



**AccuSpec V4.24ha  
Transaction #: 13741711**

**JOB TITLE:**

**Date: 11/13/2019**

**Approved By:**

Submittal review and approval required prior to listed unit(s) being released for production and shipment. Unit(s) configured based on information provided. The Approver is responsible for ensuring the units, options, and accessories meet the job specifications.



## SUBMITTAL SCHEDULE & DATA

### Gas- and Oil-Fired Unit Heaters, Infrared Heaters, and Indoor Duct Furnaces

Job Name:

Date: 11/13/2019

Location:

Engineer:

Submitted by: R Patrick McGovern

Architect:

Contractor:

	Unit Tag		
Model Number	PTC 55AS0111FBAC	PTC 65AS0111FBAC	PTC 85AS0111FBAC
Quantity of Units	1	1	1
Btu/Hr Input	55,000	65,000	85,000
Btu/Hr Output	51,150	60,450	79,050
CFM	1097	1141	1650
Altitude	0-2000	0-2000	0-2000
Temperature Rise (degrees F)	43	49	44
External Static Pressure (E.S.P)	0.00	0.00	0.00
Total Static Pressure (T.S.P.)	0.00	0.00	0.00
Gas Type	Natural	Natural	Natural
Gas Control Type	Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry	Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry	Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry
Supply Voltage	115/60/1	115/60/1	115/60/1
Control Voltage	24V	24V	24V
Motor HP	1/8	1/8	1/8
Motor RPM	1625	1625	1625
Blower RPM	N/A	N/A	N/A
Heat Exchanger Type	Aluminized Steel Heat Exchanger/Burner	Aluminized Steel Heat Exchanger/Burner	Aluminized Steel Heat Exchanger/Burner
Unit Efficiency %	93.0	93.0	93.0
Options & Accessories (See Attached Pages)			

Remarks \_\_\_\_\_



## SUBMITTAL SCHEDULE & DATA

### Gas- and Oil-Fired Unit Heaters, Infrared Heaters, and Indoor Duct Furnaces

Job Name:

Date: 11/13/2019

Location:

Engineer:

Submitted by: R Patrick McGovern

Architect:

Contractor:

	<b>Unit Tag</b>		
Model Number	PTC110AS0111FBAC	PTC135AS0111SBAC	PTC156AS0111SBAC
Quantity of Units	1	1	1
Btu/Hr Input	110,000	135,000	155,000
Btu/Hr Output	102,300	125,550	144,150
CFM	1750	2160	2600
Altitude	0-2000	0-2000	0-2000
Temperature Rise (degrees F)	54	54	51
External Static Pressure (E.S.P)	0.00	0.00	0.00
Total Static Pressure (T.S.P.)	0.00	0.00	0.00
Gas Type	Natural	Natural	Natural
Gas Control Type	Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry	Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry	Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry
Supply Voltage	115/60/1	115/60/1	115/60/1
Control Voltage	24V	24V	24V
Motor HP	1/3	1/3	1/3
Motor RPM	1075	1075	1075
Blower RPM	N/A	N/A	N/A
Heat Exchanger Type	Aluminized Steel Heat Exchanger/Burner	Aluminized Steel Heat Exchanger/Burner	Aluminized Steel Heat Exchanger/Burner
Unit Efficiency %	93.0	93.0	93.0
Options & Accessories (See Attached Pages)			

Remarks \_\_\_\_\_

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## SUBMITTAL SCHEDULE & DATA

### Gas- and Oil-Fired Unit Heaters, Infrared Heaters, and Indoor Duct Furnaces

Job Name:

Date: 11/13/2019

Location:

Engineer:

Submitted by: R Patrick McGovern

Architect:

Contractor:

	<b>Unit Tag</b>		
Model Number	PTC180AS0111SBAC	PTC215AS0111SBAC	PTC260AS0111SBAC
Quantity of Units	1	1	1
Btu/Hr Input	180,000	215,000	260,000
Btu/Hr Output	167,400	199,950	241,800
CFM	3020	4585	4585
Altitude	0-2000	0-2000	0-2000
Temperature Rise (degrees F)	51	40	49
External Static Pressure (E.S.P)	0.00	0.00	0.00
Total Static Pressure (T.S.P.)	0.00	0.00	0.00
Gas Type	Natural	Natural	Natural
Gas Control Type	Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry	Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry	Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry
Supply Voltage	115/60/1	115/60/1	115/60/1
Control Voltage	24V	24V	24V
Motor HP	1/3	1/2	3/4
Motor RPM	1075	1075	1125
Blower RPM	N/A	N/A	N/A
Heat Exchanger Type	Aluminized Steel Heat Exchanger/Burner	Aluminized Steel Heat Exchanger/Burner	Aluminized Steel Heat Exchanger/Burner
Unit Efficiency %	93.0	93.0	93.0
Options & Accessories (See Attached Pages)			

Remarks \_\_\_\_\_

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## SUBMITTAL SCHEDULE & DATA

### Gas- and Oil-Fired Unit Heaters, Infrared Heaters, and Indoor Duct Furnaces

Job Name:

Date: 11/13/2019

Location:

Engineer:

Submitted by: R Patrick McGovern

Architect:

Contractor:

		Unit Tag	
Model Number	PTC310AS0111SBAC		
Quantity of Units	1		
Btu/Hr Input	310,000		
Btu/Hr Output	288,300		
CFM	5400		
Altitude	0-2000		
Temperature Rise (degrees F)	49		
External Static Pressure (E.S.P)	0.00		
Total Static Pressure (T.S.P.)	0.00		
Gas Type	Natural		
Gas Control Type	Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry		
Supply Voltage	115/60/1		
Control Voltage	24V		
Motor HP	3/4		
Motor RPM	1125		
Blower RPM	N/A		
Heat Exchanger Type	Aluminized Steel Heat Exchanger/Burner		
Unit Efficiency %	93.0		
Options & Accessories (See Attached Pages)			

Remarks \_\_\_\_\_



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## SUBMITTAL SCHEDULE & DATA

### Gas- and Oil-Fired Unit Heaters and Infrared Heaters

Model	Description	Qty	Tag
PTC 55AS0111FBAC	Propeller Unit Heater	1	
72067	PTC 55AS0111FBAC	1	
PTC 65AS0111FBAC	Propeller Unit Heater	1	
72068	PTC 65AS0111FBAC	1	
PTC 85AS0111FBAC	Propeller Unit Heater	1	
72055	PTC 85AS0111FBAC	1	
PTC110AS0111FBAC	Propeller Unit Heater	1	
72059	PTC110AS0111FBAC	1	
PTC135AS0111SBAC	Propeller Unit Heater	1	
72035	PTC135AS0111SBAC	1	
PTC156AS0111SBAC	Propeller Unit Heater	1	
72063	PTC156AS0111SBAC	1	
PTC180AS0111SBAC	Propeller Unit Heater	1	
72036	PTC180AS0111SBAC	1	
PTC215AS0111SBAC	Propeller Unit Heater	1	
72037	PTC215AS0111SBAC	1	
PTC260AS0111SBAC	Propeller Unit Heater	1	
72038	PTC260AS0111SBAC	1	
PTC310AS0111SBAC	Propeller Unit Heater	1	
72039	PTC310AS0111SBAC	1	



## PTC MODEL NOMENCLATURE

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1,2,3	4,5,6	7	8	9,10	11,12	13	14	15	16
PTC	55	A	S	01	11	F	B	A	C

### 1,2,3 - Product Type

PTC - Separated Combustion, High Efficiency Condensing Propeller Unit

### 4,5,6 - Furnace Input Rating

55 - 55,000

### 7 - Heat Exchanger Type

A - Aluminized Steel Heat Exchanger and Burner

### 8 - Pilot Ignition

S - Direct Spark Ignition

### 9,10 - Motor and Drive Code (Power Code)

01 - 115V motor

### 11,12 - Gas and Valve/Ignition Control Type (Control Code)

11 - Natural, Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry

### 13 - Fan Guard Type

F - Finger Proof Fan Guard

### 14 - Development Sequence

B - Current

### 15 - Future

A - For Future Use

### 16 - Factory Installed Option

C - None



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## GENERAL PERFORMANCE DATA

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**Intertek**

### General Performance Data

**Model** PTC 55

#### At 0' Elevation

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Btu/Hr. Input	55,000
Btu/Hr. Output	51,150
Entering Airflow (CFM)	1097
Outlet Velocity	618
Air Temp. Rise (°F)	43
Mounting Height (Max Ft.) <sup>1</sup>	12
Heat Throw (Max. Mtg. Ft.) <sup>2</sup>	43
Unit Total Power (Amps)	4.35
Condensate Produced (gal/hr)	0.3

#### As Configured at 0-2000 Ft. Elevation

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Btu/Hr. Input	55,000
Btu/Hr. Output	51,150
Configured Air Temp Rise (°F)	43

#### Motor Data

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Horse Power	1/8
RPM	1625
Type	P.S.C.
Motor Amps at 115V	2.20

#### Clearances to Combustibles

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Top and Bottom	6"
Vent/Combustion Air Connector	6"
Access Side	6"
Non-Access Side	6"
Rear	18"

<sup>1</sup> At 65°F ambient and unit fired at full-rated input. Mounting height as measured from bottom of unit.

<sup>2</sup> Heat Throws are calculated at 65°F ambient with a 43°F air temperature rise with the unit mounted at a maximum mounting height of 12 feet.

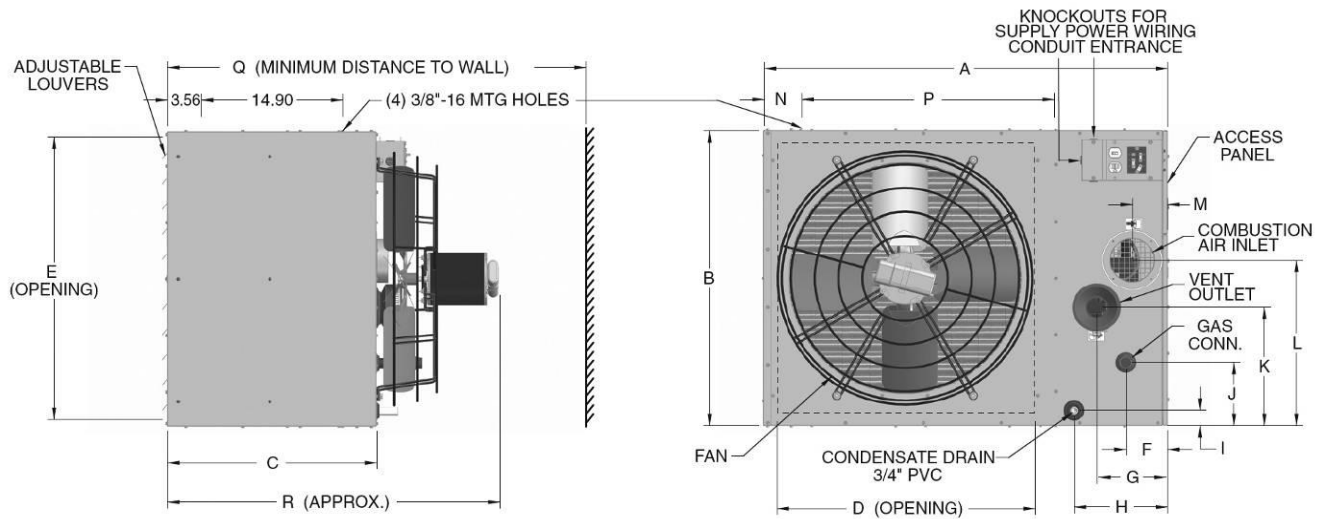




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## DIMENSIONS – UNIT

### Model PTC Dimensions



### Model Size Dimensions (inches)

A	29.8
B	18.13
C	19.03
D	17
E	16.24
F	4.71
G	7.19
H	10.22
I	3.1

### PTC55

J	12.81
K	6
L	9.07
M	3.3
N	1.9
P	16
Q <sup>2</sup>	40.19
R	28.19

Gas Connection	1/2
Fan Diameter	14
Vent Pipe Connection Size	3
Combustion Air Inlet Pipe Connection Size	3
Approx. Shipping Weight	93 lbs.

- <sup>1</sup> All models have 4 holes for mounting. Listed is the hole diameter and threads per inch to accept threaded rod.  
<sup>2</sup> Dimension equals overall "R" dimension plus 12".

## **Standards**

*All unit(s) shall include:*

ETL design certification for use in both the US and Canada to the ANSI Z83.8 - latest revision, standard for "Gas Unit Heater and Gas-Fired Duct Furnaces" for safe operation, construction, and performance

## **Mechanical Configuration**

Condensing furnace section with 93% minimum efficiency provided by an indirect-fired tubular heat exchanger with individually fired tubes coupled to a secondary recuperative heat exchanger for maximum heat recovery.

## **Venting/Combustion Air Arrangement**

The unit shall be separated combustion. The venting shall be a power exhausted arrangement with a separate combustion air intake pipe connection to allow for fresh combustion air from outside the conditioned space. The unit shall be tested to insure proper ignition when the unit is subjected to 40 mile per hour wind velocities. The unit shall also include a factory mounted differential pressure switch designed to prevent main burner ignition until positive venting has been proven.

Venting shall be Schedule 40 PVC. For Canadian installations, all vent pipe and components must be approved to ULC S636.

## **Unit Casing**

The unit heater(s) casing shall be constructed of not less than 20 gauge aluminized steel with minimization of exposed fasteners.

All exterior casing parts shall be cleaned of all oils and a phosphate coating applied prior to painting. The exterior casing parts shall then be painted with an electrostatically applied baked-on gray-green polyester powder paint (7-mil thickness) for corrosion resistance.

The unit shall be furnished with horizontal air deflectors. The deflectors are adjustable to provide for horizontal directional airflow control (up or down).

## **Furnace Section**

The heat exchanger(s) shall be made of 18 gauge aluminized steel tubes and headers. Each heat exchanger tube shall be individually and directly flame-fired. The heat exchanger tube shall be crimped to allow for thermal expansion and contraction. The flue collector box shall be made of 20 gauge AL29-4C stainless steel.

The thermal efficiency of the unit(s) shall be a minimum of 93% efficient for all air flow ranges through the use of a secondary recuperative heat exchanger. The secondary heat exchanger shall be constructed of AL29-4C stainless steel to withstand the corrosive environment of condensing gas fired equipment.

The heat exchanger(s) seams and duct connections shall be certified to withstand 0.9" W.C. external static pressure without burner flame disturbance.

The burner(s) shall be in-shot type, directly firing each heat exchanger tube individually and is designed for good lighting characteristics without noise of extinction for both natural and propane gas.

The ignition controller(s) shall be 100% shut-off with continuous retry.

The gas pressure shall be between 6-7" W.C for natural gas.

The solid state ignition system shall directly light the gas by means of a direct spark igniter each time the system is energized.

The unit gas controls shall be provided with the following:

Single-stage gas controls with a single-stage combination gas control, an ignition control. The unit fires at 100% full fire based on a call for heat from a room thermostat.

An automatic reset high limit switch mounted in the air stream to shut off the gas supply in the event of overheating.

An automatic reset high limit switch mounted on the power exhauster housing to shut off the gas supply in the event of overheating flue gas temperatures.

A condensate drain line overflow switch that senses if the condensate line is clogged and shuts the unit heater down. The switch is factory mounted inside the unit cabinet and wired to the unit controls.

An energy-saver control utilizes stratified ceiling air to heat the space at floor level before turning on the gas controls. Its operation is independent of the room thermostat and should have a higher set-point than the room thermostat. The Stat is factory mounted outside the unit and wired into the contractor convenience box.

A Modine Building Management System (BMS) Board installed in this unit provides an RS485 interface between the unit heater and existing building networks that employ a BACnet or Modbus protocol. The board works in conjunction with the unit's ignition control module to manage and report the function of the heater. A BMS network connection is not required to operate the heater, but allows for expanded control and monitoring ability.

A time delay relay that delays the start of the air mover to allow the heat exchanger a warm-up period after a call for heat. The time delay relay shall also continue the air mover operation after the thermostat has been satisfied to remove any residual heat in the heat exchanger.

The unit must be field adjusted for 0-2000 feet elevation above sea level. See units installation manual for instruction for altitude adjustments.

## **Electrical**

All electrical components shall carry UL, ETL, or CSA certification.

A low voltage terminal board shall be provided for direct wiring connection to an external thermostat.

A Contractor Convenience Package that consists of an external junction box featuring simple connection of supply power wiring internally, thermostat wiring to terminals externally, an On/Off switch, a single 115V outlet for connection of an external condensate pump, and status indicator lights to display the operational state of the unit shall be factory mounted on the rear panel of the casing.

A single 115V to 24V step down transformer shall be provided for all unit controls.

## **Air Mover**

The motor horsepower shall be 1/8 H.P.

The motor wiring shall be in flexible metal BX conduit.

The motor shall be controlled by a time delay relay.

Propeller models shall meet the following requirements:

The motor type shall be Single-Speed, Totally Enclosed (TE).

The air mover motor shall be a 115V motor.

## **Mounting**

The unit shall be equipped with tapped holes to accept 3/8"-16 threaded rod for suspension.

### **Accessories**

The following field installed accessory control devices shall be provided with the unit:

A condensate drain kit consisting of one threaded PVC elbow and two specially designed condensate traps to allow the unit to operate and drain properly.



## PTC MODEL NOMENCLATURE

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1,2,3	4,5,6	7	8	9,10	11,12	13	14	15	16
PTC	65	A	S	01	11	F	B	A	C

### 1,2,3 - Product Type

PTC - Separated Combustion, High Efficiency Condensing Propeller Unit

### 4,5,6 - Furnace Input Rating

65 - 65,000

### 7 - Heat Exchanger Type

A - Aluminized Steel Heat Exchanger and Burner

### 8 - Pilot Ignition

S - Direct Spark Ignition

### 9,10 - Motor and Drive Code (Power Code)

01 - 115V motor

### 11,12 - Gas and Valve/Ignition Control Type (Control Code)

11 - Natural, Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry

### 13 - Fan Guard Type

F - Finger Proof Fan Guard

### 14 - Development Sequence

B - Current

### 15 - Future

A - For Future Use

### 16 - Factory Installed Option

C - None



AccuSpec V4.24ha

## GENERAL PERFORMANCE DATA

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**Intertek**

### General Performance Data

**Model** PTC 65

#### At 0' Elevation

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Btu/Hr. Input	65,000
Btu/Hr. Output	60,450
Entering Airflow (CFM)	1141
Outlet Velocity	650
Air Temp. Rise (°F)	49
Mounting Height (Max Ft.) <sup>1</sup>	12
Heat Throw (Max. Mtg. Ft.) <sup>2</sup>	43
Unit Total Power (Amps)	4.35
Condensate Produced (gal/hr)	0.4

#### As Configured at 0-2000 Ft. Elevation

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Btu/Hr. Input	65,000
Btu/Hr. Output	60,450
Configured Air Temp Rise (°F)	49

#### Motor Data

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Horse Power	1/8
RPM	1625
Type	P.S.C.
Motor Amps at 115V	2.20

#### Clearances to Combustibles

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Top and Bottom	6"
Vent/Combustion Air Connector	6"
Access Side	6"
Non-Access Side	6"
Rear	18"

<sup>1</sup> At 65°F ambient and unit fired at full-rated input. Mounting height as measured from bottom of unit.

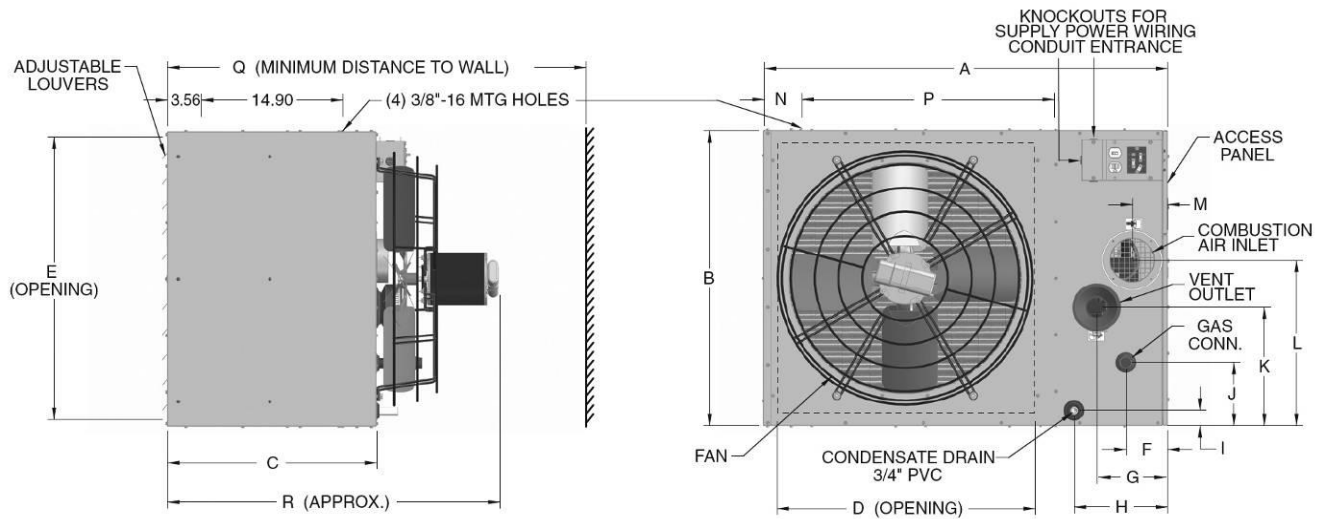
<sup>2</sup> Heat Throws are calculated at 65°F ambient with a 49°F air temperature rise with the unit mounted at a maximum mounting height of 12 feet.



AccuSpec V4.24ha

## DIMENSIONS – UNIT

### Model PTC Dimensions



### Model Size Dimensions (inches)

A	29.8
B	18.13
C	19.03
D	17
E	16.24
F	4.71
G	7.19
H	10.22
I	3.1

### PTC65

J	12.81
K	6
L	9.07
M	3.3
N	1.9
P	16
Q <sup>2</sup>	40.19
R	28.19

Gas Connection	1/2
Fan Diameter	14
Vent Pipe Connection Size	3
Combustion Air Inlet Pipe Connection Size	3
Approx. Shipping Weight	103 lbs.

- <sup>1</sup> All models have 4 holes for mounting. Listed is the hole diameter and threads per inch to accept threaded rod.  
<sup>2</sup> Dimension equals overall "R" dimension plus 12".

## **Standards**

*All unit(s) shall include:*

ETL design certification for use in both the US and Canada to the ANSI Z83.8 - latest revision, standard for "Gas Unit Heater and Gas-Fired Duct Furnaces" for safe operation, construction, and performance

## **Mechanical Configuration**

Condensing furnace section with 93% minimum efficiency provided by an indirect-fired tubular heat exchanger with individually fired tubes coupled to a secondary recuperative heat exchanger for maximum heat recovery.

## **Venting/Combustion Air Arrangement**

The unit shall be separated combustion. The venting shall be a power exhausted arrangement with a separate combustion air intake pipe connection to allow for fresh combustion air from outside the conditioned space. The unit shall be tested to insure proper ignition when the unit is subjected to 40 mile per hour wind velocities. The unit shall also include a factory mounted differential pressure switch designed to prevent main burner ignition until positive venting has been proven.

Venting shall be Schedule 40 PVC. For Canadian installations, all vent pipe and components must be approved to ULC S636.

## **Unit Casing**

The unit heater(s) casing shall be constructed of not less than 20 gauge aluminized steel with minimization of exposed fasteners.

All exterior casing parts shall be cleaned of all oils and a phosphate coating applied prior to painting. The exterior casing parts shall then be painted with an electrostatically applied baked-on gray-green polyester powder paint (7-mil thickness) for corrosion resistance.

The unit shall be furnished with horizontal air deflectors. The deflectors are adjustable to provide for horizontal directional airflow control (up or down).

## **Furnace Section**

The heat exchanger(s) shall be made of 18 gauge aluminized steel tubes and headers. Each heat exchanger tube shall be individually and directly flame-fired. The heat exchanger tube shall be crimped to allow for thermal expansion and contraction. The flue collector box shall be made of 20 gauge AL29-4C stainless steel.

The thermal efficiency of the unit(s) shall be a minimum of 93% efficient for all air flow ranges through the use of a secondary recuperative heat exchanger. The secondary heat exchanger shall be constructed of AL29-4C stainless steel to withstand the corrosive environment of condensing gas fired equipment.

The heat exchanger(s) seams and duct connections shall be certified to withstand 0.9" W.C. external static pressure without burner flame disturbance.

The burner(s) shall be in-shot type, directly firing each heat exchanger tube individually and is designed for good lighting characteristics without noise of extinction for both natural and propane gas.

The ignition controller(s) shall be 100% shut-off with continuous retry.

The gas pressure shall be between 6-7" W.C for natural gas.

The solid state ignition system shall directly light the gas by means of a direct spark igniter each time the system is energized.



The unit gas controls shall be provided with the following:

Single-stage gas controls with a single-stage combination gas control, an ignition control. The unit fires at 100% full fire based on a call for heat from a room thermostat.

An automatic reset high limit switch mounted in the air stream to shut off the gas supply in the event of overheating.

An automatic reset high limit switch mounted on the power exhauster housing to shut off the gas supply in the event of overheating flue gas temperatures.

A condensate drain line overflow switch that senses if the condensate line is clogged and shuts the unit heater down. The switch is factory mounted inside the unit cabinet and wired to the unit controls.

An energy-saver control utilizes stratified ceiling air to heat the space at floor level before turning on the gas controls. Its operation is independent of the room thermostat and should have a higher set-point than the room thermostat. The Stat is factory mounted outside the unit and wired into the contractor convenience box.

A Modine Building Management System (BMS) Board installed in this unit provides an RS485 interface between the unit heater and existing building networks that employ a BACnet or Modbus protocol. The board works in conjunction with the unit's ignition control module to manage and report the function of the heater. A BMS network connection is not required to operate the heater, but allows for expanded control and monitoring ability.

A time delay relay that delays the start of the air mover to allow the heat exchanger a warm-up period after a call for heat. The time delay relay shall also continue the air mover operation after the thermostat has been satisfied to remove any residual heat in the heat exchanger.

The unit must be field adjusted for 0-2000 feet elevation above sea level. See units installation manual for instruction for altitude adjustments.

## **Electrical**

All electrical components shall carry UL, ETL, or CSA certification.

A low voltage terminal board shall be provided for direct wiring connection to an external thermostat.

A Contractor Convenience Package that consists of an external junction box featuring simple connection of supply power wiring internally, thermostat wiring to terminals externally, an On/Off switch, a single 115V outlet for connection of an external condensate pump, and status indicator lights to display the operational state of the unit shall be factory mounted on the rear panel of the casing.

A single 115V to 24V step down transformer shall be provided for all unit controls.

## **Air Mover**

The motor horsepower shall be 1/8 H.P.

The motor wiring shall be in flexible metal BX conduit.

The motor shall be controlled by a time delay relay.

Propeller models shall meet the following requirements:

The motor type shall be Single-Speed, Totally Enclosed (TE).

The air mover motor shall be a 115V motor.

## **Mounting**

The unit shall be equipped with tapped holes to accept 3/8"-16 threaded rod for suspension.

### **Accessories**

The following field installed accessory control devices shall be provided with the unit:

A condensate drain kit consisting of one threaded PVC elbow and two specially designed condensate traps to allow the unit to operate and drain properly.



## PTC MODEL NOMENCLATURE

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1,2,3	4,5,6	7	8	9,10	11,12	13	14	15	16
PTC	85	A	S	01	11	F	B	A	C

### 1,2,3 - Product Type

PTC - Separated Combustion, High Efficiency Condensing Propeller Unit

### 4,5,6 - Furnace Input Rating

85 - 85,000

### 7 - Heat Exchanger Type

A - Aluminized Steel Heat Exchanger and Burner

### 8 - Pilot Ignition

S - Direct Spark Ignition

### 9,10 - Motor and Drive Code (Power Code)

01 - 115V motor

### 11,12 - Gas and Valve/Ignition Control Type (Control Code)

11 - Natural, Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry

### 13 - Fan Guard Type

F - Finger Proof Fan Guard

### 14 - Development Sequence

B - Current

### 15 - Future

A - For Future Use

### 16 - Factory Installed Option

C - None



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## GENERAL PERFORMANCE DATA

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**Intertek**

### General Performance Data

**Model** PTC 85

#### At 0' Elevation

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Btu/Hr. Input	85,000
Btu/Hr. Output	79,050
Entering Airflow (CFM)	1650
Outlet Velocity	619
Air Temp. Rise (°F)	44
Mounting Height (Max Ft.) <sup>1</sup>	13
Heat Throw (Max. Mtg. Ft.) <sup>2</sup>	48
Unit Total Power (Amps)	4.35
Condensate Produced (gal/hr)	0.5

#### As Configured at 0-2000 Ft. Elevation

---

Btu/Hr. Input	85,000
Btu/Hr. Output	79,050
Configured Air Temp Rise (°F)	44

#### Motor Data

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Horse Power	1/8
RPM	1625
Type	P.S.C.
Motor Amps at 115V	2.20

#### Clearances to Combustibles

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Top and Bottom	6"
Vent/Combustion Air Connector	6"
Access Side	6"
Non-Access Side	6"
Rear	18"

<sup>1</sup> At 65°F ambient and unit fired at full-rated input. Mounting height as measured from bottom of unit.

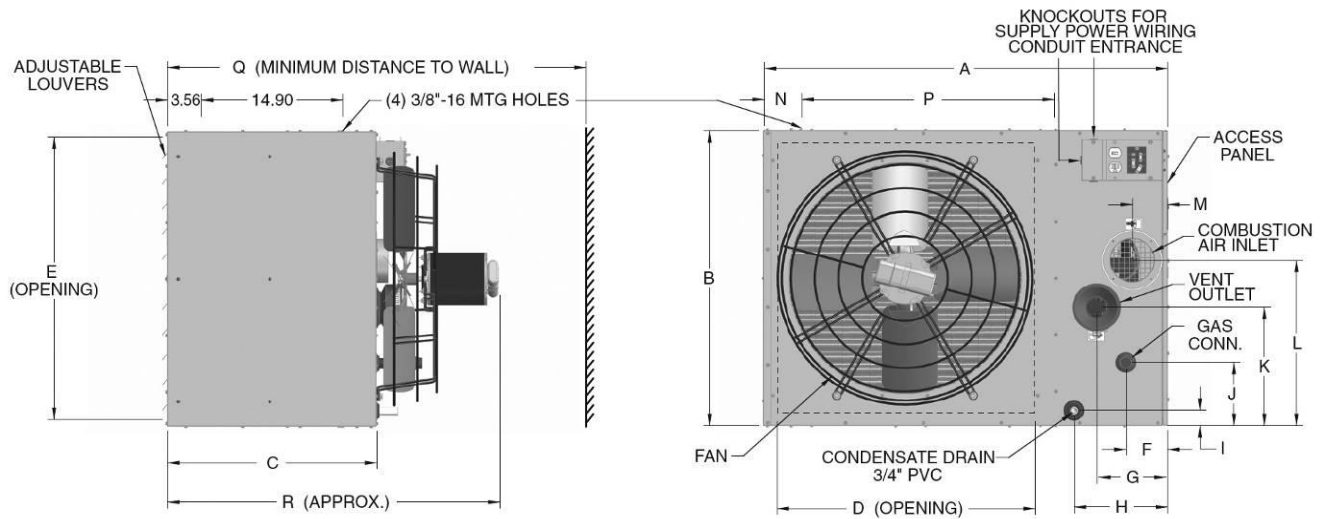
<sup>2</sup> Heat Throws are calculated at 65°F ambient with a 44°F air temperature rise with the unit mounted at a maximum mounting height of 13 feet.



AccuSpec V4.24ha

## DIMENSIONS – UNIT

### Model PTC Dimensions



### Model Size Dimensions (inches)

### PTC85

A	35.53
B	20.31
C	22.05
D	22.52
E	18.42
F	4.50
G	7.98
H	10.27
I	1.32

J	6.73
K	8.74
L	12.13
M	3.86
N	1.54
P	22.03
Q <sup>2</sup>	45.83
R	30.69

Gas Connection	1/2
Fan Diameter	18
Vent Pipe Connection Size	3
Combustion Air Inlet Pipe Connection Size	3
Approx. Shipping Weight	148 lbs.

- <sup>1</sup> All models have 4 holes for mounting. Listed is the hole diameter and threads per inch to accept threaded rod.
- <sup>2</sup> Dimension equals overall "R" dimension plus 12".

## **Standards**

*All unit(s) shall include:*

ETL design certification for use in both the US and Canada to the ANSI Z83.8 - latest revision, standard for "Gas Unit Heater and Gas-Fired Duct Furnaces" for safe operation, construction, and performance

## **Mechanical Configuration**

Condensing furnace section with 93% minimum efficiency provided by an indirect-fired tubular heat exchanger with individually fired tubes coupled to a secondary recuperative heat exchanger for maximum heat recovery.

## **Venting/Combustion Air Arrangement**

The unit shall be separated combustion. The venting shall be a power exhausted arrangement with a separate combustion air intake pipe connection to allow for fresh combustion air from outside the conditioned space. The unit shall be tested to insure proper ignition when the unit is subjected to 40 mile per hour wind velocities. The unit shall also include a factory mounted differential pressure switch designed to prevent main burner ignition until positive venting has been proven.

Venting shall be Schedule 40 PVC. For Canadian installations, all vent pipe and components must be approved to ULC S636.

## **Unit Casing**

The unit heater(s) casing shall be constructed of not less than 20 gauge aluminized steel with minimization of exposed fasteners.

All exterior casing parts shall be cleaned of all oils and a phosphate coating applied prior to painting. The exterior casing parts shall then be painted with an electrostatically applied baked-on gray-green polyester powder paint (7-mil thickness) for corrosion resistance.

The unit shall be furnished with horizontal air deflectors. The deflectors are adjustable to provide for horizontal directional airflow control (up or down).

## **Furnace Section**

The heat exchanger(s) shall be made of 18 gauge aluminized steel tubes and headers. Each heat exchanger tube shall be individually and directly flame-fired. The heat exchanger tube shall be crimped to allow for thermal expansion and contraction. The flue collector box shall be made of 20 gauge AL29-4C stainless steel.

The thermal efficiency of the unit(s) shall be a minimum of 93% efficient for all air flow ranges through the use of a secondary recuperative heat exchanger. The secondary heat exchanger shall be constructed of AL29-4C stainless steel to withstand the corrosive environment of condensing gas fired equipment.

The heat exchanger(s) seams and duct connections shall be certified to withstand 0.9" W.C. external static pressure without burner flame disturbance.

The burner(s) shall be in-shot type, directly firing each heat exchanger tube individually and is designed for good lighting characteristics without noise of extinction for both natural and propane gas.

The ignition controller(s) shall be 100% shut-off with continuous retry.

The gas pressure shall be between 6-7" W.C for natural gas.

The solid state ignition system shall directly light the gas by means of a direct spark igniter each time the system is energized.

The unit gas controls shall be provided with the following:

Single-stage gas controls with a single-stage combination gas control, an ignition control. The unit fires at 100% full fire based on a call for heat from a room thermostat.

An automatic reset high limit switch mounted in the air stream to shut off the gas supply in the event of overheating.

An automatic reset high limit switch mounted on the power exhauster housing to shut off the gas supply in the event of overheating flue gas temperatures.

A condensate drain line overflow switch that senses if the condensate line is clogged and shuts the unit heater down. The switch is factory mounted inside the unit cabinet and wired to the unit controls.

An energy-saver control utilizes stratified ceiling air to heat the space at floor level before turning on the gas controls. Its operation is independent of the room thermostat and should have a higher set-point than the room thermostat. The Stat is factory mounted outside the unit and wired into the contractor convenience box.

A Modine Building Management System (BMS) Board installed in this unit provides an RS485 interface between the unit heater and existing building networks that employ a BACnet or Modbus protocol. The board works in conjunction with the unit's ignition control module to manage and report the function of the heater. A BMS network connection is not required to operate the heater, but allows for expanded control and monitoring ability.

A time delay relay that delays the start of the air mover to allow the heat exchanger a warm-up period after a call for heat. The time delay relay shall also continue the air mover operation after the thermostat has been satisfied to remove any residual heat in the heat exchanger.

The unit must be field adjusted for 0-2000 feet elevation above sea level. See units installation manual for instruction for altitude adjustments.

## **Electrical**

All electrical components shall carry UL, ETL, or CSA certification.

A low voltage terminal board shall be provided for direct wiring connection to an external thermostat.

A Contractor Convenience Package that consists of an external junction box featuring simple connection of supply power wiring internally, thermostat wiring to terminals externally, an On/Off switch, a single 115V outlet for connection of an external condensate pump, and status indicator lights to display the operational state of the unit shall be factory mounted on the rear panel of the casing.

A single 115V to 24V step down transformer shall be provided for all unit controls.

## **Air Mover**

The motor horsepower shall be 1/8 H.P.

The motor wiring shall be in flexible metal BX conduit.

The motor shall be controlled by a time delay relay.

Propeller models shall meet the following requirements:

The motor type shall be Single-Speed, Totally Enclosed (TE).

The air mover motor shall be a 115V motor.

## **Mounting**

The unit shall be equipped with tapped holes to accept 3/8"-16 threaded rod for suspension.

### **Accessories**

The following field installed accessory control devices shall be provided with the unit:

A condensate drain kit consisting of one threaded PVC elbow and two specially designed condensate traps to allow the unit to operate and drain properly.





## PTC MODEL NOMENCLATURE

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1,2,3	4,5,6	7	8	9,10	11,12	13	14	15	16
PTC	110	A	S	01	11	F	B	A	C

### 1,2,3 - Product Type

PTC - Separated Combustion, High Efficiency Condensing Propeller Unit

### 4,5,6 - Furnace Input Rating

110 - 110,000

### 7 - Heat Exchanger Type

A - Aluminized Steel Heat Exchanger and Burner

### 8 - Pilot Ignition

S - Direct Spark Ignition

### 9,10 - Motor and Drive Code (Power Code)

01 - 115V motor

### 11,12 - Gas and Valve/Ignition Control Type (Control Code)

11 - Natural, Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry

### 13 - Fan Guard Type

F - Finger Proof Fan Guard

### 14 - Development Sequence

B - Current

### 15 - Future

A - For Future Use

### 16 - Factory Installed Option

C - None



AccuSpec V4.24ha

## GENERAL PERFORMANCE DATA

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**Intertek**

### General Performance Data

**Model** PTC 110

#### At 0' Elevation

---

Btu/Hr. Input	110,000
Btu/Hr. Output	102,300
Entering Airflow (CFM)	1750
Outlet Velocity	668
Air Temp. Rise (°F)	54
Mounting Height (Max Ft.) <sup>1</sup>	13
Heat Throw (Max. Mtg. Ft.) <sup>2</sup>	46
Unit Total Power (Amps)	6.75
Condensate Produced (gal/hr)	0.7

#### As Configured at 0-2000 Ft. Elevation

---

Btu/Hr. Input	110,000
Btu/Hr. Output	102,300
Configured Air Temp Rise (°F)	54

#### Motor Data

---

Horse Power	1/3
RPM	1075
Type	P.S.C.
Motor Amps at 115V	4.60

#### Clearances to Combustibles

---

Top and Bottom	6"
Vent/Combustion Air Connector	6"
Access Side	6"
Non-Access Side	6"
Rear	18"

<sup>1</sup> At 65°F ambient and unit fired at full-rated input. Mounting height as measured from bottom of unit.

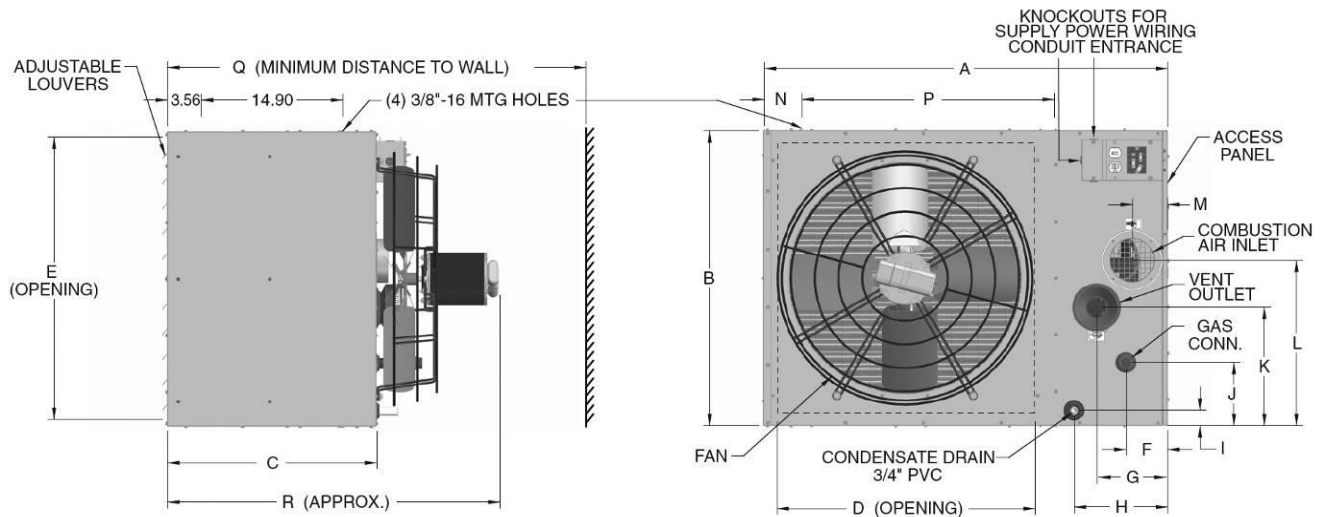
<sup>2</sup> Heat Throws are calculated at 65°F ambient with a 54°F air temperature rise with the unit mounted at a maximum mounting height of 13 feet.



AccuSpec V4.24ha

## DIMENSIONS – UNIT

### Model PTC Dimensions



### Model Size Dimensions (inches)

### PTC110

A	35.53
B	20.31
C	22.05
D	22.52
E	18.42
F	4.50
G	7.98
H	10.27
I	1.32

J	6.73
K	8.74
L	12.13
M	3.86
N	1.54
P	22.03
Q <sup>2</sup>	45.83
R	34.23

Gas Connection	1/2
Fan Diameter	18
Vent Pipe Connection Size	3
Combustion Air Inlet Pipe Connection Size	3
Approx. Shipping Weight	128 lbs.

<sup>1</sup> All models have 4 holes for mounting. Listed is the hole diameter and threads per inch to accept threaded rod.

<sup>2</sup> Dimension equals overall "R" dimension plus 12".

## **Standards**

*All unit(s) shall include:*

ETL design certification for use in both the US and Canada to the ANSI Z83.8 - latest revision, standard for "Gas Unit Heater and Gas-Fired Duct Furnaces" for safe operation, construction, and performance

## **Mechanical Configuration**

Condensing furnace section with 93% minimum efficiency provided by an indirect-fired tubular heat exchanger with individually fired tubes coupled to a secondary recuperative heat exchanger for maximum heat recovery.

## **Venting/Combustion Air Arrangement**

The unit shall be separated combustion. The venting shall be a power exhausted arrangement with a separate combustion air intake pipe connection to allow for fresh combustion air from outside the conditioned space. The unit shall be tested to insure proper ignition when the unit is subjected to 40 mile per hour wind velocities. The unit shall also include a factory mounted differential pressure switch designed to prevent main burner ignition until positive venting has been proven.

Venting shall be Schedule 40 PVC. For Canadian installations, all vent pipe and components must be approved to ULC S636.

## **Unit Casing**

The unit heater(s) casing shall be constructed of not less than 20 gauge aluminized steel with minimization of exposed fasteners.

All exterior casing parts shall be cleaned of all oils and a phosphate coating applied prior to painting. The exterior casing parts shall then be painted with an electrostatically applied baked-on gray-green polyester powder paint (7-mil thickness) for corrosion resistance.

The unit shall be furnished with horizontal air deflectors. The deflectors are adjustable to provide for horizontal directional airflow control (up or down).

## **Furnace Section**

The heat exchanger(s) shall be made of 18 gauge aluminized steel tubes and headers. Each heat exchanger tube shall be individually and directly flame-fired. The heat exchanger tube shall be crimped to allow for thermal expansion and contraction. The flue collector box shall be made of 20 gauge AL29-4C stainless steel.

The thermal efficiency of the unit(s) shall be a minimum of 93% efficient for all air flow ranges through the use of a secondary recuperative heat exchanger. The secondary heat exchanger shall be constructed of AL29-4C stainless steel to withstand the corrosive environment of condensing gas fired equipment.

The heat exchanger(s) seams and duct connections shall be certified to withstand 0.9" W.C. external static pressure without burner flame disturbance.

The burner(s) shall be in-shot type, directly firing each heat exchanger tube individually and is designed for good lighting characteristics without noise of extinction for both natural and propane gas.

The ignition controller(s) shall be 100% shut-off with continuous retry.

The gas pressure shall be between 6-7" W.C for natural gas.

The solid state ignition system shall directly light the gas by means of a direct spark igniter each time the system is energized.

The unit gas controls shall be provided with the following:

Single-stage gas controls with a single-stage combination gas control, an ignition control. The unit fires at 100% full fire based on a call for heat from a room thermostat.

An automatic reset high limit switch mounted in the air stream to shut off the gas supply in the event of overheating.

An automatic reset high limit switch mounted on the power exhauster housing to shut off the gas supply in the event of overheating flue gas temperatures.

A condensate drain line overflow switch that senses if the condensate line is clogged and shuts the unit heater down. The switch is factory mounted inside the unit cabinet and wired to the unit controls.

An energy-saver control utilizes stratified ceiling air to heat the space at floor level before turning on the gas controls. Its operation is independent of the room thermostat and should have a higher set-point than the room thermostat. The Stat is factory mounted outside the unit and wired into the contractor convenience box.

A Modine Building Management System (BMS) Board installed in this unit provides an RS485 interface between the unit heater and existing building networks that employ a BACnet or Modbus protocol. The board works in conjunction with the unit's ignition control module to manage and report the function of the heater. A BMS network connection is not required to operate the heater, but allows for expanded control and monitoring ability.

A time delay relay that delays the start of the air mover to allow the heat exchanger a warm-up period after a call for heat. The time delay relay shall also continue the air mover operation after the thermostat has been satisfied to remove any residual heat in the heat exchanger.

The unit must be field adjusted for 0-2000 feet elevation above sea level. See units installation manual for instruction for altitude adjustments.

## **Electrical**

All electrical components shall carry UL, ETL, or CSA certification.

A low voltage terminal board shall be provided for direct wiring connection to an external thermostat.

A Contractor Convenience Package that consists of an external junction box featuring simple connection of supply power wiring internally, thermostat wiring to terminals externally, an On/Off switch, a single 115V outlet for connection of an external condensate pump, and status indicator lights to display the operational state of the unit shall be factory mounted on the rear panel of the casing.

A single 115V to 24V step down transformer shall be provided for all unit controls.

## **Air Mover**

The motor horsepower shall be 1/3 H.P.

The motor wiring shall be in flexible metal BX conduit.

The motor shall be controlled by a time delay relay.

Propeller models shall meet the following requirements:

The motor type shall be Single-Speed, Totally Enclosed (TE).

The air mover motor shall be a 115V motor.

## **Mounting**

The unit shall be equipped with tapped holes to accept 3/8"-16 threaded rod for suspension.

### **Accessories**

The following field installed accessory control devices shall be provided with the unit:

A condensate drain kit consisting of one threaded PVC elbow and two specially designed condensate traps to allow the unit to operate and drain properly.



## PTC MODEL NOMENCLATURE

---

1,2,3	4,5,6	7	8	9,10	11,12	13	14	15	16
PTC	135	A	S	01	11	S	B	A	C

### 1,2,3 - Product Type

PTC - Separated Combustion, High Efficiency Condensing Propeller Unit

### 4,5,6 - Furnace Input Rating

135 - 135,000 Btu/hr Input

### 7 - Heat Exchanger Type

A - Aluminized Steel Heat Exchanger and Burner

### 8 - Pilot Ignition

S - Direct Spark Ignition

### 9,10 - Motor and Drive Code (Power Code)

01 - 115V motor

### 11,12 - Gas and Valve/Ignition Control Type (Control Code)

11 - Natural, Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry

### 13 - Fan Guard Type

S - Standard Fan Guard

### 14 - Development Sequence

B - Current

### 15 - Future

A - For Future Use

### 16 - Factory Installed Option

C - None



AccuSpec V4.24ha

## GENERAL PERFORMANCE DATA

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**Intertek**

### General Performance Data

**Model** PTC 135

#### At 0' Elevation

---

Btu/Hr. Input	135,000
Btu/Hr. Output	125,550
Entering Airflow (CFM)	2160
Outlet Velocity	719
Air Temp. Rise (°F)	54
Mounting Height (Max Ft.) <sup>1</sup>	14
Heat Throw (Max. Mtg. Ft.) <sup>2</sup>	51
Unit Total Power (Amps)	6.75
Condensate Produced (gal/hr)	1

#### As Configured at 0-2000 Ft. Elevation

---

Btu/Hr. Input	135,000
Btu/Hr. Output	125,550
Configured Air Temp Rise (°F)	54

#### Motor Data

---

Horse Power	1/3
RPM	1075
Type	P.S.C.
Motor Amps at 115V	4.60

#### Clearances to Combustibles

---

Top and Bottom	6"
Vent/Combustion Air Connector	6"
Access Side	6"
Non-Access Side	6"
Rear	18"

<sup>1</sup> At 65°F ambient and unit fired at full-rated input. Mounting height as measured from bottom of unit.

<sup>2</sup> Heat Throws are calculated at 65°F ambient with a 54°F air temperature rise with the unit mounted at a maximum mounting height of 14 feet.

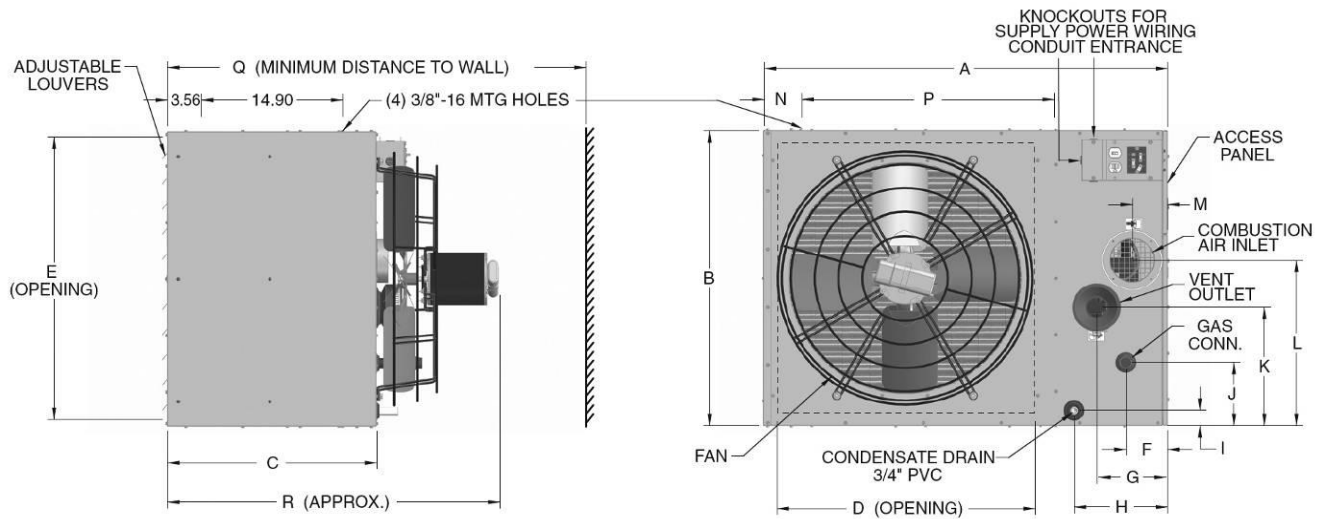




AccuSpec V4.24ha

## DIMENSIONS – UNIT

### Model PTC Dimensions



### Model Size Dimensions (inches)

### PTC135

A	35.53
B	23.06
C	22.05
D	22.52
E	21.18
F	4.50
G	7.98
H	10.18
I	2.15

J	8.09
K	8.45
L	12.95
M	3.48
N	1.54
P	22.03
Q <sup>2</sup>	45.83
R	33.83

Gas Connection	1/2
Fan Diameter	20
Vent Pipe Connection Size	3
Combustion Air Inlet Pipe Connection Size	3
Approx. Shipping Weight	165 lbs.

- <sup>1</sup> All models have 4 holes for mounting. Listed is the hole diameter and threads per inch to accept threaded rod.  
<sup>2</sup> Dimension equals overall "R" dimension plus 12".

## **Standards**

*All unit(s) shall include:*

ETL design certification for use in both the US and Canada to the ANSI Z83.8 - latest revision, standard for "Gas Unit Heater and Gas-Fired Duct Furnaces" for safe operation, construction, and performance

## **Mechanical Configuration**

Condensing furnace section with 93% minimum efficiency provided by an indirect-fired tubular heat exchanger with individually fired tubes coupled to a secondary recuperative heat exchanger for maximum heat recovery.

## **Venting/Combustion Air Arrangement**

The unit shall be separated combustion. The venting shall be a power exhausted arrangement with a separate combustion air intake pipe connection to allow for fresh combustion air from outside the conditioned space. The unit shall be tested to insure proper ignition when the unit is subjected to 40 mile per hour wind velocities. The unit shall also include a factory mounted differential pressure switch designed to prevent main burner ignition until positive venting has been proven.

Venting shall be Schedule 40 PVC. For Canadian installations, all vent pipe and components must be approved to ULC S636.

## **Unit Casing**

The unit heater(s) casing shall be constructed of not less than 20 gauge aluminized steel with minimization of exposed fasteners.

All exterior casing parts shall be cleaned of all oils and a phosphate coating applied prior to painting. The exterior casing parts shall then be painted with an electrostatically applied baked-on gray-green polyester powder paint (7-mil thickness) for corrosion resistance.

The unit shall be furnished with horizontal air deflectors. The deflectors are adjustable to provide for horizontal directional airflow control (up or down).

## **Furnace Section**

The heat exchanger(s) shall be made of 18 gauge aluminized steel tubes and headers. Each heat exchanger tube shall be individually and directly flame-fired. The heat exchanger tube shall be crimped to allow for thermal expansion and contraction. The flue collector box shall be made of 20 gauge AL29-4C stainless steel.

The thermal efficiency of the unit(s) shall be a minimum of 93% efficient for all air flow ranges through the use of a secondary recuperative heat exchanger. The secondary heat exchanger shall be constructed of AL29-4C stainless steel to withstand the corrosive environment of condensing gas fired equipment.

The heat exchanger(s) seams and duct connections shall be certified to withstand 0.9" W.C. external static pressure without burner flame disturbance.

The burner(s) shall be in-shot type, directly firing each heat exchanger tube individually and is designed for good lighting characteristics without noise of extinction for both natural and propane gas.

The ignition controller(s) shall be 100% shut-off with continuous retry.

The gas pressure shall be between 6-7" W.C for natural gas.

The solid state ignition system shall directly light the gas by means of a direct spark igniter each time the system is energized.

The unit gas controls shall be provided with the following:

Single-stage gas controls with a single-stage combination gas control, an ignition control. The unit fires at 100% full fire based on a call for heat from a room thermostat.

An automatic reset high limit switch mounted in the air stream to shut off the gas supply in the event of overheating.

An automatic reset high limit switch mounted on the power exhaustor housing to shut off the gas supply in the event of overheating flue gas temperatures.

A condensate drain line overflow switch that senses if the condensate line is clogged and shuts the unit heater down. The switch is factory mounted inside the unit cabinet and wired to the unit controls.

An energy-saver control utilizes stratified ceiling air to heat the space at floor level before turning on the gas controls. Its operation is independent of the room thermostat and should have a higher set-point than the room thermostat. The Stat is factory mounted outside the unit and wired into the contractor convenience box.

A Modine Building Management System (BMS) Board installed in this unit provides an RS485 interface between the unit heater and existing building networks that employ a BACnet or Modbus protocol. The board works in conjunction with the unit's ignition control module to manage and report the function of the heater. A BMS network connection is not required to operate the heater, but allows for expanded control and monitoring ability.

A time delay relay that delays the start of the air mover to allow the heat exchanger a warm-up period after a call for heat. The time delay relay shall also continue the air mover operation after the thermostat has been satisfied to remove any residual heat in the heat exchanger.

The unit must be field adjusted for 0-2000 feet elevation above sea level. See units installation manual for instruction for altitude adjustments.

## **Electrical**

All electrical components shall carry UL, ETL, or CSA certification.

A low voltage terminal board shall be provided for direct wiring connection to an external thermostat.

A Contractor Convenience Package that consists of an external junction box featuring simple connection of supply power wiring internally, thermostat wiring to terminals externally, an On/Off switch, a single 115V outlet for connection of an external condensate pump, and status indicator lights to display the operational state of the unit shall be factory mounted on the rear panel of the casing.

A single 115V to 24V step down transformer shall be provided for all unit controls.

## **Air Mover**

The motor horsepower shall be 1/3 H.P.

The motor wiring shall be in flexible metal BX conduit.

The motor shall be controlled by a time delay relay.

Propeller models shall meet the following requirements:

The motor type shall be Single-Speed, Totally Enclosed (TE).

The air mover motor shall be a 115V motor.

## **Mounting**

The unit shall be equipped with tapped holes to accept 3/8"-16 threaded rod for suspension.

Propeller Unit to have two point adjustable suspension points to allow for level hanging with a variety of accessories.

### **Accessories**

The following field installed accessory control devices shall be provided with the unit:

A condensate drain kit consisting of one threaded PVC elbow and two specially designed condensate traps to allow the unit to operate and drain properly.



AccuSpec V4.24ha

## PTC MODEL NOMENCLATURE

---

1,2,3	4,5,6	7	8	9,10	11,12	13	14	15	16
PTC	156	A	S	01	11	S	B	A	C

### 1,2,3 - Product Type

PTC - Separated Combustion, High Efficiency Condensing Propeller Unit

### 4,5,6 - Furnace Input Rating

156 - 155,000 Btu/hr Input

### 7 - Heat Exchanger Type

A - Aluminized Steel Heat Exchanger and Burner

### 8 - Pilot Ignition

S - Direct Spark Ignition

### 9,10 - Motor and Drive Code (Power Code)

01 - 115V motor

### 11,12 - Gas and Valve/Ignition Control Type (Control Code)

11 - Natural, Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry

### 13 - Fan Guard Type

S - Standard Fan Guard

### 14 - Development Sequence

B - Current

### 15 - Future

A - For Future Use

### 16 - Factory Installed Option

C - None



AccuSpec V4.24ha

## GENERAL PERFORMANCE DATA

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**Intertek**

### General Performance Data

**Model** PTC 156

#### At 0' Elevation

---

Btu/Hr. Input	155,000
Btu/Hr. Output	144,150
Entering Airflow (CFM)	2600
Outlet Velocity	862
Air Temp. Rise (°F)	51
Mounting Height (Max Ft.) <sup>1</sup>	18
Heat Throw (Max. Mtg. Ft.) <sup>2</sup>	62
Unit Total Power (Amps)	6.75
Condensate Produced (gal/hr)	1.1

#### As Configured at 0-2000 Ft. Elevation

---

Btu/Hr. Input	155,000
Btu/Hr. Output	144,150
Configured Air Temp Rise (°F)	51

#### Motor Data

---

Horse Power	1/3
RPM	1075
Type	P.S.C.
Motor Amps at 115V	4.60

#### Clearances to Combustibles

---

Top and Bottom	6"
Vent/Combustion Air Connector	6"
Access Side	6"
Non-Access Side	6"
Rear	18"

<sup>1</sup> At 65°F ambient and unit fired at full-rated input. Mounting height as measured from bottom of unit.

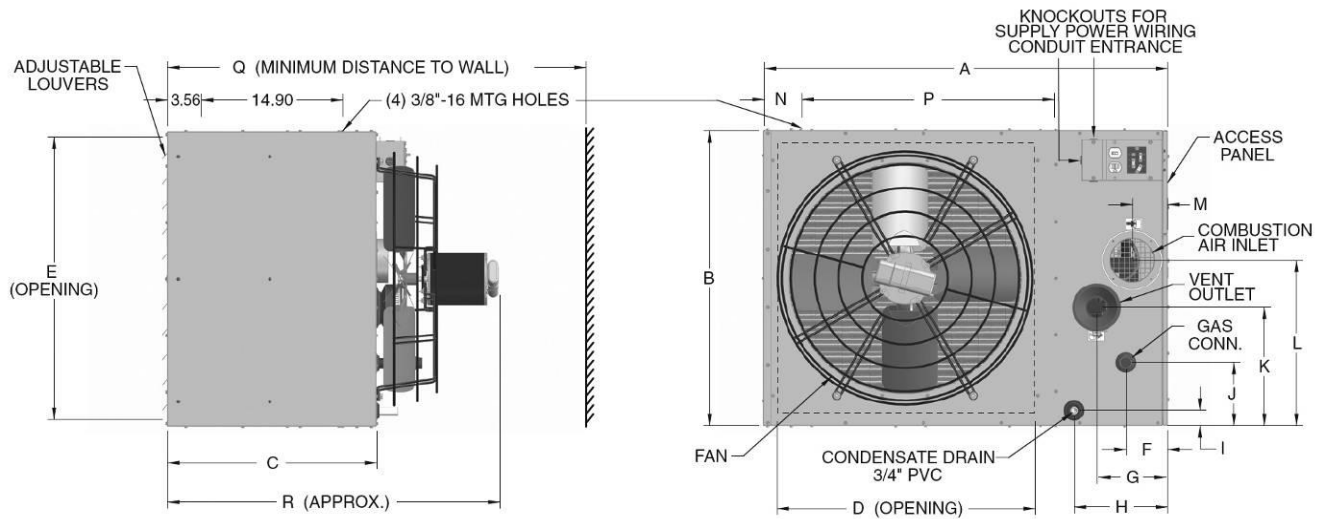
<sup>2</sup> Heat Throws are calculated at 65°F ambient with a 51°F air temperature rise with the unit mounted at a maximum mounting height of 18 feet.



AccuSpec V4.24ha

## DIMENSIONS – UNIT

### Model PTC Dimensions



### Model Size Dimensions (inches)

### PTC156

A	35.53
B	23.06
C	22.05
D	22.52
E	21.18
F	4.50
G	7.98
H	10.18
I	2.15

J	8.09
K	8.45
L	13.45
M	3.98
N	1.54
P	22.03
Q <sup>2</sup>	45.83
R	33.83

Gas Connection	1/2
Fan Diameter	20
Vent Pipe Connection Size	4
Combustion Air Inlet Pipe Connection Size	4
Approx. Shipping Weight	165 lbs.

- <sup>1</sup> All models have 4 holes for mounting. Listed is the hole diameter and threads per inch to accept threaded rod.  
<sup>2</sup> Dimension equals overall "R" dimension plus 12".

## **Standards**

*All unit(s) shall include:*

ETL design certification for use in both the US and Canada to the ANSI Z83.8 - latest revision, standard for "Gas Unit Heater and Gas-Fired Duct Furnaces" for safe operation, construction, and performance

## **Mechanical Configuration**

Condensing furnace section with 93% minimum efficiency provided by an indirect-fired tubular heat exchanger with individually fired tubes coupled to a secondary recuperative heat exchanger for maximum heat recovery.

## **Venting/Combustion Air Arrangement**

The unit shall be separated combustion. The venting shall be a power exhausted arrangement with a separate combustion air intake pipe connection to allow for fresh combustion air from outside the conditioned space. The unit shall be tested to insure proper ignition when the unit is subjected to 40 mile per hour wind velocities. The unit shall also include a factory mounted differential pressure switch designed to prevent main burner ignition until positive venting has been proven.

Venting shall be Schedule 40 PVC. For Canadian installations, all vent pipe and components must be approved to ULC S636.

## **Unit Casing**

The unit heater(s) casing shall be constructed of not less than 20 gauge aluminized steel with minimization of exposed fasteners.

All exterior casing parts shall be cleaned of all oils and a phosphate coating applied prior to painting. The exterior casing parts shall then be painted with an electrostatically applied baked-on gray-green polyester powder paint (7-mil thickness) for corrosion resistance.

The unit shall be furnished with horizontal air deflectors. The deflectors are adjustable to provide for horizontal directional airflow control (up or down).

## **Furnace Section**

The heat exchanger(s) shall be made of 18 gauge aluminized steel tubes and headers. Each heat exchanger tube shall be individually and directly flame-fired. The heat exchanger tube shall be crimped to allow for thermal expansion and contraction. The flue collector box shall be made of 20 gauge AL29-4C stainless steel.

The thermal efficiency of the unit(s) shall be a minimum of 93% efficient for all air flow ranges through the use of a secondary recuperative heat exchanger. The secondary heat exchanger shall be constructed of AL29-4C stainless steel to withstand the corrosive environment of condensing gas fired equipment.

The heat exchanger(s) seams and duct connections shall be certified to withstand 0.9" W.C. external static pressure without burner flame disturbance.

The burner(s) shall be in-shot type, directly firing each heat exchanger tube individually and is designed for good lighting characteristics without noise of extinction for both natural and propane gas.

The ignition controller(s) shall be 100% shut-off with continuous retry.

The gas pressure shall be between 6-7" W.C for natural gas.

The solid state ignition system shall directly light the gas by means of a direct spark igniter each time the system is energized.



The unit gas controls shall be provided with the following:

Single-stage gas controls with a single-stage combination gas control, an ignition control. The unit fires at 100% full fire based on a call for heat from a room thermostat.

An automatic reset high limit switch mounted in the air stream to shut off the gas supply in the event of overheating.

An automatic reset high limit switch mounted on the power exhauster housing to shut off the gas supply in the event of overheating flue gas temperatures.

A condensate drain line overflow switch that senses if the condensate line is clogged and shuts the unit heater down. The switch is factory mounted inside the unit cabinet and wired to the unit controls.

An energy-saver control utilizes stratified ceiling air to heat the space at floor level before turning on the gas controls. Its operation is independent of the room thermostat and should have a higher set-point than the room thermostat. The Stat is factory mounted outside the unit and wired into the contractor convenience box.

A Modine Building Management System (BMS) Board installed in this unit provides an RS485 interface between the unit heater and existing building networks that employ a BACnet or Modbus protocol. The board works in conjunction with the unit's ignition control module to manage and report the function of the heater. A BMS network connection is not required to operate the heater, but allows for expanded control and monitoring ability.

A time delay relay that delays the start of the air mover to allow the heat exchanger a warm-up period after a call for heat. The time delay relay shall also continue the air mover operation after the thermostat has been satisfied to remove any residual heat in the heat exchanger.

The unit must be field adjusted for 0-2000 feet elevation above sea level. See units installation manual for instruction for altitude adjustments.

## **Electrical**

All electrical components shall carry UL, ETL, or CSA certification.

A low voltage terminal board shall be provided for direct wiring connection to an external thermostat.

A Contractor Convenience Package that consists of an external junction box featuring simple connection of supply power wiring internally, thermostat wiring to terminals externally, an On/Off switch, a single 115V outlet for connection of an external condensate pump, and status indicator lights to display the operational state of the unit shall be factory mounted on the rear panel of the casing.

A single 115V to 24V step down transformer shall be provided for all unit controls.

## **Air Mover**

The motor horsepower shall be 1/3 H.P.

The motor wiring shall be in flexible metal BX conduit.

The motor shall be controlled by a time delay relay.

Propeller models shall meet the following requirements:

The motor type shall be Single-Speed, Totally Enclosed (TE).

The air mover motor shall be a 115V motor.

## **Mounting**

The unit shall be equipped with tapped holes to accept 3/8"-16 threaded rod for suspension.

Propeller Unit to have two point adjustable suspension points to allow for level hanging with a variety of accessories.

### **Accessories**

The following field installed accessory control devices shall be provided with the unit:

A condensate drain kit consisting of one threaded PVC elbow and two specially designed condensate traps to allow the unit to operate and drain properly.



## PTC MODEL NOMENCLATURE

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1,2,3	4,5,6	7	8	9,10	11,12	13	14	15	16
PTC	180	A	S	01	11	S	B	A	C

### 1,2,3 - Product Type

PTC - Separated Combustion, High Efficiency Condensing Propeller Unit

### 4,5,6 - Furnace Input Rating

180 - 180,000 Btu/hr Input

### 7 - Heat Exchanger Type

A - Aluminized Steel Heat Exchanger and Burner

### 8 - Pilot Ignition

S - Direct Spark Ignition

### 9,10 - Motor and Drive Code (Power Code)

01 - 115V motor

### 11,12 - Gas and Valve/Ignition Control Type (Control Code)

11 - Natural, Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry

### 13 - Fan Guard Type

S - Standard Fan Guard

### 14 - Development Sequence

B - Current

### 15 - Future

A - For Future Use

### 16 - Factory Installed Option

C - None



AccuSpec V4.24ha

## GENERAL PERFORMANCE DATA

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**Intertek**

### General Performance Data

**Model** PTC 180

#### At 0' Elevation

---

Btu/Hr. Input	180,000
Btu/Hr. Output	167,400
Entering Airflow (CFM)	3020
Outlet Velocity	676
Air Temp. Rise (°F)	51
Mounting Height (Max Ft.) <sup>1</sup>	15
Heat Throw (Max. Mtg. Ft.) <sup>2</sup>	53
Unit Total Power (Amps)	6.75
Condensate Produced (gal/hr)	1.3

#### As Configured at 0-2000 Ft. Elevation

---

Btu/Hr. Input	180,000
Btu/Hr. Output	167,400
Configured Air Temp Rise (°F)	51

#### Motor Data

---

Horse Power	1/3
RPM	1075
Type	P.S.C.
Motor Amps at 115V	4.60

#### Clearances to Combustibles

---

Top and Bottom	6"
Vent/Combustion Air Connector	6"
Access Side	6"
Non-Access Side	6"
Rear	18"

<sup>1</sup> At 65°F ambient and unit fired at full-rated input. Mounting height as measured from bottom of unit.

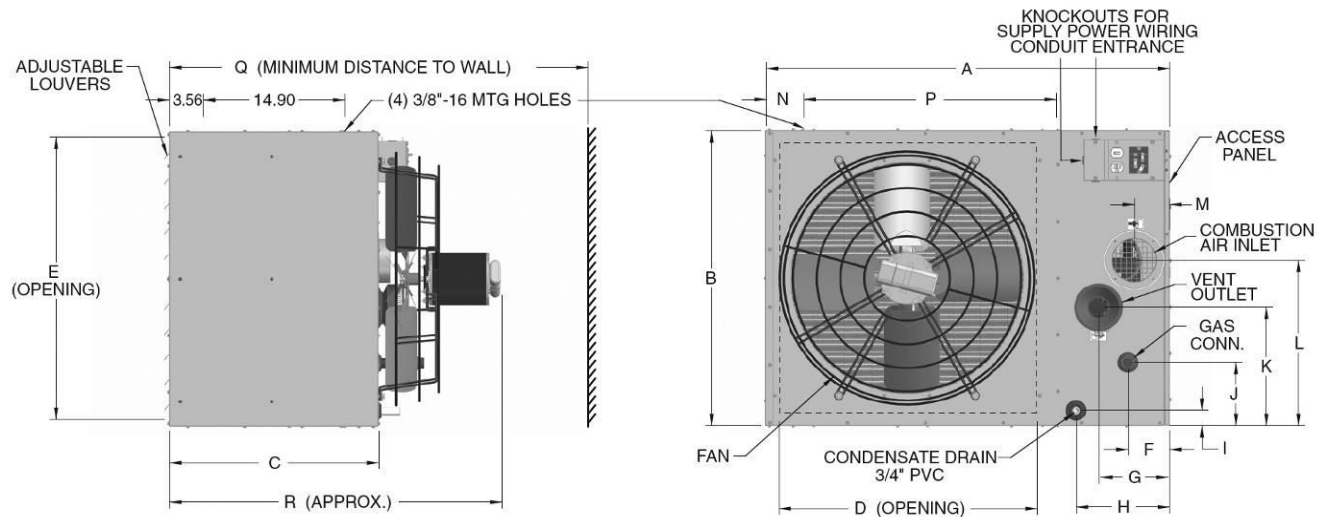
<sup>2</sup> Heat Throws are calculated at 65°F ambient with a 51°F air temperature rise with the unit mounted at a maximum mounting height of 15 feet.



AccuSpec V4.24ha

## DIMENSIONS – UNIT

### Model PTC Dimensions



### Model Size Dimensions (inches)

A	42.53
B	25.81
C	22.05
D	29.52
E	23.93
F	4.50
G	7.98
H	10.36
I	1.73

### PTC180

J	9.47
K	9.82
L	14.92
M	3.98
N	3.97
P	26.6
Q <sup>2</sup>	45.83
R	33.83

Gas Connection	1/2
Fan Diameter	22
Vent Pipe Connection Size	4
Combustion Air Inlet Pipe Connection Size	4
Approx. Shipping Weight	215 lbs.

- <sup>1</sup> All models have 4 holes for mounting. Listed is the hole diameter and threads per inch to accept threaded rod.  
<sup>2</sup> Dimension equals overall "R" dimension plus 12".

## **Standards**

*All unit(s) shall include:*

ETL design certification for use in both the US and Canada to the ANSI Z83.8 - latest revision, standard for "Gas Unit Heater and Gas-Fired Duct Furnaces" for safe operation, construction, and performance

## **Mechanical Configuration**

Condensing furnace section with 93% minimum efficiency provided by an indirect-fired tubular heat exchanger with individually fired tubes coupled to a secondary recuperative heat exchanger for maximum heat recovery.

## **Venting/Combustion Air Arrangement**

The unit shall be separated combustion. The venting shall be a power exhausted arrangement with a separate combustion air intake pipe connection to allow for fresh combustion air from outside the conditioned space. The unit shall be tested to insure proper ignition when the unit is subjected to 40 mile per hour wind velocities. The unit shall also include a factory mounted differential pressure switch designed to prevent main burner ignition until positive venting has been proven.

Venting shall be Schedule 40 PVC. For Canadian installations, all vent pipe and components must be approved to ULC S636.

## **Unit Casing**

The unit heater(s) casing shall be constructed of not less than 20 gauge aluminized steel with minimization of exposed fasteners.

All exterior casing parts shall be cleaned of all oils and a phosphate coating applied prior to painting. The exterior casing parts shall then be painted with an electrostatically applied baked-on gray-green polyester powder paint (7-mil thickness) for corrosion resistance.

The unit shall be furnished with horizontal air deflectors. The deflectors are adjustable to provide for horizontal directional airflow control (up or down).

## **Furnace Section**

The heat exchanger(s) shall be made of 18 gauge aluminized steel tubes and headers. Each heat exchanger tube shall be individually and directly flame-fired. The heat exchanger tube shall be crimped to allow for thermal expansion and contraction. The flue collector box shall be made of 20 gauge AL29-4C stainless steel.

The thermal efficiency of the unit(s) shall be a minimum of 93% efficient for all air flow ranges through the use of a secondary recuperative heat exchanger. The secondary heat exchanger shall be constructed of AL29-4C stainless steel to withstand the corrosive environment of condensing gas fired equipment.

The heat exchanger(s) seams and duct connections shall be certified to withstand 0.9" W.C. external static pressure without burner flame disturbance.

The burner(s) shall be in-shot type, directly firing each heat exchanger tube individually and is designed for good lighting characteristics without noise of extinction for both natural and propane gas.

The ignition controller(s) shall be 100% shut-off with continuous retry.

The gas pressure shall be between 6-7" W.C for natural gas.

The solid state ignition system shall directly light the gas by means of a direct spark igniter each time the system is energized.

The unit gas controls shall be provided with the following:

Single-stage gas controls with a single-stage combination gas control, an ignition control. The unit fires at 100% full fire based on a call for heat from a room thermostat.

An automatic reset high limit switch mounted in the air stream to shut off the gas supply in the event of overheating.

An automatic reset high limit switch mounted on the power exhauster housing to shut off the gas supply in the event of overheating flue gas temperatures.

A condensate drain line overflow switch that senses if the condensate line is clogged and shuts the unit heater down. The switch is factory mounted inside the unit cabinet and wired to the unit controls.

An energy-saver control utilizes stratified ceiling air to heat the space at floor level before turning on the gas controls. Its operation is independent of the room thermostat and should have a higher set-point than the room thermostat. The Stat is factory mounted outside the unit and wired into the contractor convenience box.

A Modine Building Management System (BMS) Board installed in this unit provides an RS485 interface between the unit heater and existing building networks that employ a BACnet or Modbus protocol. The board works in conjunction with the unit's ignition control module to manage and report the function of the heater. A BMS network connection is not required to operate the heater, but allows for expanded control and monitoring ability.

A time delay relay that delays the start of the air mover to allow the heat exchanger a warm-up period after a call for heat. The time delay relay shall also continue the air mover operation after the thermostat has been satisfied to remove any residual heat in the heat exchanger.

The unit must be field adjusted for 0-2000 feet elevation above sea level. See units installation manual for instruction for altitude adjustments.

## **Electrical**

All electrical components shall carry UL, ETL, or CSA certification.

A low voltage terminal board shall be provided for direct wiring connection to an external thermostat.

A Contractor Convenience Package that consists of an external junction box featuring simple connection of supply power wiring internally, thermostat wiring to terminals externally, an On/Off switch, a single 115V outlet for connection of an external condensate pump, and status indicator lights to display the operational state of the unit shall be factory mounted on the rear panel of the casing.

A single 115V to 24V step down transformer shall be provided for all unit controls.

## **Air Mover**

The motor horsepower shall be 1/3 H.P.

The motor wiring shall be in flexible metal BX conduit.

The motor shall be controlled by a time delay relay.

Propeller models shall meet the following requirements:

The motor type shall be Single-Speed, Totally Enclosed (TE).

The air mover motor shall be a 115V motor.

## **Mounting**

The unit shall be equipped with tapped holes to accept 3/8"-16 threaded rod for suspension.

Propeller Unit to have two point adjustable suspension points to allow for level hanging with a variety of accessories.

### **Accessories**

The following field installed accessory control devices shall be provided with the unit:

A condensate drain kit consisting of one threaded PVC elbow and two specially designed condensate traps to allow the unit to operate and drain properly.





AccuSpec V4.24ha

## PTC MODEL NOMENCLATURE

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1,2,3	4,5,6	7	8	9,10	11,12	13	14	15	16
PTC	215	A	S	01	11	S	B	A	C

### 1,2,3 - Product Type

PTC - Separated Combustion, High Efficiency Condensing Propeller Unit

### 4,5,6 - Furnace Input Rating

215 - 215,000 Btu/hr Input

### 7 - Heat Exchanger Type

A - Aluminized Steel Heat Exchanger and Burner

### 8 - Pilot Ignition

S - Direct Spark Ignition

### 9,10 - Motor and Drive Code (Power Code)

01 - 115V motor

### 11,12 - Gas and Valve/Ignition Control Type (Control Code)

11 - Natural, Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry

### 13 - Fan Guard Type

S - Standard Fan Guard

### 14 - Development Sequence

B - Current

### 15 - Future

A - For Future Use

### 16 - Factory Installed Option

C - None



AccuSpec V4.24ha

## GENERAL PERFORMANCE DATA

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**Intertek**

### General Performance Data

**Model** PTC 215

#### At 0' Elevation

---

Btu/Hr. Input	215,000
Btu/Hr. Output	199,950
Entering Airflow (CFM)	4585
Outlet Velocity	699
Air Temp. Rise (°F)	48
Mounting Height (Max Ft.) <sup>1</sup>	17
Heat Throw (Max. Mtg. Ft.) <sup>2</sup>	60
Unit Total Power (Amps)	9.15
Condensate Produced (gal/hr)	1.6

#### As Configured at 0-2000 Ft. Elevation

---

Btu/Hr. Input	215,000
Btu/Hr. Output	199,950
Configured Air Temp Rise (°F)	40

#### Motor Data

---

Horse Power	1/2
RPM	1075
Type	P.S.C.
Motor Amps at 115V	7.00

#### Clearances to Combustibles

---

Top and Bottom	6"
Vent/Combustion Air Connector	6"
Access Side	6"
Non-Access Side	6"
Rear	18"

<sup>1</sup> At 65°F ambient and unit fired at full-rated input. Mounting height as measured from bottom of unit.

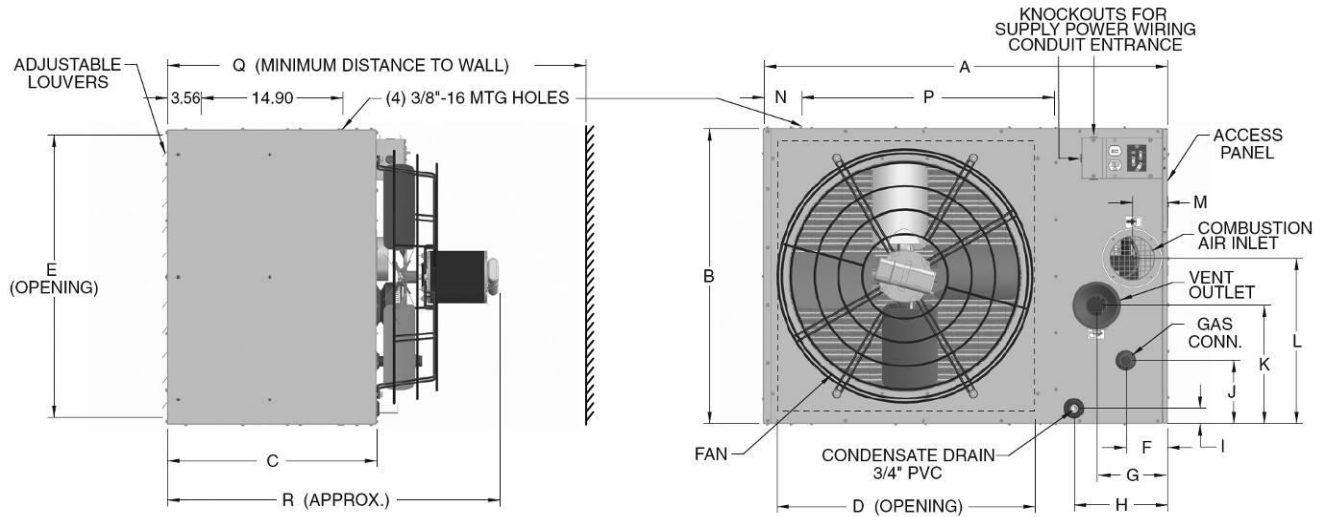
<sup>2</sup> Heat Throws are calculated at 65°F ambient with a 40°F air temperature rise with the unit mounted at a maximum mounting height of 17 feet.



AccuSpec V4.24ha

## DIMENSIONS – UNIT

### Model PTC Dimensions



### Model Size Dimensions (inches)

### PTC215

A	42.53
B	31.31
C	22.05
D	29.52
E	29.43
F	4.50
G	7.47
H	9.86
I	1.63

J	6.72
K	12.58
L	17.58
M	3.72
N	3.97
P	26.6
Q <sup>2</sup>	45.83
R	33.83

Gas Connection	3/4
Fan Diameter	24
Vent Pipe Connection Size	4
Combustion Air Inlet Pipe Connection Size	4
Approx. Shipping Weight	265 lbs.

- <sup>1</sup> All models have 4 holes for mounting. Listed is the hole diameter and threads per inch to accept threaded rod.  
<sup>2</sup> Dimension equals overall "R" dimension plus 12".

## **Standards**

*All unit(s) shall include:*

ETL design certification for use in both the US and Canada to the ANSI Z83.8 - latest revision, standard for "Gas Unit Heater and Gas-Fired Duct Furnaces" for safe operation, construction, and performance

## **Mechanical Configuration**

Condensing furnace section with 93% minimum efficiency provided by an indirect-fired tubular heat exchanger with individually fired tubes coupled to a secondary recuperative heat exchanger for maximum heat recovery.

## **Venting/Combustion Air Arrangement**

The unit shall be separated combustion. The venting shall be a power exhausted arrangement with a separate combustion air intake pipe connection to allow for fresh combustion air from outside the conditioned space. The unit shall be tested to insure proper ignition when the unit is subjected to 40 mile per hour wind velocities. The unit shall also include a factory mounted differential pressure switch designed to prevent main burner ignition until positive venting has been proven.

Venting shall be Schedule 40 PVC. For Canadian installations, all vent pipe and components must be approved to ULC S636.

## **Unit Casing**

The unit heater(s) casing shall be constructed of not less than 20 gauge aluminized steel with minimization of exposed fasteners.

All exterior casing parts shall be cleaned of all oils and a phosphate coating applied prior to painting. The exterior casing parts shall then be painted with an electrostatically applied baked-on gray-green polyester powder paint (7-mil thickness) for corrosion resistance.

The unit shall be furnished with horizontal air deflectors. The deflectors are adjustable to provide for horizontal directional airflow control (up or down).

## **Furnace Section**

The heat exchanger(s) shall be made of 18 gauge aluminized steel tubes and headers. Each heat exchanger tube shall be individually and directly flame-fired. The heat exchanger tube shall be crimped to allow for thermal expansion and contraction. The flue collector box shall be made of 20 gauge AL29-4C stainless steel.

The thermal efficiency of the unit(s) shall be a minimum of 93% efficient for all air flow ranges through the use of a secondary recuperative heat exchanger. The secondary heat exchanger shall be constructed of AL29-4C stainless steel to withstand the corrosive environment of condensing gas fired equipment.

The heat exchanger(s) seams and duct connections shall be certified to withstand 0.9" W.C. external static pressure without burner flame disturbance.

The burner(s) shall be in-shot type, directly firing each heat exchanger tube individually and is designed for good lighting characteristics without noise of extinction for both natural and propane gas.

The ignition controller(s) shall be 100% shut-off with continuous retry.

The gas pressure shall be between 6-7" W.C for natural gas.

The solid state ignition system shall directly light the gas by means of a direct spark igniter each time the system is energized.

The unit gas controls shall be provided with the following:

Single-stage gas controls with a single-stage combination gas control, an ignition control. The unit fires at 100% full fire based on a call for heat from a room thermostat.

An automatic reset high limit switch mounted in the air stream to shut off the gas supply in the event of overheating.

An automatic reset high limit switch mounted on the power exhaustor housing to shut off the gas supply in the event of overheating flue gas temperatures.

A condensate drain line overflow switch that senses if the condensate line is clogged and shuts the unit heater down. The switch is factory mounted inside the unit cabinet and wired to the unit controls.

An energy-saver control utilizes stratified ceiling air to heat the space at floor level before turning on the gas controls. Its operation is independent of the room thermostat and should have a higher set-point than the room thermostat. The Stat is factory mounted outside the unit and wired into the contractor convenience box.

A Modine Building Management System (BMS) Board installed in this unit provides an RS485 interface between the unit heater and existing building networks that employ a BACnet or Modbus protocol. The board works in conjunction with the unit's ignition control module to manage and report the function of the heater. A BMS network connection is not required to operate the heater, but allows for expanded control and monitoring ability.

A time delay relay that delays the start of the air mover to allow the heat exchanger a warm-up period after a call for heat. The time delay relay shall also continue the air mover operation after the thermostat has been satisfied to remove any residual heat in the heat exchanger.

The unit must be field adjusted for 0-2000 feet elevation above sea level. See units installation manual for instruction for altitude adjustments.

## **Electrical**

All electrical components shall carry UL, ETL, or CSA certification.

A low voltage terminal board shall be provided for direct wiring connection to an external thermostat.

A Contractor Convenience Package that consists of an external junction box featuring simple connection of supply power wiring internally, thermostat wiring to terminals externally, an On/Off switch, a single 115V outlet for connection of an external condensate pump, and status indicator lights to display the operational state of the unit shall be factory mounted on the rear panel of the casing.

A single 115V to 24V step down transformer shall be provided for all unit controls.

## **Air Mover**

The motor horsepower shall be 1/2 H.P.

The motor wiring shall be in flexible metal BX conduit.

The motor shall be controlled by a time delay relay.

Propeller models shall meet the following requirements:

The motor type shall be Single-Speed, Totally Enclosed (TE).

The air mover motor shall be a 115V motor.

## **Mounting**

The unit shall be equipped with tapped holes to accept 3/8"-16 threaded rod for suspension.

Propeller Unit to have two point adjustable suspension points to allow for level hanging with a variety of accessories.

### **Accessories**

The following field installed accessory control devices shall be provided with the unit:

A condensate drain kit consisting of one threaded PVC elbow and two specially designed condensate traps to allow the unit to operate and drain properly.



## PTC MODEL NOMENCLATURE

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1,2,3	4,5,6	7	8	9,10	11,12	13	14	15	16
PTC	260	A	S	01	11	S	B	A	C

### 1,2,3 - Product Type

PTC - Separated Combustion, High Efficiency Condensing Propeller Unit

### 4,5,6 - Furnace Input Rating

260 - 260,000 Btu/hr Input

### 7 - Heat Exchanger Type

A - Aluminized Steel Heat Exchanger and Burner

### 8 - Pilot Ignition

S - Direct Spark Ignition

### 9,10 - Motor and Drive Code (Power Code)

01 - 115V motor

### 11,12 - Gas and Valve/Ignition Control Type (Control Code)

11 - Natural, Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry

### 13 - Fan Guard Type

S - Standard Fan Guard

### 14 - Development Sequence

B - Current

### 15 - Future

A - For Future Use

### 16 - Factory Installed Option

C - None



AccuSpec V4.24ha

## GENERAL PERFORMANCE DATA

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**Intertek**

### General Performance Data

**Model** PTC 260

#### At 0' Elevation

---

Btu/Hr. Input	260,000
Btu/Hr. Output	241,800
Entering Airflow (CFM)	4585
Outlet Velocity	831
Air Temp. Rise (°F)	49
Mounting Height (Max Ft.) <sup>1</sup>	20
Heat Throw (Max. Mtg. Ft.) <sup>2</sup>	70
Unit Total Power (Amps)	10.95
Condensate Produced (gal/hr)	1.9

#### As Configured at 0-2000 Ft. Elevation

---

Btu/Hr. Input	260,000
Btu/Hr. Output	241,800
Configured Air Temp Rise (°F)	49

#### Motor Data

---

Horse Power	3/4
RPM	1125
Type	P.S.C.
Motor Amps at 115V	8.80

#### Clearances to Combustibles

---

Top and Bottom	6"
Vent/Combustion Air Connector	6"
Access Side	6"
Non-Access Side	6"
Rear	18"

<sup>1</sup> At 65°F ambient and unit fired at full-rated input. Mounting height as measured from bottom of unit.

<sup>2</sup> Heat Throws are calculated at 65°F ambient with a 49°F air temperature rise with the unit mounted at a maximum mounting height of 20 feet.

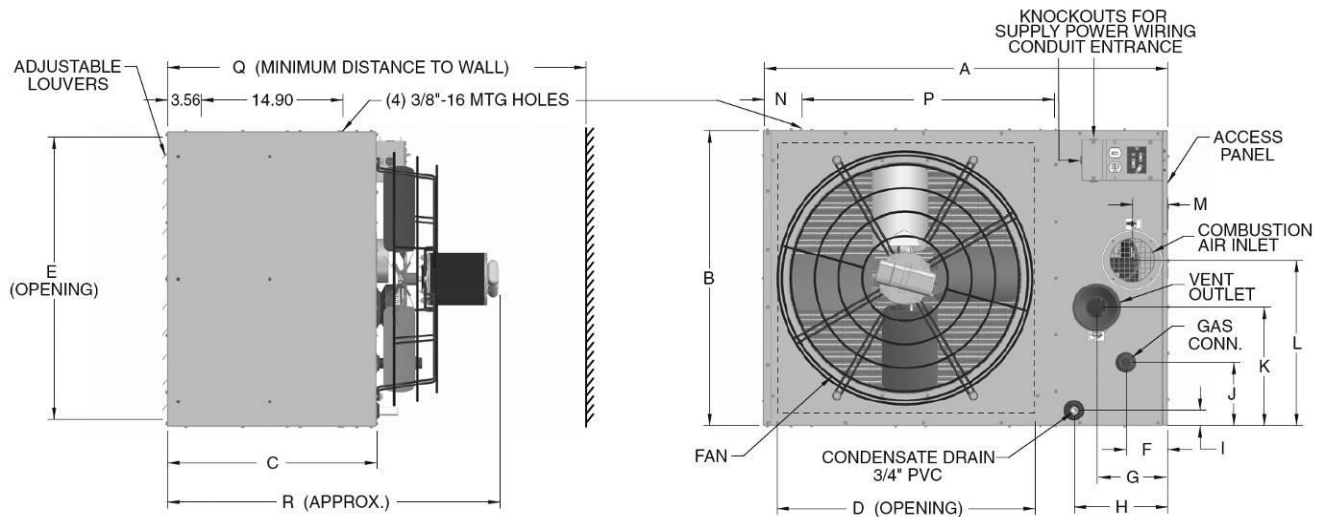




AccuSpec V4.24ha

## DIMENSIONS – UNIT

### Model PTC Dimensions



### Model Size Dimensions (inches)

### PTC260

A	42.53
B	31.31
C	22.05
D	29.52
E	29.43
F	4.50
G	7.47
H	9.86
I	1.63

J	6.72
K	12.58
L	17.58
M	3.72
N	3.97
P	26.6
Q <sup>2</sup>	45.83
R	34.83

Gas Connection	3/4
Fan Diameter	24
Vent Pipe Connection Size	4
Combustion Air Inlet Pipe Connection Size	4
Approx. Shipping Weight	265 lbs.

- <sup>1</sup> All models have 4 holes for mounting. Listed is the hole diameter and threads per inch to accept threaded rod.  
<sup>2</sup> Dimension equals overall "R" dimension plus 12".

## **Standards**

*All unit(s) shall include:*

ETL design certification for use in both the US and Canada to the ANSI Z83.8 - latest revision, standard for "Gas Unit Heater and Gas-Fired Duct Furnaces" for safe operation, construction, and performance

## **Mechanical Configuration**

Condensing furnace section with 93% minimum efficiency provided by an indirect-fired tubular heat exchanger with individually fired tubes coupled to a secondary recuperative heat exchanger for maximum heat recovery.

## **Venting/Combustion Air Arrangement**

The unit shall be separated combustion. The venting shall be a power exhausted arrangement with a separate combustion air intake pipe connection to allow for fresh combustion air from outside the conditioned space. The unit shall be tested to insure proper ignition when the unit is subjected to 40 mile per hour wind velocities. The unit shall also include a factory mounted differential pressure switch designed to prevent main burner ignition until positive venting has been proven.

Venting shall be Schedule 40 PVC. For Canadian installations, all vent pipe and components must be approved to ULC S636.

## **Unit Casing**

The unit heater(s) casing shall be constructed of not less than 20 gauge aluminized steel with minimization of exposed fasteners.

All exterior casing parts shall be cleaned of all oils and a phosphate coating applied prior to painting. The exterior casing parts shall then be painted with an electrostatically applied baked-on gray-green polyester powder paint (7-mil thickness) for corrosion resistance.

The unit shall be furnished with horizontal air deflectors. The deflectors are adjustable to provide for horizontal directional airflow control (up or down).

## **Furnace Section**

The heat exchanger(s) shall be made of 18 gauge aluminized steel tubes and headers. Each heat exchanger tube shall be individually and directly flame-fired. The heat exchanger tube shall be crimped to allow for thermal expansion and contraction. The flue collector box shall be made of 20 gauge AL29-4C stainless steel.

The thermal efficiency of the unit(s) shall be a minimum of 93% efficient for all air flow ranges through the use of a secondary recuperative heat exchanger. The secondary heat exchanger shall be constructed of AL29-4C stainless steel to withstand the corrosive environment of condensing gas fired equipment.

The heat exchanger(s) seams and duct connections shall be certified to withstand 0.9" W.C. external static pressure without burner flame disturbance.

The burner(s) shall be in-shot type, directly firing each heat exchanger tube individually and is designed for good lighting characteristics without noise of extinction for both natural and propane gas.

The ignition controller(s) shall be 100% shut-off with continuous retry.

The gas pressure shall be between 6-7" W.C for natural gas.

The solid state ignition system shall directly light the gas by means of a direct spark igniter each time the system is energized.

The unit gas controls shall be provided with the following:

Single-stage gas controls with a single-stage combination gas control, an ignition control. The unit fires at 100% full fire based on a call for heat from a room thermostat.

An automatic reset high limit switch mounted in the air stream to shut off the gas supply in the event of overheating.

An automatic reset high limit switch mounted on the power exhauster housing to shut off the gas supply in the event of overheating flue gas temperatures.

A condensate drain line overflow switch that senses if the condensate line is clogged and shuts the unit heater down. The switch is factory mounted inside the unit cabinet and wired to the unit controls.

An energy-saver control utilizes stratified ceiling air to heat the space at floor level before turning on the gas controls. Its operation is independent of the room thermostat and should have a higher set-point than the room thermostat. The Stat is factory mounted outside the unit and wired into the contractor convenience box.

A Modine Building Management System (BMS) Board installed in this unit provides an RS485 interface between the unit heater and existing building networks that employ a BACnet or Modbus protocol. The board works in conjunction with the unit's ignition control module to manage and report the function of the heater. A BMS network connection is not required to operate the heater, but allows for expanded control and monitoring ability.

A time delay relay that delays the start of the air mover to allow the heat exchanger a warm-up period after a call for heat. The time delay relay shall also continue the air mover operation after the thermostat has been satisfied to remove any residual heat in the heat exchanger.

The unit must be field adjusted for 0-2000 feet elevation above sea level. See units installation manual for instruction for altitude adjustments.

## **Electrical**

All electrical components shall carry UL, ETL, or CSA certification.

A low voltage terminal board shall be provided for direct wiring connection to an external thermostat.

A Contractor Convenience Package that consists of an external junction box featuring simple connection of supply power wiring internally, thermostat wiring to terminals externally, an On/Off switch, a single 115V outlet for connection of an external condensate pump, and status indicator lights to display the operational state of the unit shall be factory mounted on the rear panel of the casing.

A single 115V to 24V step down transformer shall be provided for all unit controls.

## **Air Mover**

The motor horsepower shall be 3/4 H.P.

The motor wiring shall be in flexible metal BX conduit.

The motor shall be controlled by a time delay relay.

Propeller models shall meet the following requirements:

The motor type shall be Single-Speed, Totally Enclosed (TE).

The air mover motor shall be a 115V motor.

## **Mounting**

The unit shall be equipped with tapped holes to accept 3/8"-16 threaded rod for suspension.

Propeller Unit to have two point adjustable suspension points to allow for level hanging with a variety of accessories.

### **Accessories**

The following field installed accessory control devices shall be provided with the unit:

A condensate drain kit consisting of one threaded PVC elbow and two specially designed condensate traps to allow the unit to operate and drain properly.



## PTC MODEL NOMENCLATURE

---

1,2,3	4,5,6	7	8	9,10	11,12	13	14	15	16
PTC	310	A	S	01	11	S	B	A	C

### 1,2,3 - Product Type

PTC - Separated Combustion, High Efficiency Condensing Propeller Unit

### 4,5,6 - Furnace Input Rating

310 - 310,000 Btu/hr Input

### 7 - Heat Exchanger Type

A - Aluminized Steel Heat Exchanger and Burner

### 8 - Pilot Ignition

S - Direct Spark Ignition

### 9,10 - Motor and Drive Code (Power Code)

01 - 115V motor

### 11,12 - Gas and Valve/Ignition Control Type (Control Code)

11 - Natural, Single Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry

### 13 - Fan Guard Type

S - Standard Fan Guard

### 14 - Development Sequence

B - Current

### 15 - Future

A - For Future Use

### 16 - Factory Installed Option

C - None



AccuSpec V4.24ha

## GENERAL PERFORMANCE DATA

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**Intertek**

### General Performance Data

**Model** PTC 310

#### At 0' Elevation

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Btu/Hr. Input	310,000
Btu/Hr. Output	288,300
Entering Airflow (CFM)	5400
Outlet Velocity	765
Air Temp. Rise (°F)	49
Mounting Height (Max Ft.) <sup>1</sup>	19
Heat Throw (Max. Mtg. Ft.) <sup>2</sup>	67
Unit Total Power (Amps)	9.85
Condensate Produced (gal/hr)	2.3

#### As Configured at 0-2000 Ft. Elevation

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Btu/Hr. Input	310,000
Btu/Hr. Output	288,300
Configured Air Temp Rise (°F)	49

#### Motor Data

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Horse Power	3/4
RPM	1125
Type	P.S.C.
Motor Amps at 115V	8.80

#### Clearances to Combustibles

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Top and Bottom	6"
Vent/Combustion Air Connector	6"
Access Side	6"
Non-Access Side	6"
Rear	18"

<sup>1</sup> At 65°F ambient and unit fired at full-rated input. Mounting height as measured from bottom of unit.

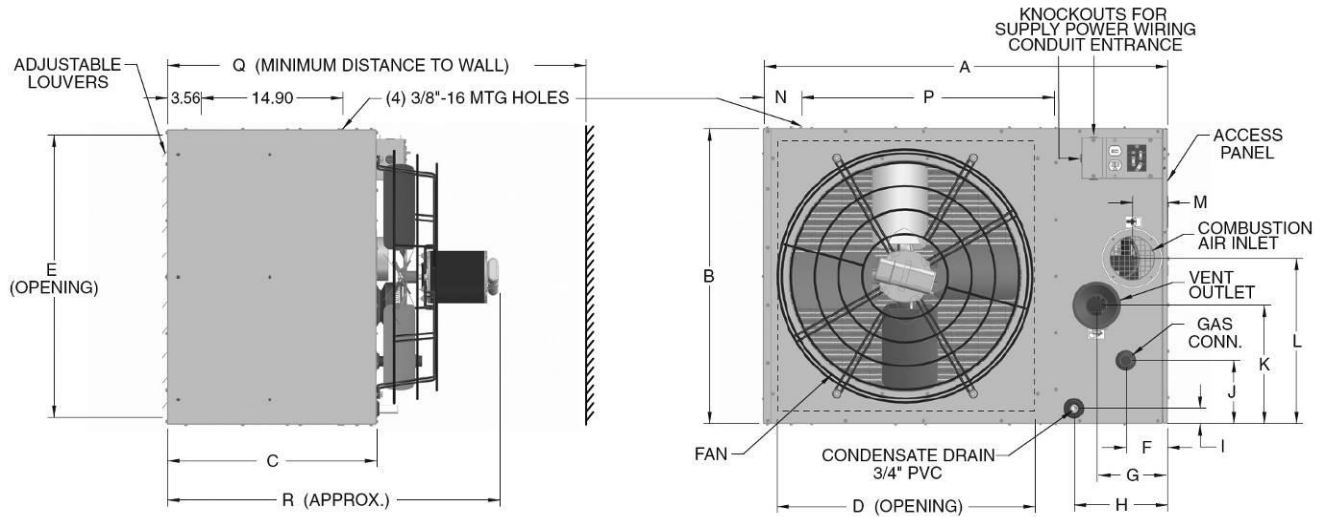
<sup>2</sup> Heat Throws are calculated at 65°F ambient with a 49°F air temperature rise with the unit mounted at a maximum mounting height of 19 feet.



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## DIMENSIONS – UNIT

### Model PTC Dimensions



### Model Size Dimensions (inches)

### PTC310

A	42.53
B	39.56
C	22.05
D	29.52
E	37.68
F	4.50
G	8.12
H	9.79
I	1.88

J	10.84
K	16.19
L	22.19
M	4.62
N	3.97
P	26.6
Q <sup>2</sup>	45.83
R	34.83

Gas Connection	3/4
Fan Diameter	26
Vent Pipe Connection Size	4
Combustion Air Inlet Pipe Connection Size	6
Approx. Shipping Weight	310 lbs.

- <sup>1</sup> All models have 4 holes for mounting. Listed is the hole diameter and threads per inch to accept threaded rod.  
<sup>2</sup> Dimension equals overall "R" dimension plus 12".

## **Standards**

*All unit(s) shall include:*

ETL design certification for use in both the US and Canada to the ANSI Z83.8 - latest revision, standard for "Gas Unit Heater and Gas-Fired Duct Furnaces" for safe operation, construction, and performance

## **Mechanical Configuration**

Condensing furnace section with 93% minimum efficiency provided by an indirect-fired tubular heat exchanger with individually fired tubes coupled to a secondary recuperative heat exchanger for maximum heat recovery.

## **Venting/Combustion Air Arrangement**

The unit shall be separated combustion. The venting shall be a power exhausted arrangement with a separate combustion air intake pipe connection to allow for fresh combustion air from outside the conditioned space. The unit shall be tested to insure proper ignition when the unit is subjected to 40 mile per hour wind velocities. The unit shall also include a factory mounted differential pressure switch designed to prevent main burner ignition until positive venting has been proven.

Venting shall be Schedule 40 PVC. For Canadian installations, all vent pipe and components must be approved to ULC S636.

## **Unit Casing**

The unit heater(s) casing shall be constructed of not less than 20 gauge aluminized steel with minimization of exposed fasteners.

All exterior casing parts shall be cleaned of all oils and a phosphate coating applied prior to painting. The exterior casing parts shall then be painted with an electrostatically applied baked-on gray-green polyester powder paint (7-mil thickness) for corrosion resistance.

The unit shall be furnished with horizontal air deflectors. The deflectors are adjustable to provide for horizontal directional airflow control (up or down).

## **Furnace Section**

The heat exchanger(s) shall be made of 18 gauge aluminized steel tubes and headers. Each heat exchanger tube shall be individually and directly flame-fired. The heat exchanger tube shall be crimped to allow for thermal expansion and contraction. The flue collector box shall be made of 20 gauge AL29-4C stainless steel.

The thermal efficiency of the unit(s) shall be a minimum of 93% efficient for all air flow ranges through the use of a secondary recuperative heat exchanger. The secondary heat exchanger shall be constructed of AL29-4C stainless steel to withstand the corrosive environment of condensing gas fired equipment.

The heat exchanger(s) seams and duct connections shall be certified to withstand 0.9" W.C. external static pressure without burner flame disturbance.

The burner(s) shall be in-shot type, directly firing each heat exchanger tube individually and is designed for good lighting characteristics without noise of extinction for both natural and propane gas.

The ignition controller(s) shall be 100% shut-off with continuous retry.

The gas pressure shall be between 6-7" W.C for natural gas.

The solid state ignition system shall directly light the gas by means of a direct spark igniter each time the system is energized.



The unit gas controls shall be provided with the following:

Single-stage gas controls with a single-stage combination gas control, an ignition control. The unit fires at 100% full fire based on a call for heat from a room thermostat.

An automatic reset high limit switch mounted in the air stream to shut off the gas supply in the event of overheating.

An automatic reset high limit switch mounted on the power exhauster housing to shut off the gas supply in the event of overheating flue gas temperatures.

A condensate drain line overflow switch that senses if the condensate line is clogged and shuts the unit heater down. The switch is factory mounted inside the unit cabinet and wired to the unit controls.

An energy-saver control utilizes stratified ceiling air to heat the space at floor level before turning on the gas controls. Its operation is independent of the room thermostat and should have a higher set-point than the room thermostat. The Stat is factory mounted outside the unit and wired into the contractor convenience box.

A Modine Building Management System (BMS) Board installed in this unit provides an RS485 interface between the unit heater and existing building networks that employ a BACnet or Modbus protocol. The board works in conjunction with the unit's ignition control module to manage and report the function of the heater. A BMS network connection is not required to operate the heater, but allows for expanded control and monitoring ability.

A time delay relay that delays the start of the air mover to allow the heat exchanger a warm-up period after a call for heat. The time delay relay shall also continue the air mover operation after the thermostat has been satisfied to remove any residual heat in the heat exchanger.

The unit must be field adjusted for 0-2000 feet elevation above sea level. See units installation manual for instruction for altitude adjustments.

## **Electrical**

All electrical components shall carry UL, ETL, or CSA certification.

A low voltage terminal board shall be provided for direct wiring connection to an external thermostat.

A Contractor Convenience Package that consists of an external junction box featuring simple connection of supply power wiring internally, thermostat wiring to terminals externally, an On/Off switch, a single 115V outlet for connection of an external condensate pump, and status indicator lights to display the operational state of the unit shall be factory mounted on the rear panel of the casing.

A single 115V to 24V step down transformer shall be provided for all unit controls.

## **Air Mover**

The motor horsepower shall be 3/4 H.P.

The motor wiring shall be in flexible metal BX conduit.

The motor shall be controlled by a time delay relay.

Propeller models shall meet the following requirements:

The motor type shall be Single-Speed, Totally Enclosed (TE).

The air mover motor shall be a 115V motor.

## **Mounting**

The unit shall be equipped with tapped holes to accept 3/8"-16 threaded rod for suspension.

Propeller Unit to have two point adjustable suspension points to allow for level hanging with a variety of accessories.

Unit to have 4 suspension points.

### **Accessories**

The following field installed accessory control devices shall be provided with the unit:

A condensate drain kit consisting of one threaded PVC elbow and two specially designed condensate traps to allow the unit to operate and drain properly.