

# STANDARD OPERATING PROCEDURE FOR A 3 INCH KNELSON CONCENTRATOR (SOP)

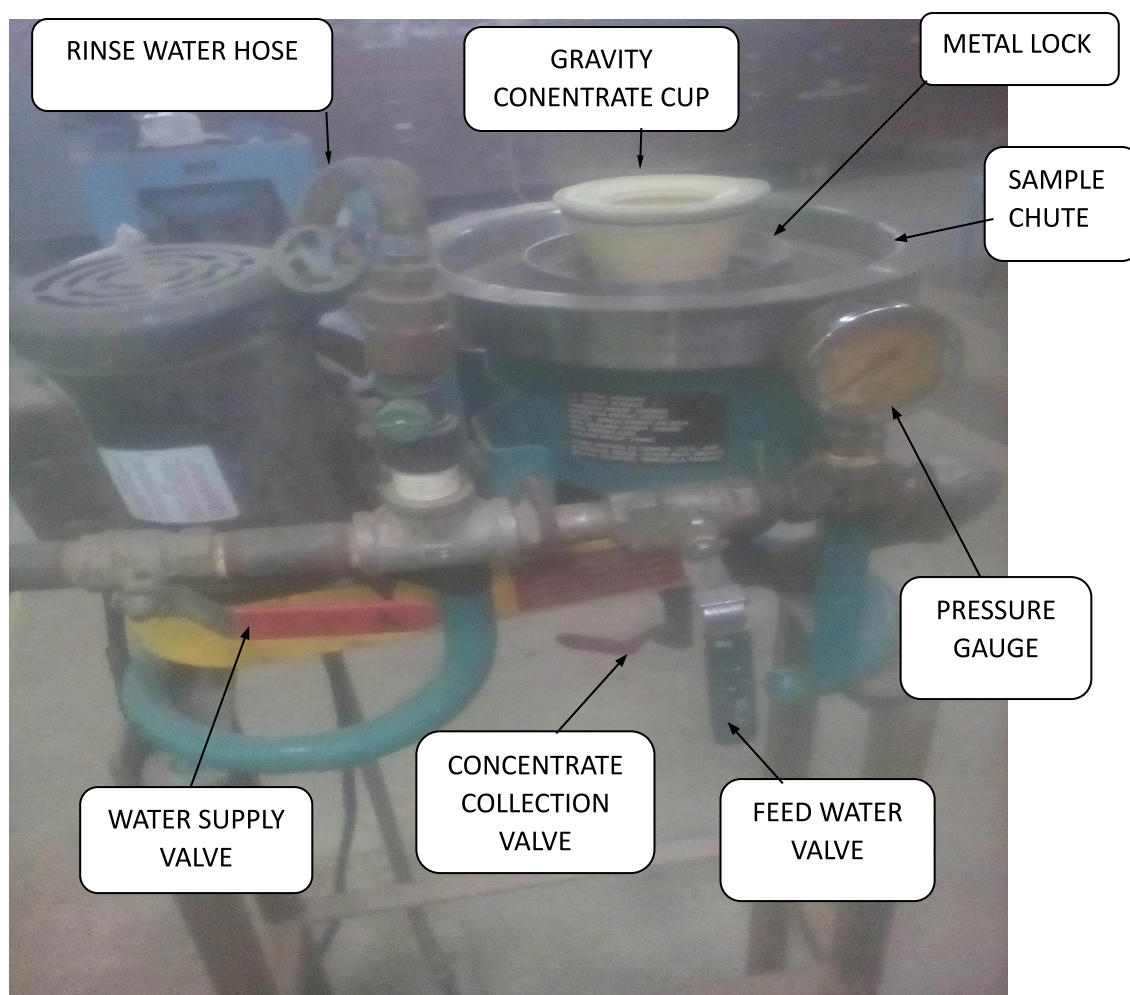
FRONT VIEW (Figure. 1)



## OBJECTIVE

This test procedure is specifically designed for the purpose of safe operation of the LABORATORY equipment 'KNELSON CONCENTRATOR'. The equipment operator must read through the procedure thoroughly and should fully understand it before operating the equipment and or otherwise consult the senior laboratory personnel for any clarifications prior to the operation of the equipment.

**SIDE VIEW – KNELSON CONCENTRATOR (Figure. 2)**



### **SAFETY**

The following safety gears must be worn when operating the Knelson Concentrator;

- Elbow length rubber gloves
- Dust mask if necessary
- Safety glasses
- Safety boots

### **APPARATUS REQUIRED**

- Sample buckets
- Gravity concentration cup removal key (supplied)
- Sample trays
- Drying oven
- Metal scoop
- 20 L buckets
- Measuring cylinders

## REAGENTS

- REAGENTS NOT APPLICABLE

## STANDARD OPERATING PROCEDURE (SOP)

1. Clean the gravity concentrator conical shape 'cup'
2. Place the conical cup and lock it by pressing it down. The black rubber seal will secure/lock it in place
3. Place the metal cover over the conical cup, press it down and turn it clockwise to secure the cup to fit it tightly
4. Place the sample 'chute' over the centre of the 'cup'
5. Place screen over the sample chute as shown (fig. 2)
6. Connect the water supply hose to the concentrator (fig. 2)
7. Fully open the water supply valve to the Knelson concentrator (see fig.2)
8. Fully open the water inlet valve to the Knelson concentrator (blue colour fig. 2)
9. Turn ON the main water supply valve to fully open position
10. Switch 'ON' the main power supply switch
11. Switch ON the power knob on the side of the Knelson concentrator motor
12. Adjust water flow rate using the water inlet valve (blue colour fig. 2) to give you the desired pressure reading on the pressure gauge
13. Record the pressure gauge reading when optimized
14. Place a 20 L bucket and position it carefully to collect the tailings being discharged from the Knelson concentrator
15. Once the water flow rate is optimized, start feeding the sample over the screen. The maximum sample weight would have to be between 2 – 3 kilograms of pre-screened (-2mm) size sample
16. Wash down any solid build up on the screen using the spray water hose attached to the Knelson concentrator (see fig.2) when feeding is completed
17. Turn OFF main water supply by closing the water valve
18. Switch OFF the main power supply. **(DO NOT switch OFF the power supply to concentrator. Keep the power ON until the water supply is turned OFF)**
19. Drain off the gravity concentrates into a container by opening the RED valve underneath the concentrator (see fig.2)
20. Remove the screen
21. Remove the sample chute
22. Remove the concentrate cup using the 'KEY' supplied with the Knelson concentrator
23. Wash the concentrates from the cup into the container containing the other concentrates collected under the concentrator earlier (step 19)
24. Decant any water in the container
25. Dry the sample in the drying oven
26. Reassemble the Knelson concentrator parts as removed
27. HOUSE KEEPING! Clean up your work area

