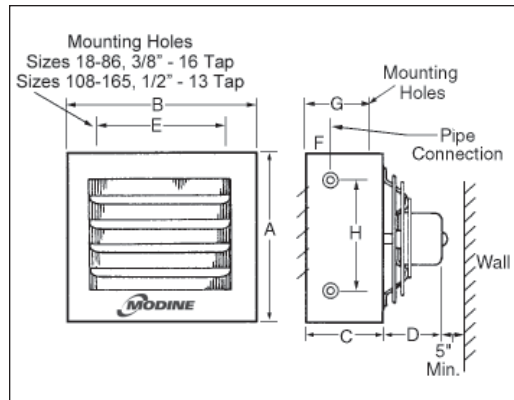


# SUBMITTAL DATA horizontal steam/hot water unit heaters model HC, side connections

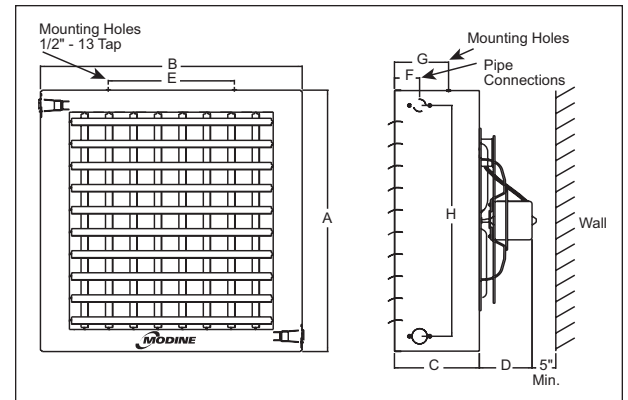


**Canadian  
Registered  
heat exchangers  
CRN  
OH 9234.5**

**Figure 1.1  
Model Dimensions HC18-165**



**Figure 1.2  
Model Dimensions HC193-340 ①**



① Vertical deflector blades shown are standard on models HC 258-340 and optional on model HC 193.

**Table 1.1 - Dimensions ①②**

| Model No. | A      | B      | C      | D               |                 | E      | F     | G     | H     | Connections NPT | Shipping Fan Dia. | Approx. Weight (Lb.) |
|-----------|--------|--------|--------|-----------------|-----------------|--------|-------|-------|-------|-----------------|-------------------|----------------------|
|           |        |        |        | 115V Std. Motor | 115V Exp. Motor |        |       |       |       |                 |                   |                      |
| HC-18     | 11-1/2 | 12-3/4 | 6      | 5               | 12-1/4          | 5-5/8  | 2-1/4 | 4-1/8 | 7 1/2 | 1/2             | 9                 | 16                   |
| HC-24     | 11-1/2 | 12-3/4 | 6      | 5               | 12-1/4          | 5-5/8  | 2-1/4 | 4-1/8 | 7 1/2 | 1/2             | 9                 | 20                   |
| HC-33     | 15     | 17-1/2 | 8-3/4  | 6               | 11-3/4          | 11     | 3-5/8 | 6     | 10    | 3/4             | 12                | 34                   |
| HC-47     | 15     | 17-1/2 | 8-3/4  | 6               | 11-3/4          | 11     | 3-5/8 | 6     | 10    | 3/4             | 12                | 6                    |
| HC-63     | 18-1/2 | 21-1/2 | 8-3/4  | 7 3/4           | 12              | 15     | 3-5/8 | 6     | 14    | 3/4             | 12                | 48                   |
| HC-86     | 18-1/2 | 21-1/2 | 8-3/4  | 7 3/4           | 12              | 15     | 3-5/8 | 6     | 14    | 3/4             | 14                | 52                   |
| HC-108    | 22-1/2 | 25-1/2 | 9-1/2  | 6 3/4           | 13-1/4          | 18     | 3-5/8 | 6-3/8 | 18    | 3/4             | 18                | 74                   |
| HC-121    | 22-1/2 | 25-1/2 | 9-1/2  | 6 3/4           | 11              | 18     | 3-5/8 | 6-3/8 | 18    | 3/4             | 18                | 76                   |
| HC-165    | 26-1/2 | 29-1/2 | 9-1/4  | 8               | 14              | 21-1/4 | 3-5/8 | 6-3/8 | 22    | 3/4             | 22                | 92                   |
| HC-193    | 30-1/2 | 32-1/2 | 9-1/4  | 8               | 14              | 21-1/4 | 3-5/8 | 4-3/4 | 26    | 1-1/4           | 22                | 98                   |
| HC-258    | 38-1/2 | 38-1/2 | 12-1/2 | 10              | 15              | 18-5/8 | 3-5/8 | 8     | 34    | 1-1/4           | 22                | 163                  |
| HC-290    | 38-1/2 | 38-1/2 | 12-1/2 | 10              | 15              | 18-5/8 | 3-5/8 | 8     | 34    | 1-1/4           | 24                | 168                  |
| HC-340    | 38-1/2 | 44-1/2 | 12-1/2 | 10              | 15              | 18-5/8 | 3-5/8 | 8     | 34    | 1-1/4           | 24                | 176                  |

① All dimensions in inches.

② Dimensions shown are for Standard and Low Outlet Temperature models.

**Table 1.2 - Specifications**

| Model No. | Core Type         |                   | Copper Tube Size (Inches) | Copper Tube Wall Thickness (Inches) |
|-----------|-------------------|-------------------|---------------------------|-------------------------------------|
|           | Single Serpentine | Double Serpentine |                           |                                     |
| HC-18     | X                 | —                 | 5/8 OD                    | 0.028                               |
| HC-24     | X                 | —                 | 5/8 OD                    | 0.028                               |
| HC-33     | X                 | —                 | 1 OD                      | 0.030                               |
| HC-47     | X                 | —                 | 1 OD                      | 0.030                               |
| HC-63     | X                 | —                 | 1 OD                      | 0.030                               |
| HC-86     | X                 | —                 | 1 OD                      | 0.030                               |
| HC-108    | X                 | —                 | 1 OD                      | 0.030                               |
| HC-121    | X                 | —                 | 1 OD                      | 0.030                               |
| HC-165    | X                 | —                 | 1 OD                      | 0.030                               |
| HC-193    | —                 | X                 | 1 OD                      | 0.030                               |
| HC-258    | —                 | X                 | 1 OD                      | 0.030                               |
| HC-290    | —                 | X                 | 1 OD                      | 0.030                               |
| HC-340    | —                 | X                 | 1 OD                      | 0.030                               |

## Junction Box

All units include an electrical junction box either integral to the motor or attached to the unit casing. Explosion proof units include an explosion proof junction box attached to the motor.

# 1-456.3 SUBMITTAL DATA

Table 2.1 - Motor Data ①

| Model Number | Motor HP | Voltage, Motor Type and Power Code  |                                     |                  |                  |                                    |                                    |                  |                                    |
|--------------|----------|-------------------------------------|-------------------------------------|------------------|------------------|------------------------------------|------------------------------------|------------------|------------------------------------|
|              |          | 115/60/1                            | 230/60/1                            | 200-208/60/3     | 230/460/60/3     | 115/60/1                           | 230/460/60/3                       | 575/60/3         | 575/60/3                           |
|              |          | Totally Enclosed w/Thermal Overload | Totally Enclosed w/Thermal Overload | Totally Enclosed | Totally Enclosed | Explosion Proof w/Thermal Overload | Explosion Proof w/Thermal Overload | Totally Enclosed | Explosion Proof w/Thermal Overload |
|              |          | 01                                  | 02                                  | 04               | 05               | 06                                 | 09                                 | 10               | 11                                 |
|              |          | Amps                                | Amps                                | Amps             | Amps             | Amps                               | Amps                               | Amps             | Amps                               |
| HC-18        | 1/60     | 0.8                                 | 0.44                                | -                | -                | 3.1                                | -                                  | -                | -                                  |
| HC-24        | 1/25     | 1.6                                 | 0.44                                | -                | -                | 3.1                                | -                                  | -                | -                                  |
| HC-33        | 1/25     | 1.6                                 | 1                                   | -                | -                | 3.1                                | -                                  | -                | -                                  |
| HC-47        | 1/12     | 2.2                                 | 1                                   | 1.2              | 1.4/0.7          | 3.1                                | -                                  | -                | -                                  |
| HC-63        | 1/12     | 2.2                                 | 1                                   | 1.2              | 1.4/0.7          | 3.1                                | -                                  | -                | -                                  |
| HC-86        | 1/8      | 2.3                                 | 1                                   | 1.2              | 1.4/0.7          | 3.1                                | -                                  | -                | -                                  |
| HC-108       | 1/8      | 2.3                                 | 1                                   | 1.2              | 1.4/0.7          | 3.1                                | -                                  | -                | -                                  |
| HC-121       | 1/6      | 2.8                                 | 1.5                                 | 1.9              | 2.1/1.05         | 4.1                                | 1.5/0.75                           | 0.84             | -                                  |
| HC-165       | 1/3      | 5.4                                 | 2.23                                | 1.9              | 2.1/1.05         | 6.1                                | 1.5/0.75                           | 0.84             | -                                  |
| HC-193       | 1/3      | 5.4                                 | 2.23                                | 1.9              | 2.1/1.05         | 6.1                                | 1.5/0.75                           | 0.84             | -                                  |
| HC-258       | 1/2      | 7.5                                 | 3.5                                 | 2.6              | 3.0/1.5          | 5.8                                | 2.0/1.0                            | 0.92             | 0.76                               |
| HC-290       | 1/2      | 7.5                                 | 3.5                                 | 2.6              | 3.0/1.5          | 5.8                                | 2.0/1.0                            | 0.92             | 0.76                               |
| HC-340       | 1/2      | 7.5                                 | 3.5                                 | 2.6              | 3.0/1.5          | 5.8                                | 2.0/1.0                            | 0.92             | 0.76                               |

① Ratings shown are for Standard and Low Outlet Temperature models.

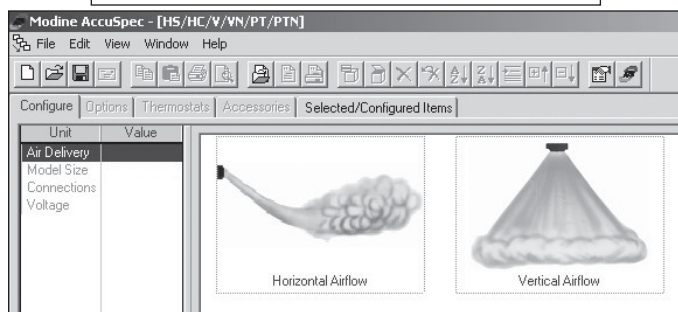


## Modine Breeze™ AccuSpec Sizing and Selection Program

The Modine Breeze AccuSpec is the fastest way to generate performance data based on actual job conditions. The Breeze AccuSpec program is a Windows based sizing and selection program. The program provides a series on step-by-step questions that allow for the easy configuration of Modine products. After a model has been configured, the program can generate Submittal Schedules, Submittal Data including performance and dimensional drawings, and Specifications.

### Capacities at Job Conditions

### Pictures for Visual Selection



Modine AccuSpec - [HS/HC/V/VN/PT/PTN]

File Edit View Window Help

Configure Options Thermostats Accessories Selected/Configured Items

Unit Value

Air Delivery

Model Size

Connections

Voltage

Horizontal Airflow

Vertical Airflow

Several Model Capacities shown for comparison

Actual job conditions

| Prefix | Model Size | Coil Type | Btu/h   | GPM  | Pressure Drop |
|--------|------------|-----------|---------|------|---------------|
| C      | 18         | Std       | 16,673  | 1.7  | 0.8           |
| C      | 24         | Std       | 21,586  | 2.2  | 1.3           |
| HS/HC  | 33         | Std       | 29,154  | 3.0  | 0.3           |
| HS/HC  | 47         | Std       | 41,855  | 4.4  | 0.6           |
| HS/HC  | 63         | Std       | 60,265  | 6.3  | 1.0           |
| HS/HC  | 86         | Std       | 80,034  | 8.3  | 1.7           |
| HS/HC  | 108        | Std       | 110,385 | 11.5 | 4.5           |
| HS/HC  | 121        | Std       | 122,653 | 12.8 | 5.5           |
| HS/HC  | 165        | Std       | 171,064 | 17.8 | 13.9          |

### Submittal Schedules

Modine AccuSpec V6.20

**SUBMITTAL SCHEDULE & DATA**

Steam/Hot Water Unit Heaters

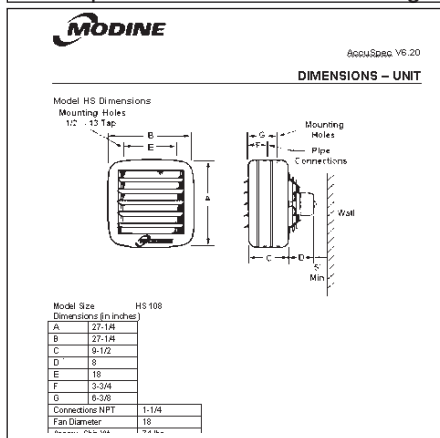
Job Name: \_\_\_\_\_ Date: \_\_\_\_\_

Location: \_\_\_\_\_ Submitted by: \_\_\_\_\_

Engineer: \_\_\_\_\_ Architect: \_\_\_\_\_ Contractor: \_\_\_\_\_

| Unit Tag | Model Number | Quantity of Units | Supply Output | CFM  | Outlet Velocity | Entering Air Temp. (°F) | Final Air Temp. (°F) | Fluid Type (Steam or Hot Water) | Steam Pressure (PSI) | Condensate (Btu/h) | Entering Water Temp. (°F) | Water Flow Rate (GPM) | Water Pressure Drop (ft of Water) | Water Temp. Drop (°F) | Supply Voltage | Motor Type                             | Motor HP |
|----------|--------------|-------------------|---------------|------|-----------------|-------------------------|----------------------|---------------------------------|----------------------|--------------------|---------------------------|-----------------------|-----------------------------------|-----------------------|----------------|----------------------------------------|----------|
|          | HS 108S 01   | 1                 | 186,000       | 2010 | 760             | 60                      | 109                  | Steam                           | 2                    | 112                | N/A                       | N/A                   | N/A                               | N/A                   | 115/60/1       | Totally Enclosed with Thermal Overload | 1/8      |

### Unit Specific Dimensional Drawings



### Job Specific Specifications

**Specifications**

General

Contractor shall furnish and install Modine steam/hot water unit heaters(s). Performance shall be as indicated on the equipment schedule in the plans. Unit heater(s) shall listed by CSA as certified.

Units

Self-contained, factory assembled, pre-wired unit consisting of cabinet with air deflection louvers, supply fan, motor, and condenser.

Coating

Electrocoat applied on grey-green corrosion resistant, high solids coating that meets the following:

- 500 hours of salt spray as defined in ASTM B117.
- Adhesion/crosshatch tests as defined in ASTM D3359, Method B, Rating 5B.
- Will not crack or peel when test panel is bent around a 1/8 inch radius.

Condenser

Condenser coils are of the extended surface type of serpentine design, utilizing aluminum fins and D.I.P. type copper tubes with malleable iron supply and return connections. Tubes are mechanically bonded to the collars of the fins. The condensers are warranted for operation at steam or hot water pressures up to 160 pounds per square inch gauge and/or temperatures up to 375°F. All coils are leak tested at 160 to 200 psig, air under water. Fins are continuous across the width and depth of the condenser and are vertically oriented to minimize the collection of dirt and dust.

Coils are of serpentine design with horizontal tubes, vertical fins and center supply and return connections at top and bottom of unit. All tube bends are beveled. All tubes have individual expansion bends. Copper tubes are 1" O.D. with 0.03" wall thickness.

Motor

Single motor with a supply voltage of \_\_\_\_\_ and horsepower of 1/8 as indicated on the equipment schedule and manufactured in accordance with NEMA standards for continuous fan duty type applications. Must be totally enclosed and single phase motors will have built in thermal overload protection. \_\_\_\_\_ to the unit with rubber gasketing (gasketing material). The entire length of the line voltage motor leads will be shielded and terminate in a factory supplied junction box mounted on the unit or integrate to the motor.

For a copy of the Breeze AccuSpec program, contact your local Modine sales representative.

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Phone: 1.800.828.4328 (HEAT) • Fax: 262.636.1665 • www.modine.com