



### ***Why magnesium safety blocks?***

Magliner Safety Blocks are extruded from Magnesium, the lightest and strongest material readily available for this type of application. Magnesium safety blocks are designed to block the ram and die of a press whenever dies are being repaired or adjusted and they offer distinct advantages over blocks manufactured of other materials. A favorable strength to weight ratio gives the metal abundant strength to meet the direct static load requirement of the ram and upper die, yet is lightweight enough to allow the block to be easily handled. Another desirable characteristic of magnesium is its inherent tendency to shear off at a 45 degree angle, rather than bend, if subjected to an accelerated or impact load condition. Unlike other materials which bend or compress under load, causing excessive equipment stresses, this shearing action minimizes damaging effects to die components and equipment. In principle, a magnesium safety block performs similarly to a calculated safety "shear pin".

### ***Selecting the proper safety block***

Safety blocks are rated to withstand a direct static load. This is conveyed as the capability of the block to support the combined weight of both the upper ram and upper die halves in an open position. Static load is defined as a non-moving or resting load of the upper ram and die halves. Proper selection of the style and size of the safety block for the specific press application must be based on three conditions:

1. Static load requirement for each press.
2. The required safety block length.
3. Options or accessories that contribute to safer operations.

### ***Determining Capacity***

The most accurate method for determining the combined weight of the ram and die is to calculate the weight of the upper ram, slide assembly including adjustment device, pitman arms of the press, and maximum weight of the upper die halves being used. Multiply the combined weight by a **minimum safety factor of two** to establish the safety block capacity requirement.

### ***Determining proper length***

Proper length is determined by the die block opening space in which the safety block is to be used. The block opening die space is usually described as the total clear opening of the press. To calculate the proper length of the block, measure the distance from the top of the bolster to the underside of the press with stroke up and adjustment up and subtract 1½" to 2" for variations in stopping at top dead center. It is important to make sure that the overall block length be no more than 2" shorter than the clear opening. Hardwood wedges are recommended for use in compensating for the open variation. This precaution will prevent the possibility of an impact load condition, which would exceed the static load capacity of the safety block.

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