



BALL BEARING GUIDANCE SYSTEMS INSTALLATION INSTRUCTIONS

Figure 1

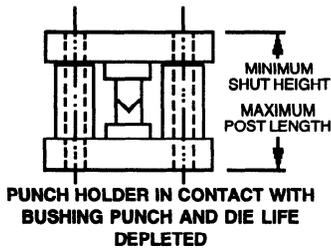
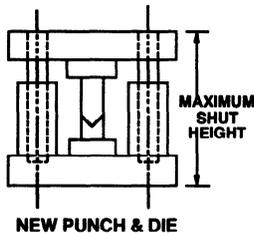


Figure 1 (Minimum Shut Height) determines maximum guide post length and maximum bushing height. Lamina Guide Posts are 1/8" shorter than nominal lengths shown, e.g. 6" post is 5-7/8". This will prevent post bottoming on bolster at minimum shut height if nominal post length is same as minimum shut height.

Figure 2

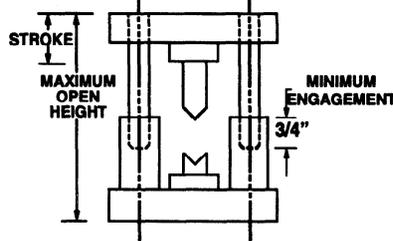


NEW PUNCH & DIE

The maximum shut height added to the stroke equals the maximum open height (Figure 3) indicating the minimum engagement for the guide post in the required bushing. It is considered ideal for the minimum engagement to be at least 3/4". If it is less than 3/4", however, the arrangement shown in Figure 4 is recommended.

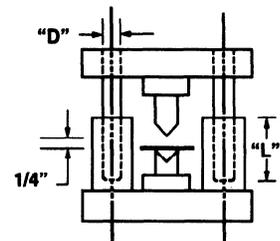
Keeping in mind that only a small part of the stroke on most dies actually does the work, when conditions shown in Figure 4 are acceptable, together with conditions shown in Figures 1 and 2, there is no need to be concerned with the full length of the stroke and maximum open height.

Figure 3



When required strokes are longer than normal, guide post and retainer, if necessary, may be totally disengaged from bushing on the upward travel, provided (A) operation is vertical, (B) operation is limited to no more than 150 strokes per minute, (C) top of bushing's inside diameter is chamfered at least 1/4" x 30°, (D) the ram and gib alignment of the press are accurate.

Figure 4



"L" (POST ENGAGEMENT) SHOULD BE 1-1/2 TIMES "D" (POST DIAMETER) WHEN PUNCH IS 1/4" ABOVE STOCK

The bushing must always be engaged by the guide post minimum of 3/4" if the operation is inclined or if speed surpasses 150 strokes per minute. The guide post bushing must engage the retainer during the entire operation, or what is known as full contact pre-load operation.

GENERAL INFORMATION SPECIFICATIONS

1. The Ball Retainer travels half the distance the pin travels or one-half the stroke length.
2. Maximum post length equals (=) minimum shut height minus (-) 1/4" Figure 1. If post length should be greater than minimum shut height it will be necessary to provide clearance for projecting post when press is at bottom of stroke.
3. Maximum straight sleeve length Figure 1 equals (=) minimum shut height minus (-) punch holder thickness minus (-) 1/4". Select nearest standard length.
4. Maximum retainer length equals (=) bushing length minus (-) 1/2".
5. Post slot lengths available upon request.