



INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

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No. 0002080380 (12)

Model TWBS.EW.H Tempered Water Blending System

WARNING

BEFORE ATTEMPTING INSTALLATION OF THIS UNIT OR MAKING ANY ADJUSTMENTS TO THE UNIT ALWAYS BE SURE MAIN CIRCUIT BREAKER IS OFF TO PREVENT DANGER OF SERIOUS ELECTRIC SHOCK.

INSTALLER/ CONSUMER RESPONSIBILITIES

PLEASE TAKE THE TIME TO READ NOT ONLY THIS MANUAL BUT ALSO THE WARRANTY CARD ENCLOSED. WARRANTY OF THIS HEATER WILL DEPEND ON PROPER INSTALLATION, OPERATION, AND REQUIRED MAINTENANCE. THE WARRANTY SHALL BE VOID IF THE DESIGN OR STRUCTURE OF THE WATER HEATER HAS BEEN ALTERED IN ANY WAY WHATSOEVER. THE MANUFACTURER OF THIS WATER HEATER WILL NOT BE LIABLE FOR ANY DAMAGES BECAUSE OF FAILURE TO COMPLY WITH THE INSTALLATION AND OPERATING INSTRUCTIONS OUTLINED ON THE FOLLOWING PAGES. IF YOU REQUIRE ANY HELP OR HAVE ANY QUESTIONS RELATING TO THE INSTALLATION OR PERFORMANCE OF THIS HEATER, PLEASE CALL OUR TECHNICAL SERVICE DEPARTMENT:
800-766-5612 OR CUSTOMER SERVICE 1-888-640-4297
HAVE THE INFORMATION LISTED BELOW BEFORE CALLING.

IF YOU NEED ASSISTANCE FROM OUR TECHNICAL SERVICE DEPARTMENT, MAKE SURE YOU CAN IDENTIFY THIS WATER HEATER BY HAVING THE SERIAL NUMBER.

Model No. TWBS.EW.H

Serial No. _____

RECOMMENDED TOOLS: Teflon thread seal tape, adjustable pipe wrenches, (Quantity 4) rust resistant wall anchors (3/16" diameter). **Do not use pipe dope.**

LOCATION OF UNIT: The Model TWBS.EW.H should be located as near as possible to the point of use. It must be installed in a vertical position with the inlet and the outlet at the bottom.

SUPPLY LINE: The minimum recommended line size is 1/2" IPS with 45-90 psi (3-6 ATM) flowing pressure at supply inlet. Cold supply temperatures should range from 35°F to 75°F. Where sediment or mineral content is a problem, an inlet filter is recommended.

ELECTRICAL CONNECTIONS: The unit requires 480 VAC/3-phase/60Hz power in a "Delta" configuration, including three power leads, and a ground conductor, each sized for the system's maximum amperage of 24A. The maximum power draw of the system is 20kW. The customer is responsible for providing a local fused disconnect switch or circuit breaker sized accordingly.

PLUMBING CONNECTIONS: Inlet supply is female 1/2" NPT, Outlet is female 1/2" NPT.

INTRODUCTION

What is the HAWS TWBS.EW.H?

The HAWS TWBS.EW.H is an instantaneous water heating system for use on emergency eyewashes where hot water is not supplied. When there is a demand for water at the eyewash, the heater will instantaneously heat the water to 80° F. The unit requires 480VAC/3-phase/60Hz power in a "Delta" configuration, including three power leads and a ground conductor, each sized for the system's maximum amperage of 24A. The maximum power draw of the system is 20 kW. The customer is responsible for providing a local fused disconnect switch or circuit breaker sized accordingly. The Haws TWBS.EW.H incorporates thermally activated and pressure activated safety features that prevent scalding and improper flow to the eyewash, even in the event of main unit failure.

How does the TWBS.EW.H operate?

The heart of the TWBS.EW.H is an instantaneous heater that maintains the output water temperature at 80° F. On the warm water outlet we include a high limit shut off valve, which reads the output temperature. When the output temperature exceeds the factory pre-set limit of 95° F, the valve shuts down the output from the heater.

On the cold-water side, we include a bypass valve. Should the heater become blocked or the high limit shut off valve closes, the bypass valve will open, allowing the incoming cold water to bypass the system and proceed directly to the eyewash.

These two back-up components permit the temperature level of the heated water to be maintained and permit the flow of cold water should the heater fail.

Performance Features of the HAWS TWBS.EW.H System

Essentially, the HAWS TWBS.EW.H provides fail-safe protection against scalding or blocked flow. There are two types of failures that can occur with any water heating system. They are as follows:

1. The heater can fail and provide an unregulated flow of hot water.
2. The heater can fail so as to provide an insufficient and/or blocked flow of warm water.

The unique HAWS TWBS.EW.H provides a high limit shut-off valve and a bypass valve to address both failure modes.

Capacity

HAWS TWBS.EW.H produces up to 4 gpm at a 45-psi dynamic inlet pressure. The warm water heater is designed to activate by individual electronic flow rate switches, at a minimum turn on flow rate of no less than .95 gpm. This unit is sized for one eyewash.

Max output @480V	Current Per phase	Temperature Rise (°F)GPM				
		2.0 gpm	3.0 gpm	4.0 gpm	T3 EE Only 5 gpm	T3 EE Only 6 gpm
20kW	24 AMPS	68	46	34	27	23

INSTALLATION PROCEDURE

This installation must conform to the latest requirements of the National Electrical Code and all applicable state and local codes. This information is available through your local authorities. You must understand and comply with these requirements before beginning this installation. Haws recommends your heater be installed by a licensed plumber and electrician.

For additional information, read and follow manufacturers "Instantaneous Water Heater" installation and owner's manual supplied with unit.

CAUTION: THIS UNIT IS INTENDED FOR INDOOR USE ONLY.

APPLICATION

The standard TWBS.EW.H is sized to heat enough water for one eyewash at a time. This Water Heating System should be installed in close proximity to the eyewash. It should be clearly identified, with easy access and free from obstructions. Supply lines connected to this unit must be heat traced if subject to freezing temperatures. If the piping network from the heater (located indoors) to the fixture passes through a cold area, piping should be heat-traced with self-regulating heat tape. Any heat-traced piping should be protected with scald protection bleed valves. Additionally, should the TWBS.EW.H be mounted at a distance greater than 50 feet from the eyewash, these runs should be evaluated by a plumbing engineer. Complicated chains of eyewashes, long piping runs, and recirculating loops should all be evaluated by a qualified engineer.

NOTE: If for any reason the heater is starved of water while power remains on, the unit may be damaged. Also, the heating elements only turn on under flow, so any water within the heater will be subject to atmospheric conditions most of the time. Therefore, the heater should never be stationed outdoors or in a freezing environment.

GENERAL

To obtain optimum performance and energy savings from your Haws heater, the unit should be located as near as possible to the point of use. The unit must only be installed in a vertical position with the inlet and outlet at the bottom.

The power is activated by individual electronic flow switches located in each of the three heating modules. These modules will be damaged by excessive heat; **do not** solder any pipes that are in contact with the heater.

Also ensure pipes are clear of installation debris before fitting the heater, otherwise the switches could jam in the "on" position. The unit must be connected to its own individual electrical flow circuit protected by a suitably rated three pole breaker. The maximum voltage which can be applied across any heating module is 480 volts.

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause DEATH, SERIOUS BODILY INJURY OR PROPERTY DAMAGE. Refer to this manual for assistance or consult the local electric utility for further information

WARNING

Failure to ground the system may result in death or serious injury.

WATER SUPPLY

The minimum recommended supply line is 1/2" IPS COLD. Cold supply temperatures should range from 35°F to 75°F. Outlet connection is a 1/2" NPT dielectric union. We recommend a manual bypass loop with appropriate tamper resistant shut-off valves to allow for heater water system maintenance or service without interrupting emergency eyewash operation.

INSTALLATION PROCEDURE...

PROCEDURE

Use Teflon thread seal tape on all water connections. **Do not use pipe dope.** This unit should be mounted as close to the point-of-use as possible.

STEP 1: Mount unit on wall (**This unit is intended for indoor use only**) per attached installation drawing. Bolt dia. 3/16" fasteners through heater box. Unit must be installed in the vertical only, with the inlet and outlet at the bottom. The cold water inlet is on the right hand side and the hot water outlet is on the left. Under no circumstances can these be changed. Leave a minimum of 8" clearance above the unit to facilitate heating element replacement.

STEP 2: Flush supply piping thoroughly prior to connecting to inlet unions. Connect outlet union to piping leading to eyewash. Check for leaks. Run water through the supply pipe to remove all debris from the pipe before connecting the heater: Failure to do so could cause damage to the flow switch. Run water through the supply pipe to remove all debris from the pipe before connecting the heater. Failure to do so could cause damage to the flow switch.

NOTE

ALL MOUNTING AND PLUMBING MUST BE COMPLETE BEFORE YOU PROCEED WITH ELECTRICAL HOOK-UP. TEST THE INSTALLATION FOR LEAKS BEFORE CONNECTING THE ELECTRICAL SUPPLY.

The unit should be installed in the plumbing system in such a way that there is no tendency for the unit to be starved of water. For example: an excessive draw-off of cold water just before the unit. Also, do not fit an unrestricted hot water draw-off point below the heater as this will tend to empty the heater by siphoning.

ELECTRICAL HOOK-UP

WARNING

HAZARD OF ELECTRICAL SHOCK! BEFORE BEGINNING ANY WORK ON THE INSRRALLATION, MAKE SURE THE ELECTRICAL SUPPLY TO THE HEATER IS TURNED "OFF". FALIURE TO DO THIS COULD RESULT IN DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

WARNING

WATER HEATERS EQUIPPED FOR ONE VOLTAGE ONLY: CHECK THE RATING PLATE ON THE FRONT OF THE UNIT. DO NOT USE THIS WATER HEATER WITH ANY VOLTAGE OTHER THAN THE ONE SHOWN ON THE MODEL RATING PLATE. FAILURE TO DO SO CAN RESULT IN DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE. IF YOU HAVE ANY QUESTIONS OR DOUBTS CONSULT YOUR ELECTRIC COMPANY.

This heater must have its own independent circuit using four wires; three live and one earth ground, of the appropriate rating protected by the correctly rated three pole breaker.

STEP 1: ELECTRICAL CONNECTION: a 1-3/8" hole on the bottom of the unit is provided for customer connection. Customer to supply 480VAC/3-phase/60Hz power in a "Delta" configuration, including three power leads and a ground conductor, each sized for the system's maximum amperage of 24A. The customer is responsible for providing a local fused disconnect switch or circuit breaker sized accordingly. The maximum power draw of the system is 20 kW.

STEP 2: TEST FUNCTION OF UNIT

Turn on eyewash. Carefully monitor initial few minutes of flow with hand in eyewash flow. Check to ensure initial flow does not contain brief shots of hot water. See troubleshooting if any problems.

IMPORTANT: REPEAT TEST PROCEDURE WEEKLY!

THIS UNIT MUST **NOT** BE CONNECTED IN STAR CONFIGURATION

WARNING

FAILURE TO GROUND THE SYSTEM MAY RESULT IN DEATH OR SERIOUS INJURY

COMMISSIONING YOUR HEATER

IMPORTANT

Before switching “on” the power at the main circuit breaker panel make sure that the hot water circuit is free of air pockets or premature failure of the heating element will occur. To do this open all hot water fixtures one at a time for several minutes until the water flow is continuous and free from “gulping” and from visible air pockets.

- 1) With inlet and outlet BALL VALVES fully open, turn on a hot water outlet.
- 2) Run for 3 minutes.
- 3) Switch on electric supply at circuit breaker panel.
- 4) The power indicator lights should now come on.

NOTE: At this point water temperature may not be hot. “EE” units are preset to deliver tepid water only.

- 5) Using the OUTLET BALL VALVE slowly reduce water flow until desired temperature is achieved at hot water outlet.

NOTE: The water temperature is regulated by the flow through the heater. The lower the flow the higher the temperature and vice versa.

- 6) If water does not achieve desired temperature, please call technical services.

TROUBLESHOOTING

SYMPTOM: NO HEAT - INDICATOR LIGHT OFF

- 1) **ELECTRIC SUPPLY IS OFF** - Turn on the main circuitbreaker.
- 2) **NO OR LOW WATER FLOW**
Ensure that the minimum flow rate to turn on your heater is met: 0.95 GPM. Also check that the inlet filter screen is clear from any debris.
- 3) **WATER CONNECTIONS ARE REVERSED**
Cold water inlet = right side, hot water outlet = left side.
- 4) **ELEMENT BURNED OUT TURN OFF THE MAIN BREAKER!**

Using an ohmmeter test the resistance of the heating element across the two threaded termination rods on top of the element.

See the front cover of this manual for the correct value.

If the resistance is much greater than the correct value, call your supplier for a replacement element.

SYMPTOM: NO HEAT OR LOW TEMPERATURE WITH INDICATOR LIGHT ON

1) WATER FLOW TOO HIGH

Reduce the water flow by using an outlet ball valve. Temperature rise is 41° at 4 GPM.

2) INCORRECT POWER SUPPLY

Make sure that the unit is connected to the voltage supply specified on the rating label on the front cover of the unit and no other.

3) ELEMENT BURNED OUT- TURN OFF THE MAIN BREAKER!

Repeat the steps from paragraph 4 above.

4) THERMOSTAT ADJUSTMENT SCREW NOT TURNED UP

Turn the thermostat adjustment screw clockwise in small increments until the indicator light remains on. Take care not to force the screw past its stop position.

REPLACEMENT PARTS

DESCRIPTION	QUANTITY
Temperature Gauge, 1/2"	1
Heater	1
Bypass Valve, 1/2"	1
Hot Shut-off Valve, 1/2"	1

For more information about Haws products, see our website: www.hawesco.com.

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HAWS ELECTRIC TANKLESS WATER HEATERS LIMITED WARRANTY



PLEASE LEAVE THIS WARRANTY WITH OWNER

Subject to the terms and conditions set forth in this limited warranty, each HAWS Tankless Water Heater is warranted to the original owner ("Owner") against (i) mechanical or electrical failure of any component solely due to defects in materials or Manufacturer's workmanship for a period of **one year from the date of original purchase** and (ii) leaks solely due to defects in materials or Manufacturer's workmanship for the later of (x) five years from the date of original purchase or (y) the date of Owner's occupancy of a new dwelling in which the HAWS Tankless Water Heater is installed. However, if Owner cannot document the original date of purchase with the original sales receipt, then the limited warranty period begins on the date the HAWS Tankless Water Heater was manufactured. As Owner's sole and exclusive remedy, Manufacturer shall, at Manufacturer's sole election, either repair or replace the HAWS Tankless Water Heater or the defective portion of such product. Manufacturer is not liable for any costs incurred by Owner, including, without limitation, the cost of any labor. Manufacturer's maximum liability is limited to the value of the water heater. This limited warranty shall be governed by the laws of the United States.

THIS LIMITED WARRANTY SHALL BE THE EXCLUSIVE WARRANTY MADE BY MANUFACTURER AND IS MADE IN LIEU OF ALL OTHER WARRANTIES, STATUTORY, EXPRESSED OR IMPLIED (WHETHER WRITTEN OR ORAL), INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. MANUFACTURER EXPRESSLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. OWNER'S SOLE AND EXCLUSIVE REMEDY IS PRODUCT REPAIR OR REPLACED, AS PROVIDED IN THIS LIMITED WARRANTY, AND ALL OTHER CLAIMS FOR DAMAGES ARE EXCLUDED.

THE REMEDIES SET FORTH IN THIS LIMITED WARRANTY ARE THE ONLY REMEDIES AVAILABLE TO OWNER OR ANY PERSON FOR BREACH OF ANY COVENANT, DUTY OR OBLIGATION ON THE PART OF MANUFACTURER. MANUFACTURER IS NOT LIABLE TO OWNER OR ANY THIRD PARTY FOR ANY LOSS, PERSONAL INJURY OR PROPERTY DAMAGE, DIRECTLY OR INDIRECTLY, ARISING FROM THE HAWS TANKLESS WATER HEATER. UNDER NO CIRCUMSTANCES IS MANUFACTURER LIABLE TO OWNER OR ANY THIRD PARTY FOR INCIDENTAL, CONSEQUENTIAL, SPECIAL, CONTINGENT, OR PUNITIVE DAMAGES OF ANY DESCRIPTION, WHETHER ANY SUCH CLAIM BE BASED UPON WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHER TORT, OR OTHERWISE.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO OWNER. IN SUCH CASES, THE WARRANTY SHALL BE LIMITED TO ONE YEAR FROM THE ORIGINAL DATE OF PURCHASE OR DATE OF MANUFACTURE, AS PROVIDED IN THIS LIMITED WARRANTY, OR THE SHORTEST PERIOD ALLOWED BY LAW. THIS WARRANTY GIVES OWNER SPECIFIC LEGAL RIGHTS AND OWNER MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

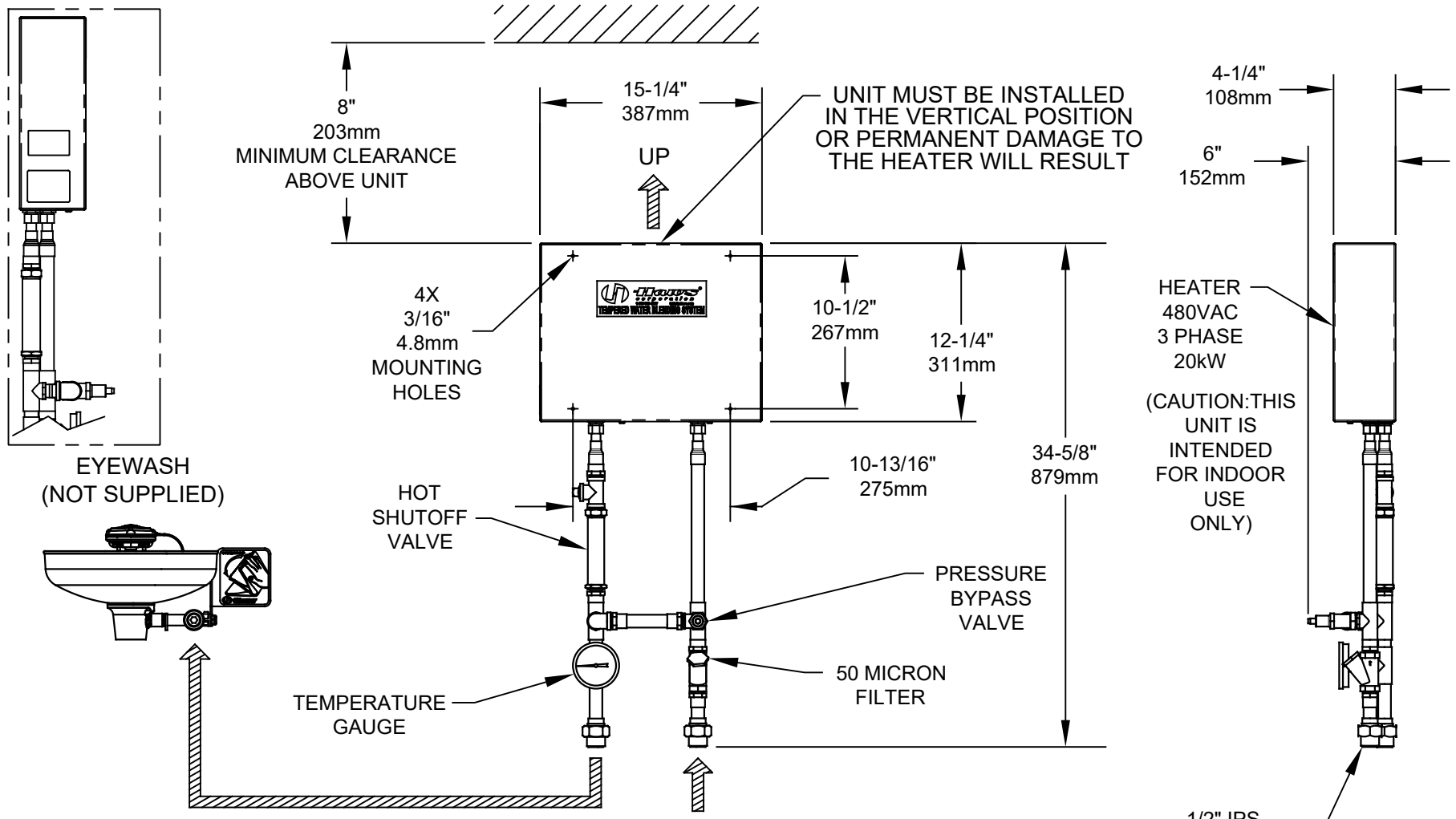
HAWS ELECTRIC TANKLESS WATER HEATERS LIMITED WARRANTY

Exclusions of Coverage from this Limited Warranty:

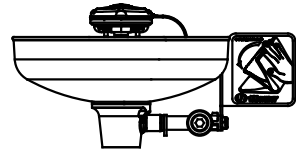
1. Manufacturer is not liable for any water damage or other damages arising, directly or indirectly, from any defect in the HAWS Tankless Water Heater component part(s) or from its use.
2. Manufacturer is not liable under this limited warranty or otherwise if:
 - a. The water heater or any of its component parts have been subject to misuse, alteration, neglect or accident; or
 - b. The water heater has not been installed in accordance with the applicable local plumbing and/or building code(s) and/or regulation(s);or
 - c. The water heater has not been installed or maintained in accordance with Manufacturer's printed instructions, or installed with improper orientation, improper fastening, improper use of pipe dope/plumbers putty or with the use of any non-Manufacturer approved sealant; or
 - d. The water heater has not been continuously supplied with potable water or the water's inlet temperature is above Manufacturer's recommended maximum temperature; or
 - e. The water heater experiences any water pressure or flow interruptions, normal inlet water pressure is outside of the published specification for the heater, is exposed to any condition that causes the heater to turn on before the air is purged from the heater also know as dry fire; or
 - f. The water heater has been exposed to conditions resulting from floods, earthquakes, winds, fire, freezing, lightning, or circumstances beyond the Manufacturer's control; or
 - g. The water heater has been removed from its original installation location; or
 - h. The water heater has been used for other than the intended purpose.
3. Owner, and not Manufacturer or its agent/representative, is liable for and shall pay for all field charges for labor or other expenses incurred in the removal and/or repair of the water heater or any expense incurred by Owner in order to repair the water heater.

Subject to the terms and conditions set forth in this limited warranty, if the HAWS Tankless Water Heater fails or leaks because of defects in materials or Manufacturer's workmanship during the applicable warranty period set forth above, Owner should contact Manufacturer for a Returned Merchandise Authorization (RMA). No returns will be accepted by Manufacturer without an RMA number and Manufacturer assumes no responsibility for a water heater returned without an RMA number. Water heaters should be wrapped and packaged securely to avoid shipping damage. All shipments of parts from the Manufacturer to the Owner to replace defective components shall be made via normal ground transportation. If expedited shipment is required, it will be provided at Owner's additional cost.





EYEWASH
(NOT SUPPLIED)



TEMPERATURE
GAUGE

HOT
SHUTOFF
VALVE

PRESSURE
BYPASS
VALVE

50 MICRON
FILTER

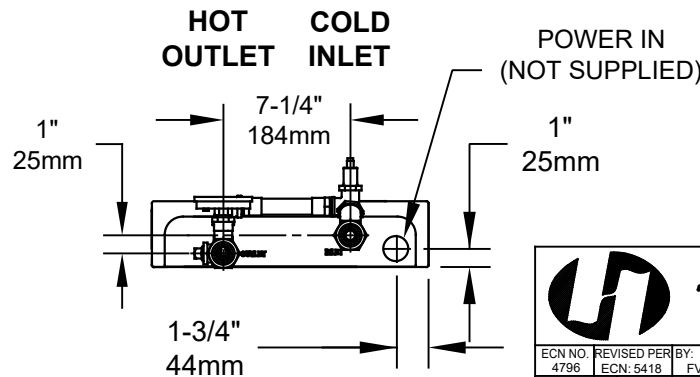
HEATER
480VAC
3 PHASE
20kW

(CAUTION: THIS
UNIT IS
INTENDED
FOR INDOOR
USE
ONLY)

1/2" IPS
DIELECTRIC
UNION
(INLET & OUTLET)

NOTES:

1. CAUTION: THIS UNIT IS INTENDED "FOR INDOOR USE ONLY"
2. USE TEFLON THREAD SEAL TAPE ON ALL WATER CONNECTIONS. **DO NOT USE PIPE DOPE.**
3. DIMENSIONS MAY VARY BY: ± 1/2" [12.7mm].



		1455 KLEPPE LANE SPARKS, NEVADA 89431 (775) 359-4712 FAX (775) 359-7424 E-MAIL: HAWS@HAWSCO.COM WEBSITE: WWW.HAWSCO.COM	
		ECN NO. 4796 DRAWN: RTM APPROVED: IR	REVISED PER: FV ECN: 5418 DATE: 04/30/04 DATE: 09/17/19
SCALE: 1:10		DRAWING TYPE: INSTALLATION	SHEET 1 OF 1