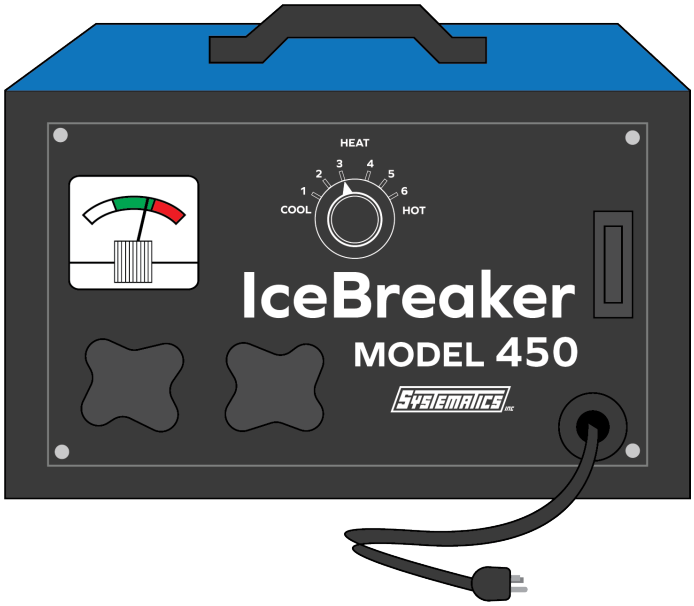
OWNER'S MANUAL

ICEBREAKER
MODEL IB450



THAWS FROZEN METAL WATER PIPES ELECTRICALLY IN MINUTES

FOR TECH SERVICE, CALL 1-800-222-9353

GENERAL SAFETY RULES

WARNING! READ AND UNDERSTAND ALL INSTRUCTIONS PRIOR TO USE. Failure to follow all instructions listed below may result in electrical shock, fire, and/or serious personal injury. Replacement manuals are available upon request at no charge or may be downloaded from our website, www.pipethaw.com. If any questions or problems arise, please call our tech service department at 1-800-222-9353.

Save these instructions! They are intended to familiarize you with the safe operation and maintenance procedures for the IceBreaker.

⚠ WARNING

WARNING indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ WARNING

Electric shock resulting in death can occur if you plug this machine into an improperly wired outlet. If the ground wire is electrified, you can be electrocuted by just touching the machine, even when the power switch if off. A ground fault circuit interrupter will not protect you in this situation. Use a UL approved tester to determine if the outlet is safe.

Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools can create sparks which may ignite the dust or fumes.

Always wear safety glasses, heavy gloves, and rubber soled, non-slip shoes. Use of this safety equipment may prevent serious injury.

Be very careful when thawing frozen pipes. Clamp tips and cable connections become hot during use. Avoid contact with skin as burns can result. Keep clamps away from combustable materials or articles that could be damaged by heat.

WORK AREA

1. Keep work area clean and well lit. Cluttered benches and dark areas invite accidents.
2. Do not operate these tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes.
3. Keep bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

ELECTRICAL SAFETY

1. Grounded tools must be plugged into an outlet, properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
2. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded.
3. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
4. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
5. When operating a power tool outside use an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of electric shock.
6. Use only three-wire extension cords which have three-prong grounding plugs, and three-pole receptacles which accept the tool's plug. Use of other extension cords will not ground the tool and increases the risk of electrical shock.
7. Use proper extension cords. Insufficient conductor size will cause excessive voltage drop, loss of power, and overheating.
8. Keep all electric connections dry and off the ground. Reduces the risk of electric shock.
9. Do not touch plugs or tools with wet hands. Reduces the risk of electric shock.

PERSONAL SAFETY

1. Stay alert, watch what you are doing and use common sense when operating a tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.
2. Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.
3. Avoid accidental starting. Be sure switch is off before plugging in. Plugging in tools that have the switch on invites accidents.
4. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.
5. Always wear safety glasses and rubber soled, non-slip shoes. Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

TOOL USE AND CARE

1. Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
2. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventative safety measures reduce the risk of starting the tool accidentally.
3. Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.
4. Maintain tools with care. Properly maintained tools are less likely to cause injury.
5. Check for breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
6. Only use accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool may become hazardous when used on another tool.
7. Inspect tool and extension cords periodically and replace if damaged. Damaged cords increase the risk of electrical shock.
8. Keep handles dry and clean and free from oil and grease. Allows for better control of the tool.

SERVICE

1. Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified repair personnel could result in injury.
2. When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual. Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of electric shock or injury.
3. Disconnect all power from the unit before servicing. Eliminates the risk of electrical shock and accidental starting.

INTRODUCTION

A frozen water pipe can be thawed very quickly by passing low voltage, high current AC electricity through it. This method works on steel or copper pipes even when they are buried in the ground or concealed in the walls of buildings. It **DOES NOT** work on plastic pipes because they will not conduct electricity. The method requires that there be unfrozen water, under standard pressure, on one side of the frozen section of pipe and an open faucet or pipe on the other. Thawing pipes electrically has been shown to be more convenient and safer than other methods of thawing pipes.

METHOD	REMARKS
OPEN FLAME	LACK OF CONTROL, USES DANGEROUS GAS OR OTHER FLAMMABLE LIQUIDS, RISK OF FIRE
HOT WATER	SLOW, LACK OF CONTROL
ARC WELDER	LARGE POWER SOURCE REQUIRED TO SUPPLY NEEDED HIGH VOLTAGE, ARC CAN MELT PIPES, HAZARD OF HIGH VOLTAGE SHOCK TO OPERATOR, DANGER TO WELDER, RISK OF FIRE
ELECTRIC PIPE THAWER	USES SAFE LOW VOLTAGE, EASY TO USE, NO FLAME OR ARC WHEN USED PROPERLY

DESCRIPTION

The **IB450** is a compact electric pipe thawing machine intended for use by professional plumbers and for light industrial use. It is designed for use with 1/2 to 1 inch copper or iron pipe up to 150 feet in length. The unit is protected by an internal thermal switch and a 20 AMP circuit breaker. It features a 6 position switch to control heat output. The meter on the unit informs the operator that the selected heat output is too low, safe, or too high for each thawing operation. Two #2/0 AWG cables of 20, 50, or 100 feet, or two #4/0 AWG cables of 50 or 100 feet should be used for thawing.

NOTE

Longer cables must also be larger in AWG size. If smaller diameter cables are used, current (amperage) will be limited.

PIPE THAWING PROCESS

When electrically thawing a section of water pipe, it is only necessary to heat the pipe enough to melt a thin film of ice on the inside of the pipe. The warmer water, under standard pressure, on the one side of the ice will break the surface tension and quickly melt the rest of the ice, causing a flow out of the open faucet on the downstream side. If operated properly, the machine will melt the ice and cause the water to flow in about 10 minutes (see "APPROXIMATE THAWING TIMES" on pg 5).

IMPORTANT

The **IB450** comes equipped with a built-in thermal protector. When the machine's internal temperature reaches a certain point, automatic shut down will occur.

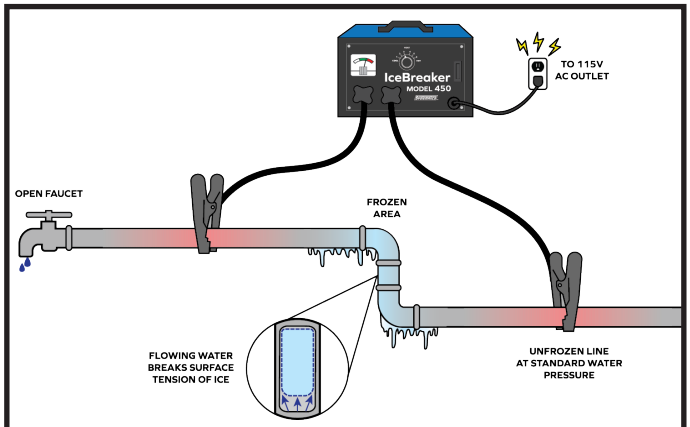


FIGURE 1 : THAWING PROCESS

SPECIFICATIONS

PART NO..... **IB450**

INPUT

VOLTAGE.....115V AC
PHASE..... SINGLE
FREQUENCY.....50/60 HZ
CURRENT.....17 AMPS
INPUT CABLE..... 9 FT

OUTPUT

VOLTAGE.....4.5 - 10V AC
CURRENT (MAX).....450 AMPS

PIPE THAWING CAPACITY

PIPE SIZE.....1"
LENGTH (MAX).....150 FT

DIMENSIONS..... **12"X13"X12"**

WEIGHT..... **58 LBS**

RECOMMENDED CABLES

(2) 50FT #2/0 AWG
(2) 100FT #4/0 AWG

FEATURES

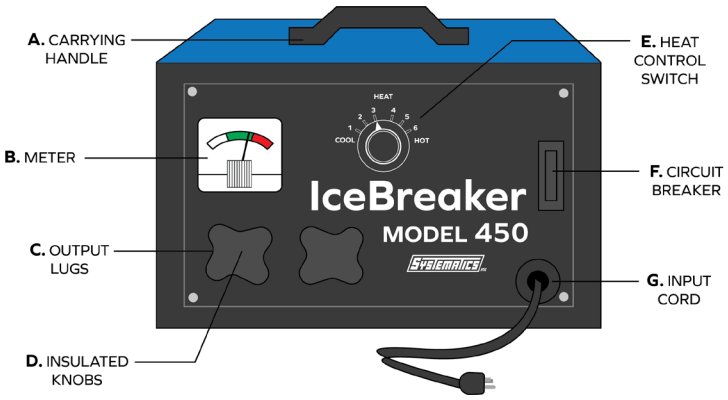


FIGURE 2 : FRONT VIEW

A. CARRYING HANDLE
HEAVY-DUTY CONSTRUCTED HANDLE FOR EASY LIFTING

B. METER
COLOR CODED METER FOR QUICK SELECTION OF OUTPUT CURRENT
WHITE - TOO LOW | **GREEN - SAFE** | **RED - TOO HIGH**

C. OUTPUT LUGS
TERMINALS ALLOW QUICK INSTALLATION AND REMOVAL OF PIPE THAWING CABLE ASSEMBLIES

D. INSULATED KNOBS
NO WRENCH REQUIRED FOR EASY CABLE REMOVAL

E. HEAT CONTROL SWITCH
6 POSITION SWITCH FOR CONTROLLING HEAT OUTPUT

F. CIRCUIT BREAKER
PRIMARY POWER SWITCH AND OVERLOAD PROTECTION DEVICE

G. INPUT CORD
9 FT HEAVY-DUTY CORD WITH GROUNDED PLUG

INSTALLATION

The **IB450** is portable and can be positioned in any location convenient to the frozen pipe and available input power. A 115V AC grounded 20 AMP circuit is required. If necessary to use an extension cord, it should be a heavy-duty 3 pronged grounded conductor type.

⚠ WARNING

If the wiring is grounded in two places, such as, at a barn and house, a parallel low voltage current may be established through the grounded neutral conductor. If so, it could start a fire in either building. Disconnect all grounds at either end of the electrical wiring systems. Disconnect all appliances to prevent blowing fuses or overheating the house wiring. Do not connect the machine to power until all pipe connections have been made.

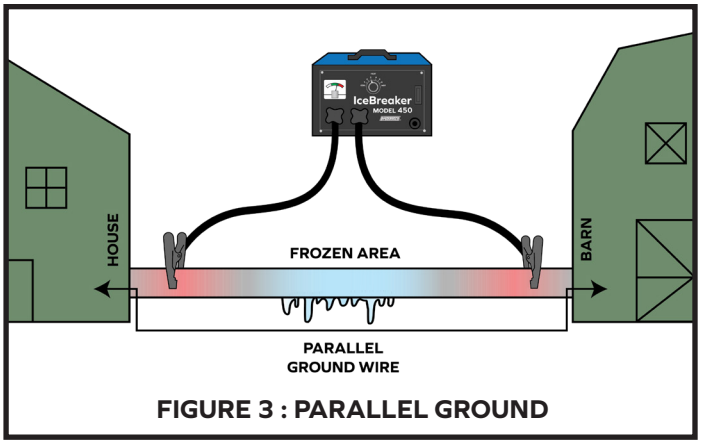


FIGURE 3 : PARALLEL GROUND

OPERATION

First, isolate the frozen section of the pipe. Inside a house, this is done by opening faucets and back tracing the pipes. The frozen section will usually be in the outside walls, near doors or windows, or in crawl spaces under floors. If all water outlets in the house fail to operate, the line from the curb valve to the house could be frozen. (See "THAWING HOUSE SERVICE PIPES" on pg 5).

THAWING DIRECT LINES

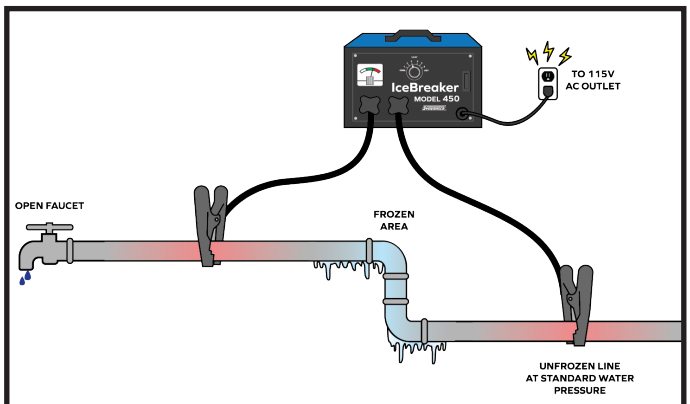


FIGURE 4 : STANDARD HOOKUP

NOTE

Good connections are necessary. Before connecting cables, clean all pipes by sanding with coarse emery cloth. Tighten connections to prevent overheating or arcing. The pipe and cables will vibrate to the touch. Do not use cables coiled up or placed on steel objects as heating in the pipe will be reduced.

1. Uncoil the pipe thawing cables.

2. Connect cables to machine and the pipe to be thawed at the nearest convenient spots that will place the frozen section **BETWEEN** the clamps.

3. Place the clamps at least 15 FT apart to prevent overheating the machine and cables.

4. Set the Heat Control Switch on machine to HEAT #1.

5. Plug the power input cord into a 115V AC receptacle.

6. Turn "ON" the circuit breaker and observe the meter.

7. If the pointer of the meter is in the white or lower green area, turn "OFF" the circuit breaker.

8. Reset the machine to HEAT #2.

9. Turn the circuit breaker "ON" and observe the meter.

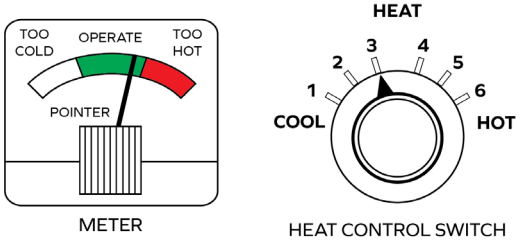


FIGURE 5 : METER LEGEND

10. If the pointer is still in the white or lower green area, try HEAT#3 setting and so on until the pointer is well into the green area but not into the red area.

11. If the pointer is in the red area, turn the circuit breaker "OFF" and reset the machine to the next lower heat setting.

12. If the meter will not go into the green zone, larger diameter cables are required for maximum thawing results.

13. Pipes may be thawed with the meter in the white zone, but thawing times will be longer.

⚠ WARNING

Always use this machine in the green area. Never in the red area. Make sure the circuit breaker is turned "OFF" before changing the heat setting. Monitor the equipment during the pipe thawing operation.

⚠ WARNING

A small empty pipe in the circuit may get very hot before a larger pipe will thaw. This could melt the solder in a copper line or set fire to nearby combustible materials.

APPROXIMATE THAWING TIMES

UNDER IDEAL CONDITIONS

PIPE TO BE THAWED

SIZE..... 3/4 - 1"
TYPE..... Copper or Steel

CABLES USED

SIZE.....#2/0 AWG
LENGTH.....50 FT

PIPE LENGTH	CURRENT	THAWING TIME
20 FT	300 AMPS	8 MIN
40 FT	270 AMPS	10 MIN
50 FT	240 AMPS	12 MIN
60 FT	220 AMPS	15 MIN
80 FT	200 AMPS	20 MIN
100 FT	180 AMPS	25 MIN

NOTE

Since copper pipes will not heat up as fast as iron pipes, allow about 30% longer thawing time.

THAWING HOUSE SERVICE PIPES

House service pipes usually can be thawed by connecting one cable to the exposed pipe in the kitchen or basement and the other cable to the curb service. At the curb, make the connection to the valve at the bottom of the service riser using a curb key. The adjustable ground level cover probably does not make a good connection to the valve.

NOTE

The curb key must make an excellent connection or heating of the key will be the only result.

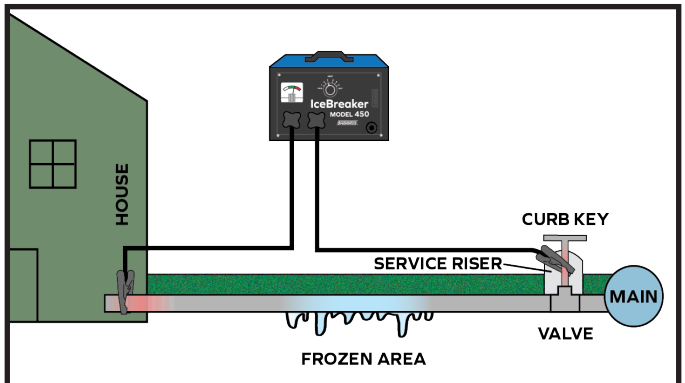


FIGURE 6 : HOUSE SERVICE PIPE

THAWING HOT WATER HEATING SYSTEMS (WINTER/SUMMER HOOKUP)

This unit is intended for use where there is a direct pressure pipeline from an unfrozen, high pressure pipeline to an open faucet. It may be used on hot water heating systems. However, the design of these systems present problems which may make the machine's use ineffective.

1. Because these systems use low pressure pumps, more heating is required before the warmer water can seep past the ice and continue the thawing process.

2. Because the pipes in the system are interconnected electrically, the resistance heating from the machine current can take several paths through the pipes and will not be concentrated in the frozen section. The heat developed will be only 1/2 - 1/3 of the heat developed by the machine. There may or may not be enough heat to thaw the pipe.

3. There is little hope of thawing pipes in systems using cast iron radiators, large iron pipes or gravity circulation.

If the setup is correct and there is no thaw, the final solution is to open the pipes so all the heat and pressure is concentrated in one frozen zone at a time, as shown in FIGURE 7.

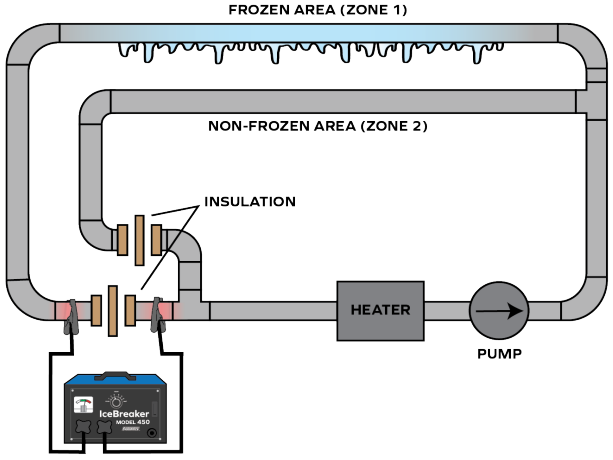


FIGURE 7 : HEATING SYSTEMS

1. Seperate and cap all unfrozen zones.

2. Seperate frozen zone.

3. Put non-conductive insulation between pipe ends.

4. Turn on heater, pump, and machine. Collect thawing water in a container.

5. Shut off everything. Quickly connect pipes.

6. Check heat in all zones.

THAWING COPPER BASEBOARD SYSTEMS

To thaw copper pipes baseboard systems, attach the clamps directly to the pipe and not to the sheet metal pipe covers. Covers should be removed or lifted up so they will not touch the heating pipe. The copper pipe should be insulated from any metal hangers or supports.

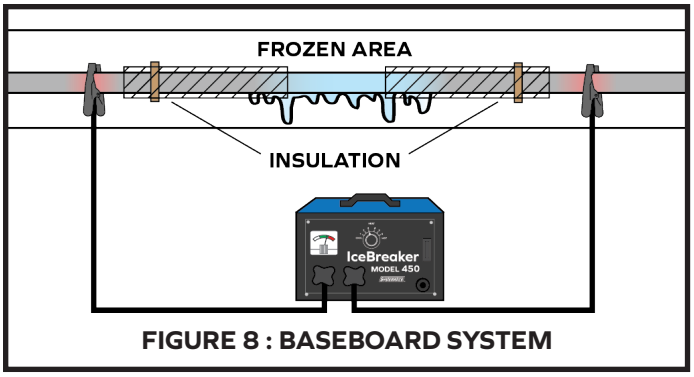


FIGURE 8 : BASEBOARD SYSTEM

PREVENT REFREEZING OF PIPES

Prevent refreezing by taking steps to prevent the pipe from cooling below 32°F. Insulate all cracks and openings, wrap pipes with thermostatically controlled heating tape and let water trickle on cold nights (usually a flow of one gallon per hour is enough to prevent freezing).

IMPORTANT

DO - USE SHORT CABLES.
DO - UNWIND THE CABLES.
DO - CONNECT THE CLAMPS TO UNFROZEN PIPE ON EITHER SIDE OF FROZEN SECTION.
DO - CLEAN PIPE AND MAKE GOOD CONNECTIONS.
DO - MAKE CONNECTIONS TO PIPE BEFORE PLUGGING IN THE ICEBREAKER.
DO - OPEN FAUCETS SO MOVING WATER CAN HELP THAW PIPE.
DO - USE ONLY HEAVY DUTY EXTENSION CORDS.
DO - DISCONNECT ALL ELECTRICAL GROUNDS ATTACHED TO THAWING AREA (i.e. TELEPHONE, CABLE, TV, etc.)
DO - MAKE SURE THERE IS WATER PRESSURE AT ONE SIDE OF FROZEN SECTION.
DO - ATTACH CLAMPS TO PIPE CORRECTLY.
DO - WATCH FOR OVERHEATING AND FIRES.
DO - PREVENT REFREEZING.

DO NOT - LAY CABLES ACROSS FLOORS OR CARPETING.
DO NOT - LEAVE CABLES WOUND UP.
DO NOT - MAKE QUICK CONNECTIONS TO DIRTY PIPE.
DO NOT - MOVE CLAMPS WHILE CURRENT IS FLOWING.
DO NOT - LEAVE MACHINE UNATTENDED.
DO NOT - LEAVE MACHINE "ON" OVERNIGHT.

TROUBLESHOOTING GUIDE

FOR TECH SERVICE, CALL 1-800-222-9353

FAULT	POSSIBLE CAUSE	REMEDY
CABLES STAY COLD. PIPE DOESN'T THAW. (NO CURRENT FLOW).	•Line fuse is broken.	•Replace fuse.
	•Machine circuit breaker is "OFF."	•Turn on circuit breaker on unit.
	•Poor connection by cable clamps.	•Clean pipe where clamps attach.
	•Both clamps are not on same pipe.	•Put clamps on same pipe.
	•Thermal protector is tripped.	•Allow unit to cool and retry.
	•Not a complete circuit: -Pipe in line is connected with rubber insulated couplings. -There is plastic pipe in the line. -Solder joint has been pushed apart by ice.	•Need a complete circuit for electric current.
CABLES GET WARM. PIPE DOESN'T THAW.	•Clamps attached to metal cover and not directly to pipe.	•Attach clamps directly to pipe.
	•Poor connection by cable clamp.	•Clean pipe where clamps attach.
	•Use of longer than standard cables which are not larger in AWG size.	•Use larger AWG cables.
CABLES GET HOT. PIPE DOESN'T THAW.	•No water pressure because source is frozen.	•Thaw water pressure source.
	•No water pressure because pump is not operating.	•Turn on pump. Water pressure is required.
	•Clamps do not cover all of frozen area.	•Reposition clamps.
	•Pipes interconnected electrically so not enough heat is concentrated in the frozen section.	•Seperate frozen zone from non-frozen zone.
	•Thawing hot water systems with several zones so not enough heat is concentrated in frozen section.	•Seperate frozen zone from non-frozen zone.

The **IB450** relies on current flow for proper operation. Please equip yourself with an AC clamp-on "Amprobe®" meter for current monitoring purposes.

MANUFACTURER'S LIMITED WARRANTY

THIS EQUIPMENT IS WARRANTED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF TWO YEARS FROM THE DATE OF PURCHASE. SHOULD THE EQUIPMENT BECOME DEFECTIVE FOR SUCH REASON, THE MANUFACTURER WILL REPAIR IT WITHOUT CHARGE, IF IT IS RETURNED TO THE MANUFACTURER'S FACTORY, FREIGHT PREPAID. THIS WARRANTY DOES NOT COVER: (1) FAILURE DUE TO NORMAL WEAR AND TEAR; (2) CONSUMABLES, SUCH AS, BUT NOT LIMITED TO, CLAMPS AND CABLES; (3) DAMAGE BY ACCIDENT, FORCE MAJEURE, IMPROPER USE, NEGLECT, UNAUTHORIZED REPAIR OR ALTERATION; (4) ANYONE OTHER THAN THE ORIGINAL PURCHASER.

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