AQUAFOG

HYDRO SS 700

DIRECT FEED

OPERATOR'S MANUAL

MADE IN USA

NOTICE

Read & Understand
Retain for Future Reference

Purchase Date _____ Model ID Number _____

Vendor Information _____

_____

Notes

GENERAL SAFETY

The **Hydro SS 700** uses a high-speed component to atomize water, the following safety precautions must be observed at all times:

1. Read operator's manual carefully and thoroughly. Understand all safety warnings and instructions before attempting operation of the unit.
2. Follow all local electrical and safety codes as well as the United States National Electrical Codes (NEC) and Occupational Safety and Health Act (OSHA).
3. Always operate SS 700 with it's safety guards and housing securely in place.
4. Disconnect power before inspecting or servicing machine. Hydro SS 700 must be properly grounded as a precaution against possible electric shock. Check for correct voltage supply.
5. Keep cord away from heat, oil, sharp edges and moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
6. If use of an extension cord is necessary, use a heavy, gauge 3 wire extension cord with a molded three-prong plug.
7. Keep hands and all objects from entering the path of the blade.
8. Install the Hydro SS 700 at seven (7) foot height or higher for added safety and optimum performance.
9. Do not use flammable liquids, caustic materials, or corrosive materials with the Hydro SS 700.
10. When servicing Hydro SS 700, use only identical replacement parts and follow instructions in the maintenance section of this manual. Use of unauthorized parts or failure to follow maintenance instructions may damage equipment or cause personal injury.

NOTIFICATION

⚠ WARNING

THE HYDRO SS 700 CAN BE AUTOMATED WHEN USED IN CONJUNCTION WITH A CONTROL. THE FAN MAY NOT APPEAR POWERED BUT COULD SUDDENLY BEGIN HIGH-SPEED ROTATION AS A FUNCTION OF THE PRESET CONTROL.

⚠ WARNING

HIGH-SPEED ROTATION, NEVER OPERATE UNIT WITHOUT THE HOUSING AND SAFETY GUARDS INSTALLED.

⚠ NOTICE

GROUND FAULT RECEPTACLES ARE STRONGLY RECOMMENDED AND MAY BE REQUIRED BY LAW.

UNPACKING

When unpacking your unit, locate the following:

- **1**) Hydro SS 700-DF
- **1**) Flowmeter Assembly (20-300 cc/min)
- **12**') Drain Tubing
- **20**') 1/4" Water Tubing w/ Hose Connector
- **1**) **Operator's Packet**
  - **1**) Manual
  - **1**) U-Bolt Packet
  - **5**) Wire Ties
  - **1**) 1/4" Water Line Install Packet
  - **1**) Service Allen Wrench (for Blade Assembly)

HANGING GUIDELINES

Where to Locate

NOTE: <u>THIS UNIT IS SPECIFICALLY DESIGNED TO BE HUNG</u>

Mount the fan high overhead in the largest available open area. As a general rule, the higher the better when mounting your fan. Allow one foot above the unit and adequate room in front of and below the fan for the unobstructed propulsion of the fog.

Mount the fan near the intake end of a ventilated structure and propel fog in direction with air flow. In structures with no ventilation, install the unit at the largest, most open end and propel the fog towards the opposite end.

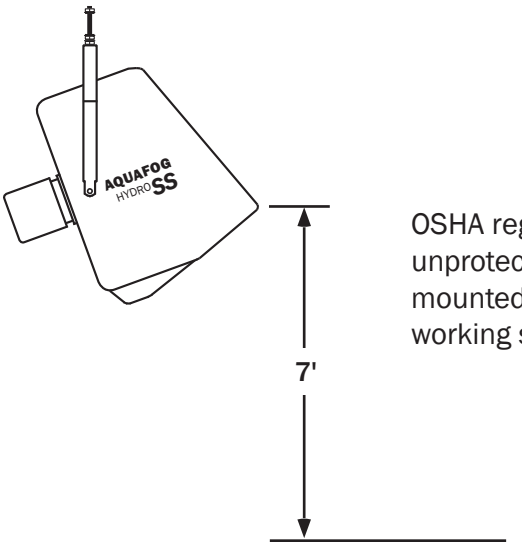
Utilize the pivoting fogging head in order to maximize the unit's performance.

DO NOT propel the fog into the wind or direction of airflow.

DO NOT pivot the fogging head to propel fog at a sharp downward angle.

DO NOT cramp the fan in tight spaces or skinny aisleways.

DO NOT mount the fan near the ground or underneath tables or benches. This would result in a high loss of fog onto the ground, though it would not cause mechanical harm to the unit.

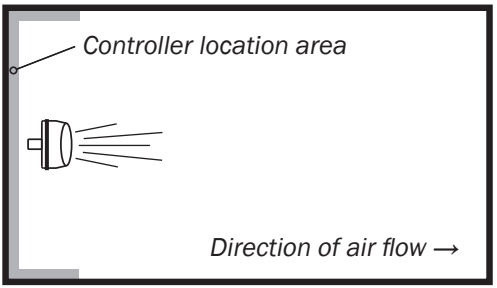


OSHA regulations require unprotected fan blades to be mounted 7' or higher from the working surface.

POSITIONING

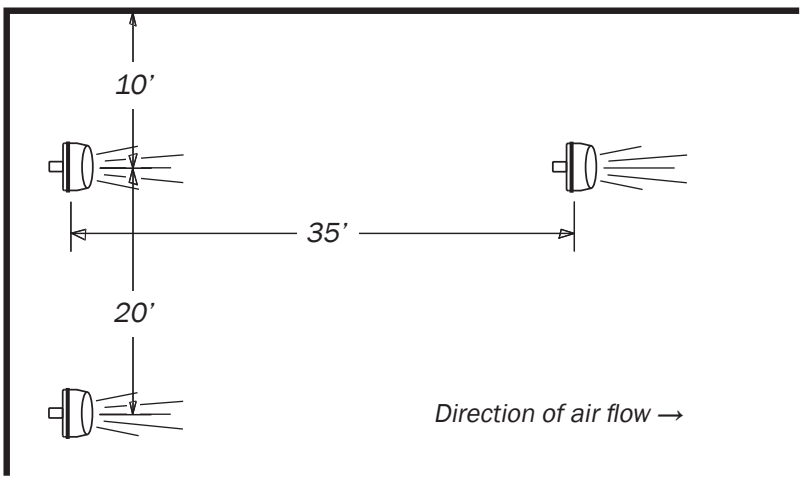
Small Structures

In applications requiring only one unit, install the unit anywhere along one end wall, propelling the fog upward and horizontally down the length of the structure. If there is forced ventilation, choose the intake end of the structure. The best location for automated controls is behind the fan at an easily-accessible level for monitoring.



Large Structures

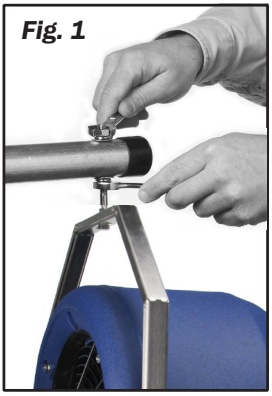
Equally space the units within the structure. Lower humidity and/or cooling requirements can allow for greater distance between fans. Usually, the maximum distance between fans should be 20’ from the side and 35’ from the front. If the structure has forced ventilation, shift the fans closer to the intake end. The fans should always be propelling their fog with the direction of natural or forced air flow.



INSTALLATION

Hanging the Unit

After unpacking, locate or install a sturdy horizontal support capable of handling over 20 pounds of weight. If the support is a 3/4 - 1" pipe, use the optional U-bolt packet provided. For the universal mounting bolt attached, drill a 5/16" clearance hole through the support where you want to hang the unit. Using 1/2" wrenches, secure the (DF) unit into position. **See Fig. 1**

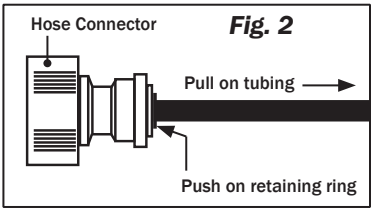


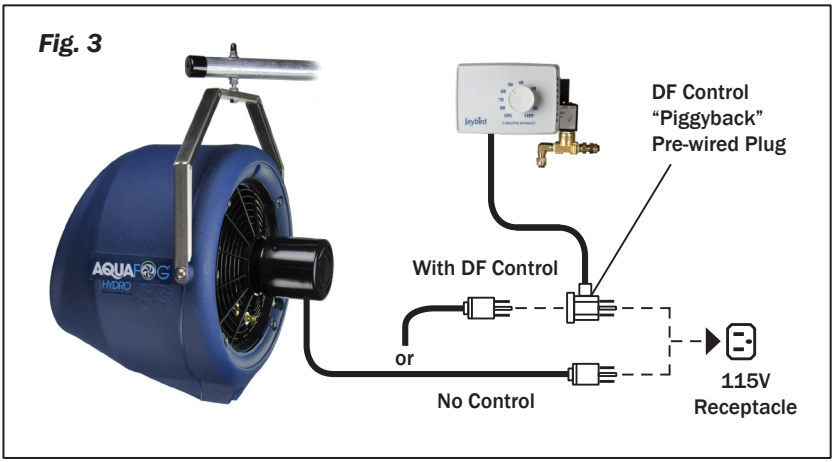
Water Supply: DF units come equipped with a 20-300 cc/min. (.3 - 5 GPH) Flowmeter panel. This panel should be mounted in an accessible location for monitoring and adjusting water flow rate.

Cut 1/4" tubing at the desired location for the flowmeter. Connect the flowmeter to the tubing between the Hydro unit and the water supply. Use the remaining tubing and hose connector to connect to an available hose bib. To remove hose connector, apply pressure to the retaining clip while pulling on the tubing. **See Fig. 2**

Power Supply: Plug directly into a properly grounded receptacle.

If using a DF Control, plug the Control into the receptacle and then plug the fan into the female side of the control's pre-wired plug. **See Fig. 3**





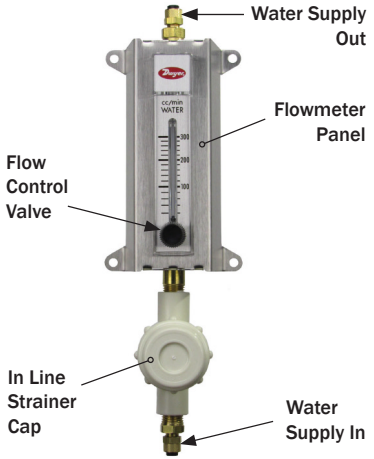
OPERATION

Fog Output

After the unit has been plugged in and the water turned on, you can adjust fogging output with the flowmeter's flow control valve. Turn counterclockwise to increase flow rate.

Pivot Feature

Pivot the fogging head anywhere between 15° down and 40° up from horizontal. The manufacturer's recommended angle is about 30° up.



MAINTENANCE

Lubricate Motor: Remove two blue plugs at the top of the motor. Apply 4-5 drops of light grade petroleum based oil at each bearing location 1 to 2 times a year or as needed. Replace blue plugs. **See Fig. 4**

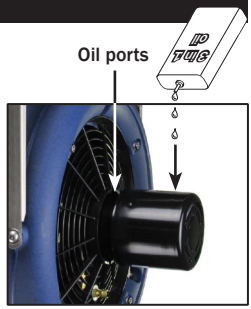


Fig. 4

Cleaning Blade Assembly: After removing the blade assembly, remove the stainless plate and O-ring. Soak the blades in CLR for about one hour, scrub clean and rinse off with water. Carefully check the small holes leading into passageways that extend the length of each blade. **See Fig. 5** When clean, test by blowing air through each blade.

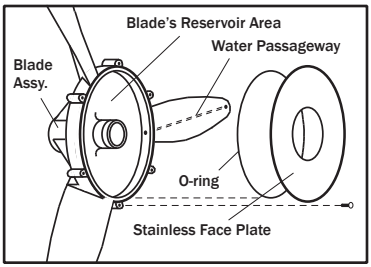


Fig. 5

Water Solenoid: Solenoids rarely become clogged but can be disassembled and cleaned if needed. **See Fig. 6**

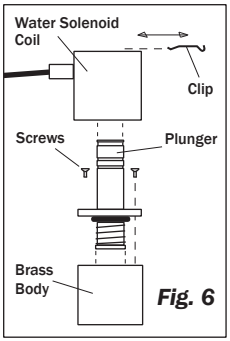


Fig. 6

Water Solenoid from optional control packages

Clean Strainer: Periodically check and clean out debris that gets caught in the in-line strainer.

Winterizing: Protect your unit from winter damage. If storing unit in freezing temperatures, be sure all fluid is drained from the unit.

TROUBLESHOOTING

Issue	Corrective Action
INITIAL START-UP	
1. Fan Blade Does Not Spin	1. Check power supply. If using a controller, try bypassing it and plug unit directly into a power outlet. Check for a faulty power cord.
2. No Fog but Blade Spins	2. Open Flowmeter's needle valve [counterclockwise]. Check for water pressure starting at the source and temporarily disconnect water line fittings to locate the issue. If using a controller and the water solenoid is not opening, check the power from controller to solenoid.
3. Hard To See Fog Output	3. As fog evaporates, it becomes transparent. Dry air and propulsion evaporates fog quickly. As humidity increases, evaporation slows and fog becomes more apparent. A dark background helps to see the output.
NO FOG	
1. Stiff/Locked Motor Shaft	1. Remove blue plugs and lubricate motor bearings while manually rotating shaft back and forth until loose.
2. Bad Motor	2. If motor smells, doesn't start (with a direct power supply) or shaft will not loosen up, replace motor.
3. Clogged Flowmeter Panel	3. Remove valve and clean. If problem reoccurs, perform a thorough cleaning inside the flowmeter body.
4. Clogged In-Line Strainer	4. Remove strainer cap, screen, and O-ring. Flush clean with water.
5. Clogged Water Solenoid	5. Remove the top clip and disassemble the valve's brass body for cleaning.
6. Clogged SST Feed Tube	6. Remove Feed Tube and ream with a small wire. Clean and reinstall.
POOR QUALITY FOG	
1. Clogged Blade Assembly	1. Remove and clean out the rear reservoir and the blades' passageways.
2. Misaligned Feed Tube	2. Adjust feed tube so its water stream flows into the blades rear reservoir.
3. Stiff Motor Shaft	3. Remove blue plugs and lubricate motor bearings while manually rotating shaft back and forth until loose.
4. Loose Blade Assembly	4. If the blade can spin without motor shaft, reposition the blade and tighten the setscrew on the flat of the shaft, replace assembly if necessary.
FAN DOES NOT SPIN	
1. Stiff/Locked Motor Shaft	1. Remove blue plugs and lubricate motor bearings while manually rotating shaft back and forth until loose.
2. Bad Motor	2. If motor smells, doesn't start (with a direct power supply) or shaft will not loosen up, replace motor.
3. Bad Controller	3. Check controller for loose connections, test unit's motor and controller independently with a direct power supply for process of elimination.
MOTOR OVERHEATING	
1. Stiff/Locked Motor Shaft	1. Remove blue plugs and lubricate motor bearings while manually rotating shaft back and forth until loose.

Atomizing Ring/Front Guard Assembly

Using a 3/8" nut driver or wrench, remove four 10-24 flange nuts located at the back of the housing. To remove and reinstall the assembly, it needs to be rotated horizontally in order to clear the lip of the front housing. **See Fig. 7.**

Fig. 7

Fan Blade Assembly

First remove the atomizing ring/front guard assembly. The blade assembly is now accessible and is secured to the motor shaft with a setscrew. Loosen the setscrew using 1/16" Allen wrench (provided) and carefully leverage blade assembly off the shaft. **See Fig. 8**

To reinstall, line up setscrew with flat of the motor shaft and secure into position with the blade assembly flush to the end of the shaft.

Fig. 8

Accessing The Motor

Disconnect the electrical power. After removing the atomizing ring, front guard assembly and blade assembly, use a 3/8" nut driver or wrench to remove the four 10-32 nuts behind the blade assembly securing the motor to rear guard. **See Fig. 8**

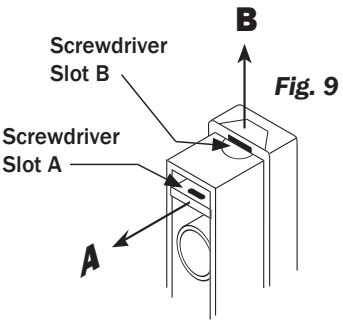


Fig. 9

Top of Flowmeter

Cleaning Flowmeter

Using a small flat screwdriver, remove the retaining key using Slot A by sliding the key out toward the back. **See Fig. 9** Next, use the screwdriver in Slot B to pull the retainer cap straight up. After the retainer cap is removed, be careful not to lose the internal float ball when handling or cleaning the flowmeter.

PART IDENTIFICATION

	DESCRIPTION	PART NO.
1	Atomizing Ring	400-001
2	Front Guard	400-002
3	Motor 115V	400-110
4	Rear Guard	400-127
5	Blade Assembly	400-128
6	Housing	400-100
7	SST Hanger	a-620
8	Water Feed Tube	400-130
9	Pivot Location	NA
10	Drain Barb Fitting	400-114
11	Drain Hose	400-089
12	Flowmeter Panel	a-F-5
13	In-Line Strainer	71
14	1/4" Water Tubing	W-14
15	Hose Connector	W-2