

# SWD

(Short wave diathermy)

- The term diathermy is to heat through.
- Diathermy is applied using electromagnetic waves that produces heat
- It has frequency of  $10^7 - 10^8$  Hz and set up a wireless waves with the wavelength between 30 meter and 3 meter.
- The use of any current with in this range is classified as SWD.
- The commonly used SWD for medical work has a frequency of 27.12 MHz and set up wireless waves with the wavelength of 11 m.

Production of SWD :

Construction :

There are two main circuit of SWD

Machine circuit 'generator circuit' 'oscillator circuit'

It produces high frequency current and amplifies it intensity.

Components of oscillator circuit :



It consist of →

• Main supply: It is connected to A.C mains that gives a current of 220-240V.

• Transformer: Two types of transformer.

→ step down transformer: The filament of triode valve is connected to step down transformer.

→ step up transformer: The anode plate of triode valve is connected to step up transformer.

Thermionic valve: This is triode valve which allows current flow in one direction.

Grid leak circuit: It consist of variable condenser and a resistance connected to grid of the triode valve.

Oscillator: It consist of a stable condenser and an oscillator coil which gives high frequency oscillating current which then flows to the amplifier and from amplifier to the resonator circuit.

\* Patient circuit or Resonator circuit

It transfers the electrical energy to the patient when coupled to machine circuit by mutual inductance.

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Page \_\_\_\_\_

inductor. The energy is transferred in form of electrostatic and electromagnetic field.