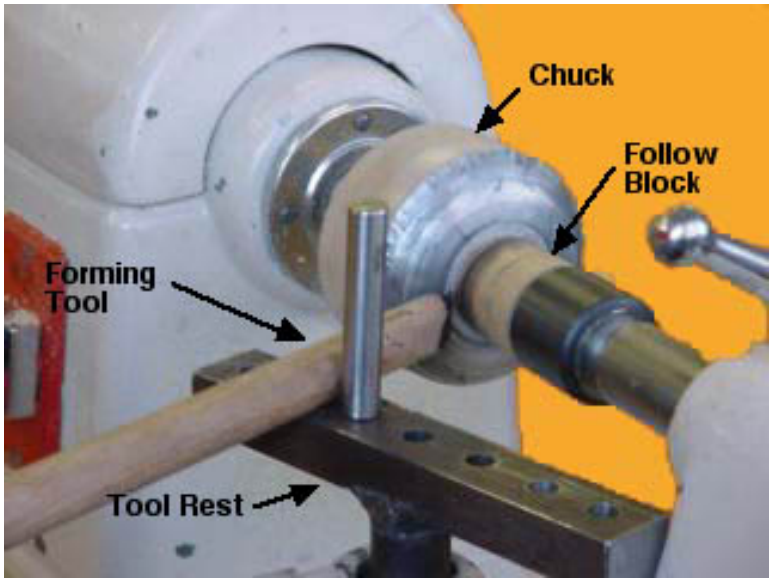
Metal Spinning on the Lathe



The lathe is one of the most versatile machine tools. When the lathe is operating the work piece is rotating. Metal spinning was originated by the Egyptians. In 1840 metal spinning was finally introduce in the United States. The shaping of a material takes place when the metal disc is forced over a piece of wood called a chuck.

This sheet contains the methods to properly spin metal in order to create the part that is desired. For more instructions, please contact the supervisor or refer to one of many texts available.

Related/Parts: The few related parts that are utilized on this equipment, consist of the following:

- The spinning pin
- The t-bar rest
- Chuck
- Follow block

Note: There are other parts on various accessories used with the lathe for spinning, but for this discussion, these parts are all that are necessary to complete this procedure.

Setup Procedures (Metal Spinning): Metal Spinning is the operation when forming a sheet of metal into certain types of forms on the lathe. The instructions are as follows:

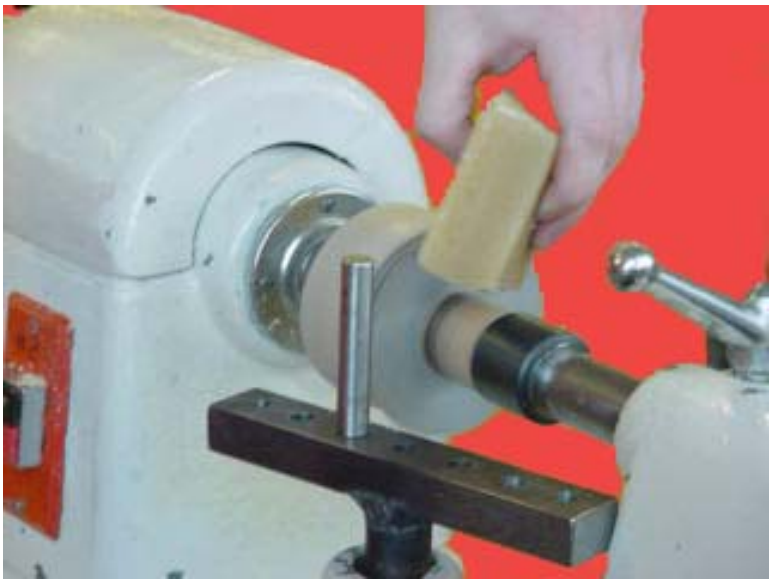
1. Prepare a **work drawing design** of the metal piece that is going to be spinning on the lathe.
2. Prepare a **hardwood chuck** of the appropriate shape.
3. Cut a **metal disc** of the proper size.
4. **Center** the metal disc between the chuck and the follow block.

Procedures to Begin Metal Spinning: Now that you are ready, follow these simple steps to begin the process involved with metal spinning:

1. **Start** the lathe.

2. Select the **proper cutting tool** for the job.
3. **Insert** the spinning pin in the T-bar rest. Then **adjust** the T-bar rest so that the tool is at a slight angle against the pin.
4. **Apply** wax l**ubrication**, to the **outer surface** of the metal that is spinning.
5. **Hold** the tool with your **right hand,** placing the **handle under your arm**.
6. **Apply pressure** to the metal that is spinning by **moving the tool** from the **center** to the outer edge of the metal.

Note: There are several other operations that can be done using the lathe to spin metal, however, for the purposes of these procedures, only the previous mentioned operations are needed. For more information about other procedures, contact your instructor and/or refer to one of the many references available.



Always put some wax **lubrication** on the piece of metal that is spinning to avoid hazards.

Hold the tool with **your right hand,** with the handle **under your arm**, to prevent hazards.

Potential Hazards:

- Contact with the edge of the metal disc that is spinning
- Entanglement (hair, clothing, jewelry, etc...) in the rotating parts
- Spinning tool knock-out
- Flying metal chip/pieces

Safety practices: Due to the potential hazards involved with the operating of this equipment, the following safety rules must be adhered to:

- Never **stand directly** in line with the disc.
- Be sure that the **metal disc** does not have any **defects** that could cause the metal to break when spinning.
- **Always** wear safety glasses and leather gloves during spinning operations..
- Make sure that the metal piece is **securely clamped** between the chuck and follow block.
- Be sure that the **tail stock** is **locked**.

- Never **insert** the metal disc, while the lathe is running.
- **Wear** the appropriate safety equipment.
- The operating controls must be in **proper working** condition.
- The lathe must be **kept clean** at all times.
- When not in use, **unplug the electrical cord.**
- Use the **safety guard** if possible.

References:

Johnson, Harold V., (1973). Technical Metals. Chas. A. Bennettt Co., Inc., Peoria, IL.

Walker, John R., (1972). Exploring Metal Working. The Goodheart-Willcox Co., Inc., South Holland, IL.

ITT 252 - Materials Processing
Department of Technology
University of Southern Maine
Prepared by Joey Soucy, 11/14/2001
