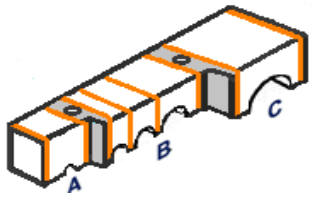
DBX-500 DIE CAVITY CALCULATION CHART

For proper manufacturing conditions and die strength, Rubber Seal Fabricators (RSF) recommends that a minimum die material wall thickness of .125 inches (3.175 mm) be maintained between all die cavities, side walls and mounting holes.

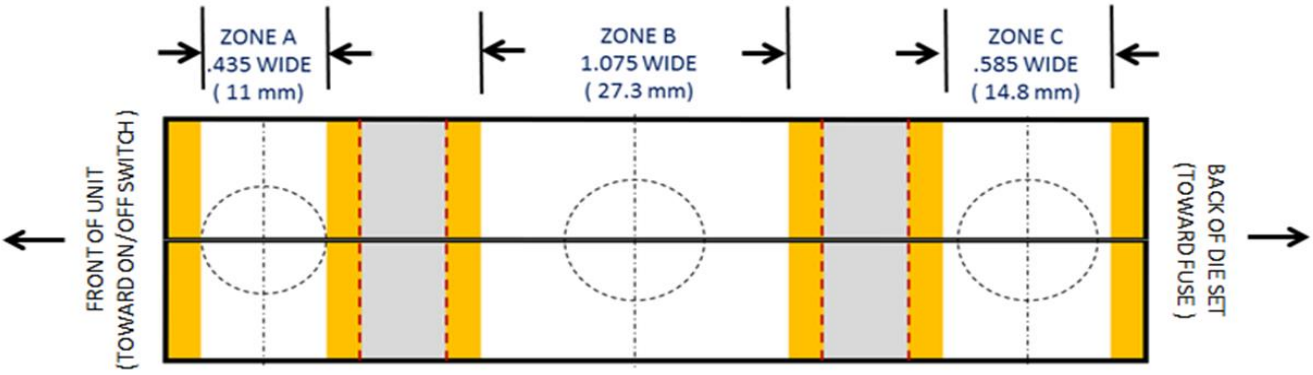
To easily identify these boundaries we have separated each die set into 3 zones(A, B, & C) as shown in the sketch of the upper right die found to the right.

The orange lines in this sketch represent the minimum .125" (3.175 mm)die material wall thickness between die cavities, side walls and mounting (shown in gray area)holes.



UPPER RIGHT DIE SKETCH

The drawing below represents a side view of the upper and lower dies with the actual width dimensions of ZONES A, B & C:



Knowing these maximum zone qualifying conditions we can easily determine that a .500 inch (12.7 mm) diameter die cavity cannot be made in ZONE "A". We also know that at least one .500 inch (12.7 mm) diameter die cavity can be made in ZONES B & C.

If we use the calculation of .500 + .500 + .125= 1.125, we can also determine that (2) .500 inch (12.7 mm) diameter die cavities require more material than is available in any of the 3 ZONES. (including ZONE "B" as the 1.125 **resultant** is greater than the 1.075 max allowed in this zone.)

The .125 die material wall thickness between side walls and mounting holes is included in the max zone qualifying conditions. We now only need to add a .125 wall between each die cavity (**hole**) to determine how many specific diameter die cavities can fit into each die zone.

Understanding these principles allows us to apply the following calculations for any diameters between .070"(1.78mm) and .500"(12.7 mm):

ZONE AREAS
A= .435 MAX
B= 1.075 MAX
C= .585 MAX

MAXIMUM ZONE QUALIFYING CONDITIONS

ORANGE LINES SHOWING .125 MIN WALL

NUMBER OF HOLES	CALCULATION FORMULA	RESULTANT
1	DIA 1=	*RESULTANT*
2	DIA 1 + DIA 2 + .125 =	*RESULTANT*
3	DIA 1 + DIA 2 + DIA 3 + .250 =	*RESULTANT*
4	DIA 1 + DIA 2 + DIA 3 + DIA 4 + .375 =	*RESULTANT*
5	DIA 1 + DIA 2 + DIA 3 + DIA 4 + DIA 5 + .500 =	*RESULTANT*

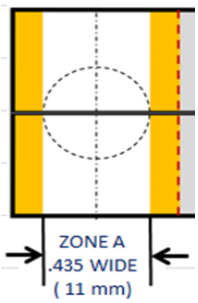
In the ZONE A, B & C, CALCULATION CHARTS on the following page we have done many of the calculations for you. Quite simply; if the number of die cavities (holes) you desire (1. 2.3. 4. or 5 in the # of holes column) fall into the specified diameter range indicated in the far left column you can see if the condition is INSTANTLY qualified. For the purpose of brevity we have also identified the ranges that should be calculated using the formulas shown above.

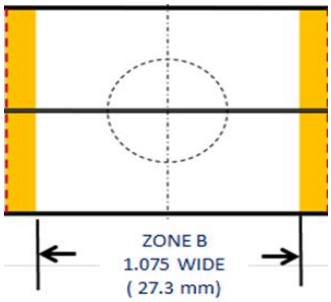
INSTANT = INSTANT QUALIFYING CONDITION

CALCULATE = MUST BE CALCULATED

ZONE A

DIAMETERS	# OF HOLES 1	2
.070-.435 (1.78-11 mm)	INSTANT	
.070-.157 (1.78-3.98 mm)		INSTANT
.070-.213 (1.78-5.41 mm)		CALCULATE





ZONE B

DIAMETERS	# OF HOLES 1	2	3	4	5
.070-.500 (1.78- 12.7 mm)	INSTANT	CALCULATE	CALCULATE		
.070-.475 (1.78-12.06 mm)		INSTANT			
.070-.275 (1.78-6.98 mm)			INSTANT		
.070-.175 (1.78- 4.44 mm)				INSTANT	CALCULATE
.070-.400 (1.78- 10.16 mm)				CALCULATE	
.070-.115 (1.78- 2.92 mm)					INSTANT

ZONE C

DIAMETERS	# OF HOLES 1	2	3
.070-.500 (1.78- 12.7 mm)	INSTANT		
.070-.231 (1.78-5.86 mm)		INSTANT	
.070-.363 (1.78- 9.22 mm)		CALCULATE	
.070-.112 (1.78- 2.84 mm)			INSTANT
.070-.238 (1.78-6.04 mm)			CALCULATE