



AK/HA Manufacturing LLC.



Installation Manual

**Class 1 NSF/ANSI Standard 40 AP Series
Wastewater Treatment Plant**

**2055 Pidco Dr. / P.O. Box 640 Plymouth, IN. 46563
Ph: 1-800-370-3749 Fax: (574) 936-2298
www.hydro-action.com**

Table of Contents

Introduction

Plant Installation Instructions

Section 1.0 Off-loading/ Unpacking Instructions & Tank Installation

Section 2.0 OPS® (Operations/Control Center) Installation

Section 3.0 Anchored Diffuser Assembly Installation

Section 4.0 Hydro-Action® Air Pump

Section 5.0 OPS® Controls / Alarm System Testing

Section 6.0 Start-up Procedure

Section 7.0 Safety

Section 8.0 Installation Checklist

Section 9.0 Design & System Component Prints

Section 10.0 Electrical Schematics

Hydro-Action AP Series Wastewater Treatment Plant

The AP Series Aerobic Treatment Units (ATUs) are now available through **Hydro-Action®**. Please read this introduction before reviewing this manual.

Earth's environment has purified water through natural processes since the beginning of time. Only recently, beginning in the Twentieth Century, has man developed a system to accelerate the processes that Mother Nature uses. **Hydro-Action®** AP Series ATUs are just such systems.

In 1916, the City of Houston, Texas, was the first to use the activated sludge wastewater treatment process as an accepted, full-scale system process to purify domestic wastewater. Since that time, the United States and many other nations have utilized this process and variations to properly treat sewage. Federal Law 92-500 supports our nation's commitment to provide secondary treatment for all domestic wastewater.

This commitment is presently being extended to on-site sewage treatment facilities. **Hydro-Action®** has been a visible part of this effort since 1989. We have manufactured numerous products to provide individuals with a means of proper, effective, efficient, and affordable on-site wastewater treatment. Our professional commitment to market needs and customer service have enabled us to reach our goal of providing effective products that assure a safe, reusable effluent. We are helping Mother Nature protect our environment and our most valuable natural resource: water.

Our continuing mission is to develop and manufacture individual on-site wastewater treatment facilities that meet society's needs in the field. This manual is a part of that dedication to customer service.

Hydro-Action® AP Series Aerobic Treatment Units are among the most advanced on-site products available today.

They are state-of-the-art extended aeration, activated sludge wastewater treatment facilities. The improvements in these units make them not only extremely efficient operational units but also the most easily maintainable system in the industry.

By following the instructions in this manual, you will be providing yourself with the best on-site wastewater treatment and service. We invite you to share in our pride of the AP Series Treatment Units.

This manual includes information on the AP-500, AP-600, AP-750, AP-1000G & AP-1500G wastewater treatment plants. These units may be installed with either a platform mounted OPS® (operations/control center) or a Remotely Located OPS®. Installation needs vary, so your on-site wastewater system may contain some of the following auxiliary components along with the treatment plant:

- Pretreatment tank
- Pump/holding tank
- Alarm systems
- Equipment for chosen effluent disposal method (drip irrigation, spray irrigation, gravel-filled drain field, pressure dosing, etc.)
- Chlorinator / UV Disinfection Unit

The certified **Hydro-Action®** dealer or installer of your **Hydro-Action®** AP Series wastewater treatment plant is responsible for completing and submitting to us the Installation Warranty Information to properly activate your **Hydro-Action®** Product Warranty.

We are eager to assist you with any questions or problems. Please contact **Hydro-Action®** at 800.370.3749 to request assistance from our Customer Service or Engineering Departments

Off-Loading & Unpacking Instructions

Off-loading Instructions:

1. Insure that the system is un-strapped from the delivery vehicle.
2. Mount the T-Bar assembly if Set-N-Go™ System, otherwise insure proper off-loading by means of forklift or machine capable of removing without damage.
3. When system is off-loaded, inspect exterior components for damage. Ops, Lids, tank, and loose pallets should not have any evidence of shipping damage.
4. Remove Covers for unpacking instructions.

Unpacking Instructions:

1. Remove all components that are shipped on loose pallets.
2. Inventory components, and inspect for damage during shipping. Pay special attention to the diffusers, drops, and diffuser weights as they are fragile and susceptible to shipping damage.
3. If a pump tank is included, inspect interior and inventory components. Effluent pump, water line, and wiring should all be intact and free of defects.
4. Inspect Ops for any interior damage, and check all connections to the control panel. Vibration from shipping may cause wires and airlines to become loose.
5. Close all covers and prepare tank to place online.

Hydro-Action® AP SERIES INSTALLATION INSTRUCTIONS:

To ensure proper installation of all components of the **Hydro-Action®** AP Series wastewater treatment plant, please read and follow all instructions included in the following sections. The AP Series WWTP with OPS® must be installed according to these instructions. Any modifications to the plant or OPS® will result in loss of warranty and invalidation of the plant's NSF certification. See Off-loading and Unpacking Instructions for the **Hydro-Action®** AP Series WWTP from its delivery means.

SECTION 1.0: Tank Installation

1.1: Locate plant in an area that provides good ventilation and rainwater run-off. To decrease the likelihood of hydraulic displacement (tank flotation), choose a site that will minimize possible groundwater saturation. Consider seasonal water table and soil conditions in the area of installation. Do not locate the plant in a low spot in the ground where water tends to pool or at the edge of any natural body of water. If such a location cannot be avoided, call **Hydro-Action®** for technical advice. Prepare an excavation with a width and a depth that will allow any and all auxiliary tank inlets/ outlets to align with the plant inlet/outlet. The plant access cover should extend above the final surface grade in such a way to prevent surface watershed from entering the plant access riser. Riser extensions may be required and are added to provide adequate elevation for at-grade access. For plant dimensions see drawings in **Hydro-Action®** O&M Manual.

1.2: Since the treatment plant must be level to operate properly, using a transit leveling instrument is recommended. If leveling instrument is not available, a four (4) foot level may be used. Use four (4) inches of sand or fine-grained gradable material in the bottom of the excavation to provide a solid flat base. Be sure bottom of excavation is level before lowering tanks.

1.3: When bottom of excavation is to grade, smooth, tamped and level, gently place all auxiliary tanks (if included) and plant into excavation. While lowering treatment plant into excavation, turn tank so four (4) inch building outlet plumbing aligns with four (4) inch inlet of treatment plant and the four (4) inch treatment plant discharge line aligns with effluent outfall plumbing.

1.4: The treatment plant and any other associated tanks must be level to ensure proper functioning. The connector pipe between any and all tanks and plant should be between level and one-eighth (1/8) inch per/foot-grade fall toward plant outlet.

1.5: Once all tanks are level and properly positioned, start filling them with clean water, checking periodically for leaks. If a leak is detected, stop filling and pump water level down below leaking area and repair hole. When leaking area has been repaired resume filling. Continue this procedure until tanks are filled to overflow and there are no leaks. During the filling procedure, check periodically to make certain tanks remain level.

1.6: While the tank is filling, run the incoming sewage lines from a properly trapped and vented building to the pretreatment tank first (if used); then run plumbing from pretreatment tank (if used) to the treatment plant tank inlet, or from building directly to treatment plant tank. Make sure that all plumbing meets building codes. Also run the four (4) inch plant outlet pipe to proper piping and/or equipment to remove the treated effluent from the immediate area. Once treatment tank is full and leak free, make final connections to inlet and outlet piping on plant.

1.7: Hydro-Action® OPS® (operations/control center) installation can be accomplished at this time. Follow the instruction given in section 2.0, OPS® (Operations/Control Center) Installation.

1.8: Hydro-Action® diffuser assembly installation can be accomplished at this time. Follow the instructions given in section 3.0, Anchored Diffuser Assembly Installation.

1.9: For installation below normal grades **Hydro-Action®s'** twenty-four (24) inch (20" for models AP-1000G and AP-1500G) diameter extension riser(s) must be used to bring access above grade. Riser must be above grade to provide plant ventilation. Extension risers on AP Series units may be any reasonable depth. Under no circumstances shall the cover be buried. If installing Platform Mounted OPS®, add an equal number of OPS® base risers to bring it to the same grade as the access risers.

1.10: After all tanks and plant have been filled to outlet overflow, backfill the excavation using a material that will settle well around the tanks. Do not use large rocks or heavy clay. Place the material around the tanks in layers, tamping and watering each layer.

1.11: Before installation is complete, the access cover and the Platform Mounted OPS® enclosure must be in place and the tamper-resistant screws, provided by **Hydro-Action®**, must be installed and properly tightened to prevent unauthorized personnel from gaining entry inside plant.

Note: Any tank and plant must be filled to overflow with water during and after installation to prevent hydrostatic displacement (floating of tanks).

Hydraulic displacement and tank flotation may occur whenever water and solids are removed from the tank when high groundwater conditions exist. Any source of water in the soil around the

plant installation could cause the tank to float. Water sources may include rainfall, springs, creeks, bayous, rivers, lakes, and coastal areas. Proper precautions are therefore required to prevent tank flotation due to hydraulic displacement.

These precautions include, but are not limited to, the following:

- Plant location — choose a site that will minimize possible groundwater saturation (see Section 1.1).
- Whenever a tank is pumped, do not remove more than one-half of the capacity of the tank. It is recommended that you pump the tank during dry seasons only. However, if tank must be pumped during the wet season, watch for upward movement of the tank while pumping is being done. If upward movement is detected during pumping, **immediately stop pumping water out of the tank and refill the tank to stop flotation.** Each site must be evaluated on a case by case basis to determine the best time to remove water from the tank and prevent flotation.

SECTION 2.0: OPS® (Operations/Control Center) Installation

2.1: Following are all parts needed to complete the installation of model AP-500, AP-600, AP-750, AP-1000G, and AP-1500G WWTP using the Platform Mounted or Remotely Located OPS®. Should any part(s) be missing or off specification, or if you encounter any problems in completion of installation of the unit or with the above listed parts, call the **Hydro-Action®** Customer Service Department at 800.370.3749 for assistance.

Item:	Quantity
1. AP Series Class I Aerobic WWTP	1 ea.
2. AP Series Hydro-Action® air pump.....	1 ea.
3. Airline seal gasket, 1" diameter	1 ea.
4. Air diffuser assembly w/4 sm. diffusers...	2 ea.
5. Airline drops, std. Length.....	2 ea.
6. Airline drops extension(s)	2 ea.
7. Airline drops retainer clamp.....	2 ea.
8. Airline drops anchor	2 ea.
9. Electrical enclosure	1 ea.
10. Air pressure-tubing kit	1 ea.
11. Effluent Tee assembly, 4" diameter	1 ea.
12. High-level alarm float	2 ea.
13. Unilet and coupling, ½" diameter.....	1 ea.
14. OPS® enclosure	1 ea.

- 15. OPS® base screws, 7" long 3 ea.
- 16. PVC airline header, ½" with fittings..... 1 ea.
- 17. Remote alarm box (optional)..... 1 ea.

2.1.1: The parts listed above include all the parts necessary for completion of the **Hydro-Action®** AP Series Class I Aerobic WWTP. By following these simple instructions, your assembly of the AP Series unit will be completed in minimum time and with assurance of a properly functional unit.

2.2: The AP-500, AP-600 and AP-750 plant may be installed with either a Platform Mounted OPS® or Remotely Located OPS®. The parts provided assume a typical installation. If site conditions are not normal and additional parts are necessary for correct installation, be sure that you have all necessary additional parts before beginning installation of the AP Series unit. The AP-1000G and AP-1500G use the remotely located OPS®. Additional parts may include access risers and equipment base risers, flexible airline hose extensions, electrical wiring, conduit, PVC pipe, and other items.

2.3: Properly install the AP Series WWTP in the chosen site being sure that the plant is level and backfilled correctly. Assemble all the component parts per instructions in section 1.0, Tank Installation. Make all necessary hose connections, wiring connections, pipe connections, and alarm connections prior to testing with electrical power. If installing a Platform Mounted OPS® that has been factory mounted, OPS® is pre-installed on top of tank. **Note:** Whenever riser extensions are added to bring the Platform Mounted OPS® base and plant access cover to grade, remember to provide enough length to all piping and wiring to meet the needs of raised installation.

2.4: If installing a Platform Mounted OPS® that has been shipped separately, remove OPS® enclosure and glue 5 5/8"-long ½" PVC pipe into airline coupling on platform. Set OPS® base on top of platform aligning airline hole with ½" PVC pipe. Align vapor and moisture sealing assemblies on OPS® base with pre-drilled gasketed holes in platform and push the vapor and moisture sealing assemblies through holes in platform. Be sure base is centered on platform before proceeding. Attach base to platform using three seven (7) inch screws; two of the screws will replace smaller screws holding air pump to OPS® base during shipping. Place the third screw at marked location (near corner of OPS® even with vapor and moisture sealing assemblies). Be sure to drill screws straight down.

2.4.1: Glue 5 5/8"-long ½" PVC pipe to 90-degree PVC fitting that is connected to air pump.

2.4.2: Connect electrical jacketed SO cables from high-level float in plant and floats and pump (if included) in pump tank by using fishwire to pull cables through conduit into base of OPS® enclosure and up through sealing assemblies. Conduit from pump tank to plant should enter plant in the riser assembly above the access, either directly above outlet or above clarification compartment. This keeps SO cables from interfering with removal of anchored diffuser assemblies. Connect cables through compression fitting into electrical enclosure as shown on electrical schematics for each model (see **Hydro-Action®** O&M Manual).

Note: Electrical schematics are included inside each electrical enclosure and **must** remain in this location at all times to ensure that system is in compliance with required rules of certification.

Do not remove the schematic from electrical enclosure.

2.5: Run electrical power in conduit from main supply to OPS® base. Thread wiring through base and into OPS® enclosure. Make connections through 3-wire compression fitting into electrical enclosure.

2.6: Electrical power connection to electrical controls in electrical enclosure is made by connecting the wiring to the electrical controls as shown in the electrical controls instructions. See **Hydro-Action®** O&M Manual.

2.7: An optional remote alarm may be mounted on the exterior of a house or garage, if desired. This alarm is equipped with audible and visible alarms.

2.8: When required, OPS® risers can be stacked below OPS® base. The OPS® enclosure is attached by four security screws. Do not kink cables inside OPS® when attaching the enclosure.

2.9: If the Remotely Located OPS® is being installed, the OPS® enclosure simply sits on top of a polyethylene base located away from the plant (no more than 55 feet from plant location).

SECTION 3.0: Anchored Diffuser Assembly Installation

3.1: Remove anchored diffuser assemblies with attached flexible air hoses from OPS® shipping box or OPS® enclosure.

Note: Before installing flexible air hoses with anchored diffuser assemblies, air hoses and plant air header must be purged of all debris. This is accomplished by turning air pump on for a few minutes. Air hoses must be free of debris to ensure proper operation of the diffusers, check valve, and aeration system.

3.2: Connect air hose to air header tee by pushing hose securely onto barb fitting. Lower anchored diffuser assembly to bottom of aeration compartment through access opening.

3.3: Lift anchor a few inches off tank bottom and bring air hose into retainer clamp. Steady diffuser assembly and lower it to tank bottom, making sure that diffuser assembly rests outside circumference of access riser. See plant detail drawings. Secure retainer clamp. Allow minimum slack in the air hose. The air hose should not be supporting the anchor. When correctly installed, the anchor rests on the bottom of the tank with a light tension on the attached air hose at the point of the retainer clamp.

Note: Diffuser stones are to be replaced on the AP Series plants whenever the pressure reading at the Schrader valve on the discharge side of the air pump equals or exceeds a reading of 3.5 psig.

SECTION 4.0: Hydro-Action® Air Pump

4.1: Hydro-Action® air pump models are preinstalled in the OPS® (operations/control center). See section 2.0 for instructions on making electrical and airline connections to the air pump.

4.2: Located in **Hydro-Action®** O&M Manual is a copy of Operation & Maintenance Technical Manual for Hydro-Action® Air Pumps. It is recommended that you review this data, which includes important information for troubleshooting, operating, and maintaining the air pump.

SECTION 5.0: OPS® Controls/Alarm System Testing

5.1: The alarms supplied with this wastewater treatment plant provide the owner with a secure, reliable, dependable, and economical means of notification for most malfunctions of the plant that would lead to producing an unsatisfactory effluent. These alarms include notification for problems of air pump failure, aeration piping malfunctions, and high water level. These

alarms need to be inspected and tested after installation and during each plant operation and maintenance site visit. If an optional remote alarm has been installed, it should also be inspected and tested during each site visit.

5.2: To determine which model of OPS® is being used, see model number on outside of OPS® enclosure (example: OPS® model 50-20). To gain access to the electrical controls and air pump, remove the security screws holding the OPS® enclosure to the base. Remember that each model offers different control and alarm functions.

5.3: The switch indicated “normal/silence” on OPS® models 50-11, 50-20, 50-30, & 50-32 is used to test the alarms, silence an alarm condition, or is left in the normal on position. The normal position of the mode is for normal operation of the plant and silence is a mode that will disrupt the alarm horn. Move the switch to the left and hold to test the alarm. The switch will reset itself automatically.

5.4: Test the low air pressure alarm. This alarm will be activated whenever the air pump fails to provide sufficient air to the diffuser assembly. To test this alarm, remove the air tubing from the barbed fitting on the electrical enclosure. This loss of air pressure should cause the alarm to signal. Silence the alarm and return the air pressure tubing to original position. Another simple check is to turn off the air pump momentarily; the loss of air pressure should cause the alarm to signal. If the alarm is not activated whenever air pressure is low, check alarms and replace light bulb or audible horn as required.

5.5: Test the plant's high-level float switch and alarm. If the system also includes a pump/holding tank to remove effluent, the **Hydro-Action®** electrical controls can be equipped with a second high-level alarm. Test one or both of these alarms by manually raising each float and holding it up until you can see and hear the alarms.

5.6: If installing OPS® models 50-30 set the timer. The timer setting is covered in the O&M manual. Please reference the timers section of this manual for correct timer specifications.

SECTION 6.0: Start-up Procedure

6.1: Initial start-up of the AP Series WWTP is very simple. No special procedures are required for bringing the plant online. The unit should be full of water from earlier leak testing. After

installation and checkout of the component parts, all that is required for start-up is to turn on electrical power and inform the owner that the plant is operational and he or she may commence use. There is no need to seed the plant.

6.2: If the unit is to remain idle for a period of time, please inform the owner that the unit is operational and that the only requirement for starting the plant is to turn on electrical power and begin using the facilities. If any mechanical or electrical problems are experienced when attempting start-up, the owner should call the dealer for service and assistance in start-up of the plant.

SECTION 7.0: Safety

7.1: Safety is an important issue in our business since we deal with one of the more potentially health hazardous materials known: raw sewage. Domestic wastewater carries in it members of a specialized group of life known as microorganisms. Such microorganisms are bacteria, viruses, algae, actinomycetes, protozoa, fungi, rotifers, crustaceans, and other members of both the plant and animal worlds. The function of a wastewater treatment plant is to treat the water to a degree that the effluent is relatively free of pathogenic bacteria and nuisance microorganisms. Until the wastewater entering the plant has had sufficient time for treatment and disinfection, it may contain any number of the harmful organisms that cause disease.

7.2: As raw wastewater may and usually does contain some level of unsafe microorganisms, proper respect and care must be given to safety. When coming into contact with raw sewage, **do not fear** the contact, but **do take proper precautions** to avoid potential danger.

7.3: Follow these simple safety precautions whenever exposed to wastewater:

- Wear disposable rubber gloves when handling wastewater contaminated items

or chlorine tablets.

- Always wash with soap and water after handling any contaminated item. The use of good bactericide soap is strongly recommended.
- Always dispose of scum, rags, trash, debris, or soiled material in a proper waste container.
- If a wastewater spill or leak occurs in a yard, flush area with plenty of clean water and disinfect. If a spill or leak occurs in the house, clean with a dilute solution of bleach.
- Treated effluent from a **Hydro-Action®** or other treatment unit may still contain harmful microorganisms. Careful attention must be used when dealing with any form of wastewater or effluent.
- If an illness or disease is suspected to have come from exposure to sewage, get proper medical attention immediately. When proper treatment is given the remedy and cure will be rapid and less of a problem. There are some serious diseases that could be transmitted by contact with raw sewage -take the proper precautions and be safe!
- Report all accidents relating to sewage exposure to the proper supervisory personnel.

*Note: Homeowner should be advised of all safety and operation of their new Hydro-Action® system.



AK/HA Manufacturing, LLC

Installation Checklist

Hydro-action Industries' aerobic treatment systems should be serviced at least every six months per NSF requirements. Please consult the Installation Manual while performing this checklist.

- ☐ Chose site and soil condition, excavate
notes: _____
- ☐ Install gradeable material and level system
notes: _____
- ☐ Fill tanks with water and leak check while buring
notes: _____
- ☐ Connect inlet and discharge piping
notes: _____
- ☐ Install OPS as per instructions and run power conduit
notes: _____
- ☐ Install diffuser assemblies
notes: _____
- ☐ Install OPS and Tank Covers w/ supplied security screws
notes: _____
- ☐ Follow start-up procedure and educate homeowner on their system
notes: _____
- ☐ Perform system check to insure proper operation
notes: _____
- ☐ Fill out installation / warranty sheet
notes: _____
- ☐ Give copy of homeowners manual to homeowner
notes: _____
- ☐ Give homeowner copy of service contract and warranty sheet
notes: _____
- ☐ Send in installation warranty sheet to Manufacturer
notes: _____

Section 9.0 Design & System Component Prints

AP Series Residential Aerobic Treatment Units

AP500 Complete

AP600 Complete

AP750 Complete

AP Series Commercial Aerobic Treatment Units

AP1000 Complete

AP1500 Complete

Operational Control Systems (OPS)

Model 11 Gravity OPS

100L Model

150L Model

1/4R Model

3/4R Model

Model 20 On Demand

100L Model

150L Model

1/4R Model

3/4R Model

Model 30 24Hr Timed

100L Model

150L Model

1/4R Model

3/4R Model

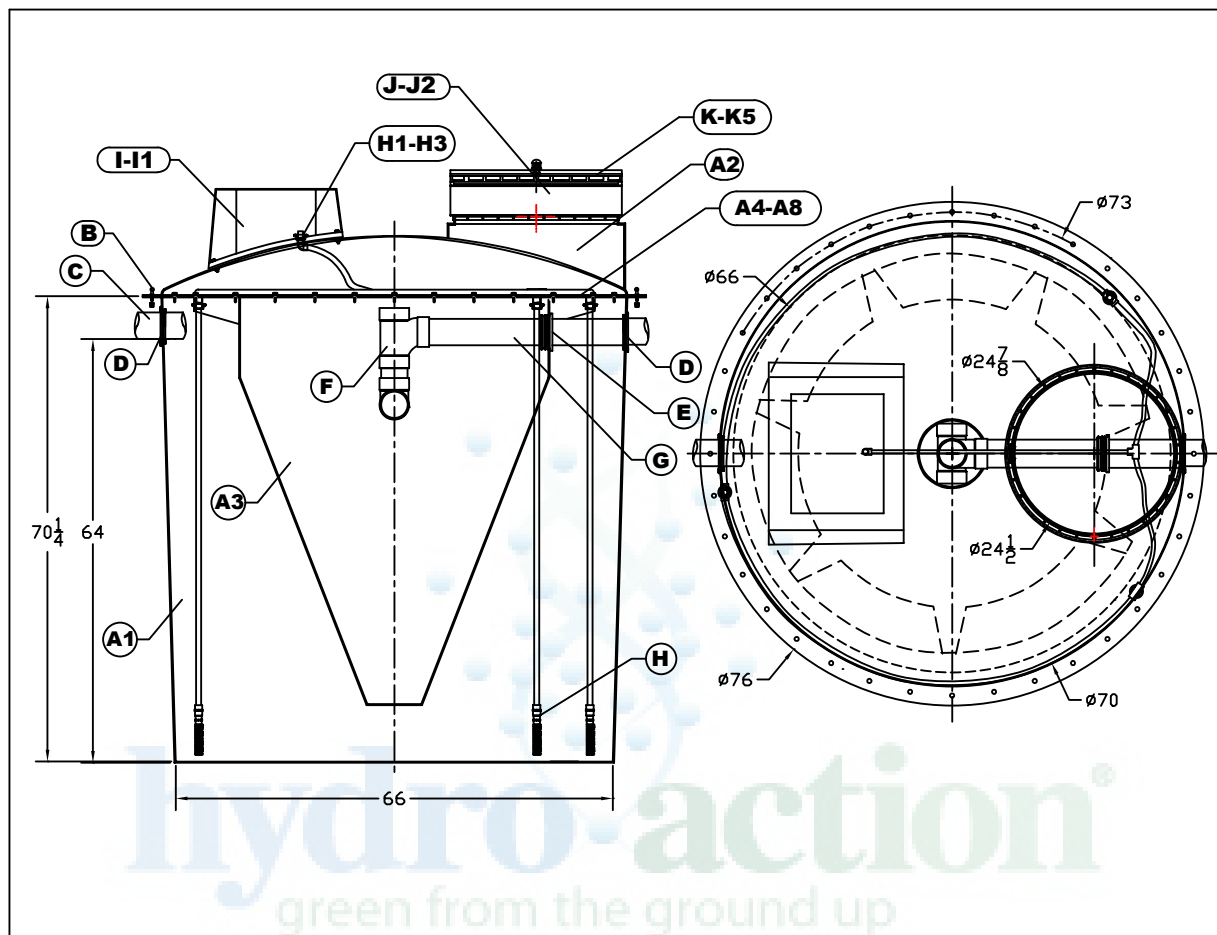
Model 32 Micro-dosed Timed

100L Model

150L Model

1/4R Model

3/4R Model



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-AP500-P	AP500, W/ PLATFORM COMPLETE	1
A1	180075	TANK, BODY AP500-P	1
A2	180080	DOME, AP500-P RTM	1
A3	240050	CDNE, POLY AP500	1
A4	200095	SCREW, 5/16" X 2" HWH SDS 410	29
A5	760068	BOLT, 3/8"-16 X 1 1/2" TAMPERPROOF	2
A6	200013	NUT, 3/8"-16 SS	2
A7	200006	WASHER, 3/8" STD SS	4
A8	160030	CONSEAL, 3/8" X 1"	1 ROLL
B	120001	ASSEMBLY, EYEBOLT	2
C	100065-35	PIPE STUB, PLUMBING & CONNECTING SCH35	1
D	240062	GROMMET, 4" ADAPT-A-FLEX SCH35	2
E	100010	GROMMET, 4" DUAL TITE	1
F	100103-35	ASSEMBLY, TEE AP SERIES OUTLET SCH35	1
G	100067-35	PIPE STUB, OUTLET AP500 SCH35	1
H	100058-3DRP	ASSEMBLY, DIFFUSER 3 DROP	1
H1	180114	PIPE, .50 PVC SCH40	(1) 5' LONG
H2	180103	ELL, .50 90° PVC SCH40	1
H3	240058	GROMMET, 1/2" ADAPT-A-FLEX	1
I	AKC10052-A	HYDRO-ACTION, PLATFORM DARK GREEN	1
I1	200094	SCREW, 1.50" X #12 SELF-TAPPING	4
J	241022	RISER, TANK 24" X 6" PL	1
J1	200059	SCREW, 1" #10 SELF-TAP PPH SS	6
J2	AKR30505	CONSEAL, 1/2" X 21'	.333
K	241024	LID, TANK RISER 24" PL	1
K1	200070	SCREW, 1 1/2" TRIGROOVE SM	4
K2	N/A	SCREW, LID (SUPPLIED W/LID)	4
K3	120000	ASSEMBLY, MUSHROOM CAP	1
K4	760050	TAG, SERIAL NUMBER AP500	1
K5	200025	RIVET, 1/8" GRIP 1/8" DIA. POP	4
	N/A	SIKAFLEX	1 TUBE
AP500 W/PLATFORM COMPLETE		DRAWN BY: A.DAVIS	
APPROVED BY:	SIGNATURE	DATE:	REV.
		1/31/13	4
		PART#	HA-AP500-P



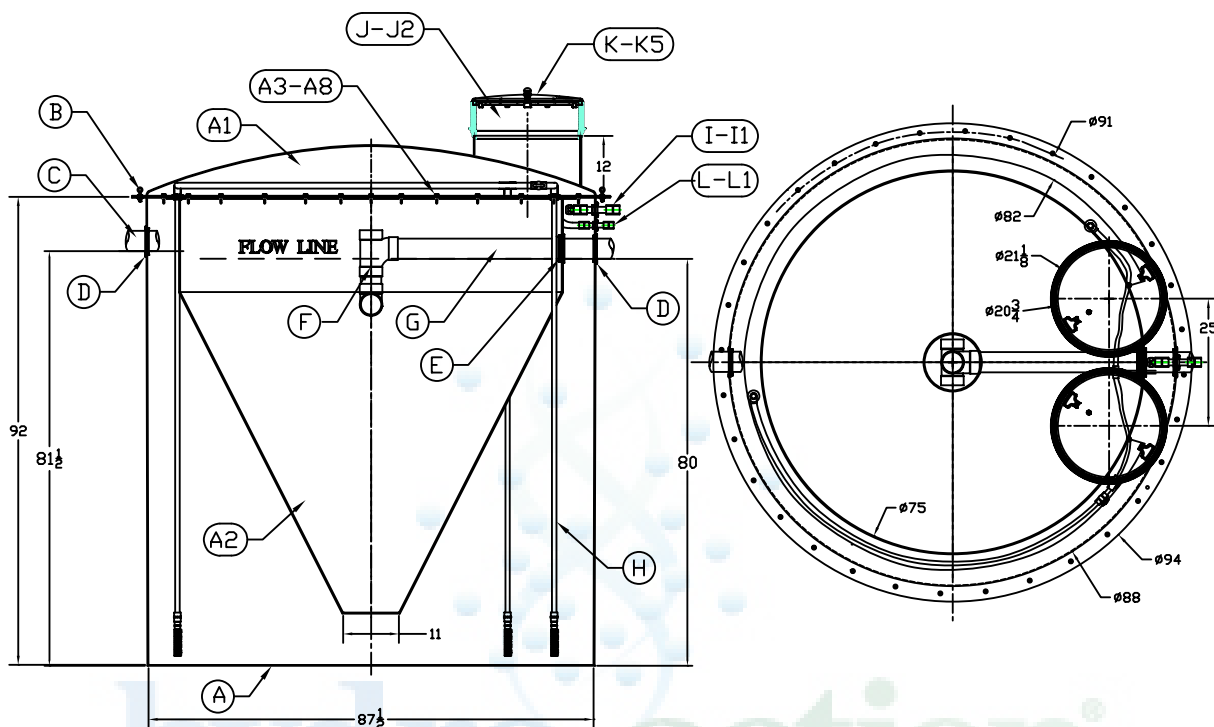
APPROVED

[illegible]

[illegible]

ITEM	P/N	DESCRIPTION	QTY:
	HA-AP1000-P	AP1000, W/ PLATFORM COMPLETE	1
A1	180038	TANK, BODY AP1000-P	1
A2	180032	DDME, AP1000-P	1
A3	180043	CONE, POLY AP1000	1
A4	200095	SCREW, 5/16" X 2" HW/ SDS 410	28
A5	760068	BOLT, 3/8"-16 X 1 1/2" TAMPERPROOF	2
A6	200013	NUT, 3/8"-16 SS	2
A7	200006	WASHER, 3/8" STD SS	2
A8	160030	CONSEAL, 3/8" X 1"	2 ROLL
B	120001	ASSEMBLY, EYEBOLT	2
C	100065-35	PIPE STUB, PLUMBING & CONNECTING SCH35	1
D	240062	GROMMET, 4" ADAPT-A-FLEX SCH35	2
E	100010	GROMMET, 4" DUAL TITE	1
F	100103-35	ASSEMBLY, TEE AP SERIES OUTLET SCH35	1
G	100070-35	PIPE STUB, OUTLET AP1000 SCH35	1
H	100058-3DRP-1000	ASSEMBLY, DIFFUSER AP1000 3 DROP	1
H1	180114	PIPE, .50 PVC SCH40	(1) 5' LONG
H2	240058	GROMMET, 1/2" ADAPT-A-FLEX	1
I	241023	RISER, TANK 20" X 6" PL	1
I1	200059	SCREW, 1" #10 SELF-TAP PPH ZINC	12
I2	AKR30505	CONSEAL, 1/2" X 21'	.667
J	241025	LID, TANK RISER 20" PL	1
J1	200070	SCREW, 1 1/2" TRIGROOVE SM	8
J2	N/A	SCREW, LID (SUPPLIED W/LID)	4
J3	120000	ASSEMBLY, MUSHROOM CAP	1
J4	760050	TAG, SERIAL NUMBER AP1000	1
J5	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
K	100075	ASSEMBLY, FLOAT COMMERCIAL	1
K1	240058	GROMMET, 1/2" ADAPT-A-FLEX	1
L	100080	ASSEMBLY, COMMERCIAL AIRLINE	1
L1	240058	GROMMET, 1/2" ADAPT-A-FLEX	1
	N/A	SKAFLEX	1/4 TUBE





BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-AP1500G	AP1500G, SYSTEM COMPLETE	1
A	180040	TANK, BODY AP1500	1
A1	180053	DOM, AP1500	1
A2	180045	CON, FIBERGLASS AP1500G	1
A3	200095	SCREW, 5/16" X 2" HWH SDS 410	30
A4	760068	BOLT, 3/8"-16 X 1 1/2" TAMPERPROOF	2
A5	200013	NUT, 3/8"-16 SS	2
A6	200006	WASHER, 3/8" STD SS	2
A8	160032	CONSEAL, 3/8" X 1 1/2" X 8"	3 1/4 ROLLS
B	120001	ASSEMBLY, EYEBOLT	2
C	100065-35	PIPE STUB, PLUMBING & CONNECTING SCH35	1
D	240062	GROMMET, 4" ADAPT-A-FLEX SCH35	2
E	100010	GROMMET, 4" DUALTITE	1
F	100103-35	ASSEMBLY, TEE AP SERIES OUTLET SCH35	1
G	100073-35	PIPE STUB, OUTLET AP1500 SCH35	1
H	100058-3DRP	ASSEMBLY, DIFFUSER AP1500 3 DROP	1
I	100075	ASSEMBLY, FLOAT COMMERCIAL	1
I1	240058	GROMMET, 1/2" ADAPT-A-FLEX	1
J	241023	RISER, TANK 20" X 6" PL	2
J1	200059	SCREW, 1" #10 SELF-TAP PPH ZINC	16
J2	AKR30505	CONSEAL, 1/2" X 21"	1.334
K	241025	LID, TANK RISER 20" PL	2
K1	200070	SCREW, 1 1/2" TRIGROOVE SM	8
K2	N/A	SCREW, LID (SUPPLIED W/LID)	8
K3	120000	ASSEMBLY, MUSHROOM CAP	2
K4	160010	TAG, SERIAL NUMBER AP1500	1
K5	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
L	100080	ASSEMBLY, COMMERCIAL AIRLINE	1
L1	240058	GROMMET, 1/2" ADAPT-A-FLEX	1
	N/A	SIKAFLEX	1/4 TUBE
	N/A	RISER STICKER	1
	N/A	CHECK PRODUCT STICKER	1



AP1500G, SYSTEM COMPLETE

DRAWN BY: A.DAVIS

APPROVED BY:

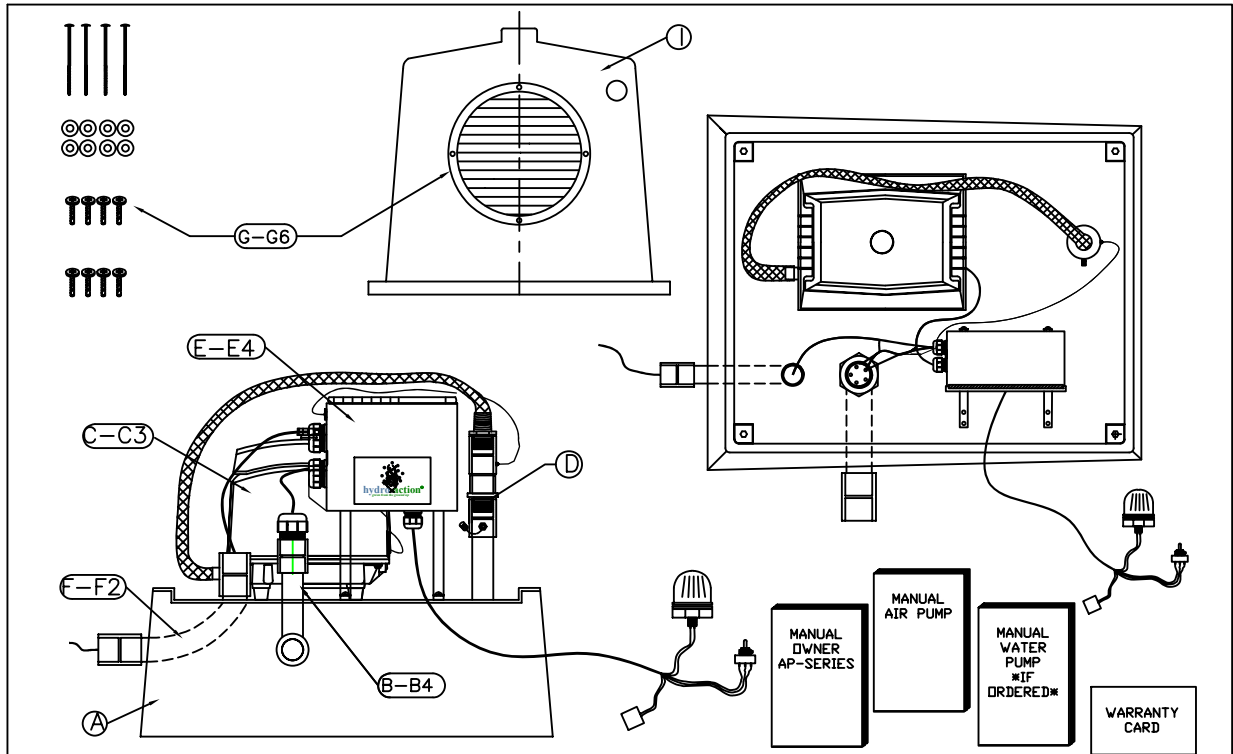
SIGNATURE

DATE: 09/13/13

REV. 7

PART#

HA-AP1500G



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-11-L-100	OPS, EC50-11-LINEAR 100	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (XS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	100122	PUMP, AIR LINEAR 100	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 3 1/2" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	2
C3	200051	WASHER, 1" x #10 FENDER	2
D	120129-L	KIT, AIR PRESSURE SWITCH LINEAR	1
E	122126	PANEL, 50-11	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1



OPS, EC50-11-LINEAR 100

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

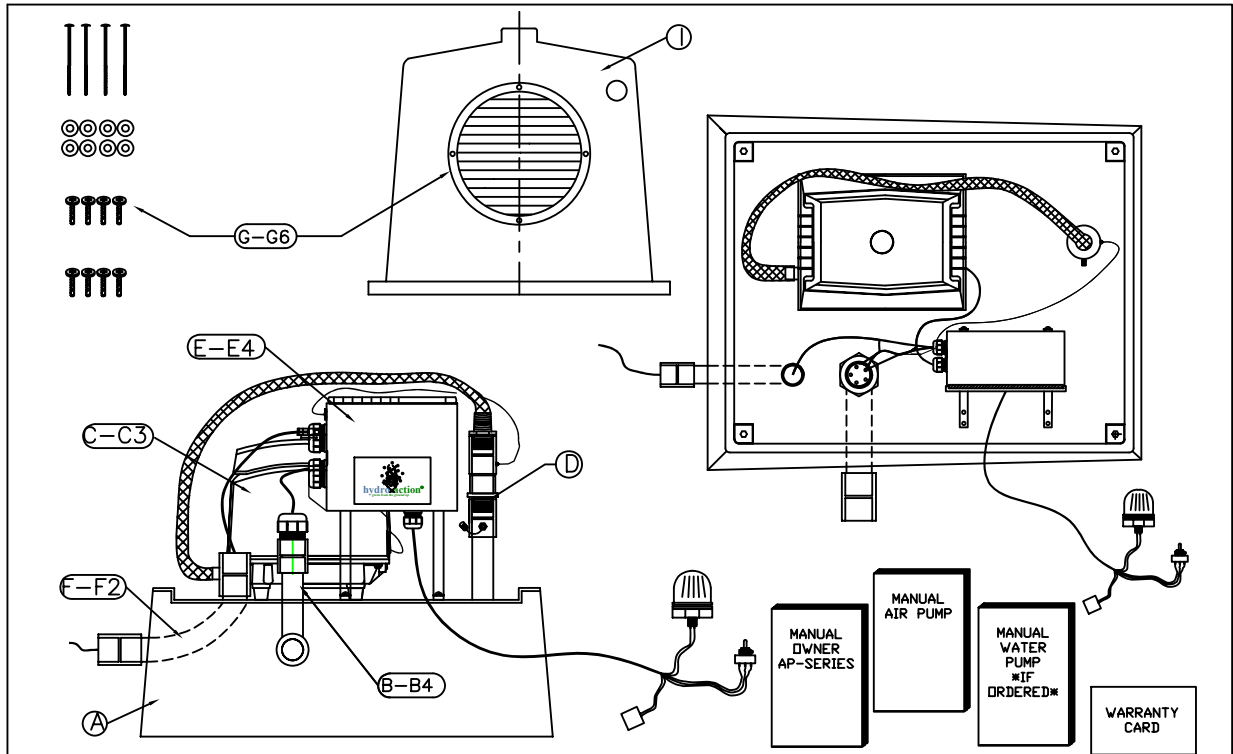
SIGNATURE

DATE: 8/20/10

REV. 1

PART#

HA-EC50-11-L-100



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-11-L-150	OPS, EC50-11-LINEAR 150	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (XS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	100124	PUMP, AIR LINEAR 150	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 3 1/2" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	2
C3	200051	WASHER, 1" X #10 FENDER	2
D	120129-L COMM	KIT, AIR PRESSURE SWITCH 3/4" COMMERCIAL	1
E	122126	PANEL, 50-11	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1



OPS, EC50-11-LINEAR 150

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

SIGNATURE

DATE: 8/20/10

REV. 1

PART#

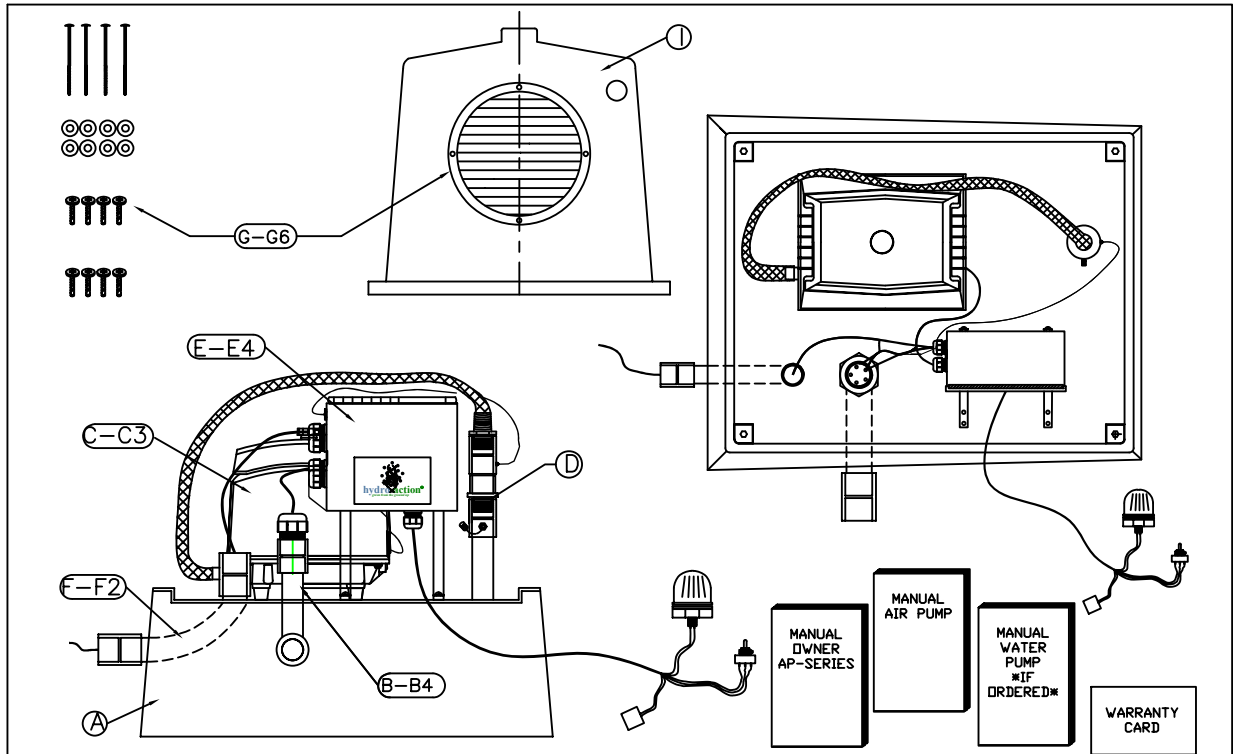
HA-EC50-11-L-150



	OPS, EC50-11-RV-.25				DRAWN BY: A.DAVIS
	APPROVED BY: STEVE DAVIS	SIGNATURE	DATE: 8/20/10	REV. 1	PART# HA-EC50-11-RV-.25



	OPS, EC50-11-RV-.75 COMMERCIAL				DRAWN BY: A.DAVIS
	APPROVED BY: STEVE DAVIS	SIGNATURE	DATE: 8/20/10	REV. 1	PART# HA-EC50-11-RV-.75



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-20-L-100	OPS, EC50-20-LINEAR 100	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (XS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	100122	PUMP, AIR LINEAR 100	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 3 1/2" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	2
C3	200051	WASHER, 1" x #10 FENDER	2
D	120129-L	KIT, AIR PRESSURE SWITCH LINEAR	1
E	122118	PANEL, 50-20	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1



OPS, EC50-20-LINEAR 100

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

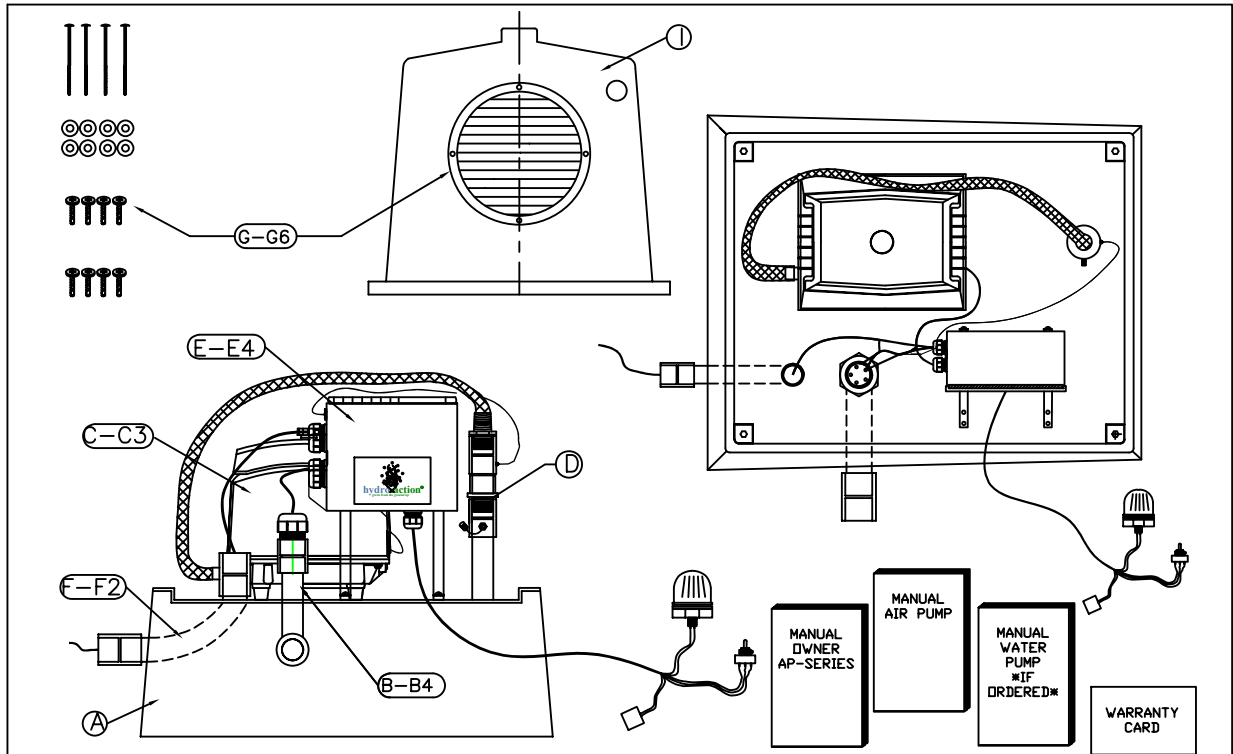
SIGNATURE

DATE: 8/20/10

REV. 1

PART#

HA-EC50-20-L-100



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-20-L-150	OPS, EC50-20-LINEAR 150	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (SXS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	100124	PUMP, AIR LINEAR 150	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 3 1/2" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	2
C3	200051	WASHER, 1" x #10 FENDER	2
D	120129-L COMM	KIT, AIR PRESSURE SWITCH 3/4" COMMERCIAL	1
E	122118	PANEL, 50-20	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1



OPS, EC50-20-LINEAR 150

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

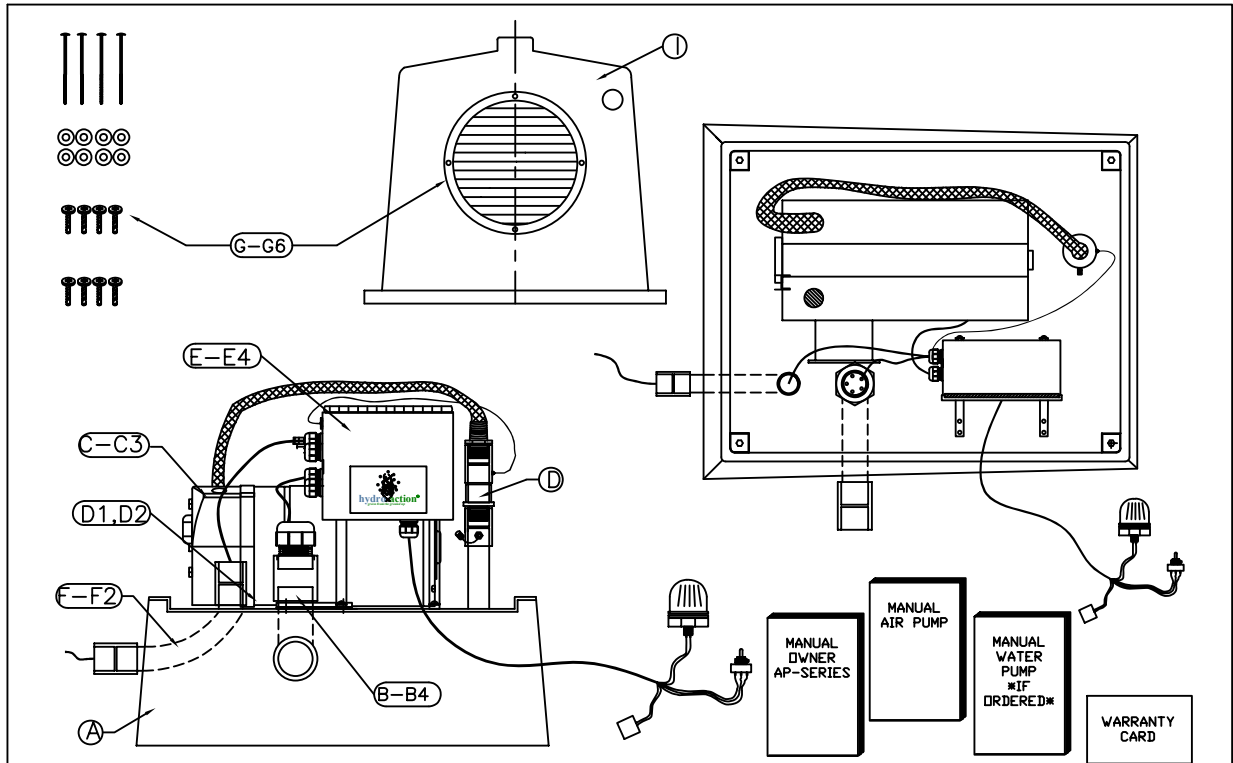
SIGNATURE

DATE: 8/20/10

REV. 1

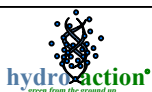
PART#

HA-EC50-20-L-150



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-20-RV-.25	OPS, EC50-20-RV-.25	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (SXS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	121068	PUMP, AIR ROTARY VANE 1/4HP	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 17" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
C3	200051	WASHER, 1" x #10 FENDER	4
D	120139-RV	KIT, AIR PRESSURE SWITCH 1/2" STD RV	1
E	122118	PANEL, 50-20	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1



OPS, EC50-20-RV-.25

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

SIGNATURE

DATE: 8/20/10

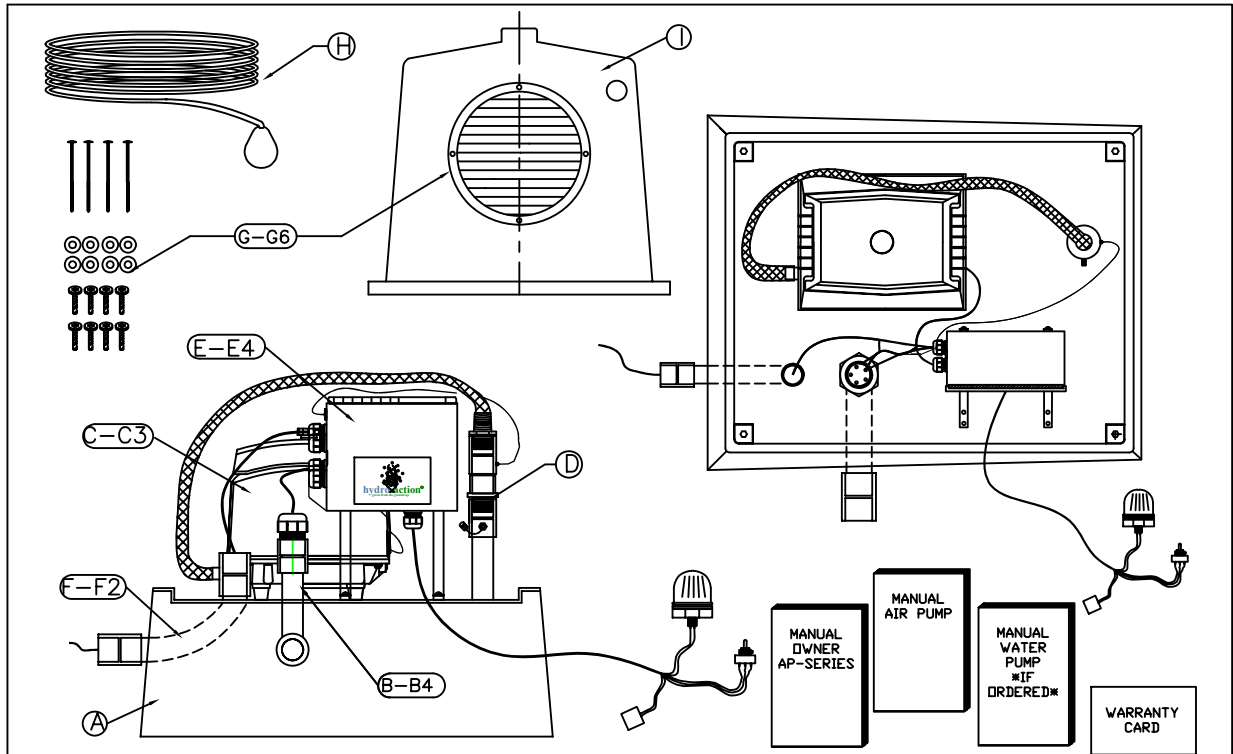
REV. 1

PART#

HA-EC50-20-RV-.25



	OPS, EC50-20-RV-.75 COMMERCIAL				DRAWN BY: A.DAVIS
	APPROVED BY: STEVE DAVIS	SIGNATURE	DATE: 8/20/10	REV. 1	PART# HA-EC50-20-RV-.75



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-30-L-100	OPS, EC50-30-LINEAR 100	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (XS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	100122	PUMP, AIR LINEAR 100	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 3 1/2" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	2
C3	200051	WASHER, 1" x #10 FENDER	2
D	120129-L	KIT, AIR PRESSURE SWITCH LINEAR	1
E	122122	PANEL, 50-30	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
H	120046	SWITCH, FLOAT JMN 25' YELLOW *** (INSTALLED)***	1
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1



OPS, EC50-30-LINEAR 100

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

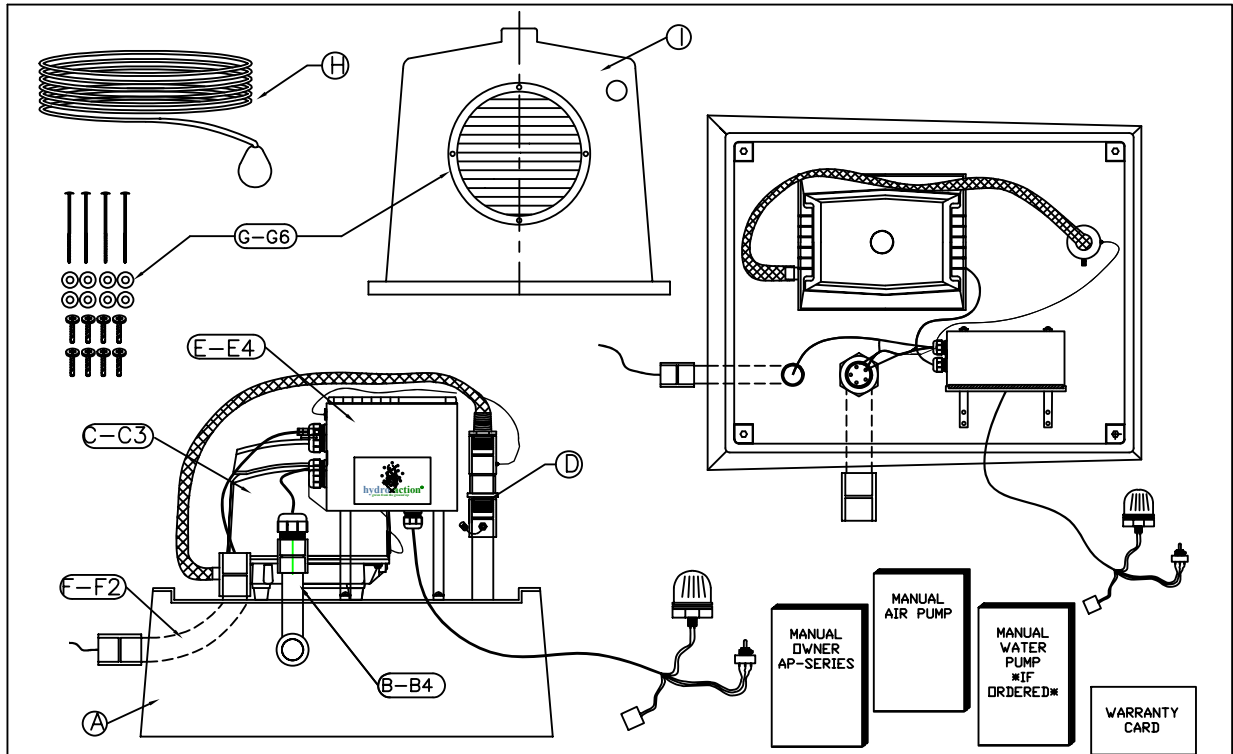
SIGNATURE

DATE: 8/20/10

REV. 1

PART#

HA-EC50-30-L-100



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-30-L-150	OPS, EC50-30-LINEAR 150	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (XS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	100124	PUMP, AIR LINEAR 150	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 3 1/2" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	2
C3	200051	WASHER, 1" X #10 FENDER	2
D	120129-L COMM	KIT, AIR PRESSURE SWITCH 3/4" COMMERCIAL	1
E	122122	PANEL, 50-30	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
H	120046	SWITCH, FLOAT JMN 25' YELLOW *** (INSTALLED)***	1
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1



OPS, EC50-30-LINEAR 150

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

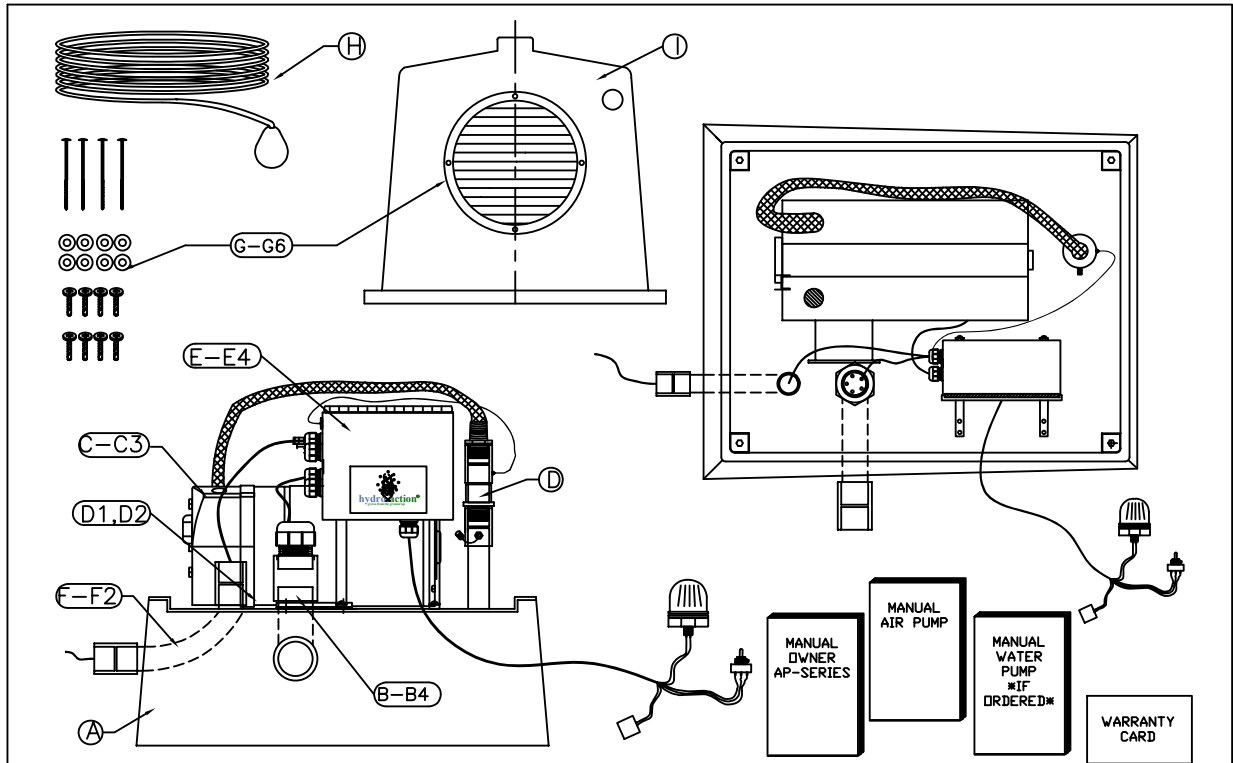
SIGNATURE

DATE: 8/20/10

REV. 1

PART#

HA-EC50-30-L-150



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-30-RV-.25	OPS, EC50-30-RV-.25	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (XS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	121068	PUMP, AIR ROTARY VANE 1/4HP	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 17" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
C3	200051	WASHER, 1" x #10 FENDER	4
D	120139-RV	KIT, AIR PRESSURE SWITCH 1/2" STD RV	1
E	122122	PANEL, 50-30	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
H	120046	SWITCH, FLOAT JMN 25' YELLOW *** (INSTALLED)***	1
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1
			0



OPS, EC50-30-RV-.25

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

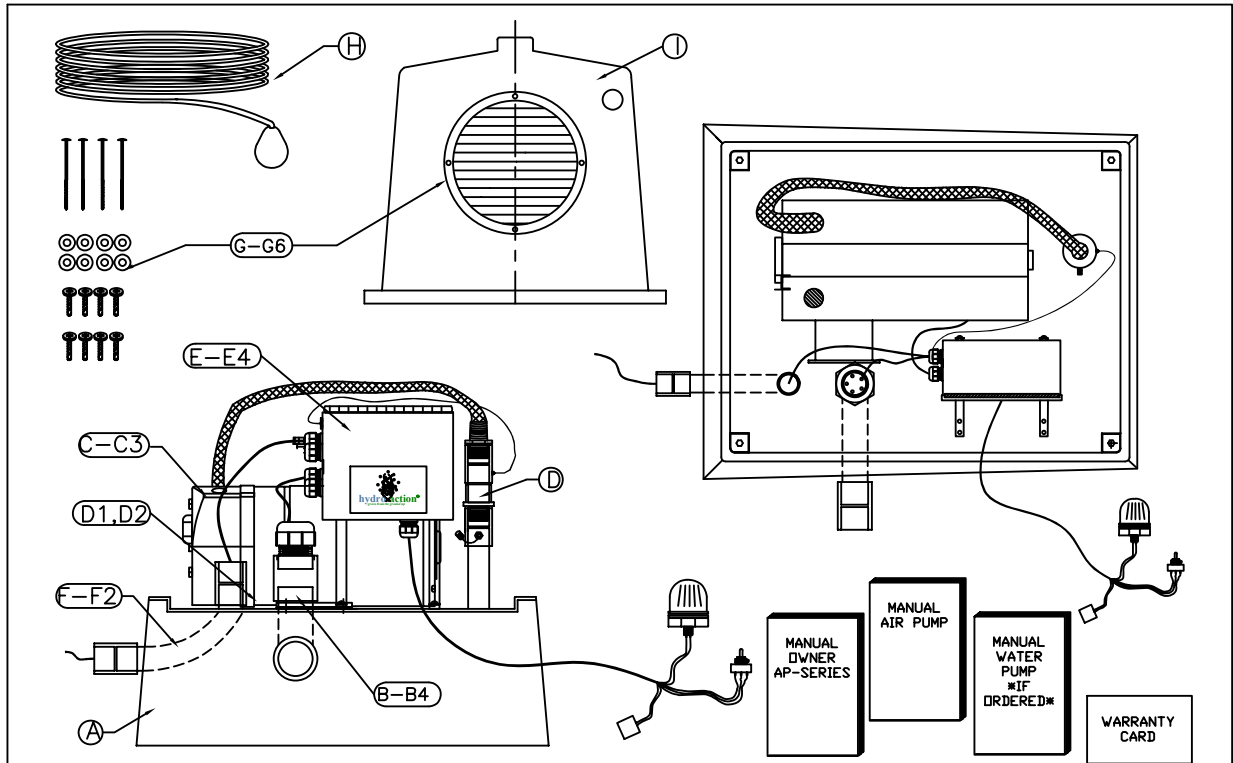
SIGNATURE

DATE: 8/20/10

REV. 1

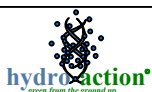
PART#

HA-EC50-30-RV-.25



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-30-RV-.75	OPS, EC50-30-RV-.75 COMMERCIAL	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (SXS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	121100	PUMP, AIR ROTARY VANE 3/4HP	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 21' INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
C3	200051	WASHER, 1" x #10 FENDER	4
D	120132-RV	KIT, AIR PRESSURE SWITCH COMMERCIAL RV	1
E	122122	PANEL, 50-30	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
H	120046	SWITCH, FLOAT JMN 25' YELLOW *** (INSTALLED)***	1
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1
			0



OPS, EC50-30-RV-.75 COMMERCIAL

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

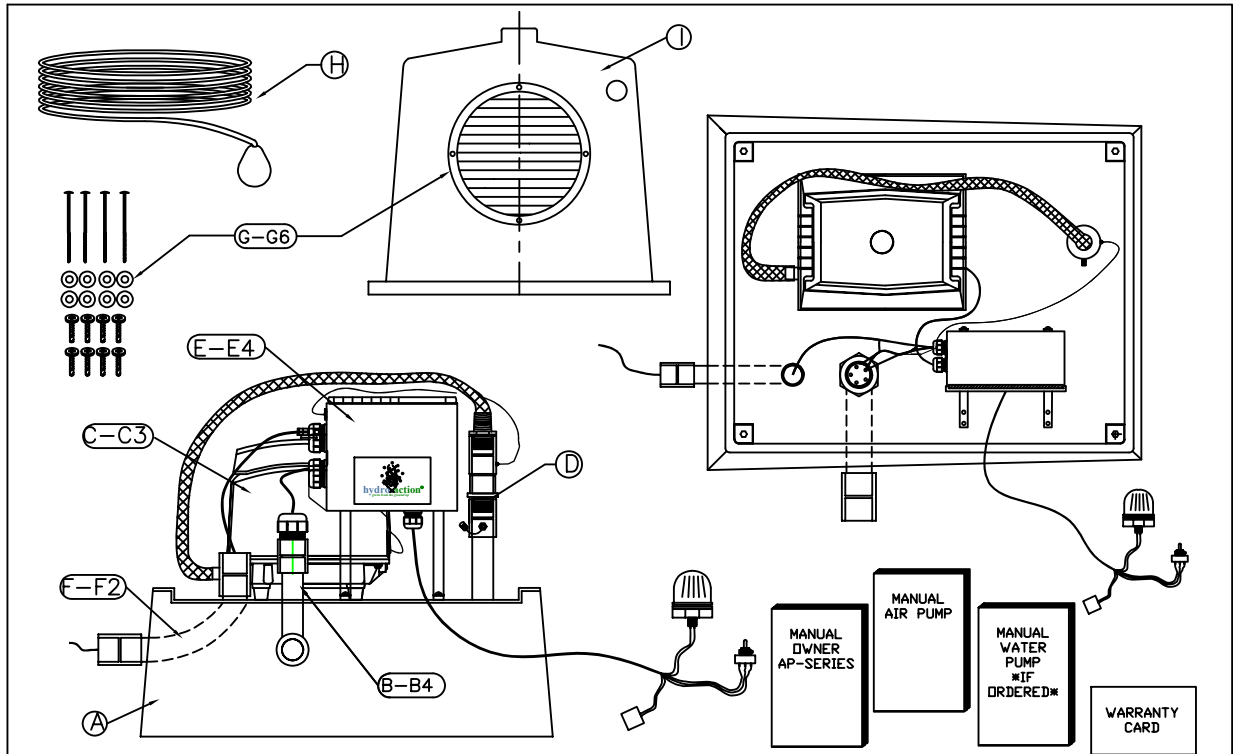
SIGNATURE

DATE: 8/20/10

REV. 1

PART#

HA-EC50-30-RV-.75



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-32-L-100	OPS, EC50-32-LINEAR 100	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (XS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	100122	PUMP, AIR LINEAR 100	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 3 1/2" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	2
C3	200051	WASHER, 1" x #10 FENDER	2
D	120129-L	KIT, AIR PRESSURE SWITCH LINEAR	1
E	122124	PANEL, 50-32	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
H	120046	SWITCH, FLOAT JMN 25' YELLOW *** (INSTALLED)***	1
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1



OPS, EC50-32-LINEAR 100

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

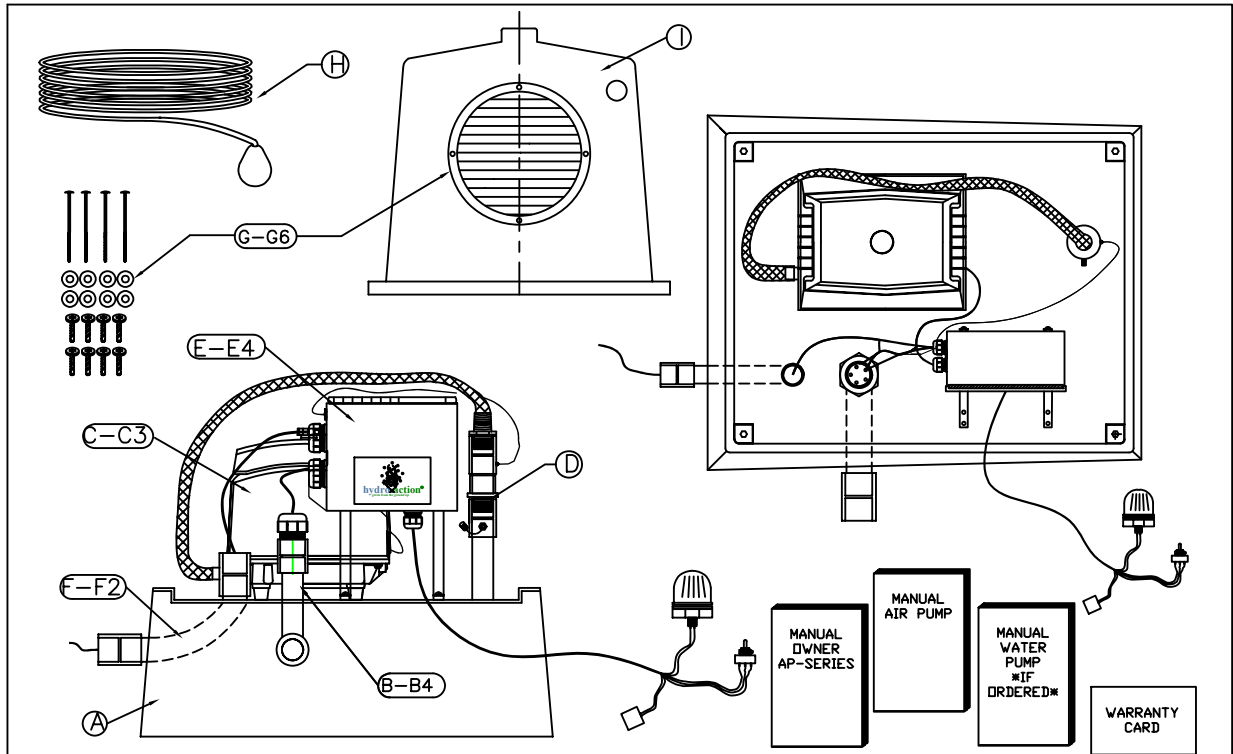
SIGNATURE

DATE: 8/20/10

REV. 1

PART#

HA-EC50-32-L-100



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-32-L-150	OPS, EC50-32-LINEAR 150	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (XS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	100124	PUMP, AIR LINEAR 150	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 3 1/2" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	2
C3	200051	WASHER, 1" x #10 FENDER	2
D	120129-L COMM	KIT, AIR PRESSURE SWITCH 3/4" COMMERCIAL	1
E	122124	PANEL, 50-32	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
H	120046	SWITCH, FLOAT JMN 25' YELLOW *** (INSTALLED)***	1
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1



OPS, EC50-32-LINEAR 150

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

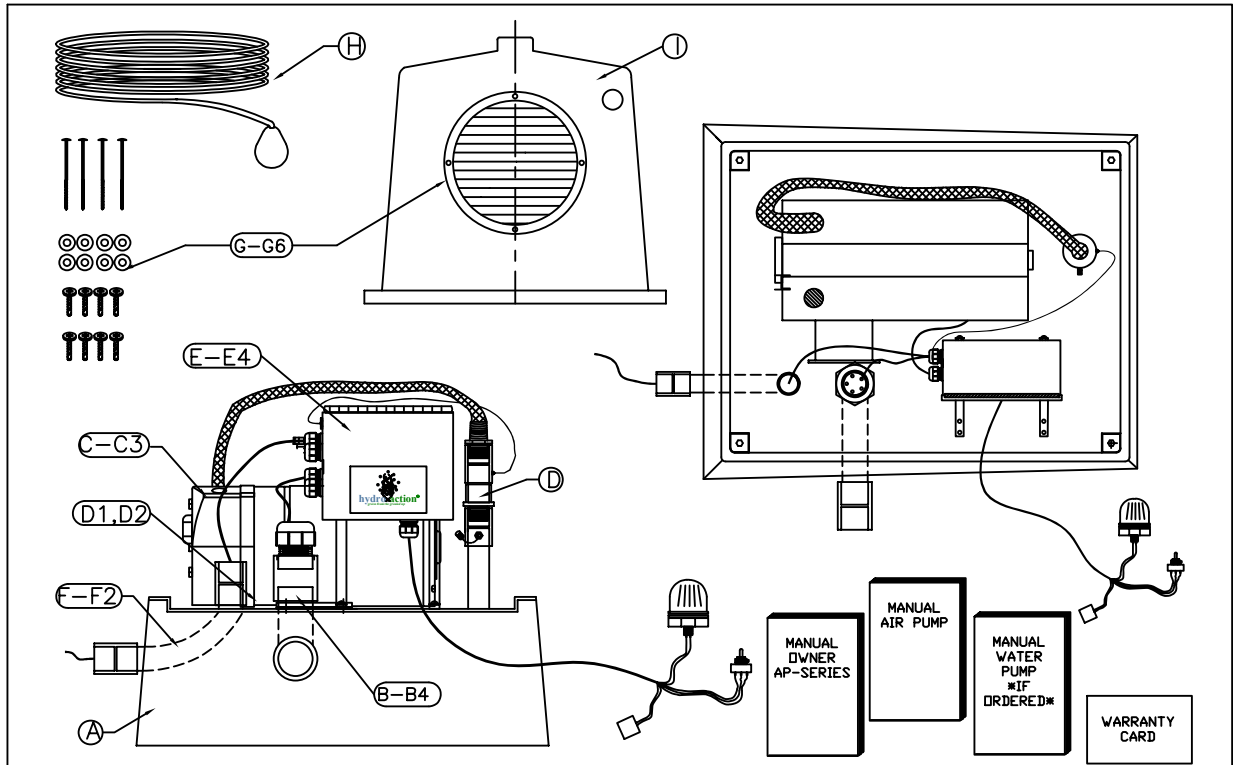
SIGNATURE

DATE: 8/20/10

REV. 1

PART#

HA-EC50-32-L-150



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-32-RV-.25	OPS, EC50-32-RV-.25	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (XS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	121068	PUMP, AIR ROTARY VANE 1/4HP	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 17" INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
C3	200051	WASHER, 1" x #10 FENDER	4
D	120139-RV	KIT, AIR PRESSURE SWITCH 1/2" STD RV	1
E	120106	PANEL, 50-32	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
H	120046	SWITCH, FLOAT JMN 25' YELLOW *** (INSTALLED)***	1
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1
			0



OPS, EC50-32-RV-.25

DRAWN BY: A.DAVIS

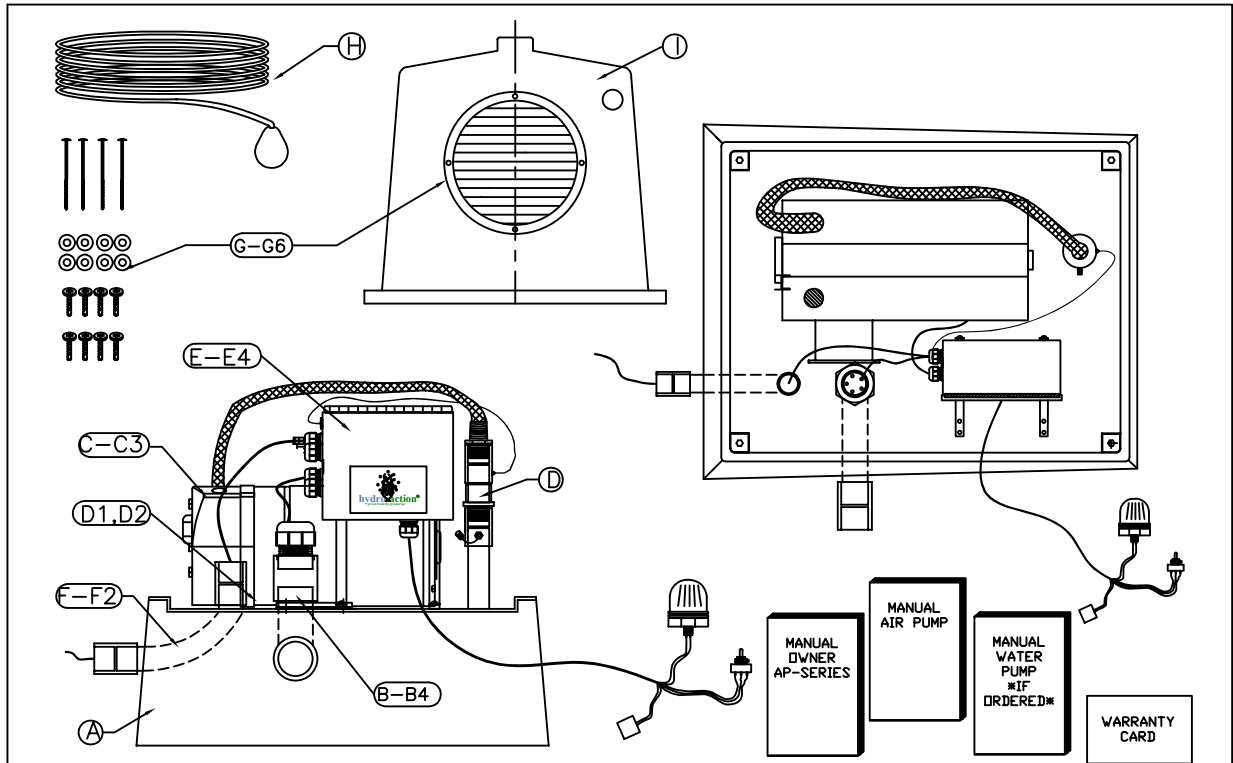
APPROVED BY: STEVE DAVIS

SIGNATURE

DATE: 8/20/10

REV. 1

PART#
HA-EC50-32-RV-.25



BILL OF MATERIALS

ITEM	P/N	DESCRIPTION	QTY:
	HA-EC50-32-RV-.75	OPS, EC50-32-RV-.75 COMMERCIAL	1
A	240026-GREEN	BASE, OPS 6" PLATFORM RISER- GREEN	1
B	200033	ASSEMBLY, CONDUIT 1 1/4"	1
B1	180129	ADAPTER, FEMALE 1-1/4" PVC (TXS)	1
B2	700039	COUPLING, 1-1/4" CONDUIT PVC (SXS)	1
B3	180130	ELBOW, 1.25 SWEEPING PVC CONDUIT SCH80	1
B4	240053	FITTING, 1-1/4 (6) HOLE CORD GRIP	1
C	121100	PUMP, AIR ROTARY VANE 3/4HP	1
C1	200067	STRAPPING, 3/4" X 10'	(2) 21' INCHES
C2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
C3	200051	WASHER, 1" x #10 FENDER	4
D	120132-RV	KIT, AIR PRESSURE SWITCH COMMERCIAL RV	1
E	120106	PANEL, 50-32	1
E1	200116	BRACKET, 5" X 11" SLOTTED	2
E2	200059	SCREW, 1" #10 SELF TAP PPH ZINC	4
E3	200102	SCREW, THUMB 1/4"-20 X 3/8"	2
E4	200056	WASHER, 5/16" BONDED SS	2
F	200050	ASSEMBLY, CONDUIT OPS POWER SUPPLY	1
F1	100213	PIPE, 3/4" CONDUIT BEND	(1) 10 1/8" LONG
F2	700036	COUPLING, 3/4" CONDUIT	2
G	HA-240027-H-GREEN	COVER, OPS & AIR PUMP KIT W/ HOLES	1
G1	200025	RIVET, 1/8" GRIP 1/8" DIA. PDP	4
G2	760059	TAG, NORMAL SILENCE OPS	1
G3	200036	SCREW, 7" #12 ROOF GRIP	4
G4	200082	WASHER, #10 COMMON FLAT SS	4
G5	200069	SCREW, 1/2" #10-24 TRIGROOVE	4
G6	200051	WASHER, 1" X #10 FENDER	4
H	120046	SWITCH, FLOAT JMN 25' YELLOW *** (INSTALLED)***	1
		WARRANTY CARD W/ SALES ORDER	1
		OWNERS MANUAL	1
		AIR PUMP MANUAL	1
		WATER PUMP MANUAL (IF ORDERED)	1
			0



OPS, EC50-32-RV-.75 COMMERCIAL

DRAWN BY: A.DAVIS

APPROVED BY: STEVE DAVIS

SIGNATURE

DATE: 8/20/10

REV. 1

PART#
HA-EC50-32-RV-.75

Section 10.0 Electrical Controls Schematics

Rhombus Panels: Used prior to '08 (No longer use nor have parts available)

Model 11 Electrical Controls Schematics.....EC-11 / CP-11

Model 20 Electrical Controls Schematics.....EC-20 / CP-20

Model 30 Electrical Controls Schematics.....EC-30 / CP-30

Model 32 Electrical Controls Schematics.....EC-32 / CP-32

SPI Panels: Used '08 to Present

Model 11 Electrical Controls Schematics.....EC-11 / CP-11

Model 20 Electrical Controls Schematics.....EC-20 / CP-20

Model 30 Electrical Controls Schematics.....EC-30 / CP-30

Model 32 Electrical Controls Schematics.....EC-32 / CP-32

OEC Panels: Used '09 to Present

Model 11 Electrical Controls Schematics.....EC-11 / CP-11

Model 20 Electrical Controls Schematics.....EC-20 / CP-20

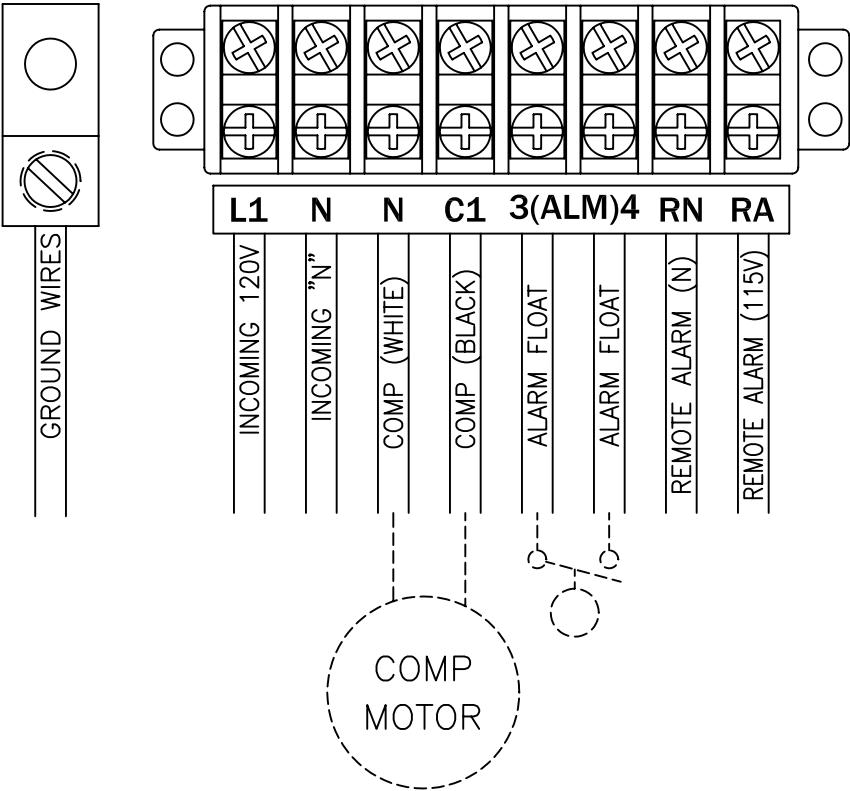
Model 30 Electrical Controls Schematics.....EC-30 / CP-30

Model 32 Electrical Controls Schematics.....EC-32 / CP-32

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.

HYDRO-ACTION

CONNECTION
DIAGRAM
EC-11 & CP-11
ALARM PANEL



ALL INFORMATION CONTAINED IN THIS DRAWING IS
CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS INC.

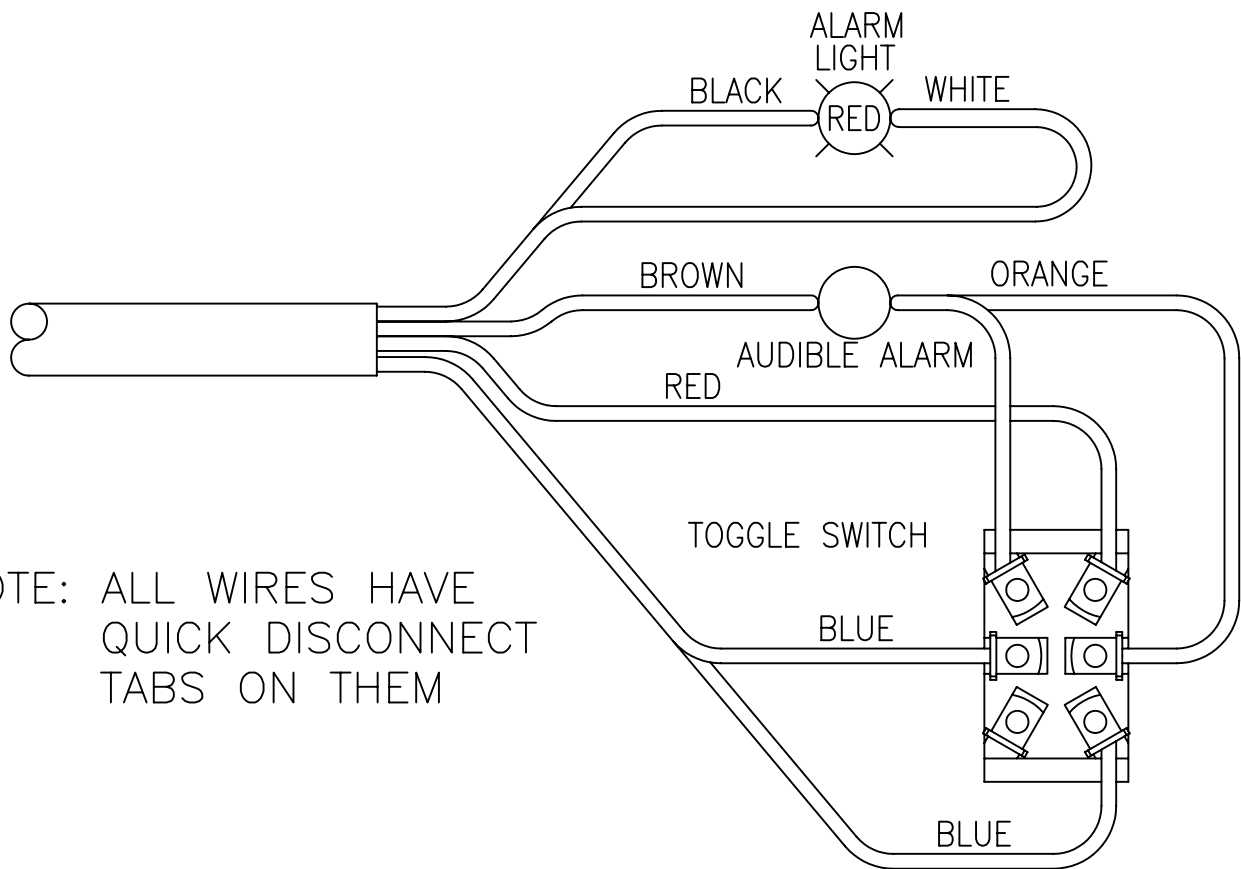


CHANGES		TOLERANCES	DRAWN BY	DATE	POWER CONNECTION DIAGRAM	
F		DECIMALS .xxx = ±.005 .xx = ±.010 FRACTIONAL x/x = ±.1/64 ANGLES x° = ±1/2°	D. MIDDLETON	5/20/04		
E			MATERIAL SPECIFICATION: AS NOTED		SCALE: PART NO.	
D					FULL	EC-11/CP-11
C						
B						
A						

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.

HYDRO-ACTION

CONNECTION DIAGRAM EC-11 EXTERNAL COMPONENTS



NOTE: ALL WIRES HAVE
QUICK DISCONNECT
TABS ON THEM

ALL INFORMATION CONTAINED IN THIS DRAWING IS
CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS INC.

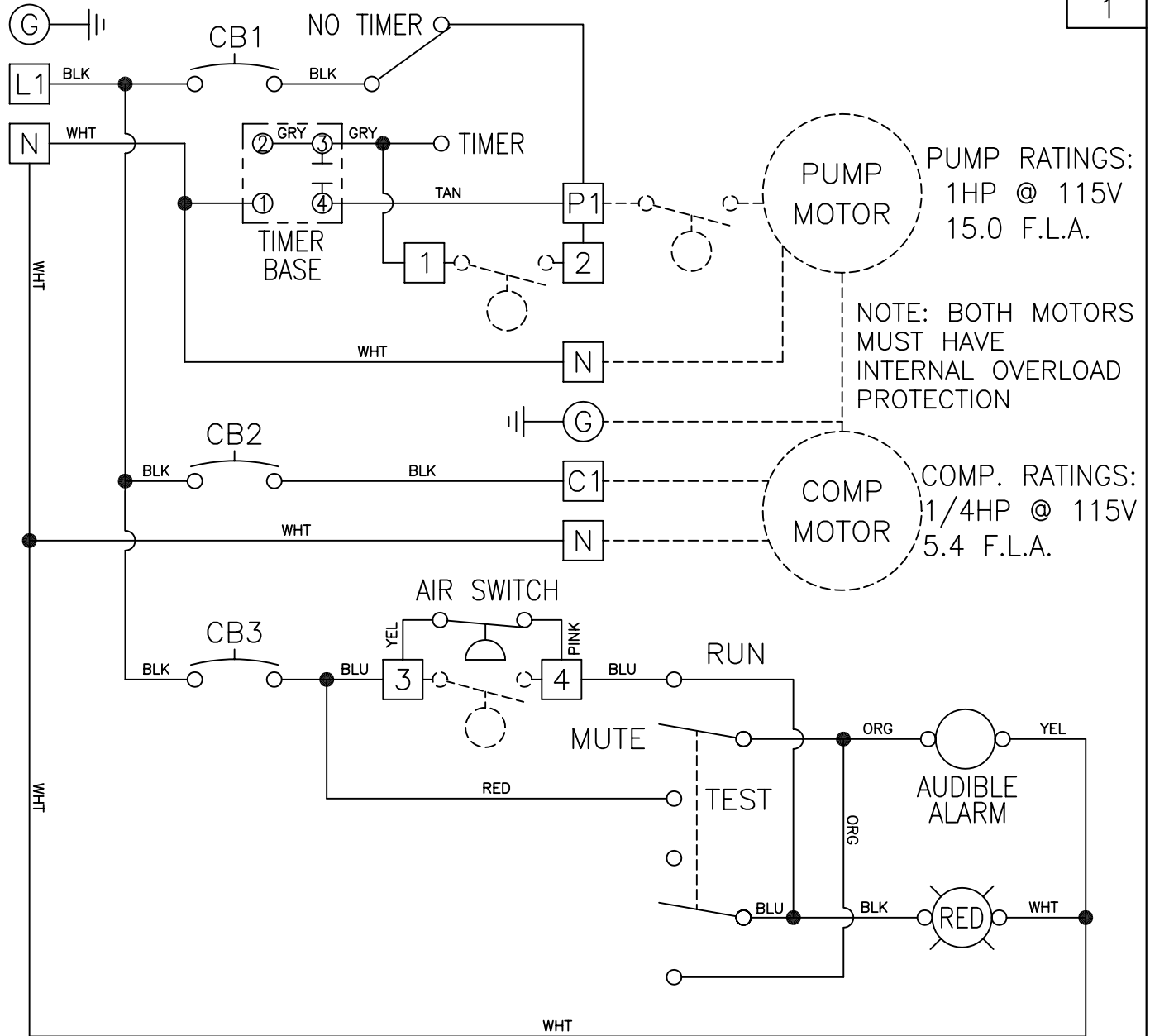
SPI/BIO
Wastewater Technologies

CHANGES		TOLERANCES	DRAWN BY	DATE	POWER CONNECTION DIAGRAM	
F		DECIMALS .XXX = ± 0.005 .XX = ± 0.010 FRACTIONAL X/X = $\pm 1/64$ ANGLES X° = $\pm 1/2^\circ$	D. MIDDLETON	5/20/04		
E			MATERIAL SPECIFICATION: AS NOTED		SCALE:	PART NO.
D					FULL	EC-11/CP-11
C						
B						
A						

PUMP/COMPRESSOR POWER CIRCUIT 115V – 1PH

HYDRO—ACTION

PAGE
1



NOTES: MAIN PANEL DISCONNECT MUST BE PROVIDED BY INSTALLER.
DASHED LINES INDICATE ITEMS NOT CONTAINED IN THE PANEL.
FIELD WIRING MUST BE A MINIMUM OF 60°C COPPER WIRE.
REQUIRED TORQUE FOR TERMINAL BLOCK SCREWS IS 9 in.-lbs.
ALL INFORMATION CONTAINED IN THIS DRAWING IS
CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS, INC.

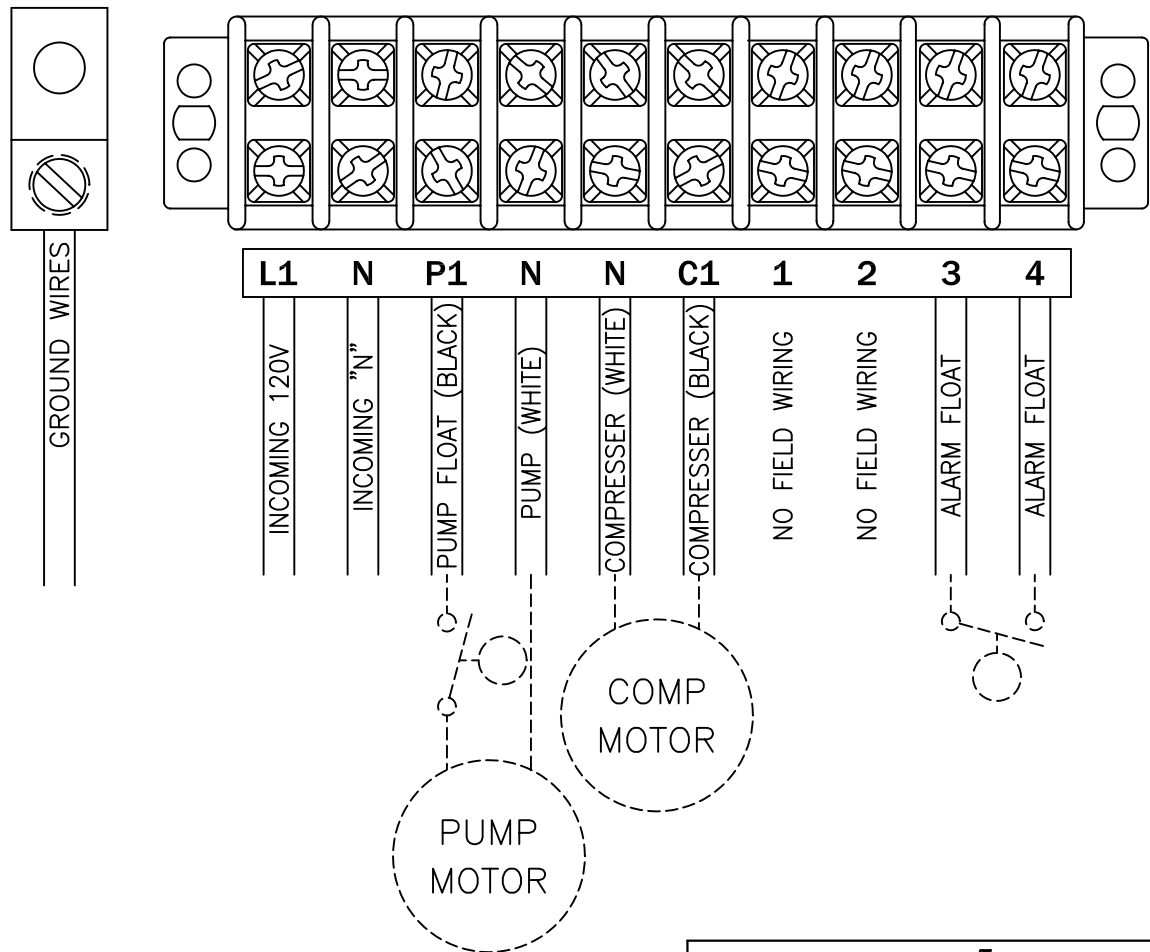
SPI/BIO
Wastewater Technologies

CHANGES		TOLERANCES	DRAWN BY	DATE	SCHEMATIC, ELECTRICAL W/TIMER & AIR SWITCH	
F		DECIMALS	D. MIDDLETON	06/20/04	SCALE: PART NO. FULL CP-20/EC-20	
E		.XXX = ±.005 .XX = ±.010	MATERIAL SPECIFICATION: AS NOTED			
D		FRACTIONAL				
C		X/X = ±.1/64				
B		ANGLES				
A		X° = ±1/2°				

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.

HYDRO-ACTION

CONNECTION DIAGRAM FOR HYDRO-ACTION CP-20 & EC-20 CONTROL PANEL



ALL INFORMATION CONTAINED IN THIS DRAWING IS
CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS INC.

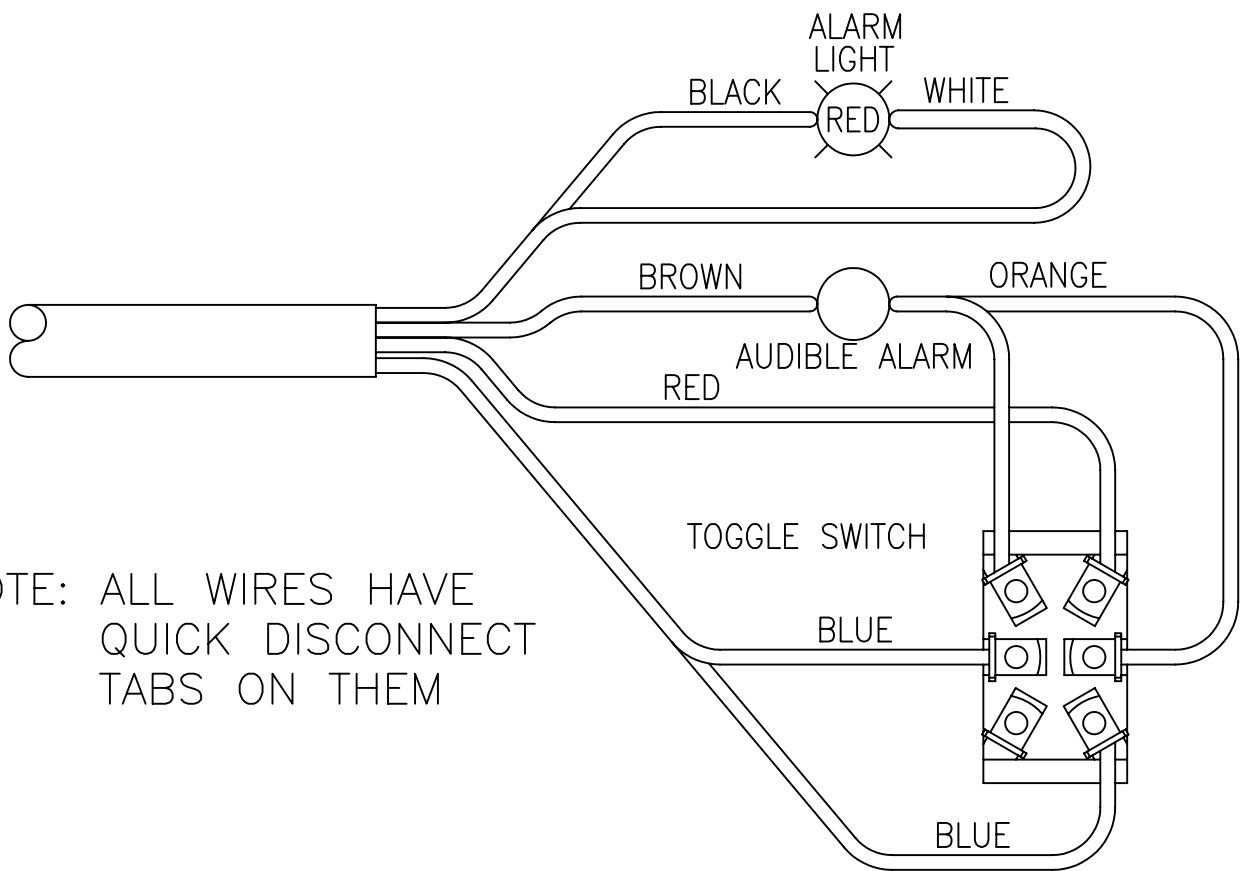
SPI/BIO
Wastewater Technologies

CHANGES	TOLERANCES	DRAWN BY	DATE	POWER CONNECTION DIAGRAM	
F	DECIMALS .xxx = ± 0.005 .xx = ± 0.010 FRACTIONAL x/x = $\pm 1/64$ ANGLES x° = $\pm 1/2^\circ$	D. MIDDLETON	12/15/04		
E		MATERIAL SPECIFICATION: AS NOTED		SCALE: PART NO.	
D				FULL	
C				CP-20/EC-20	
B					
A					

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.

HYDRO-ACTION

CONNECTION DIAGRAM EC-20 EXTERNAL COMPONENTS



NOTE: ALL WIRES HAVE
QUICK DISCONNECT
TABS ON THEM

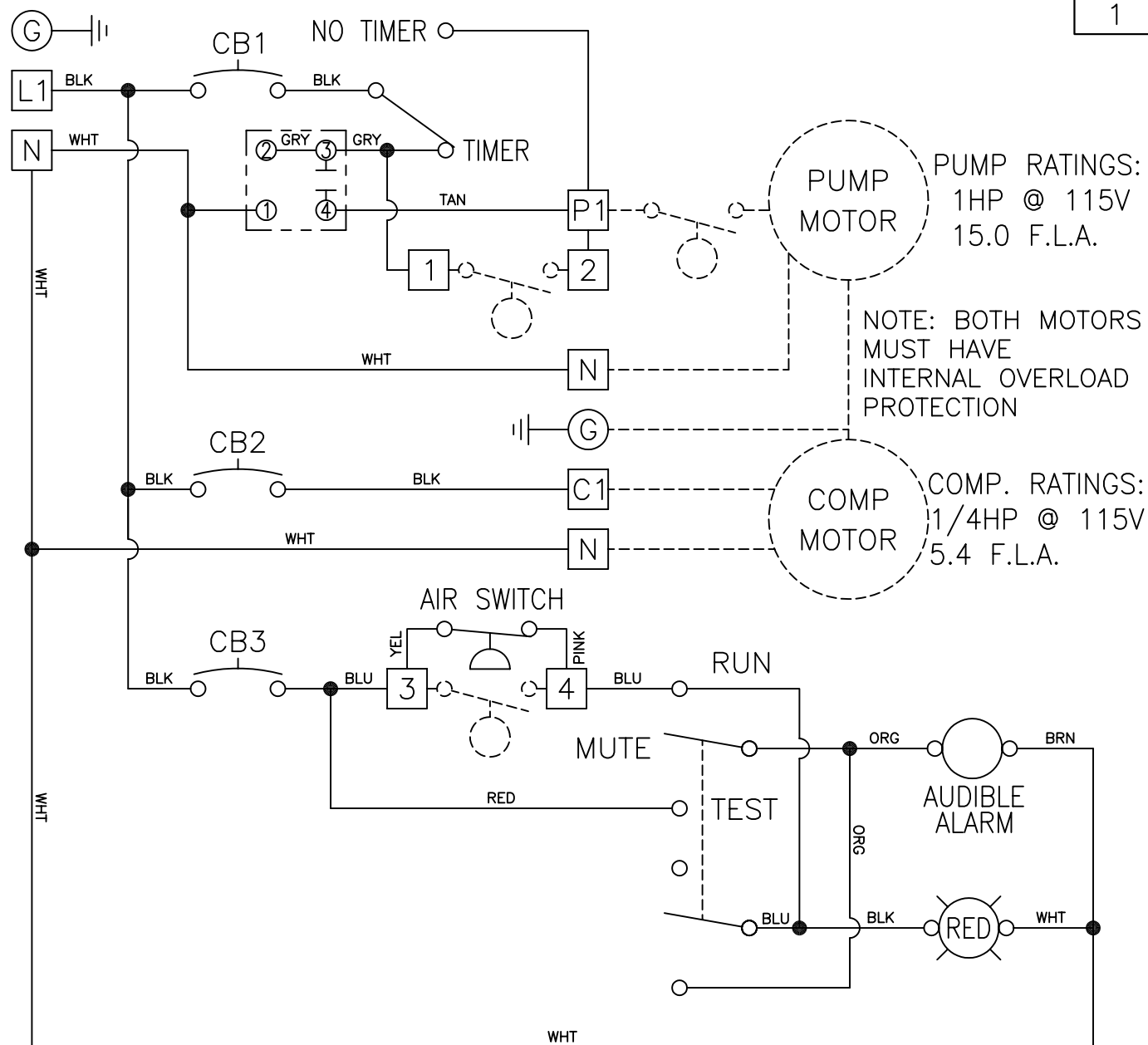
ALL INFORMATION CONTAINED IN THIS DRAWING IS
CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS INC.

SPI/BIO
Wastewater Technologies

CHANGES	TOLERANCES	DRAWN BY	DATE	POWER CONNECTION DIAGRAM	
F	DECIMALS	D. MIDDLETON	5/20/04		
E	.XXX = ± 0.005	MATERIAL SPECIFICATION:		SCALE:	PART NO.
D	.XX = ± 0.010			FULL	CP-20/EC-20
C	FRACTIONAL	AS NOTED			
B	X/X = $\pm 1/64$				
A	ANGLES				
	X' = $\pm 1/2^\circ$				

50B123/B122

PAGE
1



SPI/BIO
Wastewater Technologies

CHANGES		TOLERANCES	DRAWN BY	DATE
F		DECIMALS	D. MIDDLETON	06/20/04
E		.XXX = $\pm .005$	MATERIAL SPECIFICATION: AS NOTED	
D		.XX = $\pm .010$		
C		FRACTIONAL		
B		X/X = $\pm .1/64$		
A		ANGLES		
		X° = $\pm 1/2^\circ$		

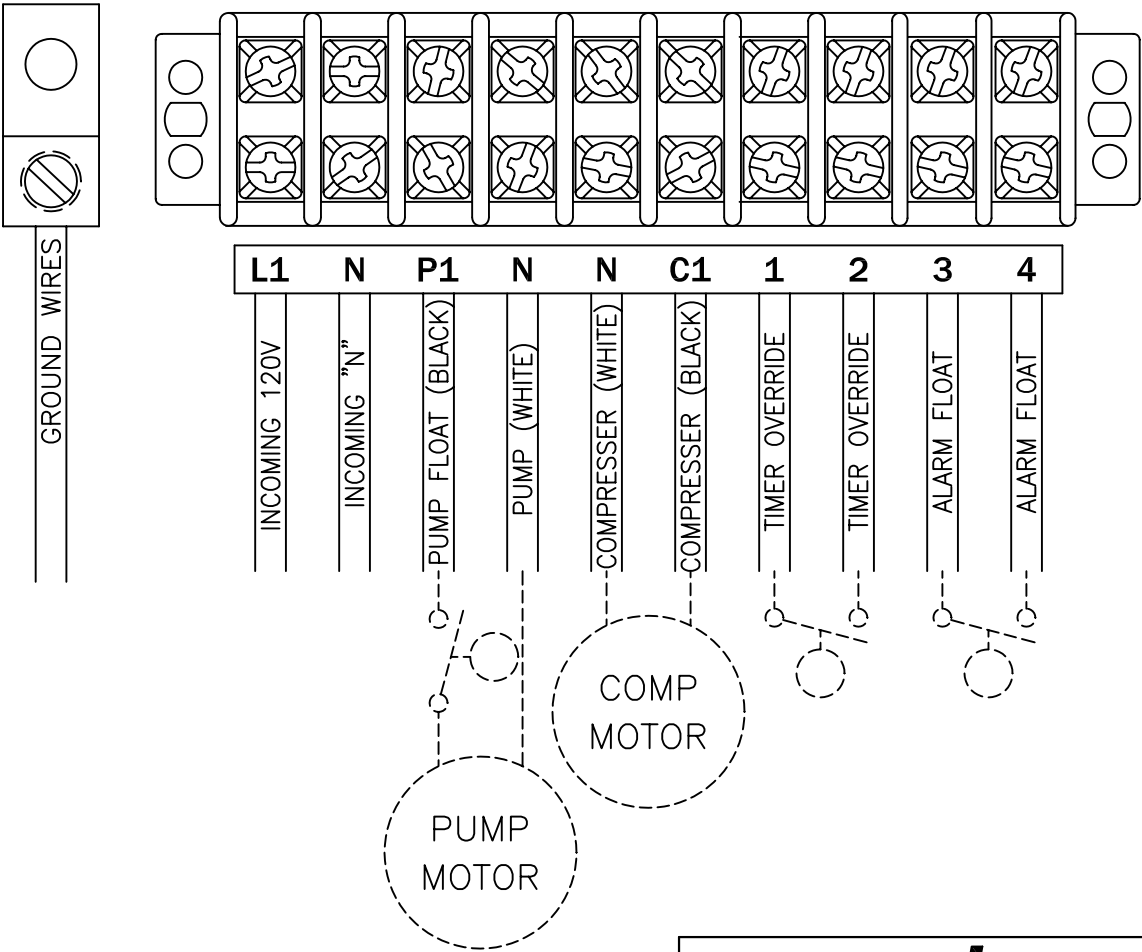
SCHEMATIC, ELECTRICAL
W/TIMER & AIR SWITCH

SCALE:	PART NO.
FULL	CP-30A/EC-30A

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.

HYDRO-ACTION

CONNECTION DIAGRAM
FOR HYDRO-ACTION
CP-30A & EC-30A
CONTROL PANEL



ALL INFORMATION CONTAINED IN THIS DRAWING IS
CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS INC.



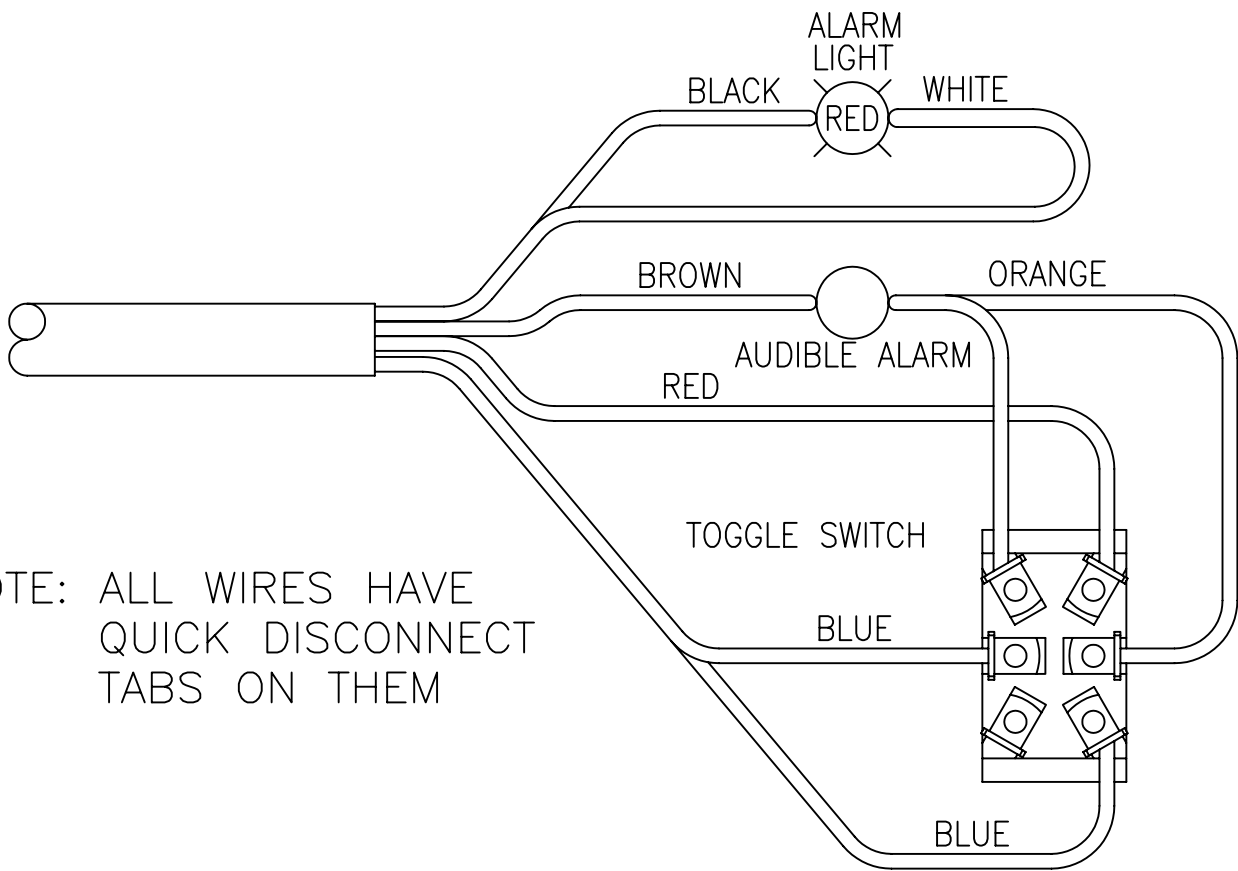
CHANGES	TOLERANCES	DRAWN BY	DATE
F		D. MIDDLETON	12/15/04
E		MATERIAL SPECIFICATION: AS NOTED	
D			
C			
B			
A			

POWER CONNECTION DIAGRAM	
SCALE:	PART NO.
FULL	CP-30A/EC-30A

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.

HYDRO-ACTION

CONNECTION
DIAGRAM
EC-30A EXTERNAL
COMPONENTS



NOTE: ALL WIRES HAVE
QUICK DISCONNECT
TABS ON THEM

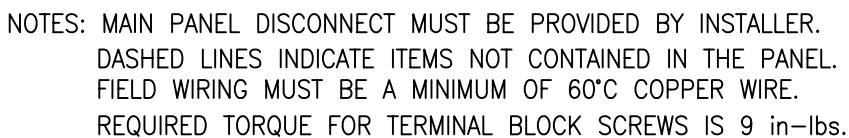
ALL INFORMATION CONTAINED IN THIS DRAWING IS
CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS INC.



CHANGES		TOLERANCES	DRAWN BY	DATE	POWER CONNECTION DIAGRAM	
F		DECIMALS .XXX = ±.005 .XX = ±.010 FRACTIONAL X/X = ±.1/64 ANGLES X° = ±1/2°	D. MIDDLETON	5/20/04		
E			MATERIAL SPECIFICATION: AS NOTED		SCALE:	PART NO.
D					FULL	CP-30A/EC-30A
C						
B						
A						

50B124

PAGE
1



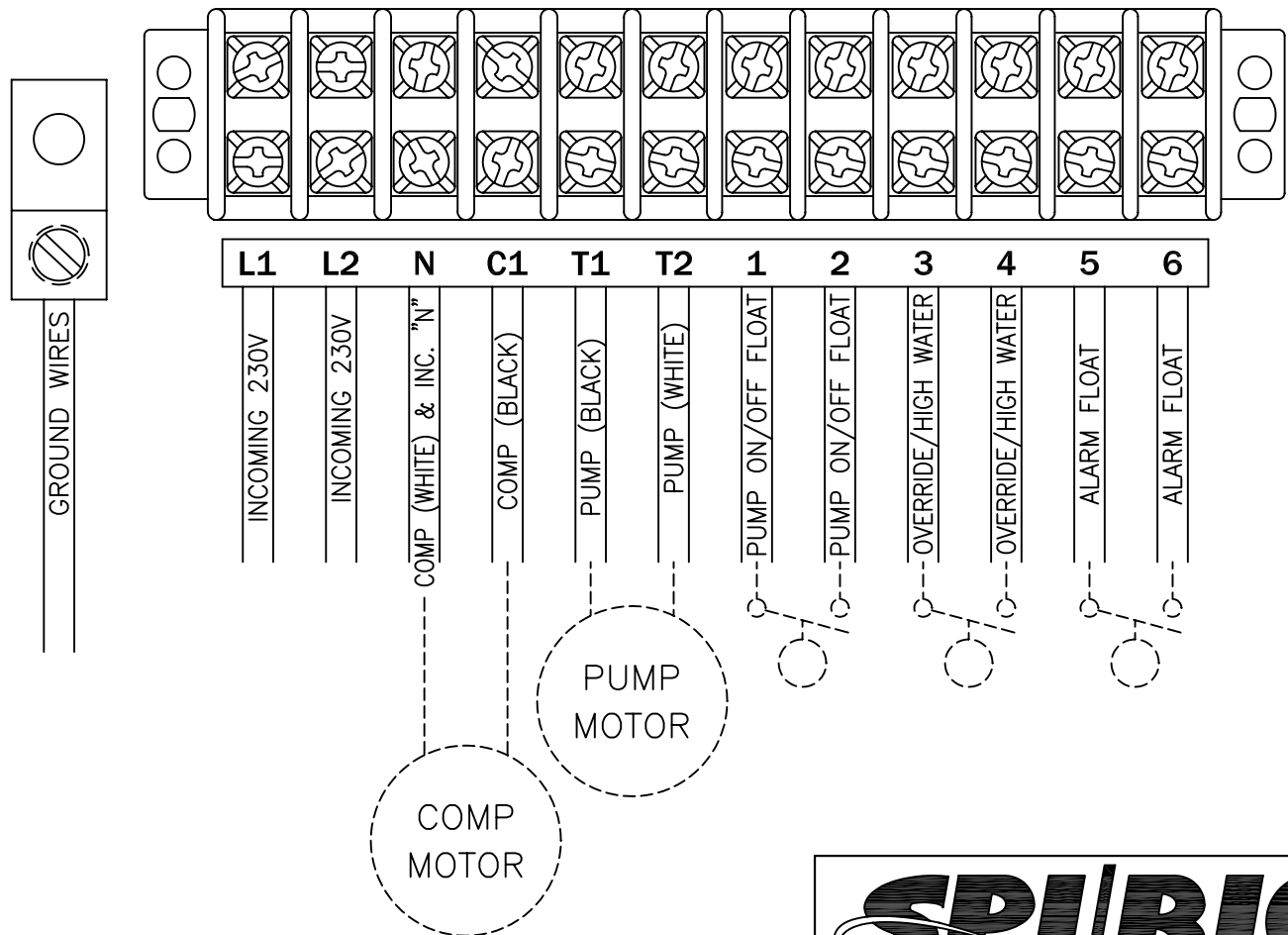
SPI/BIO
Wastewater Technologies

CHANGES		TOLERANCES	DRAWN BY	DATE	SCHEMATIC, ELECTRICAL SIMPLEX 115/230V	
F		DECIMALS .XXX = $\pm .005$.XX = $\pm .010$	D. MIDDLETON	06/20/04		
E		FRACTIONAL X/X = $\pm .1/64$ ANGLES X° = $\pm 1/2^\circ$	MATERIAL SPECIFICATION: AS NOTED		SCALE:	PART NO.
D						
C						
B						
A						
					FULL	CP-32A2/EC-32A2

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.

HYDRO-ACTION

CONNECTION DIAGRAM FOR HYDRO-ACTION EC-32A2 & CP32A2 CONTROL PANEL (230V)



ALL INFORMATION CONTAINED IN THIS DRAWING IS
CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS INC.

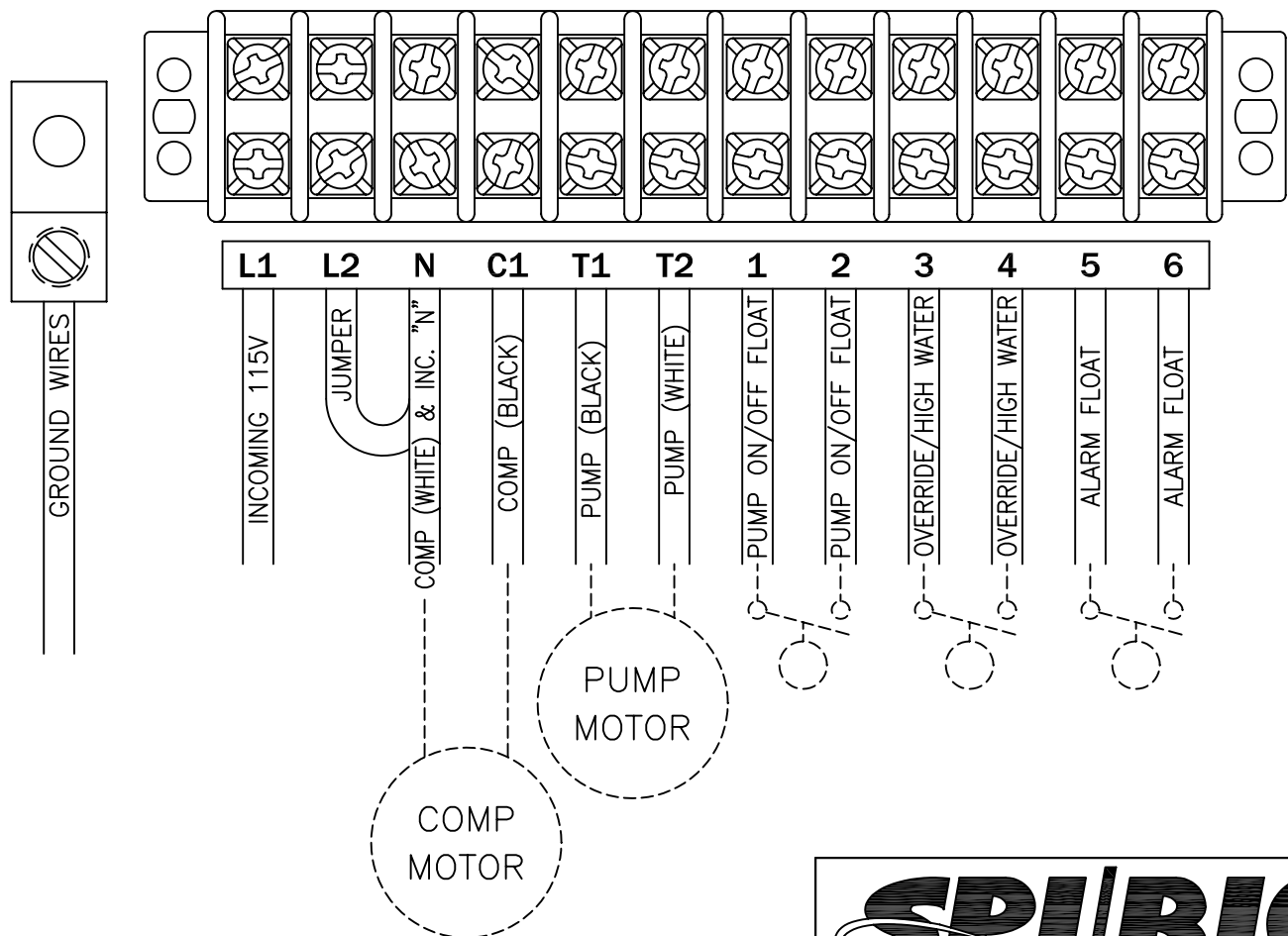


CHANGES	TOLERANCES	DRAWN BY	DATE	POWER CONNECTION DIAGRAM	
F	DECIMALS .XXX = ± 0.005 .XX = ± 0.010	D. MIDDLETON	12/15/04		
E	FRACTIONAL X/X = $\pm 1/64$	MATERIAL SPECIFICATION: AS NOTED		SCALE:	PART NO.
D	ANGLES X° = $\pm 1/2^\circ$			FULL	EC-32A2/CP-32A2
C					
B					
A					

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.

HYDRO-ACTION

CONNECTION DIAGRAM FOR HYDRO-ACTION EC-32A2 & CP32A2 CONTROL PANEL (115V)



ALL INFORMATION CONTAINED IN THIS DRAWING IS
CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS INC.

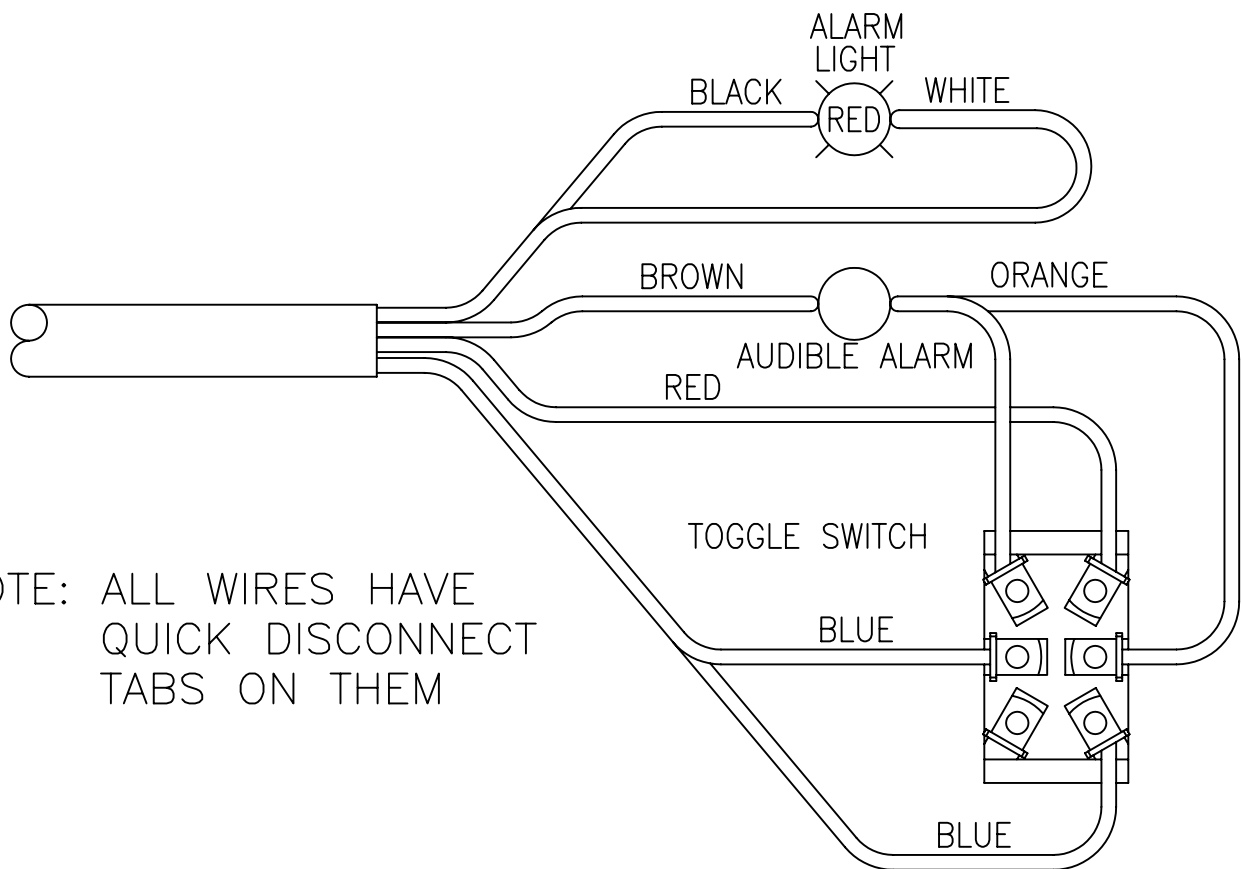
SPI/BIO
Wastewater Technologies

CHANGES	TOLERANCES	DRAWN BY	DATE	POWER CONNECTION DIAGRAM (EC-32A2)	
F	DECIMALS	D. MIDDLETON	12/15/04		
E	.XXX = ± 0.005	MATERIAL SPECIFICATION: AS NOTED		SCALE:	PART NO.
D	.XX = ± 0.010			FULL	EC-32A2/CP32A2
C	FRACTIONAL				
B	X/X = $\pm 1/64$				
A	ANGLES X° = $\pm 1/2^\circ$				

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.

HYDRO-ACTION

CONNECTION DIAGRAM EC-32A2 EXTERNAL COMPONENTS

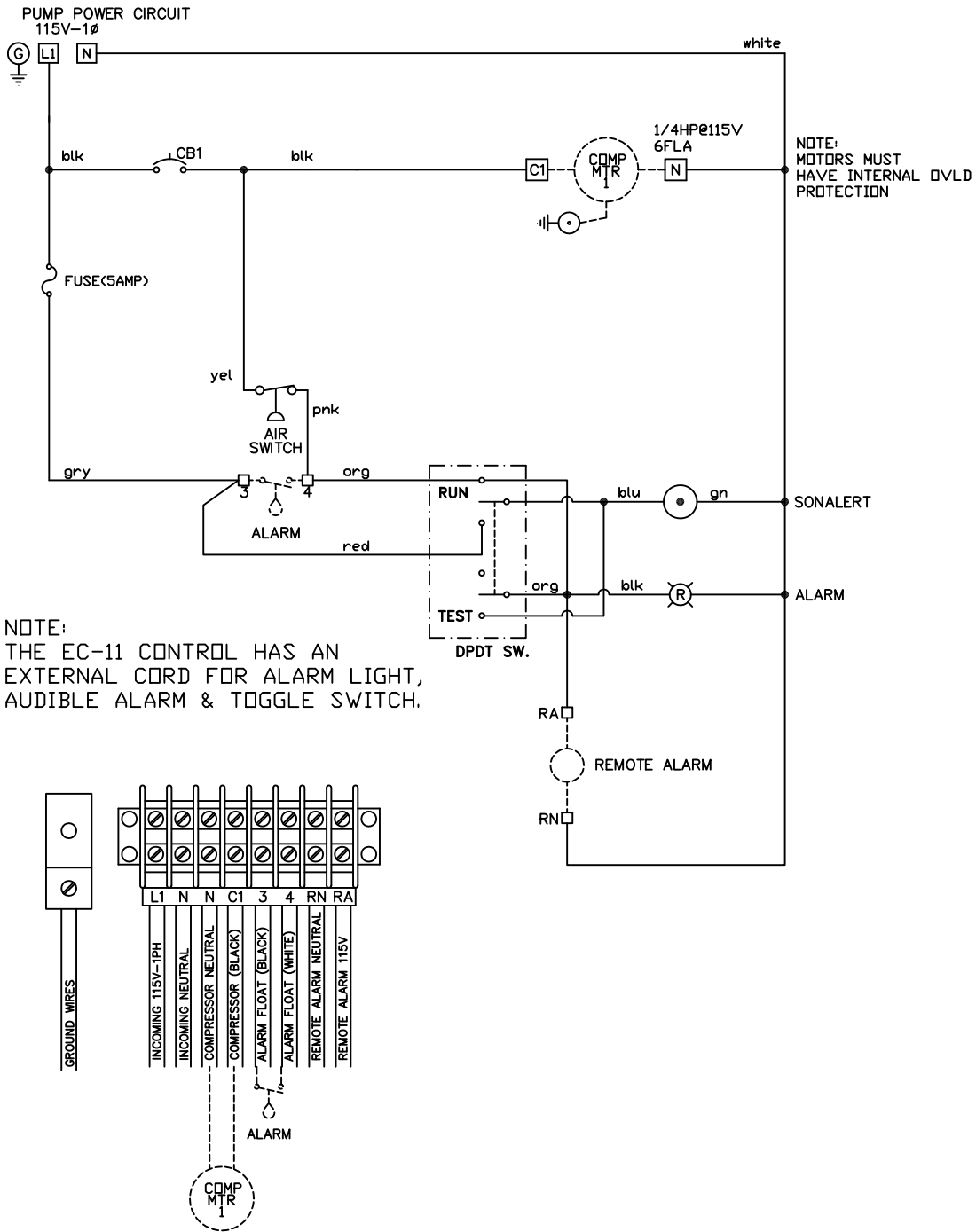


NOTE: ALL WIRES HAVE
QUICK DISCONNECT
TABS ON THEM

ALL INFORMATION CONTAINED IN THIS DRAWING IS
CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS INC.

SPI/BIO
Wastewater Technologies

CHANGES	TOLERANCES	DRAWN BY	DATE	POWER CONNECTION DIAGRAM	
F	DECIMALS	D. MIDDLETON	5/20/04		
E	.XXX = ± 0.005	MATERIAL SPECIFICATION:		SCALE:	PART NO.
D	.XX = ± 0.010			FULL	EC-32A2
C	FRACTIONAL	AS NOTED			
B	X/X = $\pm 1/64$				
A	ANGLES				
	X' = $\pm 1/2^\circ$				



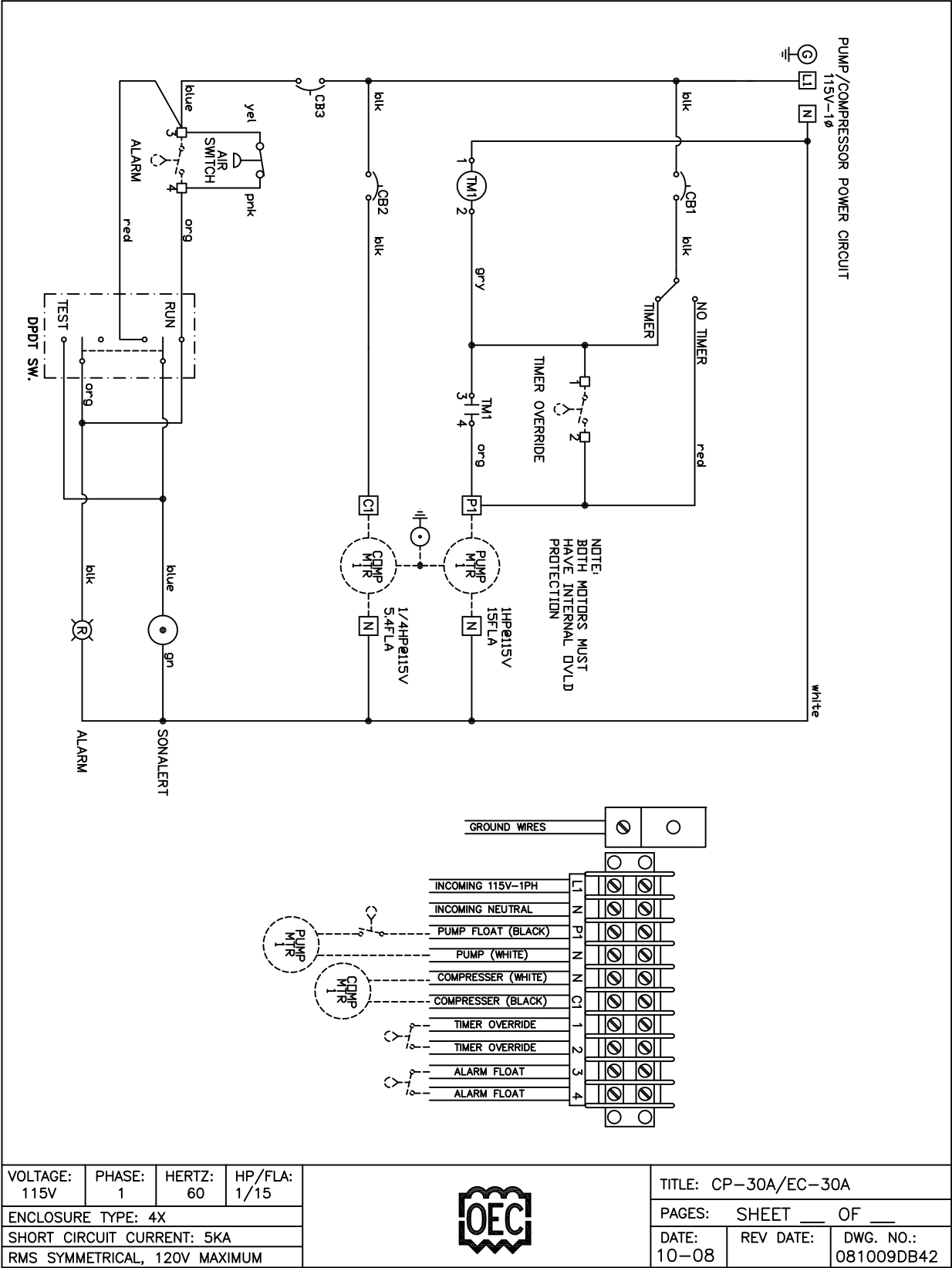
VOLTAGE: 115V	PHASE: 1	HERTZ: 60	HP/FLA: 0.25/6
ENCLOSURE TYPE: 4X			
SHORT CIRCUIT CURRENT: 5KA			
RMS SYMMETRICAL, 120V MAXIMUM			

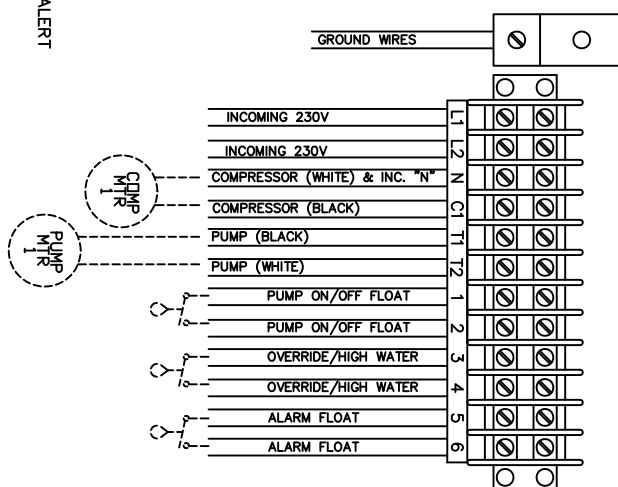


TITLE: EC-11/CP-11

PAGES: SHEET ___ OF ___

DATE: 10-08	REV DATE:	DWG. NO.: 081009DB40
----------------	-----------	-------------------------





TITLE: EC-32A2		
PAGES: SHEET ____ OF ____		
DATE: 10-08	REV DATE:	DWG. NO.: 081009DB47



AK/HA Manufacturing LLC.

**2055 Pidco Dr. / P.O. Box 640
Plymouth, IN. 46563**

**Toll Free: 800.370.3749
Phone:(574) 936-2542
Fax: (574) 936-2298**

www.hydro-action.com

rev. 07/10