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(see page 2)



Glo-Ray®

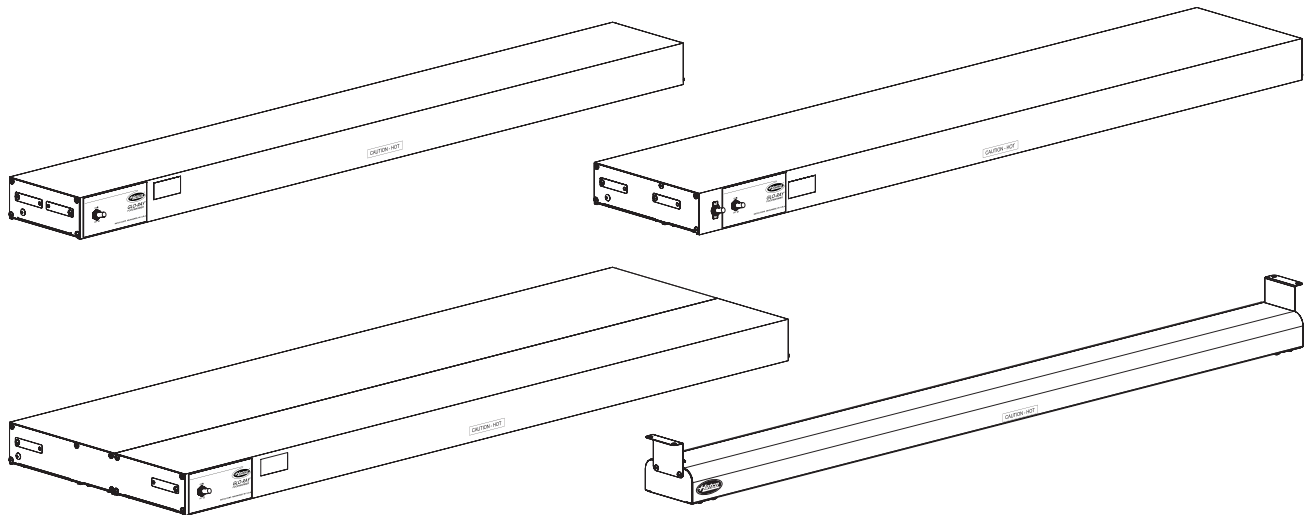
Infrared Strip Heaters

长条形红外线保温灯

GR Series • GR 系列

Installation and Operating Manual

安装及操作手册



⚠ WARNING

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.

English = p 2

⚠ 警告

请在认真阅读并理解本手册的内容后再操作本设备！不按照本手册中的说明操作可能会导致严重的人身伤亡事故。本手册中包含了有关本产品维护、使用和操作的重要安全事项。如果您不理解本手册的内容，请将本手册交给主管人员，以提请其注意。请将本手册妥善放置，以便参照。

中文 = 第 23 页

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IMPORTANT OWNER INFORMATION

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

Model No. _____

Serial No. _____

Voltage _____

Date of Purchase _____

Business Hours: 9:00 AM to 6:00 PM (Beijing Time)

Monday through Friday

Telephone: (0512) 6732-5091

E-mail: infocn@hatcocorp.com

Additional information can be found by visiting our web sites:
www.hatcocorp.com or www.hatcocorp.cn

Register your unit!

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

INTRODUCTION

Hatco Glo-Ray® Infrared Strip Heaters ensure maximum food holding 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 overcooked 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 a product 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 the installation, safety, and operating instructions for Glo-Ray Infrared Strip Heaters. Hatco recommends all installation, operating, and safety instructions appearing in this manual be read prior to installation or operation of the Strip Heaters.

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



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



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



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 plug require a hardwired connection to on-site electrical system. Connection must be properly grounded and of correct voltage, size, and configuration for electrical specifications of unit. Contact a qualified electrician to determine and perform proper electrical connection.
- Turn OFF power switch, 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.
- Unit is not weatherproof. Locate unit indoors where ambient air temperature is a minimum of 21°C (70°F).
- 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.
- Do not clean unit when it is energized or hot.
- Do not allow liquids to spill into 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.

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.
 - a. Do not install standard wattage strip heaters (GR, GRA, GRN, GRL, and GRAL Series) less than 254 mm (10”) above combustible surfaces.
 - b. Do not install high wattage strip heaters (GRH, GRHL, GRAH, GRNH, GRAHL Series) less than 343 mm (13-1/2”) above combustible surfaces.
 - c. Do not install dual strip heaters above combustible surfaces.
 - e. Install all single strip heaters with a minimum distance of 76 mm (3”) from a combustible wall or adjacent surface.

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.

WARNING

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 in unit. Failure to heat food product properly may result in serious health risks. This unit is for holding pre-heated food product only.

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

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 (0512) 6732-5091.

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.

To ensure safe and proper operation, refer to the Clearance Requirements listed in the Installation section of this manual.

NOTICE

Installation of two or more separate units with less than 3” (76 mm) 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 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.

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.

IMPORTANT—DO NOT use paper towel or glass cleaner to clean plastic surfaces. Paper towel and glass cleaner may scratch the material. Wipe off plastic surfaces using a soft, clean, water-dampened cloth.

Do not locate unit in area with excessive air movement around unit. Avoid areas that may be subject to active air movements or currents (i.e., near exhaust fans/hoods, air conditioning ducts, and exterior doors).

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, stainless steel, aluminum, or narrow design housings in lengths of 457 mm–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 also.

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 or sneeze guards.

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

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

Aluminum, dual element 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.

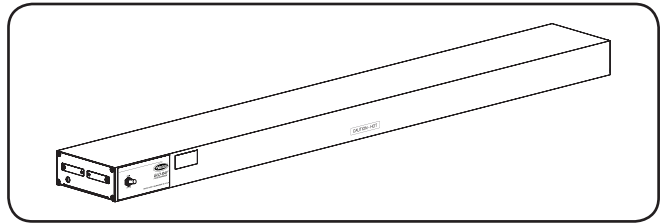
Dual models are available either with or without incandescent lights or sneeze guards.

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

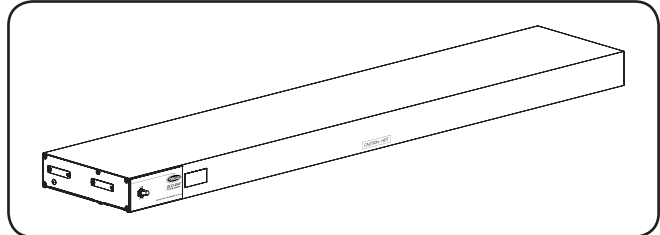
GRN-XX and GRNH-XX Models

Narrow models are available in stainless steel or powdercoated steel in several Designer colors.

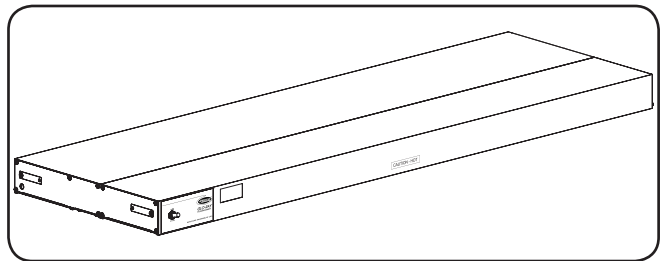
NOTE: Narrow design strip heaters are not available with lights, sneeze guards, or as dual units.



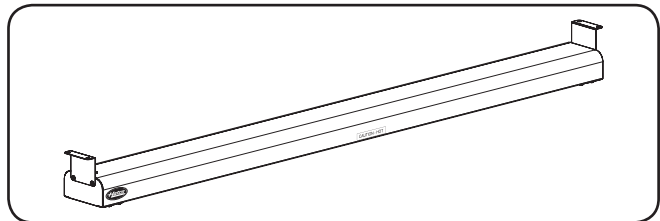
GRA-48 Model



GRAHL-48 Model

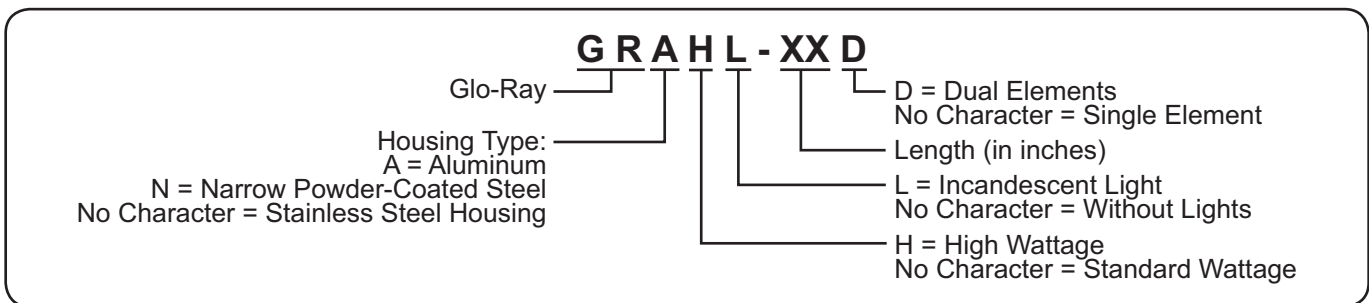


GRAL-48D Model



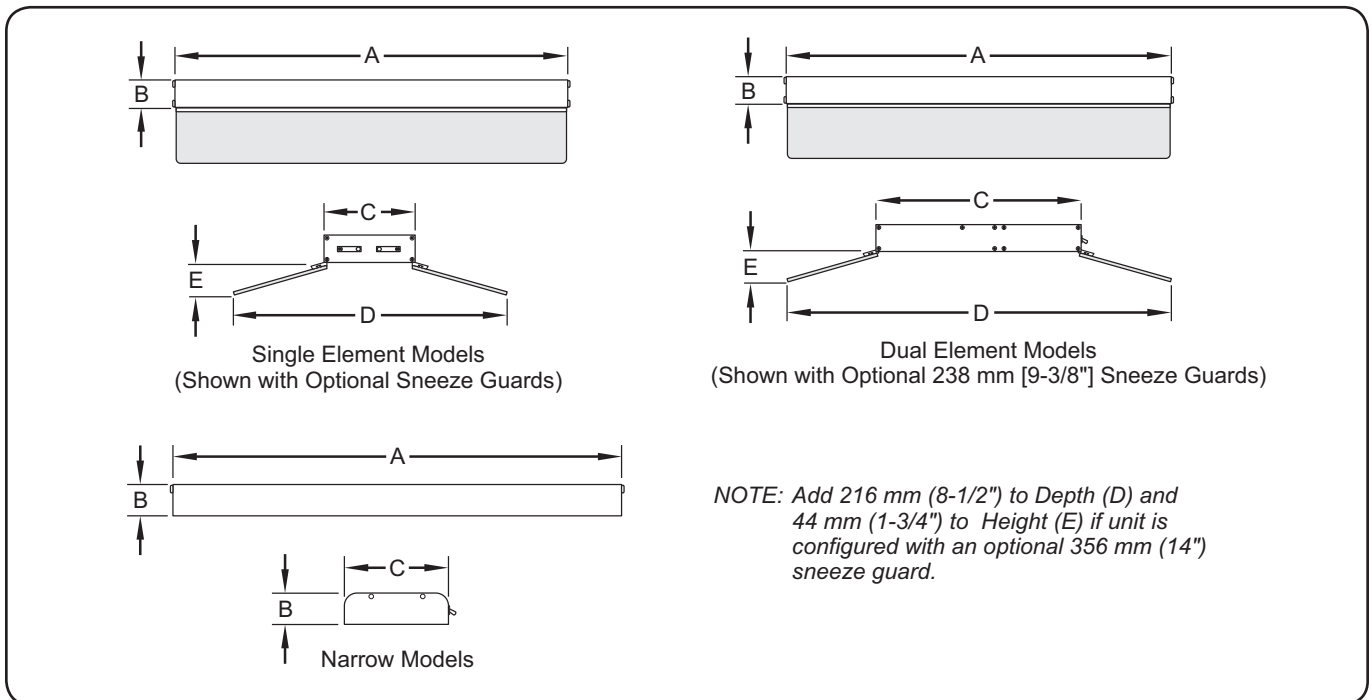
GRN-48 Model

MODEL DESIGNATION



Dimensions

Model	Width (A)	Height (B)	Depth (C)	Depth (D)	Height (E)
GR and GRH	457-1829 mm (18"-72")	63 mm (2-1/2")	152 mm (6")	---	---
GRA and GRAH	457-1829 mm (18"-72")	63 mm (2-1/2")	152 mm (6")	584 mm (23")	102 mm (4")
GRAL and GRAHL	457-1829 mm (18"-72")	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")
GRA-XXD, GRAH-XXD, GRAL-XXD, and GRAHL-XXD	457-1829 mm (18"-72")	63 mm (2-1/2")	76 mm (3") spacer: 381 mm (15") 152 mm (6") spacer: 457 mm (18")	76 mm (3") spacer: 813 mm (32") 152 mm (6") spacer: 889 mm (35")	102 mm (4")
GRN and GRNH	457-1829 mm (18"-72")	---	102 mm (4")	---	---



Electrical Rating Chart — GR-XX

Model	Voltage	Watts	Amps	Shipping Weight
GR-18	220–230	250–273	1.1–1.2	3 kg (7 lbs.)
GR-24	220–230	350–383	1.6–1.7	3 kg (7 lbs.)
GR-36	220–230	575–628	2.6–2.7	5 kg (10 lbs.)
GR-48	220–230	800–874	3.6–3.8	5 kg (12 lbs.)
GR-60	220–230	1050–1148	4.8–5.0	7 kg (15 lbs.)
GR-72	220–230	1275–1394	5.8–6.1	9 kg (19 lbs.)

Electrical Rating Chart — GRH-XX

Model	Voltage	Watts	Amps	Shipping Weight
GRH-18	220–230	350–383	1.6–1.7	3 kg (7 lbs.)
GRH-24	220–230	500–547	2.3–2.4	3 kg (7 lbs.)
GRH-36	220–230	800–874	3.6–3.8	5 kg (10 lbs.)
GRH-48	220–230	1100–1202	5.0–5.2	5 kg (12 lbs.)
GRH-60	220–230	1400–1530	6.4–6.7	7 kg (15 lbs.)
GRH-72	220–230	1725–1885	7.8–8.2	9 kg (19 lbs.)

Electrical Rating Chart — GRA-XX

Model	Voltage	Watts	Amps	Shipping Weight
GRA-18	220–230	250–273	1.1–1.2	3 kg (6 lbs.)
GRA-24	220–230	350–383	1.6–1.7	3 kg (7 lbs.)
GRA-30	220–230	450–492	2.0–2.1	4 kg (8 lbs.)
GRA-36	220–230	575–629	2.6–2.7	4 kg (9 lbs.)
GRA-42	220–230	675–738	3.1–3.2	5 kg (10 lbs.)
GRA-48	220–230	800–874	3.6–3.8	5 kg (11 lbs.)
GRA-54	220–230	925–1011	4.2–4.4	6 kg (13 lbs.)
GRA-60	220–230	1050–1148	4.8–5.0	6 kg (14 lbs.)
GRA-66	220–230	1160–1268	5.3–5.5	7 kg (16 lbs.)
GRA-72	220–230	1275–1394	5.8–6.1	8 kg (17 lbs.)

Electrical Rating Chart — GRAH-XX

Model	Voltage	Watts	Amps	Shipping Weight
GRAH-18	220–230	350–383	1.6–1.7	3 kg (6 lbs.)
GRAH-24	220–230	500–547	2.3–2.4	3 kg (7 lbs.)
GRAH-30	220–230	660–721	3.0–3.1	4 kg (8 lbs.)
GRAH-36	220–230	800–875	3.6–3.8	4 kg (9 lbs.)
GRAH-42	220–230	950–1038	4.3–4.5	5 kg (10 lbs.)
GRAH-48	220–230	1100–1202	5.0–5.2	5 kg (11 lbs.)
GRAH-54	220–230	1250–1366	5.7–5.9	6 kg (13 lbs.)
GRAH-60	220–230	1400–1530	6.4–6.7	6 kg (14 lbs.)
GRAH-66	220–230	1560–1705	7.1–7.4	7 kg (16 lbs.)
GRAH-72	220–230	1725–1886	7.8–8.2	8 kg (17 lbs.)

Electrical Rating Chart — GRAL-XX

Model	Voltage	Watts	Amps	Shipping Weight
GRAL-18	220-230	351-383	1.6-1.7	4 kg (9 lbs.)
GRAL-24	220-230	451-493	2.1-2.1	5 kg (10 lbs.)
GRAL-30	220-230	551-602	2.5-2.6	5 kg (11 lbs.)
GRAL-36	220-230	726-794	3.3-3.5	6 kg (13 lbs.)
GRAL-42	220-230	826-903	3.8-3.9	7 kg (15 lbs.)
GRAL-48	220-230	1002-1095	4.6-4.8	8 kg (17 lbs.)
GRAL-54	220-230	1127-1231	5.1-5.4	9 kg (19 lbs.)
GRAL-60	220-230	1302-1423	5.9-6.2	10 kg (21 lbs.)
GRAL-66	220-230	1412-1543	6.4-6.7	10 kg (22 lbs.)
GRAL-72	220-230	1578-1724	7.2-7.5	11 kg (24 lbs.)

Electrical Rating Chart — GRAHL-XX

Model	Voltage	Watts	Amps	Shipping Weight
GRAHL-18	220-230	451-493	2.1-2.1	4 kg (9 lbs.)
GRAHL-24	220-230	601-657	2.7-2.9	5 kg (10 lbs.)
GRAHL-30	220-230	761-832	3.5-3.6	5 kg (11 lbs.)
GRAHL-36	220-230	951-1040	4.3-4.5	6 kg (13 lbs.)
GRAHL-42	220-230	1101-1204	5.0-5.2	7 kg (15 lbs.)
GRAHL-48	220-230	1302-1423	5.9-6.2	8 kg (17 lbs.)
GRAHL-54	220-230	1452-1587	6.6-6.9	9 kg (19 lbs.)
GRAHL-60	220-230	1652-1806	7.5-7.9	10 kg (21 lbs.)
GRAHL-66	220-230	1812-1981	8.2-8.6	10 kg (22 lbs.)
GRAHL-72	220-230	2028-2216	9.2-9.6	11 kg (24 lbs.)

Electrical Rating Chart — GRA-XXD

Model	Voltage	Watts	Amps	Shipping Weight
GRA-18D	220-230	500-546	2.3-2.4	6 kg (14 lbs.)
GRA-24D	220-230	700-765	3.2-3.3	7 kg (16 lbs.)
GRA-30D	220-230	900-984	4.1-4.3	8 kg (18 lbs.)
GRA-36D	220-230	1150-1257	5.2-5.5	10 kg (21 lbs.)
GRA-42D	220-230	1350-1476	6.1-6.4	11 kg (24 lbs.)
GRA-48D	220-230	1600-1749	7.3-7.6	12 kg (27 lbs.)
GRA-54D	220-230	1850-2022	8.4-8.8	14 kg (30 lbs.)
GRA-60D	220-230	2100-2295	9.5-10.0	15 kg (34 lbs.)
GRA-66D	220-230	2320-2536	10.5-11.0	17 kg (37 lbs.)
GRA-72D	220-230	2550-2787	11.6-12.1	19 kg (41 lbs.)

Electrical Rating Chart — GRAH-XXD

Model	Voltage	Watts	Amps	Shipping Weight
GRAH-18D	220–230	700–765	3.2–3.3	6 kg (14 lbs.)
GRAH-24D	220–230	1000–1093	4.5–4.8	7 kg (16 lbs.)
GRAH-30D	220–230	1320–1443	6.0–6.3	8 kg (18 lbs.)
GRAH-36D	220–230	1600–1749	7.3–7.6	10 kg (21 lbs.)
GRAH-42D	220–230	1900–2077	8.6–9.0	11 kg (24 lbs.)
GRAH-48D	220–230	2200–2405	10.0–10.5	12 kg (27 lbs.)
GRAH-54D	220–230	2500–2732	11.4–11.9	14 kg (30 lbs.)
GRAH-60D	220–230	2800–3060	12.7–13.3	15 kg (34 lbs.)
GRAH-66D	220–230	3120–3410	14.2–14.8	17 kg (37 lbs.)
GRAH-72D	220–230	3450–3771	15.7–16.4	19 kg (41 lbs.)

Electrical Rating Chart — GRAL-XXD

Model	Voltage	Watts	Amps	Shipping Weight
GRAL-18D	220–230	601–657	2.7–2.9	6 kg (14 lbs.)
GRAL-24D	220–230	801–875	3.6–3.8	7 kg (16 lbs.)
GRAL-30D	220–230	1001–1094	4.6–4.8	9 kg (19 lbs.)
GRAL-36D	220–230	1301–1422	5.9–6.2	10 kg (22 lbs.)
GRAL-42D	220–230	1501–1641	6.8–7.1	11 kg (25 lbs.)
GRAL-48D	220–230	1802–1969	8.2–8.6	13 kg (29 lbs.)
GRAL-54D	220–230	2052–2242	9.3–9.7	15 kg (33 lbs.)
GRAL-60D	220–230	2352–2571	10.7–11.2	17 kg (37 lbs.)
GRAL-66D	220–230	2572–2811	11.7–12.2	18 kg (40 lbs.)
GRAL-72D	220–230	2853–3118	13.0–13.6	19 kg (42 lbs.)

Electrical Rating Chart — GRAHL-XXD

Model	Voltage	Watts	Amps	Shipping Weight
GRAHL-18D	220–230	801–875	3.6–3.8	6 kg (14 lbs.)
GRAHL-24D	220–230	1101–1203	5.0–5.2	7 kg (16 lbs.)
GRAHL-30D	220–230	1421–1553	6.5–6.8	9 kg (19 lbs.)
GRAHL-36D	220–230	1751–1914	8.0–8.3	10 kg (22 lbs.)
GRAHL-42D	220–230	2051–2242	9.3–9.7	11 kg (25 lbs.)
GRAHL-48D	220–230	2402–2625	10.9–11.4	13 kg (29 lbs.)
GRAHL-54D	220–230	2702–2953	12.3–12.8	15 kg (33 lbs.)
GRAHL-60D	220–230	3052–3336	13.9–14.5	17 kg (37 lbs.)
GRAHL-66D	220–230	3372–3686	15.3–16.0	18 kg (40 lbs.)
GRAHL-72D	220–230	3753–4101	17.1–17.8	19 kg (42 lbs.)

Electrical Rating Chart — GRN-XX

Model	Voltage	Watts	Amps	Shipping Weight
GRN-18	220–230	250–273	1.1–1.2	3 kg (6 lbs.)
GRN-24	220–230	350–383	1.6–1.7	3 kg (7 lbs.)
GRN-30	220–230	450–492	2.0–2.1	4 kg (8 lbs.)
GRN-36	220–230	575–629	2.6–2.7	4 kg (9 lbs.)
GRN-42	220–230	675–738	3.1–3.2	5 kg (10 lbs.)
GRN-48	220–230	800–874	3.6–3.8	5 kg (11 lbs.)
GRN-54	220–230	925–1011	4.2–4.4	6 kg (13 lbs.)
GRN-60	220–230	1050–1148	4.8–5.0	6 kg (14 lbs.)
GRN-66	220–230	1160–1268	5.3–5.5	7 kg (16 lbs.)
GRN-72	220–230	1275–1394	5.8–6.1	8 kg (17 lbs.)

Electrical Rating Chart — GRNH-XX

Model	Voltage	Watts	Amps	Shipping Weight
GRNH-18	220–230	350–383	1.6–1.7	3 kg (6 lbs.)
GRNH-24	220–230	500–547	2.3–2.4	3 kg (7 lbs.)
GRNH-30	220–230	660–721	3.0–3.1	4 kg (8 lbs.)
GRNH-36	220–230	800–875	3.6–3.8	4 kg (9 lbs.)
GRNH-42	220–230	950–1038	4.3–4.5	5 kg (10 lbs.)
GRNH-48	220–230	1100–1202	5.0–5.2	5 kg (11 lbs.)
GRNH-54	220–230	1250–1366	5.7–5.9	6 kg (13 lbs.)
GRNH-60	220–230	1400–1530	6.4–6.7	6 kg (14 lbs.)
GRNH-66	220–230	1560–1705	7.1–7.4	7 kg (16 lbs.)
GRNH-72	220–230	1725–1886	7.8–8.2	8 kg (17 lbs.)

General

Use the information in this section to prepare for and install a Glo-Ray® Infrared Strip Heater. Make sure to locate the specific information in this section for the type of installation. 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, and GRAL Series) less than 254 mm (10") above combustible surfaces.**
 - b. **Do not install high wattage strip heaters (GRH, GRHL, GRAH, GRNH, GRAHL Series) less than 343 mm (13-1/2") above combustible surfaces.**
 - c. **Do not install dual strip heaters above combustible surfaces.**
 - e. **Install all single strip heaters with a minimum distance of 76 mm (3") from a combustible wall or adjacent surface.**



CAUTION

To ensure safe and proper operation, refer to the Clearance Requirements listed in the Installation section of this manual.

NOTICE

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.

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 manufacturer of the countertop 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. Refer to "Installing Units" procedure in this section for unit installation information.

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.

NOTE: Dual units are available with aluminum housings only.

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.

Under Shelf Mounting

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

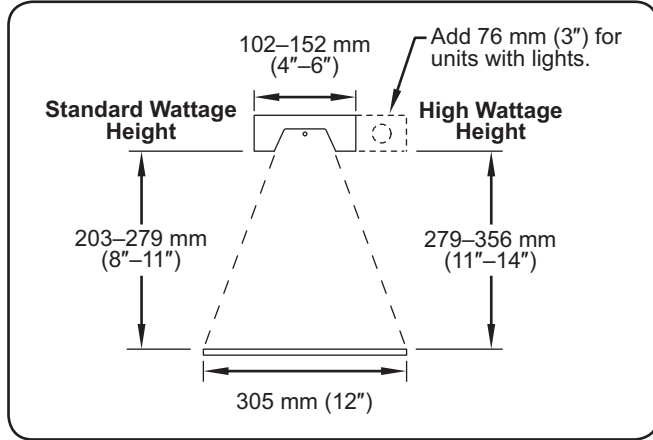
Pass-Through

If a pass-through area is 305–406 mm (12"–16") deep, a 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.

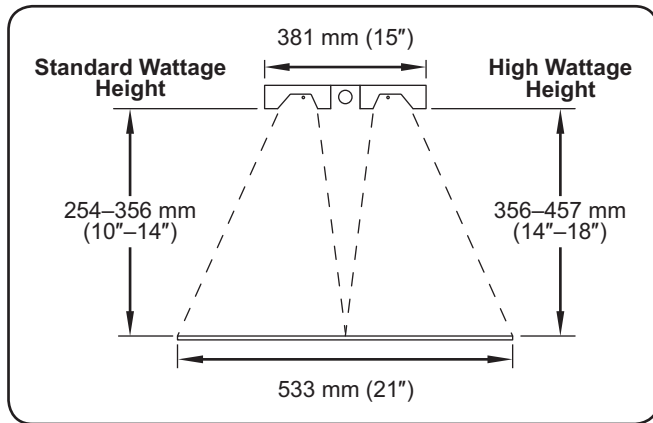
Over Steam Table

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

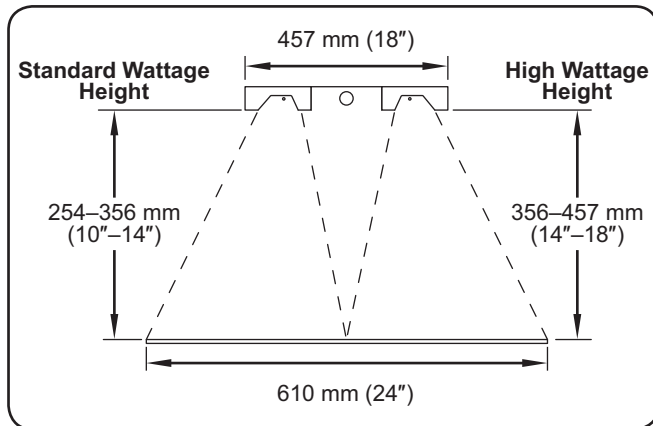
Recommended Mounting Heights



Recommended Element Height for the GR, GRA, GRL, GRH, GRHL, GRN, GRAH, GRAL, GRNH, and GRAHL models in all lengths (excluding dual models).



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

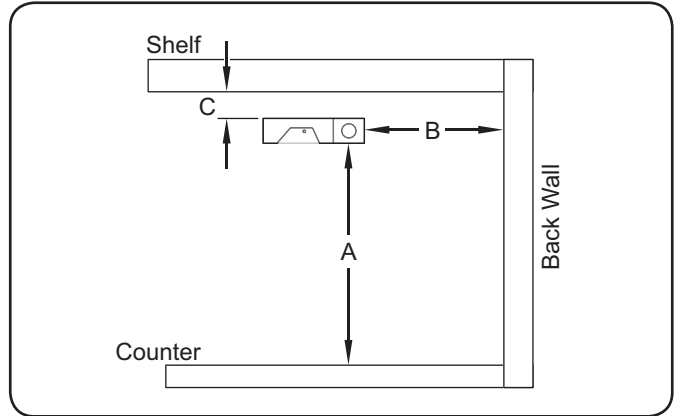


Recommended Element Height for dual models with a 152 mm (6") spacer in all lengths.

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.



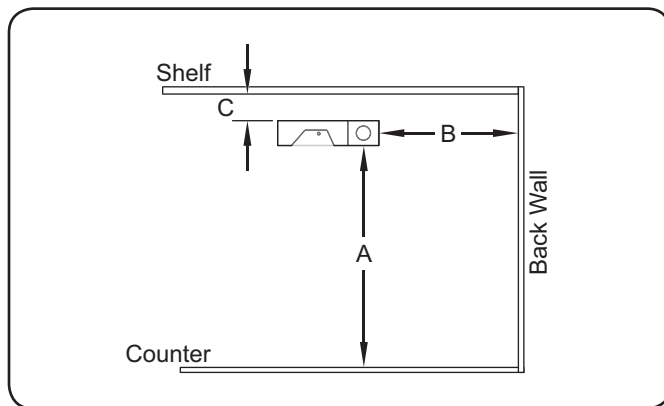
Combustible Clearance Requirements

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

Minimum Clearance Requirements for Non-Combustible Surroundings

Hardwired Units with Built-In Switches

Models	(A)	(B)*	(C)
GRA and GRAL	203 mm (8")	---	25 mm (1")
GRAH and GRAHL with Infinite Control or Indicator Light	254 mm (10")	---	25 mm (1")
GRAH and GRAHL with ON/OFF Toggle Switch	203 mm (8")	---	25 mm (1")



Non-Combustible Clearance Requirements

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")

Dual Units with Built-In Switches

Models	(A)	(B)*	(C)
GRA-XXD GRAH-XXD GRAL-XXD GRAHL-XXD	254 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 Units

Strip heaters can be mounted with tubular stands or angle brackets. Refer to the proper 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

To ensure safe and proper operation, refer to the 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 in heights from 254–356 mm (10"–14").

NOTE: Tubular stands are not field retrofittable.

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

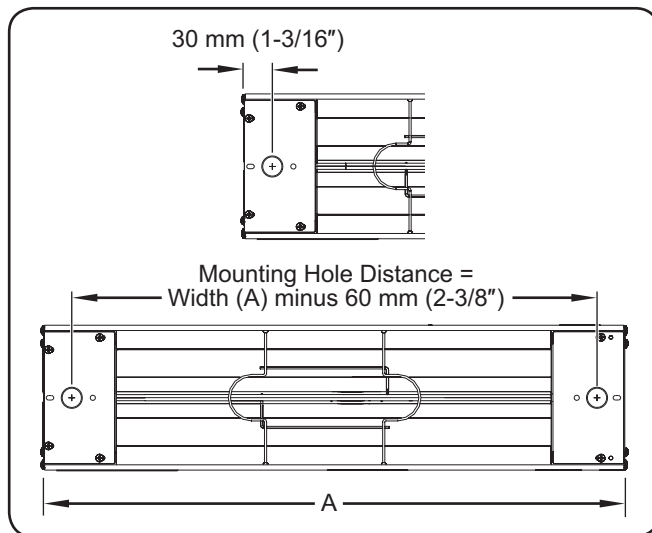
1. Position the unit upside-down on a flat surface.

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 60 mm (2-3/8") from the overall length of the strip heater.

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

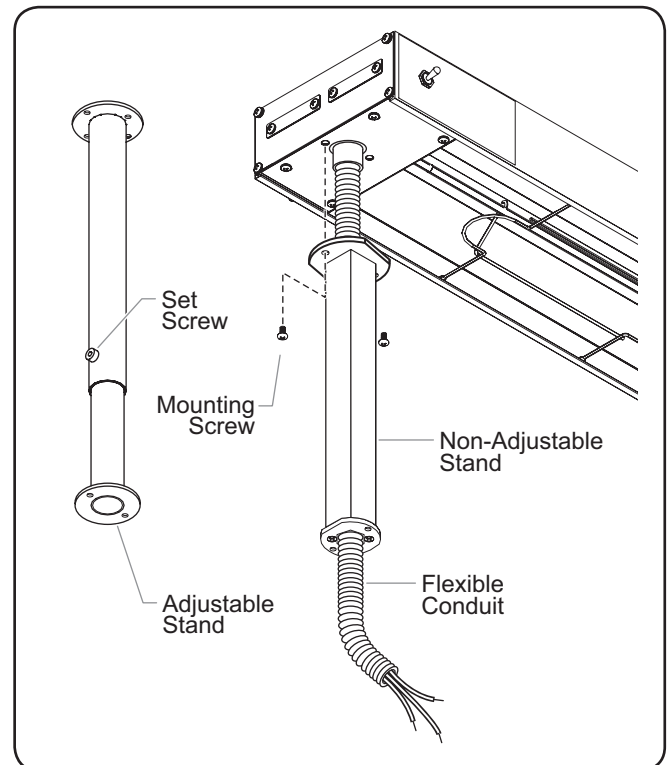


Countertop Conduit Hole Dimension

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 an Allen 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 stands will be needed for mounting dual units.



Tubular Stand Mounting

Adjustable Angle Bracket Mounting

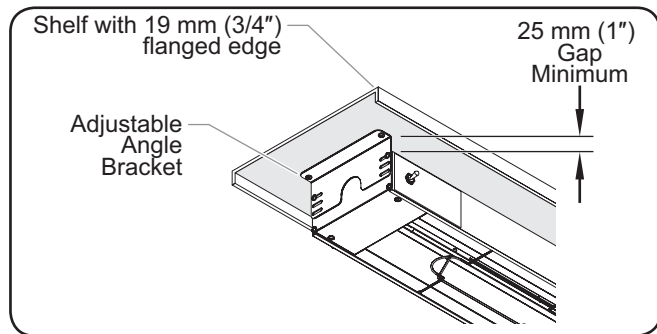
Mounting a strip heater with adjustable angle brackets permanently attaches the unit to the underside of a shelf. Units can be mounted to a flat shelf or a shelf with rolled/flanged edges. Adjustable angle brackets provide the necessary gap between the unit and a combustible shelf.



To 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 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).



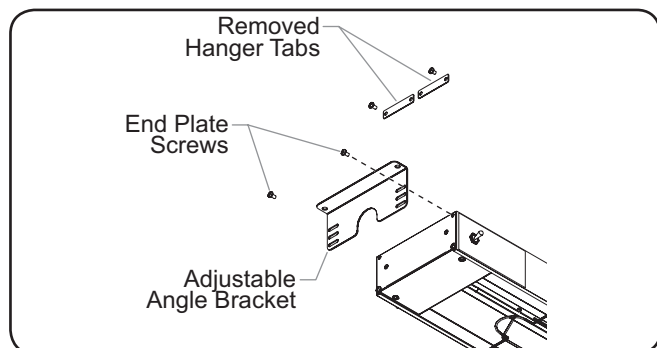
Flanged Edge Shelf Installation

NOTE: GRN Series units are supplied with matching Designer-colored angle brackets that provide 38 mm (1-1/2") clearance between the unit and an overshelf.

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).

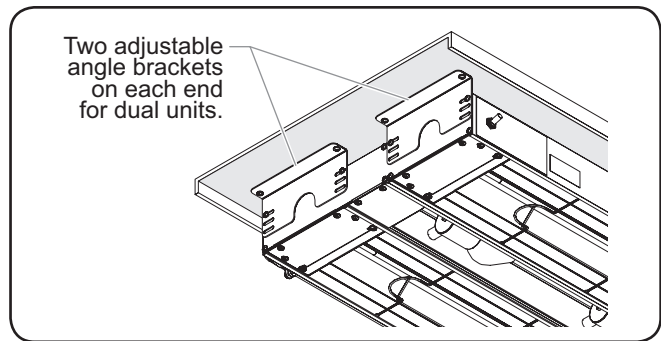
1. Position the unit on a flat surface with the heating element facing down.
2. Remove the two hanger tab screws and hanger tabs. These items will not be needed.
3. Remove the two upper end plate screws.
4. Align the adjustable angle bracket with the end plate mounting holes on the unit. Secure the angle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



Aluminum Model Adjustable Angle Bracket Installation

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.

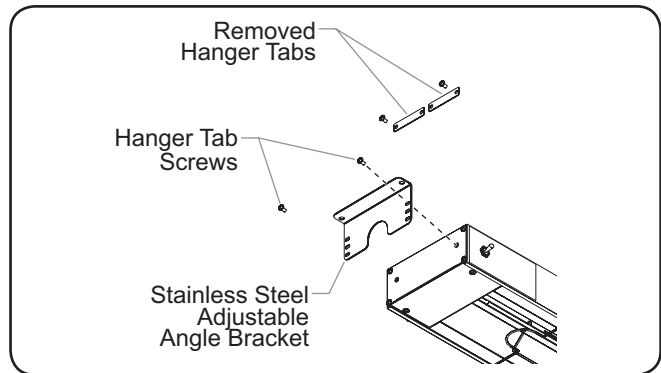


Dual Unit Mounting

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 and GRH models).

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).



Stainless Steel Model Adjustable Angle Bracket Installation

Electrical Information

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

⚠ WARNING

ELECTRIC SHOCK HAZARD: 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

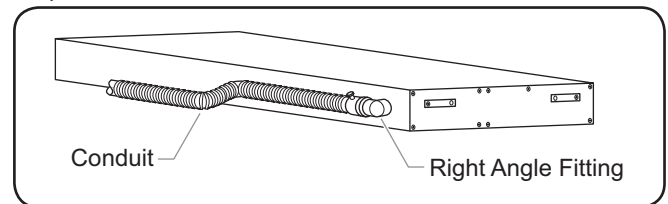
Install supply wire and connectors suitable for at least 90°C (194°F).

- 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

Remote Control Enclosures

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

The RMB Series require one remote control enclosure per strip heater.

NOTE: Remote control enclosures are available in several configurations depending on the model. All enclosures are built in accordance with CE 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.

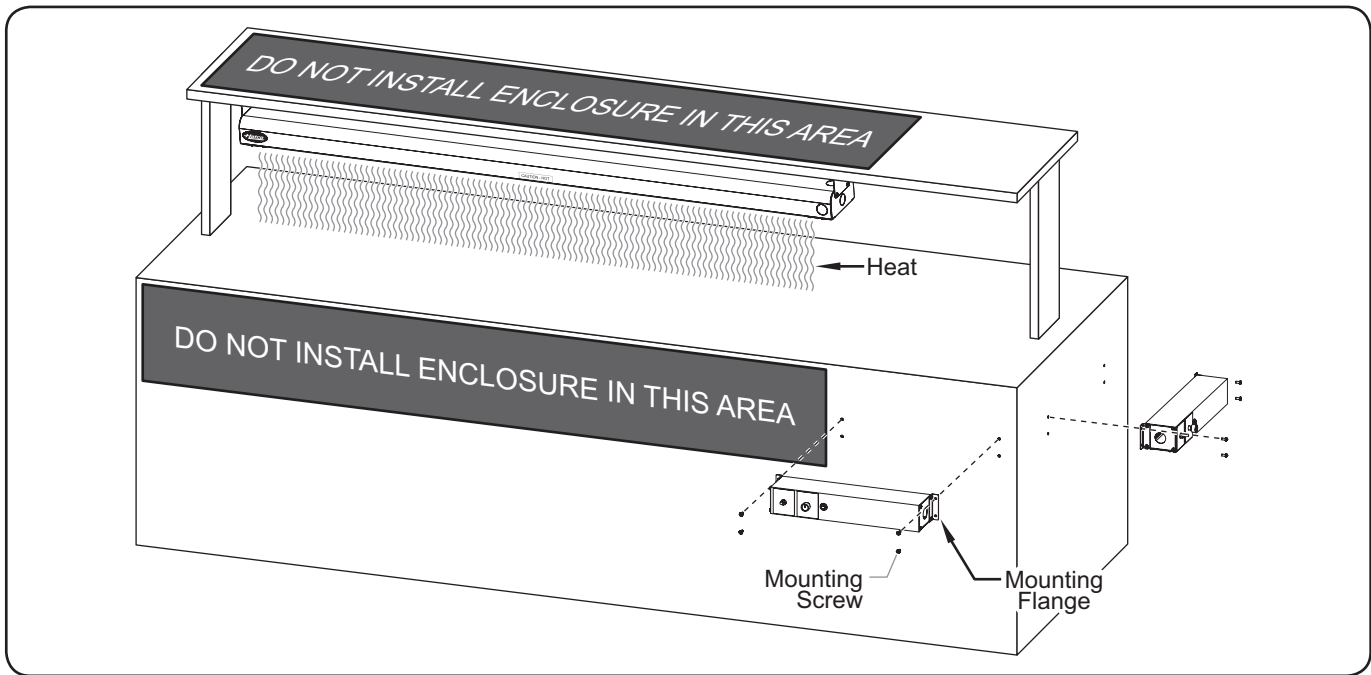
Remote Mounted Control Switches

Optional remote mounted control switches include 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. See the OPTIONS AND ACCESSORIES section for more information.

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 mounted control switches.

NOTICE

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



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. 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.

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.

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

Infinite Control—Turns on the power and controls the output 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 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.

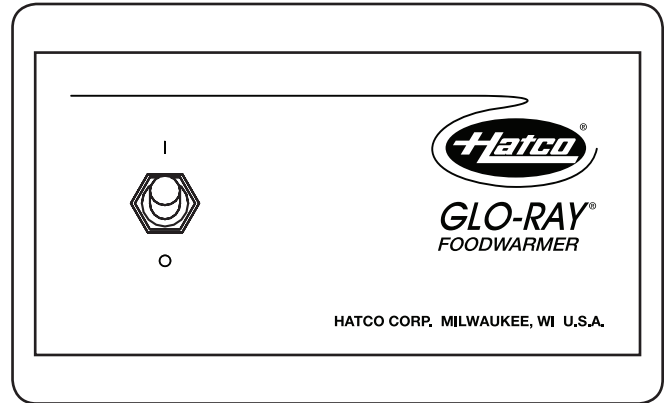
NOTE: Toggle switches cannot be used on circuits that exceed 15 amps. Infinite controls cannot be used on circuits that exceed 12.2 amps.

Startup

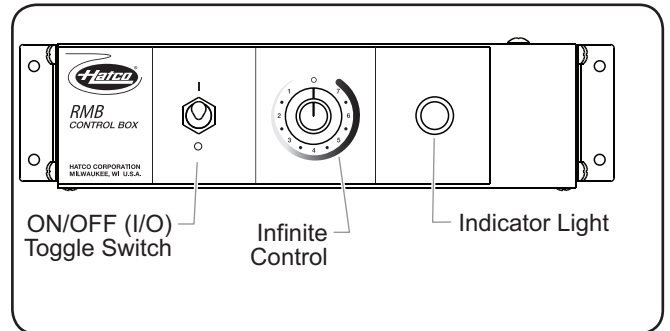
1. Turn on the heating element(s). The indicator light (if equipped) will illuminate and the heating elements will energize.
 - If unit is equipped with a ON/OFF (I/O) toggle switch, move the toggle switch to the ON (I) position.
 - If unit is equipped with an optional infinite control(s), turn the control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

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

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



Control Panel with ON/OFF (I/O) Toggle Switch



Remote Control Enclosures

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

Shutdown

1. Move the ON/OFF (I/O) toggle switch to the OFF (O) position or turn the optional infinite control(s) to the OFF (O) 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 ON/OFF (I/O) toggle switch to the OFF (O) position.

General

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

⚠ WARNING

ELECTRIC SHOCK HAZARD:

- Turn OFF power switch, 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.

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 (0512) 6732-5091.

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.

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.

IMPORTANT—DO NOT use paper towel or glass cleaner to clean plastic surfaces. Paper towel and glass cleaner may scratch the material. Wipe off plastic surfaces using a soft, clean, water-dampened cloth.

Cleaning

To preserve the finish of the unit, it is recommended that all surfaces be cleaned daily.

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.
4. If equipped, clean the plastic sneeze guards using soft cleaning cloths, mild soap, and water. **NOTICE: Do not use paper towel or glass cleaner on plastic surfaces—scratching may occur.**

Replacing Display Light Bulbs

⚠ 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. These bulbs have a special coating to guard against injury and food contamination in the event of breakage.

To replace a display 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 bulb.

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



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



ELECTRIC SHOCK HAZARD: Turn OFF power switch, 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.

Troubleshooting Questions?

If you continue to have problems resolving an issue, please contact the nearest Authorized Hatco Service Agency or Hatco for assistance. To locate the nearest Service Agency, log onto the Hatco website at www.hatcocorp.com, select the *Support* pull-down menu, and click on "Find A Service Agent"; or contact the **Hatco Parts and Service Team** at:

Telephone: (0512) 6732-5091

e-mail: infocn@hatcocorp.com

OPTIONS AND ACCESSORIES

Remote Control Enclosures — 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 CE 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.

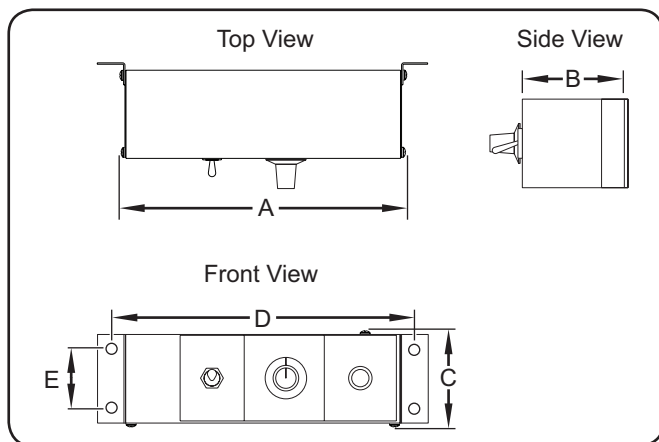
1. Determine the area to mount the RMB box.

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.

Dimensions

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")



Control Enclosure Dimensions

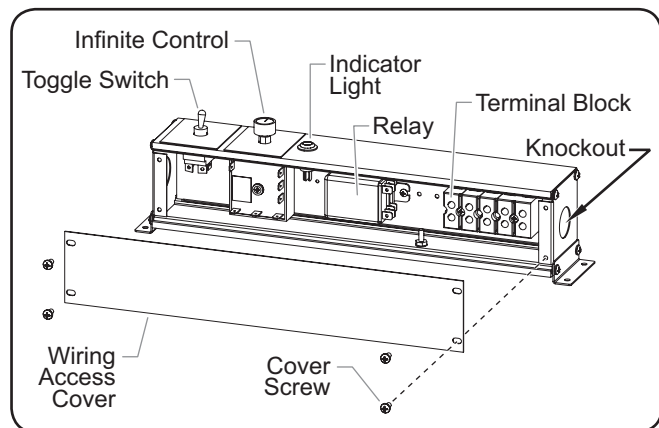
2. Secure the RMB to the mounting surface using appropriate screws or fasteners.

- Use the mounting flange on each end of the RMB.

NOTE: Sizing of the power supply wire leads and upstream overcurrent protection must conform with National Electric Code (NEC) requirements as well as all local codes.

3. Remove the wiring access cover on bottom of the control enclosure by removing screws and sliding cover off.
4. Identify and remove the appropriate knockouts from the control enclosure for the electrical connections.

5. Attach conduit connectors to the knockouts in the control enclosure.



Removing Wiring Access Cover

6. Make the electrical connections between the unit and the output terminals on the terminal block in the control enclosure. Refer to the wiring diagrams included with the unit and the RMB control enclosure.

NOTE: To ground the RMB, use either a separate ground wire, metallic conduit, or other locally accepted method in accordance with the National Electric Code (NEC) or Canadian Electric Code (CEC).

7. Make the electrical connections between the power supply and the input terminals on the terminal block inside the control enclosure. Refer to the wiring diagram included with the RMB control enclosure.

NOTE: Verify which wire leads from the foodwarmer are for phase, neutral, and/or lighting connections, as applicable.

8. Make sure all wire connections are tight, and secure both conduit runs to the conduit connectors.
9. Reinstall the wiring access cover on bottom of the control enclosure.
10. Turn on power at the fused disconnect switch/circuit breaker, turn on the unit, and test operation.

Infinite Switch

Use the following procedure to install an infinite switch. An infinite switch needs to be installed into an approved electrical box/enclosure (not supplied) by a qualified electrician.

⚠ WARNING

ELECTRIC SHOCK HAZARD: Turn OFF power switch, disconnect unit from power source, and allow unit to cool before performing any cleaning, adjustments, or maintenance.

NOTICE

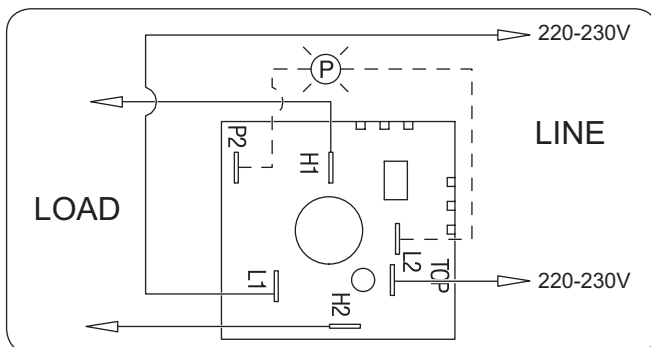
To prevent premature failure of components due to excessive heat, remote mounted control switches must be installed outside the strip heater heat zone.

1. Verify unit is off and disconnected from the power source.
2. Install the infinite switch. Refer to the wiring diagram for proper electrical connections. Make sure the switch is installed with the "H1" terminal oriented on top. This will ensure that the switch functions match the markings on the switch label.
 - Power In: L1 and L2
 - To Heating Element: H1 and H2

NOTE: The terminals on the infinite switch are specially designed, high-temperature rated terminals that do not require solder connections.

NOTICE

The infinite switch must be installed using the terminals and wires supplied with the switch. Failure to use the supplied Genuine Hatco Replacement Parts will void all warranties and may damage the equipment.



Infinite Switch Wiring Diagram (rear view)

NOTE: Make sure the switch is installed with the "H1" terminal oriented on top ("12 o'clock" position), as shown above. This will ensure that the switch functions match the markings on the switch label.

Infinite Switch Kit Part Numbers

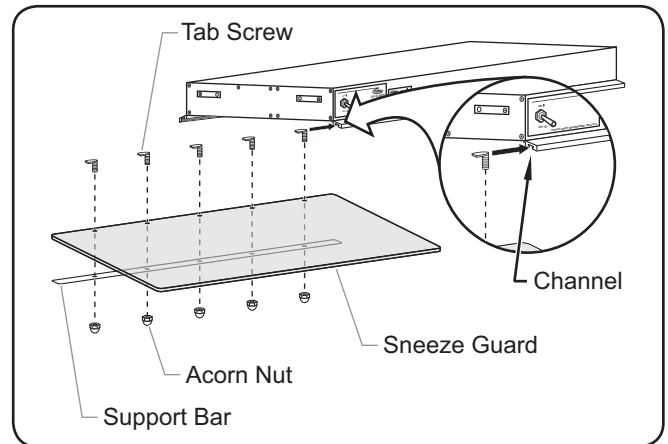
Part Number	Voltage
R02.19.019.00	240 volt

Sneeze Guards

Optional sneeze guards are available for aluminum models only. Sneeze guards not field retrofittable. 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.

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

The warranty on this Hatco unit 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 this unit 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
- 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:

- call Hatco Service at (0512) 6732-5091
- e-mail Hatco at infocn@hatcocorp.com

INTERNATIONAL LIMITED WARRANTY

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.

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使用者重要注意事项

请在下面空白处记录产品型号、序列号（规格标签位于设备底面）、电压和购买日期。当致电赫高寻求服务时，请提供这些信息。

型号 _____

序列号 _____

电压 _____

购买日期 _____

工作时间： 北京时间 上午 9:00 – 下午 6:00

电话： (0512) 6732-5091

E-mail: infocn@hatcocorp.com

查询更多信息请访问我们的网站：www.hatcocorp.com
www.hatcocorp.cn

简介

Hatco Glo-Ray® 长条形红外线保温灯能够确保最佳食品保存，减少食源性疾病的风险。使用 Glo-Ray 预集中加热模式，在适当温度下保存食物，能够优化食品安全和质量。预集中加热模式通过在热损失最大的支撑表面外边缘集中高温可以防止食物中间烧焦、边缘冷却。利用专门设计的反射器传导元件热量，Glo-Ray 长条形保温灯安全地长期维持峰值温度，可以更长时间维持最佳食用温度。

Glo-Ray 长条形红外线保温灯可从工厂购得，可以选配防破碎白炽灯，以照亮加热区域。这些灯泡有特殊涂层，一旦破碎后可避免伤人或污染食物。

Glo-Ray 长条形红外线保温灯是经过大量研究和实地测试试验的产品。所用材料经久耐用，外型美观，性能优异。在装运前每个组件都进行了全面检测。

本手册包含 Glo-Ray 长条形红外线保温灯的安装、安全和操作说明。建议您在安装和操作该设备前仔细阅读该手册。

本手册中的安全信息采用以下标志表示：



“警告”表示有危险情况，如果不加以避免，则可能导致人身伤亡。



“小心”表示有危险情况，如果不加以避免，则可能导致轻度或中度人身伤害。



“注意”用于提示不会涉及人身伤害的操作。

! 使用本设备前，请仔细阅读下列重要安全事项，以免造成严重的人身伤亡及设备或财产的损坏。

警告

触电危险：

- 出厂时不带电插头的设备需要硬连线到现场的电路系统。连接电源时必须妥当接地，并且符合设备电气规格中的正确电压、规格和配置。联系有资质的电工，以确定并执行正确的电气连接。
- 在进行任何清洁、调整或维护之前，请先关闭电源开关，关掉断路器，并使设备冷却。
- 不得将设备浸入水中。本设备不具备防水性能。如果设备被水浸泡，不得进行操作。
- 本设备不具备耐候性。请将本设备置于室内，室内气温不得低于 21°C (70°F)。
- 不得用蒸汽或使用过多的水清洁本设备。
- 本设备不具备“防喷淋”结构。请勿使用喷淋头清洁本设备。
- 当设备通电或尚未冷却时不要做清洁。
- 不要让液体溅入设备。
- 维修时只能使用正宗的 Hatco 更换零部件。未使用正宗 Hatco 更换零部件会造成质保无效，并可能造成设备操作人员受到有害电压威胁，并引起触电或着火。正宗 Hatco 更换零部件可以保证使用环境下的安全生产。某些普通零部件不具备相关特性，从而无法在 Hatco 设备内安全使用。

火警：

- 保证设备与可燃墙壁和材料保持适当距离。如果不保持安全距离，可能会导致褪色或燃烧。请参见本手册中的特定安装和装配信息了解适当的距离要求。
- 确保遵循下面列出特定的片保温灯安装信息。如果不保持安全距离，可能会导致褪色或燃烧。
 - a. 安装标准功率长条形保温灯 (GR, GRA, GRN, GRL, GRAL 系列) 时，与易燃表面距离不得小于 254 mm (10")。
 - b. 安装大功率长条形保温灯 (GRH, GRHL, GRAH, GRNH, GRAHL 系列) 时，与易燃表面距离不得小于 343 mm (13-1/2")。
 - c. 双元件长条形保温灯不可安装在易燃表面上。
 - e. 安装设备件长条形保温灯时，与易燃墙壁或邻近表面距离不得少于 76 mm (3")。

爆炸危险： 在该设备或其他任何装置附近，请勿储存或使用汽油或其他可燃蒸汽或液体。

儿童或具有身体、感觉或智力残障的人不宜使用本设备。请看护好儿童，并使其远离本设备。

确保所有操作人员都已了解如何安全和妥善地使用本设备。

在食物被放入设备以前，应确保其已被加热到恰当的安全食用温度，否则可能会严重影响健康。该设备只用来存放预先加热过的食物。

该设备须由专业人员进行检修，否则可能会引发触电或起火燃烧。

本设备不含“用户维修”零部件。如需维修，请联系赫高授权服务机构或赫高服务部门，电话 (0512) 6732-5091。

小心

燃烧危险： 本设备的某些外表面处温度较高。接触这些部位时请务必小心。

在首次启动时，由生产制造带来的标准的，被认可的机油可能会产生油烟，时间长达30分钟。但这是暂时的，设备需空载运行，直至油烟消散。

配有白炽灯的长条形保温灯需要大于 20 安培的断路器，因为加热元件必须有一个小于等于 20 安培的独立断路器，供给白炽灯使用。

确保安全正确的操作，请参阅本手册安装章节的间距要求部分。

注意

安装两个或两个以上的分离设备时，外壳间距如果小于 76 mm (3")，可能导致零件元件过早损坏。未能提供适当的间距可能会导致热量损坏电器元件。

设备需要使用特定电压。在开始安装之前，请参考规范标签的供电需求。

不要添加装饰性底面，试图隐藏安装递菜口的长条形保温灯。过热会导致设备故障。

为防止过度加热导致元件过早失效，远程安装控制开关必须安装在长条形保温灯加热区之外。

因为 Hatco 设备产生热量造成的任何台面材料损伤，都不在 Hatco 的保修范围内。请联系台面材料厂家，获取应用信息。

只允许使用非摩擦性清洁剂。摩擦性清洁剂可能会刮伤本设备的表面处理层，破坏其外观，并易使表面积尘。

重要——不要使用纸巾或玻璃清洁剂清洗塑料表面。纸巾和玻璃清洁剂可能会划伤材料。使用柔软、干净、潮湿的布料擦拭塑料表面。

请勿将设备置于气流过急的环境中。避免将设备置于空气流动或气流活跃的区域（即排气扇/排风罩、空调管和外门附近）。

所有型号

Hatco Glo-Ray® 长条形红外线保温灯可以使温热食物更长时间保持在最佳温度。食物不会干燥或变色；即使是最精美的菜肴也能保持“预制备”的外观。Glo-Ray 预集中加热模式将热量从一个管状构件传导至整个支撑表面。

Glo-Ray 长条形保温灯可选标准功率或高功率配置、不锈钢、铝或狭窄设计外壳，长度为 457 mm-1829 mm (18"-72")。

所有长条形保温灯都有几个安装选项和开关位置。还可选择无限控制开关、远程控制机柜、白炽灯照明、防鼻息食品罩。

GR-XX, GRH-XX, GRL-XX, 和 GRHL-XX 型号

不锈钢型号可以选配白炽灯。

注意：不锈钢长条形保温灯没有防鼻息食品罩。

GRA-XX, GRAH-XX, GRAL-XX, 和 GRAHL-XX 型号

铝制设备件型号可以选配白炽灯或防鼻息食品罩。

注意：白炽灯和防鼻息食品罩不可用于改造。

GRA-XXD, GRAH-XXD, GRAL-XXD, 和 GRAHL-XXD 型号

铝制双元件型号可以并排安装两个或两个以上长条形保温灯，提供一个更大的存放区。双元件型号需要在加热元件之间放置 76 mm (3") 或 152 mm (6") 的垫片。

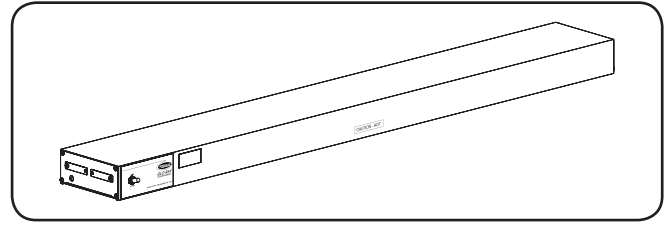
双元件型号可以选配白炽灯或防鼻息食品罩。

注意：白炽灯和防鼻息食品罩不可用于改造。

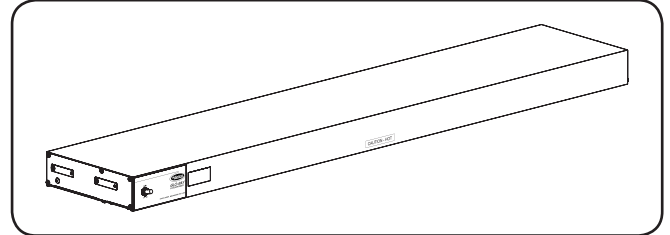
GRN-XX 和 GRNH-XX 型号

狭窄型号可选不锈钢或镀层钢，拥有几种设计师颜色。

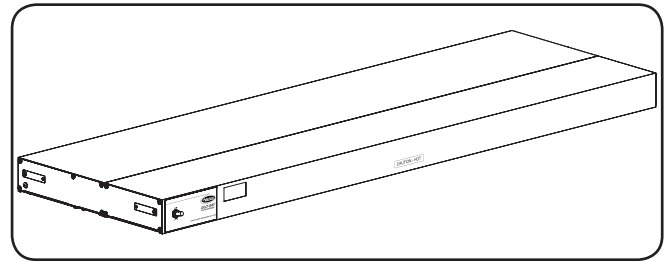
注意：狭窄设计长条形保温灯没有灯光、防鼻息食品罩或双长条型设备。



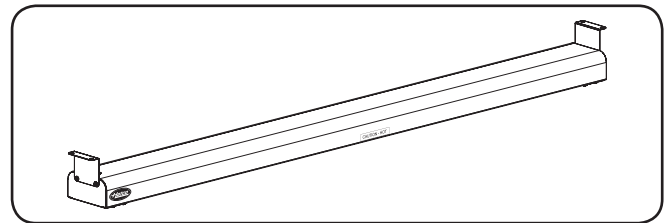
GRA-48 型号



GRAHL-48 型号

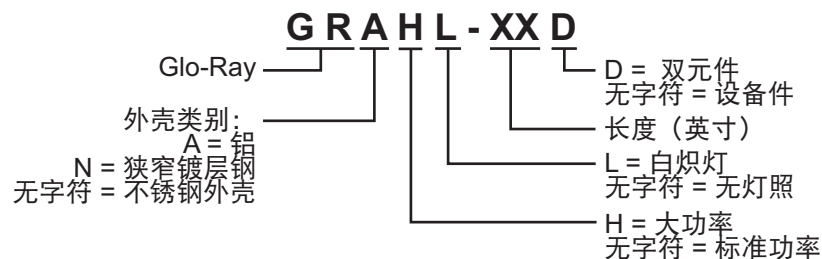


GRAL-48D 型号



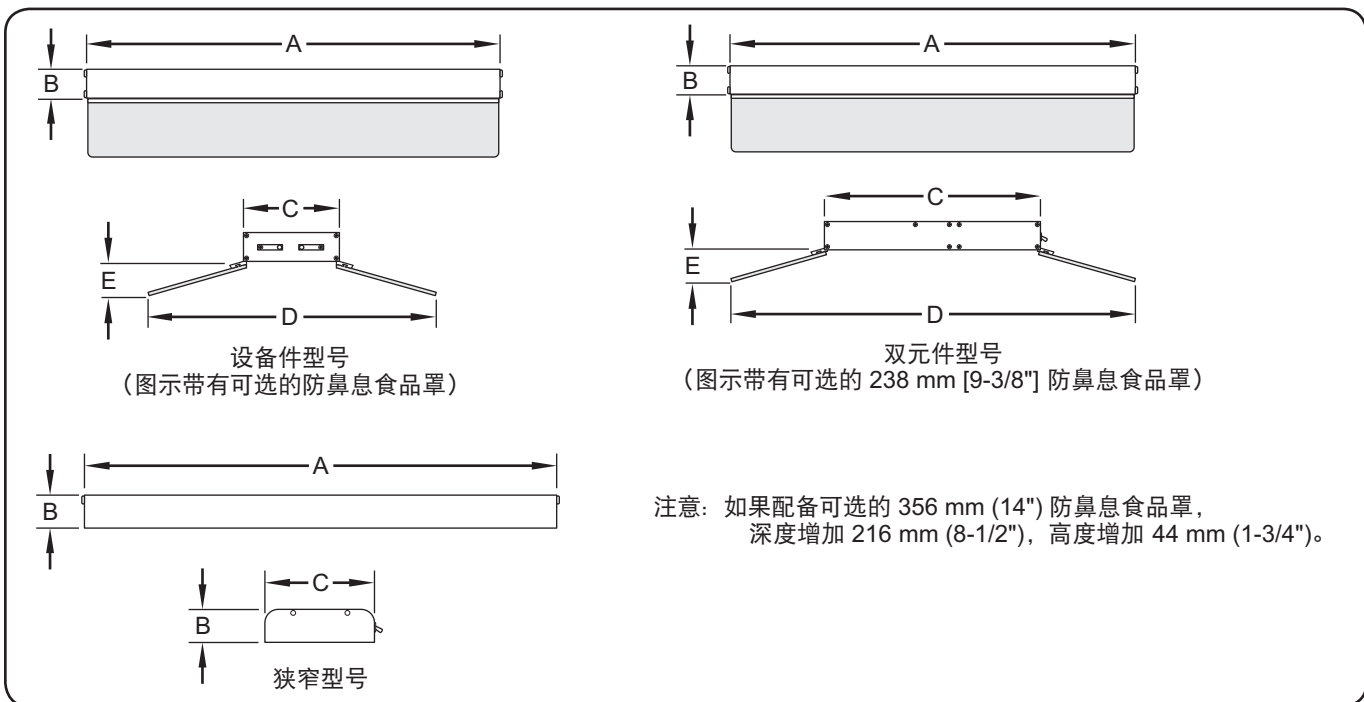
GRN-48 型号

型号命名



尺寸

型号	宽度 (A)	高度 (B)	深度 (C)	深度 (D)	高度 (E)
GR and GRH	457-1829 mm (18"-72")	63 mm (2-1/2")	152 mm (6")	---	---
GRA and GRAH	457-1829 mm (18"-72")	63 mm (2-1/2")	152 mm (6")	584 mm (23")	102 mm (4")
GRAL and GRAHL	457-1829 mm (18"-72")	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")
GRA-XXD, GRAH-XXD, GRAL-XXD, and GRAHL-XXD	457-1829 mm (18"-72")	63 mm (2-1/2")	76 mm (3") spacer: 381 mm (15") 152 mm (6") spacer: 457 mm (18")	76 mm (3") spacer: 813 mm (32") 152 mm (6") spacer: 889 mm (35")	102 mm (4")
GRN and GRNH	457-1829 mm (18"-72")	51 mm (2")	102 mm (4")	---	---



电气参数表 — GR-XX

型号	电压	功率	电流	出厂重量
GR-18	220-230	250-273	1.1-1.2	3 kg (7 lbs.)
GR-24	220-230	350-383	1.6-1.7	3 kg (7 lbs.)
GR-36	220-230	575-628	2.6-2.7	5 kg (10 lbs.)
GR-48	220-230	800-874	3.6-3.8	5 kg (12 lbs.)
GR-60	220-230	1050-1148	4.8-5.0	7 kg (15 lbs.)
GR-72	220-230	1275-1394	5.8-6.1	9 kg (19 lbs.)

电气参数表 — GRH-XX

型号	电压	功率	电流	出厂重量
GRH-18	220-230	350-383	1.6-1.7	3 kg (7 lbs.)
GRH-24	220-230	500-547	2.3-2.4	3 kg (7 lbs.)
GRH-36	220-230	800-874	3.6-3.8	5 kg (10 lbs.)
GRH-48	220-230	1100-1202	5.0-5.2	5 kg (12 lbs.)
GRH-60	220-230	1400-1530	6.4-6.7	7 kg (15 lbs.)
GRH-72	220-230	1725-1885	7.8-8.2	9 kg (19 lbs.)

电气参数表 — GRA-XX

型号	电压	功率	电流	出厂重量
GRA-18	220-230	250-273	1.1-1.2	3 kg (6 lbs.)
GRA-24	220-230	350-383	1.6-1.7	3 kg (7 lbs.)
GRA-30	220-230	450-492	2.0-2.1	4 kg (8 lbs.)
GRA-36	220-230	575-629	2.6-2.7	4 kg (9 lbs.)
GRA-42	220-230	675-738	3.1-3.2	5 kg (10 lbs.)
GRA-48	220-230	800-874	3.6-3.8	5 kg (11 lbs.)
GRA-54	220-230	925-1011	4.2-4.4	6 kg (13 lbs.)
GRA-60	220-230	1050-1148	4.8-5.0	6 kg (14 lbs.)
GRA-66	220-230	1160-1268	5.3-5.5	7 kg (16 lbs.)
GRA-72	220-230	1275-1394	5.8-6.1	8 kg (17 lbs.)

电气参数表 — GRAH-XX

型号	电压	功率	电流	出厂重量
GRAH-18	220-230	350-383	1.6-1.7	3 kg (6 lbs.)
GRAH-24	220-230	500-547	2.3-2.4	3 kg (7 lbs.)
GRAH-30	220-230	660-721	3.0-3.1	4 kg (8 lbs.)
GRAH-36	220-230	800-875	3.6-3.8	4 kg (9 lbs.)
GRAH-42	220-230	950-1038	4.3-4.5	5 kg (10 lbs.)
GRAH-48	220-230	1100-1202	5.0-5.2	5 kg (11 lbs.)
GRAH-54	220-230	1250-1366	5.7-5.9	6 kg (13 lbs.)
GRAH-60	220-230	1400-1530	6.4-6.7	6 kg (14 lbs.)
GRAH-66	220-230	1560-1705	7.1-7.4	7 kg (16 lbs.)
GRAH-72	220-230	1725-1886	7.8-8.2	8 kg (17 lbs.)

电气参数表 — GRAL-XX

型号	电压	功率	电流	出厂重量
GRAL-18	220-230	351-383	1.6-1.7	4 kg (9 lbs.)
GRAL-24	220-230	451-493	2.1-2.1	5 kg (10 lbs.)
GRAL-30	220-230	551-602	2.5-2.6	5 kg (11 lbs.)
GRAL-36	220-230	726-794	3.3-3.5	6 kg (13 lbs.)
GRAL-42	220-230	826-903	3.8-3.9	7 kg (15 lbs.)
GRAL-48	220-230	1002-1095	4.6-4.8	8 kg (17 lbs.)
GRAL-54	220-230	1127-1231	5.1-5.4	9 kg (19 lbs.)
GRAL-60	220-230	1302-1423	5.9-6.2	10 kg (21 lbs.)
GRAL-66	220-230	1412-1543	6.4-6.7	10 kg (22 lbs.)
GRAL-72	220-230	1578-1724	7.2-7.5	11 kg (24 lbs.)

电气参数表 — GRAHL-XX

型号	电压	功率	电流	出厂重量
GRAHL-18	220-230	451-493	2.1-2.1	4 kg (9 lbs.)
GRAHL-24	220-230	601-657	2.7-2.9	5 kg (10 lbs.)
GRAHL-30	220-230	761-832	3.5-3.6	5 kg (11 lbs.)
GRAHL-36	220-230	951-1040	4.3-4.5	6 kg (13 lbs.)
GRAHL-42	220-230	1101-1204	5.0-5.2	7 kg (15 lbs.)
GRAHL-48	220-230	1302-1423	5.9-6.2	8 kg (17 lbs.)
GRAHL-54	220-230	1452-1587	6.6-6.9	9 kg (19 lbs.)
GRAHL-60	220-230	1652-1806	7.5-7.9	10 kg (21 lbs.)
GRAHL-66	220-230	1812-1981	8.2-8.6	10 kg (22 lbs.)
GRAHL-72	220-230	2028-2216	9.2-9.6	11 kg (24 lbs.)

电气参数表 — GRA-XXD

型号	电压	功率	电流	出厂重量
GRA-18D	220-230	500-546	2.3-2.4	6 kg (14 lbs.)
GRA-24D	220-230	700-765	3.2-3.3	7 kg (16 lbs.)
GRA-30D	220-230	900-984	4.1-4.3	8 kg (18 lbs.)
GRA-36D	220-230	1150-1257	5.2-5.5	10 kg (21 lbs.)
GRA-42D	220-230	1350-1476	6.1-6.4	11 kg (24 lbs.)
GRA-48D	220-230	1600-1749	7.3-7.6	12 kg (27 lbs.)
GRA-54D	220-230	1850-2022	8.4-8.8	14 kg (30 lbs.)
GRA-60D	220-230	2100-2295	9.5-10.0	15 kg (34 lbs.)
GRA-66D	220-230	2320-2536	10.5-11.0	17 kg (37 lbs.)
GRA-72D	220-230	2550-2787	11.6-12.1	19 kg (41 lbs.)

电气参数表 — GRAH-XXD

型号	电压	功率	电流	出厂重量
GRAH-18D	220-230	700-765	3.2-3.3	6 kg (14 lbs.)
GRAH-24D	220-230	1000-1093	4.5-4.8	7 kg (16 lbs.)
GRAH-30D	220-230	1320-1443	6.0-6.3	8 kg (18 lbs.)
GRAH-36D	220-230	1600-1749	7.3-7.6	10 kg (21 lbs.)
GRAH-42D	220-230	1900-2077	8.6-9.0	11 kg (24 lbs.)
GRAH-48D	220-230	2200-2405	10.0-10.5	12 kg (27 lbs.)
GRAH-54D	220-230	2500-2732	11.4-11.9	14 kg (30 lbs.)
GRAH-60D	220-230	2800-3060	12.7-13.3	15 kg (34 lbs.)
GRAH-66D	220-230	3120-3410	14.2-14.8	17 kg (37 lbs.)
GRAH-72D	220-230	3450-3771	15.7-16.4	19 kg (41 lbs.)

电气参数表 — GRAL-XXD

型号	电压	功率	电流	出厂重量
GRAL-18D	220-230	601-657	2.7-2.9	6 kg (14 lbs.)
GRAL-24D	220-230	801-875	3.6-3.8	7 kg (16 lbs.)
GRAL-30D	220-230	1001-1094	4.6-4.8	9 kg (19 lbs.)
GRAL-36D	220-230	1301-1422	5.9-6.2	10 kg (22 lbs.)
GRAL-42D	220-230	1501-1641	6.8-7.1	11 kg (25 lbs.)
GRAL-48D	220-230	1802-1969	8.2-8.6	13 kg (29 lbs.)
GRAL-54D	220-230	2052-2242	9.3-9.7	15 kg (33 lbs.)
GRAL-60D	220-230	2352-2571	10.7-11.2	17 kg (37 lbs.)
GRAL-66D	220-230	2572-2811	11.7-12.2	18 kg (40 lbs.)
GRAL-72D	220-230	2853-3118	13.0-13.6	19 kg (42 lbs.)

电气参数表 — GRAHL-XXD

型号	电压	功率	电流	出厂重量
GRAHL-18D	220-230	801-875	3.6-3.8	6 kg (14 lbs.)
GRAHL-24D	220-230	1101-1203	5.0-5.2	7 kg (16 lbs.)
GRAHL-30D	220-230	1421-1553	6.5-6.8	9 kg (19 lbs.)
GRAHL-36D	220-230	1751-1914	8.0-8.3	10 kg (22 lbs.)
GRAHL-42D	220-230	2051-2242	9.3-9.7	11 kg (25 lbs.)
GRAHL-48D	220-230	2402-2625	10.9-11.4	13 kg (29 lbs.)
GRAHL-54D	220-230	2702-2953	12.3-12.8	15 kg (33 lbs.)
GRAHL-60D	220-230	3052-3336	13.9-14.5	17 kg (37 lbs.)
GRAHL-66D	220-230	3372-3686	15.3-16.0	18 kg (40 lbs.)
GRAHL-72D	220-230	3753-4101	17.1-17.8	19 kg (42 lbs.)

电气参数表 — GRN-XX

型号	电压	功率	电流	出厂重量
GRN-18	220-230	250-273	1.1-1.2	3 kg (6 lbs.)
GRN-24	220-230	350-383	1.6-1.7	3 kg (7 lbs.)
GRN-30	220-230	450-492	2.0-2.1	4 kg (8 lbs.)
GRN-36	220-230	575-629	2.6-2.7	4 kg (9 lbs.)
GRN-42	220-230	675-738	3.1-3.2	5 kg (10 lbs.)
GRN-48	220-230	800-874	3.6-3.8	5 kg (11 lbs.)
GRN-54	220-230	925-1011	4.2-4.4	6 kg (13 lbs.)
GRN-60	220-230	1050-1148	4.8-5.0	6 kg (14 lbs.)
GRN-66	220-230	1160-1268	5.3-5.5	7 kg (16 lbs.)
GRN-72	220-230	1275-1394	5.8-6.1	8 kg (17 lbs.)

电气参数表 — GRNH-XX

型号	电压	功率	电流	出厂重量
GRNH-18	220-230	350-383	1.6-1.7	3 kg (6 lbs.)
GRNH-24	220-230	500-547	2.3-2.4	3 kg (7 lbs.)
GRNH-30	220-230	660-721	3.0-3.1	4 kg (8 lbs.)
GRNH-36	220-230	800-875	3.6-3.8	4 kg (9 lbs.)
GRNH-42	220-230	950-1038	4.3-4.5	5 kg (10 lbs.)
GRNH-48	220-230	1100-1202	5.0-5.2	5 kg (11 lbs.)
GRNH-54	220-230	1250-1366	5.7-5.9	6 kg (13 lbs.)
GRNH-60	220-230	1400-1530	6.4-6.7	6 kg (14 lbs.)
GRNH-66	220-230	1560-1705	7.1-7.4	7 kg (16 lbs.)
GRNH-72	220-230	1725-1886	7.8-8.2	8 kg (17 lbs.)

总则

使用本章中的信息准备和安装 Glo-Ray® 长条形红外线保温灯。确保在本章中找到安装类型的特定信息。长条形保温灯发货时尽可能进行了组件预安装。在工厂中，双长条型设备预装有所需的 76 mm (3") 或 152 mm (6") 的垫片。



警告

火警：

- 保证设备与可燃墙壁和材料保持适当距离。如果不保持安全距离，可能会导致褪色或燃烧。请参见本手册中的特定安装和装配信息了解适当的距离要求。
- 确保遵循下面列出特定的片保温灯安装信息。如果不保持安全距离，可能会导致褪色或燃烧。
 - a. 安装标准功率长条形保温灯 (GR, GRA, GRN, GRL, GRAL 系列) 时，与易燃表面距离不得小于 254 mm (10")。
 - b. 安装大功率长条形保温灯 (GRH, GRHL, GRAH, GRNH, GRAHL 系列) 时，与易燃表面距离不得小于 343 mm (13-1/2")。
 - c. 双元件长条形保温灯不可安装在易燃表面上。
 - e. 安装设备件长条形保温灯时，与易燃墙壁或邻近表面距离不得少于 76 mm (3")。



小心

确保安全正确的操作，请参阅本手册安装章节的间距要求部分。

注意

设备需要使用特定电压。在开始安装之前，请参考规范标签的供电需求。

不要添加装饰性底面，试图隐藏安装递菜口的长条形保温灯。过热会导致设备故障。

因为 Hatco 设备产生热量造成的任何台面材料损伤，都不在 Hatco 的保修范围内。请联系台面材料厂家，获取应用信息。

注意：在安装设备之前，请联系台面基材生产商，获取应用信息和表面温度限制。

1. 从装运箱中取出设备并去除所有包装材料。

注意：为防止延迟获得保修，请完成在线保修登记。有关详细信息，请参见“重要用户信息”部分。

2. 去除设备表面的胶带保护性包装。

注意：如果设备配备了可选设备，请参见本手册的可选和配件部分。

3. 在适当位置安装/装配设备。

- a. 验证建议安装高度和最小间距要求满足适当的型号。参见本章中的“建议安装高度”和“最小间距要求”。
- b. 设备安装信息请参见本章中的“安装设备”。

双设备装配

装配并排双设备时，设备之间必须保留不少于 76 mm (3") 的间距。从工厂订购的双设备预装有 76 mm (3") 或 152 mm (6") 的垫片。

注意：双设备仅有铝制外壳。

注意

安装两个或两个以上的分离设备时，外壳间距如果小于 76 mm (3")，可能导致零件元件过早损坏。未能提供适当的间距可能会导致热量损坏电器元件。

架下装配

在架子下方装配设备时，请使用可调节角度的支架来确保适当的间距。建议使用远程控制机柜，保持开关远离加热区，防止过早失效。

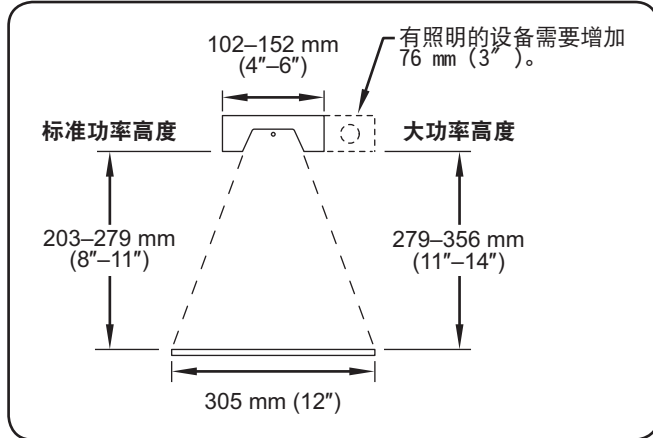
递菜口

如果递菜口区域为 305–406 mm (12"–16") 深，则可以使用标准功率或大功率单设备。对于深度为 508–610 mm (20"–24") 的递菜口区域，建议使用标准功率或大功率双设备。安装多个设备时，保温灯间至少保留 76 mm (3") 的间距。

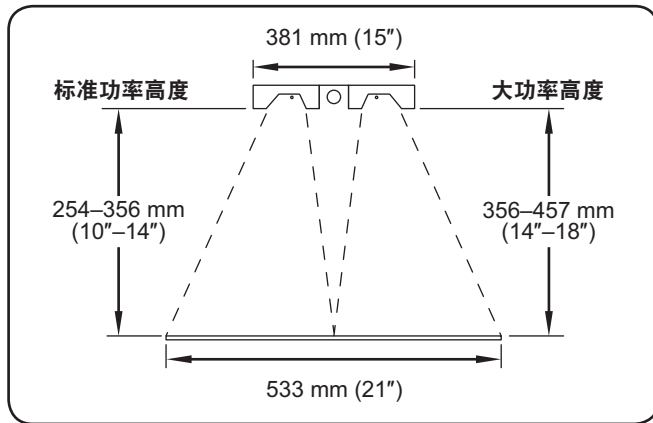
保温食品台上

安装在保温食品台上时，必须按照远程控制机柜。

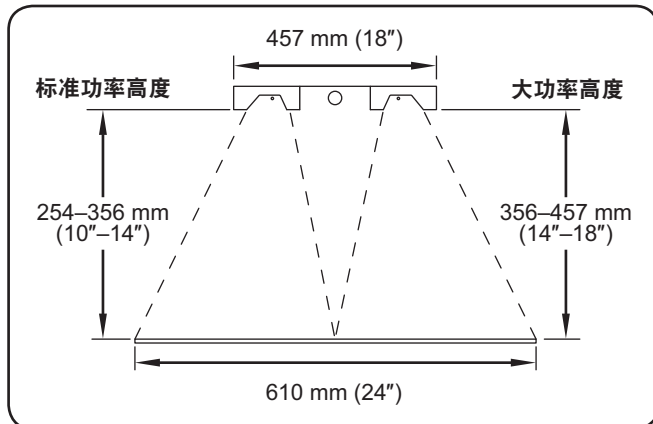
建议安装高度



各种长度 GR, GRA, GRL, GRH, GRHL, GRN, GRAH, GRAL, GRNH 和 GRAHL 型号 (双元件型号除外) 的建议元件高度。



各种长度具有 76 mm (3") 的双元件型号的建议元件高度。

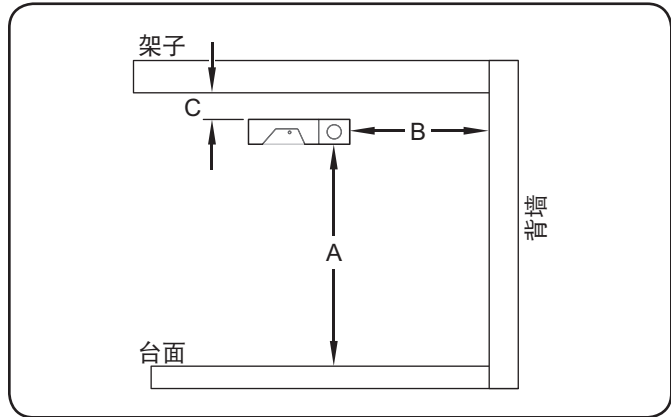


各种长度具有 152 mm (6") 的双元件型号的建议元件高度。

可燃环境的最小间距要求

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

注意：双长条形保温灯不可安装在可燃环境中。



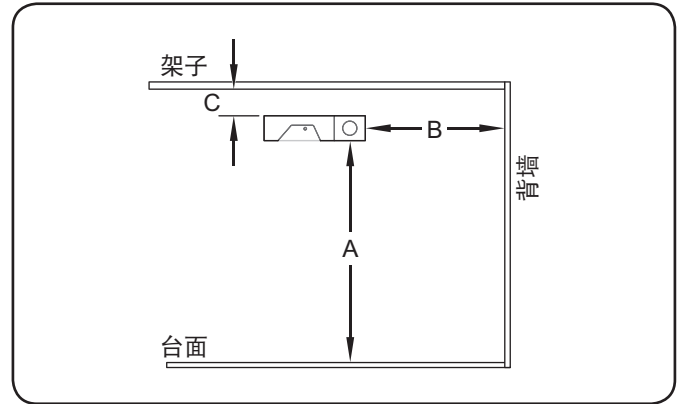
可燃间距要求

注意：加热模式的尺寸取决于设备的高度。

不可燃环境的最小间距要求

具有内置开关的硬连线设备

型号	(A)	(B)*	(C)
GRA and GRAL	203 mm (8")	---	25 mm (1")
具有无限控制或指示灯的 GRAH 和 GRAHL	254 mm (10")	---	25 mm (1")
具有开/关拨动开关的 GRAH 和 GRAHL	203 mm (8")	---	25 mm (1")



不可燃间距要求

具有远程开关的硬连线设备

型号	(A)	(B)	(C)
GRA 和 GRAL	203 mm (8")	0 mm (0")	0 mm (0")
GRAH 和 GRAHL	203 mm (8")	0 mm (0")	0 mm (0")

具有内置开关的双设备

型号	(A)	(B)*	(C)
GRA-XXD GRAH-XXD GRAL-XXD GRAHL-XXD	254 mm (10")	---	25 mm (1")

具有远程开关的双设备

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

* 必须有递菜口，不允许有背墙的环境下安装。

安装设备

长条形保温灯可以安装管状机架或可调节角度支架。请参见适当的安装部分，了解安装过程。

管状机架装配

管状机架装配会将设备永久连接在台面或服务桌上。所有布线可以隐藏在一个管状机架中。



确保安全正确的操作，请参阅本手册安装章节的间距要求部分。

不可调节管状机架可以为铝制、设计师颜色或光泽涂饰，高度为 254–406 mm (10"–16")。可调节管状机架可以为不锈钢，高度为 254–356 mm (10"–14")。

注意：管状机架不可现场改装。

注意：如果电线要隐藏，包含布线管道的机架下面的装配表面必须有 25 mm (1") 直径的孔。

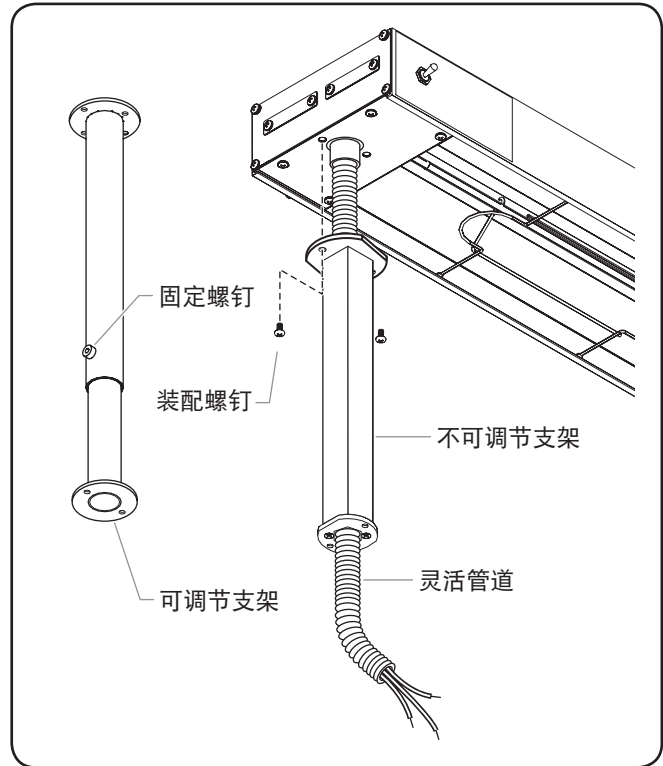
1. 在平面上倒放设备。

注意：这种应用的设备都在设备一侧配备管道。管道不能移除。

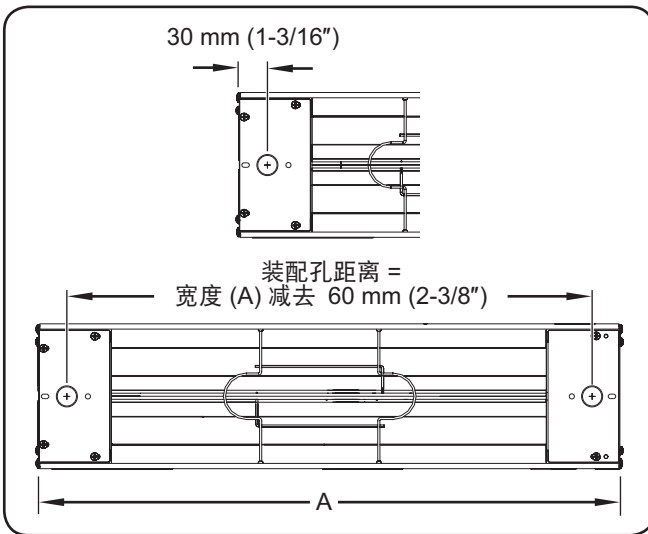
2. 如果适用，准备安装表面进行隐藏布线。
 - a. 在装配表面的适当位置剪一个 25 mm (1") 直径的孔。

注意：两个架子中心间的距离为长条形保温灯总高度减去 60 mm (2-3/8")。

- b. 将软管穿过管状机架插入安装表面。



管状机架装配



台面导管孔尺寸

3. 使用提供的螺丝，将管道一侧支架固定在设备上。
4. 将对面一侧与设备另一端的装配孔对齐，使用提供的螺丝，将支架固定在设备上。
5. 将支架固定在装配表面。

注意：可调支架可以上调或下调，只需使用六角扳手反时针方向旋转锁紧固定螺钉。松开固定螺钉后，提高或降低设备至所需高度，重新上紧螺丝。不要过分松开螺钉。

注意：安装双设备需要两副支架。

可调节角度支架装配

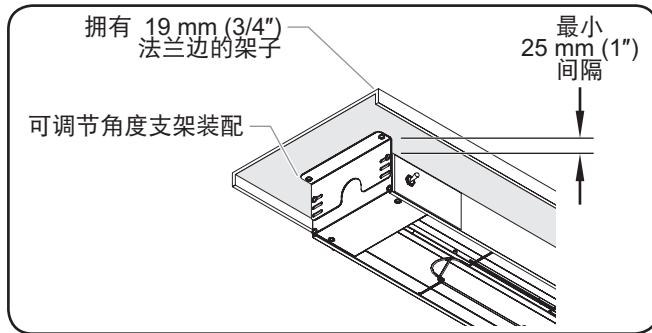
使用可调节角度支架安装长条形保温灯，会将设备永久固定在架子下方。设备可以安装一个平面架子或有卷边/法兰边缘的架子上。可调节角度支架在设备和可燃架子之间提供了必要的间距。



确保安全正确的操作，请参阅本手册安装章节的“最小间距要求”部分。

注意：在架子下方装配设备时，建议使用远程装配控制开关。

使用可选的可调节角度支架，在架子卷边或法兰边的最下部下面安装设备（设备和卷边或法兰边下面需要有 25 mm [1"] 的间隔，以防止热量损伤设备的电气系统）。



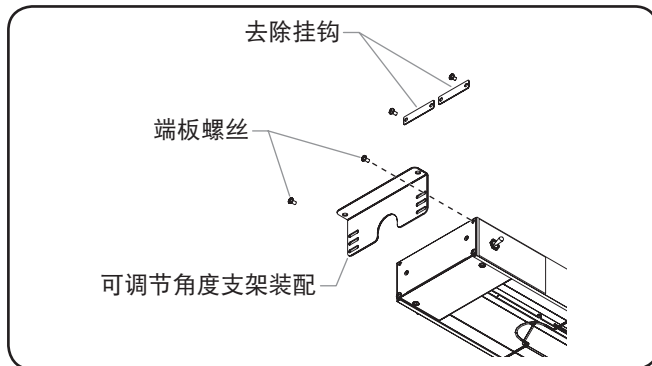
法兰边架子安装

注意：GRN 系列设备配备匹配的设计者颜色的可调节角度支架，在设备和架子上方提供 38 mm (1-1/2") 的间隔。

可调节角度支架装配在铝制型号上

使用下列程序在铝制外壳型号（GRA, GRAH, GRAL, GRAHL）的各端安装可调节支架。

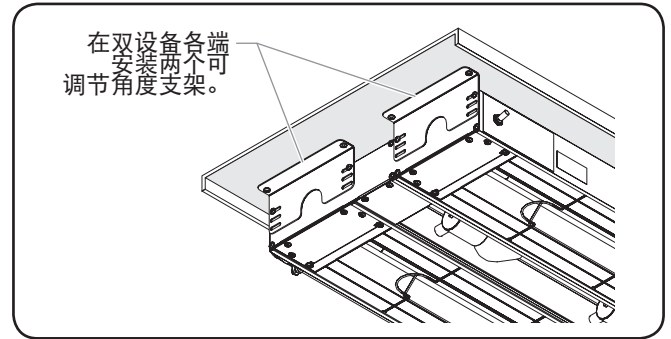
1. 将设备放置在一个平面上，加热元件朝下。
2. 去除两个挂钩螺丝和挂钩。这些物品将不再需要。
3. 去除两个上端底板螺丝。
4. 使可调节角度支架与端板安装孔对齐。用之前拧下的端板螺丝拧紧可调节角度支架。



铝制型号可调节角度支架安装

5. 将可调节角度支架拧紧至架子的上端，使用合适的紧固件（不由 Hatco 提供）。

注意：安装双设备需要两副支架。

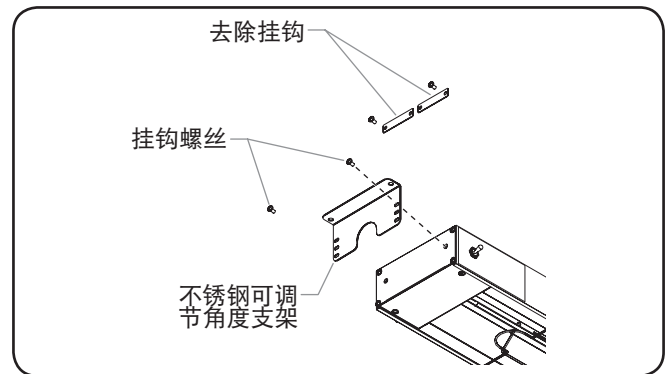


双设备装配

可调节角度支架装配在不锈钢型号上

使用下列程序在不锈钢外壳型号（GR 和 GRH 型号）的各端安装可调节支架。

1. 将设备放置在一个平面上，加热元件朝下。
2. 去除两个挂钩螺丝和挂钩。
3. 使可调节角度支架与设备的挂钩装配孔对齐。
4. 用之前拧下的挂钩螺丝拧紧可调节角度支架。
5. 将可调节角度支架拧紧至架子的上端，使用合适的紧固件（不由 Hatco 提供）。



不锈钢型号可调节角度支架安装

电气信息

请参照随设备提供的接线图和设备上的规范标签，了解特定的电气信息。



触电危险： 所有电气连接必须符合当地的电气规程和其他适用规程。 连接应由具有资格和执照的电工进行。



配有白炽灯的长条形保温灯需要大于 20 安培的断路器，因为加热元件必须有一个小于等于 20 安培的独立断路器，供给白炽灯使用。

注意： 如果本手册没有显示或列出需要安装的设备，请参见随设备提供的接线图和安装信息，获取进一步指导。

电源

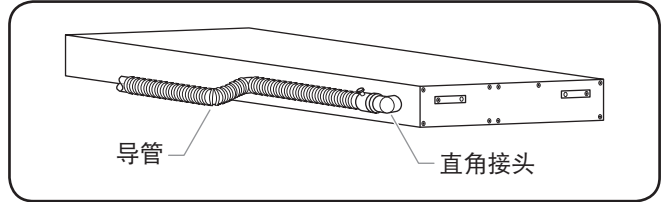
安装电源线和连接器，适用于至少 90°C (194°F)。

- 最大 15 安培的独立电路最少使用 No. 14 AWG 铜线。
- 最大 20 安培的独立电路最少使用 No. 12 AWG 铜线。
- 最大 20-25 安培的独立电路最少使用 No. 10 AWG 铜线。
- 最大 25-30 安培的独立电路最少使用 No. 8 AWG 铜线。

注意： 请参照随设备提供的接线图和设备上的规范标签，了解特定的电气信息。

导管接线

配备直角接头和灵活导管的设备在工厂已经完成了内部连接。连接正确的电源会使导管内电线温度升高。



导管接线

远程控制机柜

Hatco® 远程控制机柜包括开关、电线和/或指示灯，一同发运以备安装。

RMB 系列的每个长条形保温灯需要一个远程控制机柜。

注意：根据型号不同，远程控制机柜拥有几种配置。所有机柜都符合 CE 标准，以适应开关、指示灯和布线。有关详细信息，请参见“选配和配件”部分。

重要提示：

远程装配机柜和控制开关必须安装在阴凉干燥的位置，尽可能远离任何加热区。不要直接在设备上面、下方或上方安装机柜。安装机柜或开关不可直接接触加热表面或接近任何蒸汽发电设备。

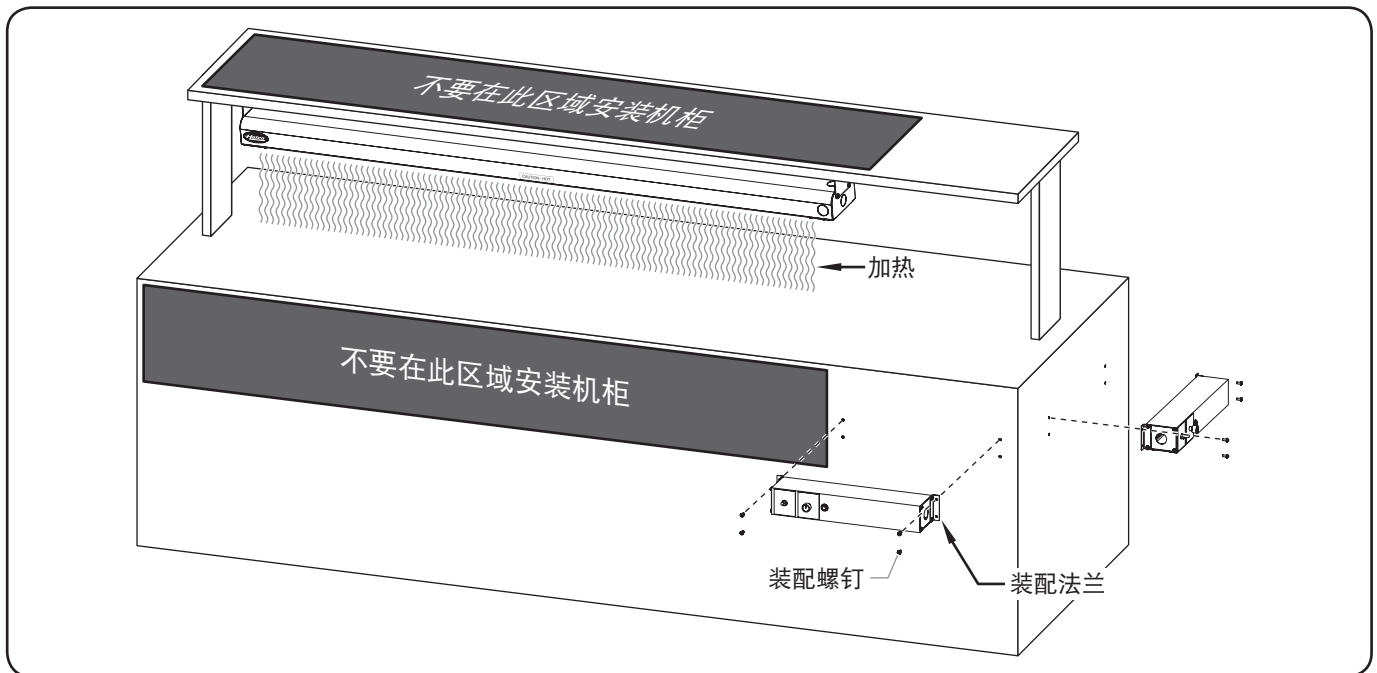
远程装配控制开关

可选远程装配控制开关包括开/关拨动开关和无限控制开关。这些开关需要安装在一个被核准的电箱/外壳上，由有资格的电工进行安装（不提供）。有关详细信息，请参见“选配和配件”部分。

注意：安装两个或两个以上设备时，热量会从一个外壳传导至另一个外壳，使其温度提高，因此控制开关应安装在远程控制机柜内。多重安装的设备应当使用使用远程安装控制开关。

注意

为防止过度加热导致元件过早失效，远程安装控制开关必须安装在长条形保温灯加热区之外。



远程装配机柜安装地点

总则

Glo-Ray® 长条形红外线保温灯设计旨在易于操作。请按照以下信息和程序来操作。



警告

操作本设备前，请仔细阅读“重要安全事项”中的所有安全说明。



小心

燃烧危险：本设备的某些外表面处温度较高。接触这些部位时请务必小心。

在首次启动时，由生产制造带来的标准的，被认可的机油可能会产生油烟，时间长达30分钟。但这是暂时的，设备需空载运行，直至油烟消散。

控制

长条形保温灯标配设备控制器或者可选的远程安装控制。下面列出的是可用的长条形保温灯控制器。

开/关 (I/O) 拨动开关— 打开和关闭加热元件和/或灯光的电源（取决于控制配置）。

无限开关— 打开电源并控制加热元件的输出。无限控制可以为内置或位于远程控制机柜。

注意：双设备不能配备内置无限控制。

灯光开/关波动开关— 打开和关闭灯光电源。

指示灯— 电源打开时点亮，关闭电源时熄灭。

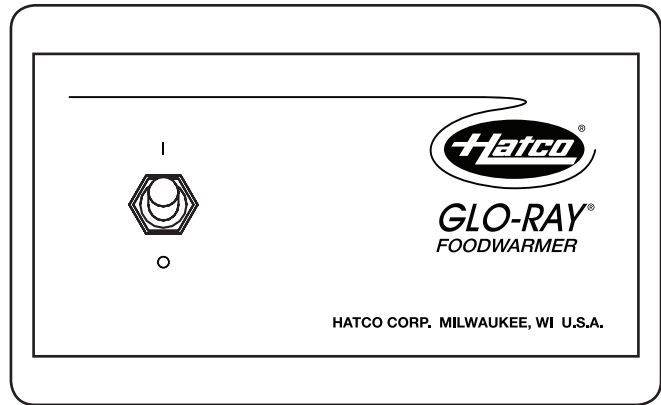
注意：拨动开关不能用在超过 15 安培的电路。无限开关不能用在超过 12.2 安培的电路。

启动

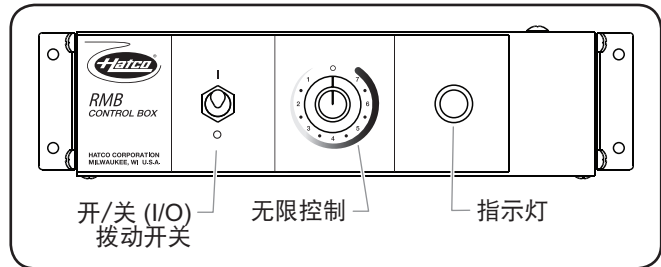
1. 打开加热元件。指示灯（如果配备）将点亮，加热元件将激活。
 - 如果设备配备了开/关 (I/O) 拨动开关，拨动开关移动到 (I) 的位置。
 - 如果设备配备了可选的无限控制，把控制器选到所需设置。

注意：等待 15-20 分钟以达到运行温度。

2. 在配备显示灯的型号上，将灯光开/关 (I/O) 拨动开关移动到 (I) 位置。



拥有开/关 (I/O) 拨动开关的控制面板



远程控制机柜

注意：有关远程控制机柜的信息，请参见“选配和配件”部分。

关机

1. 将开/关 (I/O) 拨动开关移动到 (O) 位置或将可选的无限控制移动到关闭 (O) 的位置。
 - 指示灯（如果配备）将熄灭，加热元件将关闭。
2. 在配备显示灯的型号上，将灯光开/关 (I/O) 拨动开关移动到关闭 (O) 位置。

总则

Glo-Ray® 长条形红外线保温灯的设计经久耐用、性能优异且易于维护。

警告

触电危险：

- 在进行任何清洁、调整或维护之前，请先关闭电源开关，拔下电源线，并使设备冷却。
- 不得将设备浸入水中。本设备不具备防水性能。如果设备被水浸泡，不得进行操作。
- 不得用蒸汽或使用过多的水清洁本设备。
- 本设备不具备“防喷淋”结构。请勿使用喷淋头清洁本设备。
- 当设备通电或尚未冷却时不要清洁该设备。

本设备不含“用户维修”零部件。如需维修，请联系赫高授权服务机构或赫高服务部门，电话 (0512) 6732-5091。

注意

只允许使用非摩擦性清洁剂。摩擦性清洁剂可能会刮伤本设备的表面处理层，破坏其外观，并易使表面积尘。

重要—不要使用纸巾或玻璃清洁剂清洗塑料表面。纸巾和玻璃清洁剂可能会划伤材料。使用柔软、干净、潮湿的布料擦拭塑料表面。

每日清洁

为了保持设备的外观和性能，建议每日清洁设备。

1. 关闭设备，拔掉电源线（针对台式），并让设备冷却。
2. 使用潮湿、没有摩擦性的布料擦拭金属表面。顽固污渍可使用品质良好的不锈钢或无摩擦清洁剂清除。使用小刷子和中性肥皂清洁难以接近的区域。
3. 使用没有摩擦性的干布擦拭整个设备。
4. 如果配备，使用柔软清洁布、温和肥皂和水清洁塑料防鼻息食品罩。注：不要使用纸巾或玻璃清洁剂清洗塑料表面——可能会刮伤表面。

更换显示灯泡

警告

仅使用满足或超过美国国家卫生基金会（NSF）标准且专为食品存放区设计的灯泡。无特殊涂层的灯泡一旦破碎，可能造成人员伤害和/或食品污染。

显示灯是一个白炽灯泡，会照亮温热区域。这些灯泡有特殊涂层，防止损伤和破损造成食品污染事件。

要更换显示灯泡：

1. 断开电源连接并等待设备冷却。
2. 从设备上拧下灯泡，更换一个拥有特殊涂层的全新白炽灯泡。

注意：Hatco 的防破碎灯泡符合 NSF 标准的食品存放和展示区域标准。对于 220-230 伏特的应用，请使用 Hatco P/N 02.30.058.00。

**警告**

本设备只能由受过培训且具备相应资格的人员负责维修。若由不具备相应资格的人员维修，则可能引起触电或着火。

**警告**

触电警告：在进行任何清洁、调整或维护之前，请先关闭电源开关，拔下电源线，并使设备冷却。

症状	可能原因	纠正措施
设备“打开”，但没有热量。	设备没有通电。	检查断路器，必要时进行重置。
	开关有缺陷。	联系授权服务代理商或赫高以获得帮助。
	线缆没有接好。	联系授权服务代理商或赫高以获得帮助。
	加热元件烧坏。	联系授权服务代理商或赫高以获得帮助。
热量不够。	设备安装过高于目标区域。	降低设备的位置，使有效热量接近目标。
	长条形保温灯目标区域周围空气流动过多。	限制或重定空气流动（空调管或排气扇），使其离开设备。
	电源有误（电压低）。	检查设备电源，确保其匹配。如果电源不正确，更换电源以匹配设备。
热量过多。	设备安装过分接近目标区域。	查看安装符合类型/型号规格。如果太近，便增加安装高度。
	电源电压过高。	检查设备电源，确保其匹配。如果电源不正确，更换电源以匹配。
控制开关烧坏。	设备安装不当。	将设备移动至适当的位置，与墙壁、台面和/或递菜货架保持适当距离。参考“安装”章节寻求指导。
	远程控制机柜安装距离加热区太近。	使得远程控制机柜远离加热区。
	所用开关并非 Hatco 提供。	真正的 Hatco 零件能够在使用环境中安全、正确地运行。请联系授权服务代理或 Hatco 以使用真正的 Hatco 替换零件更换开关。

对问题进行故障针对？

如果您的困境在问题解决后仍无法解除，请联系距您最近的经过授权的服务代理或 Hatco 以寻求帮助。请查找最近的服务机构，请登录 Hatco 网站 www.hatcocorp.com，选择 支持 下拉菜单，然后单击“查找服务代理”；或者联系 **Hatco** 零部件和服务团队：

电话： (0512) 6732-5091

电子邮件： infocn@hatcocorp.com

远程控制机柜—RMB 系列

RMB 系列远程控制机柜可用多种配置，以搭配长条形保温灯使用。远程控制机柜使得控制器远离热量，增加控制器的寿命。所有型号都符合 CE 标准，以适应开关、指示灯和布线。请咨询工厂，了解 RMB 系列控制机柜的类型和位置。

注意：RMB 系列远程控制机柜的每个长条形保温灯需要一个远程控制机柜。

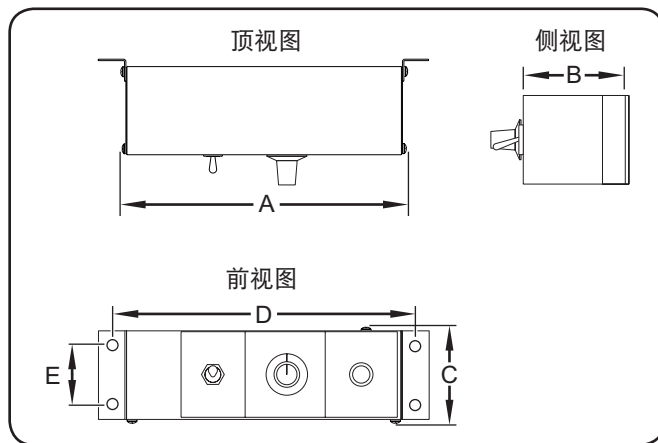
1. 确定装配 RMB 盒子位置。

重要提示：

远程装配机柜和控制开关必须安装在阴凉干燥的位置，尽可能远离任何加热区。不要直接在设备上面、下方或上方安装机柜。安装机柜或开关不可直接接触加热表面或接近任何蒸汽发电设备。

尺寸

型号	宽度 (A)	深度 (B)	高度 (C)	螺丝宽度 (D)	螺丝高度 (E)
RMB-3 系列	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 系列	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 系列	366 mm (14-3/8")	76 mm (3")	67 mm (2-5/8")	376 mm (14-13/16")	41 mm (1-5/8")



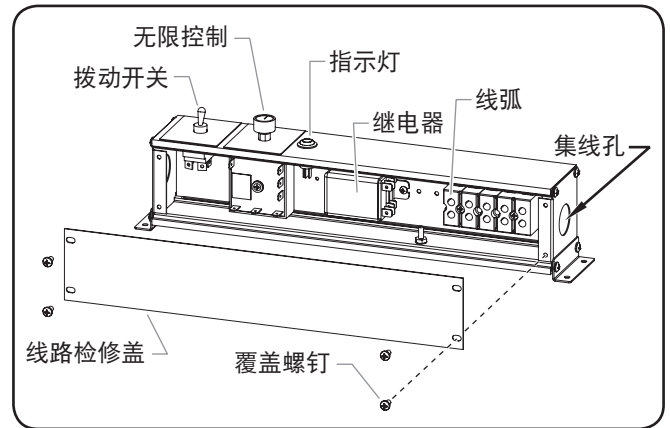
控制机柜尺寸

2. 使用适当的螺丝或紧固件，将 RMB 固定在装配表面。

- 使用 RMB 各端的固定法兰。

注意：电源导线等级和上游过流保护必须符合国家电气规程 (NEC) 以及当地规程要求。

3. 移除螺丝并滑动盖子，以拆掉控制机柜底部的线路检修盖。
4. 从控制机柜上识别并取下相应的集线孔，以进行电气连接。
5. 连接管道与控制机柜的集线孔。



卸下线路检修盖

6. 进行设备和控制机柜线弧上的输出终端之间的电气连接。请参阅包含在设备和 RMB 控制机柜中的电路图。

注意：为给 RMB 接地，请使用单独的地线、金属导管或其他当地允许的方法，要按照国家电气规程 (NEC) 或加拿大电气规程 (CEC)。

7. 进行电源和控制机柜内部线弧上的输入终端之间的电气连接。请参阅包含在 RMB 控制机柜中的电路图。

注意：检查食物保温灯的哪些电线为火线、零线和/或照明连接（如适用）。

8. 确保所有电线连接紧密，紧固各管道至管道连接器。

9. 重新将线路检修盖安装到控制机柜底部。

10. 打开保险丝断路器/断路器的电源，打开设备并测试操作。

无限开关

请按照以下程序安装无限开关。无限开关需要安装在一个被核准的电箱/外壳上，由有资格的电工进行安装（不提供）。



警告

触电危险： 进行任何清洁、调整或维护之前，请先关闭电源开关，断开设备的电源，并使设备冷却。



注意

为防止过度加热导致元件过早失效，远程安装控制开关必须安装在长条形保温灯加热区之外。

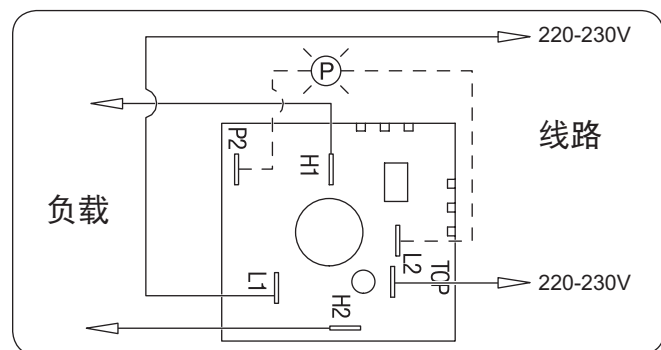
1. 验证设备关闭并已经断开电源。
2. 安装无限开关。请参考接线图，以进行正确的电气连接。开关安装时，确保“H1”终端指向向上。这将确保开关功能匹配开关标签的描述。
 - 电源输入： L1 和 L2
 - 至加热元件： H1 和 H2

注意： 无限开关的终端是特别设计的高温额定终端，不需要焊接连接。



注意

无限开关必须使用随开关提供的终端和电线进行安装。不使用所提供的真正 Hatco 替换零件将不提供保修，可能损坏设备。



无限开关接线图（后视图）

注意： 开关安装时，确保“H1”终端指向向上，（“12 点钟”方向），如图所示。这将确保开关功能匹配开关标签的描述。

无限开关设备零件编号

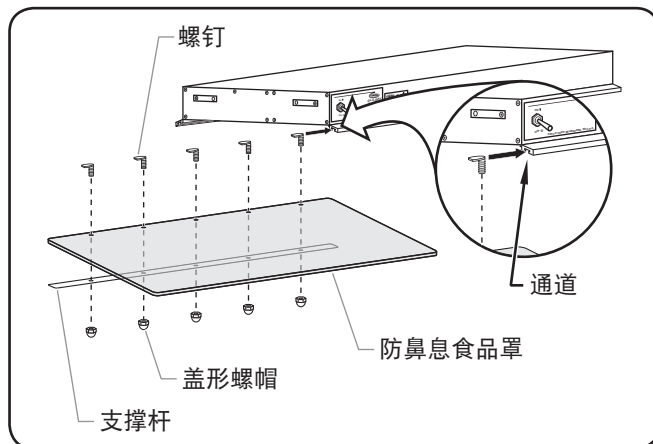
零件编号	电压
R02.19.019.00	240 伏

防鼻息食品罩

仅有铝制型号可用可选的防鼻息食品罩。防鼻息食品罩不可现场改装。可用尺寸为 238 mm (9-3/8") 和 356 mm (14")。防鼻息食品罩可以安装在设备一侧或两侧。

要安装防鼻息食品罩：

1. 从防鼻息食品罩撕掉保护纸。
2. 将各个挂钩螺丝通过防鼻息食品罩顶部进行组装并穿过支撑杆。松散地将盖形螺帽穿过支撑杆下方的螺丝。
3. 抬起防鼻息食品罩，小心地滑动松散拧在防鼻息食品罩上的螺丝，进入设备上的通道。
4. 将各个防鼻息食品罩与设备各端对齐，然后拧紧盖形螺帽，将防鼻息食品罩固定到位。不要过分拧紧盖形螺帽。



安装防鼻息食品罩

Hatco 智能饮水机的质保期为自购买之日起的 1 年内或是 Hatco 发货之日起的 18 个月内，二者以先发生的日期为准。

如果智能饮水机在质保期内出现问题，请按以下方式操作：

联系本地 Hatco 经销商

当联系 Hatco 经销商提供服务帮助时，请将以下信息提供给经销商，以确保得到及时处理：

- 设备型号
- 序列号
- 设备的具体问题
- 购买日期
- 企业名称
- 发运地址
- 联系人姓名和电话号码

Hatco 经销商会为您：

- 提供所需要的更换零部件
- 向 Hatco 提出质保索赔以供处理

非质保期故障

如果您的设备在非质保期内出现故障需要提供帮助，请联系就近的HATCO授权服务机构。

查找就近的HATCO授权服务机构：

- 打(0512) 6732-5091电话联系HATCO服务部门。
- 发邮件到infocn@hatcocorp.com联系HATCO服务部门。

全球有限质保

1. 产品质保

赫高保证其生产的产品（下称“本产品”）不存在材料和工艺缺陷，在按照赫高的说明书安装和维护的情况下，自购买之日起1年内（用户必须书面且保养）或自赫高出厂之日起18个月内，设备可以保证正常工作。客户必须通过在赫高的官网上完成本产品的注册来确定产品的购买日期，或是经由赫高判断进而认可的其他方式。

赫高保证在下述时间内及条件下，下列部件自购买之日起（符合上述条件）起不存在材料和工艺缺陷（条件如下）：

a) 保修期为两（2）年的部件：

- 履带式烤面包机加热器（金属铠装）
- 保温抽屉加热器（金属铠装）
- 保温抽屉的抽屉滚轴和滑轨
- S食品保温器加热器（金属铠装）
- 保温陈列柜加热元件（金属铠装、空气加热）
- 保温柜加热元件（金属铠装、空气加热）
- 保温汤锅加热元件—HWB系列（金属铠装）

b) 保修期为五（5）年的部件：

- 3CS和FR水箱

c) 保修期为十（10）年的部件：

- 电动瞬时加热器的水箱
- 煤气瞬时加热器的水箱

d) 保修期为九十（90）天的部件：

- 可更换零件

上述质保为赫高独家提供，并代替任何明示或隐含的质保，包括但不限于侵犯某个特定用途、专利或其他知识产权的适够性或实用性的银汉质保。在没有特定说明的情况下，上述质保不包括：带涂层白炽灯泡、日光灯、保温加热灯泡、带涂层卤素灯泡、卤素加热灯泡、氙气灯泡、LED光管、玻璃组件和保险丝；由于结垢、化学腐蚀或严寒造成的瞬时加热器水箱、翅片管式换热器或其他水加热设备的故障；或产品使用不当、擅自改动或误用、安装不当，或电压不正确。

2. 修复和损坏限制

本文所述赫高责任以及对用户的独家修复补偿义务仅限于在上述保修期内提出索赔，由赫高或赫高授权的服务机构负责更换新零件或产品或对原零件或产品进行维修。赫高有权接受或拒绝任何此类全部或部分的索赔。在此有限质保规定中，“翻新”是指本产品的部分或整机已经被赫高或赫高授权的服务代理机构修复至原有的产品规格。未经赫高事先书面批准，赫高不接受任何产品的退回，经过赫高同意的产品退回，其相关费用均由用户独自承担。在任何情况下，对于因故或意外而引起的损失，包括但不限于人工费用，或因产品的使用，或不会用，或产品隶属或成为其他产品的一部分而造成的利润损失，赫高将不予负责。

Register your unit online!

See IMPORTANT OWNER INFORMATION
section for details.

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