

# BioWorld Products

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## BioWorld Fogging System 05850

### Heavy Duty Atomizing Machine

The BioWorld Fogging System #05850 is designed to disperse almost any liquid including BioWorld Odor Neutralizer. It can deliver either a coarse spray, fine mist or a fog of droplets as small as 2 microns without a high pressure pump or nozzles with tiny orifices. BioWorld's vortex atomization nozzle and "cold fogging" technology do the job reliably and efficiently.

The 05850 offers flexible control options including timers, process sensors and PLC. In most cases, the system does not require elaborate filtration or water pretreatment.

The three main components of the 05850 are:

- One or more **vortex nozzles**. The unique BioWorld nozzle uses turbulent, low pressure air (3 psi) to atomize liquid into tiny droplets. Since the nozzle has no tiny orifices, it is quite tolerant of impurities or suspended solids in the feed liquid.

Even when atomizing a solution of dissolved solids, a build-up of deposits may slowly degrade atomization performance but does not plug the nozzle. The system can continue operating until a nozzle change is convenient. Swapping nozzles is simple: undo the quick-connect liquid line, unscrew the nozzle union to the air pipe, and attach the replacement. In many cases you can renew the old nozzle simply by immersing it in liquid to dissolve the deposits.



- The low maintenance **regenerative blower** supplies air to the nozzle. A low voltage cable from the control unit regulates blower operation, and monitors intake air pressure drop to report a dirty filter.

The blower is powered by a direct-drive TEFC (totally enclosed fan cooled) motor. Power options are 110/115V and 220/230V, 50/60 Hz, 1Ø, and 200-240V and 400-480V, 50/60 Hz, 3Ø.



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- The **control unit** manages liquid flow and regulates fogging activity. A regulator reduces liquid feed pressure to the desired 4-10 psi, and a precision needle valve and rotameter control liquid flow and output droplet size.

Liquid may be supplied by a chemical feed pump, an elevated tank (gravity feed), or connection to the domestic water supply system. You can also use a proportional mixer to dilute concentrated chemicals in-line.



The 05850 offers many control options including: countdown and repeat cycle timers, weekly day-timer with multiple on/off "events" per day (an event timer), external relay closure (2A contact) on a customer-supplied process controller, building automation system or environmental controller, humidity sensor, or programmable PLC responding to one or more analog inputs (4-20mA, 0-5VDC).



The blower and controller can be located wherever convenient. The nozzle discharge may be aimed 90° axially and 360° radially at its mounting point (a 2-inch PVC slip union). For mobile applications, an optional cart is available to carry blower, nozzle and control unit.

The system requires little maintenance: remove dirt from water screens and blower cooling fan as necessary, clean the intake air filter (a light on the control unit illuminates when the filter is dirty), and descale the nozzle if required.

The product ships with the fittings required for a typical installation: liquid input port (1/4" OD tubing, 100 mesh screen), 50 ft. liquid tubing, blower control cable (25 ft. std, other lengths available), blower intake and discharge fittings, intake air filter, and one vortex nozzle with 2" slip union. Air piping (typ. 2" PVC) from the blower to the nozzle is not included.



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## GENERAL SPECIFICATIONS (Model 05850)

<b>Components</b>	Control unit, blower, blower control cable (25 ft), BioWorld nozzle with 2" PVC slip union, liquid input fitting (1/4" compression fitting), liquid screen (100#), 50 ft. liquid supply line, air filter, blower fittings to adapt to 2" PVC pipe. (Air pipe not included)
<b>Nozzle</b>	Counter-rotating vortex design. High turbulence in nozzle shears feed liquid into fog-sized droplets. Non-clogging design (no small orifices).
<b>Fogging Liquids</b>	Unit can dispense both oil and water-based liquids. Single nozzle system handles up to 5 gal/hr (315 ml/min), adjustable. When applying chemicals, follow label instructions.
<b>Droplet Size</b>	VMD of output varies with flow rate (typical range: 2-50 $\mu$ ). Liquid viscosity and surface tension also affect droplet size.
<b>Blower</b>	Single stage cast aluminum ring compressor with direct drive squirrel cage TEFC motor and pilot duty thermal cutoff. 1 Hp, 120V, 50/60 Hz, 1 $\phi$ , 9.8A. Motors also available in 240V, 1 $\phi$ , and 230/460V, 3 $\phi$ configurations. Maximum output 90 cfm. Noise: 64 dBC (1000 Hz); 57 dBC (2000 Hz). Larger blowers available for multiple nozzle installations.
<b>Control Unit</b>	Power and Auto/Manual switches. Liquid pressure and flow controls. Blower status lights (start, run, service filter alert).
<b>Controller Options</b>	<ul style="list-style-type: none"> <li>-Humidistat: LED readout, adjustable set point (10-90%RH) and deadband. Sensor accuracy <math>\pm</math> 3% RH. 25 ft. sensor cable.</li> <li>-Day/week event controller: up to 6 timed on-off "events" per day. LCD display.</li> <li>-Countdown timer: 1-1023 sec/min, set with dip switches.</li> <li>-Repeat cycle timer: Independently adjustable ON/OFF cycles (1-1023 sec/min each), set with dip switches.</li> <li>-Analog (4-20 mA or 0-5VCD). Consult factory.</li> <li>-External relay (customer control system).</li> </ul>
<b>Control Enclosure</b>	Weathertight (NEMA 4X), corrosion resistant fiberglass with stainless steel hardware.
<b>Materials</b>	Nozzle housing – vinyl w/ stainless clamps; Tubing – nylon, vinyl; Fittings – stainless steel, brass, nylon, acetal; Nozzle - Celcon® acetal copolymer.
<b>Dimensions (HWD)</b>	Control module: 16.5 x 14 x 9 in (42 x 35 x 23 cm), Blower: 14 x 15 x 14 in (35 x 38 x 35 cm)
<b>Shipping Weight</b>	2 cartons: 36, 55 lbs (16, 25 kg)
<b>Warranty</b>	One year limited warranty on materials and workmanship.
<b>Note:</b>	Specifications subject to change without notice.