



## **PRESSURE CALCULATION**

One of the processes of applying heat transfers is setting the correct applied pressure that is recommended for the transfer type. It is important to distinguish the difference between applied pressure and input pressure. There is a formula that allows you to calculate applied and input pressure. Listed below are the symbols and definitions for performing these calculations.

$$\begin{aligned}(\mathbf{AP}) &= \frac{(\mathbf{CA}) \times (\mathbf{IP})}{(\mathbf{SA})} \\ (\mathbf{IP}) &= \frac{(\mathbf{AP}) \times (\mathbf{SA})}{(\mathbf{CA})}\end{aligned}$$

**(AP) Applied Pressure:** The force (or pressure) that is generated between the top and bottom platens when the cylinder is activated. Note: These calculations apply only to air operated presses that supply direct pressure to the platens. This does not include clam shell or other press that create indirect pressure.

**(IP) Input Pressure:** The set pressure coming into a cylinder through the pressure regulator. The amount is indicated on the gauge. Some machines have dual pressure regulators. The input pressure for calculating applied pressure refers to the regulator that controls the platens to come together.

**(CA) Cylinder Area:** This is the area of the air cylinder's bore. It is measured in square inches. The formula is calculated by  $\pi R^2$ .

**(SA) Surface Area:** The area of the top platen that contacts the bottom anvil in an application is the actual surface area. In cases using target anvils or shaped dies measure the smaller surface area. Multiply the width by the length. The measurement is taken in square inches. If both platens are the same size then you may measure either one.

♦ Common cylinder sizes along with their areas.

Cyl. Size		Square inches
2"	=	3.14"
3"	=	7.07"
3¼"	=	8.3"
4"	=	12.57"
5"	=	19.64"
8"	=	50.27"