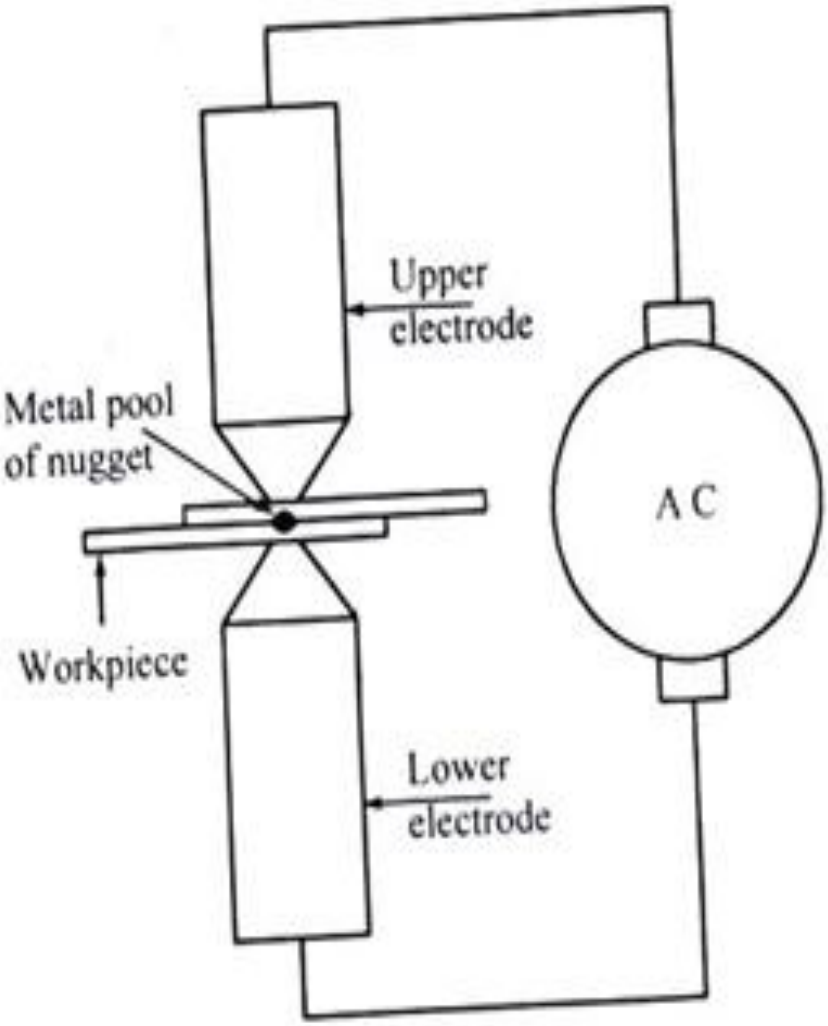
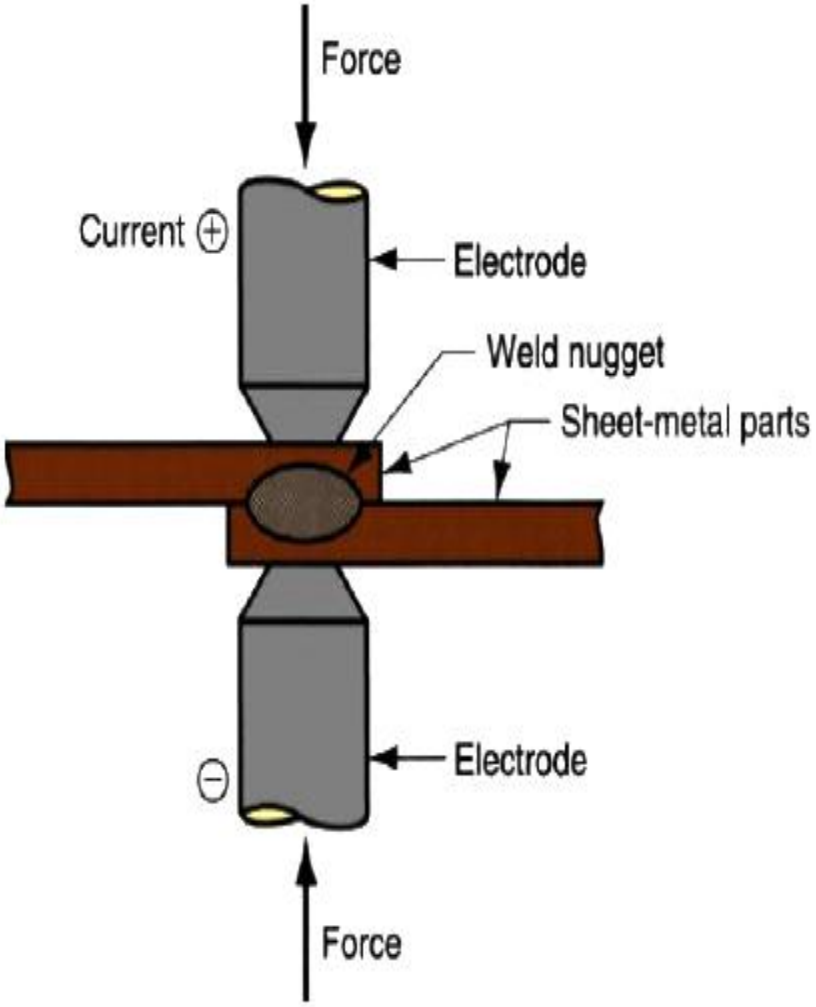
Spot welding

- ✓ Spot welding is used for making lab joints
- ✓ In this method, metal sheets from 0.025mm to 1.25mm thickness can be easily welded
- ✓ The metal pieces are assembled & placed between two copper electrodes & then current is passed.
- ✓ The parts are heated by electrical resistance
- ✓ Then the electrodes are pressed against the metal pieces by mechanical or hydraulic pressure
- ✓ The high resistance between the joint faces causes rapid heating and fusing of a small globule of metal from both faces.

- ✓ The electrode pressure can be in the range of up to 2KN
- ✓ They are made of cold rolled electrolytic copper- transfer or molybdenum alloy.
- ✓ Electrodes are cooled with water during operation to prevent overheating
- ✓ Spot welding can be done on metal strips upto 12mm thick
- ✓ All combination of ductile metals & alloys can be spot welded.


Upper
electrode
Metal pool
of nugget
AC
Workpiece
Lower
electrode


Force
Current ⊕
Electrode
Weld nugget
Sheet-metal parts
⊖
Electrode
Force

Advantages:

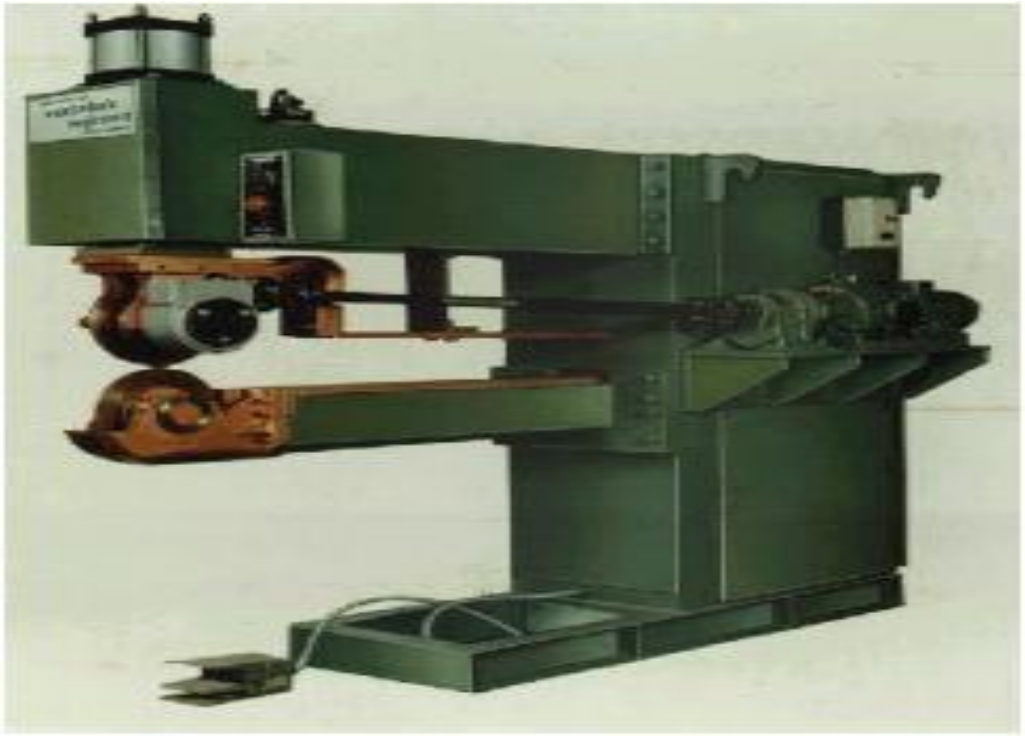
- ✓No filler metal required
- ✓High production rates possible
- ✓ Lower operator skill level than for arc welding
- ✓Good repeatability & reliability

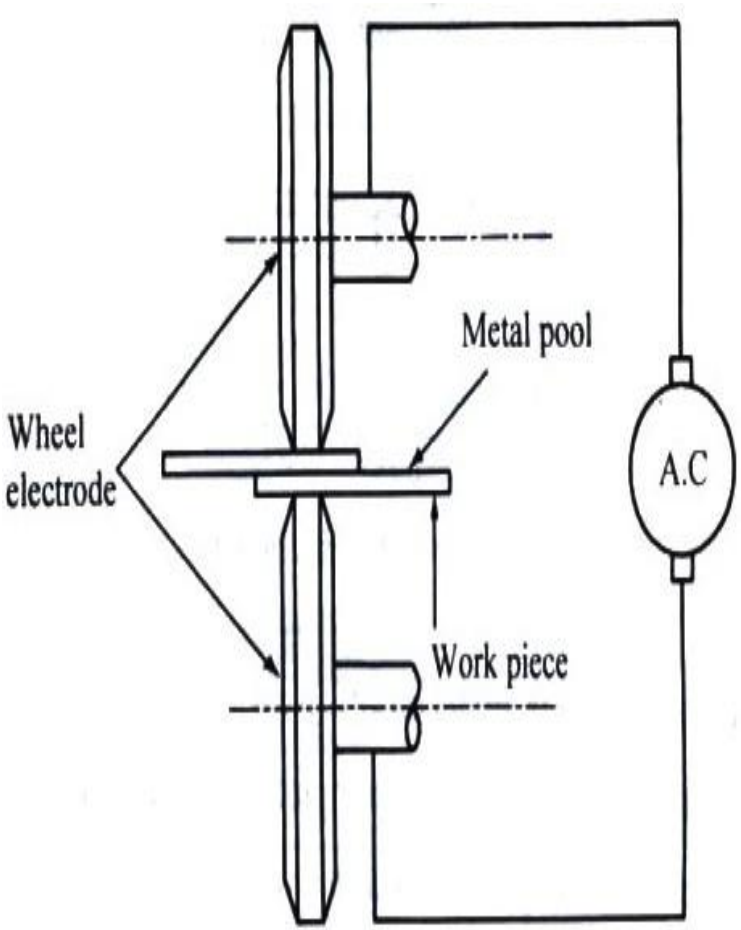
Disadvantages:

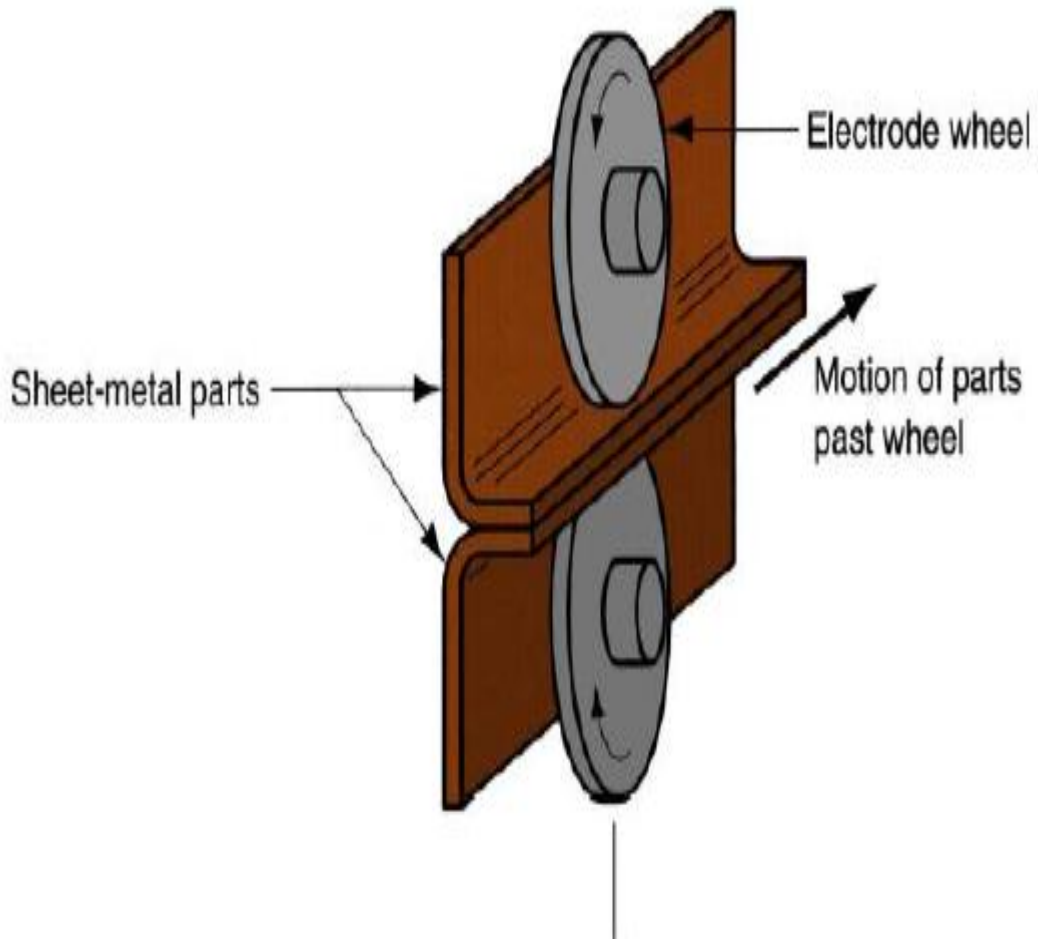
- ✓High initial equipment cost
- ✓Limited to lap joints for most processes.

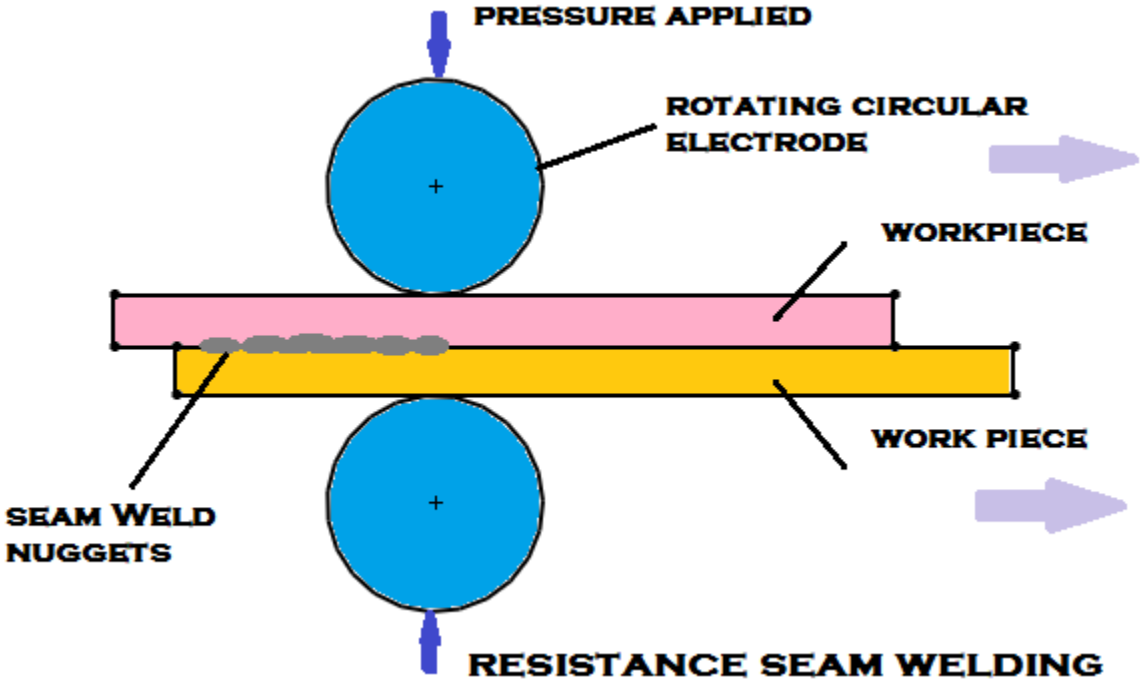
SEAM WELDING

- ✓ The rollers allow the workpiece to move through the welder continously. A stream of electrical pulses pass through the rollers and welds the joint




Wheel
electrode
Metal pool
Work piece
A.C


Electrode wheel
Sheet-metal parts
Motion of parts
past wheel


PRESSURE APPLIED
ROTATING CIRCULAR ELECTRODE
WORKPIECE
WORK PIECE
SEAM WELD NUGGETS
RESISTANCE SEAM WELDING