# WELDING JOINTS AND POSITIONS

# Types Of Welding Joints

*Different jobs need different types of welds. Different types of welding joints are made to stand up to the needs and forces of each individual application.*

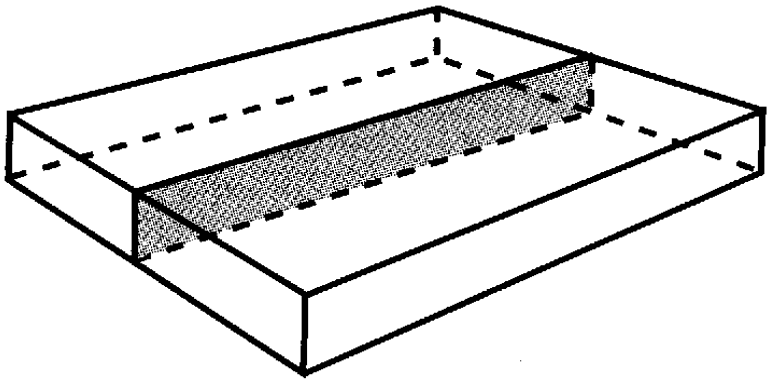
**Let's go over the 5 types of weld joints that we use to get the job done right.**

- **Butt Joint**
- **Corner Joint**
- **Fillet Joint**
- **Lap Joint**
- **Edge Joint**

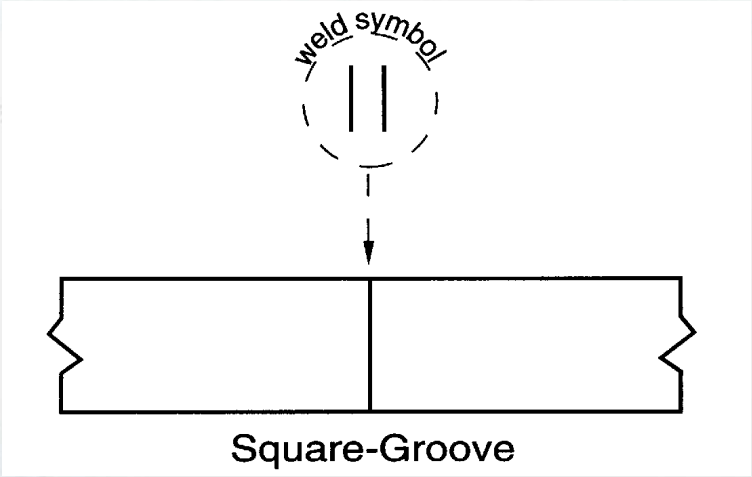
# Five Basic Welded Joints

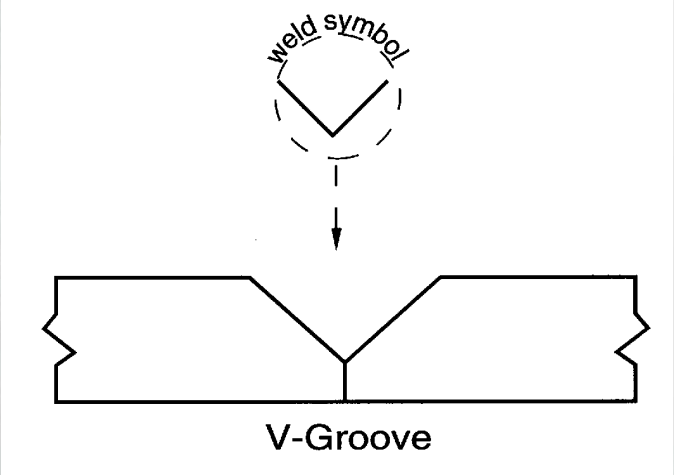
## Butt Joint

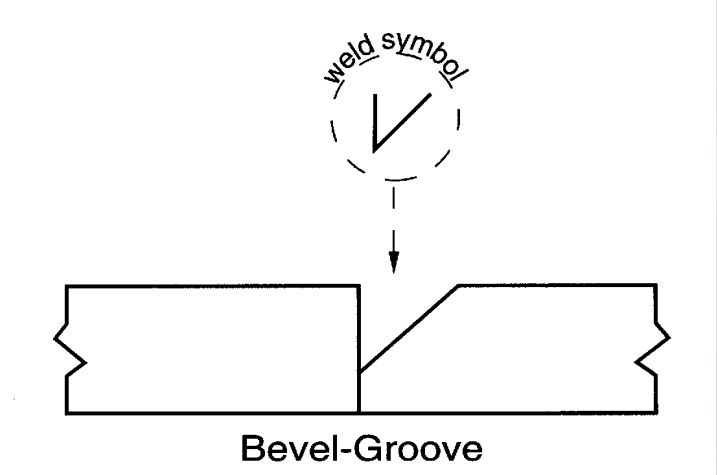
- Butt joint- a joint between two members aligned approximately in the same plane.
- Universally accepted method for attaching a pipe to itself, it's also used for valves, flanges, fittings and other equipment.



# Different Edge Shapes and Symbols for Butt-Joints



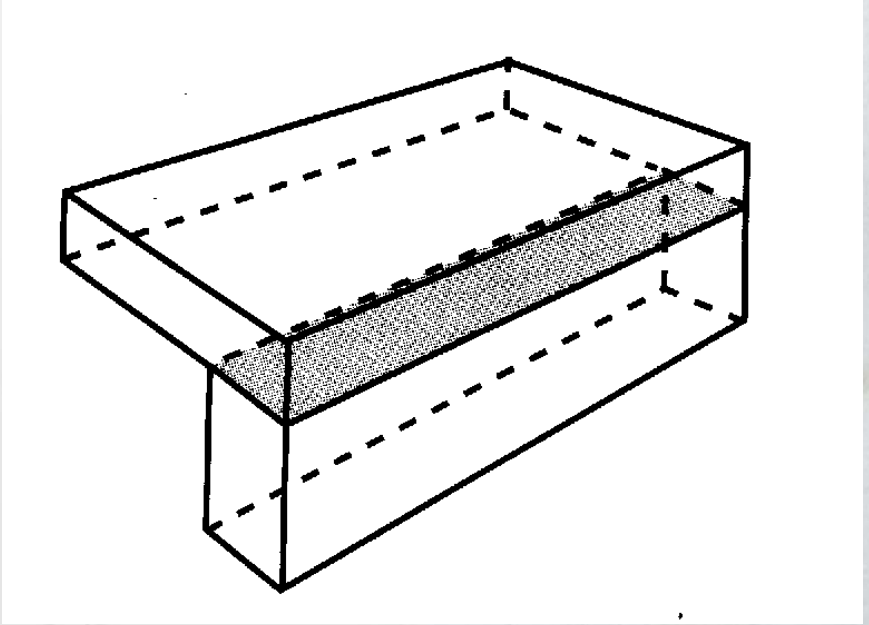



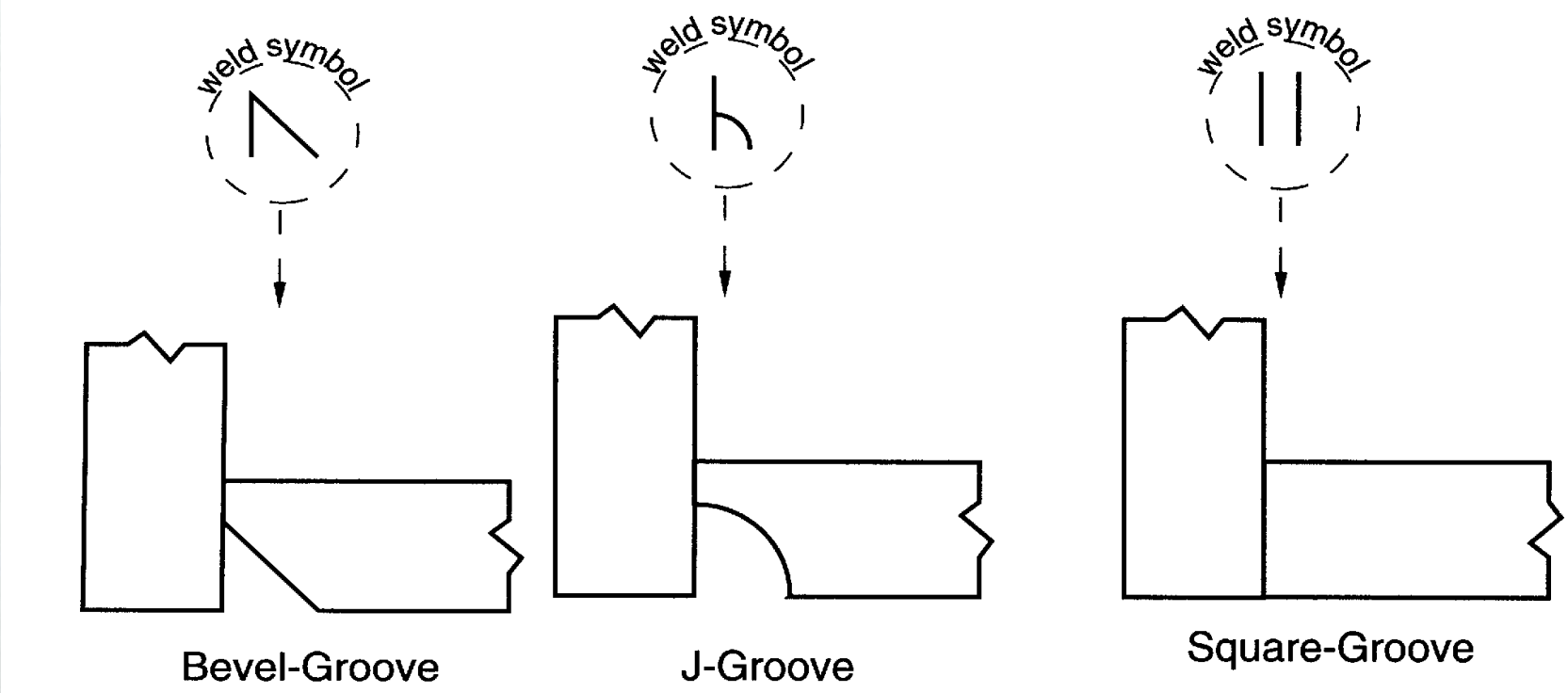
# Five Basic Welded Joints

## Corner Joint

- Corner joint - a joint between two members located at right angles to each other.
- These are common in the construction of boxes, box frames and similar fabrications.



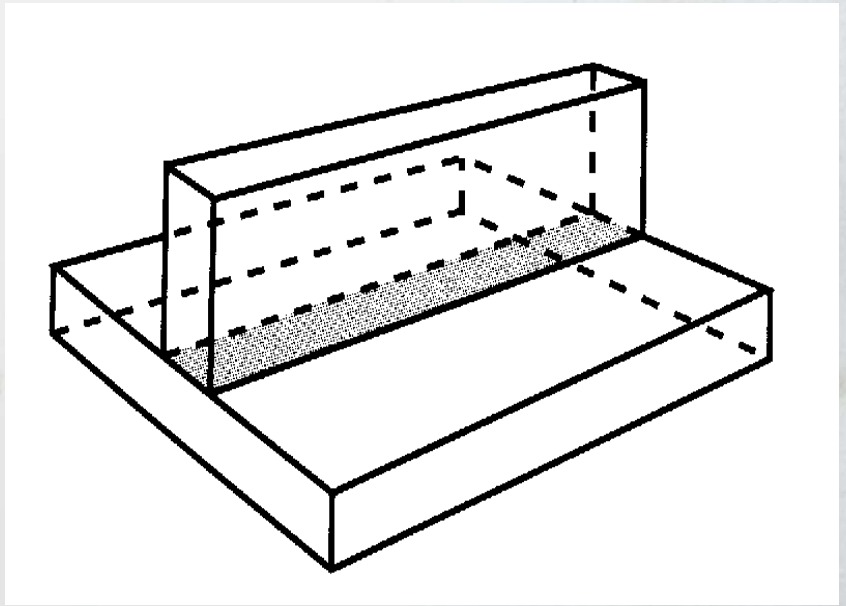
# Different Edge Shapes and Symbols for Corner Joints



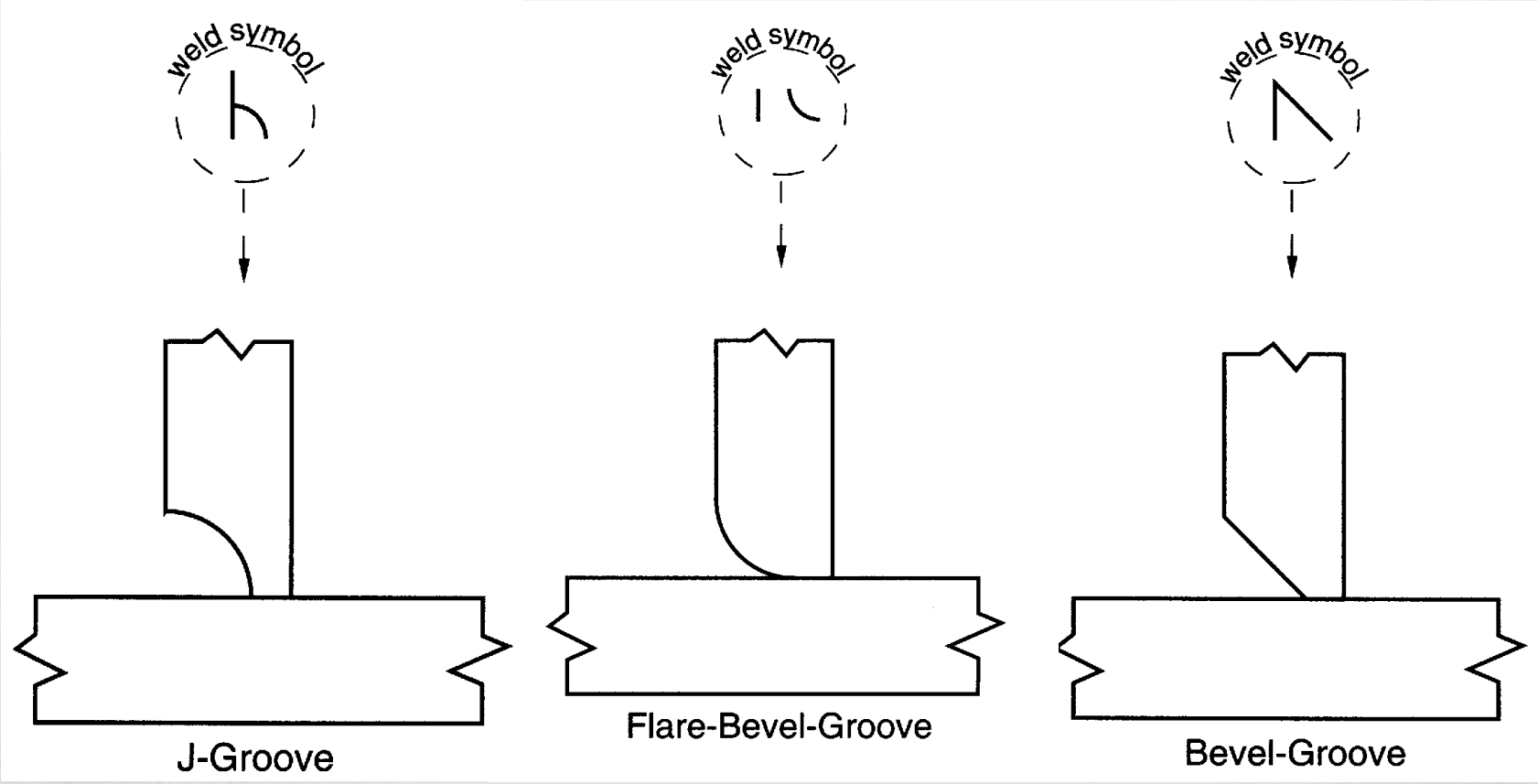
# Five Basic Welded Joints

## Fillet-Joint

- Fillet-joint - a joint between two members located approximately at right angles to each other in the form of a T
- Can be used to weld pipe or tube onto a base plate.



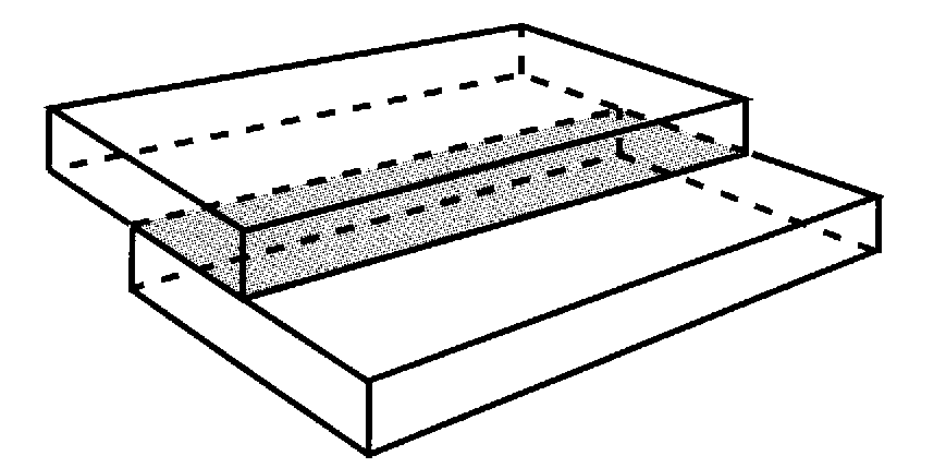
# Different Edge Shapes and Symbols for Fillet-Joint



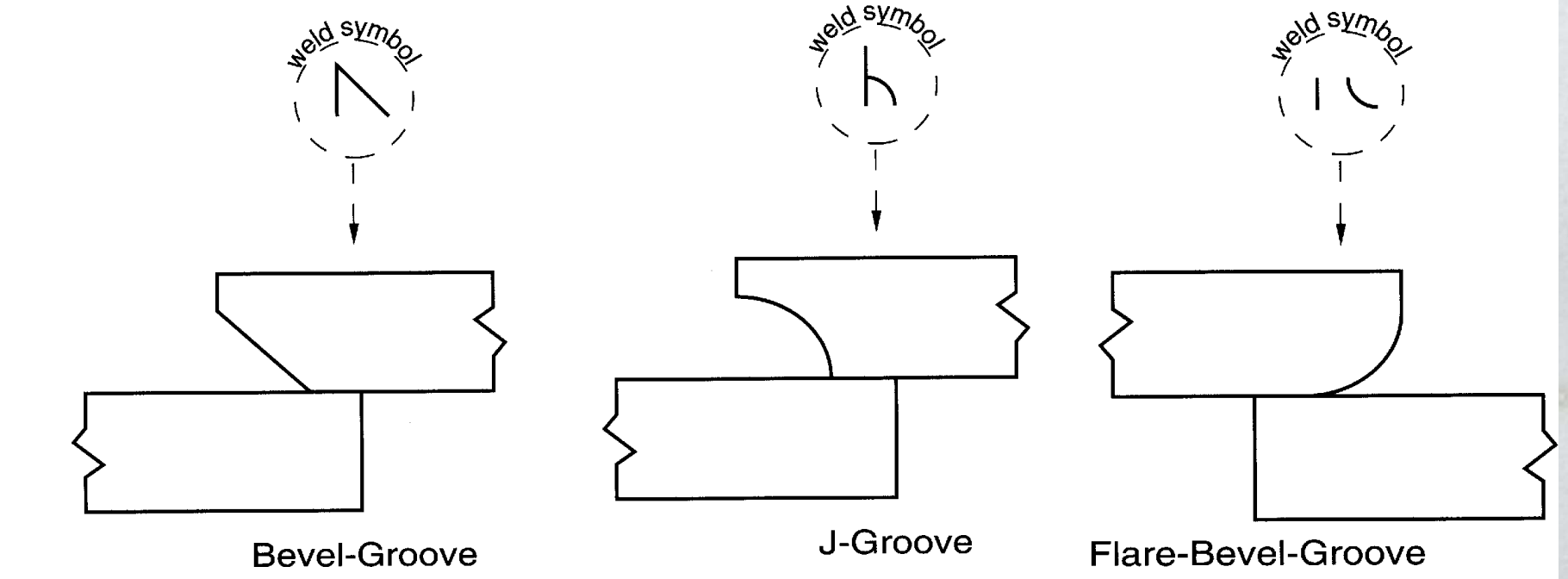
# Five Basic Welded Joints

## Lap Joint

- Lap Joint- a joint between two overlapping members.
- The weld can be made on one or both sides.
- Used most often to joint two pieces with differing thicknesses together.



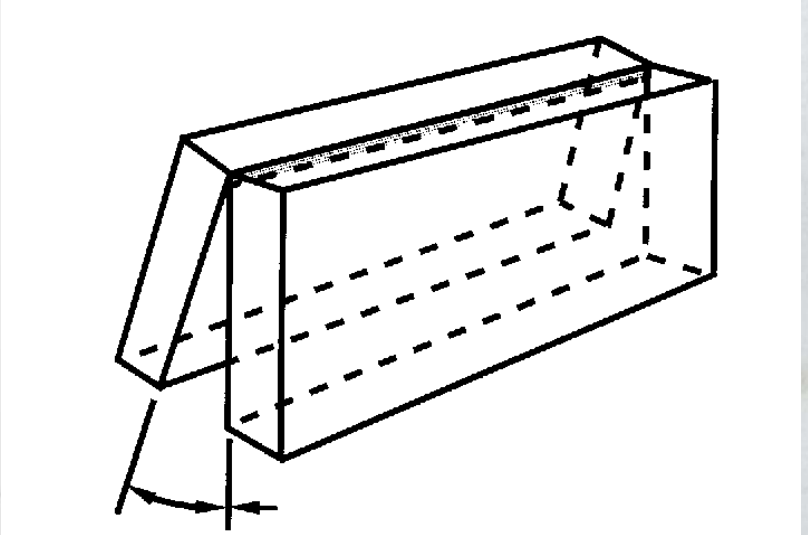
# Different Edge Shapes and Symbols for Lap-Joints



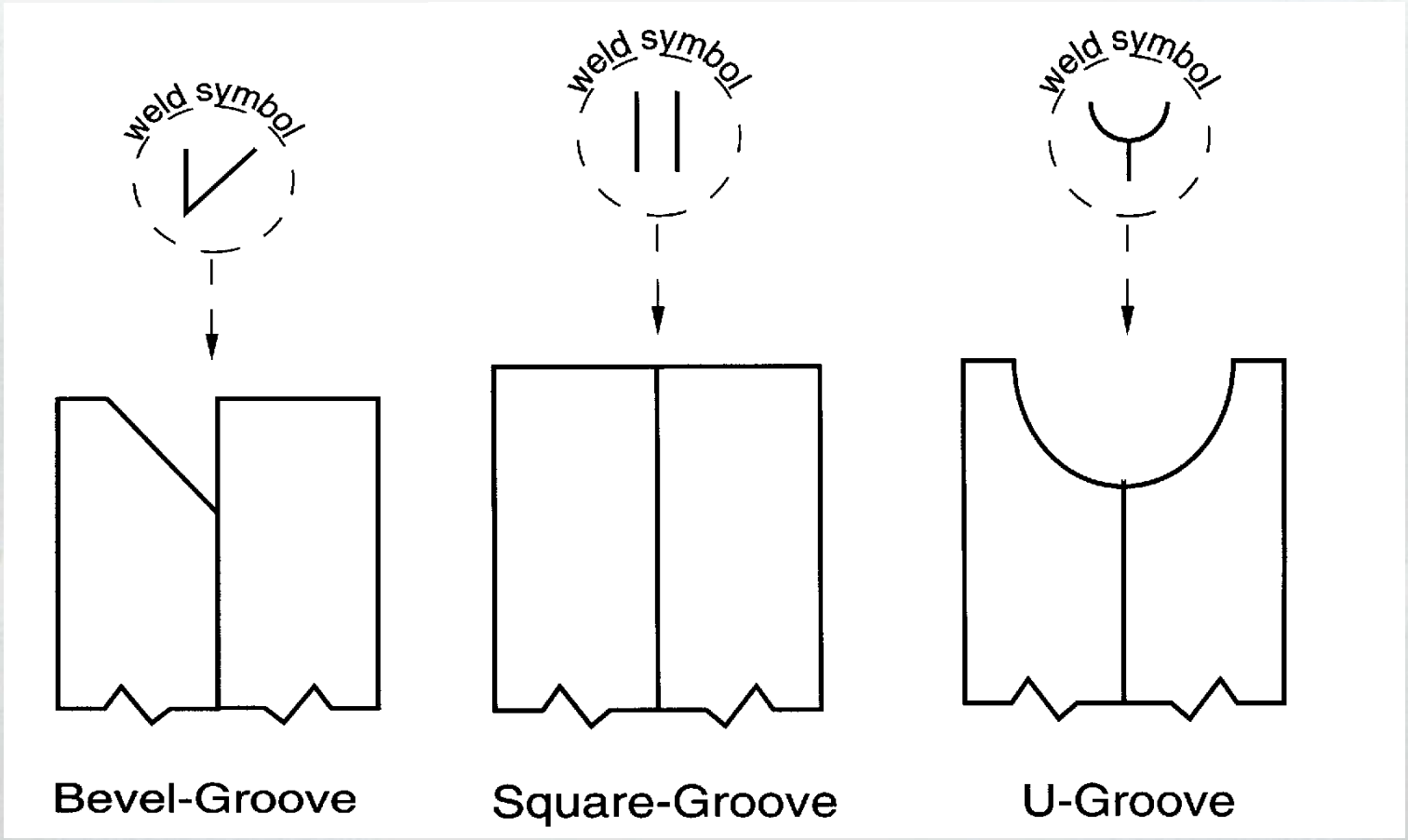
# Five Basic Welded Joints

## Edge Joint

- Edge joint- a joint between the edges of two or more parallel or nearly parallel members.
- For heavier applications filler metal is added to melt or fuse the edge completely and to reinforce the plate.



# Different Edge Shapes and Symbols for Edge-Joints



# Types Of Welding Positions

*The welding position refers to the position of the welding operator towards the workpiece to be welded. Because of gravity, the welding position affects the flow of molten filler metal. It's important to understand the types of welding positions as different welding processes require to be performed at a certain position of the welder.*

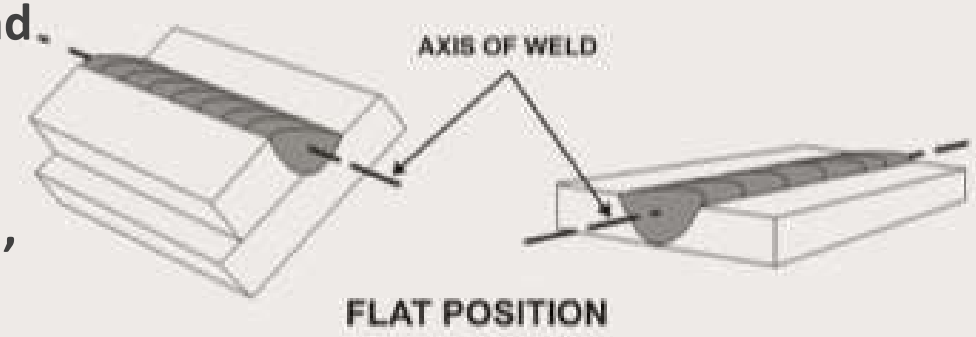
**There are 4 main types of welding positions**

- **Flat Position**
- **Horizontal Position**
- **Vertical Position**
- **Overhead Position**

# Four Basic Welding Positions

## Flat Position

- The easiest type to perform is the flat position, which is also sometimes called the down hand position.
- It involves welding on the top side of the joint. In this position, the molten metal is drawn downward into the joint. The result is a faster and easier weld.

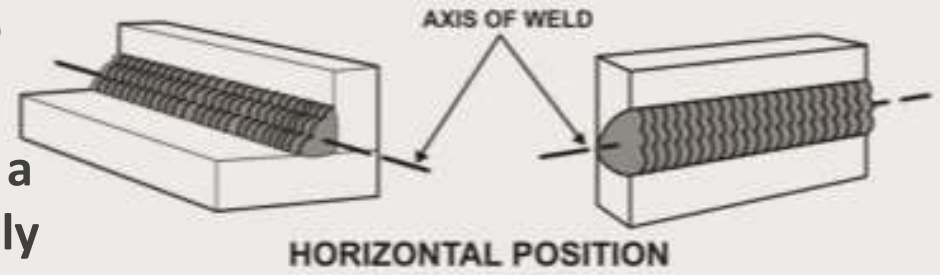


FLAT POSITION

# Four Basic Welding Positions

## Horizontal Position

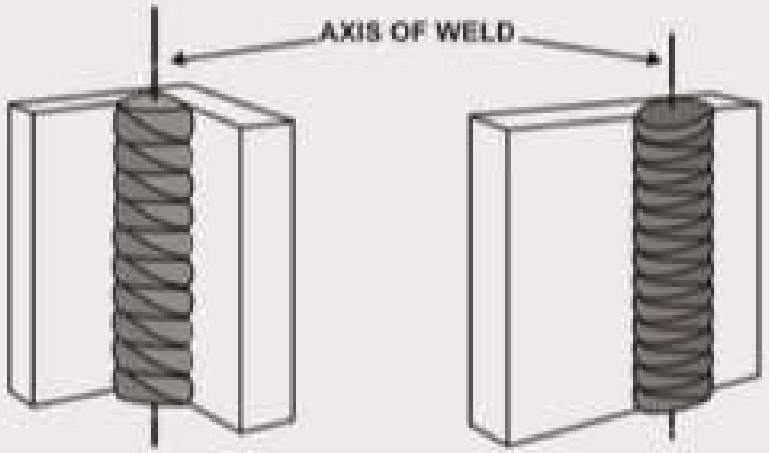
- This is an out of position welding position. It requires more skill from the welding operator to do them well.
- involves placing the weld axis in a horizontal plane or approximately horizontal. As for the face of the weld, it should lie in an approximately vertical plane.



# Four Basic Welding Positions

## Vertical Position

- In this position, both the plate and the weld lie vertically or almost vertically.
- When welding vertically, the force of gravity pushes the molten metal downward and so it has the tendency to pile up. To counteract this, you can use either an upward or downhill vertical position.




VERTICAL POSITION

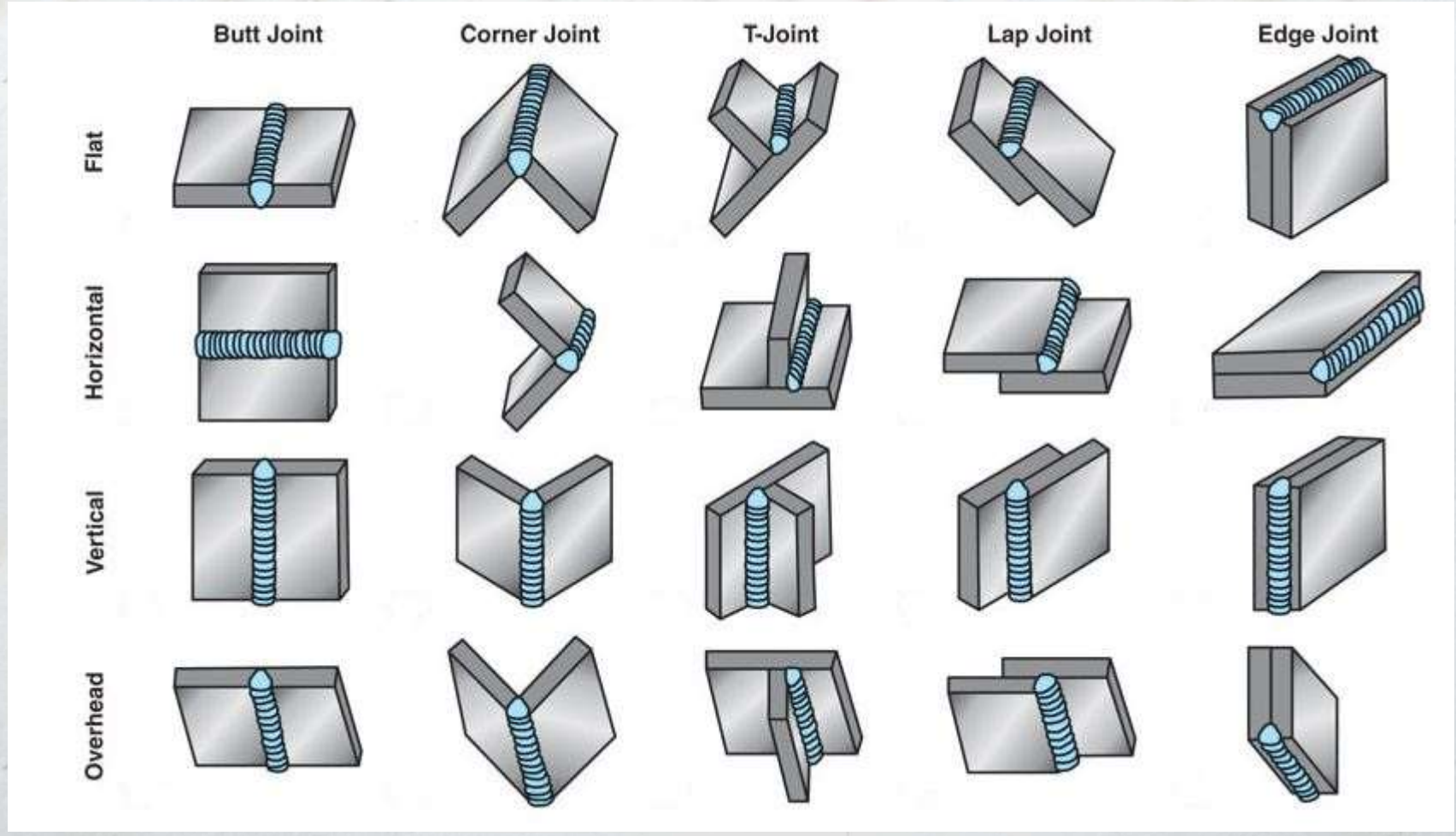
# Four Basic Welding Positions

## Overhead Position

- In this position, welding is carried from the underside of the joint. It's the most complicated and difficult position to work in.
- In the overhead position, the metal deposited to the joint tends to sag on the plate, resulting in a bead with a higher crown. To prevent this, keep the molten puddle small.


OVERHEAD POSITION

# Welded Joints And Positions



# *Thank You*