

# **Retro-DWS**<sup>®</sup>

Internal Heating Cable System for Non-Pressurized Sewer and Waste Drain Pipes

## Installation Instructions

#### **Kit Description**

Retro-DWS is a tubular self-regulating heating system designed for use in 4-inch and 3-inch non-pressurized sewage and waste water drain lines, as well as other large diameter non-pressurized pipes and storm drains. Additional add on kits and fittings may be required for sizes other than 4-inch. Retro-DWS is also suitable for other large diameter non-pressurized pipes and storm drains. The core tube is constructed of HDPE (high density polyethylene) and will push inside most pipes for long distances. They can also be drawn in with a fish tape.

Retro-DWS utilizes a conductive polymer tubular heater technology which provides a barrier from the fluids while providing extremely efficient freeze protection. Retro-DWS can be used as a system to prevent freezing or as a precautionary system. If the drain waste or sewer freezes, the system can be energized to begin the thawing process.

Retro-DWS is supplied with all of the necessary fittings to fit a 4-inch pipe (3-inch kit optional add on) at a clean out or other entry point. The Retro-DWS can be easily adapted to fit larger pipe diameters if required by using readily available, industry standard components.

Available with Ground-Fault Protection (GFCI) or Cord-Set (CS) both in 120 volt and 240 volt.

For installation of Retro-DWS into other applications refer to Retro-DWS Other Methods document.



#### \land WARNING:

**Approvals** 

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## Important Safety Instructions and Rules for safe Installation and Operation

FIRE AND SHOCK HAZARD. This component is an electrical device which must be installed properly. Read and follow these rules and instructions carefully. Failure to follow them could result in serious bodily injury and/or property damage.

Usage Type W Installation Type D USA

Standard 4-inch Cleanout Instructions

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Standard 3-inch Cleanout Instructions

#### WHEN PERFORMING WORK OR REPAIRS ON YOUR WATER SYSTEM BE SURE TO UNPLUG YOUR HEAT-LINE SYSTEM FROM THE POWER SUPPLY.

- Check your local building, plumbing and electrical codes before installing. You must comply with their rules.
- Do not force the Retro-DWS into the pipe to the point where the pipe creases and bends
- Do not install the Retro-DWS interface connection in a manner which would render it non-serviceable.

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- Retro-DWS meets cCSAus codes for use in Canada and the United States.
- Before installing this product have the electrical outlet checked by an electrician to make sure it is properly installed and grounded in accordance with your local Electrical Code.
- Before installing or servicing your Retro-DWS **BE CERTAIN** that the power source is disconnected.
- · Do not use extension cords.

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- This product is designed to keep drains from freezing in serious climate conditions. The Retro-DWS tube may obstruct certain materials, especially solids in the drains so a service schedule for proper maintenance is recommended. The use of this product is at the sole discretion of the user. Heat-Line will not be liable for obstructions or blockages that may occur in some situations.
- Never tamper with or alter the electrical apparatus associated with your Heat-Line system.
- The Retro-DWS product is exclusively designed to be employed in non-pressurized plumbing drain, waste, and sewer pipe applications. It is not designed to be installed or operated in a pressurized application.

### **Tools Required**

- 5/16" nut driver or standard screwdriver
- Pipe cutting tool for 4" and/or 3" ABS
- Torque wrench
- Large adjustable wrench or tongue and groove pliers

#### Additional Materials Required

• Teflon tape or thread sealant

Kit Contents				
ltem	Qty	Description		
A	1	Retro-DWS – predetermined length (GFC shown)		
В	1	Pre-drilled dissolving ballpoint		
С	1	4" flexible pipe coupler		
D	1	4" ABS threaded male adapter SPIG X MIPT		
E	1	Optional Cord-Set (CS) power connection		
F	1	Optional 3 inch pipe adapter kit (DWS-3.00-KIT)		



<b>Ordering Chart</b>								
	Example: <b>DWS – 5 – 100 – GFC</b>							
Product								
DWS DWS2	120 V Retro-DWS 240 V Retro-DWS	GFC Ground fault protected 5-15 P 120 V / 6-15 P 240 V						
Nominal	I Power Output	CS Cord connected (no GFCI)						
5	5 W/ft @ 50°F (16 W/m @ 10°C)	Length of System						
ŏ	8 W/π @ 50°F (26 W/m @ 10°C)	GFC Ground Fault Protected Max length Max length						
		5 W/ft 120 V 230 ft 230 ft						
		8 W/ft 120 V 150 ft 150 ft						
		5 W/ft 240 V 460 ft 540 ft						
		8 W/ft 240 V 300 ft 400 ft						

NOTE: Installers must provide 20 Amp circuits for CS circuit lengths greater than 460 ft for 5 W/ft and 300 ft for 8 W/ft systems.

Optional Acces	ssories		
DWS-3.00-KIT	3 inch pipe adapter kit, includes coupler and threaded	TIMER-CS	120/240V hard wire timer (for CS models)
	male adapter	INSUL-FOIL	Aluminum reflective metalized foil bubble insulation
HLJ-STAT	General purpose 120V, plug-in thermostat (for GFC models)	FOIL-TAPE	Professional Grade All Weather Foil Tape 2.83 inches x 150 feet (72mm x 46m)
HLA-120	General purpose 120V, plug-in thermostat (for GFC models)	INSUL-3.00	Polyethylene insulation sleeve for 3 inch ID pipe (6 feet long, 3 1/2 inch ID, <sup>3</sup> / <sub>4</sub> inch thick wall)
GFA-STAT	NEMA 4X Ground Fault Protected Adjustable Thermostat 120V/240V 30amp (for CS models)	INSUL-4.00	Polyethylene insulation sleeve for 4 inch ID pipe (6 feet long, 4 1/2 inch ID, 1 inch thick wall)
MA-10	GFCI/ELCI Electrical Equipment Protection Device (for CS models)	HLP-TAPE	Black wrap tape for sealing insulation ends together 2 inches x 100 feet (50.8mm x 3m)
TIMER-120P	120V plug-in timer (for GFC models)	T0R0-60	No hub torque wrench automatic release at 60 IN, I B.
TIMER-240P	240V plug-in timer (for GFC models)	WARRANTY	Extended 10 year limited product warranty



## 5

 Push the pre-drilled dissolving ballpoint onto the end-seal of the tubular heater making sure it is firmly in place. Then begin to feed the tubular heating cable system into the pipe through the installed flexible coupler.

**Note:** The pre-drilled dissolving ballpoint is designed to reduce the friction of the Retro-DWS tubular heater end-seal during installation. It also aids the passing of the tubular heater product through and around fittings located along the length the pipe.







## 5

 Push the pre-drilled dissolving ballpoint onto the endseal of the tubular heater making sure it is firmly in place. Then begin to feed the tubular heating cable system into the pipe through the installed flexible coupler.

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### **Control Devices and Insulation Installation**

Control devices are not required to operate the heating cable system. They can be added for energy efficiency.

**Thermostats** are used to duty cycle the system in an on/ off operation saving power consumption and maintain a certain pipe temperature. A sensor lead must be placed on the coldest section of pipe.

**Timers** are used to duty cycle the system in an on/off operation based on preset time intervals to save on power consumption.

**Insulation** is recommended for all new pipe installations, even where the pipe is to be buried.

For existing pipe applications, insulation is only required where the pipe is exposed to ambient outdoor temperatures, and/or where the pipe is above the ground. Insulation aids in heat retention making the heating cable more energy efficient and providing cold weather reliability.



## **Electrical System Connection**

#### Electrical Connection for GFC (Ground Fault Plug-in) Models

- A. Unpack the Retro-DWS system plug from its protective package.
- B. Plug into your dedicated outlet. 120V 5-15R outlet for 120V systems or 240V 6-15R outlet for 240V systems.
- C. Push reset button on the cord set ground fault device until light comes ON. If light does not illuminate check power to outlet. Do not remove or tamper with the cord set. If used with a thermostat it may be necessary to bypass the thermostat control and plug directly into receptacle to perform test.
- D. Push test button and light will go OFF. This indicates that the electrical circuit is intact and fully protected.
- E. Push reset button again and light will come ON. This indicates that your Retro-DWS is working.
- F. Follow this test procedure before each season and monthly while in use.

#### Your Retro-DWS is now fully functional.

If at any time your Retro-DWS system fails to work call your local electrician or Heat-Line for assistance at 1-800-584-4944.

Unplug when not in use.

#### Electrical Connection for CS (Cord-Set) Models into Junction Box

**Note:** The "CS" version is designed to be installed by a qualified electrician and must be inspected by the governing electrical authority following completion of installation.

- A. Ensure the Retro-DWS system will be operated on a dedicated ground fault protected circuit with over-current protection appropriate for the circuit conductor size and heating cable length.
- B. Confirm power is disconnected at the power supply prior to proceeding.
- C. Remove approved junction box cover.
- D. Route the Retro-DWS cord-set wires into box with the supplied strain relief fitting.
- E. Connect appropriate wires together using approved wire nuts. Match wires white to white, black to black, and green to green. In the case of a metal junction box/enclosure, match green to ground screw and confirm screw is tight and secured afterward.





- F. Double check that the wires have been connected correctly and tight.
- G. Install junction box cover.
- H. Establish power to the circuit and test/reset the ground fault device for proper operation.
- I. Test the GFCI at the breaker before each season and monthly while in use.

#### Your Retro-DWS system is now fully functional.

If at any time your Retro-DWS system fails to work call your local electrician or Heat-Line for assistance at 1-800-584-4944.



#### Electrical Connection for CS models installed with the optional GFA-STAT (FPT-130)

A. Ensure the Retro-DWS system will be operated on a dedicated circuit with over-current protection appropriate for the circuit conductor size and heating cable length.

Note: GFA-STAT (FPT-130) includes ground fault protection.

- B. Confirm power is disconnected at the power supply prior to proceeding.
- C. Remove front cover of the GFA-STAT.
- D. Remove black strain relief from the Retro-DWS power cord.
- E. Route the Retro-DWS cord-set wires through strain relief fitting supplied with the GFA-STAT.
- F. Follow electrical guidelines per the GFA-STAT (FPT-130) manual included with your GFA-STAT unit.
- G. Double check that the wires have been connected correctly.
- H. Establish power to the circuit and test/reset the ground fault device for proper operation.

I. Test the GFA-STAT GFCI before each season and monthly while in use.

Your Retro-DWS system is now fully functional.

If at any time your Retro-DWS system fails to work call your local electrician or Heat-Line for assistance at 1-800-584-4944.

#### **GFA-STAT** L2/N (white) Ground L2/N (white) (green) L (black) L (black) Æ $\oplus$ ⊕⊕⊕⊕⊕⊕ Alarm Input power Heating cable Input Temperature power Heating sensor cable White Black WW Alarm Black Temperature sensor

### Limited Warranty

During the time periods and subject to the conditions hereinafter set forth. Heat-Line will repair or replace to the original user any portion of your Retro-DWS product which proves defective in materials or workmanship of Heat-Line. Contact Heat-Line or your installer for warranty service.

At all times Heat-Line shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts or components. Damage due to natural events or conditions beyond the control of Heat-Line are NOT COVERED BY THIS WARRANTY.

**STANDARD WARRANTY PERIOD:** 60 months from date of purchase or 63 months from date of manufacture, which ever occurs first.

**EXTENDED WARRANTY PERIOD:** 120 months from date of purchase or 123 months from date of manufacture, which ever occurs first.

ACCESSORIES, COMPONENTS, ELECTRONICS: Not manufactured by Heat-Line, are warranted only to the extent of original manufacturer's warranty.

LABOUR, COSTS, ETC.: Heat-Line shall in NO EVENT be responsible or liable for the cost of field labour or other charges incurred by any customer in removing and/or reaffixing any Heat-Line product, part or component thereof.

#### THIS WARRANTY WILL NOT APPLY:

 (a) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided,

- (b) to failures resulting from abuse, accident or negligence;
- (c) to normal maintenance services and
- (d) to parts not used in accordance with applicable local codes, ordinance and good trade practices;
- (e) if the unit is moved from its original installation location or
- (f) if the unit is used for purposes other than for what it was designed and manufactured,
- (g) to the integral ground fault device and related electronics.

**PRODUCT IMPROVEMENTS:** Heat-Line reserves the right to change or improve its products or any component thereof without being obligated to provide such a change or improvement for units sold and/or shipped prior to such change or improvement.

**WARRANTY EXCLUSIONS:** As to any Heat-Line product after the expiration of the time period of the warranty applicable thereto as set forth above. There will be no warranties including any implied warranties of merchantability or fitness for any particular purpose. No warranties or representations at any time made by any representative of Heat-Line, shall vary or expand the provisions hereof.

**LIABILITY LIMITATION:** In no event shall Heat-Line be liable or responsible for consequential, incidental or special damages resulting from or related in any manner to any Heat-Line product or parts thereof. In the absence of suitable proof of the purchase date, the effective date of this warranty will be based upon the date of manufacture plus 90 days.

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**Important:** All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their particular application. Heat-Line a Division of Christopher MacLean Ltd. makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use. Heat-Line's only obligations are those in the Heat-Line Standard Terms and Conditions of Sale for this product, and in no case will Heat-Line be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of the product. Specifications are subject to change without notice. In addition, Heat-Line reserves the right to make changes—without notification to Buyer—to processing or materials that do not affect compliance with any applicable specification.



**Retro-DWS** *Warranty Form* 

## **CONGRATULATIONS!**

You have just purchased the most advanced internal freeze-protection system available on the market, backed by the finest warranty offered in the industry. Your Retro-DWS system comes with a standard 5 year limited warranty with an optional 10 year limited warranty available.

~ The warranty applies only to the original purchaser of the product and is not transferable at any time for any reason. The warranty form must be filled out and returned to Heat-Line within 6 months of invoice date or unit manufactured date plus 9 months to be eligible for the 10 year extended warranty. ~

OWNER M	IAILING ADDRESS	INSTALLA	<b>INSTALLATION ADDRESS</b> (if different than mailing)		
Name		Name			
Address		Address			
City		City			
Prov/State	Postal/ZIP	Prov/State	Postal/ZIP		
Country	Canada     USA     Other:	Country			
Home Phone		Work/Cell			
Email					
PRODUC	Τ ΙΝΕΩΡΜΑΤΙΩΝ				
FRODUCI		Installation Type:			
Product Cat.#			Sewage     Grav water		
Serial #					
Length			□ Other:		
WARRANT	Y INFORMATION				
5 Year Lir	nited Warranty: INCLUDED!	🛛 10 Year Limi	ited Warranty: \$1.75 / foot (\$75.00 minimum)		
PAYMENT	DETAILS FOR 10 YEAR LIMITED WARRANTY				
System L	ength*		System Length* = Subtotal		
Units 1 to	) 540 feet = \$1.75 per foot OR \$75.00 minimum		x \$ 1.75/ft		
* For custo	m lengths involving inches, round up to the nearest toot Surrency				
If Canadia	n Address: Subtotal:	If U.S. Ac	ddress or Other Country:		
Provin	icial Tax %: Tax Due:		No Taxes Apply		
	Total in CDN Currency:		Total in US Currency:		
PAYMENT	T METHOD				
Cher	 que	Cradit Card:	□ Mastercard <i>or</i> □ Visa		
Enclose a	and make out to Heat-Line for full amount	Nome on Cor	v.4.		
			···		
		Card Numbe	er:		
		Expiration Dat	te:		

## LIMITED WARRANTY

During the time periods and subject to the conditions hereinafter set forth. Heat-Line will repair or replace to the original user any portion of your Retro-DWS product which proves defective in materials or workmanship of Heat-Line. Contact Heat-Line or your installer for warranty service.

At all times Heat-Line shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts or components. Damage due to natural events or conditions beyond the control of Heat-Line are NOT COVERED BY THIS WARRANTY.

**STANDARD WARRANTY PERIOD:** 60 months from date of purchase or 63 months from date of manufacture, which ever occurs first.

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ACCESSORIES, COMPONENTS, ELECTRONICS: Not manufactured by Heat-Line, are warranted only to the extent of original manufacturer's warranty.

LABOUR, COSTS, ETC.: Heat-Line shall in NO EVENT be responsible or liable for the cost of field labour or other charges incurred by any customer in removing and/or reaffixing any Heat-Line product, part or component thereof.

#### THIS WARRANTY WILL NOT APPLY:

(a) to defects or malfunctions resulting from failure to properly install, operate or maintain the unit in accordance with printed instructions provided,

#### **PROOF OF PURCHASE**

If a proof of purchase copy is submitted with this warranty application form, the warranty period will be effective as of invoice date. In the absence of suitable proof of purchase, the effective date of this warranty will be based upon the date of unit manufacture plus 3 months.

By signing below you acknowledge you have read and understand the full limited warranty document.

Signed:

The warranty form must be filled out and returned to Heat-Line within 6 months of invoice date or unit manufactured date plus 9 months to be eligible for 10 year extended warranty.

- (c) to normal maintenance services and
- (d) to parts not used in accordance with applicable local codes, ordinance and good trade practices;
- (e) if the unit is moved from its original installation location or
- (f) if the unit is used for purposes other than for what it was designed and manufactured,
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**LIABILITY LIMITATION:** In no event shall Heat-Line be liable or responsible for consequential, incidental or special damages resulting from or related in any manner to any Heat-Line product or parts thereof. In the absence of suitable proof of the purchase date, the effective date of this warranty will be based upon the date of manufacture plus 90 days.

Dated:

Heat-Line and Retro-DWS are registered trademarks of Heat-Line Corporation.