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Wastewater Sampler: WS300

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Congratulations on your purchase of the Global Water WS300 Wastewater Sampler. This instrument has been quality tested and approved for providing accurate and reliable measurements. We are confident that you will find the WS300 to be a valuable asset for your application. Should you require assistance, our technical staff will be happy to help.

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I. WS300 Checklist

- a. Wastewater Sampler
- b. 12V Battery (Inside Enclosure)
- c. Battery Charger
- d. WS300 Manual

II. Inspection

- a. The WS300 unit was carefully inspected and certified by Global Water's Quality Assurance Team before shipping. If any damage has occurred during shipping, please notify Global Water Instrumentation, Inc. and file a claim with the carrier involved.

Use the checklist to ensure that everything needed to operate the WS300 was received.



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III. Description

- a. The Global Wastewater Sampler, WS300, is designed specifically to meet the sampling requirements for industrial discharges, sewers, rivers and streams. The Global Sampler takes a “time weighted” composite sample in a sample container, to meet the wastewater sampling guidelines. The Global Sampler is easily set up near industrial discharges or streams. It can also be suspended in a manhole for sewer flow sampling.
- b. The Global Wastewater Sampler consists of a rugged, rainproof lockable carrying enclosure. The enclosure houses one sample bottle for composite samples, a peristaltic sampling pump, a control panel, and a rechargeable battery. A battery charger and a sample pickup hose are also provided.

IV. Installing the Wastewater Sampler

- a. The sampler should be placed upright (it will not work if placed on its back or side).
- b. Open the sampler and remove the battery charger from the unit. Store the charger for later use.
- c. To secure the sample bottle:
 - 1) Screw the bottle cap/float switch onto the sample bottle
 - 2) Place bottle into the sampler enclosure
 - 3) Insert end of peristaltic pump hose into the hole in bottle cap
 - 4) Plug the float switch lead into the control panel.
(Located under control panel enclosure).
- d. The sampling unit can be secured from vandalism and strong winds by one of the following methods:
 - Mount unit on post and lock closed
 - Lock closed and chain handles to a solid structure (such as a tree, post, or building)
 - Enclose and lock unit in a steel electrical box



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- e. Avoid drilling holes in the enclosure if possible. If holes must be drilled in the enclosure avoid drilling through the control panel enclosure. Any holes drilled through the enclosure must be sealed with some type of silicone glue to prevent water from entering the case and causing an equipment failure.
- f. The unit is water resistant, not water proof. The unit must be located well above the expected water level to continue to provide reliable service.

V. Installing the Pickup Hose

- a. The pickup hose should be installed in a wastewater discharge channel or stream. The pickup strainer should be submerged under water and should be situated to avoid contact with the channel bottom.

VI. Using the Wastewater Sampler

- a. Verify that the sampling unit, and sampling pickup hose are installed correctly (see previous sections). The Global Water WS300 Wastewater Sampler will function only if the battery plug is securely fastened into the battery socket on the control panel and the float sensor plug is inserted into its socket.
- b. Set the composite sample Interval and Size knobs to the approximate values desired. For a precise sample size see appendix A.
- c. Turn the sampling unit ON (switch is on the control panel) and verify that the sampler is operating. The unit should go through a sample cycle. If the unit does not start the sample cycle press the pump test button to initiate a sample. If the pickup strainer is under water the bottle will fill to the desired level then the pump will back flush the pickup hose to clear it. The pump test button can also be used to take manual samples. If the pump turns slowly, the battery voltage should be checked and recharged if necessary, see the Maintenance section. If the pump test button does not cause the pump to run, refer to the Trouble Shooting section. The unit must be ON to take automatic samples.



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- d. The composite sample bottle fills according to the sample specifications set by the user. It will continue to sample as long as the float switch has not been activated. The float switch in the bottle cap will turn the pump off before the sample bottle overflows. After a filling the sample bottle, remove it and install a clean empty bottle or transfer the sample to a small bottle for lab or turbidity meter analysis.
- e. The WS300 can be set up to produce flow proportional samples when paced by an external flow monitor, see Appendix B.

VII. Specifications

Sample Size:	25 ml to 600 ml as set by user (Two gallon composite sample maximum)
Operating Temperature:	0° to +70°C
Size of unit:	9"L X 17"W X 22"H
Weight:	22lb (Shipping Weight 24lb)
Materials:	
Enclosure:	Expanded UV protected by PVC
Bottles:	2 gallon Polyethylene
Pickup Hose:	15' nylon reinforced 1/4" ID polyethylene flexible tubing section with intake strainer
Pump Tubing:	Norprene 1/4" ID
Sample Pump:	
Flow Rate:	1000 ml per minute at 4 ft. head
Type:	Peristaltic
Maximum Lift:	22'
Battery:	Rechargeable 5 AH Gel Cell
Battery Life:	~2 hours of continuous pumping under load (Approximately 30 gallons at 4 ft. head)



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VIII. Maintenance

Sampler

- a. The Global Water WS300 Wastewater Sampler requires minimal maintenance. The sampler enclosure is rainproof and rugged. Avoid exposure to extremely rough usage. Routinely wipe the carrying case and control panel face, rinse the pickup hose and debris strainer, and wash the sample bottle with mild soap and warm water. Additional plastic and glass sample bottles, noreprene tubing for the sampler pump, bottle caps/float switches, removable debris strainers, and pickup hose can be purchased from Global Water (see Appendix C section).

Battery

- b. If the pump runs slowly, this is an indication that the battery requires recharging. Global Water recommends fully recharging batteries approximately once per month. In addition, the battery should be recharged before any extended use. NOTE: The battery life will last longer if recharged before it drains below 10.5 volts.
- c. To recharge the battery, disconnect the battery cable from the battery. Remove the battery from the enclosure. Attach the battery charger's spade lugs to the battery terminals, red lug to red terminal, and blue lug to black terminal. Plug the charger into a wall socket. A full recharge will take about 12 hours. Additional batteries and battery chargers are available from Global Water (see Appendix C section).



To recharge the battery, fasten the charger's disconnects onto the battery terminals and plug the charger into a wall socket.



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IX. Trouble Shooting

Issue: The pump does not work

- a. Disconnect the float switch. Short the float switch jack on the control panel using a paper clip or wire. Press the red button. If the pump works the float switch is bad.
- b. If the flow proportional option is being used, verify the input is not shorted together.

Other issues

- c. Call us for tech support: 800-876-1172 or 916-638-3429 (many problems can be solved over the phone). Fax: 916-638-3270 or Email: globalw@globalw.com.

Be prepared to describe the problem being experienced including specific details of the application and installation and any additional pertinent information.

- d. In the event that the equipment needs to be returned to the factory for any reason, please call to obtain a RMA # (Return Material Authorization). Do not return items without a RMA # on the outside of the package.

Decontaminate the WS300 prior to returning.

Include a written statement describing the problems.

Send the package with shipping prepaid to Global Water's factory address. Insure the shipment, as the warranty does not cover damage incurred during transit.

- e. When calling for tech support, please have the following information ready;
 1. Model #.
 2. Unit serial number.
 3. P.O.# the equipment was purchased on.
 4. Global Water's sales number or the invoice number.
 5. Repair instructions and/or specific problems relating to the product.



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X. Warranty

- a. Global Water Instrumentation, Inc. warrants that its products are free from defects in material and workmanship under normal use and service for a period of one year from date of shipment from factory. Global Water's obligations under this warranty are limited to, at Global Water's option: (I) replacing or (II) repairing; any products determined to be defective. In no case shall Global Water's liability exceed the products original purchase price. This warranty does not apply to any equipment that has been repaired or altered, except by Global Water Instrumentation, Inc., or which has been subject to misuse, negligence or accident. It is expressly agreed that this warranty will be in lieu of all warranties of fitness and in lieu of the warranty of merchantability.
- b. The warranty begins on the date of the product's invoice.



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XI. Appendix A: Automatic Sampler Calibration

- a. The composite sample size is approximate. This means that the sample size may vary with distance from the sampler. If precise sample sizes are needed it will be necessary to manually calibrate to the installation.
- b. To manually calibrate, a graduated cylinder that exceeds the intended sample size will be needed.
- c. Follow these steps to calibrate:
 1. Install the sampler in its intended location.
 2. Remove the sample bottle. Leave the float switch/bottle cap attached to the control panel.
 3. Adjust the sample size to roughly the size needed.
 4. Place the graduated cylinder under the output of the pump.
 5. Turn on the sampler and press the red pushbutton.
 6. When the sampler is finished pumping, check the amount sampled in the graduated cylinder.
 7. If the sample size is incorrect:
Empty the cylinder and slightly adjust the sample size clockwise for a larger sample and counter-clockwise for a smaller sample. Then repeat steps 4 through 6.
 8. If the sample size is correct:
Empty the cylinder and replace the sample bottle. Be sure to re-connect the lead from the bottle cap into its socket, and make sure the output of the pump is going into the bottle.

These steps will need to be repeated for every individual installation.



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XII. Appendix B: Flow Proportional Sampling

- a. To set the WS300 up to take flow proportional samples, a flow monitor must be attached to the control panel. In this configuration the sampler is designed to take a sample every time a specific amount of flow has passed through the flow monitor.
- b. The flow monitor must provide a momentary switch closure (100ms or longer) whenever a sample is to be taken. The sample will be taken when the pulse ends. The output of the flow monitor must be wired to a 1/4" phone plug (2 wire). The phone plug is then inserted into the SENSOR jack on the control panel.
- c. Set the INTERVAL knob to 4 hours and the SIZE value to the desired sample size. The sample will be taken, flow proportionally, as directed by the flow meter.



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XIII. Appendix C: Accessories

<u>Part Description</u>	<u>Part Number</u>	<u>Unit</u>
12V 5Ah Battery	00-010	Each
Battery Charger	FE0400	Each
1 Gal Glass Sample Bottle	00-835	Each
2.5 Gal Plastic Sample Bottle	00-419	Each
Bottle Cap/Float Switch	CA0200	Each
Pickup Hose	00-546	Feet
Pickup Strainer	CA0300	Each
Pump tubing	00-744	Feet