



# Types I, II and III Selection Data For Operating Condition

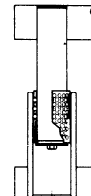
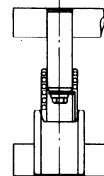
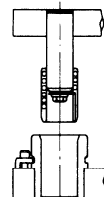
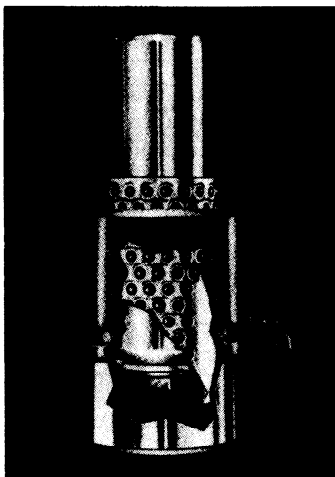
To meet the varied performance characteristics required for different applications and stroke requirements of ball bearing die sets, Standard has three types of Ball Bearing Bushing Assemblies. Selection of the proper type is important to assure the most effective and economical performance in a specific application.

**TYPE I PRE-LOADED** — Type I is recommended for use with high production, long-life dies. With this type of Ball Bearing Bushing Assembly, all of the balls remain in contact with the post and bushing in pre-loaded conditions throughout the press stroke. Dimensional data for this type is shown on pages 14 and 15.

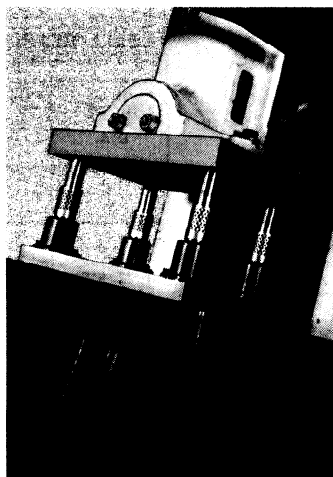
**TYPE II RELIEVING** — Type II Ball Bearing Bushing Assembly is recommended when it is desirable that the ball cage does not leave the bushing at any time. This design provides safe operation, eliminates the pinch point, prevents foreign materials from falling into the bushing and repositions ball cage each stroke. Dimensional data for this type of assembly begins on page 17.

**TYPE III DISENGAGING** — Type III can be used in applications where the ball cage can be permitted to leave the bushing with each stroke. This type offers the most economy, since it uses the shortest bushings and ball cages possible for general applications which require long strokes. Dimensional data for this type of assembly also begins on page 17.

**OPERATION AND FIT** — For proper operation of the Ball Bearing Bushing Die Set, the guide post must be assembled in the upper member (punch holder). Ball Bearing Bushings should be ordered as complete assemblies (guide post, ball cage, bushing) to assure proper fit of components.

**TYPE I****TYPE II****TYPE III**

Cutaway of full assembly shows how ball case is mounted to guide post with washer unit.



Assembly operates equally well in all types of presses, including inclined types.

## BALL BEARING BUSHING LUBRICATION RECOMMENDATION

In operation of Ball Assembly, add lubricant once each 8-hour shift by spray or brush application. Use a refined mineral oil of viscosity 290/340 SSU @ 100° F. containing "EP" additives and rust inhibitors. An oil of this type would be Mobile Compound AA or Mobile Gear 626.