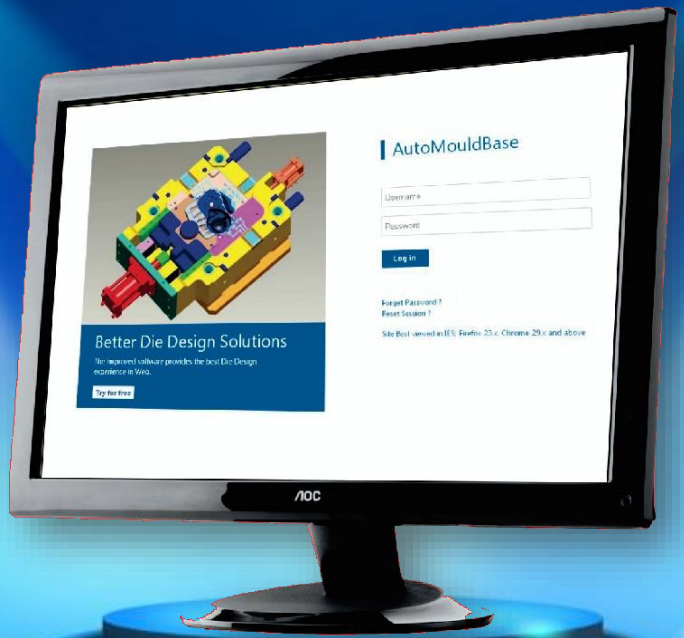
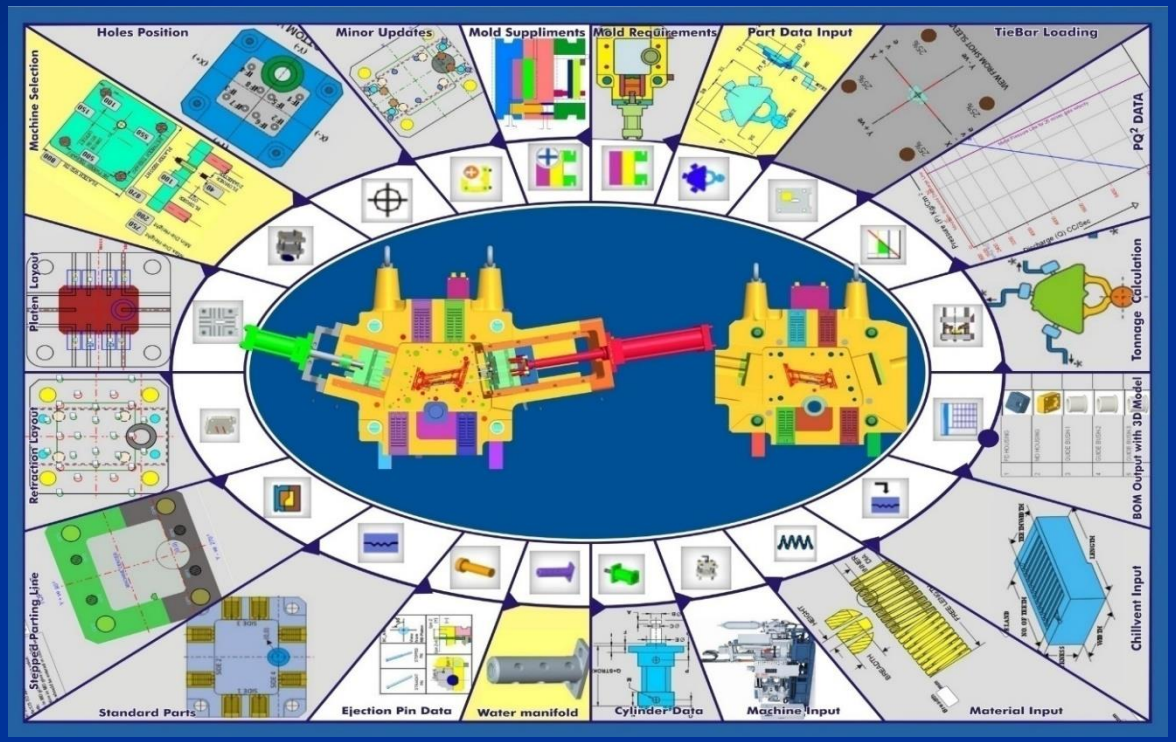
Introduction



A SOFTWARE PRODUCT OF

DIETECH INDIA (P) LIMITED

AMB FEATURES

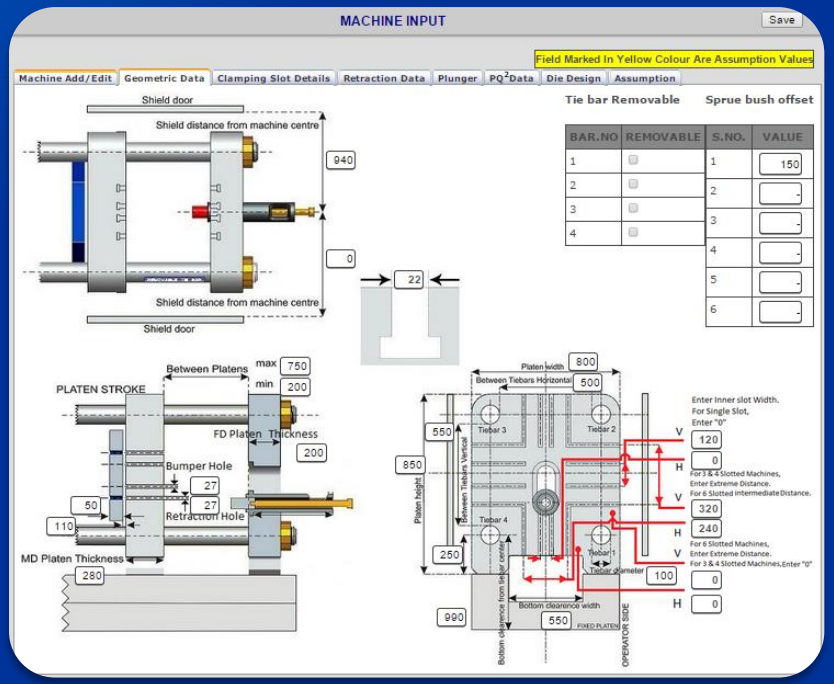


This slide shows the different icons built in the AMB

The icons are built for each design elements with variables.

The icons are placed in such a way that the design procedures are in order.

MACHINE INPUT FORM

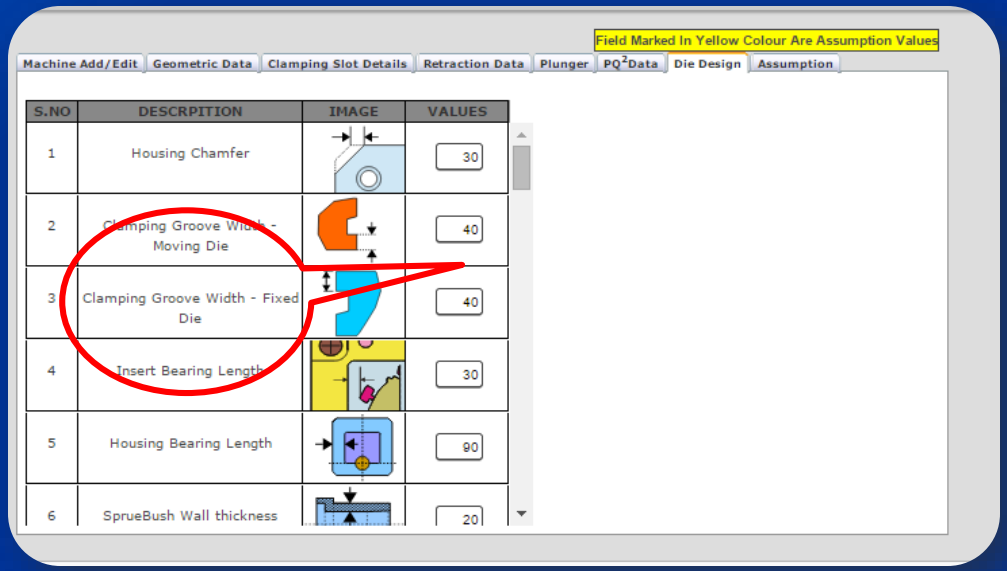


Machine input forms

AMB procedure starts with capturing the machine data like platen size, between tie bar dimensions ,max & min die height including injection offset distance etc...

AMB has forms to intake clamping slot details, Retraction hole positions, shot sleeve dimensions & Injection parameters.

DIE INPUT FORM (DIE STANDARD) – I / I

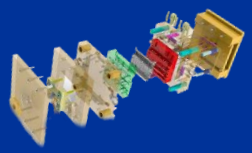


Die standards

This form will intake the Die-casters standard practices of clamping thickness, insert bearing , housing bearing etc...

DESIGN STAGES

1. PRE DESIGN



2. DESIGN

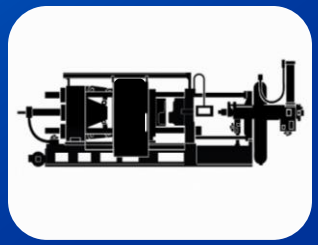
3. POST DESIGN

Design stages

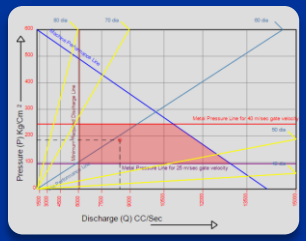
AMB will give direction to the designer in “mold base design” like Predesign, Design & Post design.

This will give clarity in design process without missing the procedure.

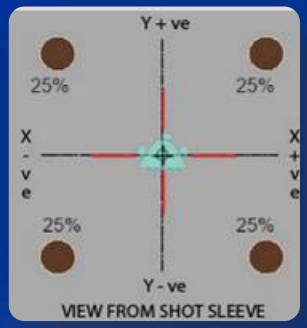
PRE DESIGN



a. TONNAGE CALCULATION



b. PQ^2 DIAGRAM

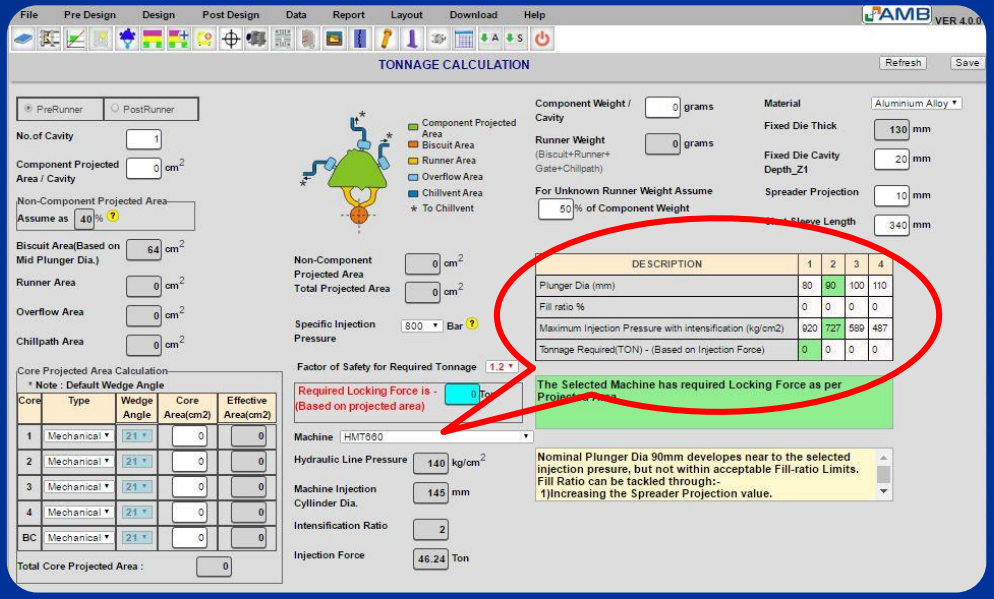


c. TIE BAR LOADING

Predesign

It deals with tonnage calculations of the desired casting, PQ square diagram, machine tie bar loading distribution study inclusive of casting part data entry in the chart.

A. TONNAGE CALCULATION

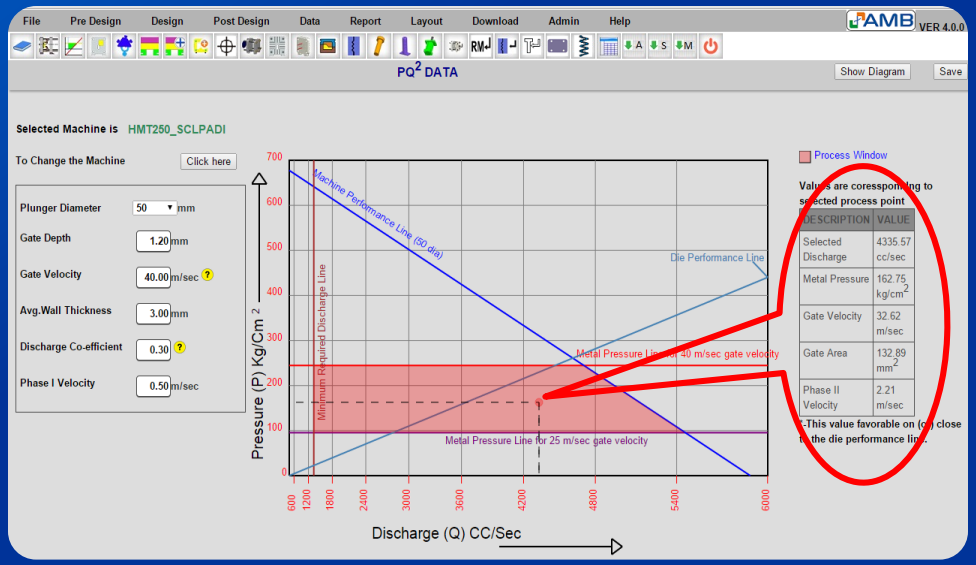


Machine tonnage calculation

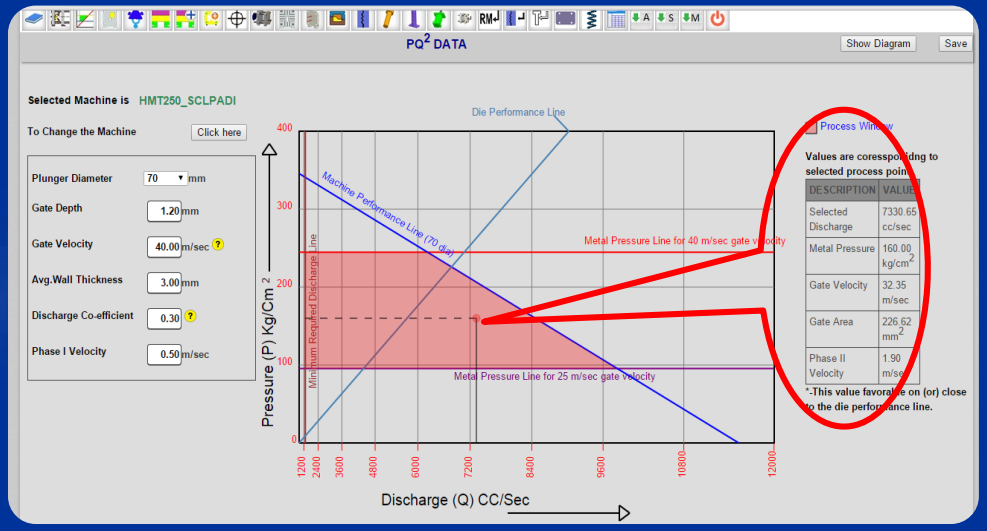
This form is having the power of selecting the required machine by asking basically the casting weight & projected area.

All other details like runner weight , etc are either guided by norms value or given as user input.

B. PQ^2 DIAGRAM



PQ2 DIAGRAM for Ø50 Plunger

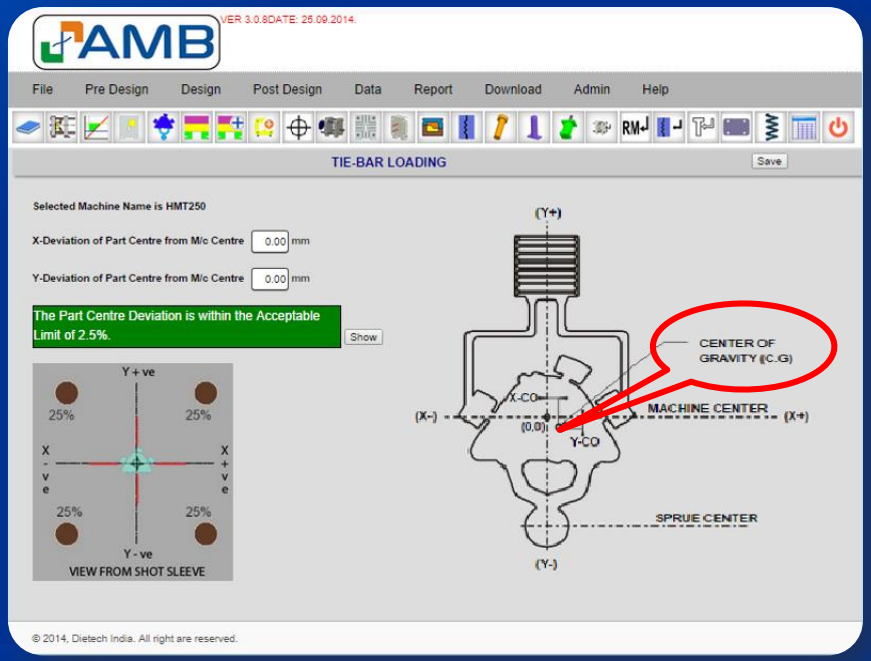


PQ2 DIAGRAM for Ø70 Plunger

B. PQ^2 DIAGRAM - NOTES

- PQ2 square diagram
- This PQ2 diagram reveals the machine & die process window between machine performance line ,required minimum discharge line and Maximum and minimum Gate velocities.
- The various size of plunger performance are also can be evaluated by selecting different plungers.
- The die performance line is shown through the process window and the reference gate area, gate velocity & cavity pressure can be taken by selecting the point in the shaded portion.

C.TIE BAR LOADING CALCULATION

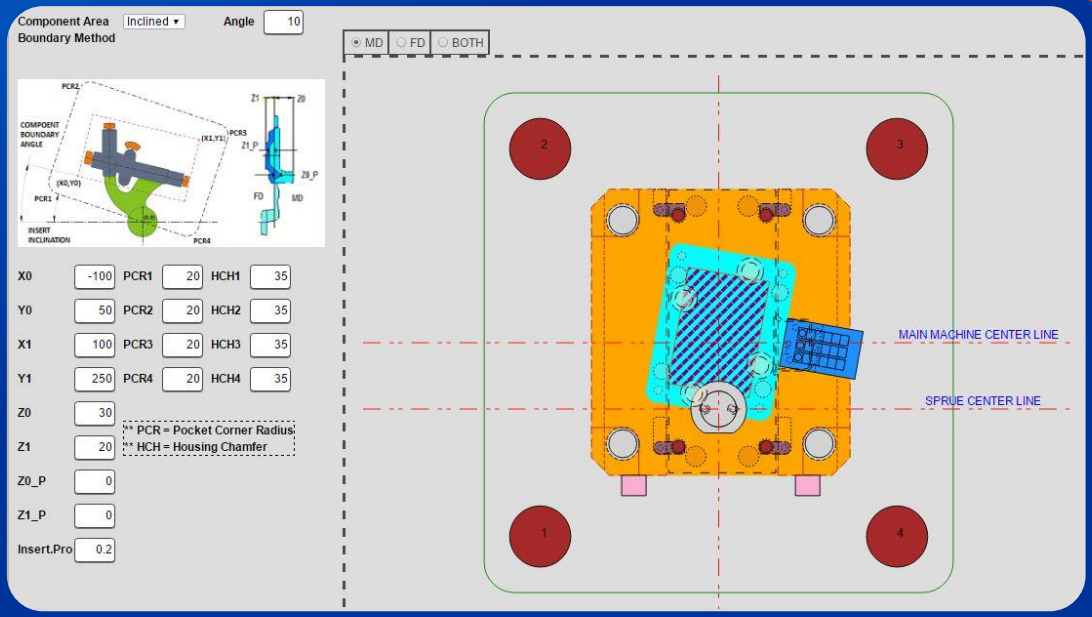


Tiebar loading distribution

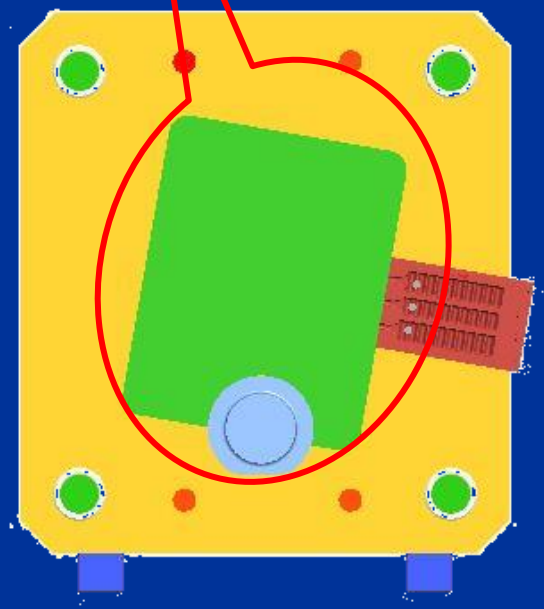
This facility will indicate load distribution on each tie bar for the given cavity center.

The quality alert will be given to show not acceptable limits.

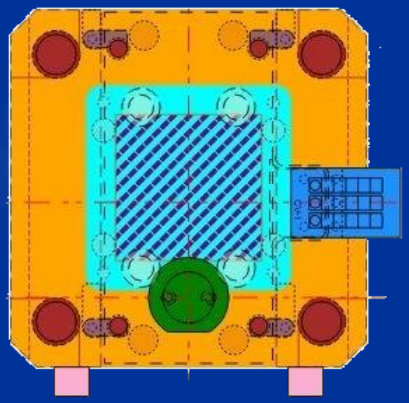
OBLIQUE INSERT – PLAIN DIE

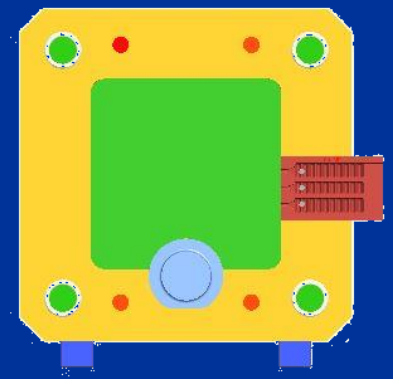


OBLIQUE INSERT



STRAIGHT INSERT

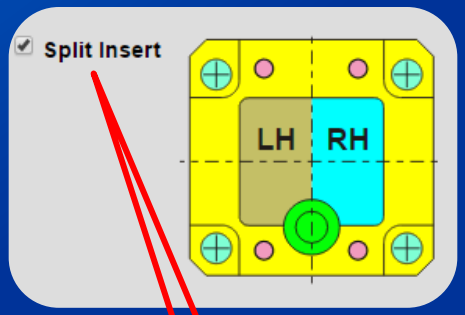


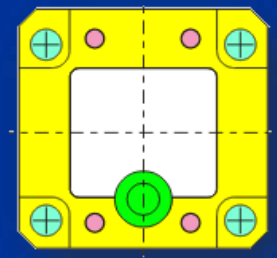


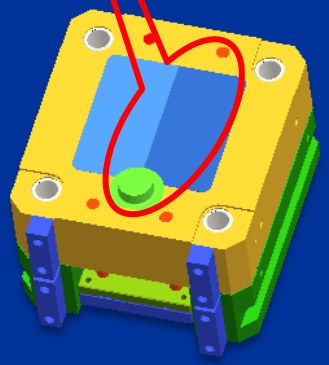
OBLIQUE INSERT – PLAIN DIE NOTES

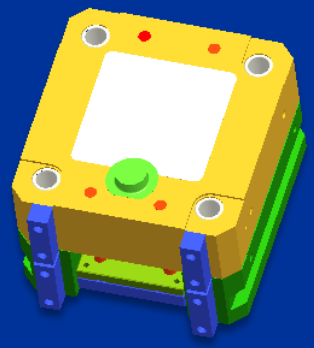
- AMB displays proportionate die layout on the screen.
- This dynamic 2D graphics helps to visualize the position of the casting area placement on the mold with hatching marks. The position of all design elements can be visualized thru this graphics.
- Oblique insert
- This facility is created to make the mold base pocket in angular position of the insert to accommodate inclination of the casting placement during runner & gate design.
- This enables the optimum insert size and uniform bearing area around the castings.

SPLIT INSERT TYPE SELECTION









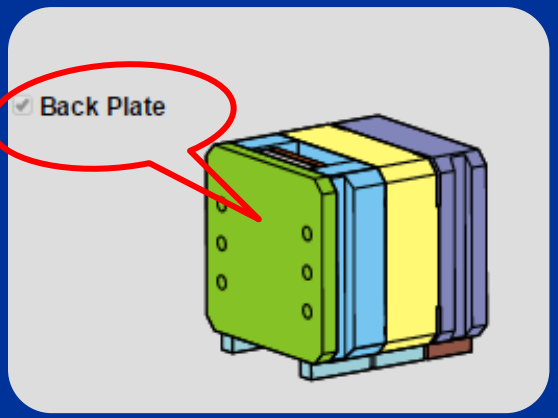
SPLIT INSERT

SINGLE INSERT

Symmetric & Non Symmetric insert

We can create symmetric and non symmetric insert and Split inserts also.

HORIZONTAL SUPPORT BLOCK SELECTION



Horizontal support block to vertical support block

In one click in the screen we can change from vertical support block to horizontal support block.

This changes will be the long time taking process in the conventional method.

STEPPED PARTING LINE

STEPPED PARTING LINE

REFRESH SAVE

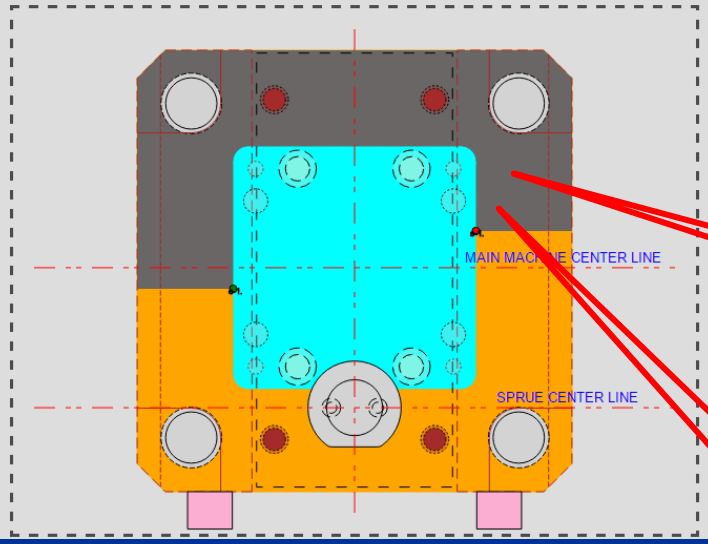
ANGLE LIMIT

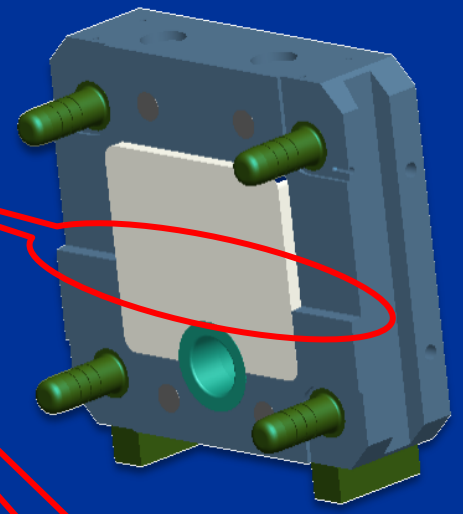
Angle should be in Anti- clockwise Direction.
Step Depth:
For Projection in MD give positive value.
For depth in MD give negative value.

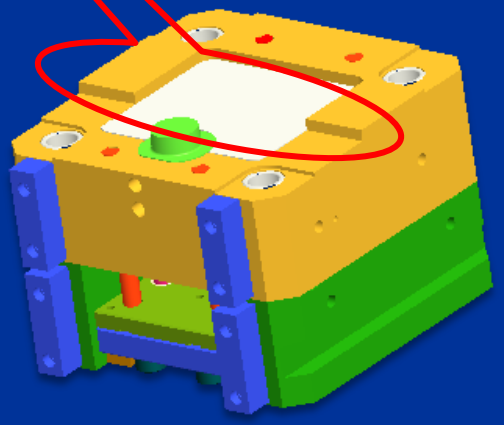
Step Alert

Step No:	Step Select:	Start Point: X:	Y:	ANG:	DA:	End Point: X:	Y:	ANG:	DA:	Depth:	Start Edit:	End Edit:
1	☑	130	189.2952	0	1	-130	127.3548	180	1	10		
2	☐	-	-	-	-	-	-	-	-	-		
3	☐	-	-	-	-	-	-	-	-	-		
4	☐	-	-	-	-	-	-	-	-	-		

**DA ----> Draft Angle



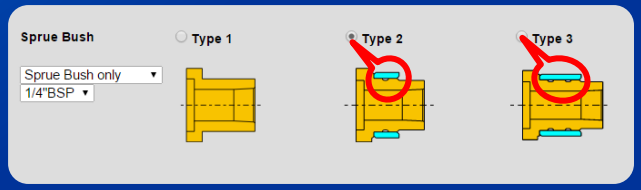


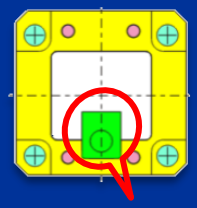


This form shows the creation of stepped parting line in thickness direction of moldbase to suit the casting parting line requirements.

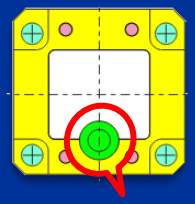
This will help to provide venting thru housing parting line

SPRUEBUSH TYPE SELECTION





RECTANGULAR



ROUND

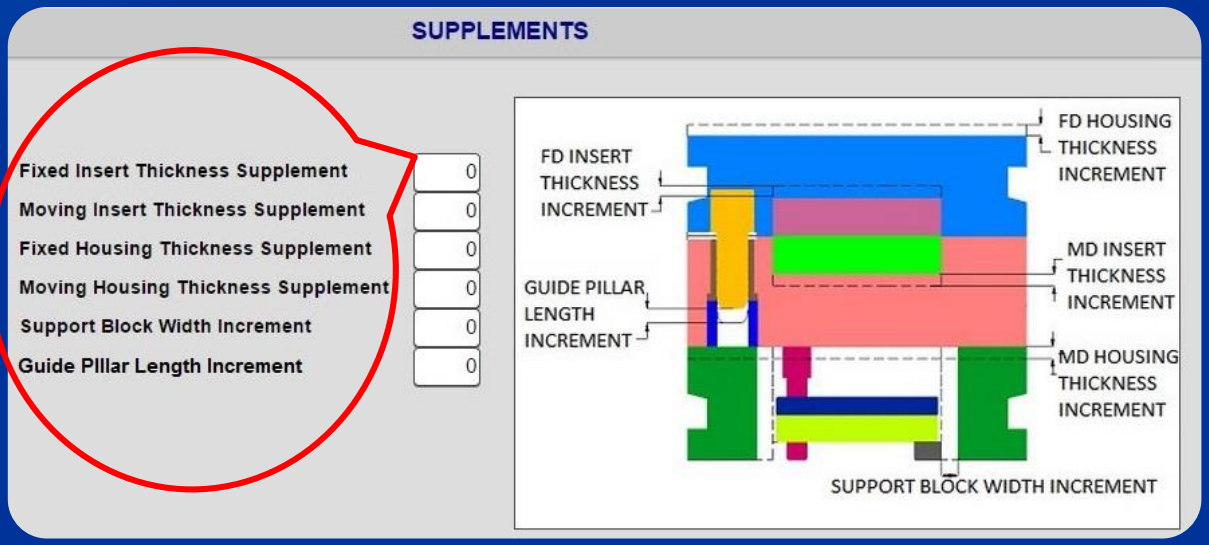
SPREADER TYPE SELECTION

Sprue bush & spreader

The facility is to select from three types of sprue bush based on water cooling System .

Also we can select two types of spreader either round or rectangular.

MOLD SUPPLEMENTS – FORM



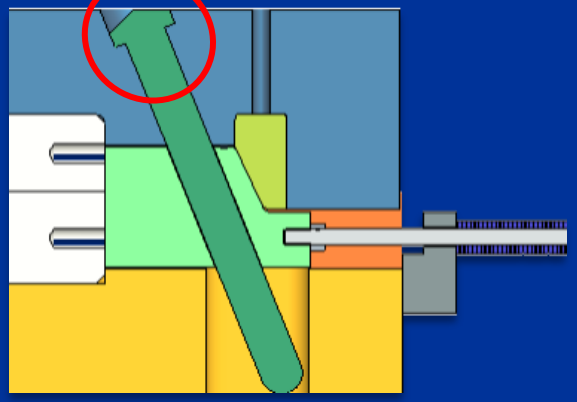
Mold supplements

This is one of art of AMB.

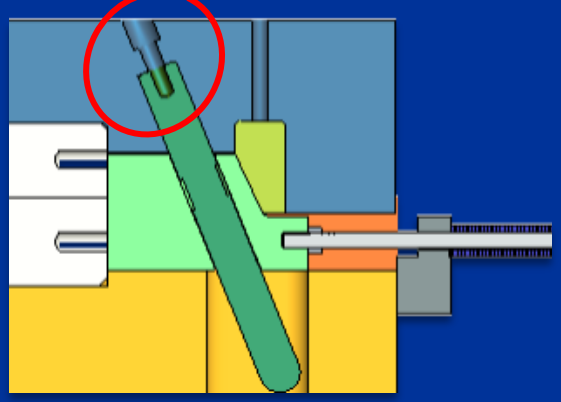
The designer can alter the housing thickness ,insert thickness to match the nearing Raw material size available.

CAMROD TYPE

1. COLLAR TYPE



2. SCREW TYPE

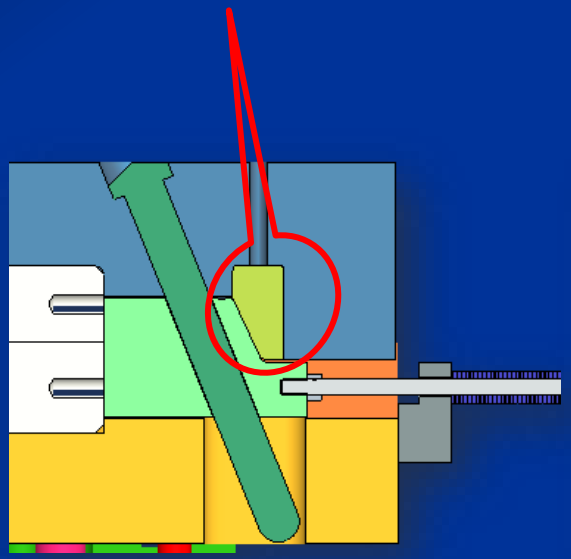


Cam rod type

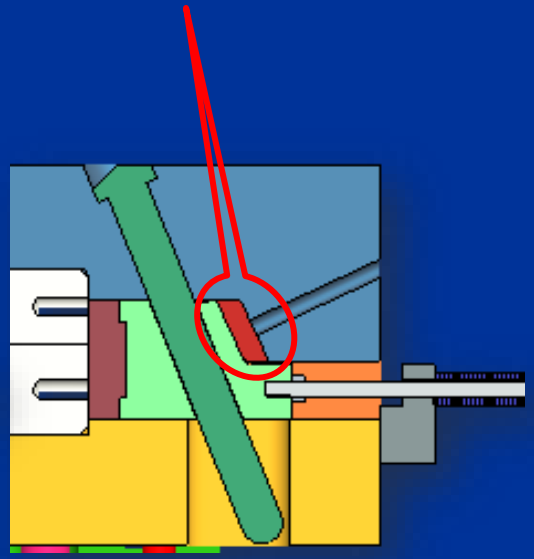
Two types of cam rod like, collar & screw can be chosen in this form.

WEDGE TYPE

1. POCKET TYPE



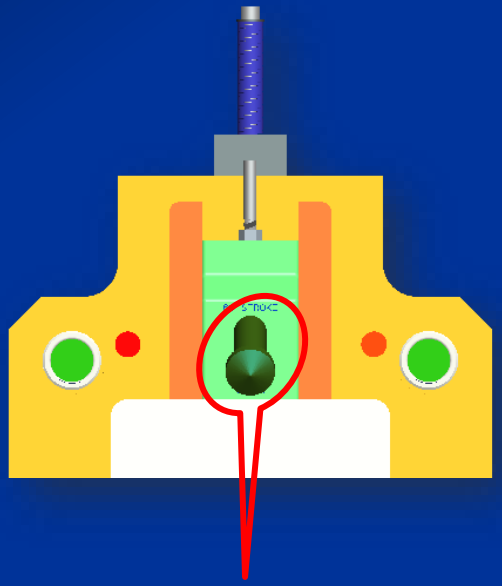
2. PLATE TYPE



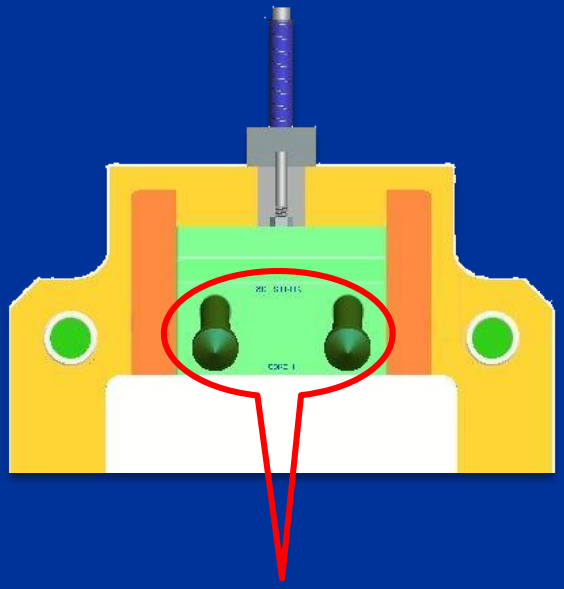
Wedge selection

The designer have the flexibility in selecting the two kinds of wedge called, “embedded” & “plate” based on the core size.

MULTIPLE CAM RODS



SINGLE CAMROD



DOUBLE CAMROD

Multiple cam rods.

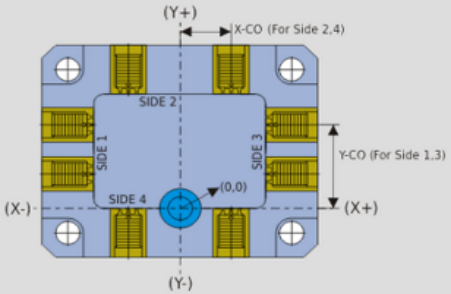
If the core holder width is more, multi cam rod provisions will be automatically generated by the AMB.

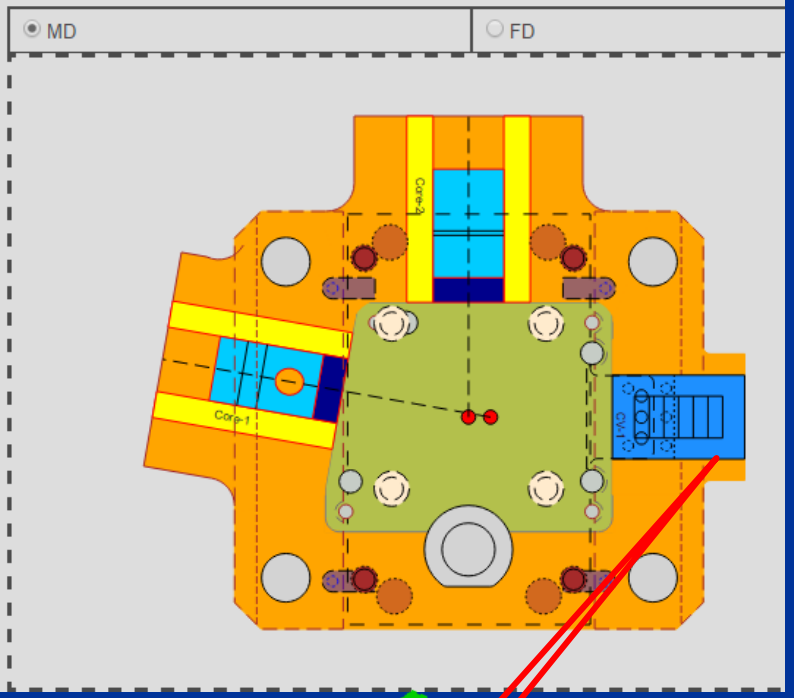
STANDARD PARTS - CHILLVENTS

CHILLVENT

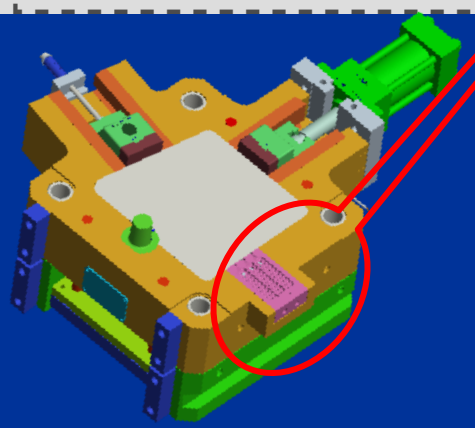
POSITION	SELECT	X-CO	Y-CO	SIZE	TYPE	SUPPORT
CV1	Along Side-3	163	150	150X95X45	Triple_Cavity	Y / N
CV2	Along Side-1			150X95X45	Triple_Cavity	Y / N
CV3	Along Side-1			150X95X45	Triple_Cavity	Y / N
CV4	Along Side-1			150X95X45	Triple_Cavity	Y / N
CV5	Along Side-1			150X95X45	Triple_Cavity	Y / N
CV6	Along Side-1			150X95X45	Triple_Cavity	Y / N
CV7	Along Side-1			150X95X45	Triple_Cavity	Y / N
CV8	Along Side-1			150X95X45	Triple_Cavity	Y / N

** Size ends with _S -> Sinewave Chillvent."

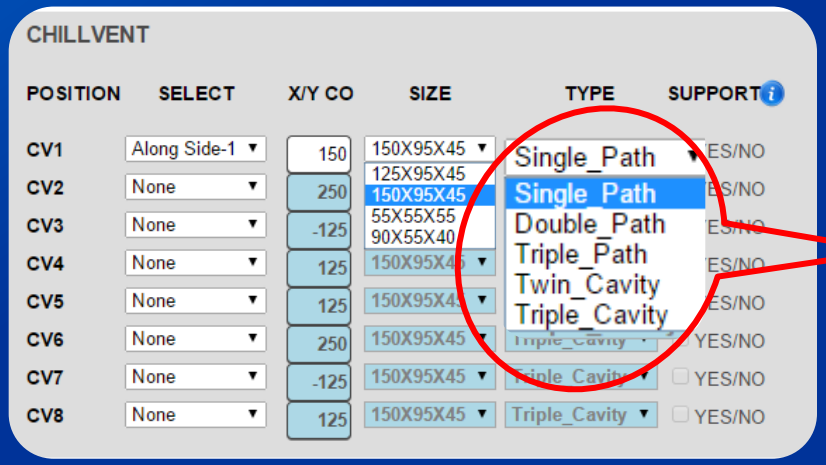


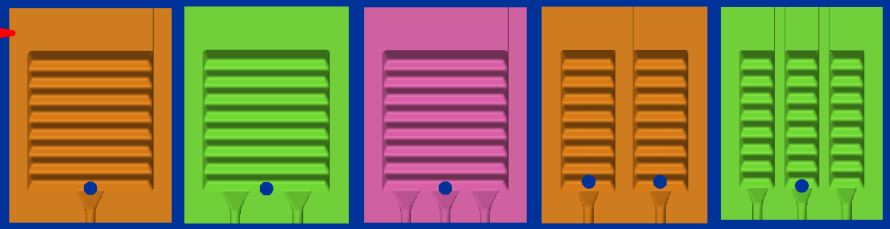


The chill vent form is designed to meet the placement of chillvents on all sides of the mold base by interactive 2D graphics.



CHILLVENT SIZES & TYPES





Chill vent types & sizes

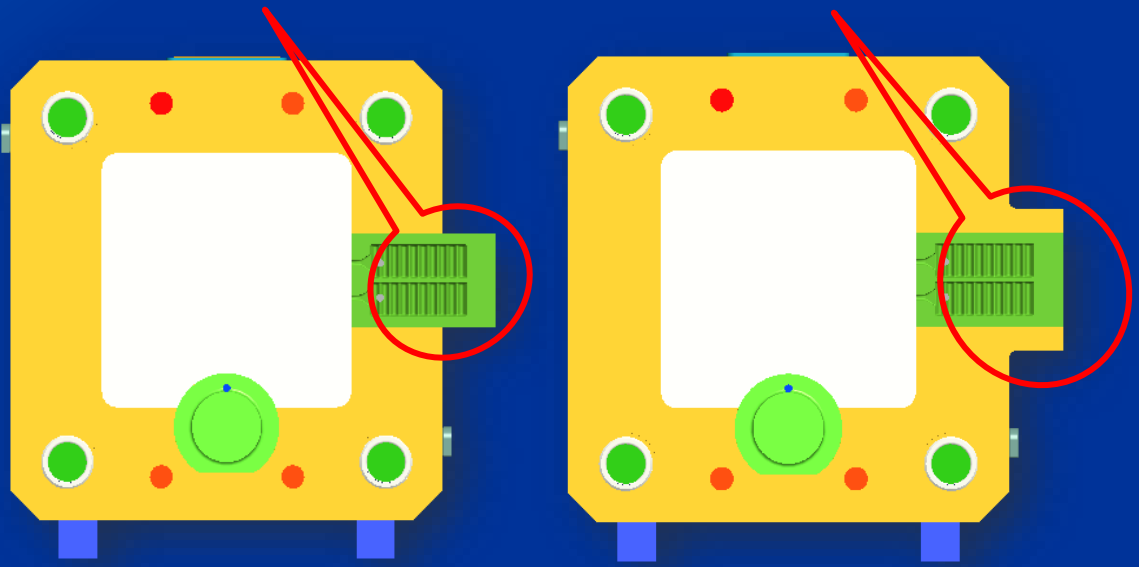
This form will help to select “the different types” of chill vents like single way & multiple way upto three.

“The different sizes” also can be embedded in the housings.

CHILLVENT EXTENSION SUPPORT

WITHOUT SUPPORT

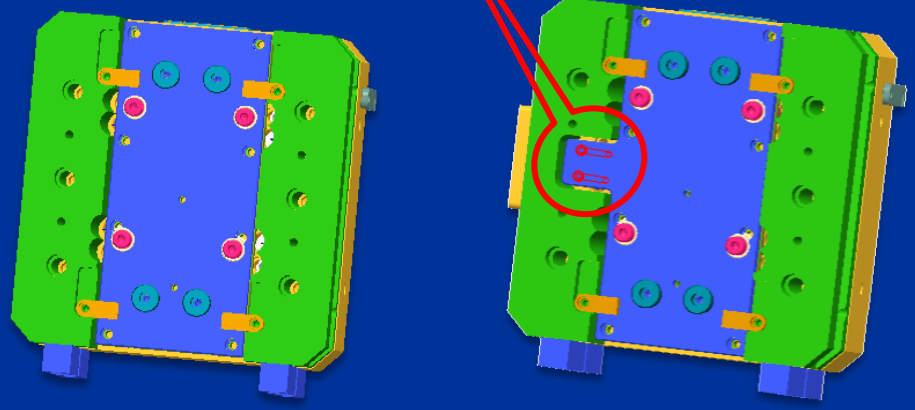
WITH SUPPORT



Chill vent extended support

The chill vent extension beyond housing can be supported with extra housing material in both housings by clicking one button.

EJECTOR PLATE EAR PROJECTION – TO SUIT CHILLVENT EJECTOR PIN



BEFORE CHILLVENT CREATION

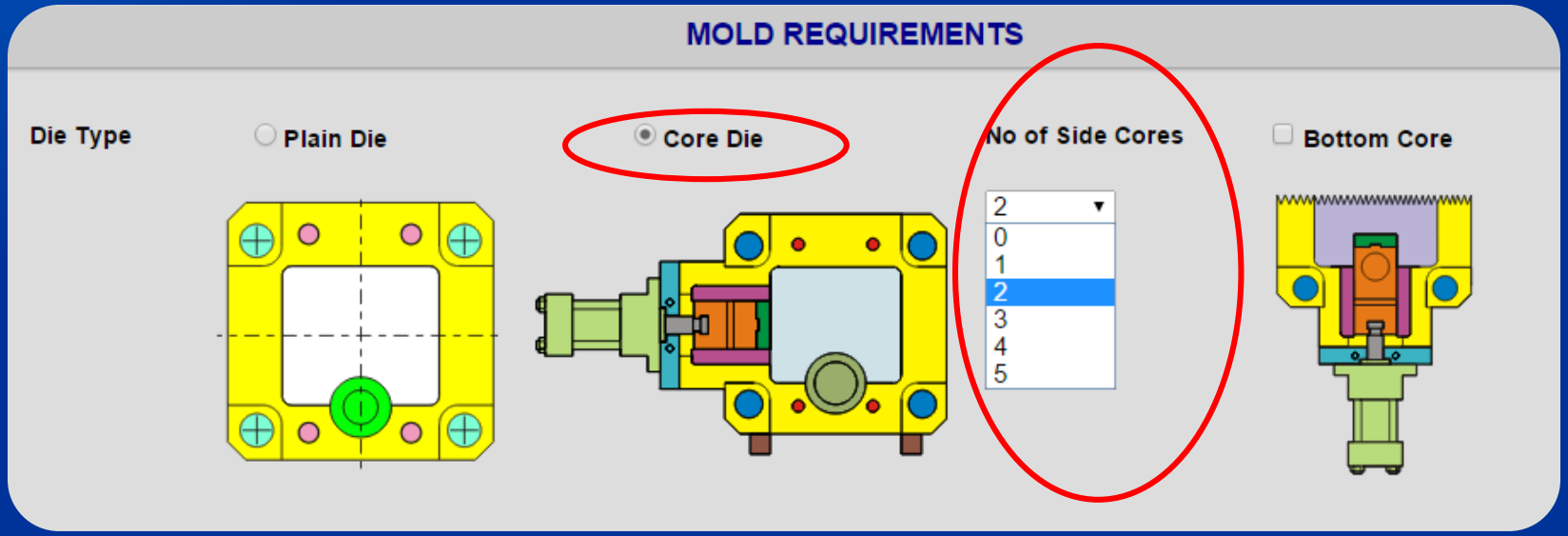
AFTER CHILLVENT CREATION

AMB has got the power of creating the 3D model with pocket location, fixing screws, hitting hole in both FD &MD housings.

Also it creates ejector pin Rooted, up to the ejector front plate, thro Moving housing. The ejector pin color pockets will be also created in the ejector front plate.

Apart from, this will make , pocket in the support block, to move the extended ejector plates.

CORE SELECTION

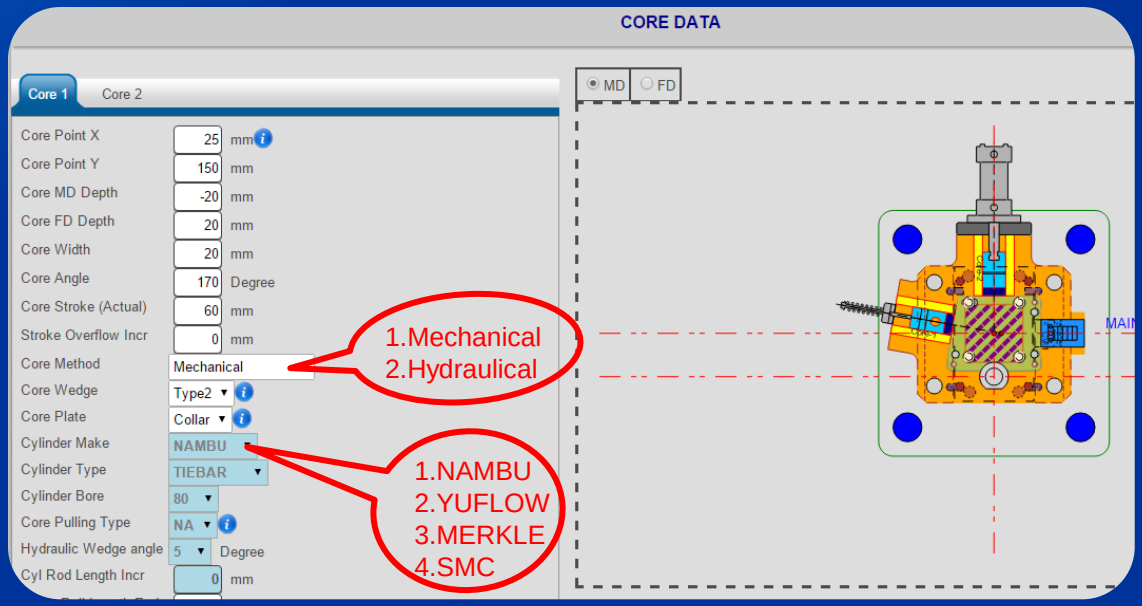


Core selection

In this form, the types of dies, no of core requirements can be selected.

The bottom core selection is added separately. AMB is limited upto 5 sidecores in single die.

CORE INPUT - FORM



The position and other requirements of the side cores can be defined thro numerical inputs with the help of visuals.

Side cores can be created anywhere between 0 to 360 degrees.

The interactive 2D graphics will help to audit the position of the same before downloading the model.

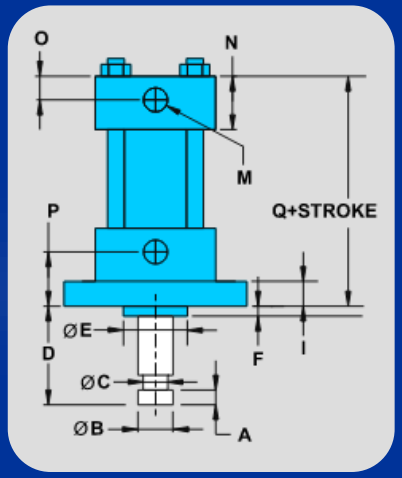
CYLINDER MAKE & TYPE

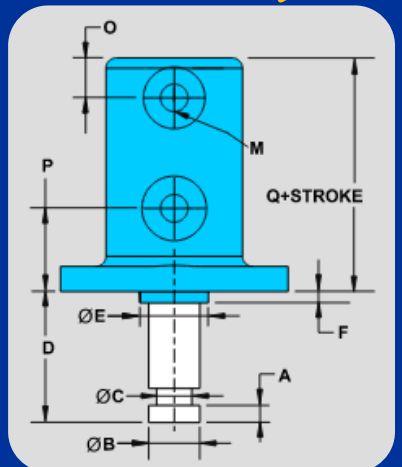
CYLINDER MAKE

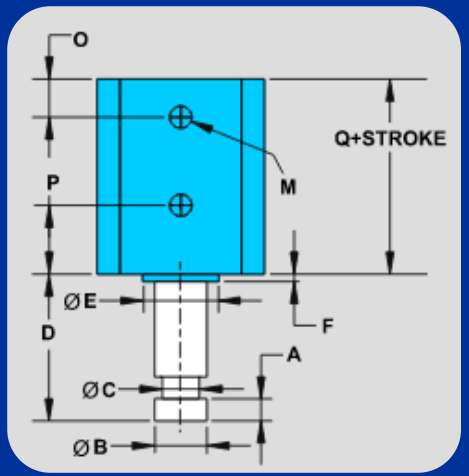
1. NAMBU
2. MERKLE
3. SMC
4. YUFLOW

CYLINDER TYPE

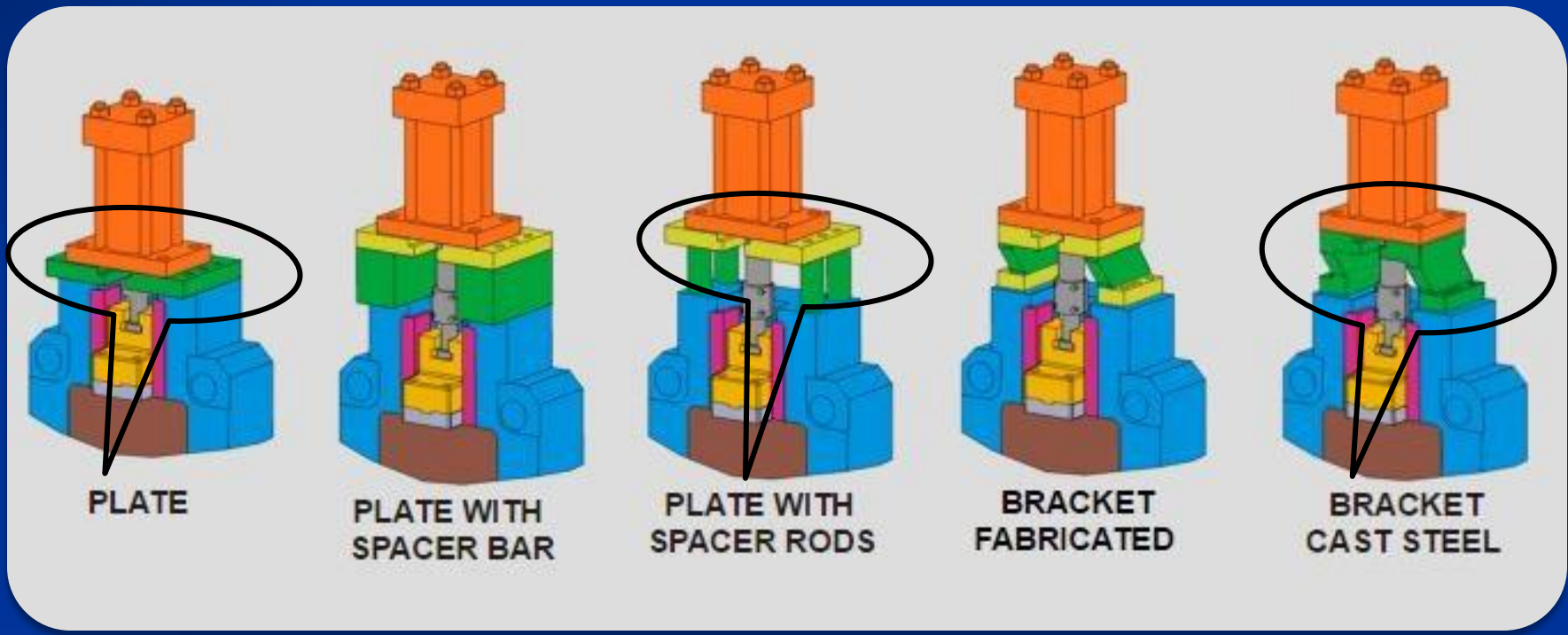
1. TIE ROD TYPE
2. COMPACT TYPE
3. WELDED TYPE







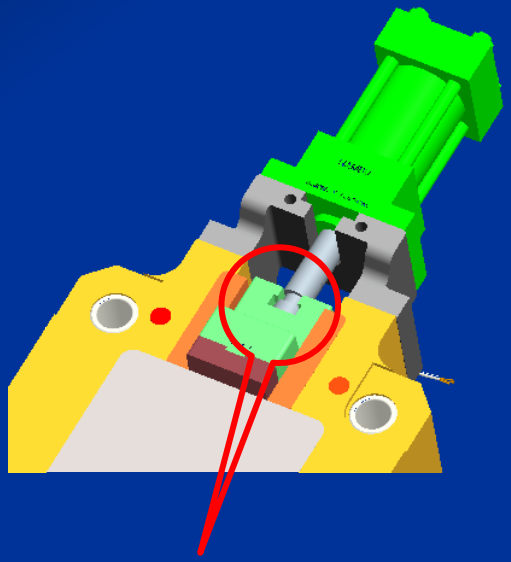
CYLINDER BRACKET



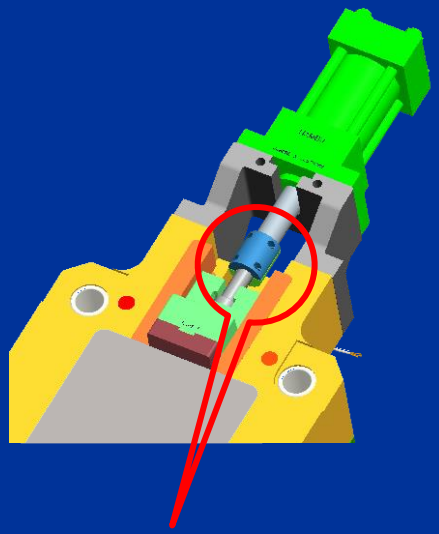
Cylinder brackets

The different types of hydraulic cylinder mounting brackets, can be selected to suit the designers options .

CORE PULLING SYSTEMS



DIRECT PULLING TYPE

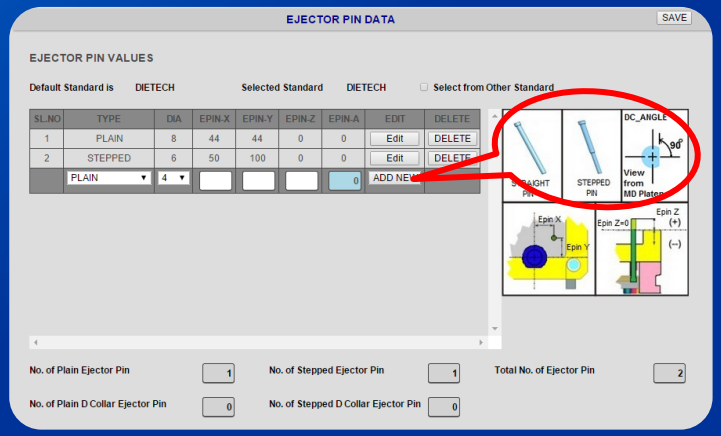


ADAPTER PULLING TYPE

Core pulling systems.

Core pulling systems form, will have two types of pulling systems, like direct & coupler types, to facilitate the designer practices.

EJECTOR PIN INPUT FORM



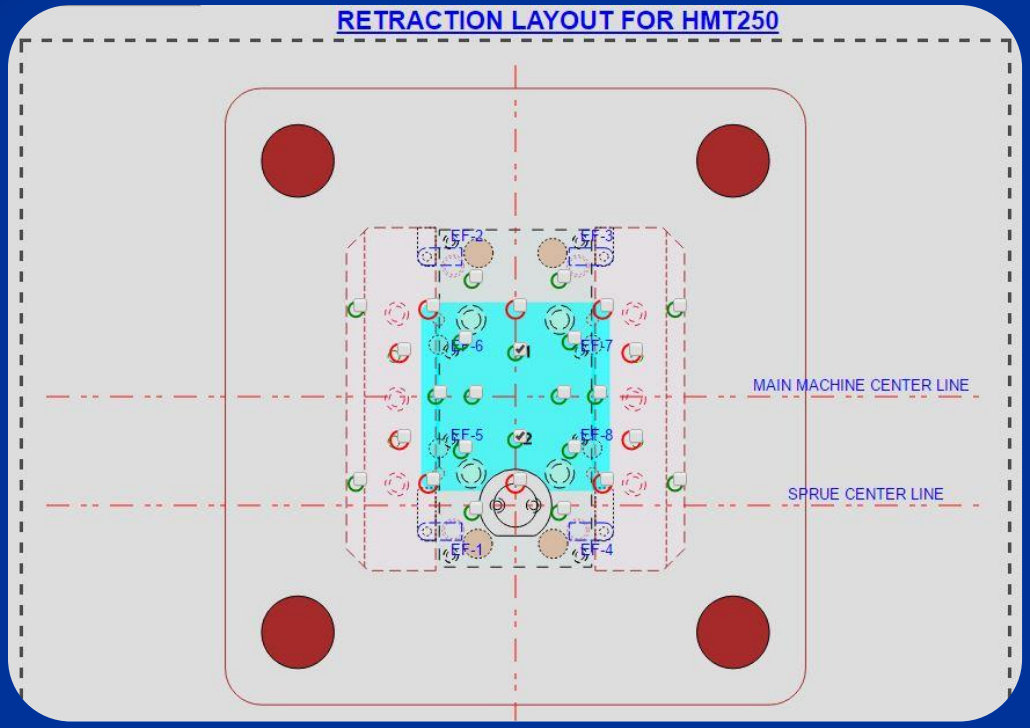
Ejector pin input data.

This menu helps, to select the straight & stepped type ejector pins, with collar orientation lock, if required .

X&Y position of ejection pins to be given with reference to the sprue centre, from the “casting ,runner and overflow” details.

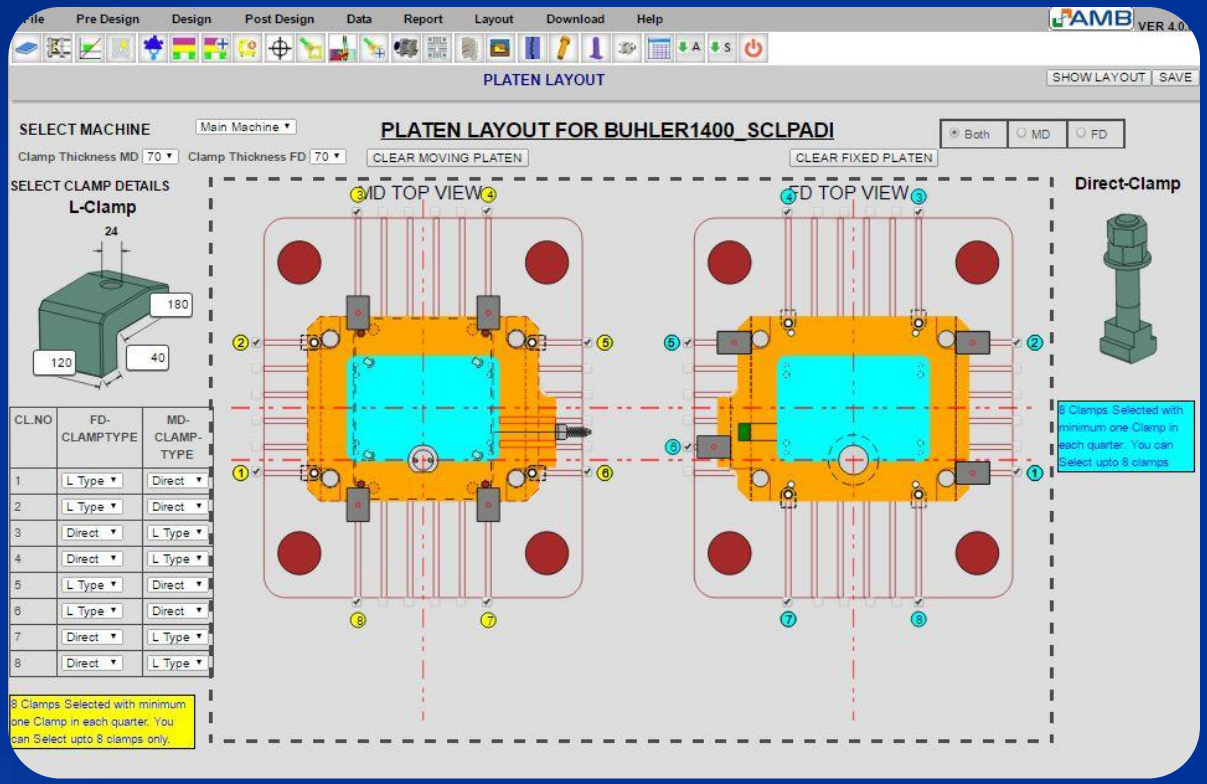
The design process in AMB, will provide the holes in the MD housing ,ejector front plate with collar counter bore. The clearance part of ejector pin holes in the housing are also taken care in this process.

RETRACTION FORM



Selected machine retraction & Bumper holes position will be displayed in this form, from that balanced retraction holes can be selected.

PLATEN LAYOUT FORM

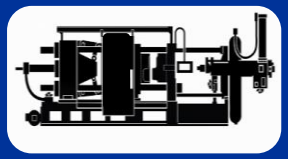


L –Type and Direct clamps upto eight clamps, can be selected in this form.
If clamps are not balanced, alert message will be displayed.

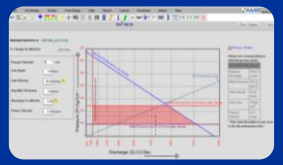
DOCUMENTATION FEATURES

REPORTS

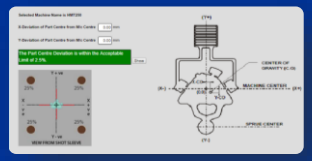
1. BOM



2.TONNAGE CALCULATION



3.PQ^2 DIAGRAM

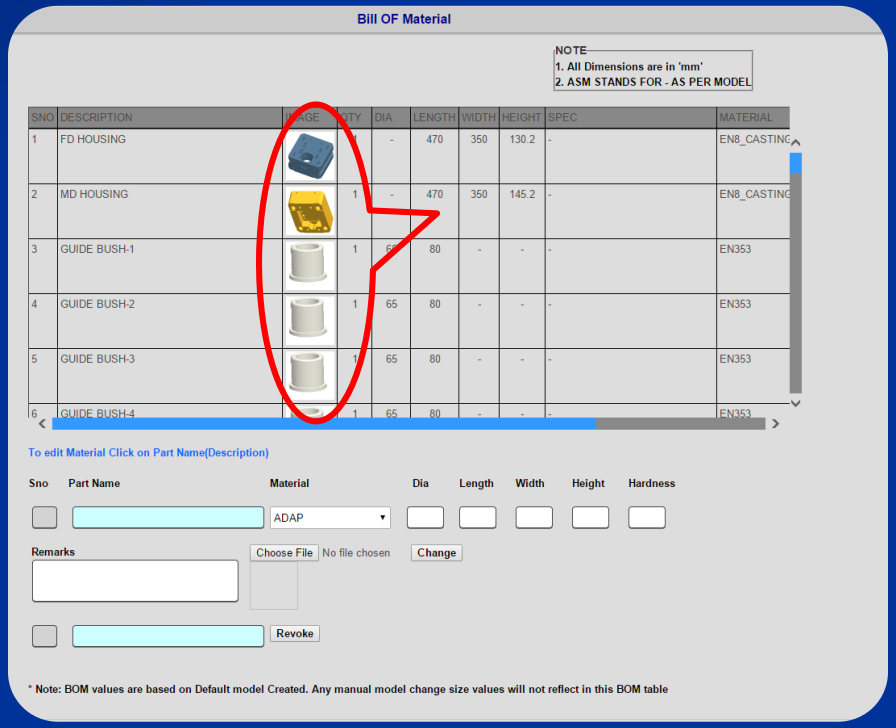


4.TIE BAR LOADING CALCULATION

The Above reports are built in, for the purposes of validation by the authorities.

They are BOM List, Tonnage calculations, PQ square diagram results & Tie bar loading calculation & Retraction details.

BILL OF MATERIAL - BOM



BOM

This is one of the important reports in AMB.

It shows all die parts name with visuals for easy understanding.

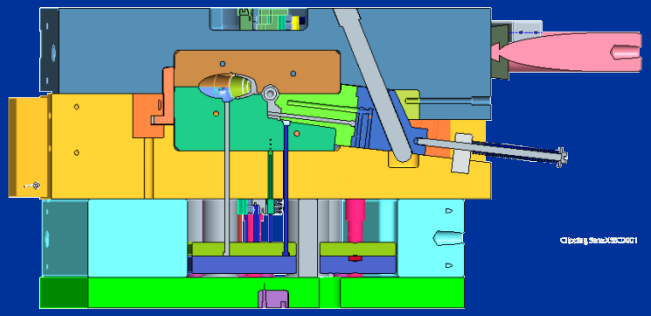
This will also give specification & size of the each die parts to plan.

AUTO MOLDBASE LIMITATIONS

TECHNICAL LIMITATIONS

AUTOMOLD BASE LIMITATIONS.

- Some conventional design work is required apart from auto mold-base design especially for uncovered design elements in AMB



- Dies with compound angle cores(cores inclined to the parting plane) need to be modified manually after AMB mold-base is done.

AUTOMOLD BASE LIMITATIONS.

- Core cavity extraction is not possible.
- AMB is limited upto 5 side cores and one Bottom core.
- Limit switch assembly(Proximity & Plunger type) is not available.
- Hydro-mechanical core option is not available.
- 2D drawings of Assembly & Parts are not available
- Fixed side ejection
- Squeeze cylinder mechanism is not available.
- Profile stepped parting line option is not available.

THANK YOU