



Register Online!



Original Instructions

GLO-RAY®

GR, GRH, GRA, GRAH, GRAL, GRAHL, GRN, and GRNH Series

Infrared Strip Heaters

GR Series

Installation and Operating Manual

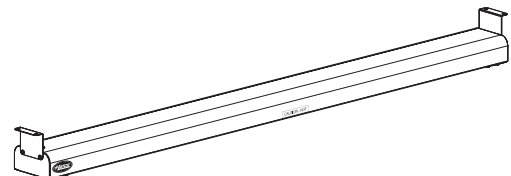
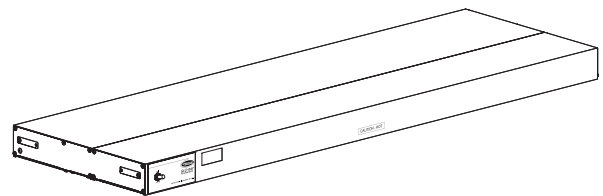
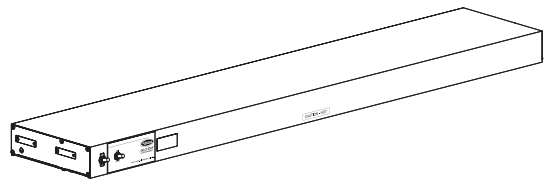
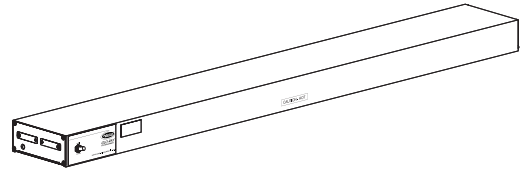
For CE and Non-CE Models

P 2



Do not operate this equipment unless you have read and understood the contents of this manual! Failure to follow the instructions contained in this manual may result in serious injury or death. This manual contains important safety information concerning the maintenance, use, and operation of this product. If you're unable to understand the contents of this manual, please bring it to the attention of your supervisor. Keep this manual in a safe location for future reference.

P/N 07.04.577.00



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IMPORTANT OWNER INFORMATION

Record the model number, serial number (specification label located on the side of the unit), voltage, and purchase date of the unit in the spaces below. Please have this information available when calling Hatco for service assistance.

Model No. _____

Serial No. _____

Voltage _____

Date of Purchase _____

Register your unit!

Completing online warranty registration will prevent delay in obtaining warranty coverage. Access the Hatco website at www.hatcocorp.com, select the *Parts & Service* pull-down menu, and click on "Warranty Registration".

Business

Hours: 7:00 AM to 5:00 PM Central Standard Time (C.S.T.)
(Summer Hours: June to September—
7:00 AM to 5:00 PM C.S.T.
Monday through Thursday
7:00 AM to 4:00 PM C.S.T. Friday)

Telephone: 414-671-6350

E-mail: partsandservice@hatcocorp.com

Fax: 414-671-3976 (Parts and Service)

Additional information can be found by visiting our web site at www.hatcocorp.com.



Correct Disposal of this Product

This marking indicates that this product and its electronic components should not be disposed of with other commercial waste. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle responsibly to promote the sustainable reuse of material resources. To dispose of product and its electronic components, contact supplier where product was purchased for environmentally safe recycling.

INTRODUCTION

Glo-Ray® Infrared Strip Heaters ensure maximum food holding time and minimize the risk of food-borne illness. Optimum safety and quality is the result of food held at the proper serving temperatures using Glo-Ray's pre-focused heat patterns. The pre-focused heat pattern prevents foods from being over-cooked in the middle and cooling off around the edges by concentrating higher temperatures to the outer edges of holding surfaces where heat loss is the greatest. Utilizing specially designed reflectors to direct the heat from the element, Glo-Ray Strip Heaters safely maintain peak serving temperatures longer without cooking the food beyond the point of excellence.

Glo-Ray Infrared Strip Heaters are available from the factory with or without shatter-resistant incandescent lights to illuminate the warming area. These bulbs have a special coating that guards against injury and food contamination in the event of breakage.

Glo-Ray Infrared Strip Heaters are products of extensive research and field testing. The materials used were selected for maximum durability, attractive appearance and optimum performance. Every unit is inspected and tested thoroughly prior to shipment.

This manual provides installation, safety, and operating instructions for Glo-Ray Strip Heaters. Hatco recommends all installation, operating, and safety instructions appearing in this manual be read prior to installation or operation of a unit.

Safety information that appears in this manual is identified by the following signal word panels:

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.



Read the following important safety information before using this equipment to avoid serious injury or death and to avoid damage to equipment or property.

**WARNING****ELECTRIC SHOCK HAZARD:**

- Units supplied without an electrical cord and plug require a hardwired connection to the on-site electrical system. Connection must be properly grounded and of the correct voltage, size, and configuration for the electrical specifications of the unit. Contact a qualified electrician to determine and install the proper electrical connection.
- Plug unit into a properly grounded electrical receptacle of the correct voltage, size, and plug configuration. If plug and receptacle do not match, contact a qualified electrician to determine and install proper voltage and size electrical receptacle.
- Turn OFF power switch, unplug power cord/turn off power at circuit breaker, and allow unit to cool before performing any cleaning, adjustments, or maintenance.
- DO NOT submerge or saturate with water. Unit is not waterproof. Do not operate if unit has been submerged or saturated with water.
- Do not steam clean or use excessive water on unit.
- This unit is not "jet-proof" construction. Do not use jet-clean spray to clean this unit.
- Discontinue use if power cord is frayed or worn.
- Do not attempt to repair or replace a damaged power cord. Cord must be replaced by Hatco, an Authorized Hatco Service Agent, or a person with similar qualifications.
- Use only Genuine Hatco Replacement Parts when service is required. Failure to use Genuine Hatco Replacement Parts will void all warranties and may subject operators of the equipment to hazardous electrical voltage, resulting in electrical shock or burn. Genuine Hatco Replacement Parts are specified to operate safely in the environments in which they are used. Some aftermarket or generic replacement parts do not have the characteristics that will allow them to operate safely in Hatco equipment.

FIRE HAZARD:

- Locate unit the correct distance from combustible walls and materials. If safe distances are not maintained, discoloration or combustion could occur. Refer to specific installation and mounting information in this manual for proper clearances.
- Make sure to follow the installation information listed below for specific strip heaters. If safe distances are not maintained, discoloration or combustion could occur.
 - Do not install standard wattage strip heaters (GR, GRA, GRN, GRL, GRAL Series) less than 254 mm (10") above combustible surfaces.
 - Do not install high wattage strip heaters (GRH, GRAH, GRNH, GRHL, GRAHL Series) less than 343 mm (13-1/2") above combustible surfaces.
 - Do not install dual strip heaters (GR-XXD, GRA-XXD, GRH-XXD, GRAH-XXD, GRL-XXD, GRAL-XXD, GRHL-XXD and GRAHL-XXD Series) above combustible surfaces.
 - Install all single strip heaters with a minimum distance of 76 mm (3") from a combustible wall or adjacent surface.

Use only light bulbs that meet or exceed National Sanitation Foundation (NSF) standards and are specifically designed for food holding areas. Breakage of light bulbs not specially-coated could result in personal injury and/or food contamination.

**WARNING**

EXPLOSION HAZARD: Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

This unit is not intended for use by children or persons with reduced physical, sensory, or mental capabilities. Ensure proper supervision of children and keep them away from the unit.

Make sure all operators have been instructed on the safe and proper use of the unit.

Make sure food product has been heated to the proper food-safe temperature before placing under unit. Failure to heat food product properly may result in serious health risks. This unit is for holding pre-heated food product only.

For installation with chains, make sure the chains have sufficient strength and are securely fastened to both the strip heater and the mounting location. Poorly installed chains may cause the heater to loosen and fall. Do not place anything on top of heaters installed with chains.

This unit has no "user-serviceable" parts. If service is required on this unit, contact an Authorized Hatco Service Agent or contact the Hatco Service Department at 414-671-6350 or International fax 414-671-3976.

**CAUTION**

BURN HAZARD: Some exterior surfaces on the unit will get hot. Use caution when touching these areas.

Standard and approved manufacturing oils may smoke up to 30 minutes during initial startup. This is a temporary condition. Operate unit without food product until smoke dissipates.

Strip heaters equipped with incandescent lights that require a circuit breaker larger than 20 amps for the heat element must have a separate circuit breaker for the incandescent lights that is 20 amps or less.

Ensure safe and proper operation. Refer to the "Minimum Clearance Requirements" listed in the Installation section of this manual.

NOTICE

Installation of two or more separate units with less than 76 mm (3") between housings may result in premature failure of component parts. Failure to provide proper spacing may result in heat damage to electrical components.

Units are voltage-specific. Refer to specification label for electrical requirements before beginning installation.

Do not add a decorative soffit to hide a pass-through mounted strip heater. Excessive heat can cause unit failure.

To prevent premature failure of components due to excessive heat, remote mounted control switches must be installed outside the strip heater heat zone.

Damage to countertop material caused by heat generated from Hatco equipment is not covered under the Hatco warranty. Contact the manufacturer of the countertop material for application information.

Use non-abrasive cleaners and cloths only. Abrasive cleaners and cloths could scratch the finish of the unit, marring its appearance and making it susceptible to soil accumulation.

MODEL DESCRIPTION



All Models

Hatco Glo-Ray® Infrared Strip Heaters keep hot foods at optimum serving temperatures longer. Foods do not dry out or become discolored; even the most delicate dishes hold that “just-prepared” look. The Glo-Ray pre-focused heat pattern directs heat from a tubular element to bathe the entire holding surface.

Glo-Ray strip heaters can be ordered in standard or high wattage configurations, aluminum housings in lengths of 457–3658 mm (18”–144”), stainless steel housings in lengths of 610–2438 mm (24”–96”), or narrow design stainless steel housings in lengths of 457–1829 mm (18”–72”).

All strip heaters have several mounting options and switch locations. Optional infinite control switches, remote control enclosures, incandescent lighting, and sneeze guards are available.

GR-XX, GRH-XX, GRL-XX, and GRHL-XX Models

Stainless steel models are available with or without incandescent lights.

NOTE: Stainless steel strip heaters are not available with sneeze guards.

GRA-XX, GRAH-XX, GRAL-XX, and GRAHL-XX Models

Aluminum, single element models are available either with or without incandescent lights.

GR-XXD, GRA-XXD, GRH-XXD, GRAH-XXD, GRL-XXD, GRAL-XXD, GRHL-XXD, and GRAHL-XXD Models

Dual models allow for side-by-side mounting of two or more strip heaters to provide a wider holding area (dual models are constructed with a required 76 mm [3”] or 152 mm [6”] spacer between heating elements).

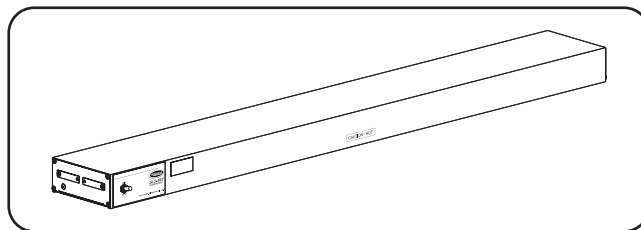
Dual element models are available either with or without incandescent lights.

NOTE: Incandescent lights and sneeze guards are not available for retrofit.

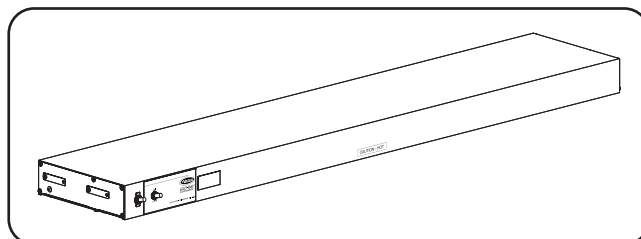
GRN-XX and GRNH-XX Models

Narrow models are available in stainless steel, powder-coated steel, or several *Designer* colors.

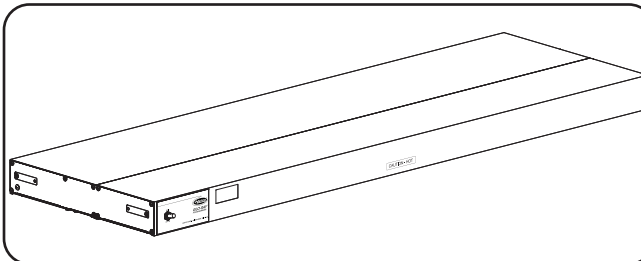
NOTE: Narrow design strip heaters are not available with lights, sneeze guards, or as dual units.



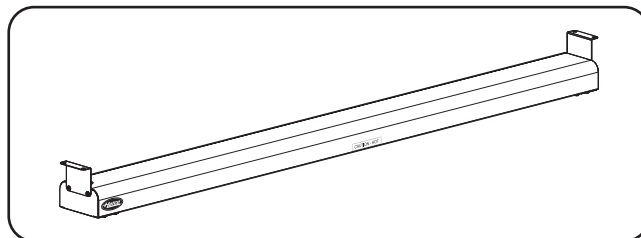
GRA-48 Model



GRAHL-48 Model

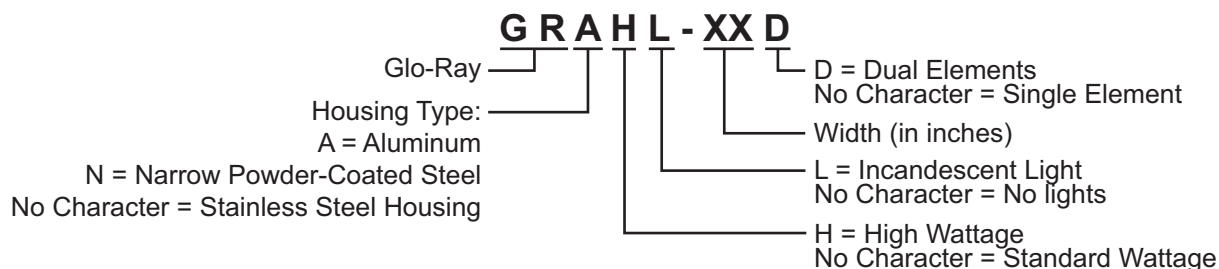


GRAL-48D Model



GRN-48 Model

MODEL DESIGNATION

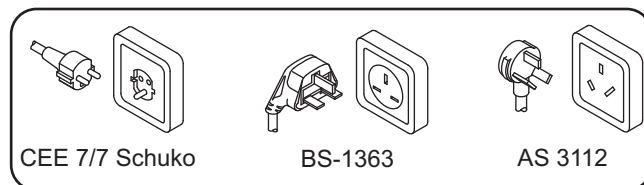


Plug Configurations

An attached 1829 mm (6') cord and plug is available as a factory-installed option for certain units. These units must have built-in controls that are 1829 mm (72") or less and mounted with a standard chain kit, C-leg stand, or T-leg stand.

⚠ WARNING

ELECTRIC SHOCK HAZARD: Plug unit into a properly grounded electrical receptacle of the correct voltage, size, and plug configuration. If plug and receptacle do not match, contact a qualified electrician to determine and install proper voltage and size electrical receptacle.



Plug Configurations

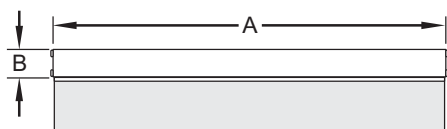
NOTE: A cord and plug set is not available for units with lights.

NOTE: Receptacle not supplied by Hatco.

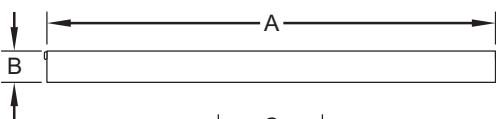
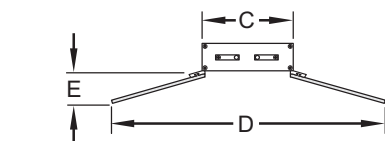
NOTE: Refer to the wiring diagram supplied with the unit and specification label attached to the unit for specific electrical information. Also, refer to the "Electrical Rating Charts" document on the Infrared Strip Heaters page of the Hatco website (www.hatcocorp.com).

Dimensions

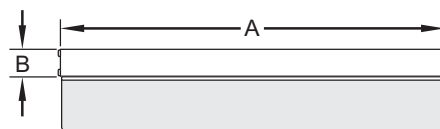
Model	Width (A)	Height (B)	Depth (C)	Depth (D)	Height (E)
GR and GRH	457–2438 mm (18"–96")	63 mm (2-1/2")	152 mm (6")	---	---
GRA and GRAH	457–3658 mm (18"–144")	63 mm (2-1/2")	152 mm (6")	584 mm (23")	102 mm (4")
GRAL and GRAHL	457–3658 mm (18"–144")	63 mm (2-1/2")	229 mm (9")	660 mm (26")	102 mm (4")
GRL and GRHL	457–1829 mm (18"–72")	63 mm (2-1/2")	229 mm (9")	660 mm (26")	102 mm (4")
GR-, GRA-, GRH-, GRAH-, GRL-, GRAL-, GRHL-, and GRAHL-XXD	457–3658 mm (18"–144")	63 mm (2-1/2")	381 mm (15")	813 mm (32")	102 mm (4")
GRN and GRNH	457–1829 mm (18"–72")	51 mm (2")	102 mm (4")	---	---



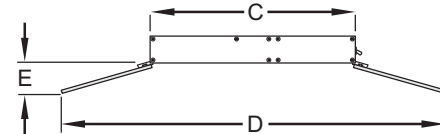
Single Element Models
(Shown with Optional 238 mm (9-3/8") Sneeze Guards)



Narrow Models



Dual Element Models
(Shown with Optional 238 mm (9-3/8") Sneeze Guards)



NOTE: Add 76 mm (3") to Depth (C and D) if unit is configured with an optional 152 mm (6") spacer.

NOTE: Add 216 mm (8-1/2") to Depth (D) and 44 mm (1-3/4") to Height (E) if unit is configured with an optional 356 mm (14") sneeze guard.

General

Use the information in this section to prepare for and install an Infrared Strip Heater. Make sure to locate the specific information for the type of installation. Infrared strip heaters are shipped with most components pre-assembled. Dual units are supplied with a required 76 mm (3") or 152 mm (6") spacer pre-assembled at the factory.

WARNING

FIRE HAZARD:

- **Locate the unit the correct distance from combustible walls and materials. If safe distances are not maintained, discoloration or combustion could occur. Refer to specific installation and mounting information in this manual for proper clearances.**
- **Make sure to follow the installation information listed below for specific strip heaters. If safe distances are not maintained, discoloration or combustion could occur.**
 - a. **Do not install standard wattage strip heaters (GR, GRA, GRN, GRL, GRAL Series) less than 254 mm (10") above combustible surfaces.**
 - b. **Do not install high wattage strip heaters (GRH, GRAH, GRNH, GRHL, GRAHL Series) less than 343 mm (13-1/2") above combustible surfaces.**
 - c. **Do not install dual strip heaters (GR-XXD, GRA-XXD, GRH-XXD, GRAH-XXD, GRL-XXD, GRAL-XXD, GRHL-XXD and GRAHL-XXD Series) above combustible surfaces.**
 - d. **Install all single strip heaters with a minimum distance of 76 mm (3") from a combustible wall or adjacent surface.**

CAUTION

Ensure safe and proper operation. Refer to the "Minimum Clearance Requirements" listed in the Installation section of this manual.

NOTICE

Do not add a decorative soffit to hide a pass-through mounted strip heater. Excessive heat can cause unit failure.

Damage to any countertop material caused by heat generated from Hatco equipment is not covered under the Hatco warranty. Contact the manufacturer of the countertop material for application information.

NOTE: Contact the countertop manufacturer of the base material for application information and surface temperature limits before installing the unit.

1. Remove the unit from the shipping carton and remove all packing materials.

NOTE: To prevent delay in obtaining warranty coverage, complete online warranty registration. See the IMPORTANT OWNER INFORMATION section for details.

2. Remove tape and protective packaging from all surfaces of the unit.

NOTE: If the unit is configured with optional equipment, see the OPTIONS AND ACCESSORIES section in this manual.

3. Install/mount the unit in an appropriate location.

- a. Verify recommended mounting heights and minimum clearance requirements are met for the appropriate model. Refer to "Recommended Mounting Heights" and "Minimum Clearance Requirements" in this section.
- b. For portable unit installation, refer to "Installing Portable Units" in this section.
- c. For chain suspension installation, refer to "Installing Chain Suspended Units" in this section.
- d. For permanent unit installation, refer to "Installing Permanent Units" in this section.

Dual Mounting

When mounting units side-by-side, a space not less than 76 mm (3") must be maintained between units. Dual units ordered from the factory are shipped with a pre-assembled 76 mm (3") or 152 mm (6") spacer.

NOTICE

Installation of two or more separate units with less than 76 mm (3") between housings may result in premature failure of component parts. Failure to provide proper spacing may result in heat damage to electrical components and are not covered by warranty.

Under Shelf Mounting

When mounting a unit under a shelf, use angle brackets to assure proper spacing. Remote control enclosures are recommended to keep switches out of the heat zone and prevent premature failure.

Pass-Through

If pass-through area is 305–406 mm (12"–16") deep, the standard wattage or high wattage single unit can be used. For a 508–610 mm (20"–24") deep pass-through area, a dual unit in either standard or high wattage is recommended. Installation of multiple units must have a minimum spacing of 76 mm (3") between heaters.

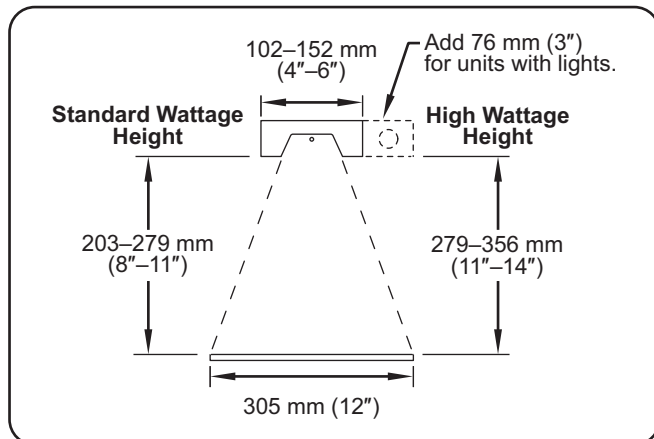
T-Legs or C-Legs

Do not mount units longer than 1829 mm (72") on T-legs or C-legs.

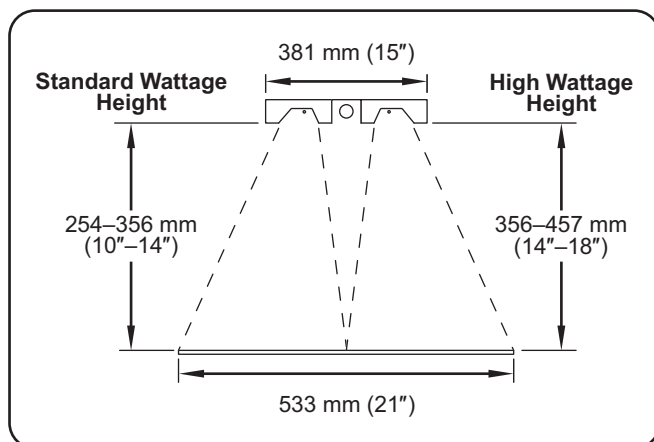
Over Steam Table

When mounting over a steam table, a remote control enclosure must be installed.

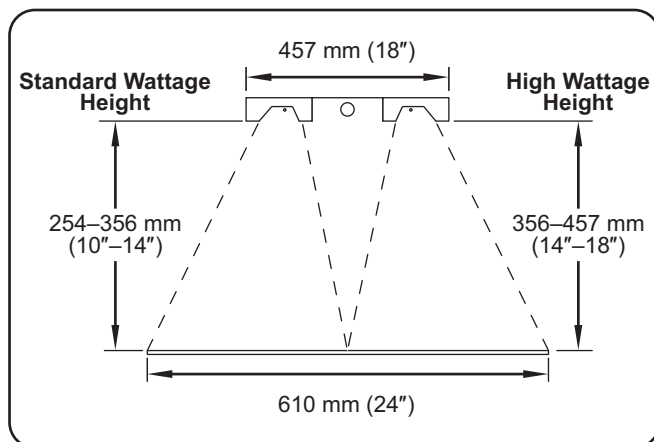
Recommended Mounting Heights



Recommended Element Height for the single models in all widths.



Recommended Element Height for dual models with a 76 mm (3") spacer in all widths

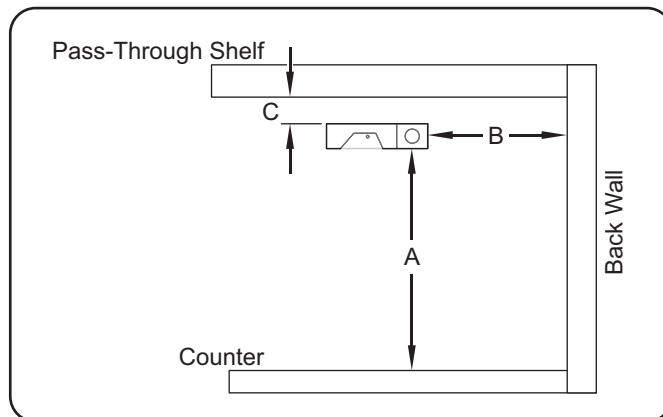


Recommended Element Height for dual models with a 152 mm (6") spacer in all widths.

Minimum Clearance Requirements for Combustible Surroundings

Models	(A)	(B)	(C)
GRA and GRAL	254 mm (10")	76 mm (3")	25 mm (1")
GRAH and GRAHL	343 mm (13-1/2")	76 mm (3")	25 mm (1")

NOTE: Dual strip heaters cannot be installed in combustible surroundings.



Combustible Clearance Requirements

NOTE: The size of heat patterns vary depending on the height of the unit.

Minimum Clearance Requirements for Non-Combustible Surroundings

Corded Units with Built-In Switches

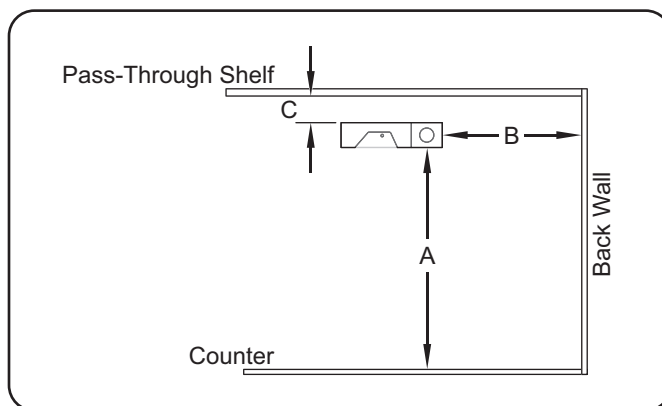
Models	(A)	(B)*	(C)
GRA and GRAL	253 mm (10")	---	76 mm (3")
GRAH and GRAHL	279 mm (11")	---	76 mm (3")

Hardwired Units with Built-In Switches

Models	(A)	(B)*	(C)
GRA and GRAL	203 mm (8")	---	25 mm (1")
GRAH and GRAHL with Infinite Heat Control or Indicator Light	253 mm (10")	---	25 mm (1")
GRAH and GRAHL with ON/OFF Toggle Switch	203 mm (8")	---	25 mm (1")

Hardwired Units with Remote Switches

Models	(A)	(B)*	(C)
GRA and GRAL	203 mm (8")	0 mm (0")	0 mm (0")
GRAH and GRAHL	203 mm (8")	0 mm (0")	0 mm (0")



Non-Combustible Clearance Requirements

Dual Units with Built-In Switches

Models	(A)	(B)*	(C)
GRA-XXD GRAH-XXD GRAL-XXD GRAHL-XXD	253 mm (10")	---	25 mm (1")

Dual Units with Remote Switches

Models	(A)	(B)*	(C)
GRA-XXD GRAH-XXD GRAL-XXD GRAHL-XXD	203 mm (8")	76 mm (3")	0 mm (0")

* Must be a pass-through application, not allowed with back wall installation.

Installing Portable Units

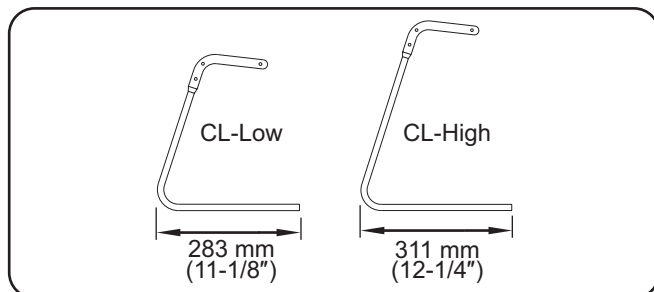
Single strip heater units under 1829 mm (72") long can be mounted on C-Leg or T-Leg stands for portable use. Portable units are required to have a power cord and plug connection.

NOTE: C-Legs and T-Legs are not to be used with dual strip heater units.

C-Leg Stand Mounting

Two types of C-Legs are available.

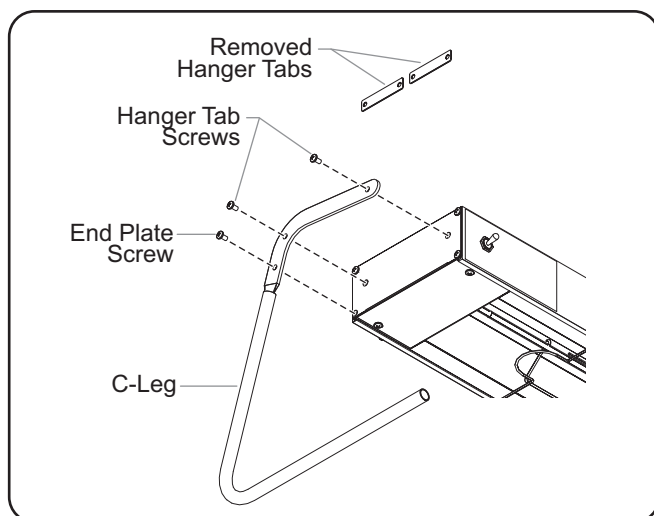
- CL-Low = 254 mm (10") height, for standard wattage strip heaters up to 1829 mm (72") in width only.
- CL-High = 343 mm (13-1/2") height, for high wattage strip heaters up to 1829 mm (72") in width only.



C-Leg Footprint Dimensions

Perform the following procedure to install a C-Leg stand on each end of the unit.

1. Position the unit upside-down on a flat surface.
2. Install sneeze guard(s), if applicable (refer to the OPTIONS AND ACCESSORIES section for details on installing a sneeze guard).
3. Remove the two hanger tab screws and hanger tabs.
4. Remove the one end plate screw that aligns with the lowest mounting hole on the C-Leg.
5. Align the three mounting holes on the C-Leg with the three holes on the unit. Secure the leg to the unit with the three screws removed in the previous steps.

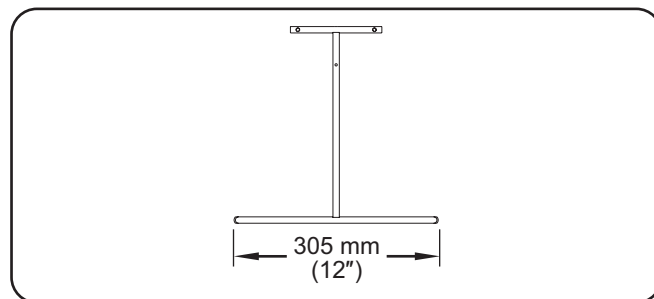


C-Leg Stand

T-Leg Stand Mounting

T-Leg stands are available in the following heights:

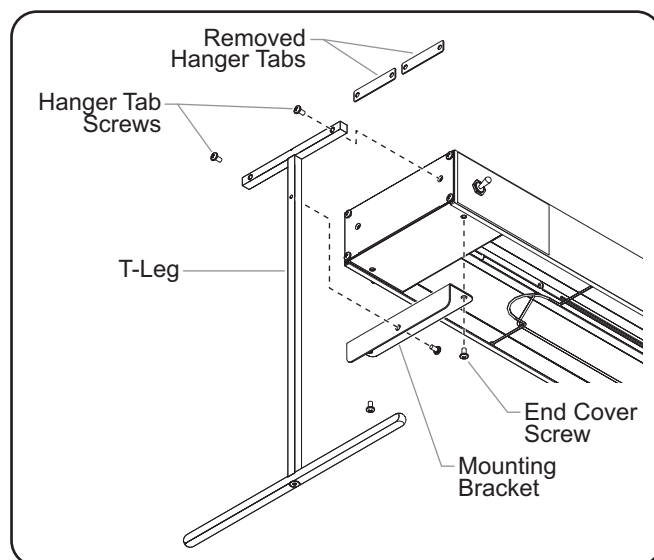
- Standard wattage units = 254 mm (10")
- High wattage units = 343 mm (13-1/2")
406 mm (16")
457 mm (18")



T-Leg Footprint Dimension

Perform the following procedure to install a T-Leg stand on each end of the unit.

1. Position the unit upside-down on a flat surface.
2. Install sneeze guard(s), if applicable (refer to the OPTIONS AND ACCESSORIES section for details on installing a sneeze guard).
3. Align the mounting bracket with the end cover on the underside of the unit, and remove the two screws on the end cover that match up with the holes on the mounting bracket.
4. Secure the mounting bracket to the unit with the two end cover screws.
5. Remove the two hanger tab screws and hanger tabs.
6. Align the two mounting holes on the small "T" of the T-Leg with the two hanger tab holes on the end of the unit. Secure the leg to the unit with the hanger tab screws.
7. Align the single mounting hole on the vertical post of the T-Leg with the hole on the mounting bracket. Secure from the inside with the supplied screw.



T-Leg Stand End Mounting

Installing Chain Suspended Units

Chain suspended mounting attaches the unit to an overhead surface with the use of "S" hooks. "S" hook mounted units are required to have a power cord and plug connection.

NOTE: Units ordered with the "S" hook option come with two "S" hooks and two 152 mm (6") lengths of chain. Additional chain (P/N 05.03.020.00) can be ordered from Hatco for the overhead mounting system or another option can be determined by a qualified installer.

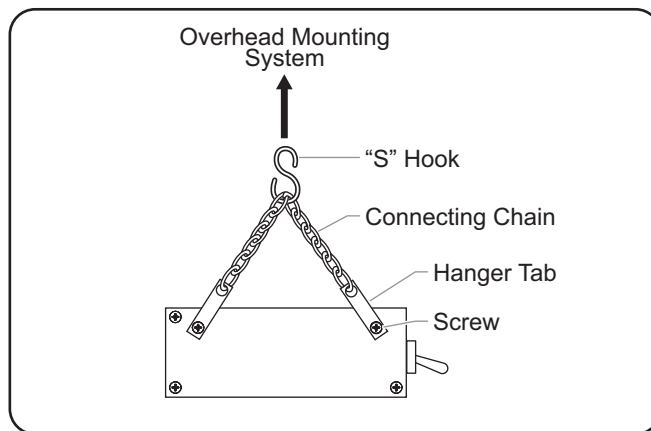
WARNING

For installation with chains, make sure the chains have sufficient strength and are securely fastened to both the unit and the mounting location. Poorly installed chains may cause the unit to loosen and fall. Do not place anything on top of units installed with chains.

Ensure safe and proper operation. Refer to the "Minimum Clearance Requirements" listed in the Installation section of this manual.

NOTE: The strength of the chain supplied by Hatco is sufficient to hold the weight of the unit securely only when mounted properly.

1. Prepare the overhead mounting system for the "S" hooks. Make sure the system is secure and is set up so the unit will be suspended at a level, safe, and proper distance from walls, counter, and food.
2. Loosen, but do not remove the screws securing the hanger tabs on each end of the unit. Rotate the tabs up, then tighten the screws securely.
3. Securely attach one of the 152 mm (6") connecting chains between each pair of hanger tabs.
4. Attach an "S" hook to the center of each connecting chain.
5. Carefully lift the unit and attach the "S" hooks on each end of the unit to the overhead mounting system. Make sure the unit is level.



"S" Hook Mounting

Installing Permanent Units

Strip heater units can be mounted permanently with tubular stands or angle brackets. Permanent units are not available with a power cord and plug connection. Refer to the proper permanent mounting section for the installation procedure.

Tubular Stand Mounting

Tubular stand mounting permanently attaches the unit to a countertop or serving table. All wiring may be concealed within one of the tubular stands.

CAUTION

Ensure safe and proper operation. Refer to the “Minimum Clearance Requirements” listed in the Installation section of this manual.

Non-adjustable tubular stands are available in aluminum, Designer colors, or gloss finishes in heights from 254–406 mm (10”–16”). Adjustable tubular stands are available in stainless steel adjustable from 254–356 mm (10”–14”).

NOTE: Tubular stands cannot be retrofitted in the field.

NOTE: If wiring is to be concealed, a 25 mm (1”) diameter hole must be provided in the mounting surface centered under the stand containing the wiring conduit.

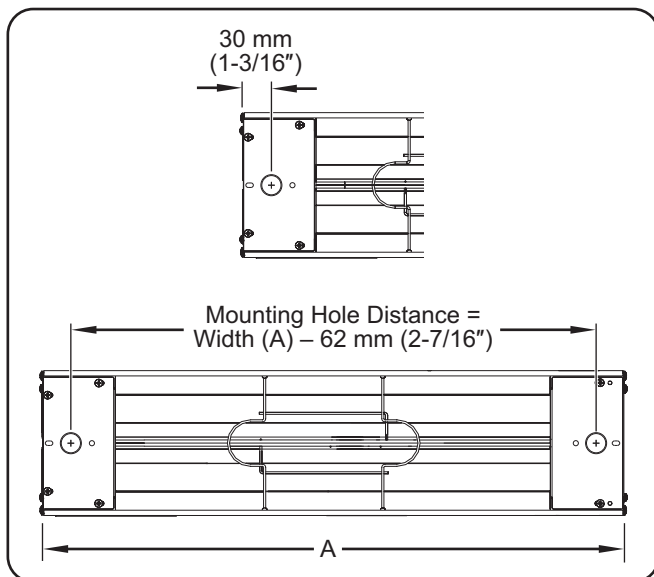
1. Position the unit upside-down on a flat surface.

NOTE: Units for this application are supplied with the conduit attached to one side of the unit. Conduit should not be removed.

2. If applicable, prepare the mounting surface for concealing wiring.
 - a. Cut a 25 mm (1”) diameter hole into the mounting surface at the appropriate location.

NOTE: The distance between the center of the two stands is found by subtracting 62 mm (2-7/16”) from the overall width of the strip heater.

- b. Route the flexible conduit through the tubular stand and into the mounting surface.

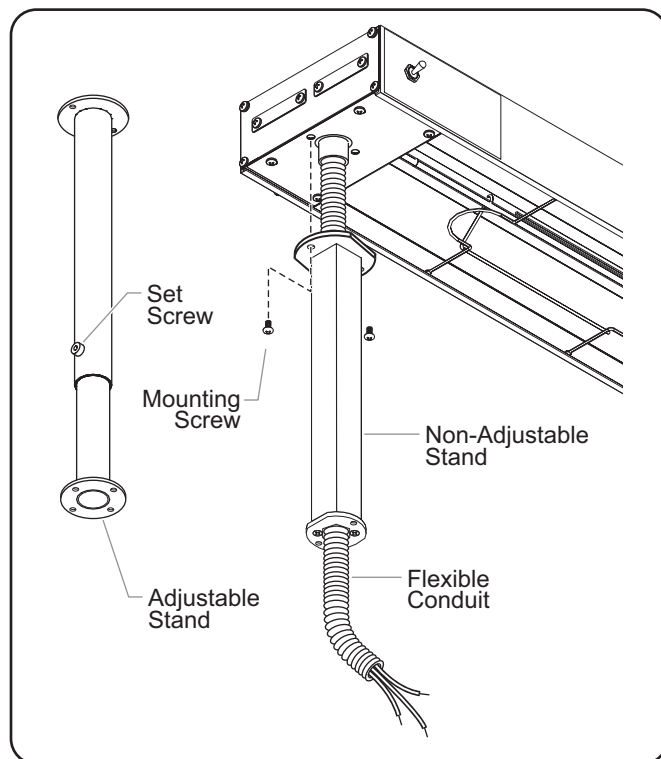


Countertop Conduit Hole Dimension

3. Secure the conduit-side stand to the unit using the screws supplied.
4. Align the opposite-side stand with the mounting holes at the other end of the unit and secure the stand to the unit using the screws supplied.
5. Secure the stands to the mounting surface.

NOTE: The adjustable stands can be raised or lowered by turning the locking set screw counterclockwise one turn with a hex wrench. After loosening the set screw, raise or lower the unit to the desired height and retighten the screw. Do not loosen the screw more than necessary.

NOTE: Two pairs of tubular stands will be needed for mounting dual units.



Tubular Stand Mounting

Adjustable Angle Bracket Mounting

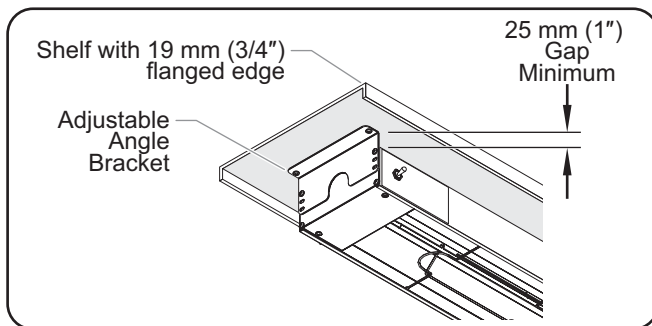
Mounting a unit with an angle bracket permanently attaches the unit to the underside of a shelf. It can be mounted to a flat shelf or a shelf with rolled/flanged edges. The adjustable angle brackets will provide the necessary gap between the unit and a combustible shelf.

CAUTION

Ensure safe and proper operation. Refer to the "Minimum Clearance Requirements" listed in the Installation section of this manual.

NOTE: When mounting the unit under a shelf, it is recommended to use a remote-mounted control switches.

Use the optional adjustable angle brackets to mount the unit below the lowest part of the rolled or flanged edge of the shelf (a minimum gap of 25 mm [1"] is required between the unit and the underside of a rolled or flanged shelf to prevent heat damage to the electrical system of the unit).

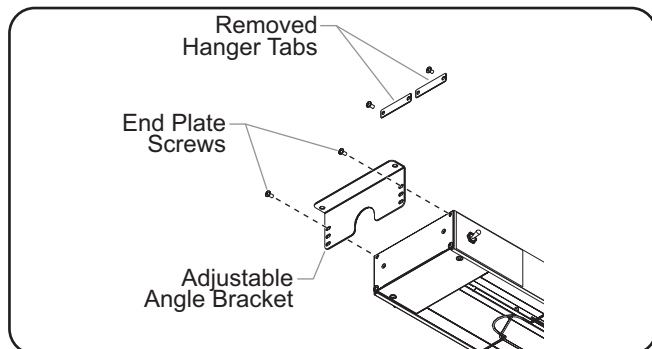


Flanged Edge Shelf Installation

Adjustable Angle Bracket Mounting on Aluminum Models

Use the following procedure to install adjustable brackets on each end of aluminum housing models (GRA, GRAH, GRAL, and GRAHL).

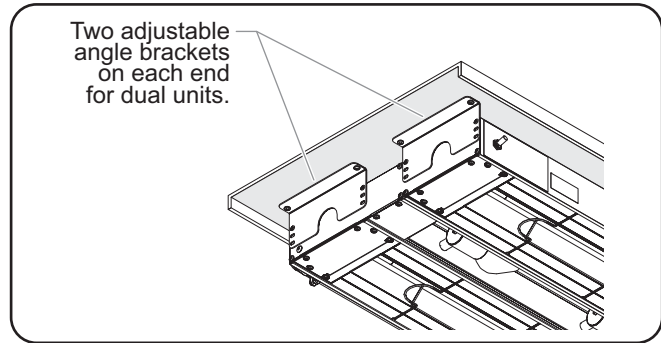
1. Position the unit on a flat surface with the heating element facing down.
2. Remove the two hanger tab screws and hanger tabs. These items will not be needed.
3. Remove the two upper end plate screws.
4. Align the adjustable angle bracket to the end plate mounting holes of the unit. Secure the angle bracket with previously removed end plate screws.



Aluminum Model Adjustable Angle Bracket Installation

5. Fasten the angle bracket to the underside of the shelf using appropriate fasteners (not supplied by Hatco).

NOTE: Two pairs of brackets will be needed for dual units.



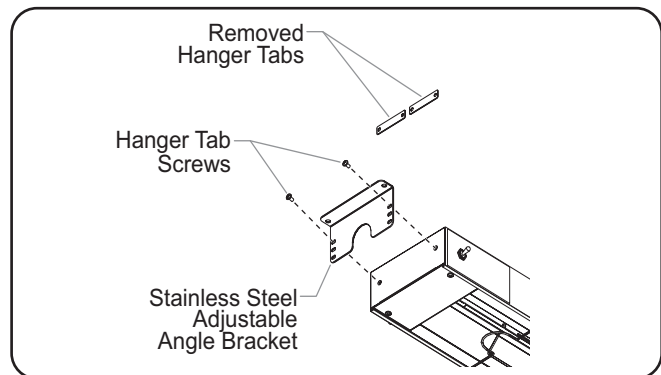
Dual Unit Mounting

Adjustable Angle Bracket Mounting on Stainless Steel Models

Use the following procedure to install adjustable angle brackets on each end of stainless steel housing models (GR, GRH, GRL, and GRAL).

1. Position the unit on a flat surface with the heating element facing down.
2. Remove the two hanger tab screws and hanger tabs.
3. Align the adjustable angle bracket with the hanger tab mounting holes on the unit.
4. Secure the angle bracket with the previously removed hanger tab screws.
5. Fasten the angle brackets to the underside of the shelf using appropriate fasteners (not supplied by Hatco).

NOTE: Two pairs of brackets will be needed for dual units.



Stainless Steel Model Adjustable Angle Bracket Installation

Electrical Information

Refer to the appropriate "Electrical Ratings Chart" for unit-specific electrical information.

⚠ WARNING

ELECTRIC SHOCK HAZARD: For hardwired units, all electrical connections must be in accordance with local electrical codes and any other applicable codes. Connections should be made by a qualified, licensed electrician.

⚠ CAUTION

Strip heaters equipped with incandescent lights that require a circuit breaker larger than 20 amps for the heat element must have a separate circuit breaker for the incandescent lights that is 20 amps or less.

NOTE: If the unit being installed is not shown or listed in this manual, refer to the wiring diagram supplied with the unit and the installation information on the unit for further instructions.

Power Supply

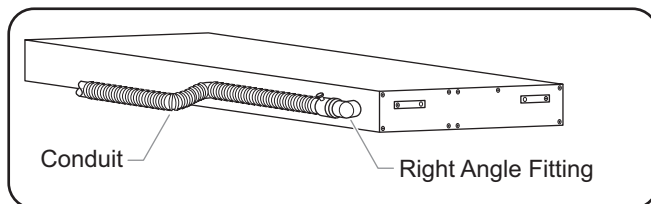
Install supply wire and connectors suitable for at least 90°C (194°F).

- Use a minimum of No. 14 AWG copper wire for individual circuits up to 15 amps.
- Use a minimum of No. 12 AWG copper wire for individual circuits 15 to 20 amps.
- Use a minimum of No. 10 AWG copper wire for individual circuits 20 to 25 amps.
- Use a minimum of No. 8 AWG copper wire for individual circuits 25 to 30 amps.

NOTE: Refer to the wiring diagram supplied with the unit and specifications label attached to the unit for specific electrical information.

Conduit Connection

Units supplied with a right angle fitting and flexible conduit attached have had all internal connections completed at the factory. Attach the proper power supply leads to the high temperature lead wires in the conduit.



Conduit Connections

NOTE: Refer to the wiring diagram supplied with the unit and specifications label attached to the unit for specific electrical information.

Power Cord and Plug Models

Units can be supplied with a 1829 mm (6') power cord and plug attached at the factory if the unit meets the following guidelines:

- Single heating element
- 1829 mm (72") or less in length
- Built-in switch
- Portable mounting using C-Legs or T-Legs supplied by Hatco or stationary mounting using "S" hooks and mounting chain supplied by Hatco.

⚠ WARNING

ELECTRIC SHOCK HAZARD: Plug unit into a properly grounded electrical receptacle of the correct voltage, size, and plug configuration. If plug and receptacle do not match, contact a qualified electrician to determine and install proper voltage and size electrical receptacle.

NOTE: Units intended for fixed or permanent mounting cannot have a power cord attached and must be hardwired according to local and national electrical codes.

Remote Control Enclosures

Hatco remote control enclosures include switches, wire leads, and/or indicator lights and are ready for installation.

The RMB Series require one remote control enclosure per strip heater. The RMB2 Series allows multiple strip heaters to be connected to one remote control enclosure.

NOTE: Remote control enclosures are available in several configurations depending on the model. All enclosures are built in accordance with UL standards to accommodate switches, indicator lights, and wiring. See the OPTIONS AND ACCESSORIES section for more information.

IMPORTANT NOTE:

Remote mounted enclosures and control switches must be installed in a cool, dry location as far away from any heat zone as possible. Do not mount enclosures or switches directly on, under, or above unit. Do not mount enclosures or switches in direct contact with any heated surface or near any steam generating equipment.

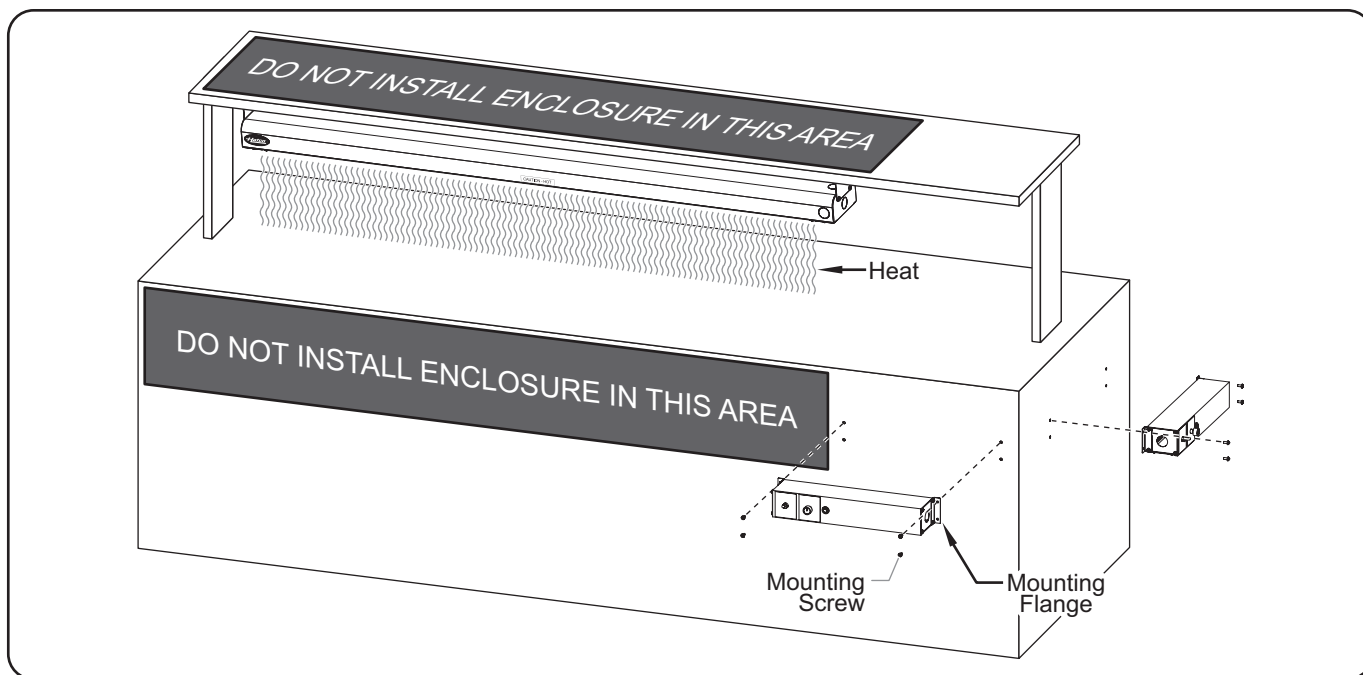
NOTICE

To prevent premature failure of components due to excessive heat, Remote Control Enclosures must be installed outside the strip heater heat zone.

Remote Mounted Control Switches

Optional remote mounted control switches include I/O (on/off) toggle switches and infinite control switches. These switches need to be installed into an approved electrical box/enclosure (not supplied) by a qualified electrician.

NOTE: When two or more units are mounted where the heat from one housing tends to raise the temperature of another, the control switches should be installed in a remote control enclosure. Units in a multiple installation should use remote control enclosures.



Remote Mounted Enclosure Installation Locations

General

Glo-Ray® Infrared Strip Heaters are designed for ease of operation. Use the following information and procedures to operate the unit.

⚠ WARNING

Read all safety messages in the **IMPORTANT SAFETY INFORMATION** section before operating this equipment.

⚠ CAUTION

BURN HAZARD: Some exterior surfaces on unit will get hot. Avoid unnecessary contact with unit.

Standard and approved manufacturing oils may smoke up to 30 minutes during initial startup. This is a temporary condition. Operate unit without food product until smoke dissipates.

Controls

Strip heaters come standard with controls mounted to the unit or with optional remote mounted controls. The following is a list of the available controls for the strip heaters.

I/O (on/off) Toggle Switch—Turns power on and off to the heating elements and/or the lights.

Infinite Control—Turns on the power and controls the temperature of the heating elements. The infinite control is available either built-in or on a remote control enclosure.

NOTE: Dual units cannot be equipped with built-in infinite controls.

Lights I/O (on/off) Toggle Switch—Turns power on and off to the lights.

Indicator Light—Illuminates when power is on, shuts off when power is off.

NOTE: Dual units require remote indicator lights.

NOTE: Toggle switches cannot be used on circuits that exceed 15 amps. Infinite controls cannot be used on circuits that exceed 12.2 amps.

Startup

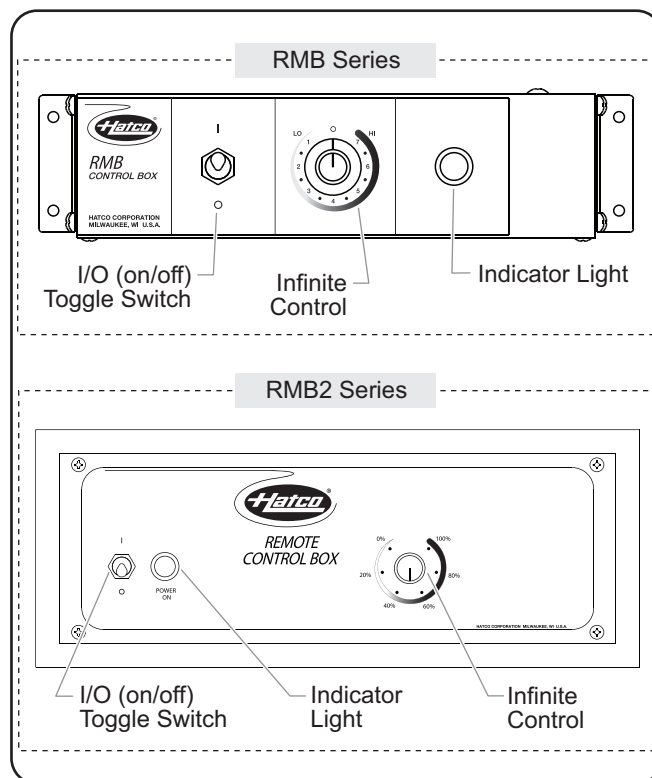
1. Turn on the heating element(s). The indicator light (if equipped) will illuminate and the heating elements will energize.
 - If unit is equipped with an I/O (on/off) toggle switch, move the toggle switch to the I (on) position.
 - If unit is equipped with an optional infinite control(s), turn the control to the desired setting.

NOTE: Allow 15-20 minutes to reach operating temperature.

2. On models equipped with display lights, move the light I/O (on/off) toggle switch to the I (on) position.



Control Panel w/ I/O (on/off) Toggle Switch.



Remote Control Enclosures

NOTE: Refer to the **OPTIONS AND ACCESSORIES** section for remote control enclosure information.

Shutdown

1. Move the I/O (on/off) toggle switch to the O (off) position or turn the infinite control(s) to the O (off) position.
 - The indicator light (if equipped) will shut off and the heating elements will shut down.
2. On models equipped with display lights, move the light I/O (on/off) toggle switch to the O (off) position.

General

The Glo-Ray Infrared Strip Heaters are designed for maximum durability and performance, with minimum maintenance.

WARNING

ELECTRIC SHOCK HAZARD:

- Turn OFF power switch, unplug power cord/turn off power at circuit breaker, and allow unit to cool before performing any cleaning, adjustments, or maintenance.
- DO NOT submerge or saturate with water. Unit is not waterproof. Do not operate if unit has been submerged or saturated with water.
- Do not steam clean or use excessive water on unit.
- This unit is not “jet-proof” construction. Do not use jet-clean spray to clean this unit.
- Use only Genuine Hatco Replacement Parts when service is required. Failure to use Genuine Hatco Replacement Parts will void all warranties and may subject operators of the equipment to hazardous electrical voltage, resulting in electrical shock or burn. Genuine Hatco Replacement Parts are specified to operate safely in the environments in which they are used. Some aftermarket or generic replacement parts do not have the characteristics that will allow them to operate safely in Hatco equipment.

This unit has no “user-serviceable” parts. If service is required on this unit, contact an Authorized Hatco Service Agent or contact the Hatco Service Department at 414-671-6350 or International fax 414-671-3976.

Daily Cleaning

To preserve the finish of the Glo-Ray Infrared Strip Heater, perform the following cleaning procedure daily.

NOTICE

Use non-abrasive cleaners and cloths only. Abrasive cleaners and cloths could scratch the finish of the unit, marring its appearance and making it susceptible to soil accumulation.

1. Turn off the unit and allow the unit to cool.
2. Wipe down all metal surfaces with a water-dampened, non-abrasive cloth. Stubborn stains may be removed with a good stainless steel or non-abrasive cleaner. Clean hard to reach areas using a small brush and mild soap.
3. Wipe dry the entire unit using a non-abrasive, dry cloth.

Replacing A Display Light

WARNING

Use only light bulbs that meet or exceed National Sanitation Foundation (NSF) standards and are specifically designed for food holding areas. Breakage of light bulbs not specially-coated could result in personal injury and/or food contamination.

The display light is an incandescent bulb that illuminates the warming area. This bulb has a special coating to guard against injury and food contamination in the event of breakage.

To replace a light bulb:

1. Disconnect the power supply and wait until the unit has cooled.
2. Unscrew the light bulb from the unit and replace it with a new, specially-coated incandescent light bulb.

NOTE: Hatco shatter-resistant light bulbs meet NSF standards for food holding and display areas. For 220, 230, and 240 volt applications, use Hatco P/N 02.30.058.00.

⚠ WARNING

This unit must be serviced by qualified personnel only. Service by unqualified personnel may lead to electric shock or burn.

⚠ WARNING

ELECTRIC SHOCK HAZARD: Turn OFF power switch, unplug power cord/turn off power at circuit breaker, and allow unit to cool before performing any cleaning, adjustments, or maintenance.

Symptom	Probable Cause	Corrective Action
Unit is turned ON but there is no heat.	No power to unit.	Check circuit breaker and reset as necessary.
	Switch is defective.	Contact Authorized Service Agent or Hatco for assistance.
	Wiring is open.	Contact Authorized Service Agent or Hatco for assistance.
	Heating element defective.	Contact Authorized Service Agent or Hatco for assistance.
Heat is inadequate.	Unit mounted too high above target area.	Lower unit, putting effective heat closer to target.
	Excessive air movement around strip heater target area.	Restrict or redirect air movement (air conditioning duct or exhaust fan) away from unit.
	Incorrect power supply (low).	Check power supply to unit, making sure it matches rating on the unit. If power supply is incorrect, change to match rating on unit.
Heat is excessive.	Unit mounted too close to target area.	Check to see that installation is within specifications for type/model. Increase mounting height if too close.
	Voltage supply too high.	Check power supply to unit, making sure it matches rating on unit. If power supply is incorrect, change to match rating.
Control switches burn out.	Unit mounted improperly.	Move the unit the proper distance away from walls, counters, and/or pass-through shelves. Refer to the INSTALLATION section for guidelines.
	Remote control enclosure is mounted too close to the heat zone.	Move remote control enclosure away from the heat zone.
	Switches used are not Hatco supplied.	Genuine Hatco Parts are specified to operate safely and properly in the environment in which they are used. Contact Authorized Service Agent or Hatco to replace switches with Genuine Hatco Replacement Parts.

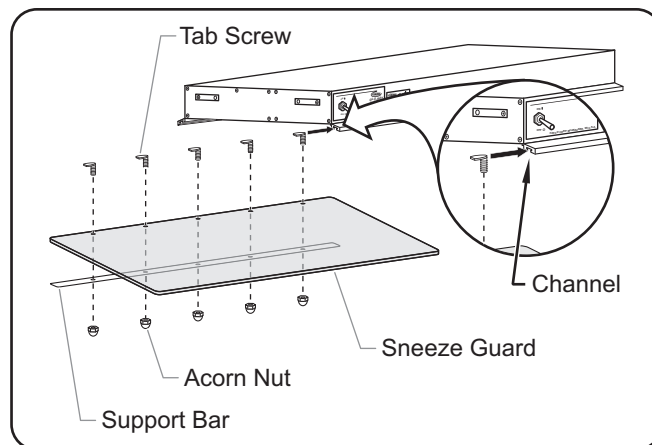
OPTIONS AND ACCESSORIES

Sneeze Guards

Optional sneeze guards are available for aluminum models only. They are available in sizes of 238 mm (9-3/8") and 356 mm (14"). Sneeze guards can be installed on either one side or both sides of the unit. Not available for retrofit.

To install a sneeze guard:

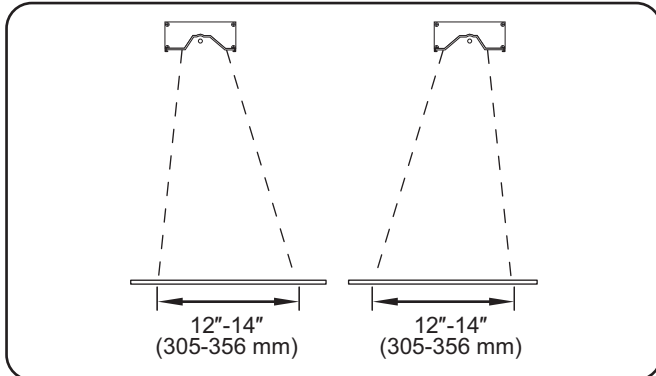
1. Remove the protective paper from the sneeze guard.
2. Assemble each tab screw through the top of the sneeze guard and through the support bar. Loosely thread an acorn nut onto each of the tab screws below the support bar.
3. Lift the sneeze guard assembly and carefully slide each of the tab screws that are loosely attached to the sneeze guard into the channel on the unit.
4. Align each end of the sneeze guard with the ends of the unit and then tighten the acorn nuts to secure the sneeze guard in position. Do not over-tighten the acorn nuts.



Installing Sneeze Guards

Slant Reflectors

Additional slant reflector styles also available, please consult factory for more information. Slant reflectors direct the heat pattern to the front or back.



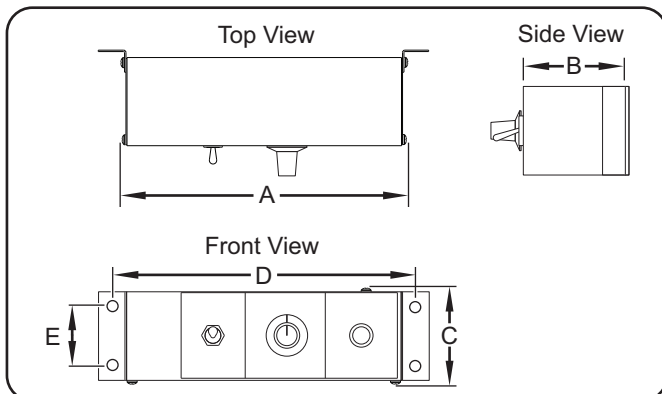
Slant Reflector Heat Patterns

Remote Control Enclosure — RMB Series

RMB Series remote control enclosures are available in various configurations for use with strip heaters. Remote control enclosures locate controls away from the heat of the unit, increasing the life span of the controls. All models are built in accordance with UL standards with switches, indicator lights, and wiring. Consult the factory for type and location of RMB Series controls for enclosure.

NOTE: RMB Series remote control enclosures require one remote control enclosure per strip heater.

Models	Width (A)	Depth (B)	Height (C)	Screw Width (D)	Screw Height (E)
RMB-3 Series	150 mm (5-15/16")	76 mm (3")	67 mm (2-5/8")	161 mm (6-5/16")	41 mm (1-5/8")
RMB-7 Series	239 mm (9-3/8")	76 mm (3")	67 mm (2-5/8")	249 mm (9-13/16")	41 mm (1-5/8")
RMB-14 Series	366 mm (14-3/8")	76 mm (3")	67 mm (2-5/8")	376 mm (14-13/16")	41 mm (1-5/8")
RMB-16 Series	417 mm (16-3/8")	76 mm (3")	67 mm (2-5/8")	427 mm (16-13/16")	41 mm (1-5/8")
RMB-20 Series	518 mm (20-3/8")	76 mm (3")	67 mm (2-5/8")	529 mm (20-13/16")	41 mm (1-5/8")



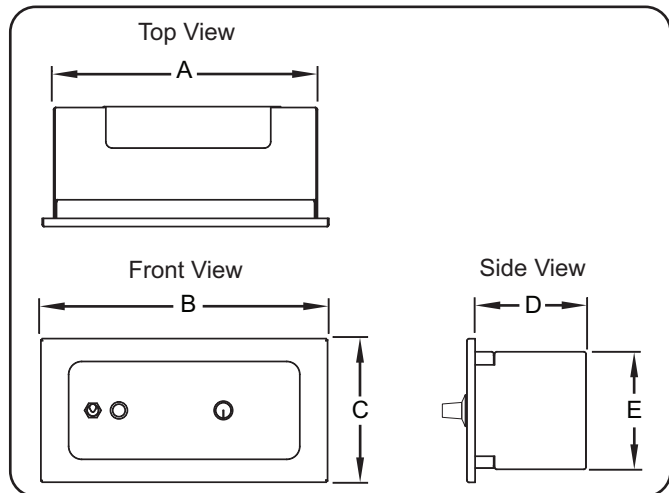
RMB Series Dimensions

Remote Control Enclosure — RMB2 Series

RMB2 Series remote control enclosures allow multiple strip heaters to be wired to and controlled by a single enclosure. The total amp draw of all connected strip heaters cannot exceed the rating of the remote control enclosure. Consult the factory for information regarding the proper RMB2 Series remote control enclosure for a specific application.

RMB2 Series Dimensions

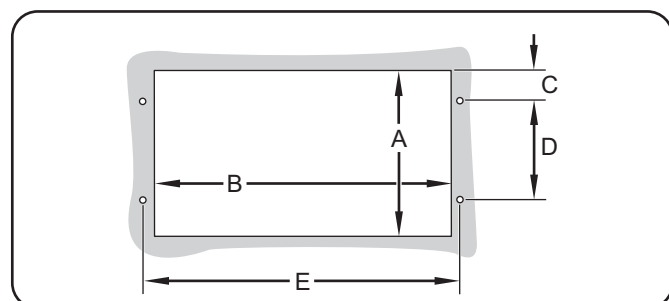
Models	Width (A)	Width (B)	Height (C)	Depth (D)	Height (E)
RMB2-1R	257 mm (10-1/8")	279 mm (11")	140 mm (5-1/2")	109 mm (4-1/4")	116 mm (4-5/8")
RMB2-2R	333 mm (13-1/8")	356 mm (14")	140 mm (5-1/2")	109 mm (4-1/4")	116 mm (4-5/8")



RMB2 Series Dimensions

RMB2 Series Cutout Dimensions

Models	Opening Cutout Dimensions		Screw Hole Dimensions		
	(A)	(B)	(C)	(D)	(E)
RMB2-1R	121 mm (4-3/4")	257 mm (10-1/8")	29 mm (1-1/8")	64 mm (2-1/2")	265 mm (10-7/16")
RMB2-2R	121 mm (4-3/4")	333 mm (13-1/8")	29 mm (1-1/8")	64 mm (2-1/2")	341 mm (13-7/16")



RMB2 Series Cutout Dimensions

1. PRODUCT WARRANTY

Hatco warrants the products that it manufactures (the "Products") to be free from defects in materials and workmanship, under normal use and service, for a period of one (1) year from the date of purchase when installed and maintained in accordance with Hatco's written instructions or 18 months from the date of shipment from Hatco. Buyer must establish the Product's purchase date by registering the Product with Hatco or by other means satisfactory to Hatco in its sole discretion.

Hatco warrants the following Product components to be free from defects in materials and workmanship from the date of purchase (subject to the foregoing conditions) for the period(s) of time and on the conditions listed below:

a) Two (2) Year Parts Warranty:

Conveyor Toaster Elements (metal sheathed)
 Drawer Warmer Elements (metal sheathed)
 Drawer Warmer Drawer Rollers and Slides
 Strip Heater Elements (metal sheathed)
 Display Warmer Elements (metal sheathed air heating)
 Holding Cabinet Elements (metal sheathed air heating)
 Heated Well Elements — HW and HWB Series
 (metal sheathed)

b) Five (5) Year Parts Warranty:

3CS and FR Tanks

c) Ten (10) Year Parts Warranty:

Electric Booster Heater Tanks
 Gas Booster Heater Tanks

d) Ninety (90) Day Parts Warranty:

Replacement Parts

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR PATENT OR OTHER INTELLECTUAL PROPERTY RIGHT INFRINGEMENT. Without limiting the generality of the foregoing, SUCH WARRANTIES DO NOT COVER: Coated incandescent light bulbs, fluorescent lights, heat lamp bulbs, coated halogen light bulbs, halogen heat lamp bulbs, xenon light bulbs, LED light tubes, glass components, and fuses; Product failure in booster tank, fin tube heat exchanger, or other water heating equipment caused by liming, sediment buildup, chemical attack, or freezing; or Product misuse, tampering or misapplication, improper installation, or application of improper voltage.

2. LIMITATION OF REMEDIES AND DAMAGES

Hatco's liability and Buyer's exclusive remedy hereunder will be limited solely to replacement of part or Product using, at Hatco's option, new or refurbished parts or Product by Hatco or a Hatco-authorized service agency with respect to any claim made within the applicable warranty period referred to above. Hatco reserves the right to accept or reject any such claim in whole or in part. In the context of this Limited Warranty, "refurbished" means a part or Product that has been returned to its original specifications by Hatco or a Hatco-authorized service agency. Hatco will not accept the return of any Product without prior written approval from Hatco, and all such approved returns shall be made at Buyer's sole expense. HATCO WILL NOT BE LIABLE, UNDER ANY CIRCUMSTANCES, FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING BUT NOT LIMITED TO LABOR COSTS OR LOST PROFITS RESULTING FROM THE USE OF OR INABILITY TO USE THE PRODUCTS OR FROM THE PRODUCTS BEING INCORPORATED IN OR BECOMING A COMPONENT OF ANY OTHER PRODUCT OR GOODS.

SERVICE INFORMATION

The warranty on Hatco Glo-Ray® Infrared Strip Heaters is for one year from date of purchase or eighteen months from date of shipping from Hatco, whichever occurs first.

If you experience a problem with a Strip Heater during the warranty period, please do the following:

Contact Local Hatco Dealer

When contacting the Hatco dealer for service assistance, please supply the dealer with the following information to ensure prompt processing:

- Model of unit
- Serial number (located on the back of the unit)
- Specific problem with the unit
- Date of purchase
- Name of business
- Shipping address
- Contact name and phone number

The Hatco dealer will do the following:

- Provide replacement part(s) as required
- Submit warranty claim to Hatco for processing

Non-Warranty Problems

If you experience a non-warranty problem that requires assistance, please contact the nearest Authorized Hatco Service Agency.

To locate the nearest Service Agency:

- access our website at **www.hatcocorp.com**, select the *Resources* pull-down menu, and click on "Find Service Agent/Distributor"
- call Hatco Service at 414-671-6350
- e-mail Hatco Service at partsandservice@hatcocorp.com



Symbol Identification



Identificación de los símbolos



Identification de Symbole



Caution — Hot Surface
Precaución: superficie caliente
Attention - Surface Chaude



Power ON
Encendido
Puissance Sur



Power OFF
Apagado
Hors Tension



Standby
En espera
Veille



Protective Earth Ground
Puesta a tierra protectora
La Terre de Protection



Earth Ground
Puesta a tierra
Mise à la Terre



Equipotential Ground
Masa equipotencial
Rez de Potentiel



Alternating Current
Corriente alterna
Courant Alternatif



Water Fill, Low Water
Llenado de agua, bajo nivel de agua
Remplir d'eau, Bas Niveau d'eau



Humidity, Humidity Cycle
Humedad, ciclo de humedad
Humidité, Cycle Humidité

HATCO CORPORATION

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www.hatcocorp.com

Register online!

See IMPORTANT OWNER INFORMATION
 for more information.

¡Regístrese en línea!

Consulte la sección INFORMACIÓN IMPORTANTE
 PARA EL PROPIETARIO para obtener información.

S'inscrire en ligne!

Lisez la section INFORMATIONS IMPORTANTES
 POUR LE PROPRIETAIRE pour plus de informations.