

FREEZE PROTECTION FOR PIPES

SERGE BARIL

The use of Serge Baril FPP self-regulating heating cable is a reliable, efficient and economical way of preventing plastic or metal pipes and tanks from freezing.

SIMPLE SOLUTION:

Simply install the selected FPP heater on the pipe, insulate and waterproof. Remember, wet insulation is conductive and worse than no insulation.

BY FAR - THE BEST SYSTEM

- Can be cut to length for the project
- Adjusts its power output where and when it is required
This provides greater energy efficiency and reduced electrical costs
- Very flexible, therefore easier to install
- Can be used with or without thermostats

HEAT TRACING CABLES



STEP 1 - DESIGN INFORMATION

The following information is required in order to determine the length and choice of cable:

- Diameter of the pipe
- Length of the pipe
- Minimum ambient temperature
- Number, type, and length of valves, if applicable
- Thickness of insulation based on fiberglass (for other types, consult your Serge Baril representative)
- Number of flanges and uninsulated supports, if applicable

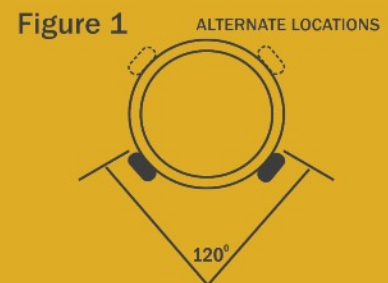
STEP 2 - CHOICE OF FPP HEATER

Table1 provides the FPP heater cable selection to maintain 40° F (5° C) on a metal or plastic pipe with the use of fiberglass or equivalent insulation. It shows three types of installation and should be read as follows:

METAL PIPES:

HEATER CABLE INSTALLED ON THE METAL PIPE

For the choice of FPP heater per pipe diameter and insulation thickness refer to **TABLE 1, COLUMN I**. For the length of heater required, see the formula at STEP-3. The cable uses components as listed on the last page and is attached at 1 ft (300 mm) intervals with fiberglass tape (GT-60). It is positioned as shown in FIGURE 1.



PLASTIC PIPES:

CAUTION: Certain plastic pipe materials have low maximum allowable temperatures. Contact your local Serge Baril representative to verify if the use of an uncontrolled (no thermostat) heater application is appropriate or recommended given the specific pipe material and the rated maximum temperature.

THERE ARE TWO CHOICES OF INSTALLATION FOR A PLASTIC PIPE:

1. HEATER CABLE INSTALLED ON THE PLASTIC PIPE

For the choice of FPP heater per pipe diameter and insulation thickness refer to **TABLE 1, COLUMN II**. For the length of heater required, see the formula at **STEP-3**. The cable uses components as listed on the last page and is attached at 1 ft (300mm) intervals with fiberglass tape (GT-60). It is positioned, as shown in **FIGURE 1**.

2. HEATER CABLE INSTALLED ON PLASTIC PIPE AND COVERED WITH ALUMINUM TAPE (AT-150)

The use of aluminum tape (AT-150) installed lengthwise on the heater helps dissipate the heat thus requiring fewer watts per foot. For the choice of FPP heater per pipe diameter and insulation thickness refer to **TABLE 1, COLUMN III**. For the length of heater required, refer to the formula at **STEP-3**. The cable uses components as listed on the last page. It is positioned, as shown in **FIGURE 1**.

INSTALLATION

Please verify the complete heater cable installation manual HT-242 latest edition supplied with the cable or available from your distributor. You can also verify our web site at www.baryl.ca or contact SBA for any assistance.

STEP 4 - CIRCUIT BREAKER SELECTION

The circuit breaker is sized based on the maximum length (feet or meters) of cable that may be connected at the specific start-up temperature.

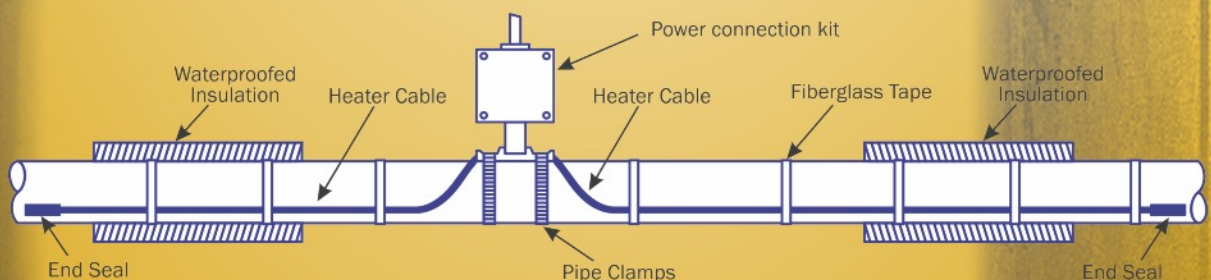
Catalog Number	Start-up Temperature		Maximum Heater Length (feet or meters)															
			120V								240V							
	°F	°C	15A		20A		30A		40A		15A		20A		30A		40A	
3FPP	50	10	344	105							673	205						
	32	0	328	100	344	105					623	190	673	205				
	4	-20	236	72	328	100	344	105			443	135	656	200	673	205		
	-40	-40	180	55	236	72	312	95	344	105	344	105	459	140	607	185	673	205
5FPP	50	10	246	75	295	90	344	105			459	140	558	170	623	190	673	205
	32	0	213	65	246	75	295	90	344	105	394	120	509	155	558	170	623	190
	4	-20	180	55	213	65	246	75	295	90	328	100	427	130	509	155	558	170
	-40	-40	148	45	164	50	230	70	279	85	246	75	328	100	492	150	541	165
8FPP	50	10	213	65	246	75	262	80	312	95	394	120	492	150	541	165	591	180
	32	0	180	55	213	65	246	75	295	90	328	100	427	130	492	150	541	165
	4	-20	131	40	164	50	213	65	246	75	230	70	328	100	427	130	492	150
	-40	-40	115	35	148	45	180	55	213	65	197	60	262	80	361	110	410	125
10FPP	50	10	148	45	180	55	213	65	230	70	295	90	344	105	427	130	492	150
	32	0	131	40	164	50	180	55	213	65	246	75	312	95	361	110	427	130
	4	-20	115	35	131	40	164	50	197	60	197	60	246	75	328	100	394	120
	-40	-40	98	30	115	35	148	45	180	55	164	50	213	65	279	85	361	110

WARNING: To minimize the danger of a wet wire fire (arcing fault) if the heating cable is damaged or improperly installed, both the Canadian and National Electrical Codes (NEC 1996) require the use of a ground fault protection device (GFPD) at all times in conjunction with the installation of all heat tracers.

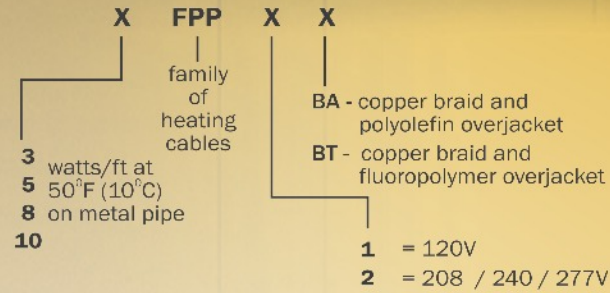
If nuisance tripping of ground fault breakers occurs due to condensation in the junction box, electrical connections should be moisture proofed by use of a coating or sealant.

SCRAP PREVENTION

The power connection box can be located along the pipe to allow the use of smaller lengths of cable going in two directions for scrap prevention as shown below.



HEATER SELECTION - CATALOG NUMBER

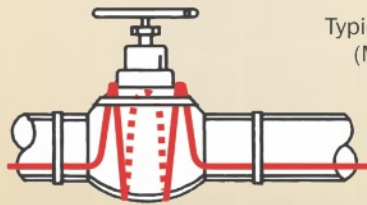


STEP 3 - LENGTH FORMULA

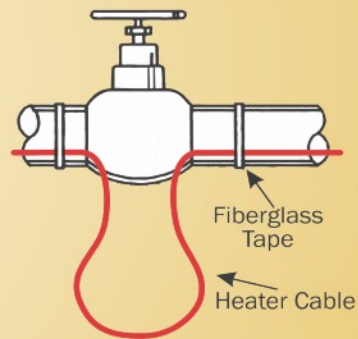
TOTAL LENGTH OF HEATER REQUIRED = Pipe length (in ft or m) + 1 foot (0.3m) for the connection
add if applicable + 4x number of gate valves x length of valve in ft or m
 + 2x number of ball or butterfly valves x length of valve in ft or m
 + 2x number of flanges x diameter of pipe in ft or m

TYPICAL INSTALLATION TIPS

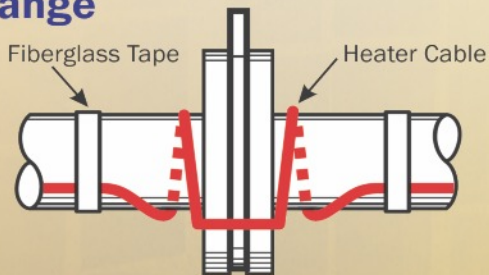
INSTALLATION ON VALVE



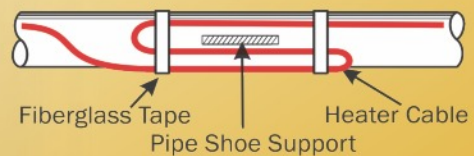
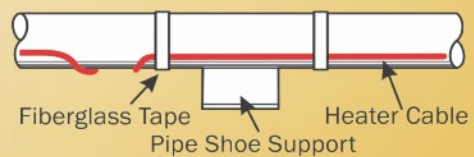
Typical installation method.
(May vary for different valve shapes)



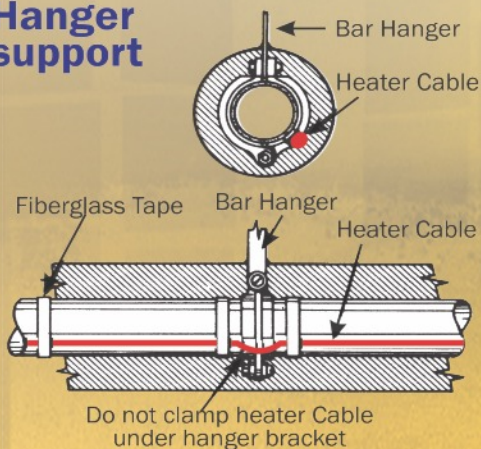
Flange



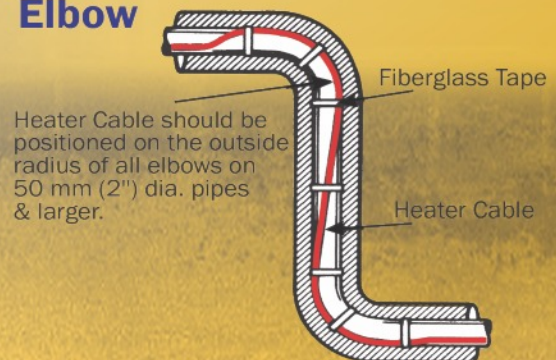
Shoe support



Hanger support



Elbow



INSTALLATION

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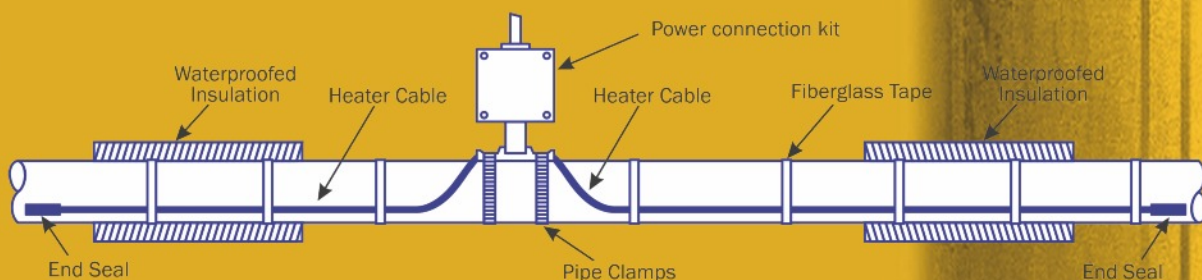
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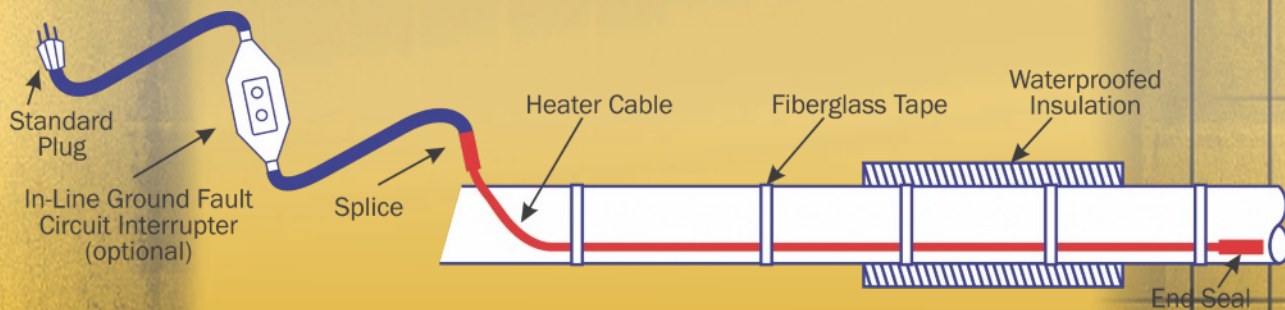


COMPONENTS

FPP-PSK-M/ESK	Power and end seal kit (fits 3 & 5 FPP)
FPP-PSK-L/ESK	Power and end seal kit (fits 8 & 10 FPP)
SB-FPP-PSK-M	Power seal kit (fits 3 & 5 FPP)
SB-FPP-PSK-L	Power seal kit (fits 8 & 10 FPP)
SB-ESK	End seal kit
PSB-M/ESK	Power seal boot and end seal kit (fits 3 & 5 FPP)
PSB-L/ESK	Power seal boot and end seal kit (fits 8 & 10 FPP)
SB-PSB-M	Power seal boot (fits 3 & 5 FPP)
SB-PSB-L	Power seal boot (fits 8 & 10 FPP)
EJK/ESK	Splice and end seal kit
SB-EJK	Splice kit

CORD SETS

Cord sets for preassembled cables are available with standard or GFI plugs on 120V, up to the maximum length allowable on a 15A breaker.



GENERAL NOTE:

The above are general suggestions for applications of our cables and are not meant to replace the normal requirements of local, construction, electrical, or other codes. The installer must verify the conformity to all applicable codes or standards.

We are pleased to offer suggestions on the use of our various products, nevertheless, there are no warranties given except such expressed warranties offered in connection with the sale of a particular product. There are no implied warranties of merchantability or of fitness for a particular purpose given in connection with the sale of any goods. In no event shall Serge Baril be liable for consequential, incidental or special damages. The buyer's sole and exclusive remedy and the limit of Serge Baril's liability for any loss whatsoever shall not exceed the original purchase price paid to SBA for the product or products for which a claim is made.

Ten year extended warranty available

AVAILABLE AT:

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