DESIGN AND FABRICATION OF SPHERICAL TURNING TOOL FOR LATHE MACHINE

ABSTRACT:

The most important machine tool in use today is the lathe. Lathe is one of the oldest machine tools to be invented. Most of the inventions and machining processes wouldn’t have been possible without the lathe. There are different types of lathe like the turret lathe, Caption lathe and engine lathe. They are used for various purposes and various sizes of the work piece.

These lathe also have some disadvantages. Some of the machining operations are not easily possible in the lathe. One of these limitations is that it is not possible to produce a spherical surface. The spherical surfaces are used in various components like ball joints and different aesthetic products. These spherical surfaces are usually made from casting process. It is a very long process and is not suitable for single instances.

Existing model:
**Proposed model:**

So we have proposed the project of the use of attachment in the lathe to produce the internal spherical feature. For this we use an external attachment that is fixed at the tool post of the lathe machine tool. The tip of the setup has the tool for material removal.

**2d layout:**

![2D layout diagram]

**3d layout:**

![3D layout diagram]
Advantages:

- Easy machining of spherical surfaces
- Better surface finish of the spherical surfaces.
- Precise operation
- The setup is simple and can be easily used

Applications:

- It can be used for making Ball joints easily
- It can be used in various other machining operations.

Scope:

The operation can be further improved by providing variable curvature operations.