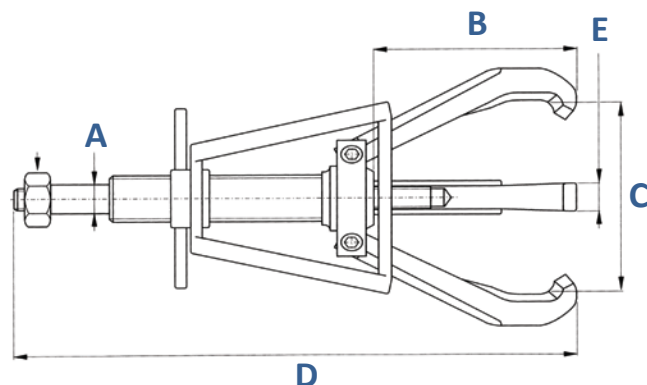


## Selecting the Right Size Manual Puller

When choosing the proper puller for a specific application, several points must be considered. By following these guidelines, the removal of gears and bearings will be made easier and safer.

1. **Puller Reach:** Puller reach is the available distance between the pulling surface of the jaw and the jaw head of the puller. This distance varies and decreases as jaws are opened. When choosing a puller, make certain the reach is sufficient to attach the puller.
2. **Puller Spread:** Puller spread is twice the distance from the center bolt to the pulling surface of the jaw. In choosing the proper puller make certain the puller has a large enough spread to attach to the object being removed.
3. **Tonnage:** Tonnage is the amount of pulling force that can be safely exerted by the puller. Tonnage may be estimated by looking at the torque curves. One rule of thumb in choosing a puller is the center bolt diameter must be at least  $\frac{1}{2}$  the diameter of the shaft from which the object is being removed. It is impossible to predict the exact force needed for every pulling situation. The amount of press fit and force of removal can vary greatly between jobs. The setup requirements along with the size, shape, and condition of the parts being pulled are variables which must be considered.
4. **Safety:** OPERATOR SAFETY COMES FIRST! Study each pulling application before you select a puller. A significant amount of force can be exerted with a puller. Respect these forces and always observe safety precautions.
  - a. Always select the proper puller for each pulling job. A puller equal to or larger than required.
  - b. Inspect the puller before each use. Replace any worn or damaged parts with authorized parts.
  - c. Always wear safety goggles when using pullers.
  - d. Always use hand tools with mechanical pullers.
  - e. Never apply heat or alter the puller by welding, cutting, or grinding.
  - f. Support the puller and object being pulled.

- |          |                             |
|----------|-----------------------------|
| <b>A</b> | <b>Center Bolt Diameter</b> |
| <b>B</b> | <b>Reach</b>                |
| <b>C</b> | <b>Spread</b>               |
| <b>D</b> | <b>Overall Length</b>       |
| <b>E</b> | <b>Jaw Width</b>            |



## Proper Bearing Removal

Bearing removal is made easier by following a few simple guidelines:

1. Carefully examine the part to be pulled prior to beginning the pull.
2. Select the proper size puller for the application. A rule of thumb is to select a center bolt with at least  $\frac{1}{2}$  the diameter of the shaft from which the object is being pulled.
3. If possible, drive the gear or bearing on slightly before beginning the pull. This will often times loosen the part and thus make the pull easier.
4. Remove all rust, burrs, scale, etc. from the shaft before attempting the pull.
5. Lubricate the shaft from which the part is being pulled. This will make the pull quicker and easier. ALWAYS lubricate the center bolt of the puller with high pressure gear grease before use.
6. Apply the puller to the object. Always support both the puller and the object being pulled.
7. Do not exceed recommended torque limitations provided by the puller manufacturer.
8. After completing the pull, always clean and lubricate your puller so it is ready for the next application.



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