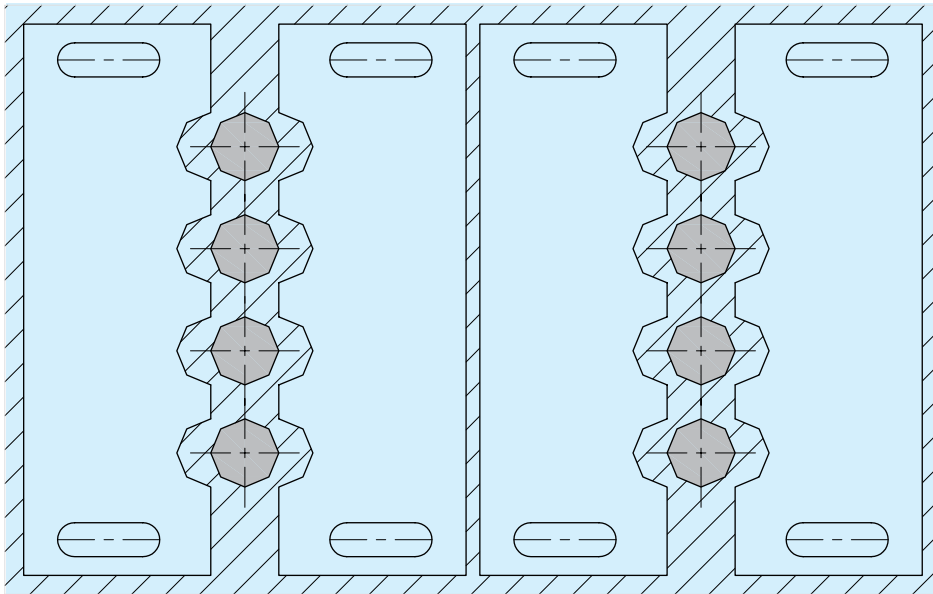
Barb connections

Luer connections

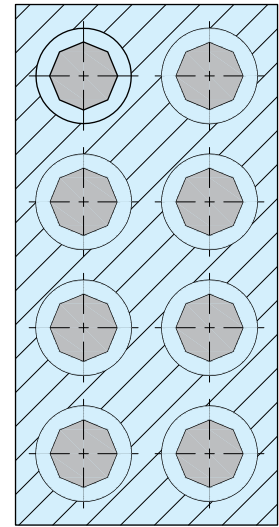
Typical mold layouts

EXP

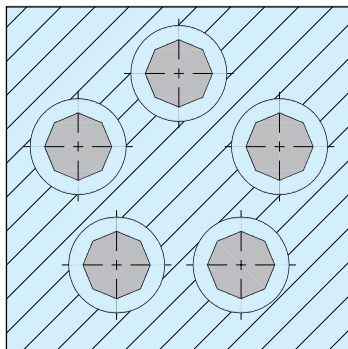
Go from this mold layout with conventional slide mold



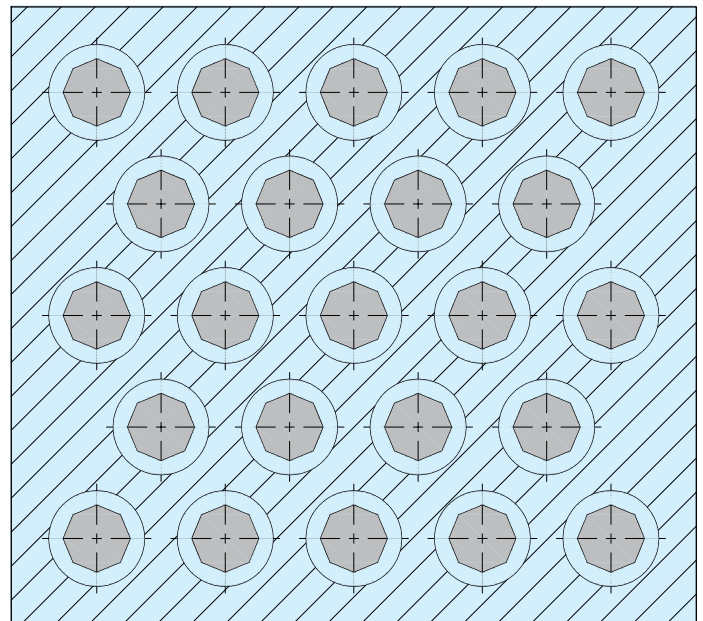
to this reduced mold size with expandable cavity



Radial mold layout with expandable cavity



Nest mold layout with expandable cavity



Expandable Core

The Expandable Core is typically made of 1.2363 tool steel, hardened to 54-58 HRC. The typical tool has 4 segments.

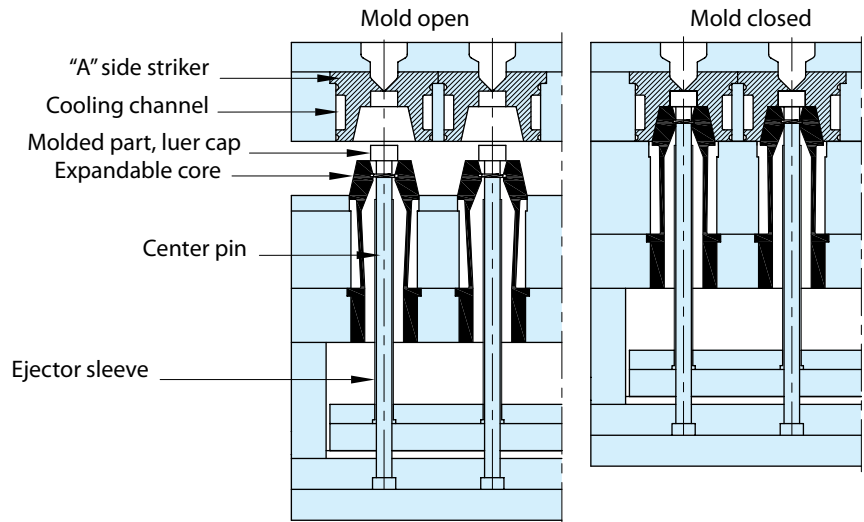
Striker Insert

The Striker Insert is made from different types of tool steel. It is hardened to 32-45 HRC scale, depending on the application. The Striker Insert has a lower hardness than the Expandable Core to ensure the eventual wear will occur on the Striker Insert. Depending on the part configuration, the Striker Insert can be used in the "A" or "B" side of the mold. (See figure 1 and 2 for details). The Striker Insert must be closely fit to the Expandable Core to ensure that in the mold closed position the segments are completely sealed against one another. The tolerance on this fit must be held to ± 0.013 mm. This will ensure flash free molding. When the mold is closed, the exterior of the Expandable Core must be supported by the Striker Insert at least $7/8$ of the molded length plus the shut-off, to ensure no flash conditions. Allow for 5 mm of shut-off length below the molding length, any more is excessive.

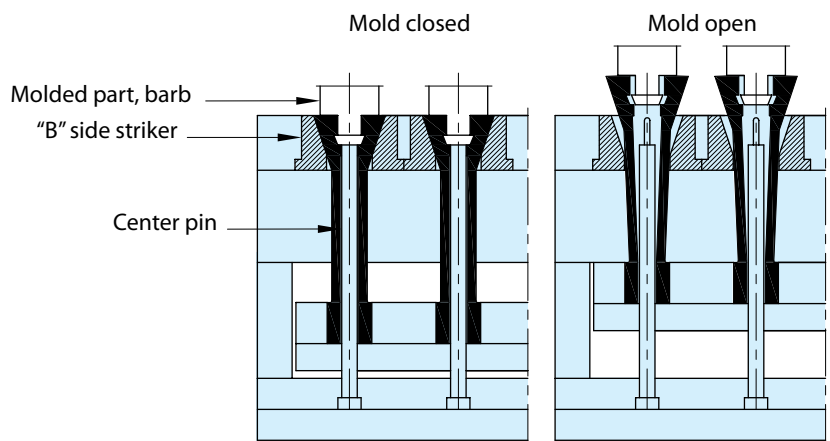
Interchangeable Center Pin

The solid center mandrel is the most common type of center pin. It may have an inner cooling channel depending on its size. The center pin provides an internal shut-off with the Expandable Core.

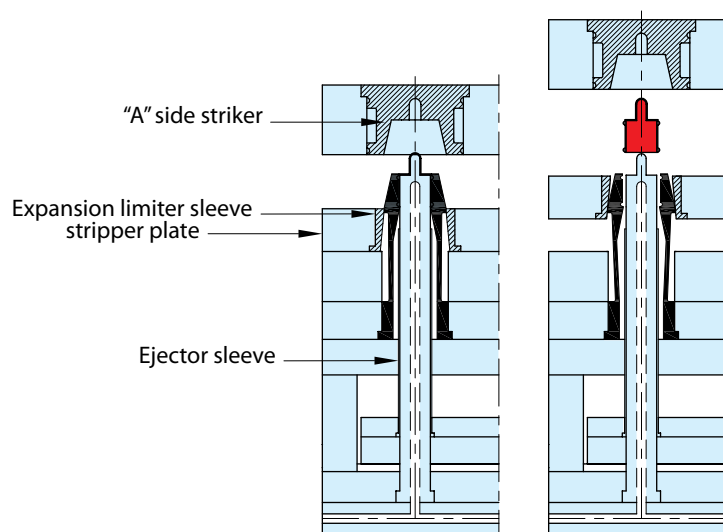
Typical application with "A" side striker insert



Typical application with "B" side striker insert



With "A" striker insert and expansion limiter sleeve



The Expandable Core can mold a full 360° around. The most common configuration is 4 segments that mold 90° apiece. The Expandable Core can also be designed as asymmetrical, such as two segments that mold 90° apiece and 3 segments that mold 60° apiece. The amount of expansion varies according to the part requirements, and clearances needed.

The critical expansion needed to release the undercut is not the radial difference between major diameter (D) and minor diameter (d).

Most Expandable Cores are usually ground or EDM'd. It is important when grinding to flood tool with suitable coolant for hardened tool steels. (Dress wheel frequently). The wheel must be of a soft grade. When grinding make sure the Expandable Core completely closed in a true circle by using the grinding ring supplied, as shown here. After all finish grinding, polishing and EDM'ing work, be sure to demagnetize the Expandable Core to prevent adhesion of any metal particles that might find their way into the Core during molding.

Note : **DME** does not provide the part configuration detailing or machining.

