MODINE
APPLIED THERMAL INNOVATION™

75-136.41
November, 2008

Commercial & Industrial Unitary Heating Products

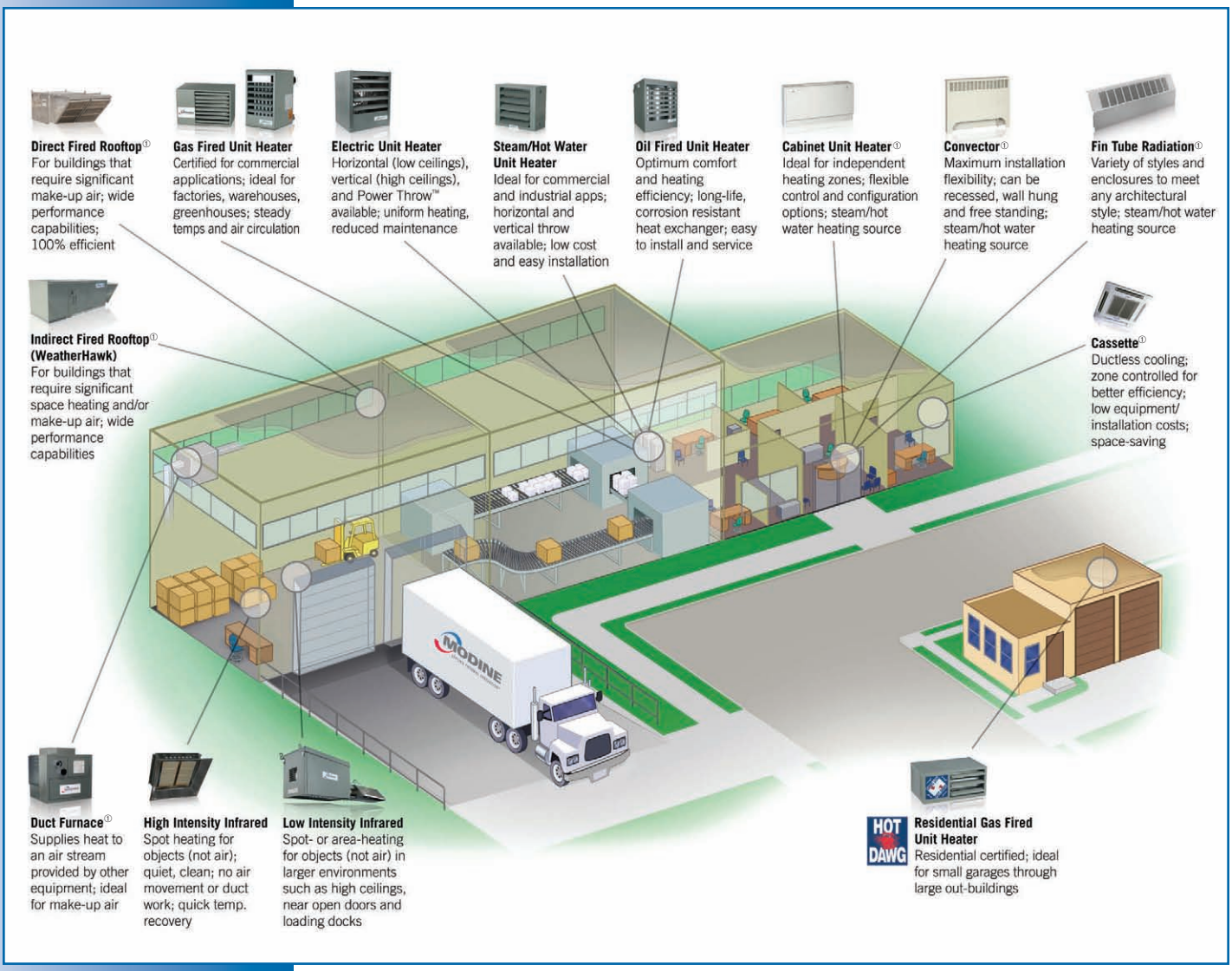
Gas
Steam/Hot Water
Oil
Electric

INDOOR AIR SOLUTIONS

Modine has always been the industry standard for comfort heating applications. With the Modine product line, you can fulfill your unit heater application needs with a variety of energy sources, including:

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

Modine sales representatives are experienced specialists in the engineering, selection and application of Modine commercial and industrial heating and ventilating equipment. Located near you, these representatives can help you satisfy your comfort needs and indoor-air quality requirements. Contact your Modine product source for assistance in providing top-quality, high-efficiency Indoor Air Solutions.



① Products as noted can be found in the latest revision of 75-137, Commercial & Industrial Applied Products

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GAS-FIRED, POWER-EXHAUSTED, LOW PROFILE

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

MODEL HD

MODEL HDB

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.

- Hush-puppy quiet operation.
- Uses natural or propane gas.
- Certified for residential, commercial and industrial use.
- Low-profile design and neutral color to blend in with decor.
- Lightweight, easily installs 1” from ceiling with only two angle brackets (standard on sizes 30-75, accessory for 100-125).
- Install quickly and easily with field wiring connections and knockouts for quick access to gas and electricity.
- Standard power exhaust simplifies side-wall or roof venting with small-diameter vent pipe.
- Sizes 30 thru 75 feature a versatile design that allows for right or left hand controls and installation. Gas, electrical and flue connections can be changed from one side to the other by simply flipping the Hot Dawg over.
- Permanently-lubricated motor for trouble-free dependability.
- Full 10-year warranty on heat exchanger.
- Available in both propeller fan and centrifugal blower configurations.

Performance Data

Propeller	Model Number					
	HD 30	HD 45	HD 60	HD 75	HD 100	HD 125
Btu/Hr Input	30,000	45,000	60,000	75,000	100,000	125,000
Btu/Hr Ouput	24,000	36,000	48,000	60,000	80,000	100,000
Vent Dia. (In.) ①	3 or 5	3 or 5	3 or 5	3 or 5	4 or 6	4 or 6
CFM @ 70°F	505	720	990	1,160	1,490	1,980
Air Temp. Rise (°F)	44	46	45	48	50	47
Maximum Mounting Height (Ft.)②	10	10	12	14	12	16
Heat Throw (Ft.)②	25	27	36	38	42	56
Motor HP	1/25	1/15	1/12	1/12	1/12	1/8

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.

Blower	Model Number			
	HDB 60	HDB 75	HDB 100	HDB 125
Btu/Hr Input	60,000	75,000	100,000	125,000
Btu/Hr Ouput	48,000	60,000	80,000	100,000
Vent Dia. (In.)	3 or 5	3 or 5	4 or 6	4 or 6
Motor HP	1/3	3/8	1/2	1/2
Air Flow CFM Range	635-1100	795-1390	1060-1850	1240-2050
Air Temp Rise Range	40-70	40-70	40-70	45-75

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, 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

MODEL PDP

MODEL BDP

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, 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.

Performance Data

Propeller	Model Number						
		PDP 150	PDP 175	PDP 200	PDP 250	PDP 300	PDP 350	PDP 400
Btu/Hr Input		150,000	175,000	200,000	250,000	300,000	350,000	400,000
Btu/Hr Output		120,000	140,000	160,000	200,000	240,000	280,000	320,000
Vent Dia. (In.)		5	5	5	6	6	6	6
CFM @ 70°F	For power exhausted models rated 30,000 to 125,000 Btu/hr, please see HD models on page 3.	2180	2550	2870	3700	4460	4870	5440
Air Temp. Rise (°F)		51	51	52	50	50	53	54
Maximum Mounting Height (Ft)		16	17	15	19	21	20	19
Heat Throw (Ft) ①		55	59	51	67	74	70	69
Motor HP		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 150	BDP 175	BDP 200	BDP 250	BDP 300	BDP 350	BDP 400
Btu/Hr Input		150,000	175,000	200,000	250,000	300,000	350,000	400,000
Btu/Hr Output	For power exhausted models rated 30,000 to 125,000 Btu/hr, please see HDB models on page 3.	120,000	140,000	160,000	200,000	240,000	280,000	320,000
Vent Dia. (In.)		5	5	5	6	6	6	6
Motor HP (Std 115V/60Hz/1Ph)		1/4	1/3	1/4	1/3	3/4	1	1-1/2
Air Flow CFM Range		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

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, LOW PROFILE

• 100% Outside Air for Combustion • Sealed Compartment Protects Combination Gas Control, Ignition Control, Manifold and Burner • Horizontal or Vertical Concentric Venting • 80% Thermal Efficiency • Field Convertible to Propane • Low Profile Casing • Direct Spark Ignition • 100% Shut-Off with Continuous Retry • Mounting Brackets Supplied • Certified for Commercial or Residential Applications

MODEL HDS

MODEL HDC

The separated combustion Hot Dawg draws its combustion air from outside to ensure that the unit will always have plenty of fresh, clean air to breathe. This fresh-air supply reduces common concerns about dusty, dirty or humid applications. In addition, by drawing the combustion air from the outside, the overall heating efficiency is increased. In short, the Hot Dawg separated combustion unit gives you the added advantages of:

- Less maintenance in dusty environments,
- Improved efficiency by using outside air for combustion,
- Greater durability in “hostile” environments (environments possessing substances that may deteriorate the performance of the unit),
- External gas connections.
- Hush-puppy quiet operation.
- Uses natural or propane gas.
- Certified for residential, commercial and industrial use.
- Low-profile design and neutral color to blend in with decor.
- Lightweight, easily installs 1” from ceiling with only two angle brackets (standard on sizes 30-75, accessory for 100-125).
- Install quickly and easily with field wiring connections and knockouts for quick access to gas and electricity.
- Standard power exhaust simplifies side-wall or roof venting with small-diameter vent pipe.
- Sizes 30 thru 75 feature a versatile design that allows for right or left hand controls and installation. Gas, electrical and flue connections can be changed from one side to the other by simply flipping the Hot Dawg over.
- Permanently-lubricated motor for trouble-free dependability.
- Full 10-year warranty on heat exchanger.
- Available in both propeller fan and centrifugal blower configurations.

Performance Data

Propeller	Model Number					
	HDS 30	HDS 45	HDS 60	HDS 75	HDS 100	HDS 125
Btu/Hr Input	30,000	45,000	60,000	75,000	100,000	125,000
Btu/Hr Ouput	24,000	36,000	48,000	60,000	80,000	100,000
Vent Dia. (In.)	3	3	4	4	4	4
CFM @ 70°F	505	720	990	1,160	1,490	1,980
Air Temp. Rise (°F)	44	46	45	48	50	47
Maximum Mounting Height (Ft.) ①	10	10	12	14	12	16
Heat Throw (Ft.) ①	25	27	36	38	42	56
Motor HP	1/25	1/15	1/12	1/12	1/12	1/8

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			
	HDC 60	HDC 75	HDC 100	HDC 125
Btu/Hr Input	60,000	75,000	100,000	125,000
Btu/Hr Ouput	48,000	60,000	80,000	100,000
Vent Dia. (In.)	4	4	4	4
Motor HP	1/3	3/8	1/2	1/2
Air Flow CFM Range	635-1100	795-1390	1060-1850	1240-2050
Air Temp Rise Range	40-70	40-70	40-70	45-75

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

Request Catalog 6-175 For Complete Technical Information and Specifications.

GAS-FIRED, SEPARATED COMBUSTION, TUBULAR HEAT EXCHANGER

• 100% Outside Air for Combustion • Sealed Compartment Protects Combination Gas Control, Ignition Control, Manifold and Burner • Horizontal or Vertical Concentric Venting • 80% Thermal Efficiency • Field Convertible to Propane • Direct Spark Ignition • 100% Shut-Off with Continuous Retry • Certified for Commercial and Industrial Applications

MODEL
PTS (shown) / BTS

The separated combustion Model PTS/BTS draws its combustion air from outside to ensure that the unit will always have plenty of fresh, clean air to breath. This fresh-air supply reduces common concerns about dusty, dirty or humid applications. In addition, by drawing the combustion air from the outside, the overall heating efficiency is increased. In short, the Model PTS/BTS separated combustion unit gives you the added advantages of:

- Less maintenance in dusty environments,
- Improved efficiency by using outside air for combustion,
- Greater durability in "hostile" environments (environments possessing substances that may deteriorate the performance of the unit),
- External gas connections.
- Quiet operation.
- Uses natural or propane gas.
- Certified for commercial and industrial use.
- Durable polyester powder coat paint finish.
- Install quickly and easily with field wiring connections and knockouts for quick access to gas and electricity.
- Standard power exhaust simplifies side-wall or roof venting with small-diameter vent pipe.
- Permanently-lubricated motor for trouble-free dependability.
- Full 10-year warranty on heat exchanger.
- Available in both propeller fan and centrifugal blower configurations.

Performance Data

Propeller	Model Number						
	PTS150	PTS175	PTS200	PTS250	PTS300	PTS350	PTS400
Btu/Hr Input	150,000	175,000	200,000	250,000	300,000	350,000	400,000
Btu/Hr Output	120,000	140,000	160,000	200,000	240,000	280,000	320,000
Vent Diameter (inches)	4"	4"	4"	6"	6"	6"	6"
CFM @ 70°F	2139	2726	3015	3994	4543	5278	5995
Air Temp.Rise (°F)	52	48	49	46	49	49	49
Maximum Mounting Height (Ft.) ①	14	14	15	18	19	18	21
Heat Throw (Ft.) ①	51	50	54	62	69	65	74
Motor HP	1/6	1/6	1/6	1/3	1/2	1/2	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						
		BTS150	BTS175	BTS200	BTS250	BTS300	BTS350	BTS400
Btu/Hr Input		150,000	175,000	200,000	250,000	300,000	350,000	400,000
Btu/Hr Output		120,000	140,000	160,000	200,000	240,000	280,000	320,000
Vent Diameter (inches)		4"	4"	4"	6"	6"	6"	6"
Air Flow CFM Range	Min	1587	1852	2116	2646	3175	3704	4233
	Max	2778	3241	3704	4630	5556	6481	7407
Air Temp Rise Range	Max	70	70	70	70	70	70	70
	Min	40	40	40	40	40	40	40
Maximum Mounting Height (Ft.)		See Note below						
Heat Throw(Ft.)								
Motor HP		1/4 to 1	1/3 to 1-1/2	1/2 to 2	1/2 to 3	1 to 3	1-1/2 to 5	1-1/2 to 5

Note: Mounting Height/Heat Throw depend on blower speed. Please see the Catalog, Installation & Service Manual, or Breeze AccuSpec selection software for details.

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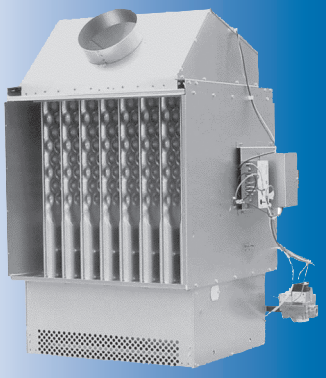
Request Catalog 6-175 For Complete Technical Information and Specifications.

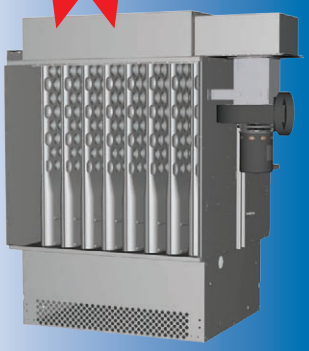
GAS-FIRED, GRAVITY AND POWER-VENTED DUCT FURNACES

• Low Initial Cost • Applications Cover Heating and/or Make-Up Air • 75,000 to 400,000 Btu/Hr Input Capacity • 80% Minimum Thermal Efficiency • Low Maintenance • Easy to Service



MODEL DFG GRAVITY VENTED

COMING SPRING 2009



MODEL DFP POWER VENTED

The Modine indoor duct furnace was designed for use with a building's heating, heating/cooling and make-up air systems. Available in 11 model sizes, in both gravity and power vented configurations, the unit covers a wide variety of applications. They have input ranges from 75,000 to 400,000 Btu/Hr and can operate on either natural or propane gas. The airflow direction can be specified when ordering the unit. The duct furnace is certified for location either upstream or downstream from cooling coils and has a drain pan that allows connection to a condensate drain line.

Standard Features:
- C.S.A. certification
- ETL certification
- All units a minimum of 80% thermally efficient
- 20 gauge aluminized steel cabinet
- Certified to 3.0" W.C. external static pressure for high static applications

Optional Features:
- 409 stainless steel heat exchanger and burner
- 409 stainless steel drip pan
- Two-stage, mechanical modulation, and electronic modulation controls for either natural or propane gas
- Building management compatible gas conrols for modulation control using 0 - 10 Vdc or 4 - 20 mA input
- High and/or low gas pressure switches

Performance Data ① ② ③

DFG/DFP Model Size	Btu/Hr		Without Air Baffle		With Air Baffle	
	Input	Output	Temperature Rise Range (°F)	CFM Range	Temperature Rise Range (°F)	CFM Range
75	75,000	60,000	20 - 60	926 - 2,778	20 - 100	556 - 2,778
100	100,000	80,000	20 - 60	1,235 - 3,704	20 - 100	741 - 3,704
125	125,000	100,000	20 - 60	1,543 - 4,630	20 - 100	926 - 4,630
150	150,000	120,000	20 - 60	1,852 - 5,556	20 - 100	1,111 - 5,556
175	175,000	140,000	20 - 60	2,160 - 6,481	20 - 100	1,296 - 6,481
200	200,000	160,000	20 - 60	2,469 - 7,407	20 - 100	1,481 - 7,407
225	225,000	180,000	20 - 60	2,778 - 8,333	20 - 100	1,667 - 8,333
250	250,000	200,000	20 - 60	3,086 - 9,259	20 - 100	1,852 - 9,259
300	300,000	240,000	20 - 60	3,704 - 11,111	20 - 100	2,222 - 11,111
350	350,000	280,000	20 - 60	4,321 - 12,963	23 - 100	2,593 - 11,111
400	400,000	320,000	20 - 60	4,938 - 14,815	27 - 100	2,963 - 11,111

① Ratings are shown for elevations up to 2,000 feet.
② Units approved for use in California by CEC.
③ When high rates of CFM are used, the air distribution baffle may be removed to reduce the pressure drop through the duct furnace.

DFG is design certified by CSA for the gas heating furnace section, and ETL for the electrical controls.
DFP is design certified by ETL for both the gas heating furnace section and the electrical controls.

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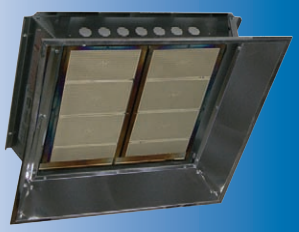
Request Catalog 5-174 For Complete Technical Information and Specifications.

GAS-FIRED, HIGH AND LOW-INTENSITY INFRARED UNITS

• 30,000 to 200,000 Btu/Hr Input • Simple Chain Mounting • High Heat Transfer Ceramic Tiles • Unvented Operation • Low Installation Cost • Ideal for Spot Heating • Available in Natural or Propane Gas



MODEL MHR

Modine's model MHR is a high intensity infrared heater, approved for indoor unvented installation. Model MHR does not utilize a fan, thus eliminating noise and draft distractions. Gas and power connections are simple and maintenance is inexpensive, since there are no moving parts to maintain. Controls are available as either Direct Spark Ignition or Self-Generating Millivolt. Modine's MHR Series heaters include the following features:

- Rugged aluminized steel frame.
- High temperature ceramic tiles provide maximum heat transfer.
- Polished aluminum reflector efficiently directs infrared rays to desired area.
- Available for both Natural or Propane gas operation.
- Two stage gas controls available.

Performance Data

Model	Gas Controls	Input Rating (Btu/hr)		Recommended Mounting Height (ft.) Standard Reflector	
		Natural	Propane	0° Angle	30° Angle
MHR 30	Single Stage or Millivolt	30,000	-	11.0 – 13.0	10.0 – 12.0
MHR 50	Single Stage or Millivolt	-	50,000	13.5 – 15.5	12.5 – 14.5
MHR 60	Single Stage or Millivolt	60,000	-	14.5 – 16.5	13.0 – 15.0
MHR 90	Single Stage or Millivolt	90,000	90,000	16.0 – 18.5	14.5 – 17.0
	Two Stage	-	90,000/45,000	16.0 – 18.5	14.5 – 17.0
MHR100	Single Stage or Millivolt	100,000	-	17.0 – 19.5	15.0 – 17.5
	Two Stage	100,000/50,000	-	17.0 – 19.5	15.0 – 17.5
MHR120	Single Stage or Millivolt	120,000	120,000	17.5 – 21.0	15.5 – 18.5
	Two Stage	-	120,000/80,000	17.5 – 21.0	15.5 – 18.5
MHR150	Two Stage	150,000/100,000	-	18.5 – 22.5	16.5 – 20.0
MHR160	Single Stage or Millivolt	160,000	160,000	19.0 – 23.0	17.0 – 20.5
MHR160	Two Stage	-	160,000/80,000	19.0 – 23.0	17.0 – 20.5
MHR200	Single Stage or Millivolt	200,000	-	20.5 – 25.0	18.5 – 22.5
	Two Stage	200,000/100,000	-	20.5 – 25.0	18.5 – 22.5

Request Catalog 9-122 For Complete Technical Information and Specifications.

• Pressurized Type, Low-Intensity Heater • 50,000 to 200,000 Btu/Hr Input • 20 to 70 Foot System Lengths • Straight and U-Shaped Configurations • Simple Chain Mounting • Designed for Indoor or Outdoor, Vented or Unvented, Commercial and Industrial Installation • Available in Natural or Propane Gas

MODEL TLP

Modine's Model TLP is a single-burner positive pressure infrared heater, approved for vented or unvented commercial and industrial applications. For either indoor or outdoor installation. Modine's TLP series heaters include the following features:

- Heat treat darkened 16 gauge aluminized steel heat exchanger provides enhanced corrosion-resistance for longer life, high radiant heat transfer, and will not scratch, flake, or peel like painted tubes.
- Blocked intake/exhaust switch to provide gas valve closure.
- Reliable four-trial (three re-trial) hot surface ignition with separate flame sensor.
- Polished aluminum reflector directs infrared rays efficiently to desired area.
- Sight window and indicator lights show proper unit operation.
- Available distributor packaging burner and tube kits to reduce inventory.
- 180° rotatable gas valve, accessible from either side of burner box.
- Durable polyester powder paint maintains life-long appearance.
- 115v service voltage, 24v control voltage.
- Permanently-lubricated combustion air blower mounted inside burner box for quiet operation.
- Side access panels for servicing either side of the burner box.
- Enclosed burner compartment allows burner box to be open while manifold pressure is adjusted.

Performance Data

Model No.	Btu/Hr Input	System Lengths (ft.)	Recommended Mounting Height (ft.)
TLP 50	50,000	20, 30	10 - 12
TLP 60	60,000	20, 30, 40	10 - 12
TLP 75	75,000	30, 40	12 - 14
TLP 100	100,000	30, 40, 50 ①	12 - 14
TLP 125	125,000	40, 50, 60	15 - 22
TLP 150	150,000	50, 60	15 - 25
TLP 175	175,000	50, 60, 70 ②	18 - 28
TLP 200	200,000	50, 60, 70 ②	20 - 30

① Consult factory for propane operation at 50 ft. system length.
② Consult factory for propane operation at 70 ft. system length.

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Request Catalog 9-117 For Complete Technical Information and Specifications.

STEAM/HOT WATER, HORIZONTAL DELIVERY UNIT HEATERS

• Totally-Enclosed Motor • Thermal Overload Protection • Adjustable Horizontal Blades • Top/Bottom (Model HSB) or Side (Model HC) Inlet/Outlet Piping • Fan Safety Guard • High Air Velocity Models PT/PTN

MODEL HSB

MODEL HC

MODEL PT/PTN

An industry leader since Arthur B. Modine invented and patented the first lightweight, suspended hydronic unit heater in 1923, the Modine hydronic unit heater has proven one of the most popular of all unit-heater types in commercial and industrial applications. Designed for long heat-throw and uniform heat delivery, two types are offered:

- **Horizontal Delivery Units (Model HSB/HC)** – Recommended for use in buildings where ceilings are low and with few obstructions. Units are normally placed around the perimeter of the building so that the air stream from each heater "wipes" the wall to produce a blanket of warm air along walls where heat loss is greatest.
- **Power-Throw™ High Velocity Horizontal Delivery Units (Model PT/PTN)** – Recommended where there is a requirement for heat throw greater than can be provided by standard horizontal delivery models. For hard-to-heat areas, such as frequently opened loading dock doors or large warehouses, Power-Throw™ units are an ideal choice. A single Power-Throw™ unit can often replace as many as three smaller horizontal delivery units, reducing equipment, installation, and maintenance costs.

Standard features include:

- Top/bottom (Model HSB) or side (Model HC) inlet/outlet piping.
- Units install quickly, easily, and at low cost because they are lightweight, yet are ruggedly constructed to resist rigorous handling and on-the-job abuse.
- Carefully-selected motors and fans with a scientifically designed venturi fan-shroud reduce noise levels to a satisfactory minimum.
- Totally enclosed motor with thermal-overload protection.
- Fans are statically and dynamically balanced.
- Fan and motor assemblies are exposed and can be removed without lowering the unit heater.
- The unit casing is treated for protection against corrosion prior to the application of the attractive gray-green, baked-on polyester powder coat paint finish.
- Horizontal air deflector blades are standard (vertical deflector blades available).
- Low outlet temperature models are recommended for steam pressure above 30 PSI, but can also be used in dirty environments to minimize buildup of air contaminants on the coil.
- Modine PTN models feature coils made from cupro-nickel tubes that have the extra strength to withstand higher steam pressures (250 PSI) or water temperatures (400°F).

Performance Data

Model No.	Motor Data ①		Standard Models									
			Steam (2# Steam, 60°F Ent. Air)			Hot Water (200°F in 180°F out, 60°F Ent. Air)				CFM	Max. Mounting Height (Ft.)	Throw @ Max. Mounting Height (Ft.)
	HP	Approx RPM	Btu/Hr	Condensate (Lbs/Hr)	Final Air Temp. (°F)	Btu/Hr	Water Flow (GPM)	Final Air Temp. (°F)	Press. Drop (Ft of Water)			
HSB/HC 18	1/60	1550	18,000	18	107	12,600	1.3	94	0.5	340	8	17
HSB/HC 24	1/25	1550	24,000	25	119	16,300	1.7	100	0.8	370	9	18
HSB/HC 33	1/25	1550	33,000	35	108	21,700	2.3	91	0.2	630	10	21
HSB/HC 47	1/12	1550	47,000	49	119	30,900	3.2	98	0.4	730	12	28
HSB/HC 63	1/12	1550	63,000	66	111	45,600	4.7	97	0.6	1120	14	29
HSB/HC 86	1/8	1625	86,000	89	118	60,200	6.3	101	1.0	1340	15	31
HSB/HC 108	1/8	1625	108,000	111	109	83,700	8.7	98	2.8	2010	17	31
HSB/HC 121	1/5	1075	121,000	126	122	93,000	9.7	108	3.3	1775	16	25
HSB/HC 165	1/3	1075	165,000	170	106	130,900	13.6	97	8.6	3240	19	40
HSB/HC 193	1/3	1075	193,000	200	121	143,000	14.9	105	1.4	2900	18	38
HSB/HC 258	1/2	1075	258,000	267	111	202,000	21.0	100	5.7	4560	19	44
HSB/HC 290	1/2	1075	290,000	300	117	228,600	23.8	105	7.1	4590	20	46
HSB/HC 340	1/2	1075	340,000	352	120	271,100	28.2	108	11.3	5130	20	46
PT/PTN 279	1/2	1075	279,000	288	111	192,400	20.0	94	0.2	5460	16	100
PT/PTN 333	3/4	1140	333,000	345	116	238,500	24.8	99	0.4	5980	17	110
PT/PTN 385	1	1140	385,000	398	110	276,100	28.8	95	0.6	7680	17	115
PT/PTN 500	1-1/2	1140	500,000	518	108	358,000	37.3	93	0.5	10,390	18	130
PT/PTN 610	1-1/2	1140	610,000	631	112	450,400	46.9	97	1.0	11,750	20	140
PT 952	2	1140	952,000	986	139	721,600	75.2	120	1.1	12,170	21	145

① Applies to most popular motor.

Request Catalog 1-150 For Complete Technical Information and Specifications.

STEAM/HOT WATER, VERTICAL DELIVERY UNIT HEATERS

• 15 Standard Models • Lightweight, Easy to Install • Totally-Enclosed Motors • 33,000 to 952,000 Btu/Hr Input • Built-In Fan Safety Guard

MODEL V/VN

Modine Model V/VN vertical steam/hot water unit heaters are designed for long heat-throw, uniform comfort heat delivery, and reduced maintenance. The units are recommended for areas where ceilings are high or where obstructions do not permit good horizontal movement of air.

Standard features include:

- Units install quickly, easily, and at low cost because they are lightweight, yet are ruggedly constructed to resist rigorous handling and on-the-job abuse.
- Carefully-selected motors and fans with a scientifically designed venturi fan-shroud reduce noise levels to a satisfactory minimum.
- Totally enclosed motor with thermal-overload protection.
- A motor heat shield protects the motor from heated air passing through the heater.
- Fans are statically and dynamically balanced.
- Fan and motor assemblies are exposed and can be removed without lowering the unit heater.
- The unit casing is treated for protection against corrosion prior to the application of the attractive gray-green, baked-on polyester powder coat paint finish.
- A variety of deflector-blade options provides an increased degree of control over air-discharge direction.
- Low outlet temperature models are recommended for steam pressure above 30 PSI, but can also be used in dirty environments to minimize buildup of air contaminants on the coil.
- Modine VN models feature coils made from cupro-nickel tubes that have the extra strength to withstand higher steam pressures (250 PSI) or water temperatures (400°F).

Performance Data

Model No.	Motor Data ①		Standard Models									
			Steam (2# Steam, 60°F Ent. Air)			Hot Water (200°F in 180°F out, 60°F Ent. Air)				CFM	Max. Mounting Height (Ft.)	Heat Spread (Ft.)②
	HP	Approx RPM	Btu/Hr	Condensate (Lbs/Hr)	Final Air Temp. (°F)	Btu/Hr	Water Flow (GPM)	Final Air Temp. (°F)	Press. Drop (Ft of Water)			
V/VN 42	1/30	1050	42,000	43	103	30,100	3.1	90	0.6	950	15	11
V/VN 59	1/30	1050	59,000	61	111	42,600	4.4	96	0.5	1155	19	14
V/VN 78	1/15	1050	78,000	81	109	57,000	5.9	95	0.5	1590	20	15
V/VN 95	1/15	1050	95,000	99	118	69,300	7.2	101	0.5	1665	20	15
V/VN 139	1/5	1075	139,000	144	112	106,600	11.1	99	2.6	2660	24	18
V/VN 161	1/3	1075	161,000	167	115	123,200	12.8	101	2.2	2940	27	20
V/VN 193	1/3	1075	193,000	200	116	147,200	15.3	101	2.2	3500	30	22
V/VN 212	1/3	1075	212,000	219	120	161,700	16.8	104	1.5	3610	30	22
V/VN 247	1/2	1075	247,000	256	111	188,700	19.7	98	2.1	4820	34	26
V/VN 279	1/2	1075	279,000	288	111	212,700	22.2	98	2.1	5460	37	30
V/VN 333	3/4	1140	333,000	345	116	260,100	27.1	103	3.8	5980	37	30
V/VN 385	1	1140	385,000	398	110	302,100	31.5	98	5.0	7680	36	30
V/VN 500	1-1/2	1140	500,000	518	108	391,700	40.8	97	4.8	10,390	44	37
V/VN 610	1-1/2	1140	610,000	631	112	450,400	46.9	97	1.0	11,750	43	36
V 952	2	1140	952,000	986	139	721,600	75.2	120	1.1	12,170	45	56

① For most popular motor used on each model.

② At 2 psi steam, 60°F entering air – unit heaters equipped with cone-jet deflectors.

Request Catalog 1-150 For Complete Technical Information and Specifications.

OIL-FIRED, HORIZONTAL DELIVERY UNIT HEATERS

• Three Sizes • Pressure-Atomizing, Gun-Type Oil Burner • Cad-Cell Safety Shut-Off • Electric-Spark Ignition • Fan and Limit Control

MODEL POR

Modine model POR oil-fired unit heaters are built with time-tested and field-proven components to provide optimum comfort and heating efficiency as high as 84%.

Standard features include:

- A long-life heat exchanger is made of corrosion-resistant, aluminized steel and roll-formed to eliminate thermal stress. It contains a preformed, ceramic fiber fire-pot that is lightweight, resilient, and resists both mechanical and thermal shocks.
- For ease of service, the heat exchanger is equipped with an inspection port, two clean-out ports, and an amply-sized service door for removing fire pot when replacement becomes necessary.
- A reliable, pressure-atomizing gun-type burner equipped with a stainless steel, die-stamped flame-retention head that can increase combustion efficiency by as much as 20 to 30 percent over non-flame retention-type burners.
- Honeywell microprocessor based ignition controller providing superior combustion and safety monitoring.
- Onboard diagnostics with LED output for simplifying the lives of service personnel.
- Interrupted-duty ignition that disables the spark once ignition is proven. Older technology uses a continuous spark that is noisy, prone to shorter lifespan, and not energy efficient.
- Electronic oil igniter module with superior spark voltage (20kV) replaces traditional bulky ignition transformers.
- Beckett CleanCut burner pump that uses a solenoid valve to instantly cut oil flow on shutdown, eliminating soot formation from coasting stops.
- Two stage pump with PSC motor provides maximum fuel pressure delivery, even in high lift applications.
- Finger-proof fan guard.
- The unit casing is treated for protection against corrosion prior to the application of the attractive gray-green, baked-on polyester powder coat paint finish.
- Accessory Outside Combustion Air Kit converts the burner to accept outside combustion air piping for tight building applications.

Performance Data

Model	Input Btu/Hr	Input GPH	Output Btu/Hr	CFM @ 70°F	Delivery FPM	Temp. Rise (°F)	Max Height ①	Heat Throw
POR100	119,000	0.85	100,000	1890	460	49	12'	39'
POR145	175,000	1.25	145,000	2400	580	56	13.5'	50'
POR185	231,000	1.65	185,000	3200	740	54	12'	51'

① Deflector blades pitched 45° toward the floor. Mounting height is measured from floor to bottom of unit.

Fan Motor Specifications

Model	HP	Voltage	Hz	Phase	Fan Motor Amps ②	RPM	Type	Fan Diameter
POR100	1/6	115	60	1	2.1	1100	PSC	18"
POR145	1/3	115	60	1	5.4	1100	PSC	18"
POR185	1/3	115	60	1	5.4	1100	PSC	22"

② Total AMPS equals fan motor AMPS plus burner motor and ignition transformer load of 2.2 AMPS.

Request Catalog 4-112 For Complete Technical Information and Specifications.

ELECTRIC, HORIZONTAL DELIVERY UNIT HEATERS

• Horizontal Delivery Models • Low Installation Cost and Maintenance • Model HER Available in 7 Sizes from 5kW through 25kW • Factory Assembled and Wired for Specific Power Supply Ordered • High-Capacity Unit with Horizontal Air Delivery • High Air Velocity Model PTE Available in 3 Sizes from 15kW through 50 kW • Model PTE Offered in Single and Two-Stage Controls

MODEL HER

MODEL PTE

Modine horizontal electric unit heaters provide a wide variety of options in solving comfort-heating problems. Each is designed for long heat-throw, uniform heat-delivery, and reduced maintenance. The two types offered are:

- **Horizontal Delivery Units (Model HER)** – Recommended for use in buildings where ceilings are low and with few obstructions. Units are normally placed around the perimeter of the building so that the air stream from each heater "wipes" the wall to produce a blanket of warm air along walls where heat loss is greatest.
- **Power-Throw™ High Velocity Horizontal Delivery Units (Model PTE)** – Recommended where there is a requirement for heat throw greater than can be provided by standard horizontal delivery models. For hard-to-heat areas, such as frequently opened loading dock doors or large warehouses, Power-Throw™ units are an ideal choice. A single Power-Throw™ unit can often replace as many as three smaller horizontal delivery units, reducing equipment, installation, and maintenance costs.

Standard features include:

- Completely factory assembled and wired for specific power supply ordered.
- Finned-tube sheathed nichrome wire heating elements.
- Totally enclosed motor with thermal-overload protection.
- Fans are statically and dynamically balanced.
- Fan and motor assemblies are exposed and can be removed without lowering the unit heater.
- The unit casing is treated for protection against corrosion prior to the application of the attractive gray-green, baked-on polyester powder coat paint finish.
- Horizontal air deflector blades are standard (vertical deflector blades available).
- Terminal and junction boxes provide easy access to heating-element terminals, an overheat control switch, and the power supply and control connections.
- An automatic reset overheat control.
- Hinged bottom panels for easy control access.

Performance Data

Model	Heating Capacity		Air Delivery Data					Electrical Rating (Volts/ Hz/Ph)
	kW	Btu/Hr	CFM	Outlet Velocity (FPM)	Temp. Rise (°F) ①	Max. Mounting Height (Ft.) ②	Heat Throw (Ft.) ②	
HER50	5.0	17,100	530	420	30	8	14	208/60/1 240/60/1 208/60/3 240/60/3 480/60/3
HER75	7.5	25,600	530	430	45	8	14	
HER100	10.0	34,100	830	670	38	9	20	
HER125	12.5	42,700	830	670	38	10	20	208/60/3 240/60/3 480/60/3
HER150	15.0	51,200	830	690	57	10	20	
HER200	20.0	68,300	1300	760	49	11	25	
HER250	25.0	85,400	1300	780	61	11	25	
PTE300	30.0	102,000	2575	1240	40	17	75	480/60/3
PTE400	40.0	137,000	2575	1240	54	15	60	
PTE500	50.0	171,000	2575	1240	70	14	45	

① With 70°F ambient air.
② With air deflector blades pitched 45° toward the floor. Mounting height is measured from floor to bottom of unit.

Request Catalog 2-116 For Complete Technical Information and Specifications.

ELECTRIC VERTICAL DELIVERY UNIT HEATERS

• Low Installation Cost and Maintenance • Available in 21 Models, 9 Sizes from 5kW through 50 kW • Offered in Single and Two-Stage Controls • Factory Assembled and Wired for Specific Power Supply Ordered

MODEL VE

Modine Model VE vertical electric unit heaters are designed for long heat-throw, uniform comfort heat delivery, and reduced maintenance. The units are recommended for areas where ceilings are high or where obstructions do not permit good horizontal movement of air.

Standard features include:

- Completely factory assembled and wired for specific power supply ordered.
- Finned-tube sheathed nichrome wire heating elements.
- Totally enclosed motor with thermal-overload protection.
- Fans are statically and dynamically balanced.
- A motor heat shield protects the motor from heated air passing through the heater.
- Fan and motor assemblies are exposed and can be removed without lowering the unit heater.
- The unit casing is treated for protection against corrosion prior to the application of the attractive gray-green, baked-on polyester powder coat paint finish.
- A variety of deflector-blade options provides an increased degree of control over air-discharge direction.
- Terminal and junction boxes provide easy access to heating-element terminals, an overheat control switch, and the power supply and control connections.
- An automatic reset overheat control.

Performance Data

Model	Heating Capacity		Air Delivery Data					Electrical Rating (Volts/ Hz/Ph)
	kW	Btu/Hr	CFM	Outlet Velocity (FPM)	Temp. Rise (°F) ①	Max. Mounting Height (Ft.) ②	Heat Throw (Ft.) ②	
VE50	5.0	17,100	800	700	21	13	20	240/60/1 208/60/3 240/60/3 480/60/3
VE75	7.5	25,600	800	700	31	11	17	
VE100	10.0	34,100	940	820	36	12	18	
VE150	15.0	51,200	1340	1170	38	17	26	③
VE200	19.0	64,900	1600	1400	41	20	30	④
VE250	25.0	85,400	1600	1400	55	17	26	480/60/3
VE300	30.0	102,000	2575	1240	40	20	31	
VE400	40.0	137,000	2575	1240	54	18	27	
VE500	50.0	171,000	2575	1240	70	16	24	

① With 70°F ambient air.
② Unit heater without air deflector
③ VE150 available in 208V/60Hz/3Ph, 240V/60Hz/3Ph and 480V/60Hz/3Ph
④ VE200 available in 240V/60Hz/3Ph and 480V/60Hz/3Ph

Request Catalog 2-116 For Complete Technical Information and Specifications.

ELECTRIC, HAZARDOUS LOCATIONS UNIT HEATERS

• Rated for 100,000 Cycles of Service • UL Listed • Sealed Heat-Exchanger Core • Ethylene Glycol for Heat Transfer Fluid • Protected, Explosion-Proof Electric Motor • Two-Piece Fan-Guard

MODEL HEX

Modine's HEX electric unit heaters are designed for hazardous industrial locations where potential for explosion exists due to the presence of flammable gases, vapors, powdered-metals or dusts.
HEX electric unit heaters are UL-listed for Class I, Divisions 1 & 2, Groups C & D; Class II, Division 1, Groups E, F and G and Class II, Division 2, Groups F and G. UL temperature code shall be T3B 329°F (165°C) for Class I and II, indicating maximum operating-surface temperatures.

Standard features include:
- Liquid to air, finned tube heat exchanger core.
- Ethylene glycol water mixture used as heat-transfer fluid in the heater core, providing -49°F (-45°C) freeze damage protection.
- Thermally protected, automatic reset, explosion-proof, motor driven fan moves air across finned tubes for even heat distribution.
- Automatically reset, bimetal high-limit provides over temperature protection and is rated for 100,000 cycles of service.
- Pressure relief valve provides over-pressure protection.
- Epoxy coated, 14 gauge steel cabinet contains heater core, motor, and fan assembly.
- Narrow-gap, two-piece fan-guard shields all moving parts.
- Adjustable extruded aluminum louvers allow directional control of air.
- Copper conductor wires enclosed in steel conduits carry all electrical power.

Performance Data

kW	Model	Volts	Phase	Heater amps	Btu/Hr	Air Temp. Rise (°F)	Max. Mounting Height (Ft.)	Heat Throw (Ft)
3.0	HEX412-208160-3.0	208	1	15.3	10,250	19.0	7	15
	HEX412-208360-3.0	208	3	8.9	10,250	19.0		
	HEX412-240160-3.0	240	1	13.5	10,250	19.0		
	HEX412-240360-3.0	240	3	7.2	10,250	19.0		
	HEX412-480360-3.0	480	3	3.9	10,250	19.0		
5.0	HEX412-208160-5.0	208	1	24.9	17,050	31.6	7	15
	HEX412-208360-5.0	208	3	14.4	17,050	31.6		
	HEX412-240160-5.0	240	1	21.9	17,050	31.6		
	HEX412-240360-5.0	240	3	12.7	17,050	31.6		
	HEX412-480360-5.0	480	3	6.4	17,050	31.6		
7.5	HEX412-208160-7.5	208	1	36.9	25,600	27.9	10	30
	HEX412-208360-7.5	208	3	21.4	25,600	27.9		
	HEX412-240160-7.5	240	1	32.3	25,600	27.9		
	HEX412-240360-7.5	240	3	18.7	25,600	27.9		
	HEX412-480360-7.5	480	3	9.4	25,600	27.9		
10.0	HEX412-208360-10.0	208	3	28.3	34,100	37.2	10	30
	HEX412-240160-10.0	240	1	42.7	34,100	37.2		
	HEX412-240360-10.0	240	3	24.7	34,100	37.2		
	HEX412-480360-10.0	480	3	12.4	34,100	37.2		
15.0	HEX416-208360-15.0	208	3	41.4	51,200	27.1	10	40
	HEX416-240360-15.0	240	3	36.0	51,200	27.1		
	HEX416-480360-15.0	480	3	18.0	51,200	27.1		
20.0	HEX416-480360-20.0	480	3	24.0	68,300	36.1	10	40
25.0	HEX420-480360-25.0	480	3	30.1	85,400	21.9	20	70
30.0	HEX420-480360-30.0	480	3	36.1	102,500	26.3	20	70
35.0	HEX420-480360-35.0	480	3	42.1	119,450	28.0	20	70

Request Catalog 2-116 For Complete Technical Information and Specifications.

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.

INDOOR AIR SOLUTIONS

Products from Modine are designed to provide indoor air-comfort solutions for commercial, institutional and industrial applications. Whatever your heating, ventilating and cooling 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
- Oil-fired unit heaters
- Electric unit heaters
- Indoor gravity vented single and multiple duct furnace make-up air units
- Indoor separated combustion single and multiple duct furnace make-up air units
- Outdoor single and multiple duct furnace make-up air units
- Direct-fired make-up air units
- Ductless split ceiling cassettes

With burner capacities up to 7,862,000 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.

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