Introduction

Thank you for purchasing an Ion Technologies BA Series sump pump. Take the time to read the instructions carefully before using this appliance. We strongly recommend that you keep this instruction manual in a safe place for future reference.

Check the nameplate for your pump's specification, refer to the table list.

Be careful not to exceed the given specifications in the use of your pump.

Marks & Meanings

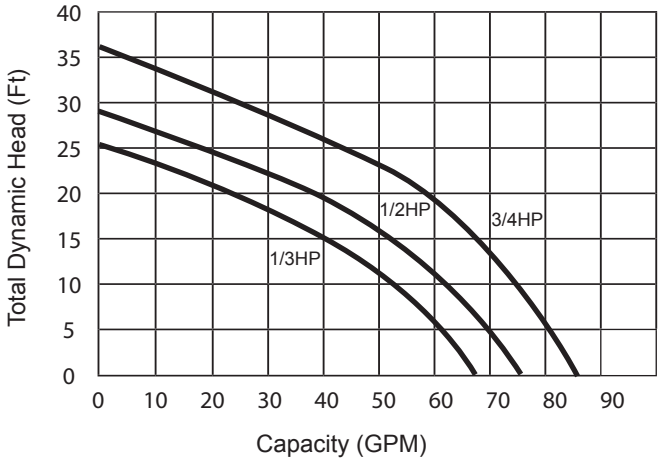
DANGER: Keep the pump equipment out of the reach of children! Warns that the failure to follow the directions given could cause serious risk to individuals or objects.

WARNING: This sign warns the operator that the failure to follow an instruction may damage the pump and/or the system.

Limitations

This pump series is suitable to pump water and also can be used both for permanent and temporary installation.

The pump can be placed in a sump pit that means it could pump rain water containing suspended solid particles no larger than ¼" in diameter.



Model	Output		Discharge (inch)	Rated		Maximum		Dimensions L x W x H	Weight (lbs)
	HP	Amp		Head (feet)	Flow (GPM)	Head	Flow		
BA33	1/3	4.5	1.5	10	50	0 GPM @ 25'	68 @ 0'	7-5/8 x 5-1/2 x 12-1/2"	16
BA50	1/2	5.8	2	10	61	0 GPM @ 29'	78 @ 0'	8-3/4 x 5-3/4 x 13-5/8"	24
BA75	3/4	7.5	2	10	74	0 GPM @ 37'	98 @ 0'	8-3/4 x 5-3/4 x 14-1/2"	25

Available Ion™ Switch, suffix i, or SPI switch, suffix spi, configurations. *Add 3-13/4" to width for Ion™ Switch.

WARNING: The pump can be used for sea water but not inflammable, corrosive, explosive or dangerous liquids.

Installation

Drill a 1/8" inch hole into PVC pipe 4 inches above the pumps discharge.

Do not work on pump until power is unplugged. Do not cut off ground pin or use an adapter fitting. Do not use an extension cord.

The pump power cord should be connected to a separately fused, grounded line with a minimum capacity of 15 amps.

It can be connected to non-fused breaker at the recommended amperes. Never touch the pump when it is connected to electrical power.

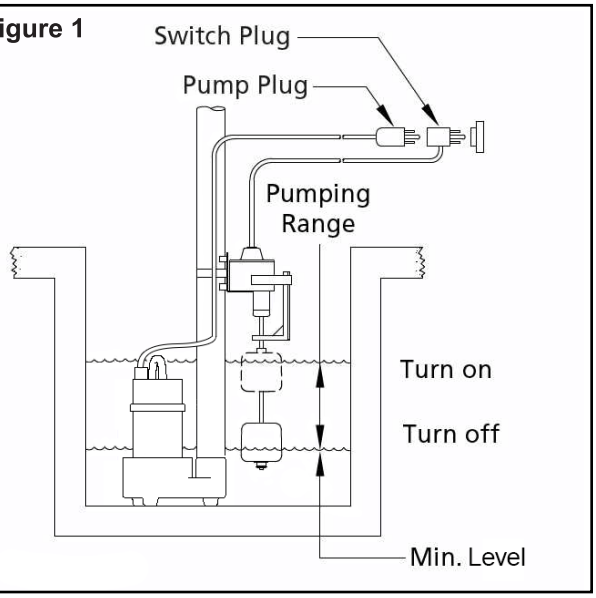
1. Before installing or servicing this pump, be certain pump power source is disconnected.
2. Installation and electrical wiring must adhere to state and local codes and must be completed before priming pump. Check appropriate community agencies or contact local electrical and pump professionals.
3. Call an electrician when in doubt. Pump should be connected to a separate 15 amps circuit breaker or 15 amp fuse block. Note that plugging into existing outlets may cause low voltage at motor, causing blown fuses, tripping of motor overload, or burned out motors.
4. A permanent ground connection from pump to the grounding bar at the service panel is mandatory, BA Series sump pumps come with a grounding conductor and a grounding-type attachment plug. Do not connect pump to a power supply until permanently grounded. For maximum safety, connect pump to a circuit equipped with a fault interrupter device when you position the pump's grounding wire.
5. Voltage of power supply must match the voltage of the pump.
6. Piping: Plastic PVC pipe could be installed in the outlet piping, but drain hose, galvanized steel or copper pipe may be used if desired. All piping must be clean and free of all foreign matter to prevent clogging. Use thread compound on all threaded joints unless specified otherwise. Be sure to seal the thread connection with tape when using the pipe fitting to connect the flange.
7. Before installing pump, clear sump basin of any water, debris or sediment.

WARNING: Sump basin must be vented in accordance with local plumbing codes. BA Series sump pumps are not designed for, and can not be installed in locations classified as hazardous.

8. Position vertical switch on discharge pipe, making sure that off level is not lower than minimum level. **See Figure 1.**

Note: If you purchased your pump with an Ion™ Digital Level Control switch, please refer to its manual for installation instructions.

Figure 1

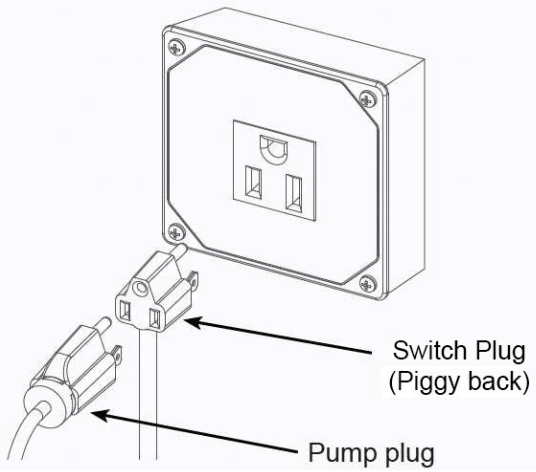


9. Tighten pipe clamp around pipe and through mounting bracket slots.
10. If needed, on and off stops on switch can be adjusted. **See Figure 1.**
11. Plug piggyback plug into a grounded outlet,

then plug pump into the piggyback plug. **See Figure 2.**

12. Cycle the system for proper operation. Filling the basin may require a bucket or garden hose to cycle. Make adjustments if needed and cycle system again to ensure proper operation.

Figure 2



13. Make sure that float is free and unobstructed.

14. Secure all excessive and loose cord to avoid future problems.

Electrical Wire Connection

DANGER: Before servicing a pump, always shut off the main power breaker and then unplug the pump. Make sure you are not standing in water and are wearing insulated protective sole shoes, under flooded conditions. Contact your local electric company or a qualified, licensed electrician for disconnecting electrical service prior to pump removal.

WARNING: Verify that the voltage and frequency of the pump shown on the nameplate correspond to those available on the mains.

1. The installer must make sure that the electric system is grounded in accordance with the law in force.

2. The plug and connections should be protected from water splashes. Before using the pump, always inspect it visually (especially power cable and plug).

3. Do not use the pump if it is damaged.

4. If the pump is damaged, have it inspected by an authorized service center only.

5. Make sure that electric connections are protected from inundation. Protect the plug and the power cable from heat, oil or sharp edges.

WARNING: The power cable must be replaced by qualified personnel only.

Grounding
The plug of the power cable has a double grounding contact, so that grounding can be performed by simply inserting the plug

Overload Protection:
This pump series has a built in thermal protection switch. The pump stops if an overload condition occurs. The motor restarts automatically after it has cooled down.

Troubleshooting

DANGER: Shut off power to pump.

A. If pump does not run and hums, check the following:

1. Check line circuit breaker is off, or fuse is burned or loose.

2. Check water level in sump has not reached turn-on level.

3. Check pump cord is not making contact in receptacle.

4. Check float is stuck. It should operate freely in basin.

5. Check if all of the above are OK, then the motor could be malfunctioning.

B. If pump runs but does not deliver water, check

the following:

1. Check valve is installed backwards. Arrow on valve should point in direction of flow.
2. Discharge shut-off valve (if used) may be closed.
3. Impeller or volute openings are fully or partially clogged. Remove pump and clean.
4. Pump is air-locked. Start and stop several times by plugging and unplugging cord. Check for clogged vent hole in pump case. Drill a 1/8 inch hole into PVC discharge pipe.
5. Inlet holes in pump base are clogged. Remove pump and clean the openings.
6. Vertical pumping distance is too high. Reduce distance or change the discharge fittings of the pump.

C. If pump runs and pumps out sump, but does not stop, check the following:

1. Float is stuck in up position. Be sure float operates freely in basin.
2. Defective float switch. Replace with float switch.
3. Defective vertical switch. Replace with vertical switch

D. If pump runs but only delivers a small amount of water, check the following:

1. Pump is air-locked. Start and stop several times by plugging and unplugging cord. Check for clogged vent hole in pump case. Drill a 1/8 inch hole into PVC discharge pipe.
2. Vertical pumping distance is too high. Reduce distance or change the discharge fitting of the pump. Inlet holes in pump base are clogged. Remove pump and clean the strainer and openings.
3. Impeller or volute openings are fully or partially clogged. Remove pump and clean.
4. Pump impeller is partially clogged, causing motor to run slow and overload Remove pump and clean.

E. If fuse blows or circuit breaker trips, check the following:

1. Pump impeller is partially clogged, causing motor to run slow and overload. Remove pump and clean.
2. Motor stator may be defective.
3. Fuse size or circuit breaker may be too small. (Must be 15 amps).
4. Impeller or volute opening are fully or partially clogged. Remove pump and clean

F. If motor runs for a short time then stops, check the following:

1. Inlet holes in pump base are clogged. Remove pump and clean the openings.
2. Pump impeller is partially clogged, causing motor to run slow and overload. Remove pump and clean.
3. Motor stator may be defective.
4. Impeller or volute openings are fully or partially clogged. Remove pump and clean also clean the strainer if you had installed.

Warranty VOID if...

The following may cause severe damage to pump and will void the warranty:

1. Using an extension cord.
2. Power cord has been cut or altered.
3. Cutting off the ground pin or using an adapter fitting.
4. Working on pump or switch while plugged in.
5. Removing motor housing, unscrewing impeller, or otherwise removing impeller seal
6. Running the pump continuously.
7. Pumping chemicals or corrosive liquids.
8. Pumping gasoline or other flammable liquids.
9. Removing cord tags.
10. Pump will be inadequate if suspension liquids contain solid particles larger than the strainer's holes.

Warranty Registration Card

Please fill out and send back to: Metropolitan Ind. Warranty Department P.O. Box 7266 Romeoville, IL 60446. Or to register online, go to www.sumpro.com

Ion Technologies BA Series Warranty Registration Card

To register your purchase, please fill in the following information:

Name: _____ Date: _____

Address: _____

City _____ State: _____ Zip: _____

Purchased From: _____

Installed By: _____ Phone: _____

Patent pending

Features

1. First of its kind, solid-state sensing technology with no moving parts.
2. Space age design with no mechanical contact points.
3. Multipoint sealing mechanism that supersedes single surface seals.
4. Inverter rated for use with any battery back-up system.
5. Standard piggy back connection for use with any pump.
6. Suitable for sump and sewage applications.

Pipe Mounting Bracket (optional)

1. Determine bracket mounting position (Figure A).
2. Mount bracket to Ion® switch with screw already provided in Ion® switch (Figure B).
3. Mount hose clamp with switch around pipe at predetermined level. Cable should remain outside hose clamp (Figure C).
4. Tighten hose clamp.

Note: The Ion® switch is available in a 6" range. The range of the switch is the distance between the On and Off levels. The Off level is at the bracket mounting screw of the switch. From this point, measure up 6" to find the On level. Please refer to the Installation Drawing.

CAUTION: Bottom of switch should not be mounted lower than suction inlet of pump. When installing the Ion® switch with the pipe mounted bracket be sure not to set the switch too low or too high on the pipe. The Ion® switch must be installed above the inlet of the pump to prevent air-locking as shown in the installation drawing.

To prevent flooding do not set the on point of the switch higher than the top of the basin.

Model	Cord	Range
IN-006-010	10	6
IN-006-020	20	6

Piggy-Back Installation

Electrical outlet must not be located in pump pit.

Electrical outlet voltage, piggy-back plug voltage and pump voltage must all be the same voltage.

DO NOT CUT plug off unit.

Ensure vent tube on plug is protected from moisture, dirt and insects and other items that could plug or block tube.

1. Insert the Ion® switch's piggy-back plug into the outlet.
2. Plug pump into piggy-back plug as (Figure E).
3. Allow system to cycle to ensure proper installation.

Please note this product may not work in conjunction with other controllers.

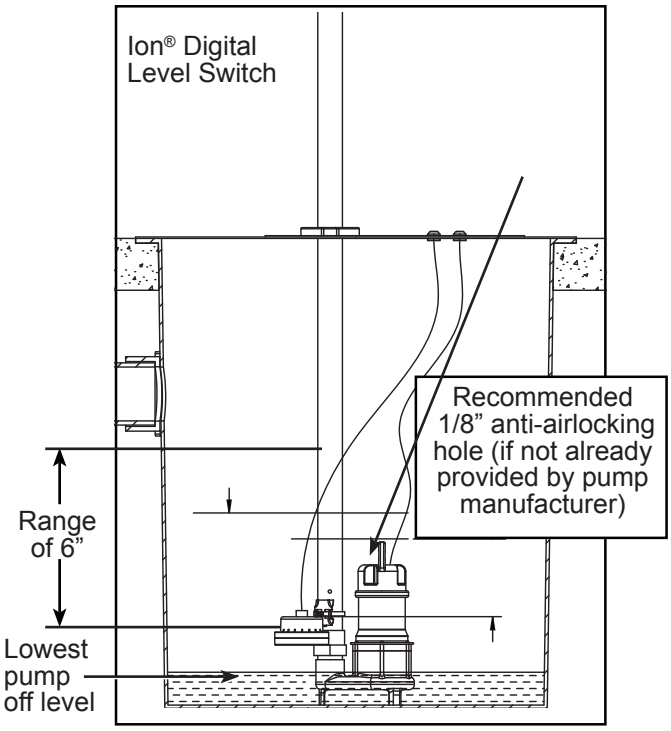
Safety Precautions

CAUTION: To prevent electric shock, ensure product is connected to a grounded outlet. The electrical outlet should be properly wired to a dedicated 15A circuit breaker. Proper short-circuit and overload protection must be provided at the distribution panel. Install in accordance with all local

and national electrical codes.

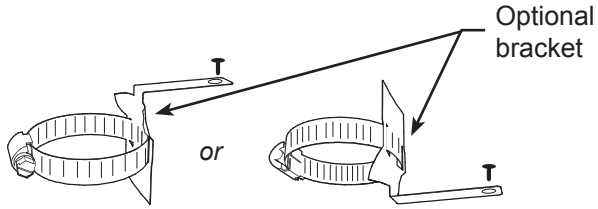
WARNING: Electrical outlet must not be located in pump pit. For best performance, do not use electrical extension cords.

Installation Drawing



BE SURE TO MOUNT THE ION SWITCH AT PROPER LEVEL.

FIGURE A



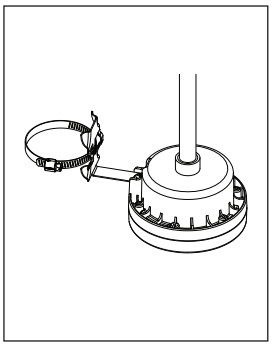


FIGURE C

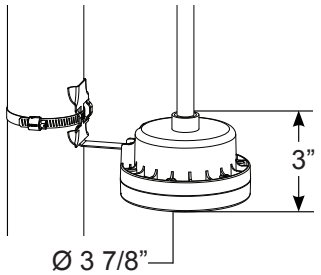
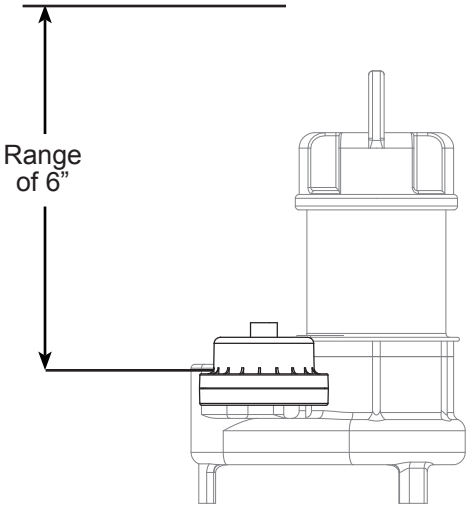
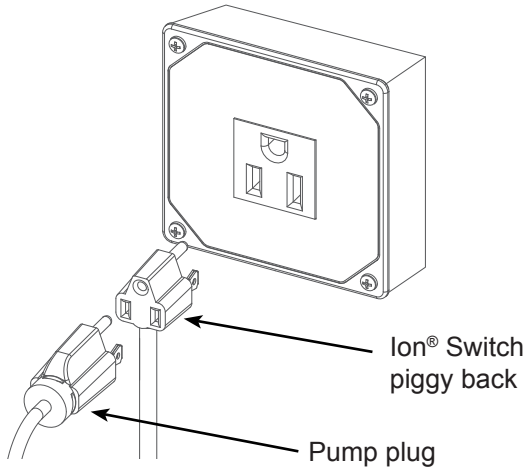


FIGURE D



NOTE: If you purchased a pump with the Ion switch hard-mounted to the pump **(Figure D)** and the installation requires the switch to be mounted to the pipe, the pipe-mount bracket is sold separately, PN: IN-SPB1-1.

FIGURE E



Troubleshooting

Switch Does Not Turn On Pump

1. Test the pump without the Ion® switch
    a. Plug the pump directly into the wall outlet, without plugging it into the switch plug.
    b. If pump still does not run, see the troubleshooting section in the pump manual.
    c. If the pump does run, continue to the next step.
2. Test the switch with the pump
    a. Plug the pump into the Ion® switch and plug the Ion switch plug into the wall.
    b. Push up on the sensing plate through the diaphragm surface. Please don't use any sharp object to push against the diaphragm. You may hear a small click sound when the pump is turned on.
    c. If the pump does not turn on, the switch will have to be replaced.
    d. If the pump does turn on, continue to the next step.
3. Verify the range of the switch
    a. The part number can be found on the switch cord tag.
        i. IN-006… = 6" range
    b. For a pipe-mounted switch, see Page 2, Installation Drawing to verify that the On level is appropriate for your basin.
        i. Lower the switch on the pipe so the On level is at a point within the basin, insuring that the Off level does not fall below the minimum level shown in the Installation Drawing.
        ii. If the On level is still too high, the switch will have to be replaced with a lower range Ion® switch.
    c. For a pump-mounted switch, see Page 2, Figure D to verify that the On level is appropriate for your basin.
        i. If the On level is too high, the switch will have to be replaced with a lower range Ion switch.

Switch Does Not Turn Off Pump

1. Unplug the pump from the Ion® plug and then unplug the Ion plug from the wall outlet.
2. Plug the pump back into the Ion® plug and plug the Ion plug back into the wall outlet.
    a. If the pump does not turn on right away, and the water level is not at the On level, let the pump go through an On / Off cycle a few times to insure that the switch is functioning properly. The basin may need to be filled with a garden hose or bucket.
    b. If the pump turns on right away, and the water level is not at the On level, the switch will have to be replaced.

Warranty is VOID if...

1. Using an extension cord.
2. Power cord has been cut or the grounding prong removed or using an adapter fitting.
3. The switch has been disassembled or tampered with.
4. Any tags or labels have been removed.
5. Used in a heavy grease application
6. Used in applications exceeding the designed temperature range of 32 - 104 degrees F.

Notes

Notes

Notes

3 Year Residential Warranty

1. Coverage and Term. Metropolitan Industries, Inc. ("**Metropolitan**") warrants to the original purchaser (the "Buyer") of each StormPro/Sumpro product (the "product"), that any part thereof which proves to be defective in material or workmanship within three (3) years from date of manufacture, will be replaced at no charge with a new or remanufactured part, F.O.B. factory. Buyer shall be responsible for all freight charges and all costs of field labor or other charges incurred in the removal and/or reinstallation of any product, part or component thereof.

2. Exclusions. **THE WARRANTY IS SUBJECT TO THE FOLLOWING CONDITIONS AND EXCLUSIONS:**

(a) The Warranty excludes products or workmanship which becomes defective as a result of: (i) earthquake, fire, storms, the elements or any other acts of God; (ii) normal wear and tear from use; (iii) accident, misuse, abuse or neglect; (iv) modifications made by Buyer or any third party, other than **Metropolitan**; and (v) Buyer's failure to properly install, maintain, service and/or operate the product under normal conditions and according to manufacturer's instructions.

(b) **Metropolitan** shall not be responsible for, and the Warranty shall not cover, extended damage which occurs because of Buyer's failure to notify **Metropolitan** promptly in writing of apparent defects.

(c) Any part or component designated as manufactured by anyone other than **Metropolitan** shall be covered only by the express warranty of the manufacturer thereof.

(d) The Warranty shall lapse upon Buyer's failure to fully comply with the terms and conditions of its contract with **Metropolitan**, including Buyer's failure to pay the purchase price for the product or any portion thereof. Buyer's subsequent compliance with the terms and conditions of any such contract, will not cause the term of the Warranty to extend beyond the time period set forth above.

(e) No actions taken by **Metropolitan** to correct a defect in a product shall extend the Warranty beyond the period set forth above. **Metropolitan** shall not be obligated to remedy any defect, where otherwise required pursuant to the Warranty unless and until Buyer notifies **Metropolitan** in writing of the defect and then only if such notification is made prior to the expiration of the period set forth above.

3. Process of Claims and Repairs. **Metropolitan** agrees that if the product or any part or component thereof shall fail to conform to the terms of this Warranty, **Metropolitan** shall replace such nonconforming product, part or component at the original point of delivery and furnish instruction for its disposition. Any transportation charges involved in such disposition and all costs of field labor or other charges incurred in the removal and/or reinstallation of any product, part or component thereof shall be the responsibility of Buyer.

4. Limitation on Liability. Notwithstanding any provision to the contrary, **Metropolitan's** entire liability under this Warranty shall not in the aggregate exceed, and Buyer's exclusive and sole remedies are, to the extent permitted by law, shall be to secure replacement of the defective product. **UNDER NO CIRCUMSTANCES SHALL METROPOLITAN BE LIABLE UNDER THE WARRANTY FOR ANY INDIRECT, PUNITIVE, SPECIAL, EXEMPLARY, CONSEQUENTIAL OR INCIDENTAL DAMAGES (INCLUDING LOST PROFITS, REVENUE, USE OR ECONOMIC ADVANTAGE).**

5. Express Waiver of Any Other Warranties. **THE EXPRESS WARRANTY SET FORTH IN THIS WRITTEN WARRANTY IS THE ONLY WARRANTY MADE BY METROPOLITAN, OR ANY OTHER PARTY, IN CONNECTION WITH ANY PRODUCT PURCHASED FROM METROPOLITAN. NEITHER METROPOLITAN, NOR ANY OTHER PARTY, MAKES ANY OTHER EXPRESS OR IMPLIED WARRANTY WHICH IS NOT SET FORTH HEREIN, AND METROPOLITAN HEREBY DISCLAIMS AND BUYER HEREBY WAIVES ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

6. Not Transferable. The Warranty may not be transferred and shall be void on the sale or other transfer of the product.

7. Products and Warranty Subject to Change. **Metropolitan** reserves the right to make revisions to its products and their specifications, and to revise this Warranty and related information without notice.