

## HWAT IO

<https://cdn.chemelex.com/Product%20Documents/Installation%20Manuals/Raychem-IM-H57548-HWATsystem-EN.pdf>

## RayClic PC install video

<https://www.youtube.com/watch?v=gKUq8VqPLaw>

## General heat trace install video (Not XLTrace, different components)

<https://www.youtube.com/watch?v=AFaVGKu3FWY>

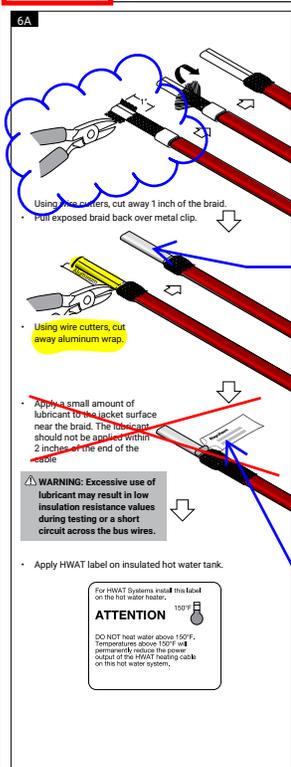
## RayClic PC installation instructions

<https://cdn.chemelex.com/Product%20Documents/Installation%20Manuals/RAYCHEM-IM-H55092-RayClicConnectionSystem-EN.pdf>

For HWAT (Heavy red cable) Do NOT go to 6B, You must remove 1" of braid and the aluminum wrap

For the end seal you must also remove the aluminum jacket in step 2A

**HWAT ONLY**



6A

- Using wire cutters, cut away 1 inch of the braid.
- Full exposed braid back over metal clip.
- Using wire cutters, cut away aluminum wrap.
- Apply a small amount of lubricant to the jacket surface near the braid. The lubricant should not be applied within 2 inches of the end of the cable.

**WARNING:** Excessive use of lubricant may result in low insulation resistance values during testing or a short circuit across the bus wires.

- Apply HWAT label on insulated hot water tank.

**ATTENTION** 150°F

DO NOT heat water above 150°F. Temperatures above 150°F will damage wiring and may cause failure of the HWAT heating cable on this hot water system.

6B

Full exposed braid back over metal clip.

White inner jacket stays on

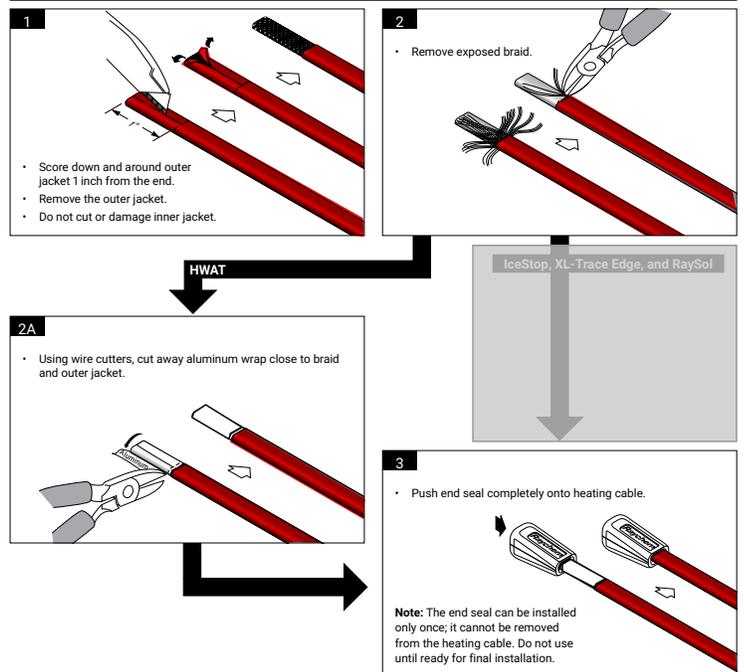
Insert prepared heating cable end into connector. Push until heating cable is fully inserted and end is visible through opening in connection cover plate.

Note: RayClic connection kits are designed to be installed only once; the heating cable cannot be removed once installed.

For HWAT Systems install this label on the hot water heater.

**Do NOT use lube provided!**

**END SEAL INSTALLATION**



1

- Score down and around outer jacket 1 inch from the end.
- Remove the outer jacket.
- Do not cut or damage inner jacket.

2

- Remove exposed braid.

HWAT

IceStop, XL-Trace Edge, and RaySol

2A

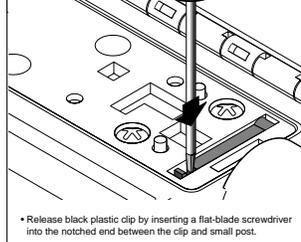
- Using wire cutters, cut away aluminum wrap close to braid and outer jacket.

3

- Push end seal completely onto heating cable.

Note: The end seal can be installed only once; it cannot be removed from the heating cable. Do not use until ready for final installation.

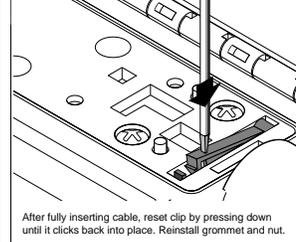
## IT IS EASIER TO INSERT THE HWAT FULLY INTO THE RAYCLIC IF YOU LOOSEN/REMOVE THE SEALING GLAND AND RELEASE THE PULL OUT GATE



• Release black plastic clip by inserting a flat-blade screwdriver into the notched end between the clip and small post.

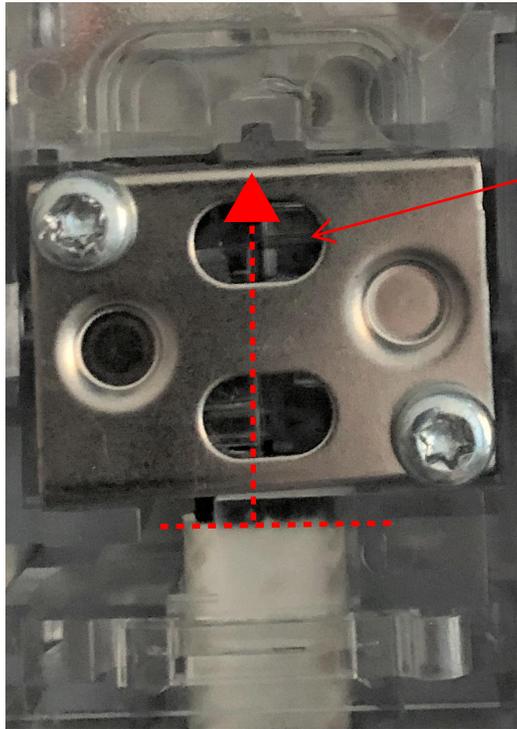


• Pry up the clip until it pops free.

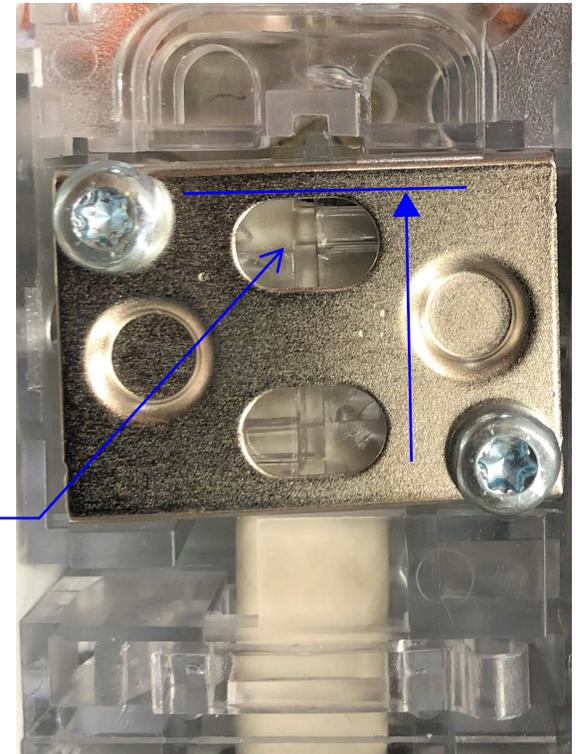
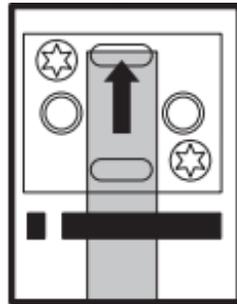


After fully inserting cable, reset clip by pressing down until it clicks back into place. Reinstall grommet and nut.

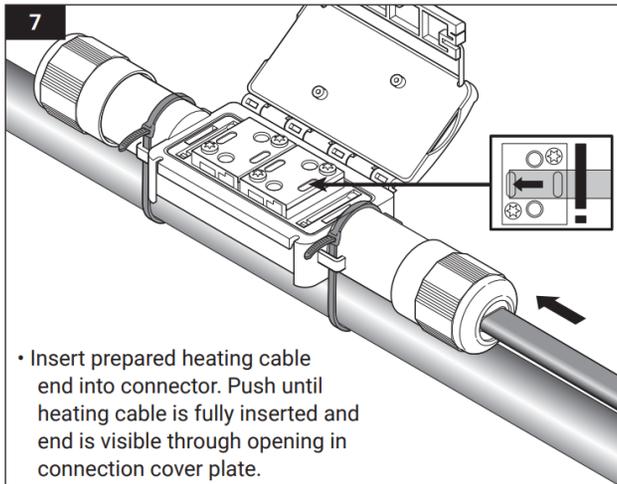
See video at  
<https://cdcommercialservices.com/>



The heating cable inner jacket should be visible in both windows



Heating cable inner jacket visible in top window



- Insert prepared heating cable end into connector. Push until heating cable is fully inserted and end is visible through opening in connection cover plate.

**Note: Heating cable cannot be removed.** The connection and end seal are designed to be installed only once; the heating cable cannot be removed once installed.

Find the powered RayClic instructions here:

<https://cdn.chemelex.com/Product%20Documents/Installation%20manuals/RAYCHEM-IM-H55092-RayClicConnectionSystem-EN.pdf>

Raycllic Power IO video

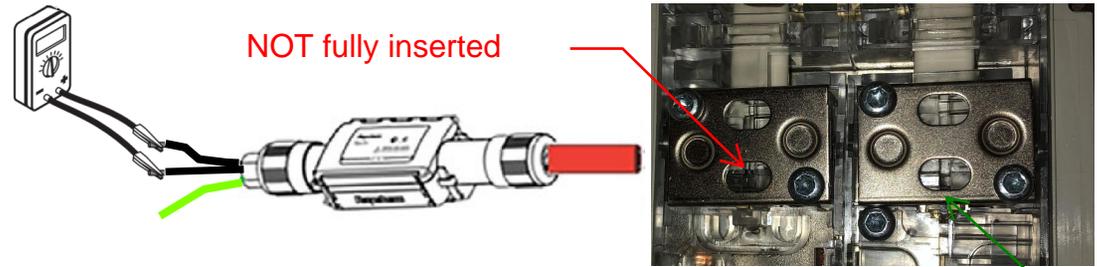
<https://www.youtube.com/watch?v=gKUq8VqPLaw>



TITLE: Proper RayClic Cable Insertion		
SCALE: NONE	DATE: 2/28/23	REV: A

### "CORE" resistance

"CORE" resistance is read from Black to Black. This is reading across the heating core and should show 4-150 ohms depending on length and temperature. A longer cable should have a lower core resistance. If the reading is above 300 ohms be sure that the cable is fully inserted into the RayClic. Check the Rayclic screws for tightness. If below 3 ohms check for a bus wire to bus wire short or exceeded maximum circuit length.

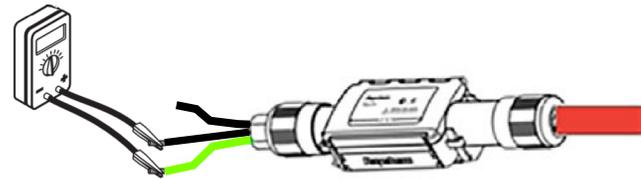


NOT fully inserted

You should see white inner jacket all the way into both windows

### Capacitance Reading

The capacitance reading can be used to estimate length. For HWAT-R2 the factor is 5.8. The capacitance is read from the bus wire (black) to braid (green). The reading (in nano farads) times the factor (5.8) will give a rough estimate of the heating cable connected length. Note that if there is a bad IR reading the indicated length will be WRONG and the you will see a cable length as long as only one bus wire is connected. This should be used as an estimate only.

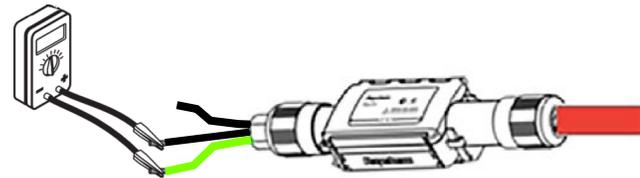


Heating Cable	Capacitance ft/nF
HWAT-R2	5.8

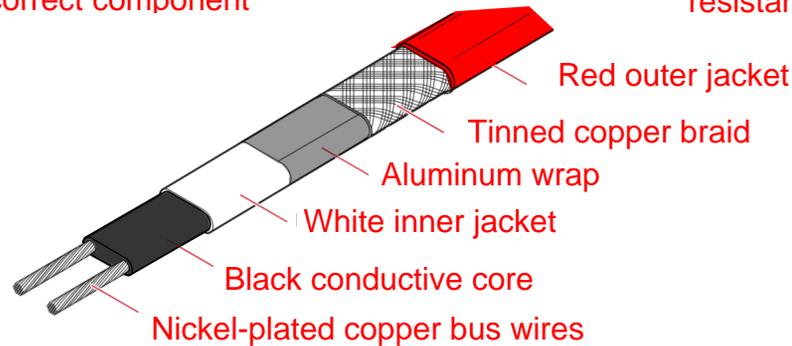
Estimated length = Capacitance reading (in nf) x 5.8

### Insulation Resistance Testing (Meggering)

Insulation resistance testing is the electrical version of pressure testing a pipe. The resistance of the primary jacket is measured from the bus wire (black) to braid (green) at a high voltage to be sure there is no damage. Raychem requires this to be done up to 2500VDC because that is the voltage required to jump the thickness of the primary jacket. Readings below 1000M ohms at 2500VDC indicate damage or incorrect component installation.



Raychem requires a minimum insulation resistance (IR) of 1000 Mega ohms at 2500VDC



TITLE: RAYCHEM HWAT IO Testing Diagrams		
SCALE: NONE	DATE: 8/2/22	REV: A



Megger Brand MIT2500  
This tester does all of the readings  
listed on previous pages.



**NOTE:**  
When testing long circuits you may have to  
connect one lead AFTER you start testing.  
If not you may get a "HI CAP" error from  
the device.

Grainger offers the MIT2500 here:  
[https://www.grainger.com/product/54JH70?gucid=N:N:PS:Paid:G:GL:CSM-2295:Y8ZQJW:20500801:APZ\\_1&gad\\_source=1&gad\\_campaignid=21375667808&gclid=CjwKCAjwmnCBhA4EiwAtVjzmoYelLtLicyPtALTv\\_UszrZgBLIpSQvt6LKpWQcbzskbdjrR7ilvbxoC8foQAvD\\_BwE&gclid=aw.ds](https://www.grainger.com/product/54JH70?gucid=N:N:PS:Paid:G:GL:CSM-2295:Y8ZQJW:20500801:APZ_1&gad_source=1&gad_campaignid=21375667808&gclid=CjwKCAjwmnCBhA4EiwAtVjzmoYelLtLicyPtALTv_UszrZgBLIpSQvt6LKpWQcbzskbdjrR7ilvbxoC8foQAvD_BwE&gclid=aw.ds)

TITLE: Megger MIT2500

SCALE NONE	DATE 6/24/25	REV A
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