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and

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INSTRUMENT OPERATING PROCEDURE

INSTRUMENT:

Digital titrator

MODEL:

25 mL, 30 mL, and 50 mL

MANUFACTURER:

Jencons [Scientific] Limited
Brinkman
BrandTech

PRECAUTIONS:

POTENTIAL INTERFERENCES

No interferences noted in instruction manual

SAFETY

Exercise care to avoid spills and splashes while refilling titrator.

PROCEDURES:

- I. Description of titrator
 - A. The Digitrate is a burette with a digital display of the volume of fluid dispensed.
 - B. A maximum of 25 mL to 50 mL of reagent can be dispensed without refilling the titrator from the reservoir.
 - C. The capacity of the reservoir is about 1500 mL.
 - D. Principles of operation:
 1. Handwheels on the body of the titrator are turned to fill and empty a cylinder.
 2. The volume is shown on the digital display as liquid is discharged through the nozzle.
- II. Preparation for use
 - A. Fill the reservoir with N/50 sulfuric acid (titrations for total alkalinity).
 - B. Prime the titrator
 1. Screw the titrator onto the reservoir.
 2. Ensure that the air is completely removed from the system before use by repeatedly filling and emptying the cylinder. Move the piston to the bottom of its stroke each time.
 - C. Fill the titrator by turning the handwheels in the FILL direction.
 - D. Turn the handwheels slightly in the TITRATE direction to eliminate play in the drive system. Eliminate excess reagent that may adhere to the end of the discharge tube.
- III. Operation of titrator
 - A. Turn on the display by pressing the ON/OFF switch.
 - B. Zero the display by pressing the ZERO button.
 - C. Titrate by turning the handwheels in the TITRATE direction. The volume of reagent dispensed is shown on the display.
 - D. If the downward end of the piston stroke is reached before the titration is completed:
 1. Record the display reading.
 2. Turn the handwheels in the FILL direction until the titrator is refilled.
 3. Turn the handwheels slightly in the TITRATE direction to eliminate play in the drive system.

4. Re-zero the display and continue to titrate.

MAINTENANCE:

- I. The 3 AAA alkaline penlight batteries are replaced when necessary. A blinking decimal point on the display indicates that a change of batteries is necessary.
- II. Empty the titrator at the end of the field season and rinse thoroughly with deionized water. Store the titrator empty with the piston at the bottom of the cylinder.
- III. The Brinkman units are recharged by plugging in the charger.

REFERENCES:

- Jencons Digitrate Operating Instructions
- Brinkman Digital Burette Operating Instructions
- BrandTech Digital Titrator operating Instructions

This procedure has been reviewed and approved by the undersigned representatives of the U.S. Fish and Wildlife Service and Fisheries and Oceans Canada.

REVIEWED/APPROVED _____ DATE _____
Field Supervisor (U.S.)

REVIEWED/APPROVED *Jake Shivers* DATE 05 MAR 2020
Program Manager (Canada)