

SUMPRO

Battery Back-up

OPERATION MANUAL

Dated: 02/04/08

Supersedes: NONE

Document No.: SUMPRO-OM

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IMPORTANT SAFETY INSTRUCTIONS

READ AND SAVE THESE INSTRUCTIONS - THIS MANUAL CONTAINS IMPORTANT INSTRUCTIONS

FAILURE TO HEED SAFETY INSTRUCTIONS AND WARNINGS COULD RESULT IN INJURY OR DEATH

- Read all the instructions before installing or using the SUMPRO. Always disconnect batteries and disconnect Sumpro from the AC power source before storing, handling, or making any adjustments to the unit.
- Use SUMPRO only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
- Do not sit or stand on SUMPRO. Keep children away.
- Do not place objects on Sumpro or allow vents to become blocked.
- Do not smoke, use sparkable electrical devices, or open flame when working on this unit!
- CAUTION - To reduce the risk of fire, use only on circuits provided with 20 ampere branch-circuit protection in accordance with the National Electrical Code, ANSI/NFPA 70.



WARNING: ELECTRICAL SHOCK HAZZARD

- This unit has not been evaluated for use outdoors - Never operate SUMPRO outdoors.
- Never operate SUMPRO with battery enclosure open.
- Never operate SUMPRO in a wet location.
- Never operate SUMPRO in a location where liquid or moisture will come in contact with, splash on, or drip on unit.
- Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause electric shock, andlor a fire hazard.



WARNING: RISK OF ELECTRICAL SHOCK

In the event of a short circuit, grounding reduces the risk of shock by providing an escape wire for the electrical current. The Sumpro must be properly grounded.

The SUMPRO is equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be used with an outlet that has been installed and grounded in accordance with all local codes and ordinances. The outlet must be the same configuration as the plug. Where a two-prong wall outlet is encountered, it must be replaced; contact a qualified electrician. To reduce the risk of electric shock, the grounding plug must not be cut off the plug. Do not use the three-prong plug with a two-prong adapter. DO NOT attempt to defeat this safety feature.

Use the SUMPRO only with adequate wiring that is up to code. Connect to properly grounded outlets only.



WARNING: RISK OF ELECTRICAL SHOCK

The SUMPRO is capable of and intended to generate electrical current when unplugged from the wall outlet or when the AC power is shut off.

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Because the SUMPRO uses batteries to generate 120 volts of AC current, both the batteries and the power cord must be disconnected to neutralize the Sumpro. Failure to disconnect both the batteries and the power cord could result in electrical shock sufficient to cause injury or death.

SEE ALSO "BATTERY PRECAUTIONS".

BATTERY PRECAUTIONS

WARNING: IMPORTANT SAFETY INSTRUCTIONS. SAVE THESE INSTRUCTIONS.

A. Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries.

B. When replacing batteries, use only models conforming to Battery Council International (BCI) 27 or 31 DC specifications for Group 27 or 31 Deep Cycle Marine batteries. At the time of this publication, the following model batteries are recommended. At the time of purchase, verify that these models, or any other model, conform to Battery Council International (BCI) 27DC specifications for Group 27 or 31 Deep Cycle ,Marine Batteries:

Metropolitan	Model MT120-UR
Metropolitan AGM	Model LW20104
Die Hard	Model 27524
Exide	Model NC-27
Interstate	Model SRM-27

C. **CAUTION** - Do not dispose of batteries in a fire. The batteries may explode.

D. **CAUTION** - Do not open or mutilate the batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

E. **CAUTION** - A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries.

1. Remove watches, rings, or other metal objects.
2. Use tools with insulated handles.
3. Do not lay tools or metal objects on top of

batteries.

1. Wear safety goggles and a face shield.

F. **CAUTION** - The electrolyte is a dilute sulfuric acid that is harmful to the skin and eyes. It is electrically conductive and corrosive. The following procedures should be observed:

1. Wear full eye protection and clothing.
2. If electrolyte contacts the skin, wash it off immediately.
3. If electrolyte contacts the eyes, flush thoroughly and immediately with water. Seek medical attention.
4. Spilled electrolyte should be washed down with a suitable acid neutralizing agent. A common practice is to use a solution of approximately one pound (500 grams) bicarbonate of soda to approximately one gallon (4 liters) of water. The bicarbonate of soda solution can be added until the evidence of reaction (foaming) has ceased. The resulting liquid should be flushed with water and the area dried.

G. **CAUTION** - Lead acid batteries can present a risk of fire because they generate oxygen and hydrogen gas. The following procedures should be followed.

1. Do not smoke when near batteries
2. Do not cause flame or spark in battery area.
3. Discharge static electricity from body before touching batteries by first touching a grounded metal surface.

H. See Battery Manufacturers' installation manual for additional installation maintenance, and safety instructions.



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FRENCH VERSION

IMPORTANTES INSTRUCTIONS DE SECURITE

CONSERVER CES INSTRUCTIONS- CE MANUEL CONTIENT DES INSTRUCTIONS

IMPORTANTES

Avant de manier ou de procéder à tout réglage, SUMPRO doit être débranché de sa source de courant CA et des batteries.

AVERTISSEMENT:

Pour réduire les risques de chocs électriques:

1. Risque de choc électrique-Cette unité n'est pas homologuée pour utilisation à l'extérieur.
2. Risque de choc électrique-Cette unité doit être uniquement branchée sur une prise murale pour trois broches, correctement mise à la terre. Ne couper, en aucun cas, la broche de prise de terre du fil de connexion.

Lors du maniement de cette unité, ne pas fumer, ne pas utiliser d'outils électriques pouvant produire des étincelles ou une flamme vive !

Ne pas installer Sumpro dans des emplacements classés dangereux par les Normes

N.E.C., ANSI/NFPA 70-1984.

NE PAS TENIR COMPTE DE CES PRECAUTIONS PEUT ÊTRE LA CAUSE DE BLESSURES OU MÊME DE MORT.

ATTENTION: "IMPORTANTES INSTRUCTIONS DE SECURITE"

Une batterie présente des risques de chocs électriques et de courts-circuits de haute tension. Pendant le maniement de batteries, les précautions suivantes doivent être prises.

1. Retirer montres, bagues, alliances et tout autre objet métallique.
2. Utiliser des outils à manches isolés.
3. Ne pas poser d'outils ou de pièces métalliques sur le dessus d'une batterie.

Après avoir pris les précautions ci-dessus, installer les deux batteries de 12 volts dans le logement, les bornes se faisant face. Vérifier alors la polarité des

batteries. En faisant face à l'avant de l'unité SUMPRO, la borne gauche de la batterie doit être positive et la borne droite négative. Si ce n'est pas le cas, cesser l'installation jusqu'à ce que des batteries correctes soient obtenues, ou que le problème soit corrigé.

Entretien de la batterie:

AVERTISSEMENT:

IMPORTANTES INSTRUCTIONS DE SECURITE CONSERVER CES INSTRUCTIONS

A. La maintenance de batterie doit être exécutée ou supervisée par du personnel qualifié connaissant les batteries et les précautions requises. Le personnel non qualifié doit être tenu à l'écart des batteries.

B. Lors du remplacement de batteries, utiliser le même type. (-voir les spécifications de la batterie pour des informations sur la passation de commandes.

C. ATTENTION-Ne pas se débarrasser d'une batterie en la jetant dans le feu. La batterie peut exploser.

D. ATTENTION-Ne pas ouvrir ou endommager une batterie. Le liquide électrolytique qui s'écoule est dangereux pour la peau et les yeux. Il peut être toxique.

E. ATTENTION-Les batteries présentent le risque de chocs électriques et de courts-circuits de haute tension. Pour le maniement de batteries, les précautions suivantes doivent être observées.

1. Retirer montres, bagues, alliances et tout autre objet métallique.
2. Utiliser des outils à manches isolés.
3. Ne pas poser d'outils ou d'objets métalliques sur le dessus d'une batterie.

F. ATTENTION-Le liquide électrolytique est une dilution d'acide sulfurique qui est dangereux pour la peau et pour les yeux. Il est corrosif et bon conducteur de l'électricité. Suivre la procédure ci-dessous:

1. Porter des vêtements de protection et des lunettes de sécurité.
2. Si du liquide électrolytique entre en contact avec la peau, laver à grande eau immédiatement.
3. Si du liquide électrolytique entre en



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contact avec les yeux, laver a grande eau immediatement. Obtenir des soins medicaux.

4. Tout liquide electrolytique repandu doit etre lave avec un produit adequat pour la neutralisation de l'acide. Il est habitue1 d'utiliser une solution de 500 grammes de bicarbonate de soude dans environ 4 litres d'eau. La solution de bicarbonate de soude doit etre ajoutee jusqu'a ce que toute evidence de reaction chimique (mousse) a ceesee. Le liquide resultant de ce lavage doit etre evacue a grande eau et l'endroit doit etre seche.

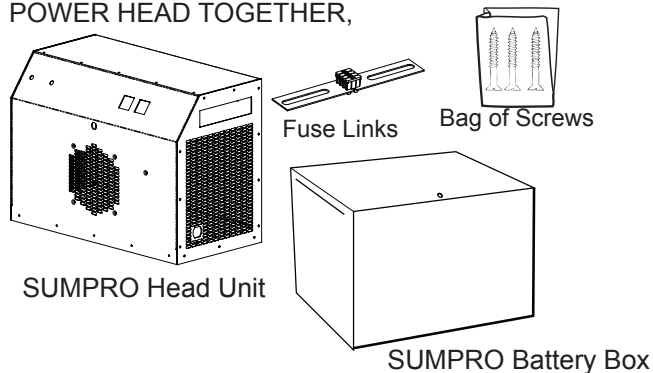
G. **ATTENTION**-Les batteries a l'acide de plomb peuvent presenter des risques d'incendies parce qu'elles produisent de l'hydrogene qui se degage. suivre la procedure ci-dessous.

1. NE PAS FUMER a proximite des batteries.
2. NE PAS CREER de flamme ni d'etincelles dans la zone des batteries.
3. Decharger l'electricite statique du corps avant de toucher une batterie, en touchant d'abord une surface metallique mise a la terre.

H. Voir le manuel d'installation du fabricant de batterie pour obtenir des instructions supplementaires d'installation et d'entretien.

CONTENTS

THE SUMPRO UNIT IS PACKAGED IN TWO SEPARATE CARTONS CONTAINING ONE COMPLETE UNIT, A FUSED BATTERY JUMPER PLATE, AND THREE PHILLIPS SCREWS TO CONNECT THE BATTERY ENCLOSURE AND POWER HEAD TOGETHER,



GENERAL INFORMATION

The SUMPRO unit is an auxiliary power source for 120 volt pumps and motors.

TOOLS NEEDED

- A Phillips Screwdriver.
- Adjustable wrench

BATTERY REQUIREMENTS

Your SUMPRO unit depends on two deep cycle batteries (not included) for its reserve power.

NOTE: Your SUMPRO unit operates on 24VDC power when in the Auxiliary Power mode; therefore two (2) group 27 deep cycle marine batteries must be used. Any substitutions will cause damage to the unit and void the warranty.

At the time of this publication, the following model batteries are recommended. At the time of purchase, verify that these models, or any other model, conform to Battery Council International (BCI) 27DC specifications for Group 27 Deep Cycle Marine Batteries:

Die Hard	Model 27524
Exide	Model NC-27
Interstate	Model SRM-27
Metropolitan	Model MT120
Metropolitan AGM	Model LW20104

UNIT INSTALLATION

See accompanying unit assembly drawings.

1. UNPACK THE SUMPRO: Your SUMPRO auxiliary power supply should be in two separate containers. Remove the contents from the containers. They should include (1) the power head, (2) the battery enclosure and (3) inside the battery enclosure a fused battery jumper plate and three phillips head screws.

Open the lid on the battery enclosure and remove the hardware from inside.

2. LOCATION: Find a suitable place to set the unit (when it is assembled). Keep in mind that the unit should be placed in an area where water and moisture will not splash or drip on the unit, the fan inlet on the front of the enclosure will not be obstructed, and where a properly grounded three prong receptacle is within reach of the power cord.

3. ASSEMBLY:

- A. Set the battery enclosure in place, making sure that the openings will be facing the back of

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the power head. Once in place, place the power head in front of the battery enclosure feeding the battery leads through the large holes in the front of the battery box.

B. Once the battery leads have been fed through the appropriate holes in the battery enclosure, take the three phillips head screws supplied with the unit, and fasten the battery enclosure and power head together.

1. BATTERY INSTALLATION: Now that the unit has been properly assembled and in its permanent location the batteries can be installed.

CAUTION: "IMPORTANT SAFETY INSTRUCTIONS"

A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries.

1. Remove watches, rings, or other metal objects.
2. Use tools with insulated handles.
3. Do not lay tools or metal objects on top of batteries.
4. Wear safety goggles and a face shield.

After taking the above precautions, lower the two 12V batteries into the enclosure with the terminals facing each other. At this time check the polarity of your marine batteries. Facing the front of the Sumpro unit, the left battery terminal should be positive, and the right negative. If this is not the case, do not continue until the proper batteries can be obtained.

5. CONNECTING BATTERIES:

- A. Now that the batteries have been installed, and the polarity conforms to the SUMPRO, connect the fuse plate across the back battery terminals.
- B. Connect the negative (-) battery lead (black) to the negative (-) post of the battery. Screw down bolt TIGHTLY.
- C. Plug the SUMPRO unit into the designated 110V AC outlet.

- A. **Within 30 seconds**, connect the positive (+) red battery lead (red) to the positive (+) post.

NOTE: Screw down bolts TIGHTLY.

NOTE: Make sure all battery connections are properly tightened to 75 pound inches. At this time you may notice the lights on the unit alternately flashing. This is normal. (See light functions)

6. CLOSE UNIT: Close and secure the battery enclosure lid with the phillips head latch built into the battery enclosure cover, so that children cannot tamper with the unit.

7. PLUG IN THE PUMP: At this time you may plug your 110V pump into your Sumpro unit, not exceeding the load limit of 15 amps at a .80 service factor or 1440 watts at any one time.

SUMPRO LIGHT FUNCTIONS

After you have your SUMPRO unit in operation, you can check it's status by looking at the system lights. They should tell you everything you need to know about the status of the unit.

1. Green charging light and red inverter light will flash alternately for about 1 Minute 30 Sec. after you first plug in the unit and install batteries. (If green charging light does not flash at this time, check the 110 VAC circuit for power) Go to the Setup, then unit will go to #7
2. Red inverter light-
 - A. Lights for about 1 Minute while SUMPRO determines that 110VAC power is on. After this minute, the red light should go off.
 - B. Stays on when 110VAC power fails and batteries are supplying auxiliary power (Ventilator fan only runs when pump runs.)
3. Green charging light-
 - A. Stays on when SUMPRO is charging the batteries, ventilator fan operated if under hard charging situation.



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B. Flashes when batteries are fully charged. (Fully depleted batteries should take 24 hours to fully recharge.) (May take longer)

4. Green light ON; Red light flashing indicates a FAULT MODE: See Trouble Shooting below.

5. Once the batteries are fully charged, the SUMPRO will monitor their voltage. When a voltage drop is detected in the batteries, the system will switch back to a partial charge mode. The fan however will only come on if a significant voltage drop is detected.

TESTING THE SYSTEM

To test the SUMPRO, simply unplug it from the 110V AC power to run your pump on battery power for a short time. You can repeat this if you wish, but it is not necessary. If your SUMPRO unit works the first time it is sure to work time and time again. Be sure that you remember to plug the unit back into the receptacle after you have completed the test.

TROUBLESHOOTING

NOTE: If while testing your SUMPRO your pump does not turn on, the following steps should be taken.

1. A. With SUMPRO plugged in to 110VAC outlet, the green charging light should be flashing to indicate batteries are fully charged. If it stays ON, batteries are not sufficient to run the pump and need charging. Wait until batteries are fully charged and green light flashes.

B. Unplug the SUMPRO. The green charging light should go OFF and the Red inverter light should go ON and stay ON.

2. Check the 110VAC circuit breaker.

3. Plug the pump directly into a live 110V outlet. If the pump runs, recheck all battery connections, and check the fuse plate for continuity. If the fuse plate does not have continuity, you may purchase a new one through your authorized distributor.

4. If your SUMPRO unit still does not operate properly, or indicator lights display FAULT MODE (green on; red flashing), it is likely you can remedy the problem by diagnosing Improper or loose connections

- Defective or deficient battery

Follow these steps:

A. Unplug the pump from the SUMPRO

B. Make sure all connections are in accordance with instructions and diagrams, and secured TIGHTLY. If something is incorrect, (a) unplug Sumpro from the wall, (b) disconnect the positive (+) red battery lead, (c) disconnect the negative (-) black battery lead, (d) proceed with proper connections.

Note: You may have taken too long to connect the leads to the batteries after plugging the unit into the wall. When setting up the unit it is best to put the batteries in the enclosure first, connect the negative (-) black lead to battery terminal, install fuse plate connecting batteries, plug Sumpro into the wall, and connect the positive (+) red lead to batteries.

C. Green light should be ON or flashing.

D. Plug in pump and test per instructions.

5. If display lights indicate FAULT MODE (Green ON, red flashing):

A. Unplug the pump

B. Wait 10 minutes (SUMPRO will attempt to reset itself by performing certain functions). If green light comes on or flashes, skip to step 7 below.

6. If it continues to show FAULT (Green ON; red flashing):

A. Disconnect the positive (+) red battery lead.

B. Unplug SUMPRO from the wall.

C. Wait 30 seconds.

D. Plug SUMPRO back into the wall.

E. Immediately reconnect positive (+) red battery lead TIGHTLY.

7. Green light should be on or flashing.

8. Plug in pump and run test sequence.

9. If after the above steps, SUMPRO continues to show FAULT MODE (Green on; red flashing) it is likely you have one or more defective batteries. Remove them and have them checked by your place of purchase or a qualified battery dealer.

10. If all of the above items have been thoroughly checked and your pump will still not run when plugged into the SUMPRO unit:



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- A. Unplug the pump.
- B. Disconnect Red (+) battery lead.
- C. Unplug the SUMPRO from 110VAC outlet.
- D. Disconnect Black (-) battery lead.
- E. Disconnect fuse plate.
- F. Remove batteries.
- G. Repack SUMPRO and return for replacement.

SUMPRO MAINTENANCE:

Your SUMPRO unit has been designed to be virtually maintenance free. Just make sure it is kept clean and dry and that the unit is periodically tested in the auxiliary mode.

SUMPRO WARRANTY IS VOID:

If ... Power cord has been cut or the grounding prong has been removed.

If ... Batteries not meeting the above specifications have been used.

If ... Unit has been submerged in water.

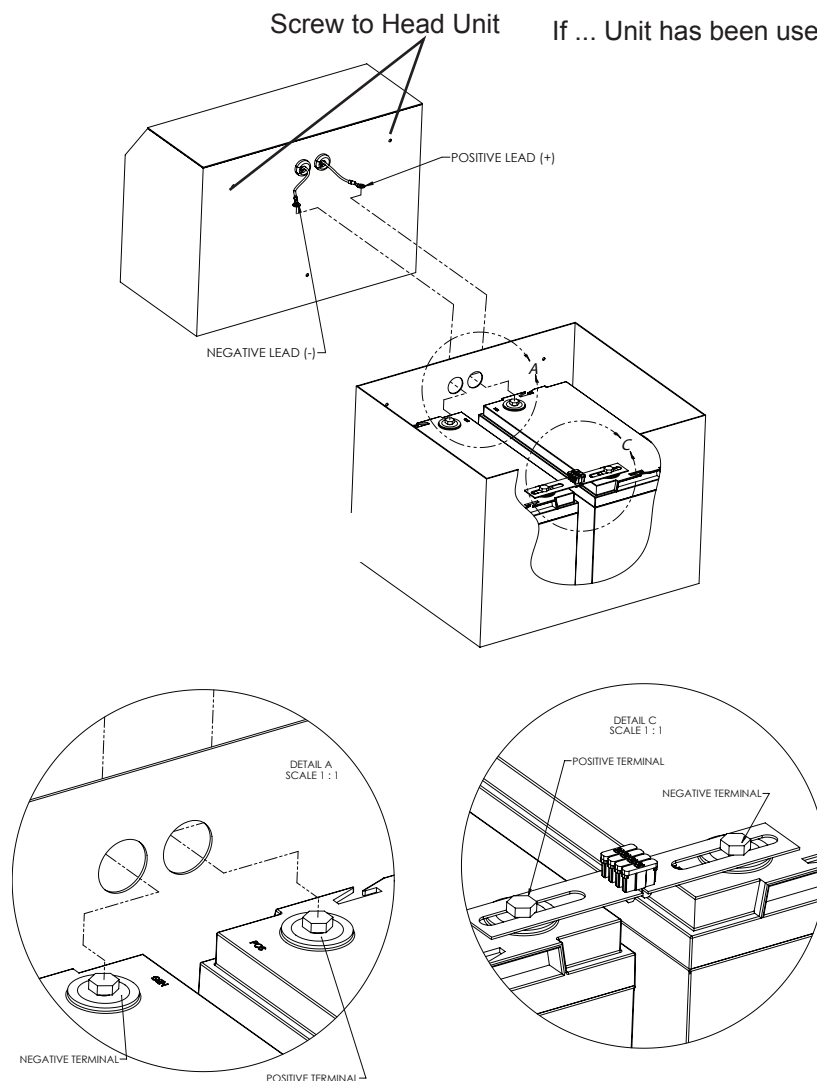
If ... Unit has been tampered with in any manor not described in the above instructions.

If ... Unit has been disassembled by customer.

If ... Unit has been applied to products exceeding the maximum capacity of the unit.

If ... Unit has been applied to the wrong voltage.

If ... Unit has been used in an outdoor application.



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LIMITED WARRANTY

Sumpro is warranted to be free from defects in material and workmanship and to perform within applicable specifications for a period of one (1) year. Obligation under this warranty is limited to repairing or replacing any part thereof, which shall within one year be returned to us with transportation charges prepaid, and prove to be defective.

The above limited warranty takes the place of all other warranties, express or implied and correction of such defects by replacement or repair shall constitute a fulfillment of all obligations under the terms of the warranty, which specifically EXCLUDES any incidental damages caused by or associated with this product or its use. The warranty does not cover any unit which has been damaged either in transit or by misuse, accident or negligence. No warranty or representation not contained herein shall be binding.

LABOR, ETC. COSTS: Metropolitan shall IN NO EVENT be responsible or liable for the cost of field labor or other charges incurred by any customer in removing and/or affixing any Metropolitan product, part or component thereof.

Register your product at

www.sumpro.com