



ADVANTAGE
MANUFACTURING



ADVANTAGE
SPA CONTROLS



AIR SWITCH CONTROL 110/220 VOLT • PART NUMBER #A5500 OWNER'S MANUAL

To prevent potential injury and to avoid unnecessary service calls, read this manual carefully and completely.

⚠ CAUTION – We highly recommend a qualified professional install and service this product.

⚠ WARNING – This manual contains important safety information that must be furnished to the end user of this product. FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS COULD RESULT IN SERIOUS INJURY.

SAVE THIS INSTRUCTION MANUAL

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ADVANTAGE
POOLS & PONDS

IT IS EXTREMELY IMPORTANT THAT YOU READ AND UNDERSTAND THE INSTALLATION INSTRUCTIONS BEFORE PROCEEDING. This will make the installation easier, quicker and most important safer.

If you have any technical questions please contact us:

Advantage Advantage Manufacturing
1-800-636-8866
info@advantageman.com
www.advantageman.com

SAFETY PRECAUTIONS

- These devices use high voltage and high current.
- **ELECTROCUTION** is possible if care is not taken.
- Disable the power supply (at the circuit breaker) when connecting or removing any wires to the terminal block and/or when plugging or unplugging any outboard components. This includes, but is not limited to pumps, blowers, ozone generators, stereo systems, topside controls, TV's, lights etc.
- Use a volt meter to verify that all power is disabled.
- Do not apply power to test or check any components, until all plumbing and electrical connections are made, the spa is completely filled, and the control box cover is secure. Powering up the spa will be the very last step.
- Do not stand in water or wet concrete when working on the spa equipment.
- It is extremely important that the ground connection is intact. This allows the GFCI circuitry to work properly.
- This control system must be hardwired to the electrical supply with a minimum #8 gauge wire.
- The only exception to this is a spa that is designed to operate on a 120 volt circuit.
- 120v powered spas must use a GFCI protected power cord.
- Do not use extension cords of any type.
- Contact your local electrical supplier if your current wiring is improper.

ELECTRICAL INSTALLATION

A qualified and licensed electrician in accordance with the National Electric Code (NEC) Article 680, Canadian Electric Code, and with any local codes must accomplish the electrical installation.

All connections must be made according to the electrical installation label on the control box. Follow the instructions from the label if they are different than the instructions in this manual. If your electrician is not absolutely sure how to connect your system correctly, call your local dealer. Any mistake may be costly and void your equipment warranty.

The GFCI (Ground Fault Circuit Interrupter) Is a mandatory electrical safety device required for all portable spas and hot tubs as specified in the National Electrical Code Article 680-42. The GFCI in your particular installation may be installed at the electrical service panel, a separate sub-panel or built into your Advantage Pack.

Your spa equipment requires a DEDICATED CIRCUIT. No other appliances or lights can be on this circuit. Refer to equipment data label for power supply requirements of your spa equipment.

Use copper conductors ONLY. The ground must be sized following the National Electric Code, Table 250-122.

For Power conductor size, refer to the National Electric Code Table 310-16.

NOTE: Due to the electrical requirements of some models, it may be required to SPLIT the incoming electrical service to accommodate the GFCI Circuit Breaker limits. Contact your electrician if you need additional information on this topic.

Circuit & Breaker Rating	15A	20A	30A	40A	50A	60A	70A	80A
Maximum Amps	12A	16A	24A	32A	40A	48A	56A	64A
Minimum Wire Size	14	12	10	8	6	4	4	4

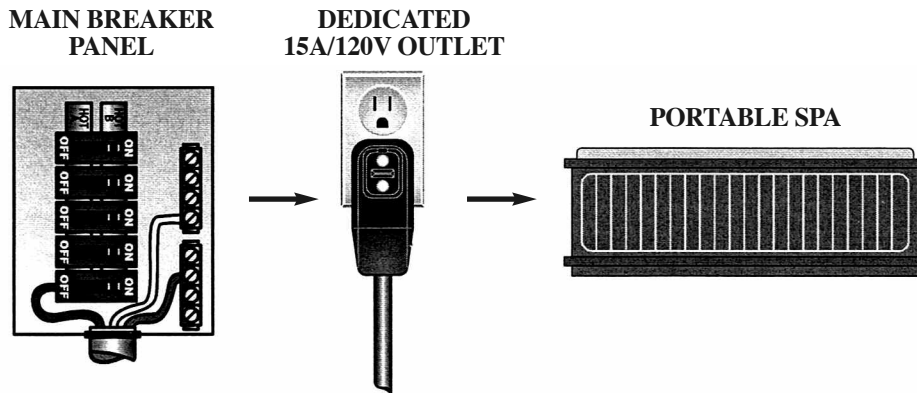
Universal Systems require a Neutral wire therefore the service required is as follows: 120-volt systems require a three-wire electrical service including ground, consisting of Line 1 (Black), Neutral (White) and Ground (Green). 240-volt systems require a four wire electrical service including ground, consisting of Line 1 (Black), Line 2 (Red), Neutral (White) and Ground (Green).

ELECTRICAL CONNECTIONS

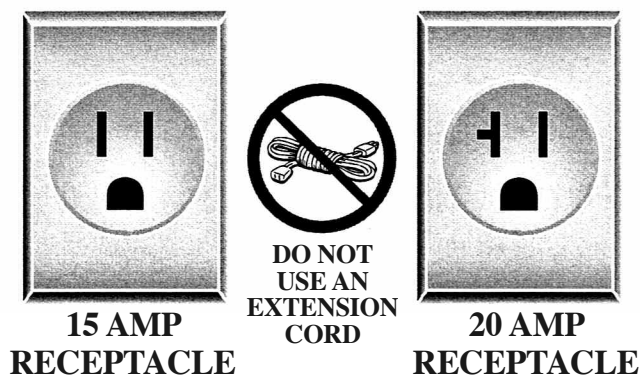
If your system was configured to include a 120VAC power cord, ensure that the proper receptacle has been installed (a dedicated circuit is required). **DO NOT** under any circumstances modify a 20 Amp plug to fit into a 15 Amp receptacle or use an extension cord. Doing so will create hazardous conditions and/or void the warranty.

OPTION 1 Units with 15A GFCI Plug Connection

20 AMP CORDEND GFCI



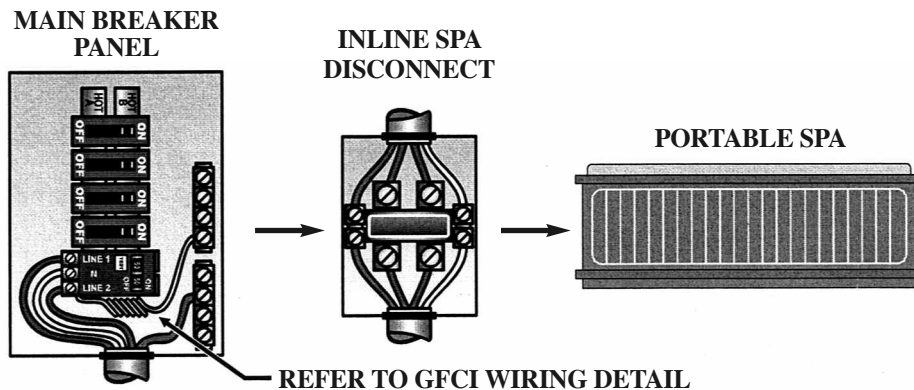
This illustration depicts a typical 20 AMP, cord-end GFCI installation. **(The spa must be installed on a dedicated circuit.)**



ELECTRICAL CONNECTIONS

OPTION 2 GFCI Installed in Main Service Panel

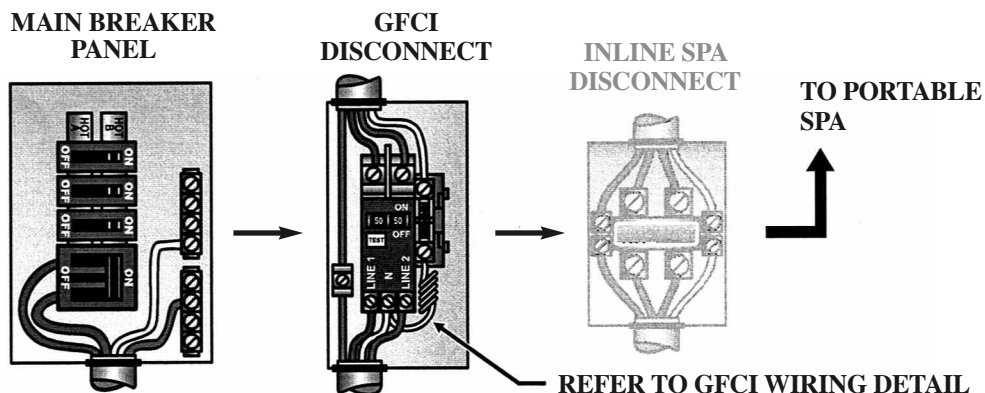
20-60AMP HARDWIRED



Power from GFCI breaker installed into main service panel to a service disconnect within line-of-site of the spa.

OPTION 2a SUBPANEL GFCI Installed

20-60AMP HARDWIRED



Power from main service panel to a GFCI subpanel within line-of-site of the spa. (Note: Most local codes will allow a GFCI subpanel to be a disconnect. If this is not the case in your installation, a disconnect must be provided.)

ELECTRICAL CONNECTIONS

 **IMPORTANT** – The NEC and most local codes require that a “disconnect” be installed within “line-of-site” of the spa.

ELECTRICAL INSTALLATION DETAILS

Refer to the System Data Label for equipment voltage and maximum amperage draws.

Install proper size Ground Fault Circuit Interrupter (GFCI) or circuit breaker, then proper sized wiring and bonding wire. For Power conductor size, refer to the National Electric Code Table 310-16. For Ground conductor size, refer to the National Electric Code Table 250-122.

A bonding lug has been provided on the control box to allow connection to local ground points. To reduce the risk of electrical shock, a solid copper bonding wire should be connected from this lug to any metal ladders, water pipes or other metal object within 5 feet of the spa.

 **WARNING** – BE SURE THAT YOUR POWER SUPPLY CIRCUIT CAN ADEQUATELY HANDLE THE AMPERAGE YOU SELECT.

The control input power wiring may have been provided. Following NEC and local codes in effect at the time of installation, connect (refer to wiring diagram located on the inside of control hinged cover) the Black wire to input Line 1, Blue wire to input Line 2 (if applicable), White wire to Neutral and the Green wire to ground.



PRODUCT REGISTRATION

(Retain For Your Records)



DATE OF INSTALLATION _____

INITIAL PRESSURE GAUGE READING (CLEAN FILTER) _____

PUMP MODEL _____ HORSEPOWER _____

FILTER MODEL _____

IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should always be followed, including the following.

READ AND FOLLOW ALL INSTRUCTIONS.

⚠ DANGER – To reduce the risk of injury, do not permit children to use this product unless they are closely supervised by an adult at all times.

⚠ WARNING – RISK OF CHILDREN DROWNING. Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use a spa or hot tub unless they are supervised at all time.

⚠ DANGER – To reduce the risk of injury to persons, do not remove suction fittings.

INSTALLATION – Provide drainage ports wherever necessary.

HYPERTHERMIA – Prolonged immersion in water that is warmer than normal body temperature can result in a dangerous condition known as **HYPERTHERMIA**. The causes, symptom, and effects of hyperthermia may be described as follows - hyperthermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 98.6°F. The symptoms of Hyperthermia include dizziness, fainting, drowsiness, lethargy, and increase in the internal temperature of the body. The effects of Hyperthermia include (1) unawareness of impending hazard, (2) failure to perceive heat, (3) failure to recognize the need to exit the spa, (4) physical inability to exit the spa, (5) fetal damage in pregnant women and (6) unconsciousness resulting in a danger of drowning. **WARNING** – The use of alcohol, drugs, or medication can greatly increase the risk of fatal Hyperthermia in hot tubs and spas.

⚠ DANGER – RISK OF ELECTRIC SHOCK. Install at least 5 feet (1.5m) from all metal surfaces. (A spa may be installed within 5 feet of metal surfaces if each metal surface is permanently connected by a minimum **No.8 AWG** (8.4mm) Solid copper conductor attached to the wire connector on the terminal box that is provided for this purpose.

IMPORTANT SAFETY INSTRUCTIONS

Always follow National and Local Electrical Code. A pressure wire connector is provided on the control box to permit connection of a minimum No.8 AWG (8.4mm) solid copper bonding conductor between this point and any metal equipment metal enclosures of electrical equipment metal water pipe, or conduit within 5 feet (1.5m) of the unit as needed to comply with local requirements.

Bond accessible metal to the dedicated connector on the equipment grounding bus and the bonding of the equipment grounding bus to the local common bonding grid only when a local common bonding grid is part of the installation in the form of (1) a reinforced concrete slab for support, (2) a ground plate provide beneath the hot tub or spa, or (3) a permanent ground connection that is acceptable to the local inspection authority.

⚠ DANGER – RISK OF ELECTRICAL SHOCK. Do not permit any electrical appliance. Such as a light telephone, radio, or television within 5 feet (1.5m) of spa or hot tub.

TO REDUCE THE RISK OF INJURY:

The water in a spa or hot tub should never exceed 49°C (140°F). water temperatures between 38°C (110°F) and 40°C (104°F) are considered safe for a healthy adult. Lower water temperatures are recommended for extended use (exceeding 10-15 minutes) and for children.

Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa or hot tub water temperatures to 38°C (100°F).

Before entering a spa or hot tub, the user should measure water temperature with an accurate thermometer since the tolerance of water temperature-regulating devices may vary as much as + or - 3°C (SF).

The use of alcohol, drugs or medication before or during spa or hot tub use may lead to unconsciousness with the possibility of drowning.

Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a spa or hot tub.

FOR UNITS WITHOUT G.F.C.I.:

⚠ WARNING – A G.F.C.I. must be installed at the house panel or in conjunction with a load center that meets N.E.C.

FOR ALL EQUIPMENT ASSEMBLIES:

Install at least 5 feet (1.5m) from tub water using nonmetallic plumbing. Install blower no less than 1 foot (305mm) above the maximum water level to prevent water for contacting electrical equipment. Install in accordance with the installation instructions.

Install at least 5 feet (1.5m) from inside wall of tub using nonmetallic plumbing.

GENERAL INFORMATION / SAFETY INSTRUCTIONS

FOR CORD AND PLUG-CONNECTED UNITS:

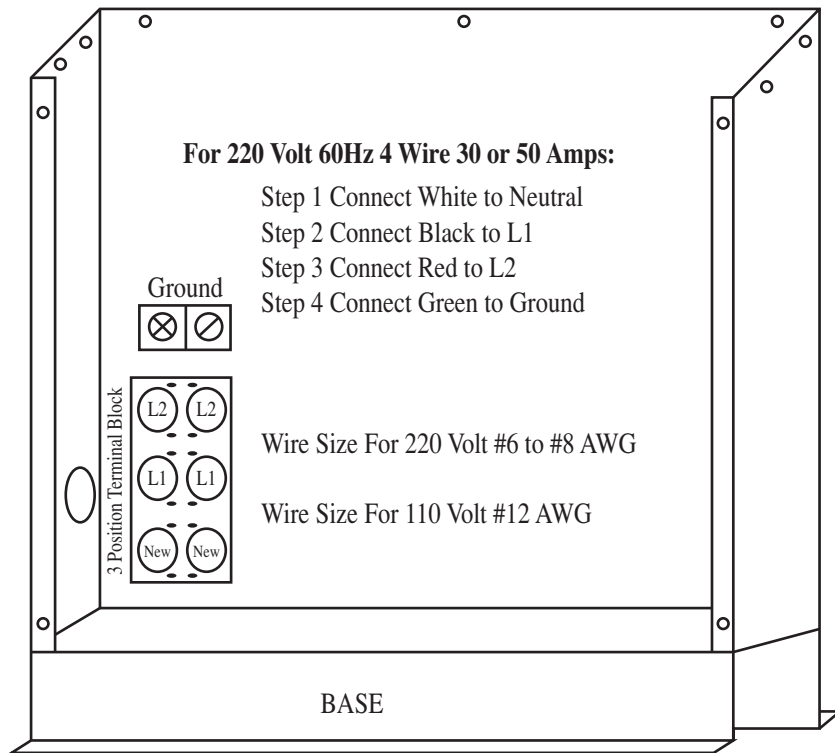
Connect to a grounded, grounding type receptacle only. **NEVER** Connect the spa to an extension cord. **DO NOT BURY CORD.**

⚠ WARNING – To reduce the risk of electrical shock, replace damaged cord immediately.

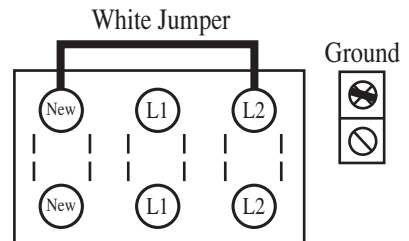
FOR PERMANENTLY INSTALLED UNITS:

A terminal marked “G” or ground is provided in the wiring box located inside the equipment compartment. To reduce the risk of electrical shock connect this terminal or connector to the grounding terminal of your

Setup	50 amp.....	60amp
Control.....	110.....	220
1st Pump Red.....	110.....	220
Blower Blue.....	110.....	220
Ozone Pink	110.....	220
2nd Pump Orange.....	110.....	220
Topside Black	110.....	220
Heater	110.....	1.5Kw
Titanium	Yes	No
Heater	220.....	5.5Kw



**To Change Control to 110 Volt:
 Incoming Power Wire #12 AWG**



For 110 Volt 60Hz 3 Wire 20 Amp

- Step 1 Connect White to Neutral
- Step 2 Connect White Jumper from Neutral to L2
- Step 3 Connect Black L1
- Step 4 Connect Green to Ground

**For Pumps White to Neu 110V
 For Pumps White to L2 220V**

⚠ CAUTION!! The equipment must be connected by a licensed electrician and in accordance with the National Electrical Code. Non compliance to the National Electrical Code will void your warranty. The licensed electrician should wire only the four incoming wires from Your house’s distribution panel to the terminal block. This is an appliance and should be installed and serviced only by a Licensed dealer or licensed spa repair technician.

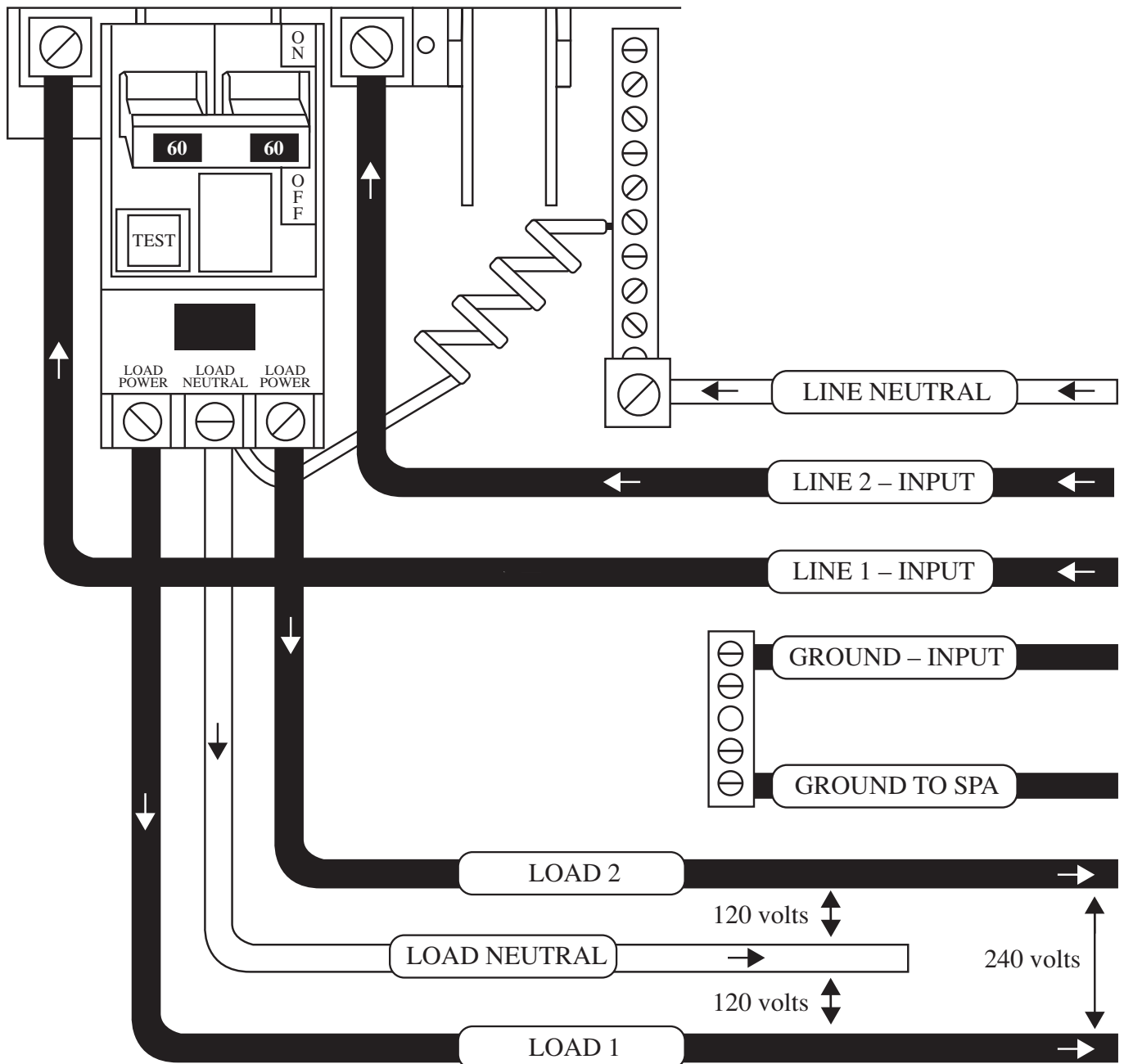
GENERAL INFORMATION / SAFETY INSTRUCTIONS

electric service or supply panel with a continuous green insulated copper wire. This wire must be equivalent in size to the circuit conductors supplying the equipment, but no smaller than No. (8.4AWG mm).

FOR ALL PERMANENTLY CONNECTED UNITS NOT PROVIDED WITH AN INTERNAL DISCONNECTING MEANS.

The electrical supply for this product must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with section 442-20 of the National Electrical Code. ANSI/NFPA 70-1987. The disconnecting means must be readily accessible to the tub occupant but installed at least 5 feet (1.5m) from the tub water.

Wiring a G.F.C.I Breaker



START UP AND OPERATION

Thank you for purchasing An Advantage Spa Pack.

This unit runs up to 4 single air switches. 1st air switch is Jets 1 Hi speed and low speed, 2nd air switch is for Blower on/off, 3rd air switch for light on/off and 4 th air switch is for Jets 2 on/off.

Also the unit is equipped with a thermostat for precise control of water temperature according to the user's preferences.

The thermostat will maintain the water temperature and the level you set it. The thermostat turns off when the water temperature setting is reached. When the temperature drops 4 to 5 degrees it goes on and reheats and so on all you must do when leaving your spa is to be sure system is in auto mode.

READ CAREFULLY

The wiring is complete and the spa is full of water and you are ready! The first thing you do is make sure the thermostat is turned off (that is all the way to the left or counter clockwise).

If you have a 110 volt hookup push the RESET button on the G.F.C.I.

That will power the pack. At this time if anything is running push the air button on the spa until so nothing is running. Now to begin push the 1 st air switch the high speed pump will come on, let it run for about five minutes or until all the air is out of the system and you have good jet action. At this point, check for leaks. If none are found, push the air button until the pack turns off.

Now turn the thermostat all the way up. A 120 volt hookup will take about 24 hours. To reach maximum water temperature. A 240 volt hookup will take 10 to 12 hours. You should have a good floating thermometer in the water to monitor water temperature changes. When the temperature reaches about 102 degrees slowly turn the thermostat to the left until the spa goes off. You are now set up in auto mode. The rest is automatic.

If you spa equipment is setup for 50 amps, The **Yellow wire is on Hot Load** it will heat in all modes, but the auto mode remains the same as above. The same applies to all 240 volt packs.

Important: 30/50 amp G.F.C.I. must be installed on your house electrical distribution panel.

TIME CLOCK MODE

The time clock works in low speed mode. Time clock sets up the daily filtration schedule. If you turn the thermostat off the pump will run in low speed but with no heat. If thermostat is on, it will still be in auto mode and control pump and heater. During set time thermostat will control heater as needed. The time clock does not control anything else except the low speed pump operation for filtration purposes.

TEMPERATURE CONTROL

Thermostat Mode. Push rocker switch on the left side down. Turn thermostat knob on the control panel clockwise all the way up now beck off. Between 1/4 to 1/2 turn. This will tum on the low speed pump and the heater on. (See heat indicator light.) Use an accurate thermometer in the water to monitor water temperature. When the heater shuts off check the temperature. Turn thermostat clockwise to increase or counter clockwise to decrease temperature. Once temperature is achieved it will be maintained automatically when in thermostat mode.

START UP AND OPERATION

Clock Mode. Push rocker switch on the right side down. This mode is for people who want to control the time when the heater and the low speed pump will run and only then. In this mode you must learn to set the clock for the right number of hours to have the water hot when you want to use the spa. The thermostat will still shut off heater when heat is achieved, but it will only work when clock is set. To set clock time and running time rotate clock dial clockwise to actual time by positioning time of day directly in line with time arrow: (**Caution:** Never turn clock counter clockwise).

Each tripper on the time clock represents 30 minutes of operation. Simply pull up trippers on clock at the time and the amount of time you want to run and you are ready. No doubt you will have to adjust this until the desired temperature is reached. As the weather changes so will your timing. To give an idea a 5kw heater has about an 8 degree heat rise per hour and a 1.5kw Heater has about a 2 degree rise per hour. In some cases this can be the best way to operate your spa.

HEATER HIGH LIMIT SWITCH

The high limit safety switch will shut off the main power supply if there is an. Abnormal temperature rise. After the heat cools down, the high limit switch can be reset by pushing the red button located on the control panel.

If the high limit kicks off more than once, **DO NOT USE THE SPA.** Until the problem has been corrected by a qualified technician.

CARE INSTRUCTIONS

READ CAREFULLY – PROTECT YOUR WARRANTY SPA WATER CARE

Changing water regularly and maintaining correct chemical balance will keep your spa safe and sanitary, and will protect your spa pack and its warranty coverage.

Purchase a good “DPD” water test kit and check the following chemical levels frequently.

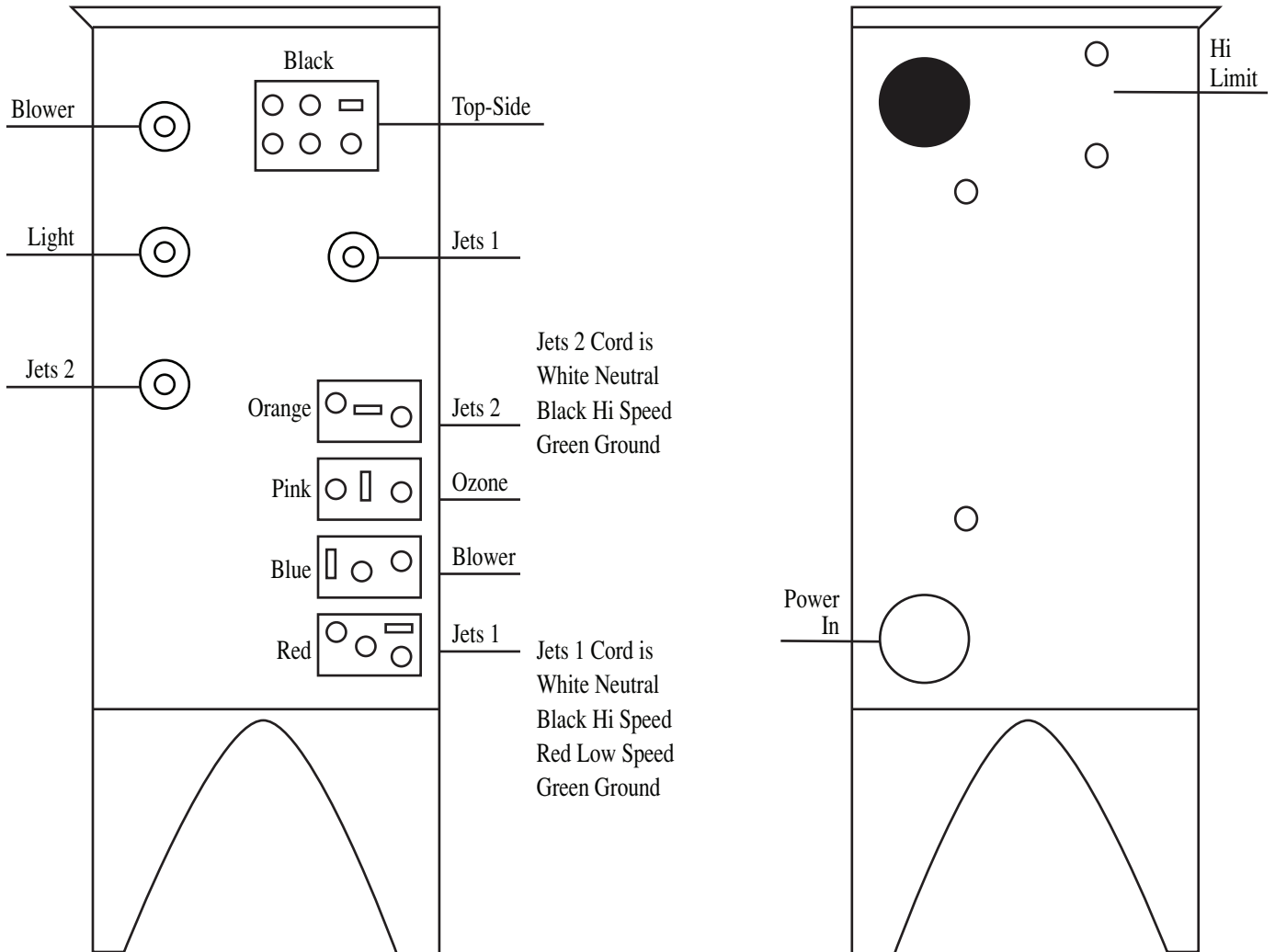
CHLORINE OR BROMINE – Recommended level 3 to 5 PPM. TEST before use.

PH – Recommended level 7.4 to 7.6. High readings reduce sanitizer efficiency. Low readings are corrosive and cause rapid PH changes when chemicals are added.

TOTAL ALKALINITY – 80 to 100 PPM. Test weekly during regular use. Low readings are corrosive and cause rapid PH changes when chemicals are added.

CALCIUM HARDNESS – 150 to 300 PPM. Test whenever spa is refilled. Low levels (soft water) can be very corrosive. Remember, addition of any chemicals can change levels of chlorine PH and total alkalinity.

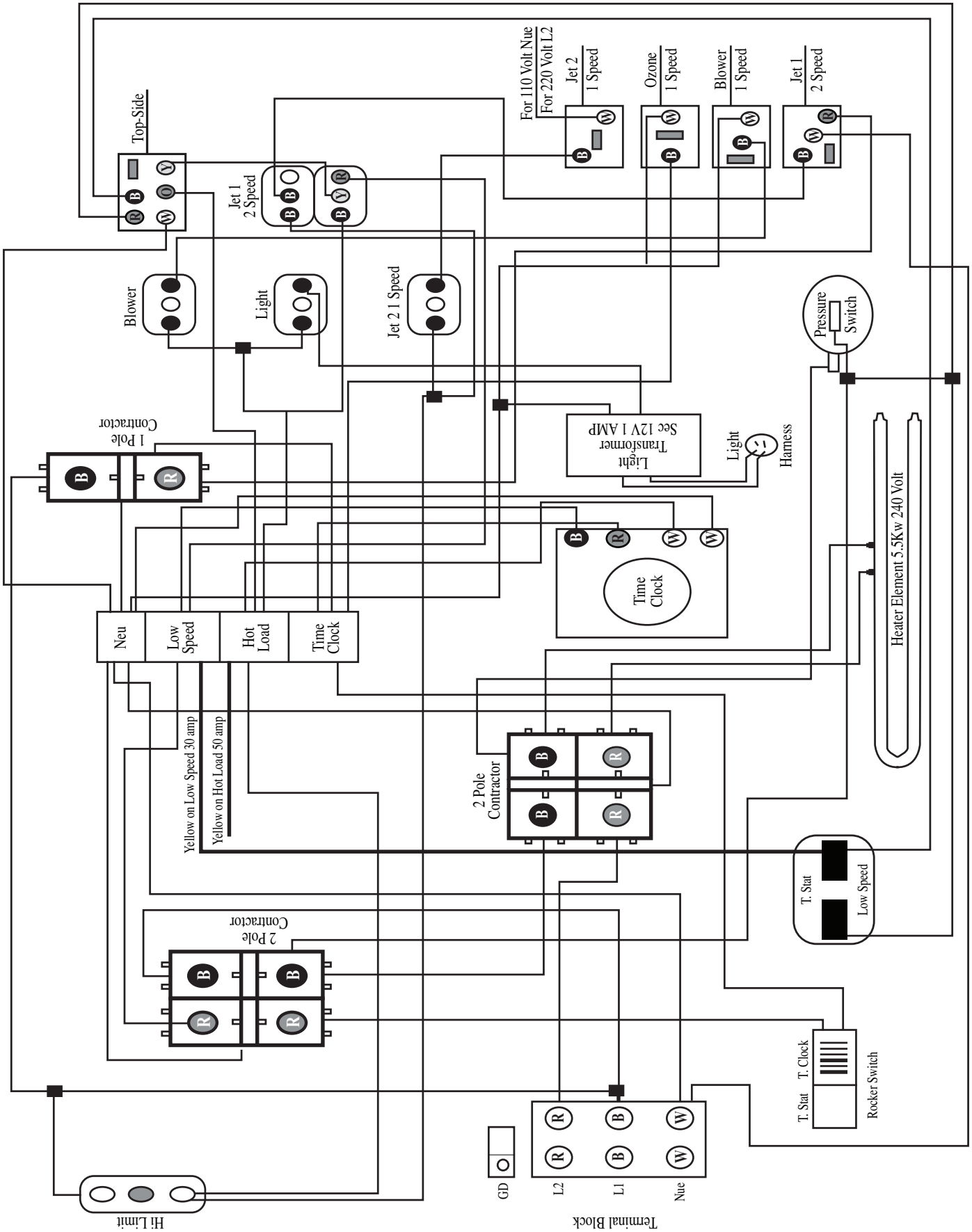
AIR SWITCH CONTROL – DIGITAL SIDE VIEW



YOUR SPA PACK MAY NOT HAVE ALL OPTIONS SHOWN.

IF A G.F.C.I. IS NOT INCLUDED IN YOUR SPA PACK ONE MUST BE INSTALLED IN YOUR POWER SUPPLY.

AIR SWITCH CONTROL - PART #A5500



Your spa pack may not have all options shown. If a g.F.C.I. is not included in your spa pack one must be installed in your power supply.

TROUBLESHOOTING

The following describes situations and possible solutions to common problems may encounter as a spa owner.
Note: your system may not include all components listed.

NOTHING OPERATES

- Main Breaker is Off** – *Set to On*
- Sub-Panel Breaker Off** – *Set to On*
- System GFCI Off** – *Set to On*
- Power switch in Off position** – *Set to On*
- Components not plugged in** – *Plug in components*
- Power cord not plugged in** – *Plug in power cord*

NO, LOW OR SURGING WATER FLOW

- Air Lock in Plumbing System** – *“Bleed” the system*
- Restricted Flow** – *Insure that the water shut-off valves are open and that suction fittings are not blocked by debris*
- Low Water Level** – *Increase water level to recommended level*

NO LOW SPEED PUMP OPERATION

- Pump 1 Not Plugged-In** – *Plug in Pump 1*
- Pump 1 Fuse Blown** – *Contact your local dealer*
- Pump 2 Not Plugged-In** – *Plug in Pump 2*
- Pump 2 Fuse Blown** – *Contact your local dealer*

NO JETS OR BLOWER OPERATION

- Blower or Pump Not Plugged-In** – *Plug in the Blower or Pump*
- Pump or Blower Fuse Blown** – *Contact your local dealer*

NO THERAPY JET OPERATION

- Water Shut-Off Valves are Closed** – *Open Shut-Off valves*
- Jets Not Properly Adjusted** – *Adjust Jets properly*
- Diverter Valve Not Properly Adjusted** – *Adjust diverter valve properly*
- Thermal Overload Tripping** – *Check for restricted flow of water*

NO LIGHT OPERATION

- Light Bulb Defective** – *Replace bulb or contact your local dealer*
- Reflector has Fallen Off** – *Replace deflector or contact your local dealer*
- Light Not Plugged-In** – *Plug in the Light*

WATER LEAKS

- Spa Overfilled** – *Adjust water level*
- Drain-Valve Left Open** – *Close drain valve*
- Couplings or Unions Loose** – *Tighten or contact your local dealer*
- Pump Seal Leaking** – *Contact your local dealer*
- Plumbing / Connections Leaking** – *Contact your local dealer*
- Water Leaking from Spaside Control** – *Contact your local dealer*
- Water in Air Blower Plumbing** – *Contact your local dealer*

NO HEAT

- Temperature Not Set Correctly** – *Adjust “Set Point” Temperature*
- System Power Restriction** – *Depending on available power, the spa may have interlocks in place to shut off the heater when the pumps are switched to high speed*

HIGH HEAT

- Temperature Sensor Not in Dry-Well** – *Place sensor in dry-well*
- Temperature Set Too High** – *Adjust “Set Point” Temperature*
- High Ambient Temperature** – *Remove spa cover*

1 YEAR LIMITED WARRANTY

CLAIMS: All claims must be made within ten (10) calendar days after receipt of the merchandise. If any shipment is Here received in a damaged condition, your claim must be filed with the delivering carrier and noted on the freight bill before you accept the merchandise.

RETURNS: All returns are subject to our written approval and must be accompanied by a "Return Goods Authorization" number obtained from APP prior to shipment. Unauthorized returns will not be accepted. Freight must be prepaid. Material returned for credit, if in original condition and resalable, is subject to a 20% handling charge.

TAXES: Any Federal or State Excise or Sales Tax for which APP may be liable on any sale will be charged to and paid by the buyer. Buyer is responsible for furnishing a resale certificate.

PRICES: Prices and Products are subject to change without notice.

LIMITED WARRANTY: To Buyer, as original purchaser of the Goods, APP warrants its products free from defects

in materials and workmanship for a period of one year from the date of purchase. Parts which fail or become defective during the warranty period, except as a result of freezing, negligence, improper installation, use or care, shall be repaired or replaced, at our option, within ninety (90) calendar days of the receipt of the defective product, barring unforeseen delays. To obtain warranty, replacements or repair, defective components or parts should be returned, transportation paid, to the place of purchase. No returns may be made directly to the factory without the express written authorization of APP. Pump housing/strainers which become defective during the warranty period, except as a result of freezing, negligence, improper installation, use or care, or as the result of use in association with an automatic valving system, shall be repaired or replaced, at APP's option, without charge. All other conditions and terms of the standard warranty apply. APP shall not be responsible for cartage, removal and/or re installation labor or any other cost incurred in obtaining warranty replacements. The foregoing warranty does not apply to components manufactured by others. For such products, the warranty established by the respective manufacturers will apply.

LIMITATION ON IMPLIED WARRANTIES: Implied warranties, including any warranty or merchantability imposed on the sale of the goods under state law, are limited to one year duration for the goods or any parts.

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BREACH OF THIS AGREEMENT OR WHETHER ANY REMEDY PROVIDED.

HEREIN FAILS OF ITS ESSENTIAL PURPOSE. APP'S LIABILITY AND BUYER'S SOLE REMEDY, WHETHER IN CONTRACT, UNDER WARRANTY, IN TORT (INCLUDING NEGLIGENCE,) IN STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE RETURN OF THE AMOUNT OF THE PURCHASE PRICE PAID BY BUYER AND SHIPMENT COSTS.

INDEMNIFICATION: Buyer will defend and indemnify APP and its directors, employees, agents, customers, end users, successors and assigns from and against all actual and alleged claims, liabilities, suits, damages, losses and expenses (including attorney's fees and legal costs) arising from, or caused in whole or in part, by buyers breach of any provision, term or condition of purchase.

BINDING EFFECT: All sales transactions are binding on APP and the buyer and their respective directors, officers, employees, agents, subcontractors, successors and permitted assigns.

GOVERNING LAW: All transactions will be interpreted and enforced under the laws of the State of California (including without limitation the Uniform Commercial Code as adopted by the California), without recourse to the conflict of laws provision thereof. In no event will the provisions of the UN Convention of the International Sale of Goods apply to any purchases. APP and buyer agree that any action or proceeding arising out of or in connection with any sale of product or service, will be brought exclusively to a court of competent jurisdiction in the County of Orange, State of California.

THE LIMIT OF LIABILITY FOR ANY CLAIMS SHALL NOT EXCEED THE AMOUNT PAID OR PREPAID ON ACCOUNT BY BUYER FOR THE GOODS GIVING RISE TO SUCH CLAIMS. BUYER SHALL BE DEEMED TO ASSUME ALL LIABILITY FOR ANY AND ALL DAMAGES ARISING FROM OR IN CONNECTION WITH THE USE OR MISUSE OF THE GOODS BY BUYER, ITS EMPLOYEES, CUSTOMERS AND OTHERS. SELLER SHALL NOT BE LIABLE FOR AND BUYER AGREES TO INDEMNIFY, DEFEND AND HOLD SELLER HARMLESS FROM ANY CLAIMS BASED ON SELLER'S COMPLIANCE WITH BUYER'S DESIGNS, SPECIFICATIONS OR INSTRUCTIONS, OR MODIFICATION OF ANY GOODS BY PARTIES OTHER THAN SELLER, OR USE IN COMBINATION WITH OTHER PRODUCTS. EACH PARTY RECOGNIZES AND AGREES THAT THE WARRANTY DISCLAIMERS AND LIABILITY AND REMEDY LIMITATIONS HEREIN ARE MATERIAL, BARGAINED FOR BASES OF ANY ORDER OR CONTRACT AND THAT THEY HAVE BEEN TAKEN INTO ACCOUNT AND REFLECTED IN DETERMINING THE CONSIDERATION TO BE GIVEN BY EACH PARTY UNDER ANY ORDER OR CONTRACT AND IN THE DECISION BY EACH PARTY TO ENTER INTO SUCH ORDER OR CONTRACT.

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