

Flocculation Jar Test Apparatus

Operating Manual

Laboratory Equipment

Intended use

Bench-scale stirring apparatus for jar testing of water and wastewater, used to compare coagulant doses and mixing conditions by stirring several samples at the same controlled speed.

Intended users

Trained water treatment, environmental and teaching laboratory personnel; students under supervision.

Read this manual completely before first use and keep it with the product. This document provides general operating, care and safety guidance. Where the product is supplied with manufacturer labeling or instructions, those take precedence. For questions, a replacement copy, or a digital copy of this manual, email sales@scimedstore.com.

1. Safety

Safety warnings and cautions

- Connect only to a grounded outlet with the supply voltage marked on the unit.
- Switch off and unplug before cleaning, changing paddles or lamps, or moving the unit.
- Do not allow water or chemicals to enter the housing or controls. Wipe up spills on the base promptly.
- Wear gloves and eye protection when handling coagulants, pH adjusters and wastewater samples.
- Treat wastewater samples as potentially infectious and follow your laboratory's safety procedures.
- Keep hands and loose items away from rotating paddles.
- Handle glass beakers carefully; do not use cracked beakers.

2. Specifications

Jar configurations	Varies by variant: 2, 4 or 6 jars
Beaker size	1000 mL
Speed range	5-150 RPM, continuously variable
Speed accuracy	+/- 1 RPM
Display	12 mm red LED digital RPM display
Stirring paddles	Stainless steel, flat blade, individually removable
Illumination	Cold-light illuminator diffused through acrylic base
Dimensions (6-jar)	930 x 250 x 480 mm (L x W x H)
Power	110 V or 220 V, 50/60 Hz (specified at order)

3. Unpacking and setup

- 1 Place the unit on a stable, level bench near a grounded outlet.
- 2 Check that the supply voltage marked on the unit matches your local supply.
- 3 Fit the stainless steel paddles to the stirrer shafts and check they are secure.
- 4 Place clean 1000 mL beakers on the illuminated base, centered under each paddle.
- 5 Connect the power cord, switch on and check the display and illuminator operate.
- 6 Run the paddles briefly at low speed with empty beakers to check smooth rotation.

4. Operation

Running a jar test

- 1 Fill each beaker with the same volume of sample.
- 2 Lower or position the paddles so they are at the same depth in each beaker.
- 3 Add the planned dose of coagulant or other chemical to each beaker as set by your test plan.
- 4 Set the rapid-mix speed and time from your test method and start stirring.

- 5 Reduce to the slow-mix speed and time from your test method.
- 6 Stop the paddles and allow the samples to settle for the time set by your method.
- 7 Observe floc formation and settling using the illuminated base.
- 8 Draw samples from each beaker as required and analyze them, for example for residual turbidity.
- 9 Record speeds, times, doses and results for each beaker.

Removing a single paddle

- 1 Lift or release the paddle from its shaft according to its mounting.
- 2 Remove the paddle while the other stirrers continue running, keeping hands clear of rotating paddles.
- 3 Refit the paddle securely before using that position again.

5. Cleaning and disinfection

- Switch off and unplug before cleaning.
- Rinse paddles and beakers with clean water after each test and wash with laboratory detergent as needed.
- Wipe the acrylic base and housing with a soft cloth dampened with mild detergent. Do not use solvents or abrasives on the acrylic.
- Dry all parts before storage.

6. Maintenance and storage

- Store in a clean, dry place, covered to keep dust off.
- Check paddles for bending or corrosion and replace damaged paddles.
- Replace illuminator lamps only with the type specified for the unit.
- Check speed accuracy periodically with a tachometer, per your laboratory's quality procedures.
- Refer electrical repairs to qualified service personnel.

7. Troubleshooting

Problem	Likely cause	What to do
Unit does not switch on	No power or blown fuse	Check outlet and cord; have the fuse checked by qualified personnel.
Paddles do not turn	Speed set to minimum or drive fault	Increase speed setting; refer for service if not resolved.
Paddles run at different speeds	Paddle slipping on shaft	Refit and secure the paddle.
Illuminator does not light	Lamp failure	Switch off, unplug and replace the lamp.
Results not repeatable	Unequal sample volumes or paddle depths	Use equal volumes and set paddles at the same depth.
Display reading unsteady	Electrical interference or fault	Use a dedicated grounded outlet; refer for service if it continues.

8. Disposal

- Dispose of test samples and chemicals in accordance with your laboratory's waste procedures and local regulations.
- Dispose of the unit as electronic waste in accordance with local regulations. Do not discard in household waste.

9. Warranty and support

Products are covered by SciMed's standard warranty (12 months from purchase unless a different period is stated on your invoice). Warranty terms: scimedstore.com/pages/warranty.

Support, spare parts and additional copies of this manual: sales@scimedstore.com. Please include your order number and a photo of the product or issue.

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