# ROTARY EVAPORATION: THE "*ROTOVAP*"


**MODEL :** Buchi 23022A120 Rotavapor R-210 Professional Rotary Evaporator, P+G Diagonal, 115V

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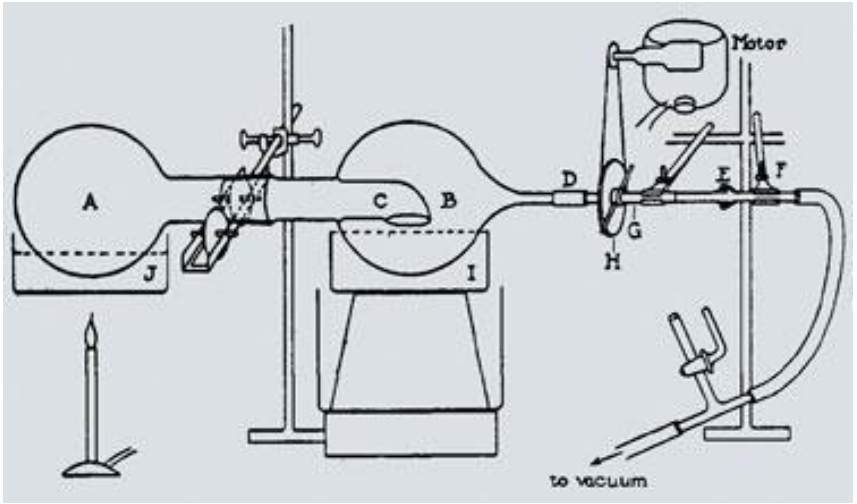
# INTRODUCTION & HISTORY

- **ROTAVAPOR:** Fastest, most efficient and environmentally friendly way of removing a **volatile solvent** from a non-volatile sample by **evaporation**.

- Inventor : **Lyman C. Craig** (1949)

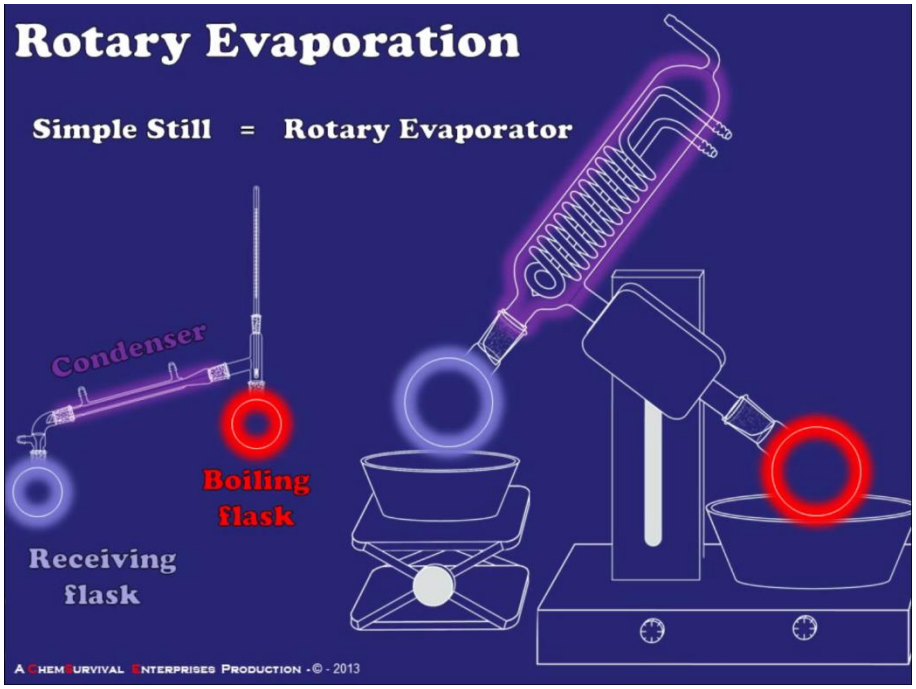



- First commercialized by the Swiss company **Büchi** in 1957

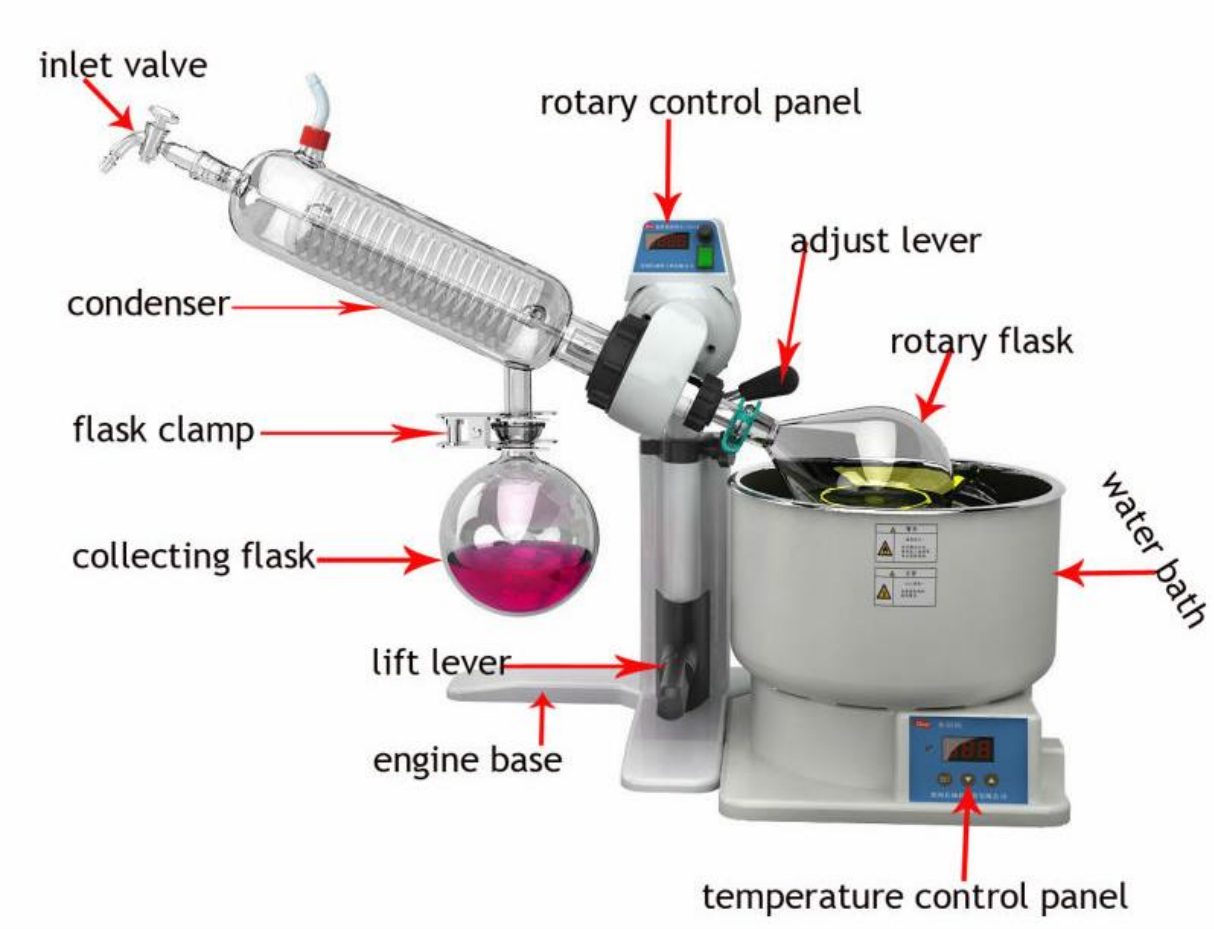
# WORKING PRINCIPLE

Increased rate of evaporation of the solvent by

- reducing the pressure to lower the solvent boiling point,
- rotating the sample to increase the effective surface area and
- heating the solution.



# COMPONENTS


inlet valve
rotary control panel
adjust lever
condenser
rotary flask
flask clamp
water bath
collecting flask
lift lever
engine base
temperature control panel

# Rotary Evaporation

**PRE - CHECK – CRACKS/STARS/CHIPS!**

1. **Run cold water to the Dimroth condenser and add ice to the collection flask bath (if needed)**

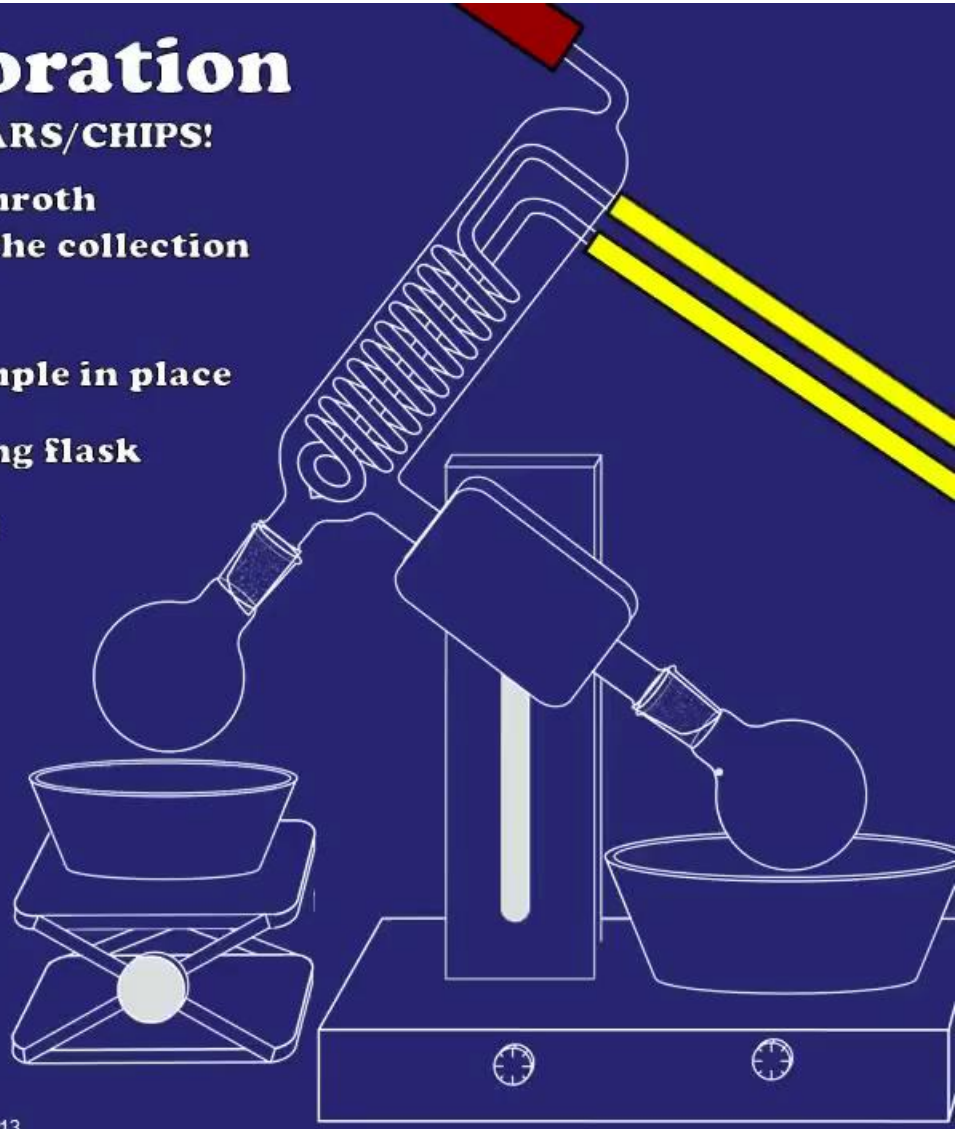
2. **Clip boiling flask with sample in place**

3a. **Commence rotation boiling flask**

3b. **SLOWLY evacuate system**

4. **Apply heat via the warm water bath**

5. **Enjoy the magic of rotary evaporation!!!**



= volatile solvent

= non volatile solute

# DOs

- ✓ ***To avoid "bumping“***
- Do not fill your flask > ½ full
- Faster spin rate usually helps\
- Use a moderate bath temp – too high will cause excessively fast evaporation.

- ✓ ***Empty the collection flask once solvent removal is done.***

- ✓ ***Careful with the bump trap as the unit is lowered.***

- ✓ ***Do not use round bottom flasks with visible cracks.***

- ✓ ***Turn off the chiller and the water bath once done.***

# DONTs

- ➢ ***In case of solvent bumps into the bump trap, or beyond:***
- Immediately CLEAN all affected components from the bump trap.
- Do not continue to use the rotovap after it has bumped, or you risk fusing the ground glass joints together with your dried product.

- ➢ ***Do not continually pump on a collection flask which contains solvent.***

- ➢ ***Fill the water bath with clean, deionized water and NOT tap water.***