

GAS-FIRED UNIT HEATERS

COMMERCIAL & INDUSTRIAL

GRAVITY VENTED



POWER VENTED



SEPARATED COMBUSTION



LOW PROFILE



MODINE

INDOOR AIR SOLUTIONS

GAS-FIRED, GRAVITY-VENTED UNIT HEATERS

- Low Initial Cost, 80% Thermal Efficiency • Gravity-Vented • 12 Propeller Models and 11 Blower Models
- Small Vent-Sizes Provide Lower Cost • Available with Intermittent Pilot Ignition • Power Exhaust Optional



MODEL PD

Due to its low cost and compact design, Modine's PD propeller unit heater is the logical choice for many unit heater applications. The model PD is a gas-fired, gravity-vented propeller unit heater that provides application versatility, ease of installation, low installed cost, long life and excellent heat-throw. Designed for overhead suspended mounting, this heater only requires venting, gas, and electric service connections prior to operation.

Propeller fan units are classified as zero-static-pressure type, and should not be used with velocity-generating discharge nozzles or ductwork connections.

The model BD blower is a gas-fired, gravity-vented blower unit heater, and is usually selected in place of the model PD for one or more of the following reasons:

- To overcome static pressures.
- Where several rooms or areas are to be served by a remote heat source.
- To provide heat, filtered air and ventilation, all from a single source.
- When quiet operation is important.
- For zone control over heating and ventilation.
- For spot heating or high mounting-heights where special discharge nozzles may be required.

Equipment options include:

- Blower and motor enclosures, combination filter-rack and duct connections, velocity-generating nozzles and deflector hoods.
- A wide variety of motor horsepower and control options to meet your performance criteria.

Performance Data

	Model Number											
	PD 30	PD 50	PD 75	PD 100	PD 125	PD 150	PD 175	PD 200	PD 250	PD 300	PD 350	PD 400
Btu/Hr Input	30,000	50,000	75,000	100,000	125,000	150,000	175,000	200,000	250,000	300,000	350,000	400,000
Btu/Hr Output	24,000	40,000	60,000	80,000	100,000	120,000	140,000	160,000	200,000	240,000	280,000	320,000
Vent Dia. (In.)	3	4	5	6	6	7	7	7	8	9	10	10
CFM @ 70°F	440	740	1100	1460	1850	2180	2550	2870	3700	4460	4870	5440
Air Temp. Rise (°F)	51	50	51	51	50	51	51	52	50	50	53	54
Maximum Mounting Height (Ft)	7	9	12	14	14	16	17	15	19	21	20	19
Heat Throw (Ft) ①	25	33	41	49	51	55	59	51	67	74	70	69
Motor HP	1/40	1/40	1/12	1/12	1/8	1/8	1/6	1/6	1/3	1/2	3/4	3/4

① At 65° ambient temperature and unit fired at full-rated input. Mounting height is measured from floor to bottom of unit.

	Model Number										
	BD 50	BD 75	BD 100	BD 125	BD 150	BD 175	BD 200	BD 250	BD 300	BD 350	BD 400
Btu/Hr Input	50,000	75,000	100,000	125,000	150,000	175,000	200,000	250,000	300,000	350,000	400,000
Btu/Hr Output	40,000	60,000	80,000	100,000	120,000	140,000	160,000	200,000	240,000	280,000	320,000
Vent Dia. (In.)	4	5	6	6	7	7	7	8	9	10	10
Motor HP (Std 115V/60Hz/1Ph)	1/4	1/4	1/4	1/4	1/4	1/3	1/4	1/3	3/4	1	1-1/2
Air Flow CFM Range	529-926	794-1389	1058-1852	1323-2315	1587-2778	1852-3241	2116-3704	2646-4630	3175-5556	3704-6481	4233-7407
Air Temp. Rise Range (°F)	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70

Note: Maximum mounting heights and heat throws for BD models, without ductwork or nozzles, and at a CFM yielding a 55° temperature rise, are the same as those listed for equivalent size PD units.

DO NOT LOCATE ANY GAS-FIRED UNIT IN AREAS WITH CHLORINATED, HALOGENATED OR ACIDIC VAPORS IN ATMOSPHERE.

Request Catalog 6-189 For Complete Technical Information and Specifications.



MODEL BD



GAS-FIRED, POWER-EXHAUSTED HIGH-EFFICIENCY II™ UNIT HEATERS

- 80% Thermal Efficiency • Rotating Power Exhaust • Horizontal or Vertical Venting • Field-Convertible to Propane
- Field-Adjustable Level Hanging • Intermittent Pilot Ignition, 100% Shut-Off with Continuous Retry

HIGH EFFICIENCY II®

The PDP (propeller) and BDP (blower) High Efficiency II gas-fired unit heaters are a generation of products that are inexpensive to install, easy to use, and offer excellent in-service economy.

Each Modine power-exhausted unit heater has been engineered to include the following features:

- 80% thermal efficiency, maximizing seasonal efficiency through the use of a collector box and the power exhauster.
- A power exhaust that can be rotated 180°. The unit can be vented vertically or horizontally.
- A 100% shut-off, intermittent pilot-ignition system with continuous retry, at no extra charge. This ignition system allows for all PDP/BDP units to be field-converted to propane, if desired.
- A safety pressure-switch to assure safe venting conditions.
- Designed to utilize the smallest-diameter vent pipe possible.
- PDP models are designed to operate against 0.5 inches of external static pressure.
- "Wing" screws so that the bottom pan can be dropped without a screwdriver or nut driver.
- A level hanging mechanism for easy field adjustments after adding accessories that may change the unit's center of gravity.



MODEL PDP



MODEL BDP

Performance Data

	Model Number											
	PDP 30	PDP 50	PDP 75	PDP 100	PDP 125	PDP 150	PDP 175	PDP 200	PDP 250	PDP 300	PDP 350	PDP 400
Btu/Hr Input	30,000	50,000	75,000	100,000	125,000	150,000	175,000	200,000	250,000	300,000	350,000	400,000
Btu/Hr Output	24,000	40,000	60,000	80,000	100,000	120,000	140,000	160,000	200,000	240,000	280,000	320,000
Vent Dia. (In.)	3 or 4	3 or 4	4	4	4	5	5	5	6	6	6	6
CFM @ 70°F	440	740	1100	1460	1850	2180	2550	2870	3700	4460	4870	5440
Air Temp. Rise (°F)	51	50	51	51	50	51	51	52	50	50	53	54
Maximum Mounting Height (Ft)	7	9	12	14	14	16	17	15	19	21	20	19
Heat Throw (Ft) ①	25	33	41	49	51	55	59	51	67	74	70	69
Motor HP	1/40	1/40	1/12	1/12	1/8	1/8	1/6	1/6	1/3	1/2	3/4	3/4

① At 65° ambient temperature and unit fired at full-rated input. Mounting height is measured from floor to bottom of unit.

Blower											
	Model Number										
	BDP 50	BDP 75	BDP 100	BDP 125	BDP 150	BDP 175	BDP 200	BDP 250	BDP 300	BDP 350	BDP 400
Btu/Hr Input	50,000	75,000	100,000	125,000	150,000	175,000	200,000	250,000	300,000	350,000	400,000
Btu/Hr Output	40,000	60,000	80,000	100,000	120,000	140,000	160,000	200,000	240,000	280,000	320,000
Vent Dia. (In.)	3 or 4	4	4	4	5	5	5	6	6	6	6
Motor HP (Std 115V/60Hz/1Ph)	1/4	1/4	1/4	1/4	1/4	1/3	1/4	1/3	3/4	1	1-1/2
Air Flow CFM Range	529-926	794-1389	1058-1852	1323-2315	1587-2778	1852-3241	2116-3704	2646-4630	3175-5556	3704-6481	4233-7407
Air Temp. Rise Range (°F)	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70	40-70

Note: Maximum mounting heights and heat throws for BDP models, without ductwork or nozzles, and at a CFM yielding a 55° temperature rise, are the same as those listed for equivalent size PDP units.

DO NOT LOCATE ANY GAS-FIRED UNIT IN AREAS WITH CHLORINATED, HALOGENATED OR ACIDIC VAPORS IN ATMOSPHERE.



Request Catalog 6-189 For Complete Technical Information and Specifications.

GAS-FIRED, SEPARATED-COMBUSTION, HIGH-EFFICIENCY UNIT HEATERS

- 80% Seasonal Efficiency • 82% Thermal Efficiency • Horizontal or Vertical Venting • 20%+ Fuel Savings Versus Gravity-Vented Products • 100% Outside Air for Combustion • Stainless-Steel Secondary Heat-Exchanger Tubes • Sealed Compartment Protects Combination Gas Control, Ignition Control, Manifold and Burner • Horizontal or Vertical Concentric Venting.



MODEL PSH



MODEL BSH

When faced with difficult applications, Modine separated-combustion, high-efficiency unit heaters are the better choice. These unit heaters are specifically designed for buildings with hostile atmospheric conditions, such as chemicals, high humidity or negative pressure.

Combustion air is brought in from outside the heated area, either from outdoor air or from an adjacent room. This eliminates the need to use contaminated indoor air for combustion. To ease the installation of the separated-combustion unit heaters, Modine offers horizontal and vertical concentric venting options. Like all Modine gas-fired unit heaters, these heaters feature efficient air-foil heat-exchanger tubes and effective heat-transfer surfaces designed to maximize heat transfer from the burned fuel to the air passing over the heat exchanger. Modine's unique design also minimizes resistive losses, resulting in greater heat throw and lower motor horsepower requirements.

Modine employs a non-condensing recuperative heat-exchanger design to reclaim additional flue-gas heat prior to expelling the gases from the building. This is accomplished by collecting the flue gases and passing them twice through the secondary heat exchanger tubes.



Performance Data

Propeller						
	Model Number					
	PSH 130	PSH 150	PSH 170	PSH 225	PSH 280	PSH 340
Btu/Hr Input	130,000	150,000	170,000	225,000	280,000	340,000
Btu/Hr Output	106,600	123,000	139,400	184,500	229,600	275,400
Vent Dia. (In.)	4	4	4	4	6	6
CFM @ 70°F	2540	2900	2900	4275	4400	5300
Air Temp. Rise (°F)	39	39	45	40	48	48
Maximum Mounting Height (Ft) ①	12	16	16	20	20	20
Heat Throw (Ft) ①	50	50	50	65	65	65
Motor HP	1/6	1/6	1/6	1/3	1/2	1/2

① At 65°F ambient temperature and unit fired at full-rated input. Mounting height is measured from floor to bottom of unit.

Blower						
	Model Number					
	BSH 130	BSH 150	BSH 170	BSH 225	BSH 280	BSH 340
Btu/Hr Input	130,000	150,000	170,000	225,000	280,000	340,000
Btu/Hr Output	106,600	123,000	139,400	184,500	229,600	275,400
Vent Dia. (In.)	4	4	4	4	6	6
Motor HP (Std 115V/60Hz/1Ph)	1/4	1/2	1/2	3/4	1	1
Air Flow CFM Range	1161-1795	1340-2071	1591-2347	1985-3068	2501-3865	3000-4636
Air Temp. Rise Range (°F)	55-85	55-85	55-85	55-85	55-85	55-85

Note: Maximum mounting heights and heat throws for the BSH models without ductwork or nozzles, and at a CFM yielding a 55° temperature rise, are the same as those listed for equivalent size PSH units.

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Request Catalog 6-190 For Complete Technical Information and Specifications.

GAS-FIRED, POWER-EXHAUSTED, LOW PROFILE

- 80% Thermal Efficiency • Horizontal or Vertical Venting • Field Convertible to Propane • Low Profile Casing
- Hot Surface Ignition • 100% Shut-Off with Continuous Retry • Mounting Brackets Supplied • Commercial or Residential Applications



MODEL HD



For applications requiring a low profile unit, Modine offers the Hot Dawg® unit heater. The Hot Dawg may be installed in residential or commercial applications just one inch below the ceiling. The superior quality matched with the following features makes the Hot Dawg unit heater an easy choice for a variety of applications.

- Certified for residential, commercial and industrial use.
- Quiet operation.
- Attractive low profile design and neutral paint scheme assures that Hot Dawg will blend inconspicuously into any garage.
- Durable polyester powder paint maintains life-long good looks.
- Standard power exhaustor simplifies side-wall or roof venting with small-diameter vent-pipe.
- Versatile design allows for right or left-hand piping and installation. Gas, electrical and flue connections can be changed from one side to the other by simply flipping the Hot Dawg over.
- Lightweight, allows suspension from ceiling with only 2 angle brackets (included).
- Hassle free installation with field wiring connections and knockouts for quick access to gas and electricity.
- Designed for natural or propane gas.
- Sealed, permanently-lubricated motor for trouble-free dependability.
- Full 10-year warranty on heat exchanger.

Performance Data

	Model Number			
	HD 30	HD 45	HD 60	HD 75
Btu/Hr Input	30,000	45,000	60,000	75,000
Btu/Hr Output	24,000	36,000	48,000	60,000
Vent Dia. (In.) ①	3 or 5	3 or 5	3 or 5	3 or 5
CFM @ 70°F	505	720	990	1,160
Air Temp. Rise (°F)	44	46	45	48
Maximum Mounting Height (Ft.)②	10	10	12	14
Heat Throw (Ft.)②	25	27	36	38
Motor HP	1/25	1/15	1/12	1/12

① Vent size varies depending upon application.

② At 65°F ambient temperature and unit fired at full-rated input. Mounting height is measured from floor to bottom of unit.



DO NOT LOCATE ANY GAS-FIRED UNIT IN AREAS WITH CHLORINATED, HALOGENATED OR ACIDIC VAPORS IN ATMOSPHERE.

Request Catalog 6-114 and Submittal 6-460 For Complete Technical Information and Specifications.

PRODUCT FEATURES AND CUSTOMER BENEFITS

Heat Exchanger	20-gauge aluminized or stainless steel for additional strength and corrosion resistance.
Casing	22-gauge cold-rolled steel, with completely-painted outer panels, rounded corners and hidden fasteners for more-attractive appearance.
Paint	Electrostatically-applied, baked-on polyester powder paint for corrosion resistance and durability.
Burner	Burner can be easily removed for fast, efficient service. Available in aluminized or stainless steel.
Level Hanging Adjustment	Maintains level hanging, even if using a variety of field-installed accessories.
Natural & Propane Gas Fuel	Factory-installed or field-conversion kits available.
Combustion Air Inlet	Meters air to assure proper amount and eliminate flame disturbance.
Intermittent Pilot Ignition	Pilot is lit only when heat is called for. Includes a line voltage/25V control transformer. (Not standard on all models)
Six-Terminal Wiring Board	Easy thermostat and accessory wiring connections.
Totally-Enclosed Motors	Offers maximum atmospheric protection. Built-in thermal-overload protection on single-phase motors.
Wing Screws	For easy access to manifold, burner, and heat exchanger
Die-Formed Venturi and Light-weight Fans	Quiet operation.
Safety Fan Guard	360 degrees, formed from heavy rod-stock. Optional finger-proof guards available.
Limit Control	Safety device shuts off gas supply if unit overheats.
Adjustable Air-Deflector Blades	Horizontal blades standard; vertical blades optional for maximum air-current control.

OPTIONS AND ACCESSORIES

Deflector Hoods	<u>Propeller Models Only</u>
Vertical Deflector Blades	Finger-Proof Fan Guards
Summer/Winter Switch	
Energy-Saver Kit	<u>Blower Models Only</u>
Low-Voltage Thermostats and Subbases	Blower and Motor Enclosures
Thermostat Guards with Locking Covers	Combination Filter Rack and Duct Connector
Power Exhauster	Outlet Duct Connectors
Transformers and Relays	Discharge Nozzles
High-Pressure Regulators	Discharge Polytube Transitions
Propane and Natural-Gas Conversion Kits	Belt Guards
Concentric Venting	

MODINE GAS-FIRED UNIT HEATERS Model HD

PRODUCT FEATURES AND CUSTOMER BENEFITS

Heat Exchanger	18-gauge aluminized steel tube with gathered bends for added heat exchanger life.
Casing	Low profile design constructed of 20-gauge cold-rolled steel, with outer panels completely painted in Modine gray-green.
Paint	Electrostatically-applied, baked-on polyester powder paint for corrosion resistance and durability.
Burner	Utilizes inshot burner for increased serviceability.
Mounting Rails	Supplied with two L-shaped mounting brackets to facilitate a clean installation as close as one inch from the ceiling.
Natural & Propane Gas Fuel	Factory-installed or field-conversion kits available.
Power Exhauster	All HD units are supplied with factory installed power exhauster.
Hot Surface Ignition	All units are equipped with hot surface ignition for quick and reliable ignition on call for heat. Unit includes a line voltage to 24V control transformer to utilize low voltage controls.
Terminal Wiring Board	Easy thermostat wiring connections.
Die Formed Venturi Fans	Delivers quiet operation.
Safety Fan Guard	360° finger-proof fan guard to provide safe operation of unit.
Limit Control	Safety device shuts off gas supply if unit overheats.
Flame Roll Out Sensor	Safety device shuts off gas supply if flames roll out of heat exchanger.
Pressure Switch	Safety device shuts off gas supply if a blocked vent situation is present.
Adjustable Air-Deflector Blades	Horizontal blades designed for easy removal allowing unit to be flipped for opposite side controls.

OPTIONS AND ACCESSORIES

- Low-Voltage Thermostats and Subbases
- Control Relays
- Natural to Propane Gas Conversion Kits
- Vibration Isolation Kit

INDOOR *AIR* SOLUTIONS

Products from Modine are designed to provide indoor air-comfort solutions for commercial, institutional and industrial applications. Whatever your heating and ventilating requirements, Modine has the product to satisfy your needs, including:

- Gas-fired unit heaters
- Gas-fired duct furnaces
- Gas-fired high-intensity infrared heaters
- Gas-fired low-intensity infrared heaters
- Steam/hot water unit heaters
- Steam/hot water cabinet unit heaters
- Steam/hot water commercial fin tube radiation
- Steam/hot water convectors
- Oil-fired unit heaters
- Electric unit heaters
- Indoor gravity vented duct furnace make-up units
- Indoor gravity vented multiple duct furnace make-up air units
- Indoor separated combustion duct furnace make-up air units
- Indoor separated combustion multiple duct furnace make-up air units
- Outdoor duct furnace make-up air units
- Outdoor multiple duct furnace make-up air units
- Direct-fired make-up air units

With burner capacities up to 7,128,000 Btu/hr and air-handling capacities as high as 60,000 CFM, Modine products are compatible with every fuel type, including:

• **Natural or Propane Gas • Steam/Hot Water • Oil • Electric**

Specific catalogs and computer-generated heat-loss calculations are available for each product. Catalogs 75-136 and 75-137 provide details on all Modine HVAC equipment.

The Modine brand has been the industry standard since Arthur B. Modine invented and patented the first lightweight, suspended hydronic unit heater in 1923. No other manufacturer can provide the combined application flexibility, technical expertise and fast delivery found at Modine. Consult your local Modine distributor for help in solving your indoor air problems.

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