IQWATT Inc., CANADA

6 w/ft

IQ PIPE

PIPE FREEZE PROTECTION KIT

INSTALLATION MANUAL

iQWATT

CONTENTS

IMPORTANT SAFEGUARDS AND WARNINGS

WARNING: Shock and Fire Hazard

Never twist, cut, or alter the cable in any way. This is to avoid the risk of electrical arcing, fire, damage, shock and injury.
Do not embed cable in insulating materials such as spray foam. Insulation must be pre-formed, rigid foam or fiberglass types. They must be inflammable, as well.
Ground fault or arc flash protection is recommended for all persons involved in the installation and maintenance of the preassembled IQ PIPE freeze protection system.
Inspect the cable throughout the installation process and routinely as a maintenance procedure. Remove and replace cable immediately if there is any evidence of cuts, nicks, gouging, cutting, biting or any other damage. It is recommended that qualified personnel install and maintain this product.
Never allow the IQ PIPE system to be used without being covered by inflammable fiberglass or inflammable preformed foam insulation.
If there is a chance that the IQ PIPE system may come in contact with water, the system must be completely covered in rigid insulation that has a vapour barrier. If the rigid insulation does not have a vapour barrier the installer must cover the IQ PIPE system and insulation in waterproof fiberglass, glass cloth or other inflammable waterproof tape. As with the other steps in the installation this must be done before the electrical current is turned on.
Exposing the cable to temperatures above 85 °C (185 °F) will cause damage.
Never install the heating cable when the cable is colder than -10 °C (14 °F).
Never use the system on steam lines, often heated to temperatures of 65 °C (149 °F), or other pipes that will experience very high temperatures.

- Instructions marked Important
- Safety warnings identified as WARNING

GENERAL INFORMATION

The IQ PIPE freeze protection system is designed and manufactured to prevent metal and plastic water pipes from freezing.
It is for use in residential and commercial locations.
The cable is insulated and therefore may be looped back along the length of a pipe, crossed over itself, or spiraled along the pipe for ease of installation.
The cable is available in a variety of cable lengths and comes preassembled

in a kit with a heating cable, end seal, power cord and plug.
The IQ PIPE system is self-regulating: the surrounding temperature is monitored along the length of the cable. The electric power decreases or increases to maintain a constant warm temperature for maximum energy savings.
The system runs on 120 or 240 volts.
Full contact of the IQ PIPE cable system with the pipe is mandatory for proper functioning.

Important

Review this manual carefully. The installation process must be followed exactly in order to prevent the risk of electrical arcing, fire, damage and shock, and to effectively protect pipes from freezing.
This manual is guided by the Canadian Electrical Code, Part 1, and by the codes of the Canadian Standards Association (and by the NEC in the US). If you are not familiar with all local, provincial and national electrical standards, consult an electrician.
For each electrical heating cable circuit, the use of 30-MA ground fault protection is recommended. This will ensure maximum freeze protection. If you are unaware of a ground fault circuit interrupter (GFCI) in your electrical system, consult an electrician. This direction is especially important for people installing the IQ PIPE system for mobile homes.
Inflammable tape such as ½" fiberglass is recommended to attach the IQ PIPE system to the pipe. Nylon or plastic ties may be used, but must be tightened carefully in order to avoid damage to the cable cover. Metal clamps can also be used, as the cable is insulated: however, damage to the cover could be incurred. Vinyl tape and metal staples are prohibited from use.
Do not use extension cords.
Do not turn on power to the cable until the system has been installed on the pipe. Ensure that power is turned off during installation and servicing.
Retain this manual for reference.
Taking photos of the installation process is recommended for documentation.

1 PRODUCT SELECTION

1.1 CHOOSE THE CABLE

Before starting your installation, measure the pipe or pipes being protected from freezing. Note the diameter and material of the pipe for proper selection.
Add 1' (1 foot) for each spigot, valve or connection that will be present on the pipe.

Select the length of cable that you need from the Product Selection table. The minimum length of the cable is 3' (3feet).
If the pipe is shorter than the cable of choice, the extra length can be safely doubled back on itself or spiraled around the pipe. The insulation present inside the cable makes this possible.

TABLE 1:120V PRODUCT SELECTION

Model Number	Reference Number	Voltage (V)	Length (ft)	Power Output at 40°F, 5°C (W)	Power Output at 50°F, 10°C (W)	Power Output at 32°F, 0°C (W)	Max. Exposure Temperature	
							°F	°C
IQ Pipe-36-6-1	A	120	6	36	30	60	185	85
IQ Pipe-72-12-1	B	120	12	72	60	120	185	85
IQ Pipe-108-18-1	C	120	18	108	90	180	185	85
IQ Pipe-144-24-1	D	120	24	144	120	240	185	85
IQ Pipe-300-50-1	E	120	50	300	250	500	185	85
IQ Pipe-450-75-1	F	120	75	450	375	750	185	85
IQ Pipe-600-100-1	G	120	100	600	500	1000	185	85

TABLE 2:120V CHOOSING A CABLE FOR THE PIPE*

Pipe Length (Ft)	Pipe Diameter (Inch) and Material									
	½		1		1½		2		2½	
	Metal	Plastic	Metal	Plastic	Metal	Plastic	Metal	Plastic	Metal	Plastic
5	A	A	A	B	A	B	A	B	A	B
10	B	B	B	B	B	C	B	B	C	D
15	C	C	C	C	C	D	C	E	C	E
20	D	D	D	D	D	E	D	E	D	E
25	E	E	E	E	E	E	E	E	E	F
30	E	E	E	E	E	E	E	F	E	F
35	E	E	E	E	E	E	E	F	E	F
40	E	E	E	E	E	F	E	G	E	G
45	E	E	E	E	E	F	E	G	E	G
50	E	F	E	F	E	G	F	G	F	-

* Letters A-G represent reference number of each model of the pipe

Pipe Length (Ft)	Pipe Diameter (Inch) and Material									
	½		1		1½		2		2½	
	Metal	Plastic	Metal	Plastic	Metal	Plastic	Metal	Plastic	Metal	Plastic
55	F	F	F	F	F	G	F	G	F	-
60	F	F	F	F	F	G	F	-	F	-
65	F	F	F	F	F	G	F	-	F	-
70	F	F	F	F	F	G	F	-	F	-
75	F	G	F	G	F	-	F	-	G	-
80	G	G	G	G	G	-	G	-	G	-
85	G	G	G	G	G	-	G	-	G	-
90	G	G	G	G	G	-	G	-	G	-
95	G	G	G	G	G	-	G	-	G	-
100	G	G	G	-	G	-	-	-	-	-

TABLE 3:240V PRODUCT SELECTION

Model Number	Reference Number	Voltage (V)	Length (ft)	Power Output at 40°F, 5°C (W)	Power Output at 50°F, 10°C (W)	Power Output at 32°F, 0°C (W)	Max. Exposure Temperature	
							°F	°C
IQ Pipe-36-6-2	A	240	6	36	30	60	185	85
IQ Pipe-72-12-2	B	240	12	72	60	120	185	85
IQ Pipe-108-18-2	C	240	18	108	90	180	185	85
IQ Pipe-144-24-2	D	240	24	144	120	240	185	85

TABLE 4:240V CHOOSING A CABLE FOR THE PIPES*

Pipe Length (Ft)	Pipe Diameter (Inch) and Material									
	½		1		1½		2		2½	
	Metal	Plastic	Metal	Plastic	Metal	Plastic	Metal	Plastic	Metal	Plastic
5	A	A	A	B	A	B	A	B	A	B
10	B	B	B	B	B	C	B	B	C	D
15	C	C	C	C	C	D	C	-	C	-
20	D	D	D	D	D	-	D	-	D	-

* Letters A-G represent reference number of each model of the pipe

WARNING

Cable must be handled gently, without twisting, bending at too small an angle, or stretching.
Do not cut or alter the cable in any way.
Complete dryness of the cables, pipes, bindings, insulation and tape must be maintained throughout the entire process of the installation.
Eye protection must be worn by personnel smoothing any roughness from the pipe.

2 PREPARATION OF PIPE AND CABLE FOR INSTALLATION

2.1 INSPECT AND IMPROVE PIPE

Before you begin, inspect the pipe for rough spots or jagged pieces of metal or plastic that might damage the polyolefin cover of the cable. While protecting your eyes, use abrasive materials to smooth the pipe. Even a small piercing makes a cable unusable.

2.2 CHECK CABLE FOR READINESS TO USE

Take the cable, with end seal, power cord and plug, from the package. Do a thorough visual inspection for cuts, nicks, gouges or other damage. Do not proceed with installing the cable system if there is any appearance of damage.

WARNING

Use inflammable insulation such as fiberglass insulation or preformed foam. The diameter of the insulation should be ½" or less. The maximum ½" insulation ensures that the cable will not overheat. Overheating may create the risk of electrical arcing, fire, damage or shock.
Waterproof the system by using rigid preformed insulation with a vapour barrier. The other method is to cover the IQ PIPE system with waterproof tape. If there is any possibility of the system coming into contact with water, waterproofing must be done to ensure proper performance.
Do not install the same heating cable on more than one pipe.
Plastic pipe must be covered in aluminum tape before the IQ PIPE freeze protection system is installed. Be sure that there is standing water in the pipe when the system is in use.

Important

Do not install the cable if it is stiff from cold, or indeed any colder than the surrounding temperature. Wait until the cable is warmer and pliant to begin the installation.
Ensure that water does not come into contact with any materials or components.

2.3 OBTAIN MATERIALS FOR INSTALLATION

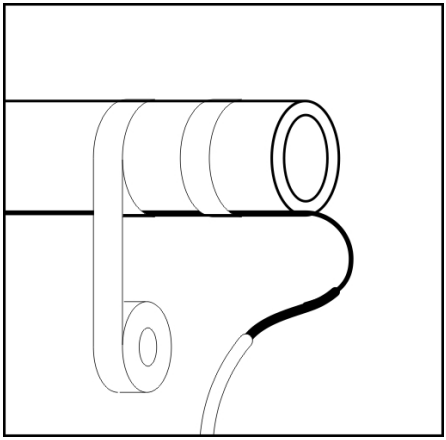
- Fiberglass tape, or other inflammable tape, of a ½' to 1" width. Nylon or plastic ties are an alternative. Metal clamps or wires are acceptable but not advised.
- Fiberglass or other inflammable rigid preformed insulation material, with a maximum thickness of ½ "(1/2 inch) and preferably with a vapour barrier.
- Aluminum tape for wrapping plastic pipe before the installation begins.
- Ten "Electric Heat Tracing" labels, to be applied after the installation to bring attention to the presence of electric cable.
- Electrical tape if desired, over the range of 80 to prevent slippage.

3 INSTALLATION

3.1 ATTACH THE CABLE TO THE PIPE

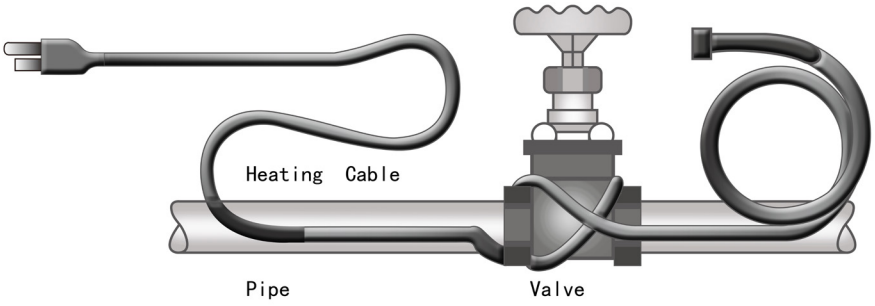
Examine the pipe again for smoothness, and the IQ Pipe system for the absence cuts, nicks or other damage.
Ensure that all components are dry.
Remove any old tape or other materials adhering to the pipe.
If plastic pipe or PEX tubing is being used, consult the pipe manufacturer for compatibility with the IQ PIPE system. Then, wrap aluminum tape fully around the pipe, along the pipe's entire length.
For all pipes, note the length, diameter, and material.
Count the number of connectors or spigots along the pipe length, and add one foot (1') to the length of the pipe for each one.
Recheck your product choice, adding cable length for spigots or connectors if necessary.

Important

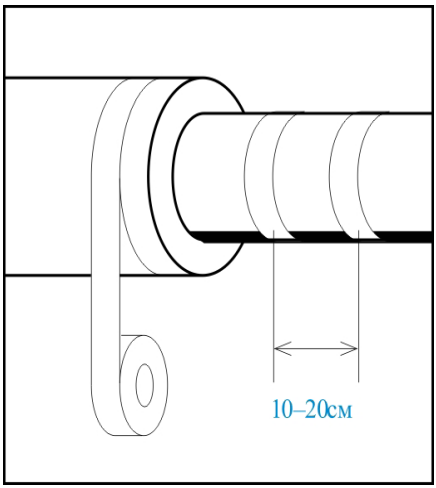


• If the cable is the same length as the pipe, and the pipe of a diameter where only one run is required, run the cable straight along the underside of the pipe. If two runs of cable are needed, place the two cables at the 4 and 8 o'clock positions. If three cables are needed, run them at the 11 or 1 o'clock positions, and the 8 and 4 o'clock positions. You may wrap tape around the cable and pipe or use nylon or plastic ties, at 10cm intervals, to create a secure attachment.

• If the cable is longer than the pipe but less than double the length, you may spiral the cable evenly along the length of the cable. Wrap tape around the spirals in the opposite direction, or in a "W" manner. The cable can be wrapped around valves and spigots. Nylon or plastic ties may also be used to attach the cable to the pipe. Be careful not to twist or stretch the cable, or cause nicks or cuts: damaged cable must not be used due to the risk of electrical arcing, fire, property damage, shock or other injury. The illustration below shows how to put the cable around a spigot.



3.2 WRAP THE IQ PIPE FREEZE PROTECTION SYSTEM IN INFLAMMABLE INSULATION



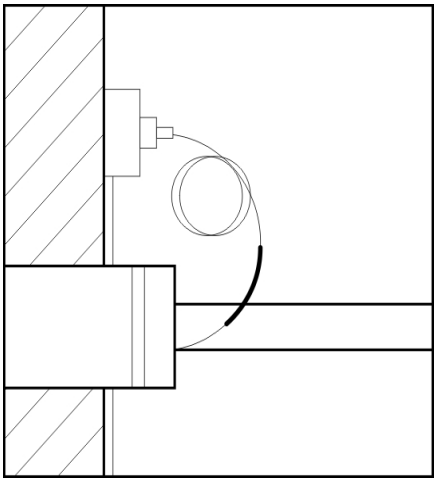
After the IQ PIPE cable has been attached to the metal or plastic pipe, so that every part of the cable system is in contact with the pipe, cover it with fiberglass, preformed foam or other inflammable insulation of ½" thickness.

If there is any expectation of contact with water, the insulation should have a vapour barrier for waterproofing, or be waterproofed with sufficient wrapping of waterproof tape.

It is recommended that you mark spigots or connectors with labels.

3.3 PLACE AWARENESS LABELS

Place ten "Electric Heat Tracing" labels, easily purchased, on the outside of the insulation. Choose locations where the labels can easily be seen and clearly indicate the presence of electric cables.



3.4 ELECTRICAL PANEL NOTATION

Write in the electrical panel and on the circuit breaker to indicate the circuit to which the IQ PIPE freeze protection system is attached.

3.5 TURN ON THE POWER

After the installation has been completed, turn on the circuit that gives power to the cable. Within an hour, heat should come to the cold standing water in the pipe.

4 MAINTENANCE

Inspect cable regularly for damage and yearly, at minimum, before the beginning of winter. If the system seems disturbed or damaged, inspect further. Replace a cable that shows any appearance of damage. Replace tape, insulation and ties as needed.
If cleaning or service work has been done in the vicinity of the cable, it is recommended that the IQ PIPE freeze protection system be inspected.
Qualified personnel should maintain the system.

Important

Mobile homes
For mobile homes, special diligence must be used to ensure that GFCI circuit breakers are used. If you cannot ascertain a GFCI desist from using this product. Other electrical fault currents may not be large enough to trip a circuit breaker. Fire, shock, damage, personal injury and death are risks, without GFCI protection.

Plastic pipes
When using plastic, rather than metal pipe, make sure that the pipe (or PEX tubing) has been approved for this exact use. All plastic pipes with IQ PIPE freeze protection must be filled with water at all times. To ensure maximum heat distribution plastic pipe must be wrapped in aluminum foil before the IQ PIPE freeze protection system is installed. Remember to check for GFCI protection.

WARRANTY - IQ PIPE

The warranty is effective for two (2) years from time of purchase. The warranty is invalid if: any attempt has been made to physically alter any component of the preassembled IQ PIPE freeze protection kit; the Installation Manual has not been followed; or if local, provincial or state, and national (CEC, CSA or NEC) electrical codes have not been adhered to.

The Record of Purchase, which is included in the IQ PIPE package, should be completed online or on paper and should be submitted to IQWATT before you turn on your IQ PIPE system.

For a period of two (2) years from the date of purchase IQWATT warrants that the IQ PIPE heating cable, cord and plug will be free from defects in material, design and workmanship. The warranty is valid if the Warranty Card has been filled in on the website or mailed in to an IQWATT location when the installation of the IQ PIPE kit has been completed. For the purchaser's convenience, an image or copy of the proof of purchase can be submitted with the Warranty Card for registration purposes. A copy of the Warranty Card, along with the Installation Manual and proof of purchase, should be retained by the purchaser. It is mandatory that the installation be completed as instructed in the Installation Manual, as well as in accordance with the Canadian Electrical Code or NEC and with provincial or state and local regulations.
In the rare event of a purchaser experiencing a problem with the IQ PIPE cable, cord or plug, an IQWATT representative must be contacted. After verifying the proof of purchase, date of installation if completed, the product, and the nature of the defect, the representative will determine whether the product should be delivered to an IQWATT location, with charges being the responsibility of the purchaser. A replacement product will be sent to the purchaser to a location chosen by IQWATT and convenient for the purchaser if a defect is identified.
IQWATT shall not be liable for any consequential and secondary costs or damages linked to any defect or replacement of IQ PIPE products.

THE FOREGOING WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ON THE PART OF IQ FLOOR MAT. IQWATT DISCLAIMS ANY WARRANTY, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IQWATT NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON, FIRM OR CORPORATION TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH SALE OR PRODUCT. IQWATT SHALL NOT BE HELD RESPONSIBLE FOR DAMAGE TO PERSON OR PROPERTY, CONSEQUENTIAL LOSS, LOSS OF PROFIT, LOSSES ON GOODS IN STORE, OR THE LIKE WHICH MIGHT ARISE OUT OF THE FAILURE OF THE EQUIPMENT DELIVERED, IRRESPECTIVE OF THE CAUSE (INCLUDING FAULTY MANUFACTURE).

How to claim this warranty

1. Contact a company representative. Information on the product and its installation should have been registered with IQWATT.
2. Provide information on the nature of the manufacturing defect, and confirm proof of purchase, product model and date of installation.
3. The IQWATT representative will determine whether the product can be submitted for a warranty claim.
4. In the event that a product is determined to be defective a replacement product shall be sent by IQWATT to a location chosen by IQWATT and convenient for the purchaser.

Disclaimer:

This warranty gives you specific legal rights and you may also have some legal rights, which may vary from province to province or state to state. IQWATT hereby disclaims, and it is as a condition of the sale, that there are implied warranties. Some provinces and states do not allow limitations on an implied warranty so the above limitation may not apply to you.

iQWATT
Electrical Heating Systems
www.iqwatt.ca
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WARRANTY CARD

Name of purchaser _____

Address of purchaser _____

Location of installation _____

Date of completion of installation _____

Product purchased _____ Date of purchase /___ /___ /_____/

Proof of purchase (optional) _____

Steps for using the Warranty

In the rare event of a failure of the IQ FLOOR MAT system, the following steps must be taken.

1. Contact an IQWATT representative to discuss the problem. If the warranty card has not already been submitted to IQWATT, the purchaser's name, address, location and date of installation, product, date of purchase and proof of purchase must be submitted to the IQWATT representative.
2. At the representative's discretion, the defective product will be delivered to an IQWATT facility by the purchaser, who will assume any delivery charges.
3. IQWATT will examine the product.
4. A replacement product will be sent to a location convenient to the purchaser and chosen by IQWATT when the product is determined to be defective.


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