

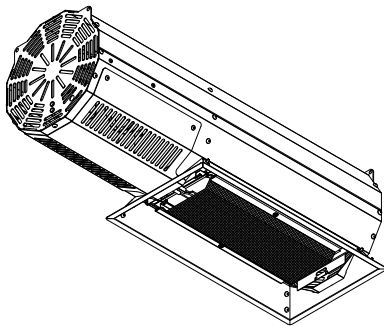
# the Habanero

## RADIANT PATIO HEATER

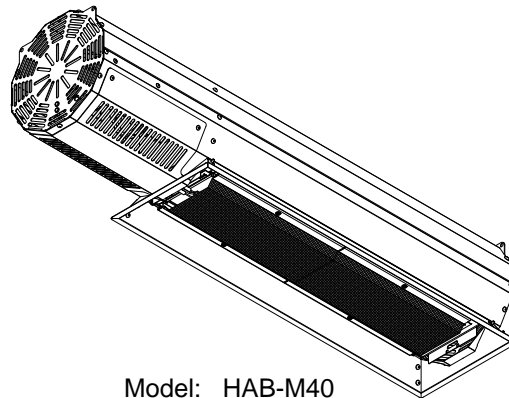
"A PATIO HEATER LIKE NO OTHER"

### Series HAB

#### Manual for Installation, Operation & Maintenance



Model: HAB-M20



Model: HAB-M40

Model: HAB-M50



#### **DANGER**

If you smell gas:

1. Shut off gas to appliance.
2. Extinguish any open flame.
3. If odour continues, immediately call your gas supplier.



#### **FOR YOUR SAFETY**

Do not store or use gasoline or other flammable vapours and liquids in the vicinity of this or any other appliance. An LP cylinder not connected for use shall not be stored in the vicinity of this or any other appliance.



#### **\* For Use Indoor/Outdoor Commercial and Outdoor Residential Use Only**

\* The HABANERO heater has been approved for indoor use in non-residential applications for Natural Gas units ONLY



**WARNING:** Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

#### **IMPORTANT**

**OWNER:** Please retain these instructions for future reference.

**INSTALLER:** The installer or seller must leave these instructions with the owner. Only those who are certified to do so should perform service on these heaters.





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## Caution and General Safety

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CAUTION: FIRE OR BURN INJURY HAZARD
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- At all times maintain clearance to combustible materials as further specified in this manual. Failure to do so can result in serious fire hazard.
- Never operate heaters in atmosphere containing flammable vapours or combustible dusts.
- This heater is equipped with an electronic and automatic ignition device. Do not attempt to light the burner by hand. Failure to comply can result in a serious fire and personal injury hazard.
- Certain materials, when stored under this heater are subjected to radiant heat can soften, distort or otherwise be damaged, special care should be taken of plastic materials
- Appliance surfaces, other than the obvious flame and emitter surfaces, attain elevated temperatures during operation. Do not touch the heater head during operation. Everyone should be alerted to this hazard to avoid burning.
- Children and adults should be alerted to the hazards of high surface temperatures and should stay away to avoid burns or clothing ignition.
- Young children should be strictly supervised when in the area of this heating appliance. Playing or running around the structure should be strictly forbidden.
- Clothing or other flammable materials should not be hung on or near this heater.
- Any guard or other protective device removed for servicing the heater must be replaced prior to operating the heater.
- Installation and repair should be done by a qualified service person. The heater should be inspected before use and at least annually by a qualified service person.

### - Safety Requirements

1. Never locate the heater directly below electrical lines, gas lines or sprinkler systems.  
**NOTE:** Sprinkler head heat fuse link performance may alter with age.
2. Do not locate heater too close to vinyl or plastic wall coverings. These materials may discolour or soften well before they reach combustible limits.
3. The heater requires a minimum clearance from combustible materials. See the Clearance to Combustible Materials section for specific requirements.
4. Always allow room for maintenance purposes.
5. The heater aspirates air for combustion. Do not locate heater where there are severe draft conditions or airflow restrictions to the burner.

## Code Requirements

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### - Installation Codes

Installations must comply with local building codes, or in their absence, the latest edition of the national regulations and procedures as listed below.

### - Gas Codes

Heaters must be installed only for use with the type of gas appearing on the rating plate. The installation must conform with local codes or, in the absence of local codes, with the *National Fuel Gas Code, ANSI Z223.1/NFPA 54* in the US, *Natural Gas and Propane Installation Code, CSA B149.1*, or *Propane Storage and Handling Code B149.2* in Canada.

This heater maybe approved for either indoor or outdoor installation. Not for use in residential dwellings, refer to Rating plate.

### Gas Supply Lines

Gas supply pipe sizing must be in accordance with the National Fuel Gas Code, ANSI Z223.1/NFPA 54 in the US and CAN/CGA B149.1 and B149.2 *Installation Codes* in Canada.

### - Electrical Codes

All heaters must be electrically grounded in accordance with local codes or, in the absence of local codes, with the *National Electric Code, ANSI/NFPA 70*, or the *Canadian Electric Code, CSA C22.1*.

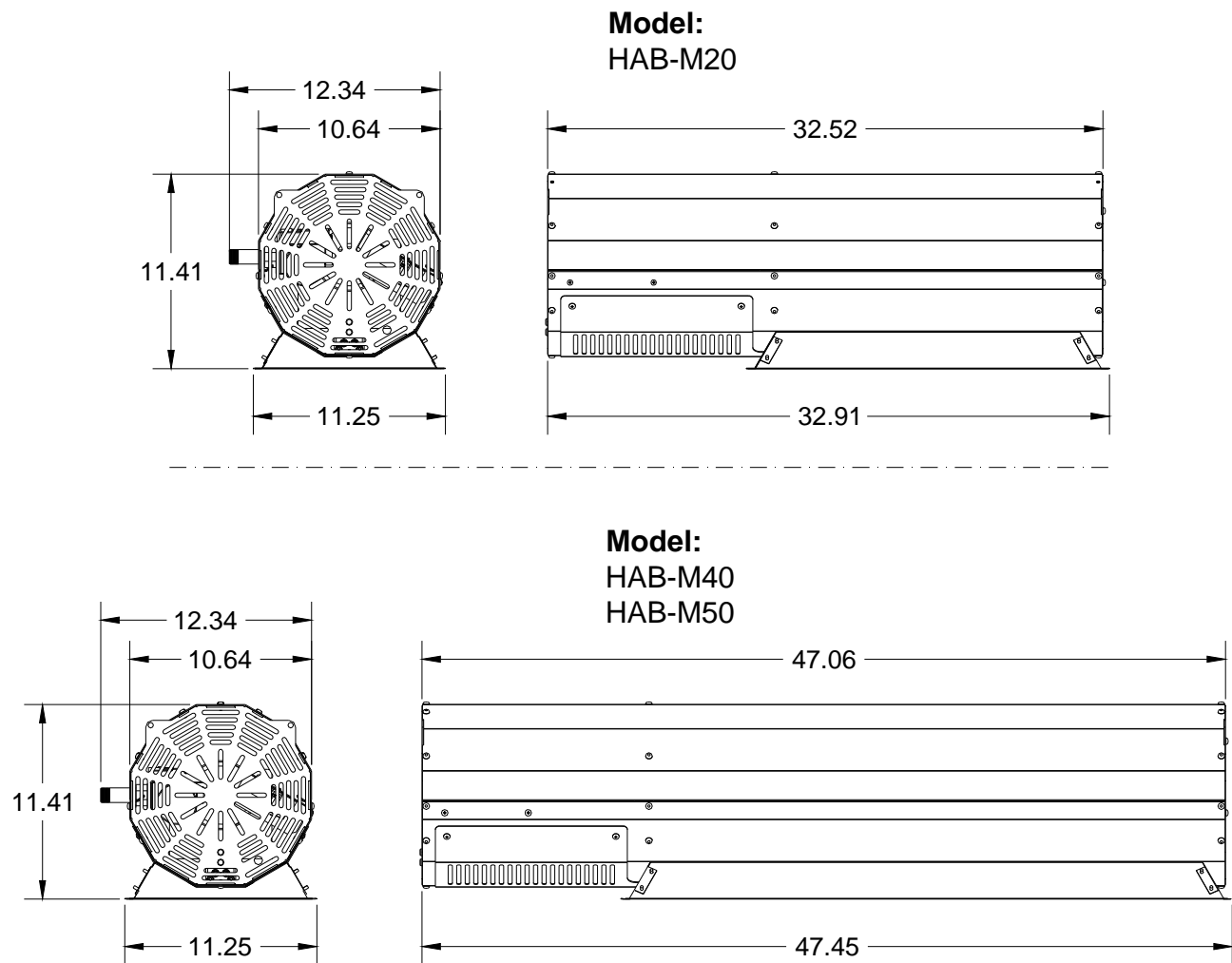
**WARNING!**

This heater is NOT approved for any indoor Residential application. If in doubt of your application consult with your local fire marshal or gas authority having jurisdiction. Indoor spaces include but are not limited to attached garages, solariums, living quarters etc.

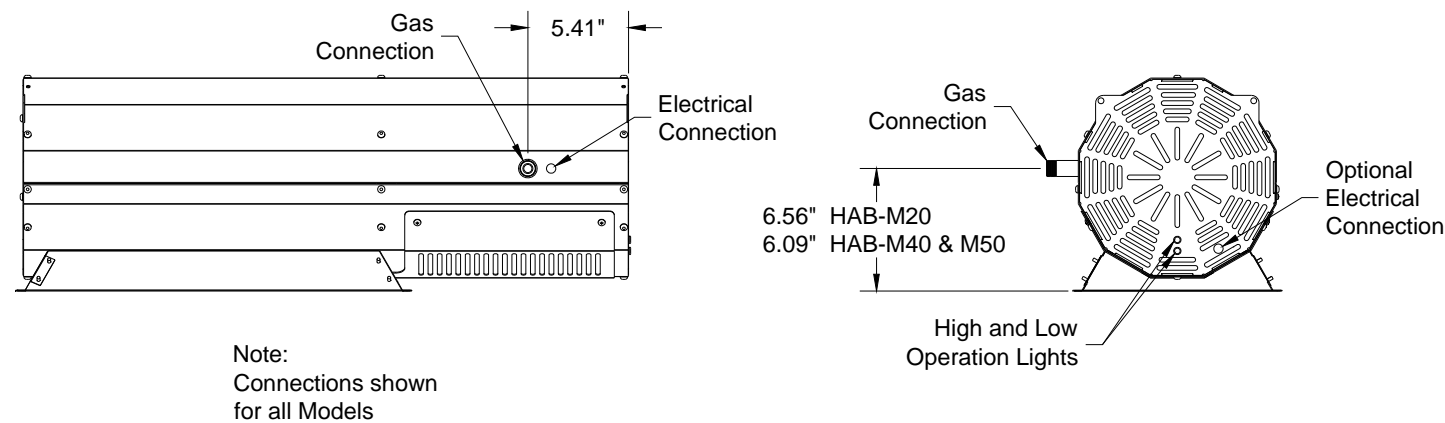
# Specifications

## - Dimensional Details:

**Note:** All dimensions are in inches.



## - Gas and Electrical Connections:



**Important**

Installation or repair should only be done by a qualified service person. The heater should be inspected before use and at least annually by a qualified service person.

The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of ½ psig (3.5 kPa)

The appliance must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than ½ psig (3.5 kPa)

**- Power & Gas Specifications****Gas Supply (Natural Gas ONLY)**

	<b>HAB-M20</b>	<b>HAB-M40</b>	<b>HAB-M50</b>
<b>Rated Input</b>			
High Fire Rate	20,000	40,000	50,000
Low Fire Rate	15,000	32,000	42,000
<b>Inlet Pressure</b>			
Maximum	14.0" W.C.	14.0" W.C.	14.0" W.C.
Minimum	7.0" W.C.	7.0" W.C.	7.0" W.C.
<b>Manifold Pressure</b>			
Maximum	6.2" W.C.	6.3" W.C.	6.3" W.C.
Minimum	3.0" W.C.	4.5" W.C.	4.5" W.C.
<b>Inlet Connection</b>	½" Male NPT		

**Electrical Supply**

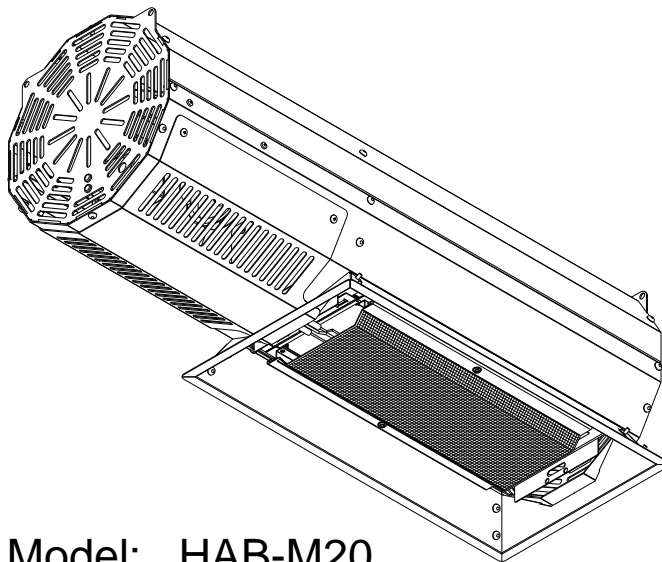
Alternating current AC, voltage; 24 V, 60 Hz with L, N and Ground (GND).

**Note:** 24V transformer not supplied.

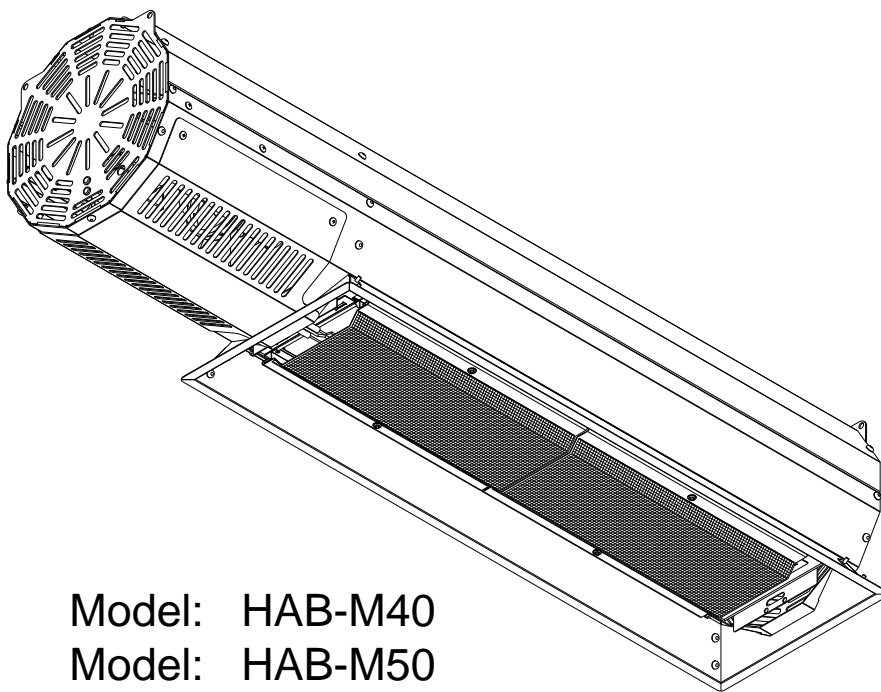
## Equipment

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- **Standard Equipment Included:**



Model: HAB-M20



Model: HAB-M40

Model: HAB-M50



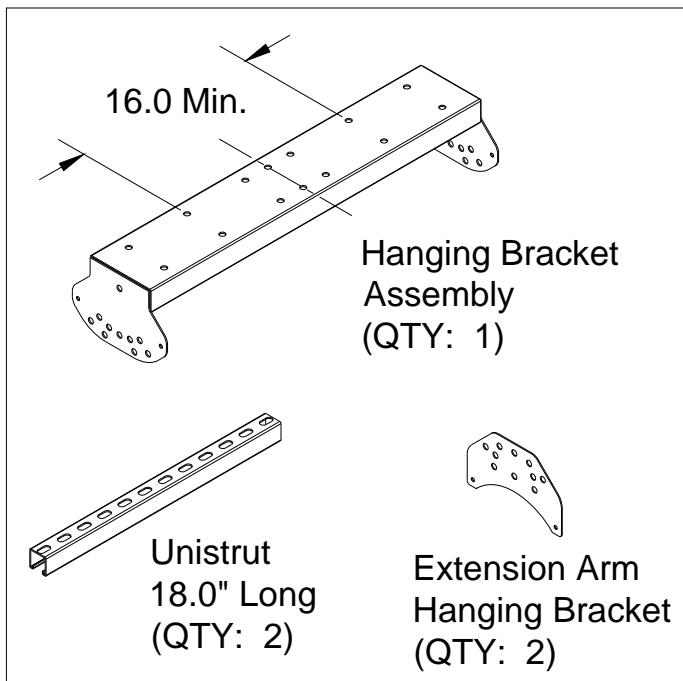
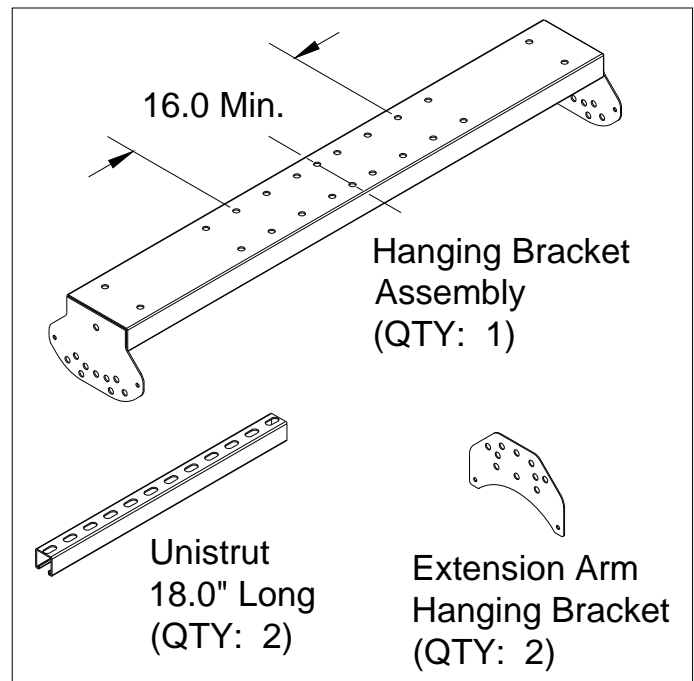
**- Optional Equipment:**

The following bolts are **approved** for installing this heater with the hanging brackets.

- 3/8" X 3" long Lag Bolts (minimum 4 per heater) with minimum 16.0" mounting spacing on centres.
- 3/8" X 3" Anchor Bolts (minimum 4 per heater) with minimum 16.0" mounting spacing on centres.

Optional Standard Ceiling / Wall Mounting Kits

HAB-M20

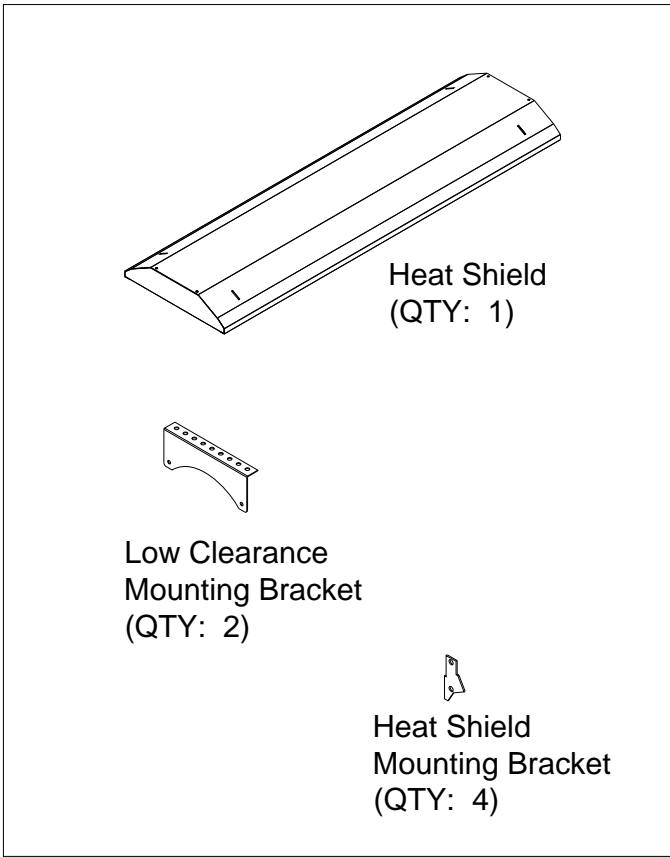
HAB-M40  
HAB-M50

Equipment

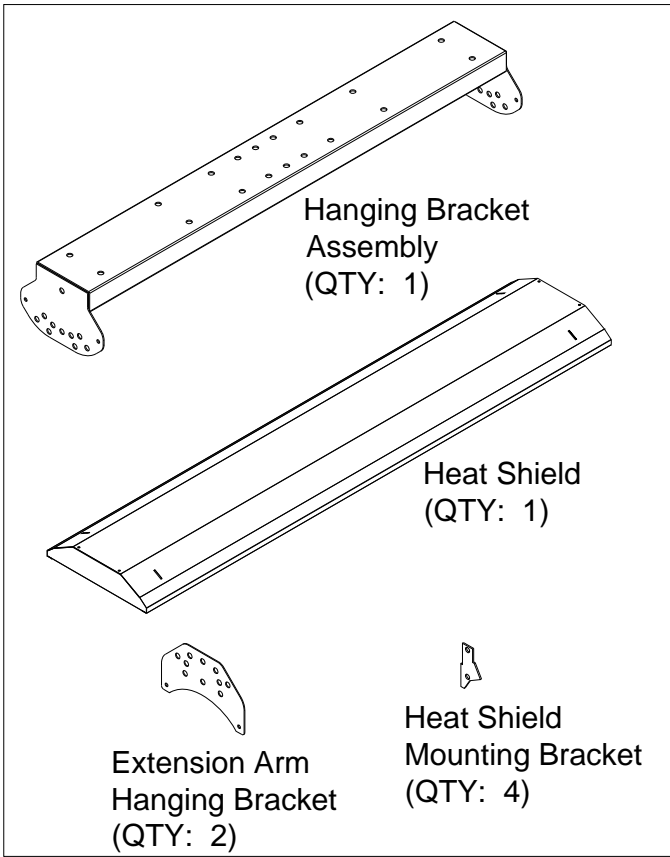
Optional Equipment continued:

Optional Low Clearance Ceiling Mounting Kits

HAB-M20

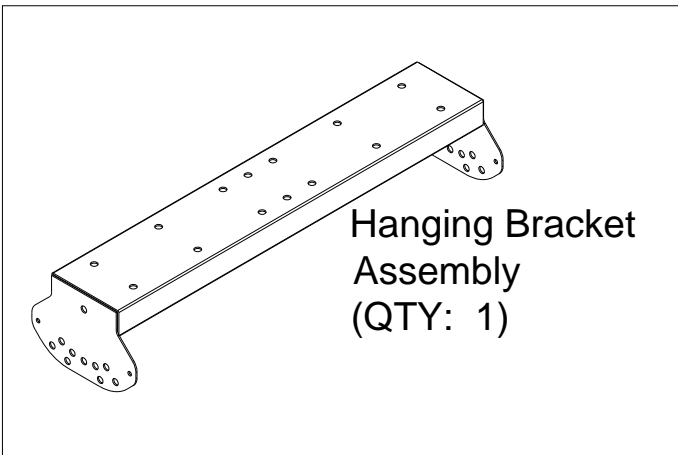


HAB-M40  
HAB-M50

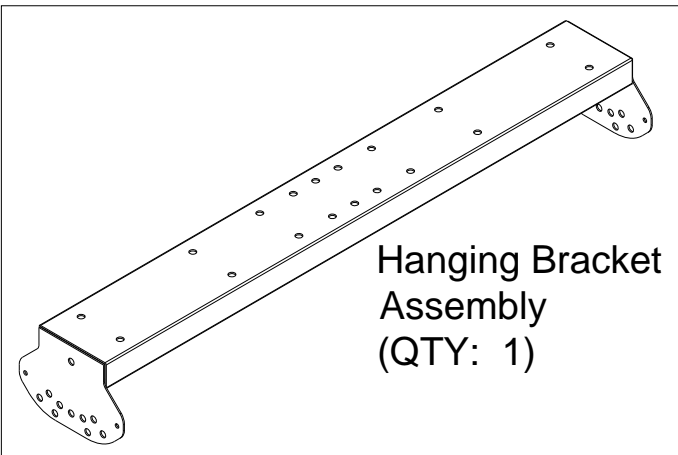


Optional Low Clearance **NON COMBUSTIBLE** Ceiling Mounting Kits

HAB-M20



HAB-M40  
HAB-M50



## Installation Instructions

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### - Clearance to Combustibles

**A general clearance of 18" (0.5 m) in every direction** is recommended for servicing only around each Burner, also to ensure adequate air flow in and around the Heating System.

The stated clearance to combustibles represents a surface temperature of 90°F (50°C) above room temperature. Building materials with low heat tolerance (**such as plastics, vinyl siding, canvas, tri-ply, etc...**) maybe subject to degradation at lower temperatures. **It is the installer's responsibility to assure that adjacent materials are protected from degradation.**

**In addition to this it is very important to observe the minimum clearance to combustibles at all times to avoid any possibility of property damage or personal injury.**

Table below lists the minimum clearance to combustible materials for various installation configurations. Additional clearance may be required for glass, painted surfaces and other materials which maybe damaged by radiant or convective heat.

*Combustible materials are considered to be wood, compressed paper, plant fibres, plastics, Plexiglas or other materials capable of being ignited and burned. Such materials shall be considered combustible even though flame-proofed, fire-retardant treated or plastered.*

**Note with an ambient temperature of 70°F the surface temperatures at the clearance distances listed below could reach 160°F, Care should be taken with placement of plastic or vinyl in the proximity of the heater as they tend to distort and soften at these temperatures.**

Adequate clearance to sprinkler heads must be maintained.

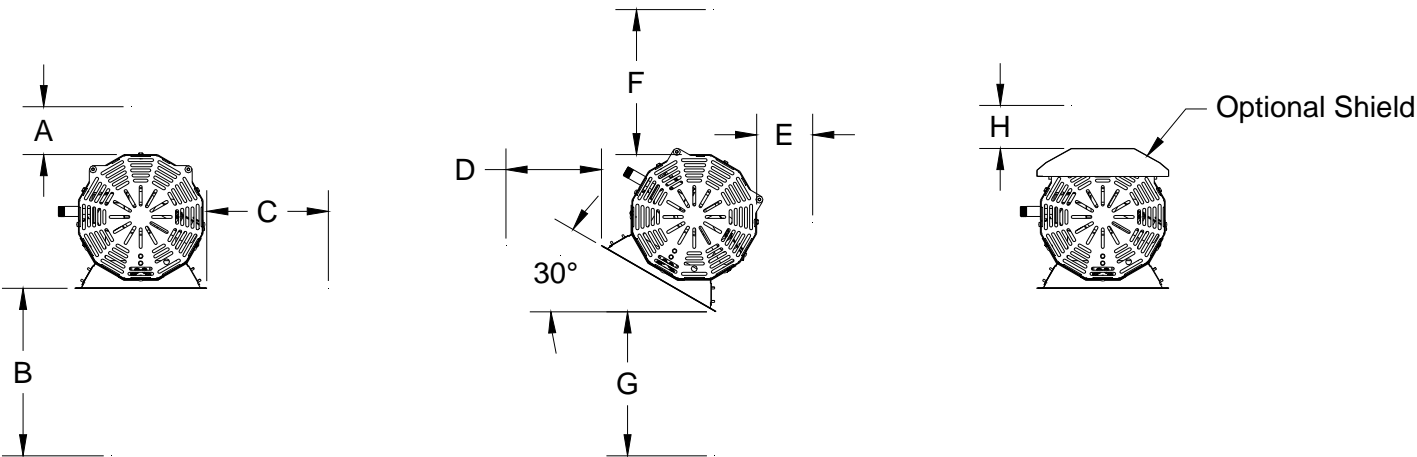
<b>NOTE:</b> Sprinkler head heat fuse link performance may alter with age.
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<b>NOTE:</b> Some materials deteriorate or soften at sustained temperatures below 160°F. Consult material manufacturer for recommendations
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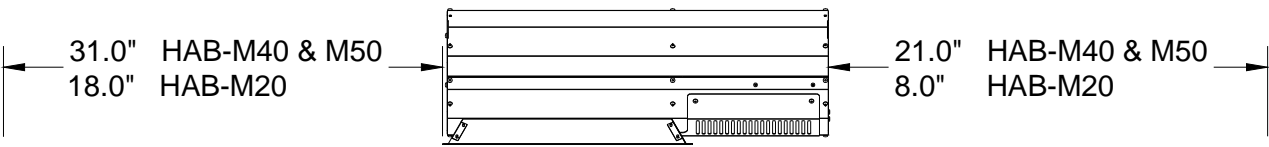
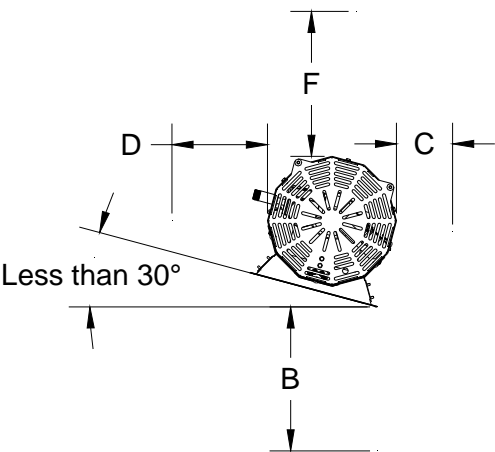
Installation Instructions

Clearance to Combustibles Table

Model #	Dim A	Dim B	Dim C	Dim D	Dim E	Dim F	Dim G	Dim H
HAB-M20	9	47	17	29	8.5	9	38	3
HAB-M40	13	75	34	48	10	16	66	9
HAB-M50	13	75	34	48	10	16	66	9



Less than 30° mounting angle



Dimensions in inches

## Installation Instructions

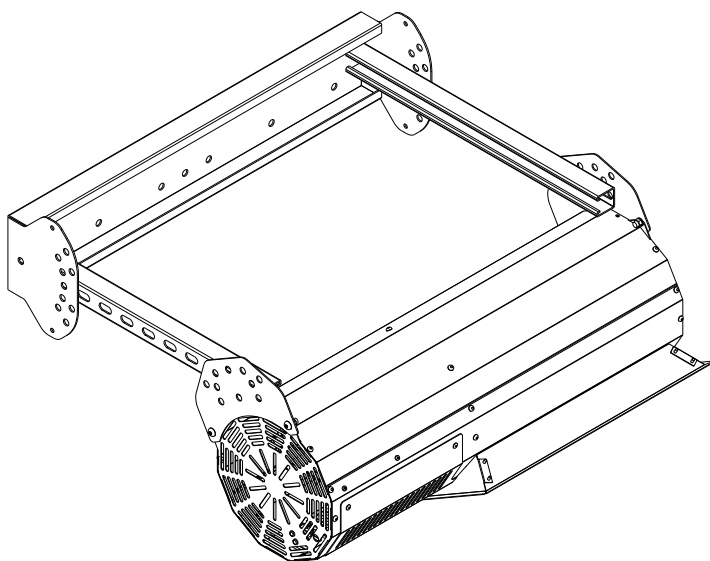
### - Installation Sequence:

The Habanero can be mounted either horizontally or at an incline of up to 30° as shown in the clearance to combustibles table (previous section). A review of the job site will usually indicate a logical installation location and order. However, time and expense can be saved if installation is begun at the most critical dimension, watching for interference from overhead beams etc. Figure below provides a general overview of the components utilized in the installation, as well as their general relationship.

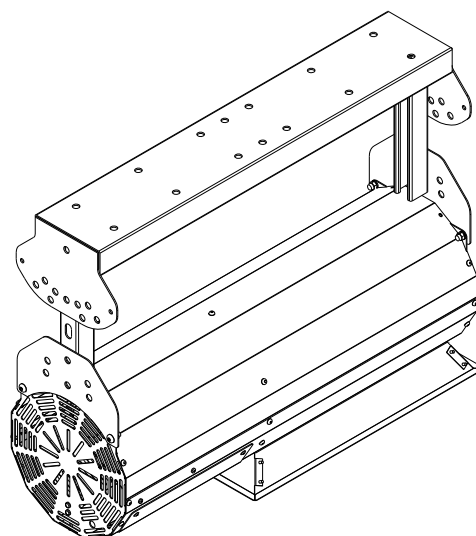
**Caution:** In areas where seismic forces are present extra / additional bracing may be required.

**Caution:** The heater must have a minimum clearance of 8 feet below, but less than 8 feet hanging application can be considered as long as it meets local codes and minimum clearance to combustibles.

Wall or Wood Post  
Hanging Option



Ceiling Hanging  
Option



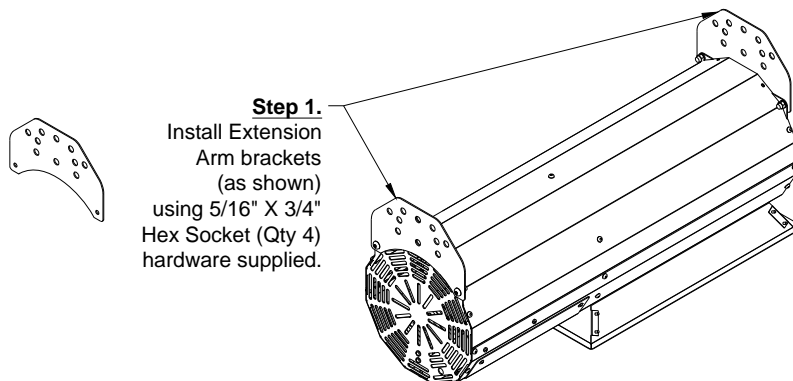
## Installation Instructions

### - Ceiling / Wall Installation

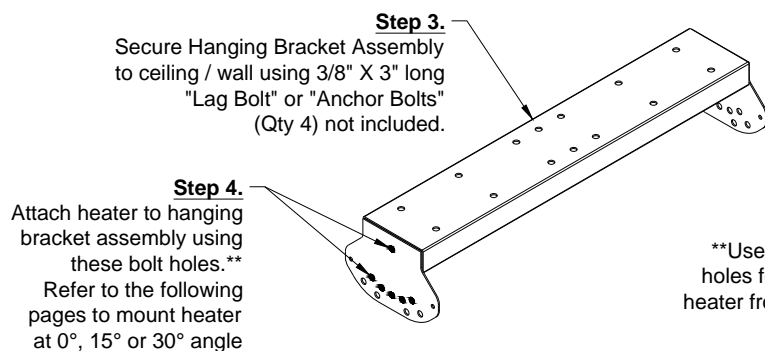
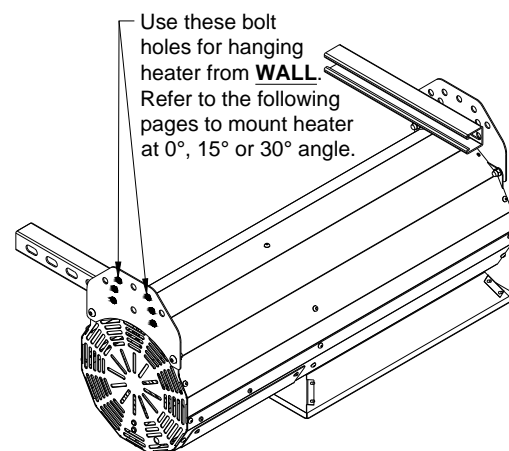
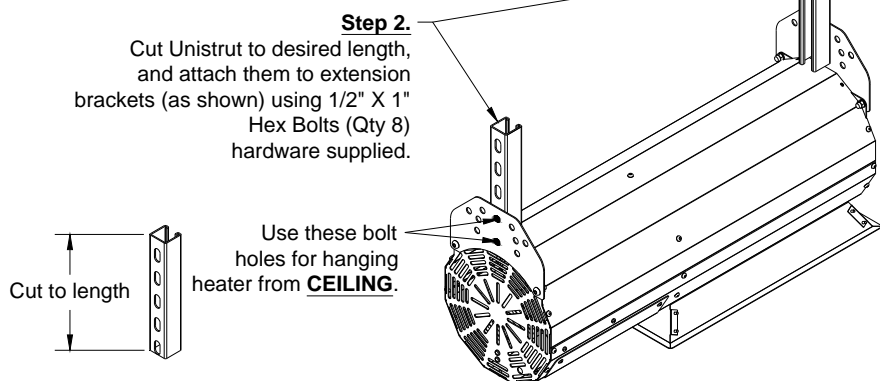
#### Using Optional Standard Ceiling / Wall Mounting Kits

The mounting kits have provision for **0°, 15° and 30° mounting angles** using the optional mounting brackets. Figure below shows the possible angle configurations to install at desired angle.

#### Ceiling Installation for HAB-M20, HAB-M40 and HAB-M50.



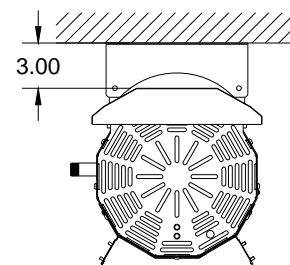
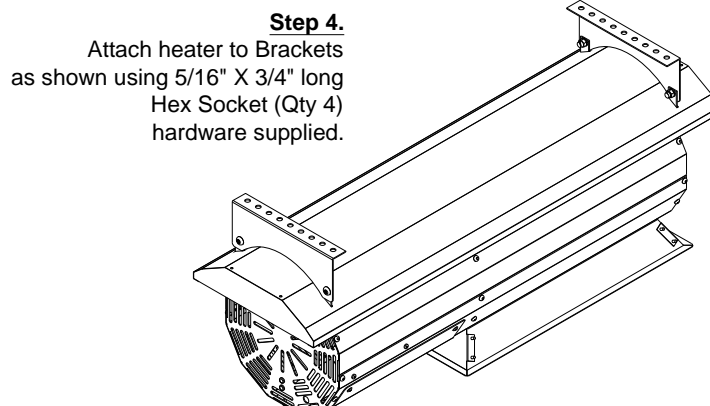
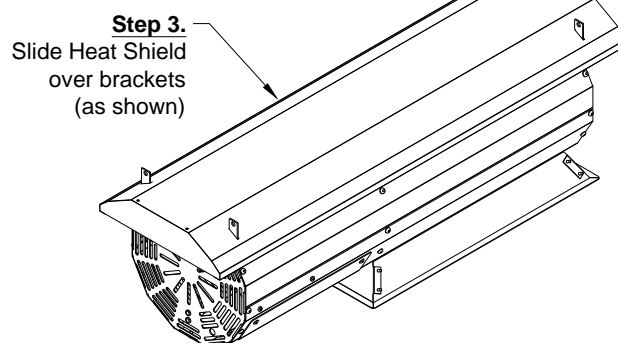
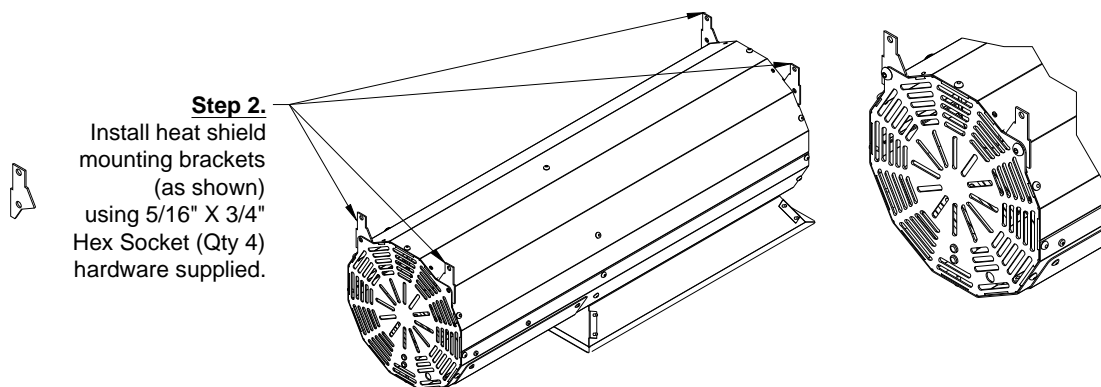
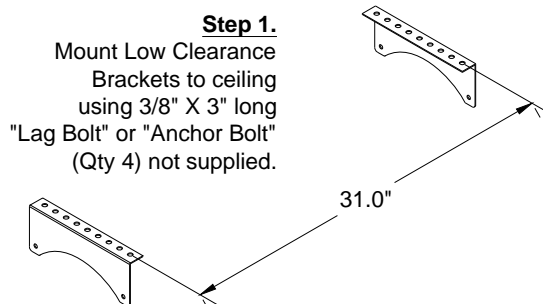
Note:  
Minimum clearances to combustibles must be maintained as per clearance to combustibles table when cutting Unistrut.



\*\*Use these bolt holes for hanging heater from **WALL**.

## Installation Instructions

## Using Optional Low Clearance Ceiling Mounting Kit HAB-M20 Only

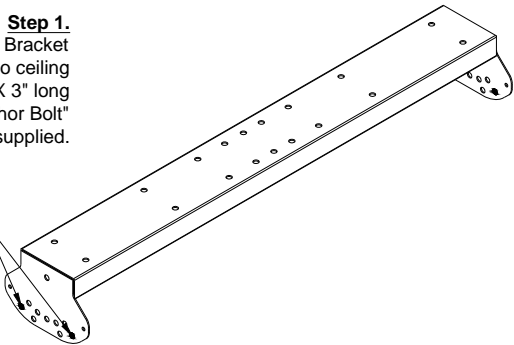


# Installation Instructions

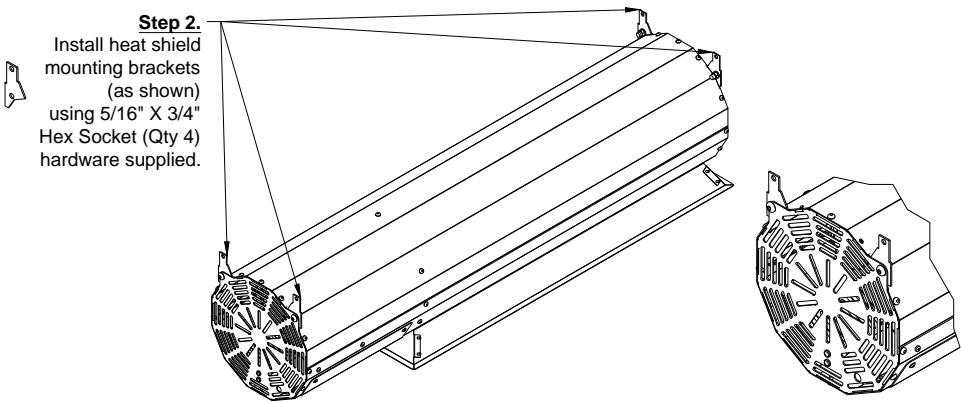
## Using Optional Low Clearance Ceiling Mounting Kit HAB-M40 and M50 Only

**Step 1.**  
Mount Hanging Bracket  
Assembly to ceiling  
using 3/8" X 3" long  
"Lag Bolt" or "Anchor Bolt"  
(Qty 4) not supplied.

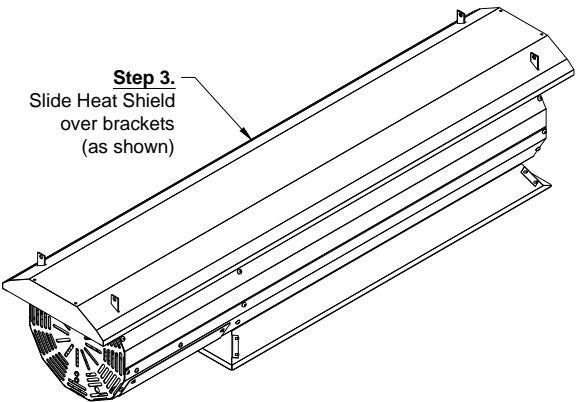
Use these  
two bolt holes  
to attach bracket  
to extension arm  
refer to **step 4.**



**Step 2.**  
Install heat shield  
mounting brackets  
(as shown)  
using 5/16" X 3/4"  
Hex Socket (Qty 4)  
hardware supplied.

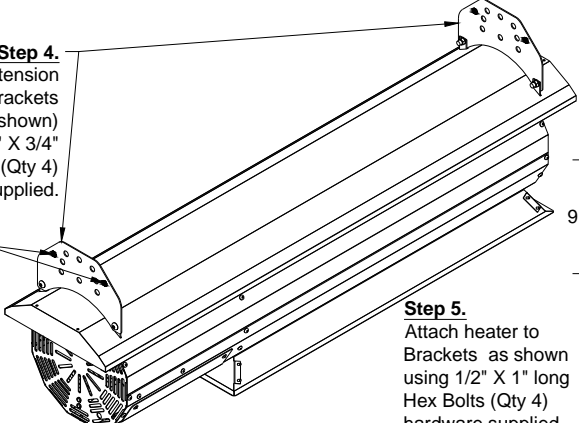


**Step 3.**  
Slide Heat Shield  
over brackets  
(as shown)

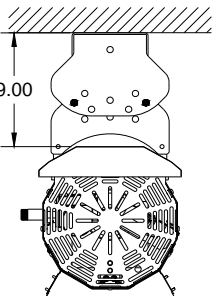


**Step 4.**  
Install Extension  
Arm brackets  
(as shown)  
using 5/16" X 3/4"  
Hex Socket (Qty 4)  
hardware supplied.

Use these  
two bolt holes  
to attach heater  
to Hanging bracket  
assembly in **step 1.**



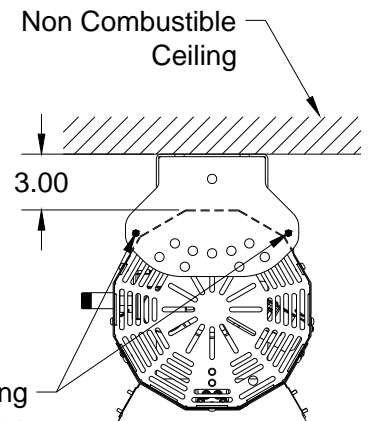
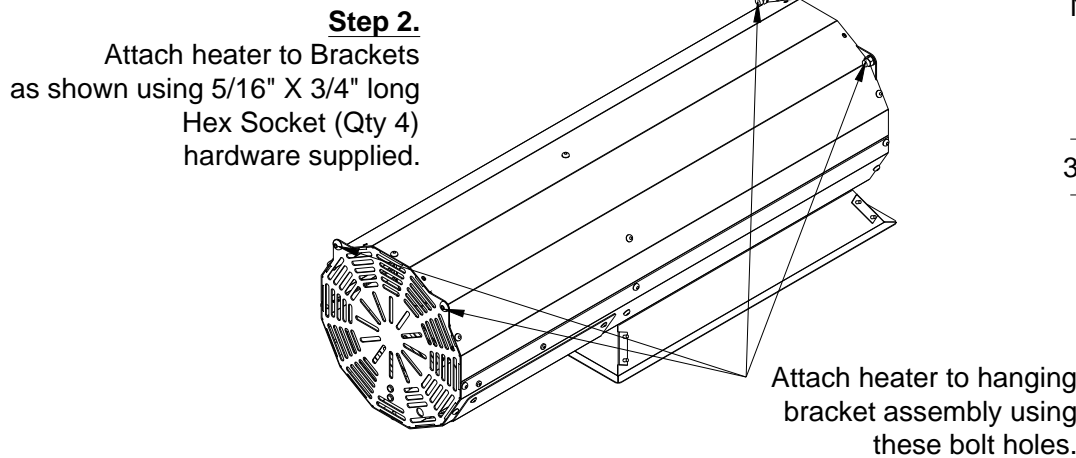
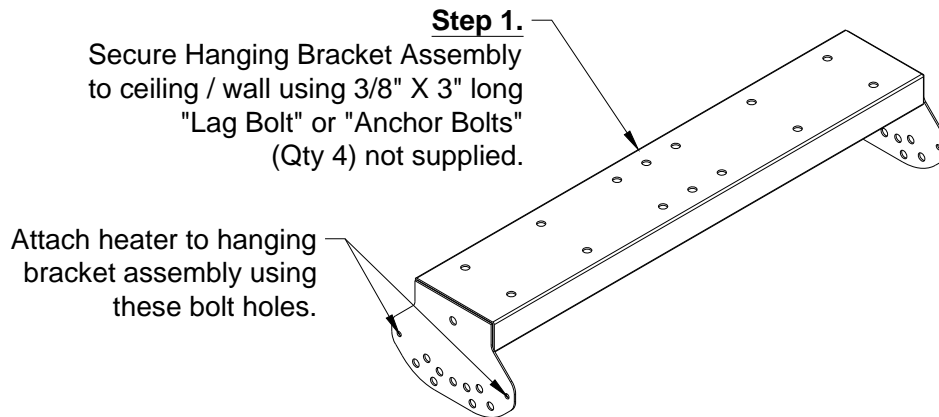
**Step 5.**  
Attach heater to  
Brackets as shown  
using 1/2" X 1" long  
Hex Bolts (Qty 4)  
hardware supplied.



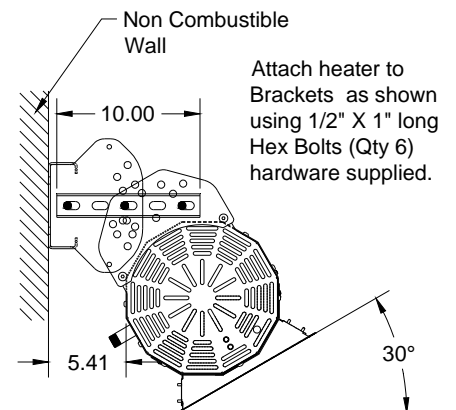
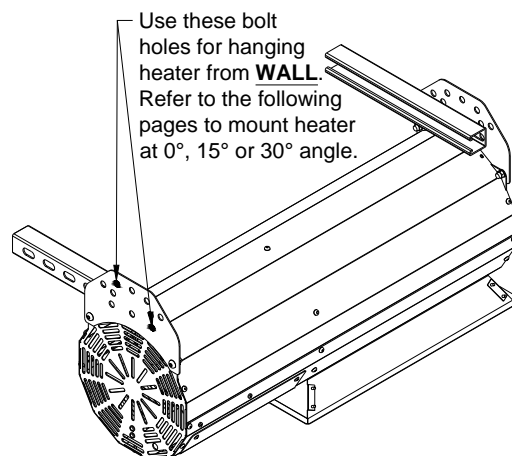
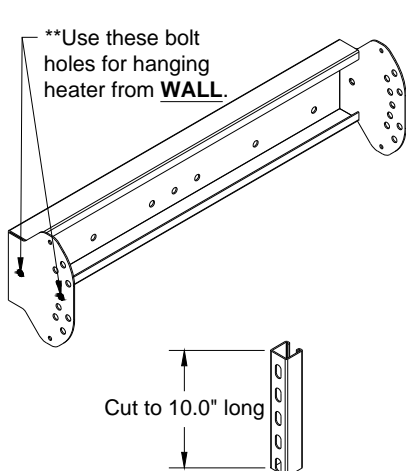


## Installation Instructions

### Using Optional Low Clearance NON COMBUSTIBLE Ceiling Mounting Kits (all models).



### Installing Heater on a NON COMBUSTIBLE WALL (all models).

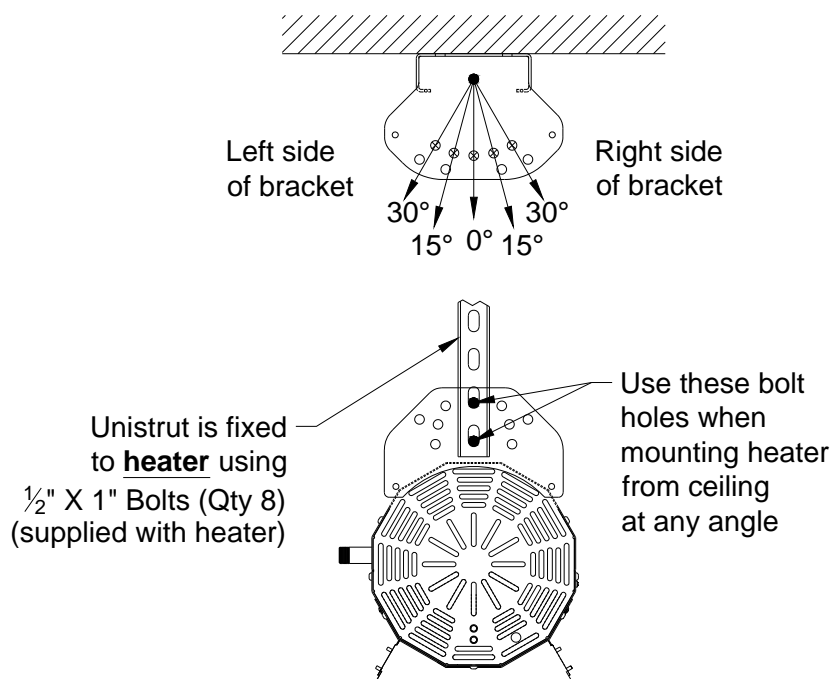


## Installation Instructions

### - Angle Mounting Configurations:

The mounting kits have provision for **0°, 15° and 30° mounting angles** using the optional mounting brackets. Figure below shows the possible angle configurations to install at desired angle.

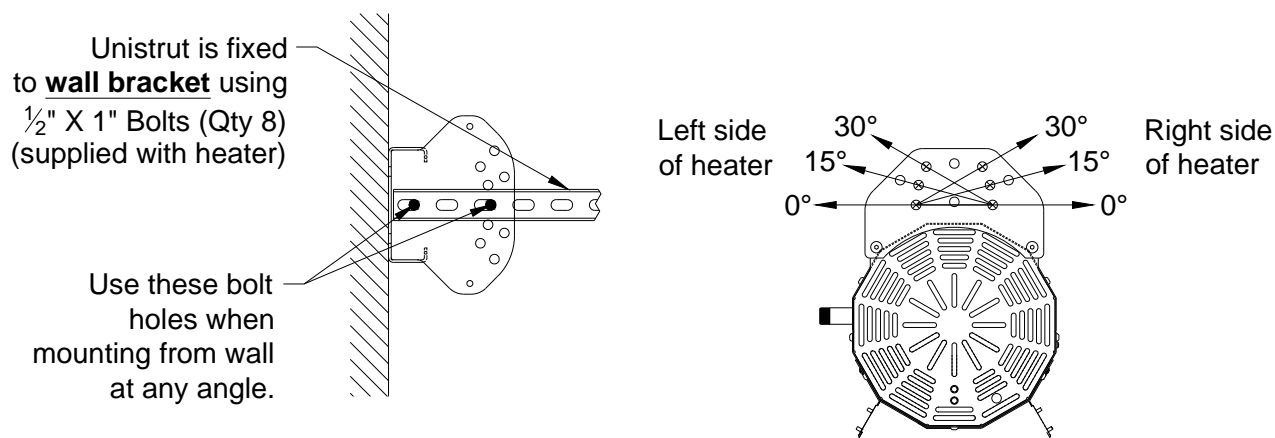
#### Ceiling Mount / Hanging Configuration



Note:

Other clearances must be maintained as per clearance to combustibles table.

#### Wall Mount / Hanging Configuration



Note:

Other clearances must be maintained as per clearance to combustibles table.

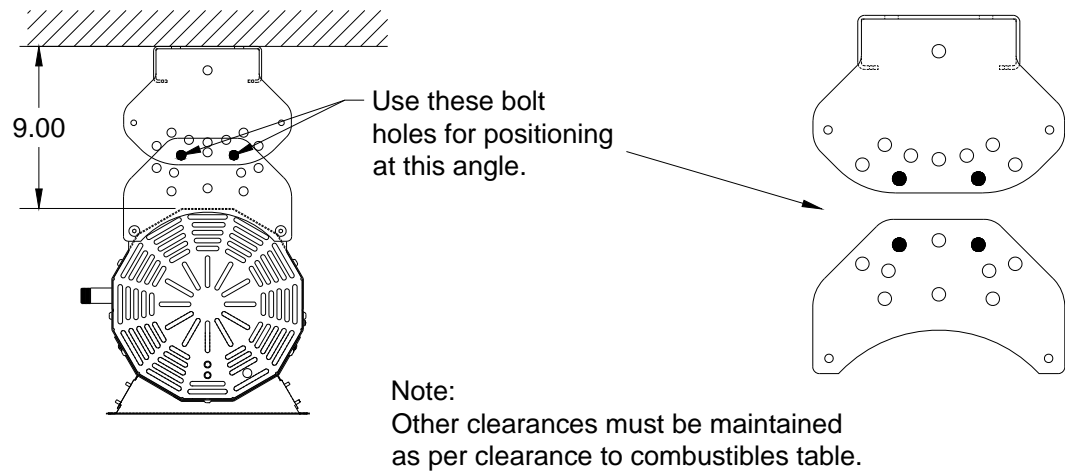
# Installation Instructions

**- HAB-M20 Installation:**

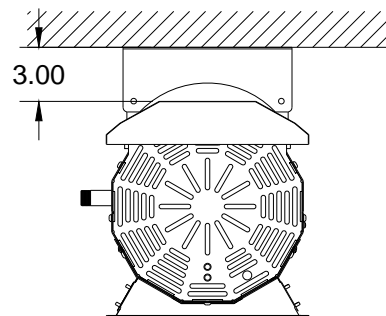
**Mounting heater at 0° from horizon.**

The figure below shows the minimum mounting distances to achieve the clearance to combustibles.

**Minimum Ceiling Mount Distance**



**Minimum Ceiling Mount Distance using Optional Shield**



Note:  
Other clearances must be maintained as per clearance to combustibles table.

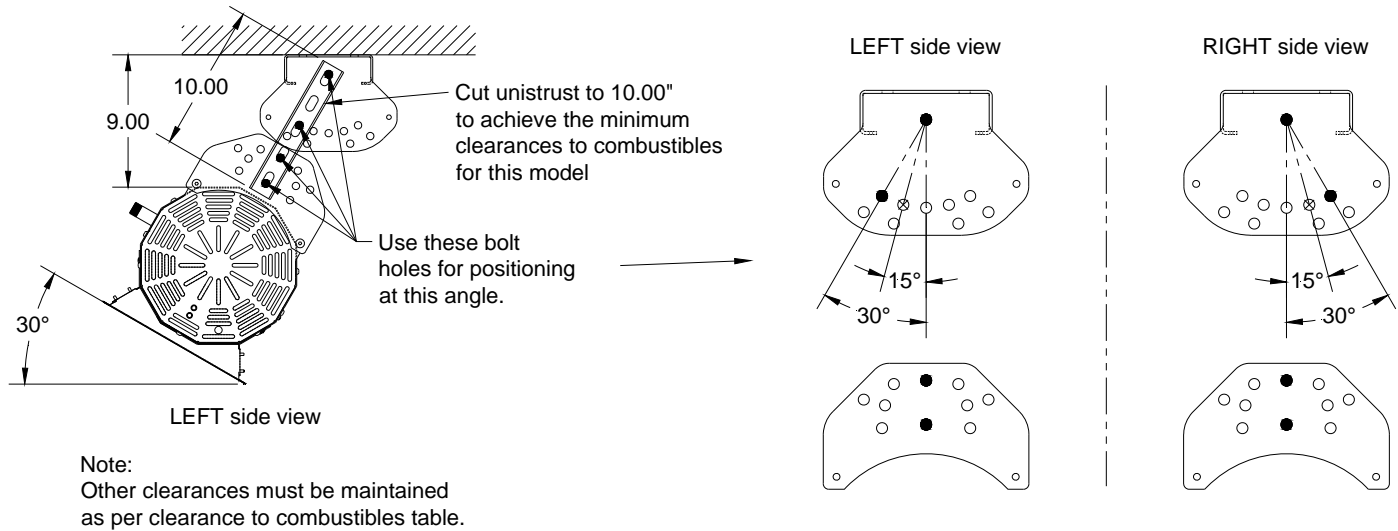
## Installation Instructions

### HAB-M20 Installation continued:

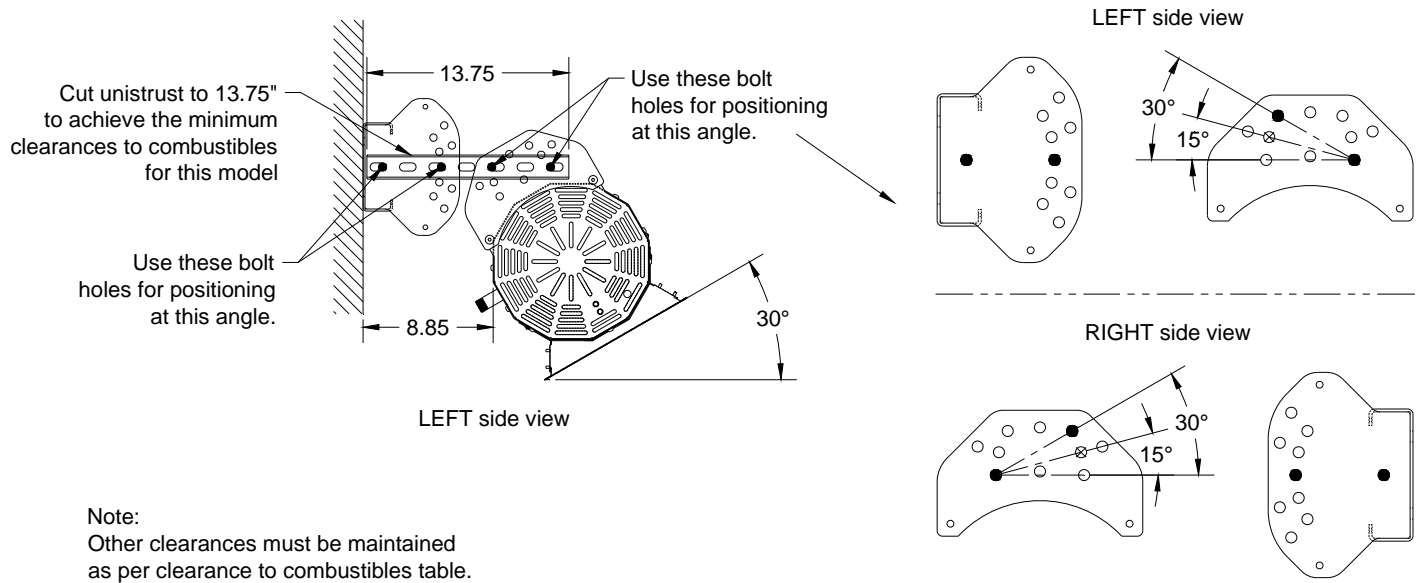
#### Mounting heater at 30° from horizon.

The figure below shows the minimum mounting distances to achieve the clearance to combustibles.

#### Minimum Ceiling Mount Distance



#### Minimum Wall Mount Distance



**Note: When assembling hanging brackets the maximum angle the heater can be at is 30° from horizon.**

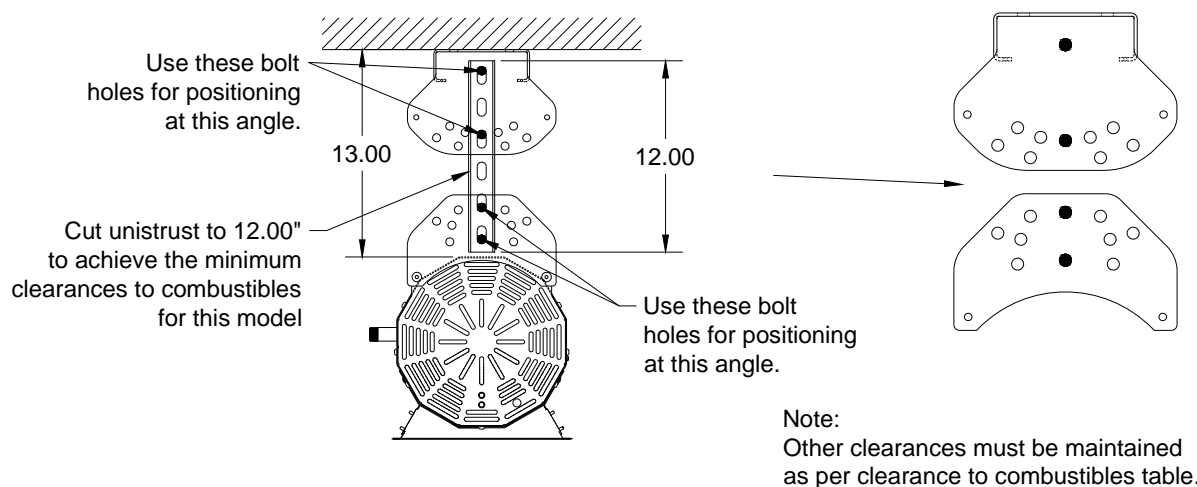
## Installation Instructions

### - HAB-M40 and M50 Installation:

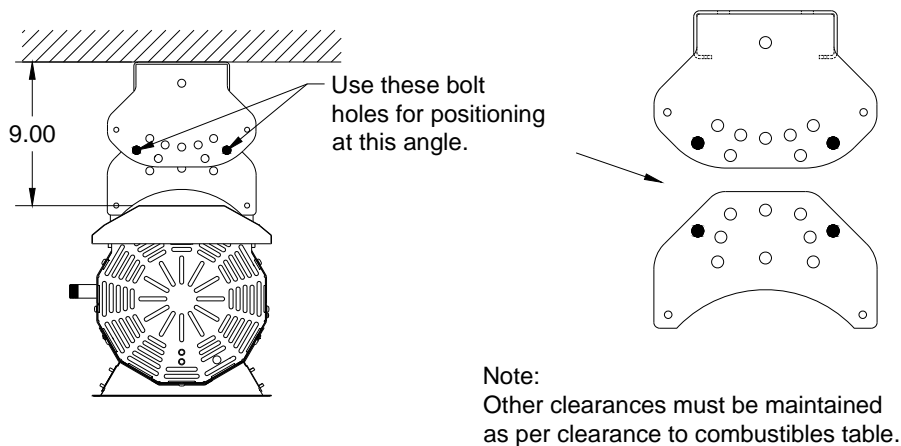
#### Mounting heater at 0° from horizon.

The figure below shows the minimum mounting distances to achieve the clearance to combustibles.

#### Minimum Ceiling Mount Distance



#### Minimum Ceiling Mount Distance using Optional Shield



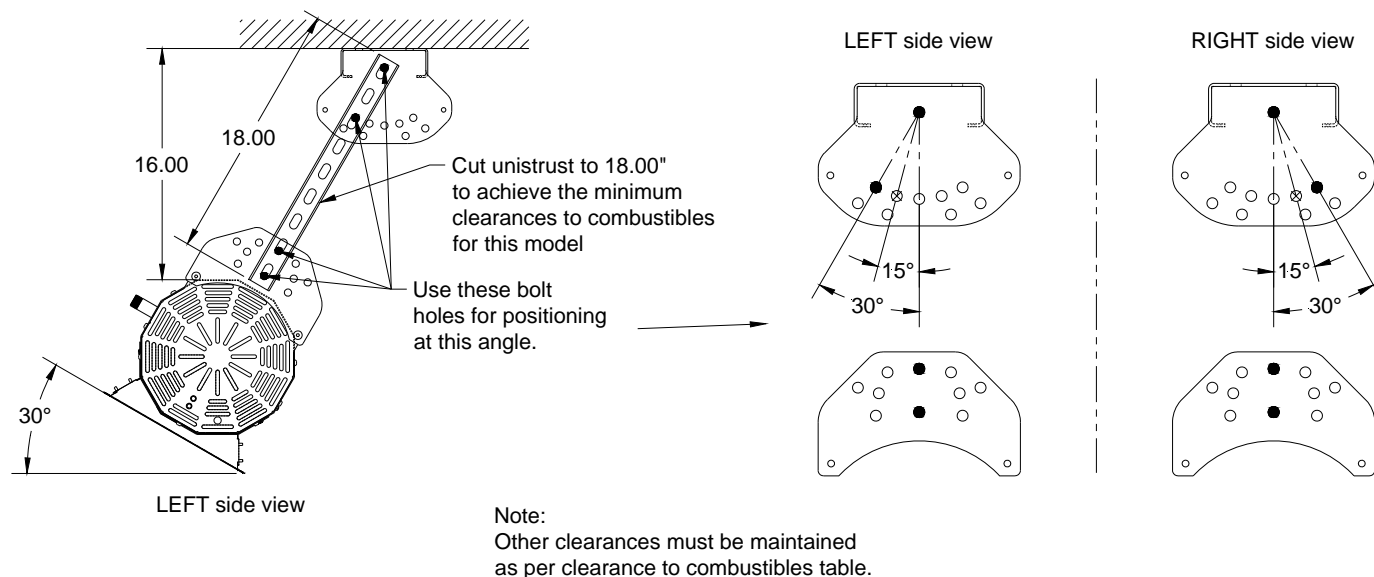
## Installation Instructions

### HAB-M40 and M50 Installation continued:

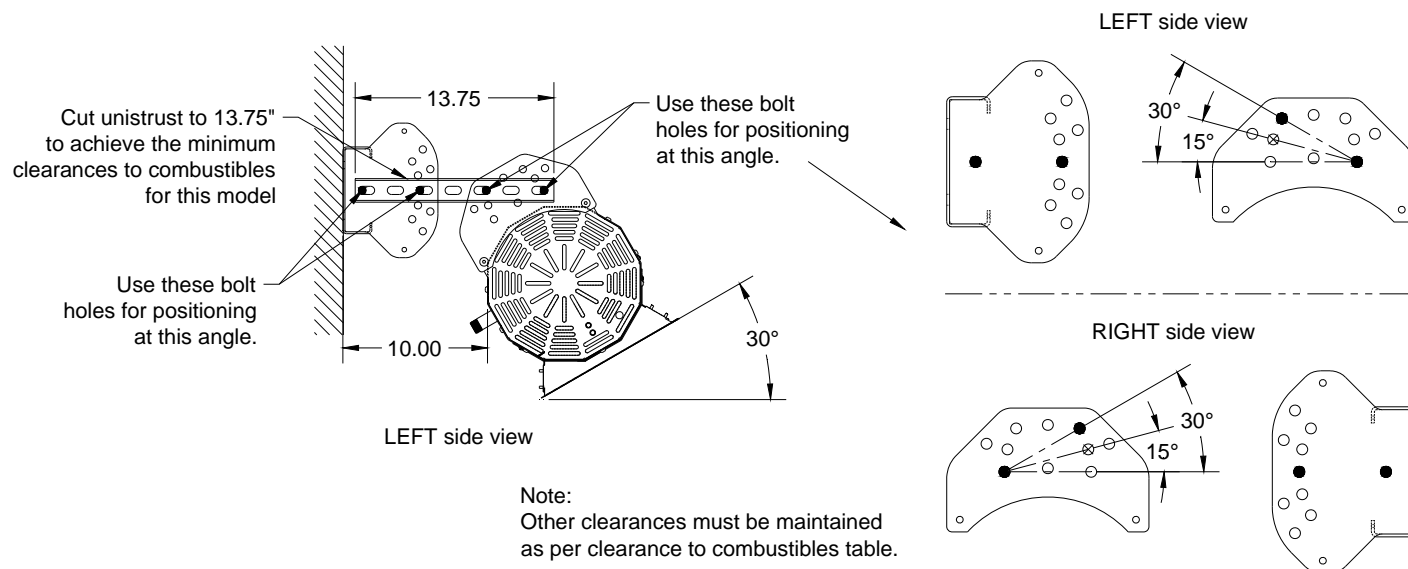
#### Mounting heater at 30° from horizon.

The figure below shows the minimum mounting distances to achieve the clearance to combustibles.

#### Minimum Ceiling Mount Distance



#### Minimum Wall Mount Distance



**Note: When assembling hanging brackets the maximum angle the heater can be at is 30° from horizon.**

## Installation Instructions

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### - Gas Connection / Code Requirements

Installation must comply with local building codes and/or, for the USA/National Fuel Gas Code, ANZI Z 223.1 (NFPA 54) and for Canada, CAN/CGA B149.1 and B149.2, National Gas and Propane Installation Code (latest editions).

Do not use high pressure (above ½ psig) to test the gas supply system with the appliance connected. Failure to comply can result in damage to the appliance.

Check for gas leaks at all connections with appropriate soap solution.

Never connect an unregulated gas supply to the heater.

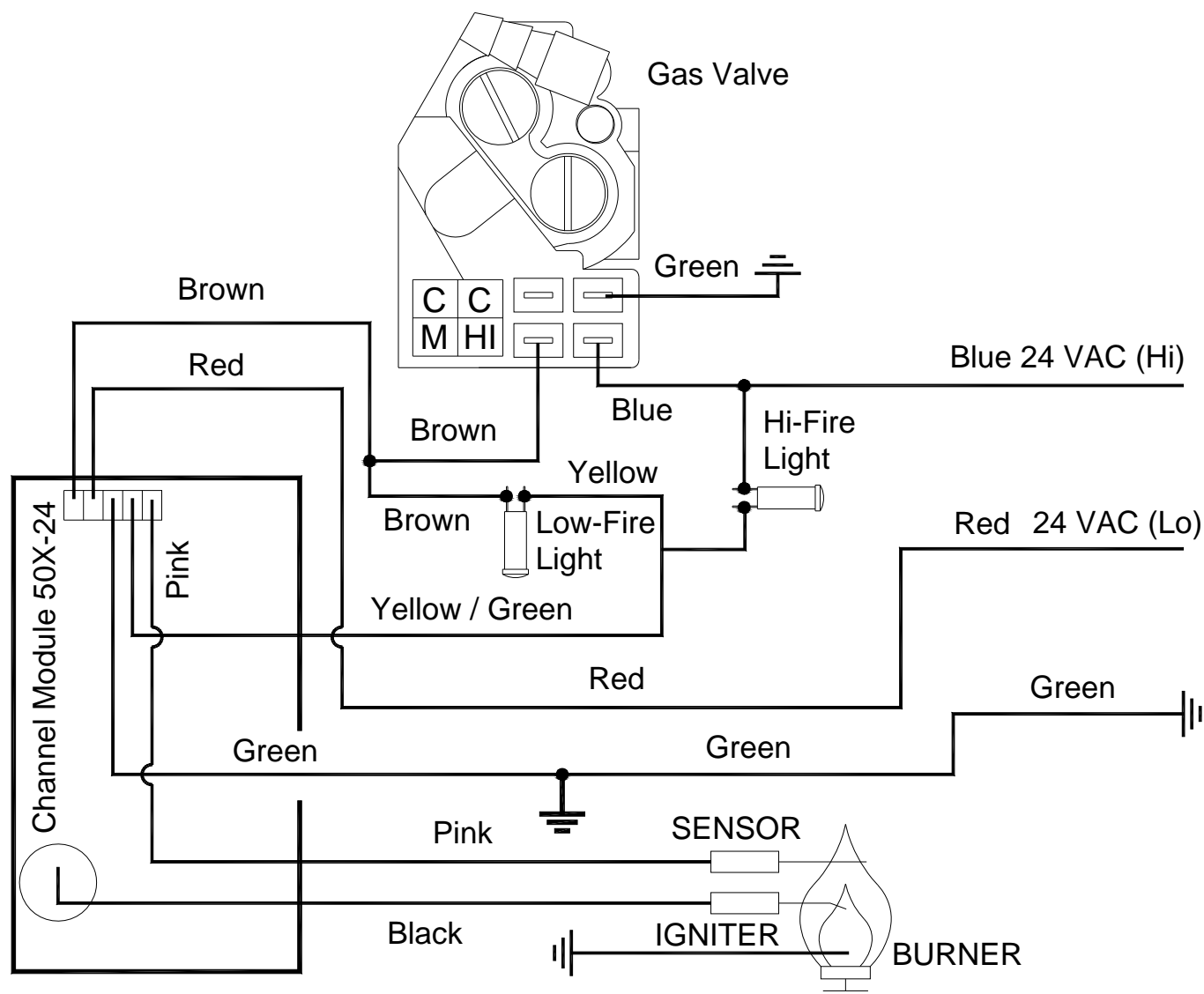
## Installation Instructions

### - Electrical Connection / Code Requirements

The Habanero Heaters require 24VAC power supply (transformer to be supplied by installer). In all cases, heaters must be electrically grounded in accordance with local codes or in their absence, the *National Electric Code*, ANSI/NFPA 70 in the US, and the *Canadian Electric Code*, CSA C22.1. Heaters may also be controlled with a manual line switch or timer switch in place of the thermostat. Refer to wiring diagrams below for guidance on electrical wiring of heaters.

If any of the original wire as supplied with the heater must be replaced, it must be replaced with wiring having a rating of at least 105°C temperature service and 600 volts capability.

#### Internal wiring diagram.



#### Note:

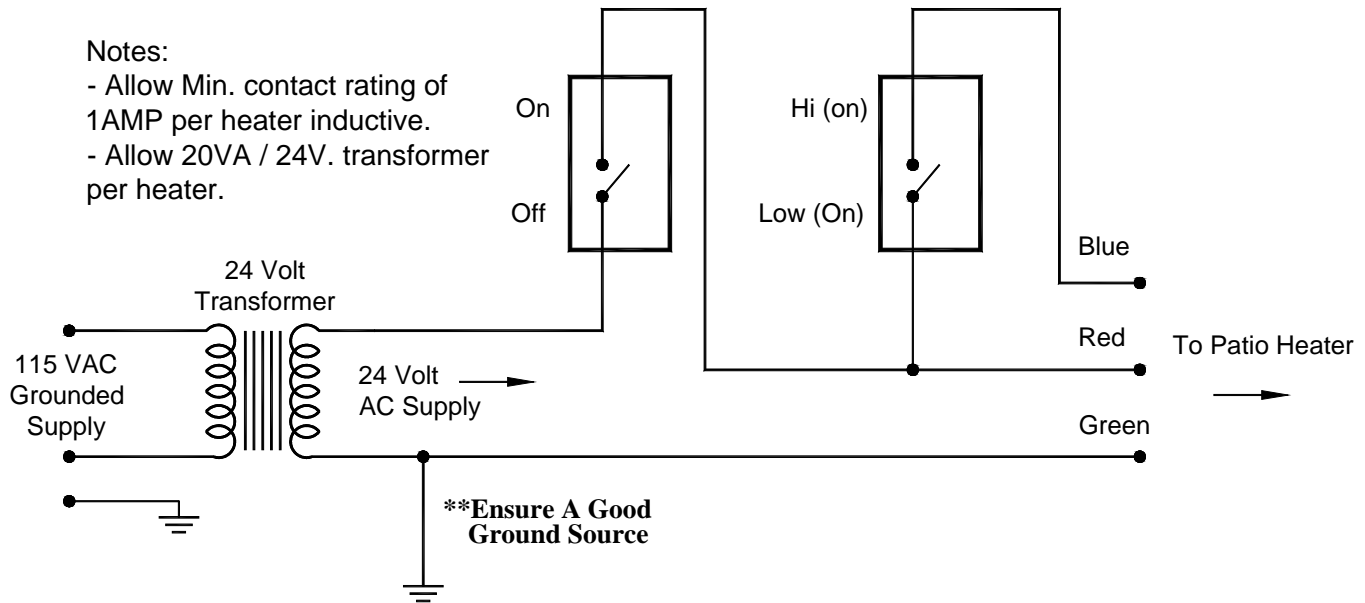
If any of the original wire as supplied with the appliance must be replaced, it must be replaced with wiring material having a temperature rating of at least 105°C.



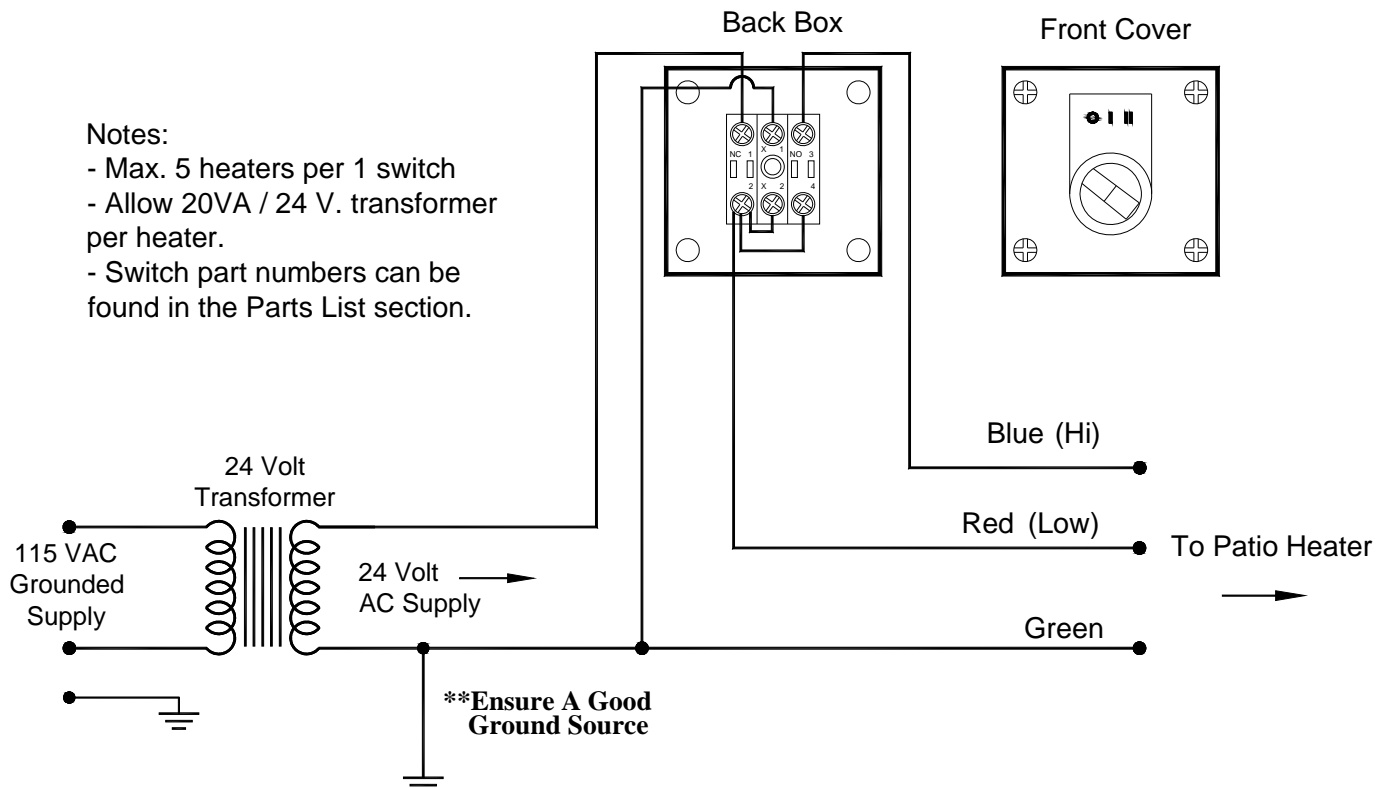
## Installation Instructions

## External wiring Options. (Manual line switch with Hi-Lo or Two Stage Switch)

## Manual Line Switch with Hi-LO wiring diagram



## Two Stage Switch wiring diagram



## Installation Instructions

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### - Venting

This heater does not require venting.

**WARNING!**

This heater is NOT approved for any indoor Residential application. If in doubt of your application consult with your local fire marshal or gas authority having jurisdiction. Indoor spaces include but are not limited to attached garages, solariums, living quarters etc.

## Lighting & Shutdown Instructions

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### - Lighting

1. Open manual gas supply valve (ensure gas supply lines have been purged).
2. Turn on switch to energize electric supply.
3. The electronic control module will time begin the ignition period in 3 seconds.
4. The gas valve will open and ignition spark will commence and continue for 20 sec.
5. If flame starts and "is detected", flame will continue until turned off.
6. If no flame is detected, the gas valve will close after 20 sec. A "wait" period commences and lasts approximately 5 sec. and a second trial for combustion commences. The electronic control will attempt three trials for ignition before locking out for approximately 1 hour at which time it will automatically try again.

Electronic control of heater can be re-set by de-energizing and re-energizing electric power.

### - Shut Down

1. Turn off power to electronic control.
2. For longer periods of shut down, also close manual gas supply valve.

### Note:

It is recommended to use a factory recommended "Hi-Lo switch" with this heater.

## Maintenance & Trouble Shooting

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### - Maintenance

For best performance, the certain minimal maintenance procedures should be performed before each heating season:

- A service agency qualified to adjust and repair infrared heaters should be engaged for service other than routine maintenance.
- Before performing any services or maintenance, shut off gas and electrical supply to heater.
- Keep the appliance area clear and free from combustible materials, gasoline and other flammable vapours and liquids.
- Do not obstruct the flow of combustion and ventilation air.
- Check condition of burner. Remove any foreign objects or debris from burner.
- Inspect the igniter. Replace igniter if there is excessive wear or erosion, breakage or other defects.
- The reflector sections may be cleaned by wiping with a damp cloth.
- Annually verify hose gas supply in heater post and all connections for gas leaks.

### - Trouble Shooting

#### No Gas Supply at Burner

- Ensure manual shut off valve is in proper position
- Ensure there is pressure and flow at inlet to gas valve.
- Ensure gas valve gets 24v power from control module during ON cycle.

#### No Spark

- Ensure control module has 24VAC supply
- Ensure spark electrode assembly is grounded and there are no cracks in ceramic insulator.

#### Flame Lights but Will Not Stay Lit

- Ensure there is no overpowering wind.
- Ensure sense electrode is not corroded, is not grounded or has a cracked insulator. Electrode position is radially across face of burner.

**- Replacement Parts**

Item #	Part #	Description
1	HE001	Spark Electrode
2	CE006	Ignition Wire (not shown)
3	EE009	Electronic Ignition Module
4	EG001	Gas Valve NAT
5	HG034	Burner Assembly HAB-M20
	HG035	Burner Assembly HAB-M40 and HAB-M50
6*	SE004	20VA 24V Transformer (not supplied)
	SE009	40VA 24V Transformer (not supplied)
	SE010	100VA 24V Transformer (not supplied)
7*	EE020	Two Stage Switch

