

MCC

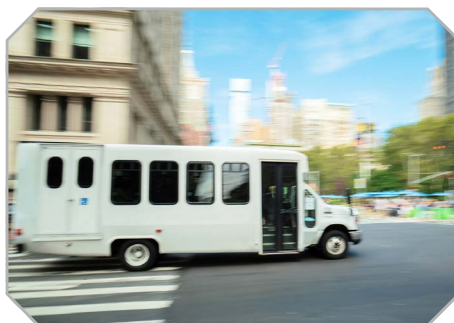


Mobile Climate Control

mcc-hvac.com

AFTERMARKET HVAC PRODUCT GUIDE

Heavy Duty Vehicle Applications





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V. Split System Air Conditioning

Classic EM-1

The Classic EM-1 ceiling mount air-conditioning evaporator provides the market's best solution between price, performance and maintenance. It's well-known for ease of servicing and quick installation in commercial and school buses. With the drain pan as part of the base

system the Classic EM-1 can be installed, charged and tested before the cover is put in place. The easy removal of the cover makes all serviceable components accessible. This evaporator is available for non-ducted free blow applications.

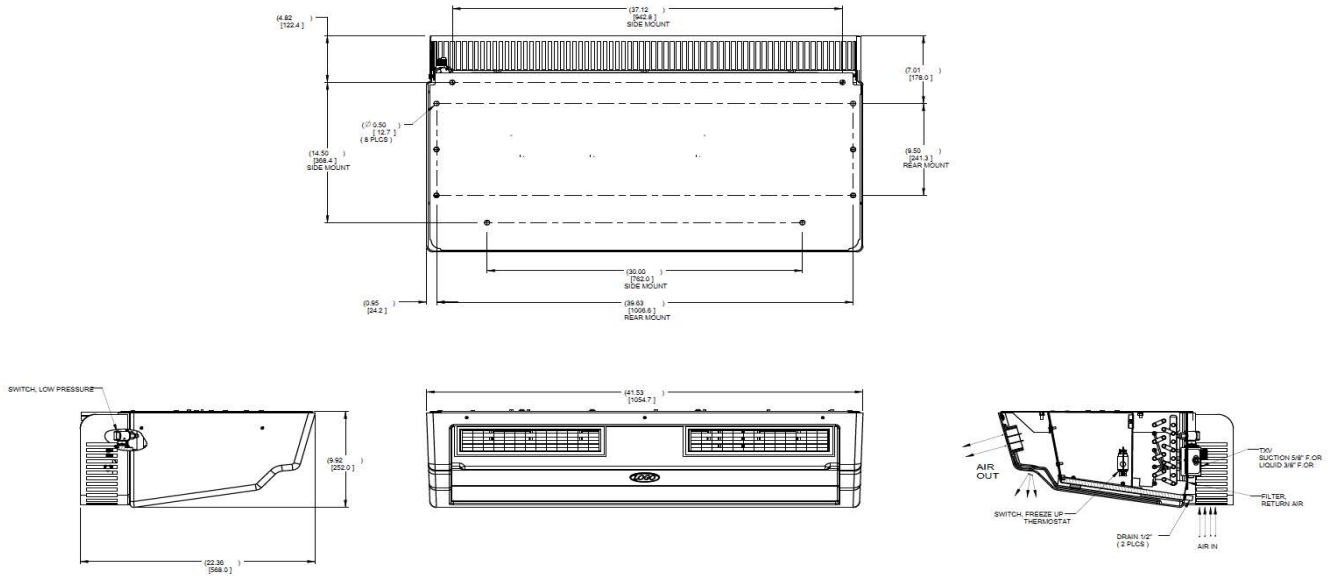


Features

- Multi-speed, high-efficiency blowers
- Available for front or rear ceiling mount
- Heavy duty construction with galvanized steel frame and blower housing

Benefits

- Maximum airflow on high speed
- Flexible to fit any application
- Strength and durability



Technical Data

Cooling capacity	60000 Btu/hr (17.5 kW) IMACA ^[1]
	27000 Btu/hr (8 kW) ARI ^[2]
Heating capacity (Optional Feature)	60000 Btu/hr (17.5 kW)
Air flow	904 CFM (1537 m ³ /hr) ^[3]
Max amperage requirement	31 A @ 13.5 V dc (High Speed) Voltage
Refrigerant	R134a
Length	41.53 (1055 mm)
Width	22.36 (568 mm)
Height	9.92 (252 mm)
Weight	69 lbs (31 kg)
Condensate drain connection	5/8" (12.7 mm) O.D (doal drains)
Cover color	Dove Gray

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH

[3] Airflow is tested at super high speed with cover and louvers fully installed, 0" static, 13.5 VDC

Classic **EM-2**

The Classic EM-2 ceiling mount air-conditioning evaporator provides the market's best solution between price, performance and maintenance. It's well-known for ease of servicing and quick installation in commercial and school buses. With the drain pan as part of the base

system the Classic EM-2 can be installed, charged and tested before the cover is put in place. The easy removal of the cover makes all serviceable components accessible. This evaporator is available for non-ducted free blow applications.

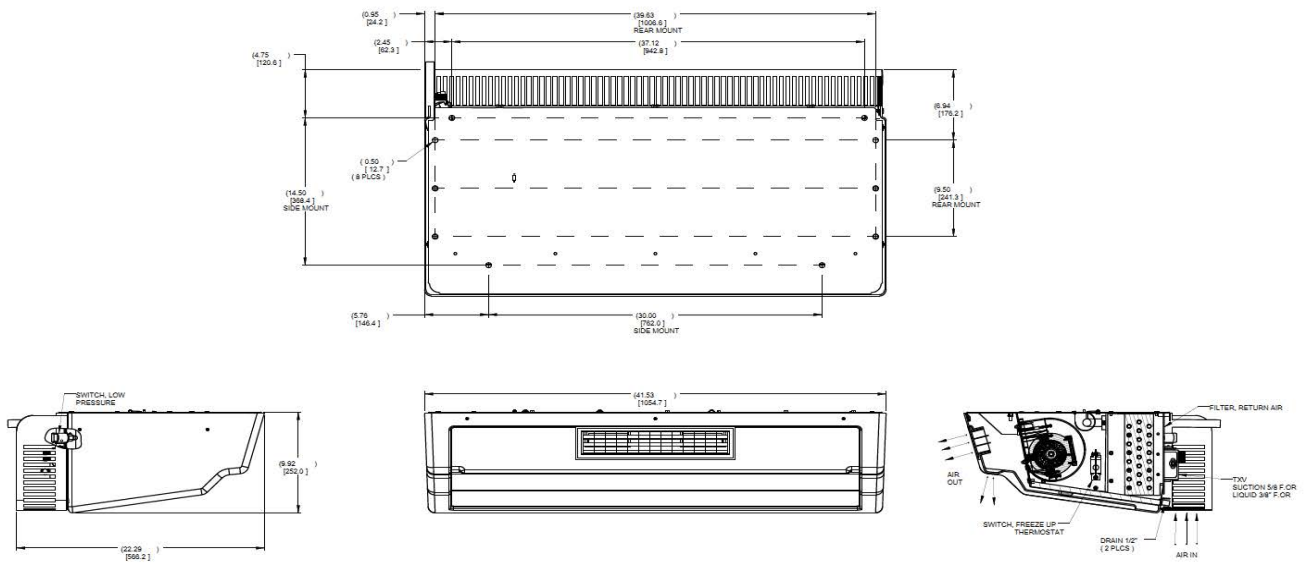


Features

- Multi-speed, high-efficiency blowers
- Available for front or rear ceiling mount
- Heavy duty construction with galvanized steel frame and blower housing

Benefits

- Maximum airflow on high speed
- Flexible to fit any application
- Strength and durability



Technical Data

Cooling capacity	40000 Btu/hr (10.1 kW) IMACA ^[1]
Heating capacity (Optional Feature)	40000 Btu/hr (10.1 kW)
Air flow	513 CFM (872 m ³ /hr) ^[2]
Max amperage requirement	17 A @ 13.5 V dc (High Speed) Voltage
Refrigerant	R134a
Length	41.53 (1055 mm)
Width	22.29 (566 mm)
Height	9.92 (252 mm)
Weight	56.5 lbs (25 kg)
Condensate drain connection	5/8" (12.7 mm) O.D (doal drains)
Cover color	Dove Gray

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] Airflow is tested at super high speed with cover and louvers fully installed, 0" static, 13.5 VDC

Classic **EM-3**

The Classic EM-3 ceiling mount air-conditioning evaporator provides the market's best solution between price, performance and maintenance. It's well-known for ease of servicing and quick installation in commercial and school buses. With the drain pan as part of the base

system the Classic EM-3 can be installed, charged and tested before the cover is put in place. The easy removal of the cover makes all serviceable components accessible. This evaporator is available for non-ducted free blow applications.

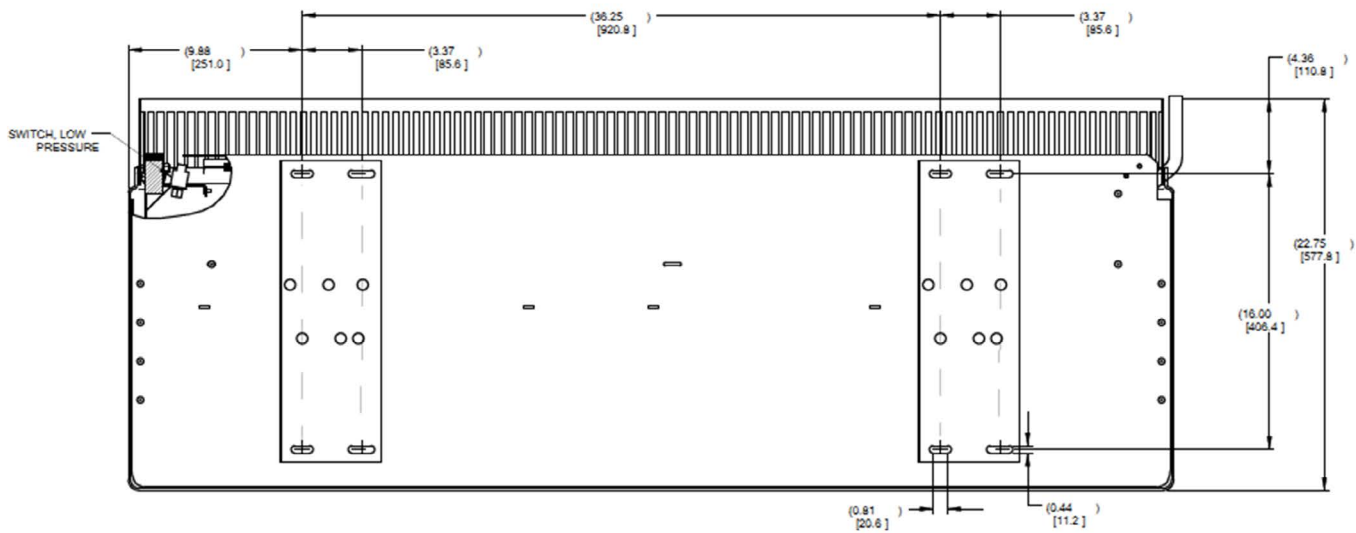


Features

- Multi-speed, high-efficiency blowers
- Available for front or rear ceiling mount
- Heavy duty construction with galvanized steel frame and blower housing

Benefits

- Maximum airflow on high speed
- Flexible to fit any application
- Strength and durability



Technical Data

Cooling capacity	86000 Btu/hr (21.7 kW) IMACA ^[1]
Heating capacity (Optional Feature)	70000 Btu/hr (17.7 kW)
Air flow	1322 CFM (2247 m ³ /hr) ^[2]
Max amperage requirement	43.9 A @ 13.5 V dc (High Speed) Voltage
Refrigerant	R134a
Length	59.38 (1508 mm)
Width	22.75 (578 mm)
Height	9.9 (251 mm)
Weight	98 lbs (44.5 kg)
Condensate drain connection	5/8" (12.7 mm) O.D. (dual drains)
Cover color	Dove Gray

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] Airflow is tested at super high speed with cover and louvers fully installed, 0" static, 13.5 VDC

Classic **EM-6**

The Classic EM-6 ceiling mount air-conditioning evaporator provides the market's best solution between price, performance and maintenance. It's well-known for ease of servicing and quick installation in commercial and school buses. With the drain pan as part of the base

system the Classic EM-6 can be installed, charged and tested before the cover is put in place. The easy removal of the cover makes all serviceable components accessible. This evaporator is available for non-ducted free blow applications.

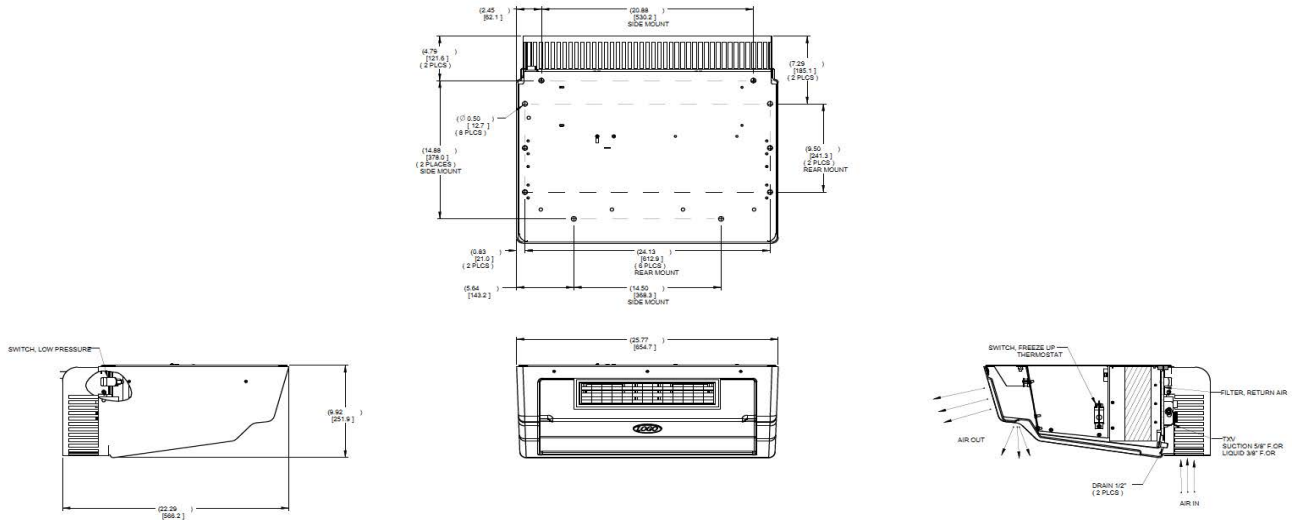


Features

- Multi-speed, high-efficiency blowers
- Available for front or rear ceiling mount
- Heavy duty construction with galvanized steel frame and blower housing

Benefits

- Maximum airflow on high speed
- Flexible to fit any application
- Strength and durability



Technical Data

Cooling capacity	30000 Btu/hr (7.6 kW) IMACA ^[1]
Heating capacity (Optional Feature)	30000 Btu/hr (7.6 kW)
Air flow	487 CFM (828 m ³ /hr) ^[2]
Max amperage requirement	16 A @ 13.5 V dc (High Speed) Voltage
Refrigerant	R134a
Length	25.77 (655 mm)
Width	22.29 (566 mm)
Height	9.92 (252 mm)
Weight	39 lbs (18 kg)
Condensate drain connection	5/8" (12.7 mm) O.D (dual drains)
Cover color:	Dove Gray

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] Airflow is tested at super high speed with cover and louvers fully installed, 0" static, 13.5 VDC



Premium EM-1

The premium EM-1 ceiling mount air-conditioning evaporator comes with the industry's most modern, efficient and high technology, such as transverse blower

technology and long life motors. Yet, it's still very easy to service and to install thanks to its smart design. The premium EM-1 is the lowest profile and lightweight evaporator on the market.

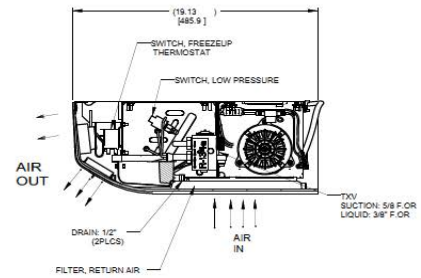
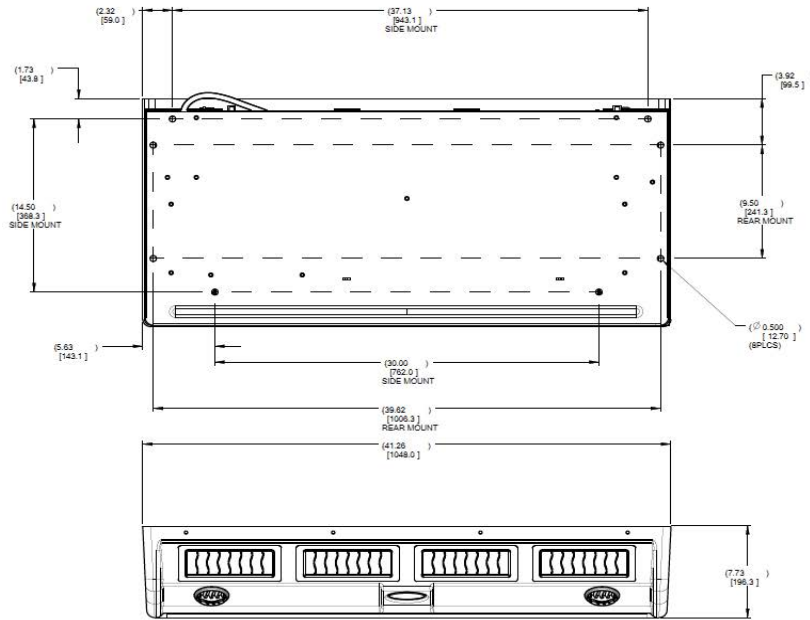


Features

- Transverse blower technology
- New extreme long life motors
- Available for front and rear ceiling mount
- Galvanized steel frame
- State of the art enhanced coil
- Attractive plastic cover available in two colors

Benefits

- Provides uniform air flow across the slanted coil which increases evaporator performance and efficiency.
- Lowest noise levels and maximum air throw
- Offers unparalleled 10,000 hours usage
- Flexible to fit any application
- Strength and durability
- Maximum capacity and efficiency



Technical Data

Cooling capacity	60000 Btu/hr (15.1 kW) IMACA ^[1] 27000 Btu/hr (6.8 kW) ARI ^[2]
Max amperage requirement	27 A @ 13.5 V dc (High Speed) Voltage
Air flow	709 CFM (1205 m ³ /hr) ^[3]
Refrigerant	R134a
Length	41.25 (1048 mm)
Width	19.13 (486 mm)
Height	7.73 (196 mm)
Weight	59 lbs (27 kg)
Condensate drain connection	½ (12.7 mm) O.D (doal drains)
Cover color	Snow White or Dove Gray

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH

[3] Airflow is tested at super high speed with cover and louvers fully installed, 0" static, 13.5 VDC



Premium EM-2

The premium EM-2 ceiling mount air-conditioning evaporator comes with the industry's most modern, efficient and high technology, such as transverse blower

technology and long life motors. Yet, it's still very easy to service and to install thanks to its smart design. The premium EM-2 is the lowest profile and lightweight evaporator on the market.

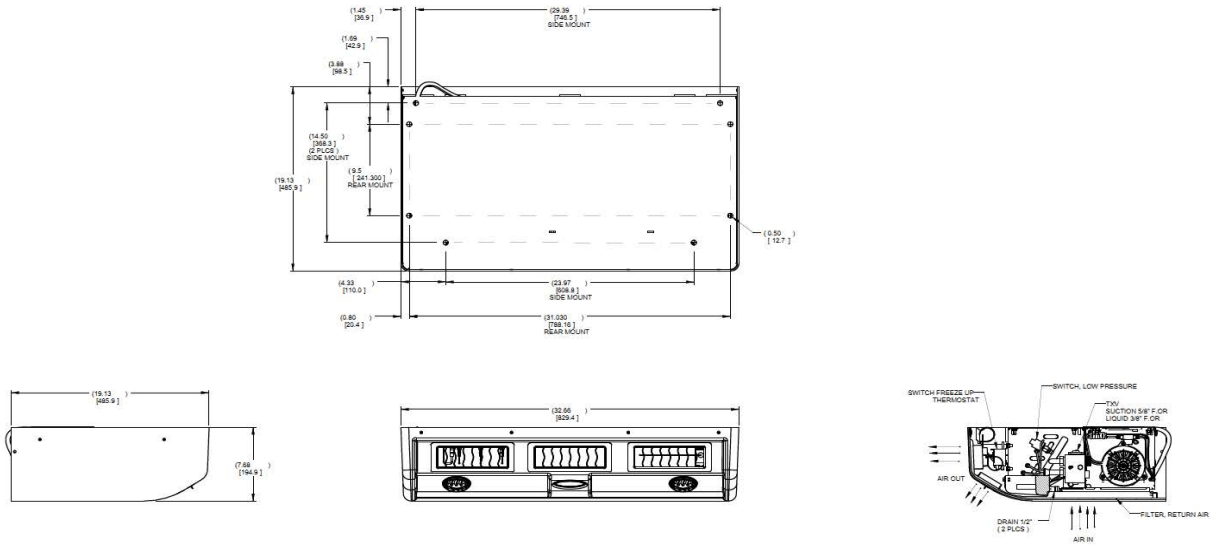


Features

- Transverse blower technology
- New extreme long life motors
- Available for front and rear ceiling mount
- Galvanized steel frame
- State of the art enhanced coil
- Attractive plastic cover available in two colors

Benefits

- Provides uniform air flow across the slanted coil which increases evaporator performance and efficiency.
- Lowest noise levels and maximum air throw
- Offers unparalleled 10,000 hours usage
- Flexible to fit any application
- Strength and durability
- Maximum capacity and efficiency



Technical Data

Cooling capacity	45000 Btu/hr (11.4 kW) IMACA ^[1]
	18500 Btu/hr (4.7 kW) ARI ^[2]
Max amperage requirement	27 A @ 13.5 V dc (High Speed) Voltage
Air flow	552 CFM (938 m ³ /hr) ^[3]
Refrigerant	R134a
Length	32.66 (829 mm)
Width	19.13 (486 mm)
Height	7.68 (195 mm)
Weight	50 lbs (22 kg)
Condensate drain connection	½ (12.7 mm) O.D (dual drains)
Cover color	Snow White or Dove Gray

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH

[3] Airflow is at tested super high speed with cover and louvers fully installed, 0" static, 13.5 VDC



Premium EM-7

The premium EM-7 ceiling mount air-conditioning evaporator comes with the industry's most modern, efficient and high technology, such as transverse blower

technology and long life motors. Yet, it's still very easy to service and to install thanks to its smart design. The premium EM-7 is the lowest profile and lightweight evaporator on the market.

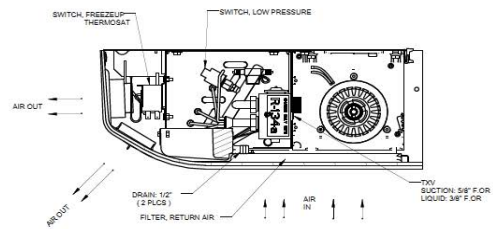
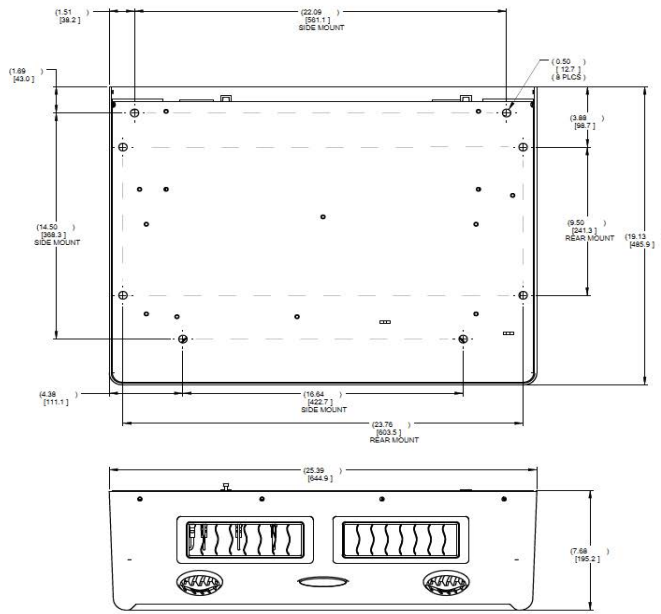


Features

- Transverse blower technology
- New extreme long life motors
- Available for front and rear ceiling mount
- Galvanized steel frame
- State of the art enhanced coil
- Attractive plastic cover available in two colors

Benefits

- Provides uniform air flow across the slanted coil which increases evaporator performance and efficiency.
- Lowest noise levels and maximum air throw
- Offers unparalleled 10,000 hours usage
- Flexible to fit any application
- Strength and durability



Technical Data

Cooling capacity	35000 Btu/hr (8.8 kW) IMACA ^[1] 13700 Btu/hr (3.5 kW) ARI ^[2]
Max amperage requirement	16 A @ 13.5 V dc (High Speed) Voltage
Air flow	376 CFM (640 m ³ /hr) ^[3]
Refrigerant	R134a
Length	25.39 (645 mm)
Width	19.13 (486 mm)
Height	7.68 (195 mm)
Weight	39 lbs (17 kg)
Condensate drain connection	½ (12.7 mm) O.D (dual drains)
Cover color	Snow White or Dove Gray

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH

[3] Airflow is tested at super high speed with cover and louvers fully installed, 0" static, 13.5 VDC



Evaporator **EM-3**

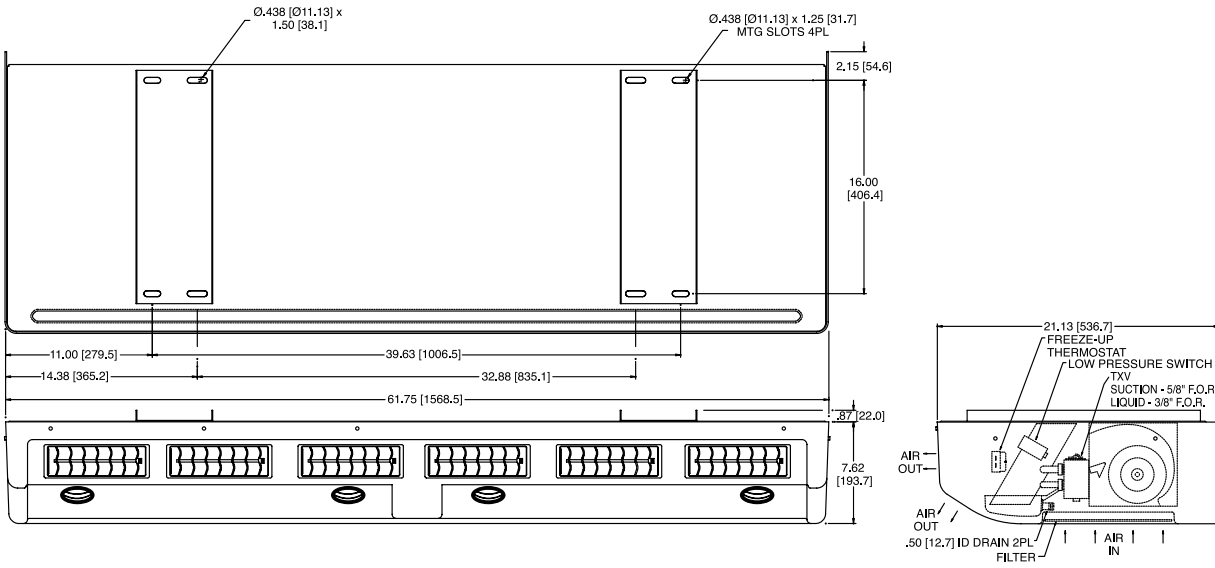
MCC EM-3 rear ceiling mount air conditioning evaporator has been engineered for maximum serviceability and ease of installation in light and medium duty buses. Because the drain pan is part of the basic system, the EM-3 can be completely installed, charged and tested before the cover

is put in place, greatly reducing installation time. Simple cover removal provides ready access to all serviceable components. EM-3 is available for non-ducted free blow applications in (30 – 35)' (914 – 1067)cm length passenger areas.



Features

- New, efficient, transverse blower technology reduces AMP draw and provides increased uniformly distributed air flow
- Higher capacity unit in a smaller package (height reduced to over 20% less than existing models, thereby significantly increasing head clearance)
- Heavy-duty steel frame is reinforced for added strength
- High volume air flow, widely dispersed through bi-directional louvers for total passenger comfort
- Return air filter can be removed and cleaned without removing the unit's cover
- State-of-the-art-enhanced coils for maximum cooling capacity and increased efficiency
- Three or variable speed blower allows for full airflow adjustment to optimize system to individual cooling preferences
- Reduced service time and over all life cycle cost with single, easily accessible motor, bottom mounted air filter,
- 10% fewer parts and fasteners than previous models
- Can only be rear center ceiling mounted in all makes and models of buses



Technical Data

Cooling capacity	90000 Btu/hr (26 kW) IMACA ^[1]	47000 Btu/hr (14 kW) ARI ^[2]
Air flow	2400 CFM (679.6 m ³ /hr)	
Refrigerant	R134a	
Length	61.75" (1566 mm)	
Width	21.13" (537 mm)	
Height	8.49" (215.6 mm)	
Weight	95 lbs (43 kg)	
Condensed drain connection	½" (12.7 mm) O.D	
Max amperage requirement	46 A @ 13.5 V dc (High Speed)	
Voltage	12 or 24 VDC	
Cover color	Snow White or Dove Gray	

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH



Evaporator EM-7

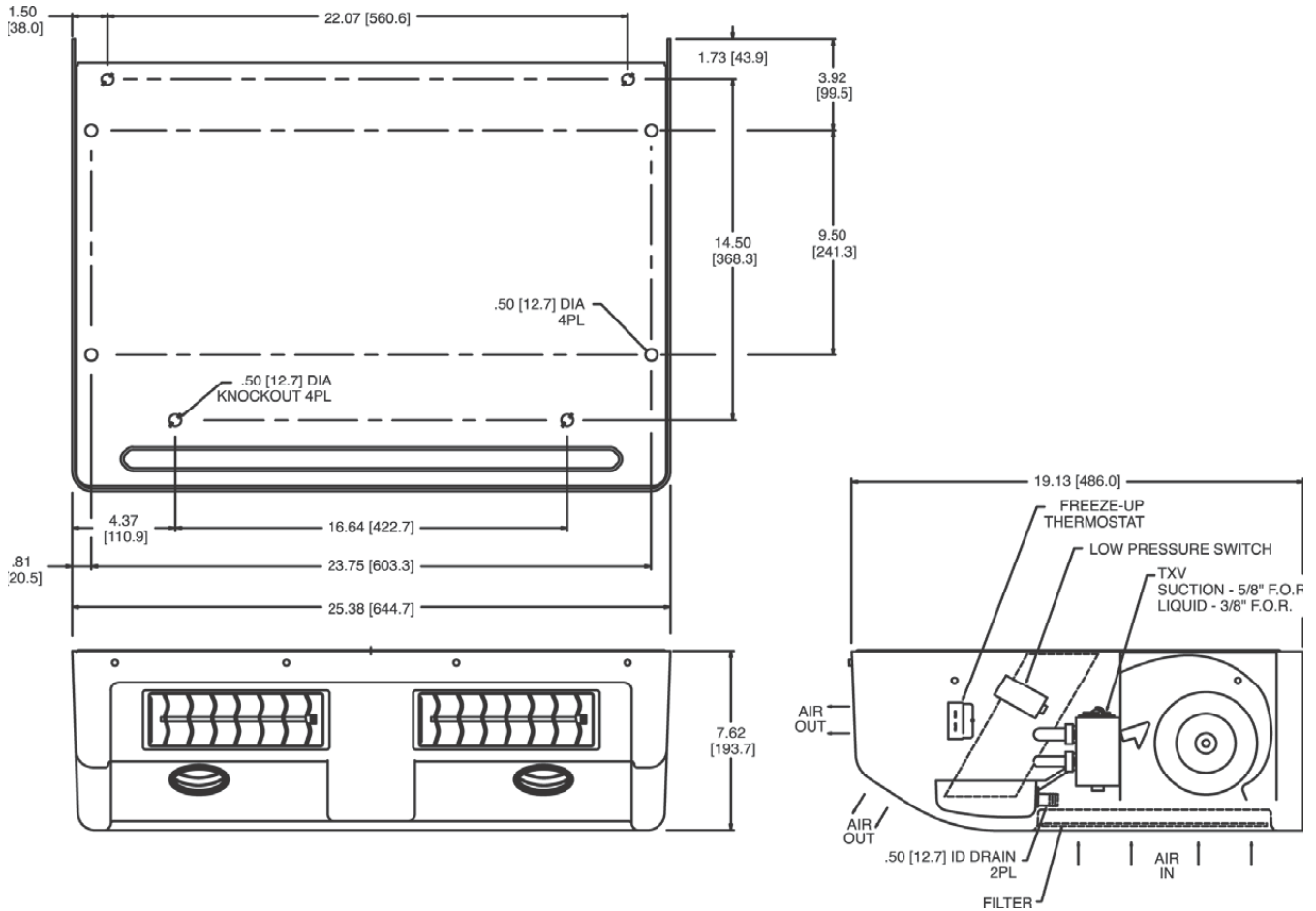
MCC EM-7 ceiling mount air conditioning evaporator has been engineered for maximum serviceability and ease of installation in commercial and school buses and vans. Because the drain pan is part of the basic system, the EM-7 can be completely installed, charged and tested

before the cover is put in place, greatly reducing installation time. Simple cover removal provides ready access to all serviceable components. This evaporator is available for non-ducted free blow applications in (15 – 20)” (381 – 508)mm passenger areas.



Features

- New, efficient, transverse blower technology reduces AMP draw and provides increased, uniformly distributed air flow
- Higher capacity unit in a smaller package (height reduced over 20% from existing models, significantly increasing head clearance)
- Reduced service time and overall life cycle cost with single, easily accessible motor, bottom mounted air filter, 10% fewer parts and fasteners than previous models
- Return air filters can be removed and cleaned without removing the units cover
- High volume air flow, widely dispersed through bi-directional louvers for total passenger comfort
- State-of-the-art enhanced coils for maximum cooling capacity and increased efficiency
- Variable speed blower allows for full air flow adjustment to optimize system to individual cooling preferences
- Heavy-duty steel frame is reinforced for added strength
- Can be front/rear center or front/rear side mounted in all makes/models of buses



Technical Data

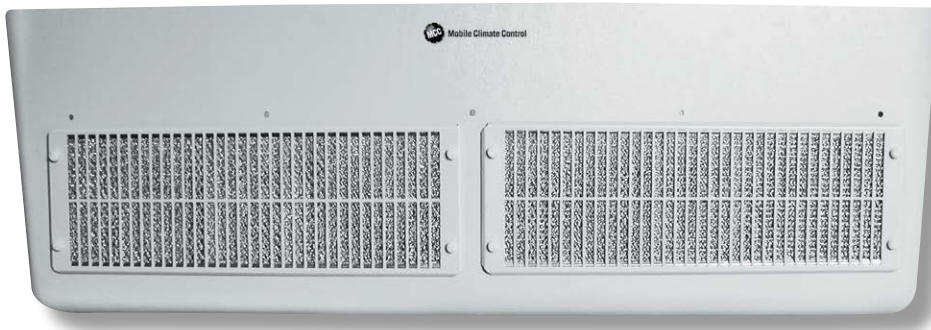
Cooling capacity	35000 Btu/hr (10.25 kW) IMACA ^[1]	13700 Btu/hr (4 kW) ARI ^[2]
Air flow	800 CFM (1359 m ³ /hr)	
Refrigerant	R134a	
Length	25.38" (645 mm)	
Width	19" (486 mm)	
Height	7.62" (193.5 mm)	
Weight	41 lbs (19 kg)	
Condensate drain connection	½" (12.7 mm) O.D	
Max amperage requirement	15.9 A @ 13.5 V dc (High Speed)	
Voltage	12 or 24 VDC	
Cover color	Snow White or Dove Gray	

[1] IMACA conditions: F (38°C) / 90°F (32°C) / 50% RH
 [2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH

Evaporator **EM-9**

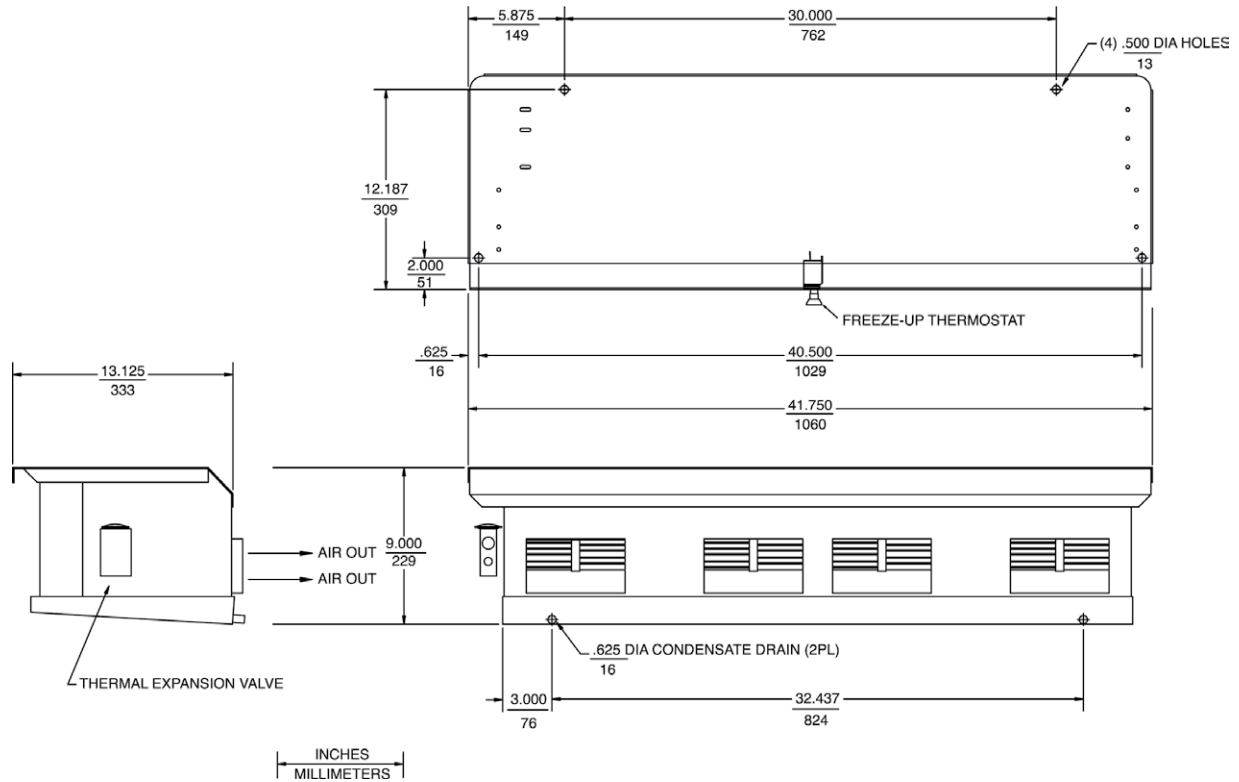
MCC EM-9 ceiling mount air conditioning evaporator has also been engineered for maximum serviceability and ease of installation in commercial and school buses. Because the drain pan is part of the basic system, the EM-9 can be

completely installed, charged and tested before the cover is put in place, greatly reducing installation time. Simple cover removal provides ready access to all serviceable components. This evaporator is available for ducted applications only up to 35" (889 mm) passenger areas.



Features

- Heavy-duty steel frame is reinforced for added strength
- High volume air flow that delivers performance in to any shape of duct work
- State-of-the-art enhanced coils for maximum cooling capacity and increased efficiency
- Flexible mounted positions offer airflow where you need it
- Three speed blower allows for full air flow adjustment to optimize system to individual cooling preferences
- Unit incorporates coil freeze up protection. The result is increased trouble-free compressor life
- Return air Filter can be removed and cleaned without removing the unit cover



Technical Data

Cooling capacity	60000 Btu/hr (17.5 kW) IMACA ^[1]	27000 Btu/hr (8 kW) ARI ^[2]
Air flow	1600 CFM (2718 m ³ /hr)	
Refrigerant	R134a	
Length	41.75" (1060 mm)	
Width	13.125" (333 mm)	
Height	9" (228 mm)	
Weight	85 lbs (38.5 kg)	
Condensate drain connection	½" (12.7 mm) O.D	
Max amperage requirement	37.5 A @ 13.5 V dc (High Speed)	
Voltage	12 or 24 VDC	
Cover color	Snow White or Dove Gray	

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH



Evaporator **EM-17**

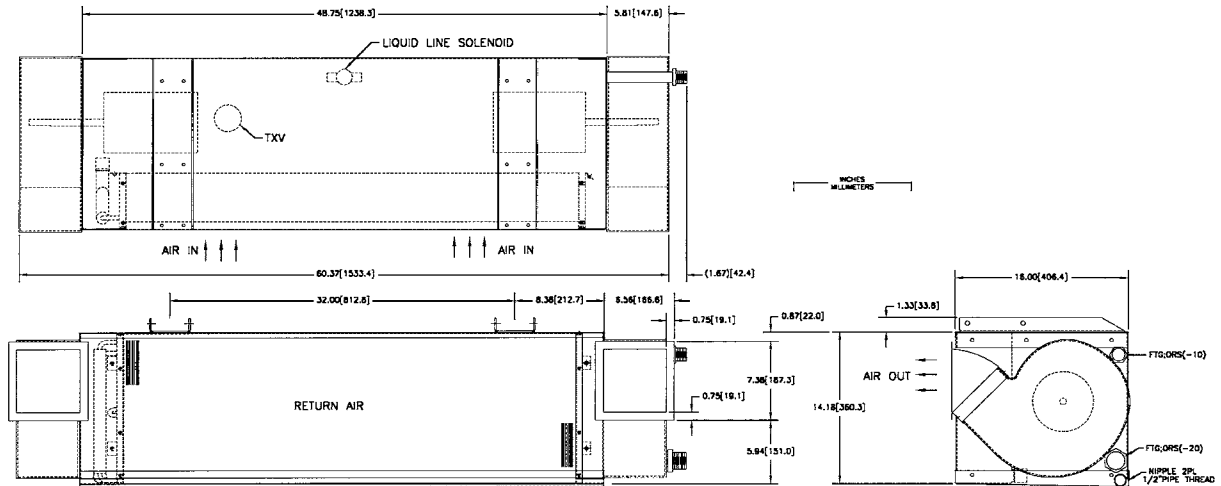
MCC's EM-17 rear ceiling mount air conditioning evaporator has been specifically engineered for use in vehicles with an overall length of 35 – 40' (1067 – 1219 cm) and which are used in the severest of climates and operating conditions. This unit was designed with the term

“heavy-duty” in mind: from its long life large frame transit style motors to its own power supply being generated by a 24V batteryless alternator. This is the unit that needs to be experienced to be appreciated. It has conquered transit-duty school bus applications in the desert, now let it conquer your unique application.



Features

- Internally-enhanced rugged coil design delivers the highest capacity in its class while using R-134a as its refrigerant
- Heavy-duty steel frame construction coupled with stainless steel fasteners equal rugged construction
- The highest air volume in its class is generated by two re-buildable 56-series cast frame constructed motors which drive two large diameter metal scroll blower wheels. This is then evenly dispersed through the use of ductwork to provide total passenger comfort
- State-of-the-art electronic controls are incorporated to provide minimum wiring, improved reliability, and maximum protection
- All refrigerant connection points are O-ring for added leak protection and are coupled with hoses constructed to meet or exceed SAE Spec J2064 Type E
- A vinyl-clad steel cover is included in your choice of two colors (snow white or dove gray) which are custom fit to your vehicles unique contours
- A durable aluminum mesh filter is mounted in an easy to service hinged air return grill for minimized service time and maximum operating time



Technical Data

Cooling capacity	130000 Btu/hr (38 kW) IMACA ^[1]	32760 Btu/hr (9.61 kW) ARI ^[2]
Air flow	2400 CFM (4080 m ³ /hr)	
Refrigerant	R134a	
Length	16" (406.4 mm)	
Width	48.75" (1238.3 mm)	
Height	15.5" (394 mm)	
Weight	196 lbs (89 kg)	
Condensate drain connection	½" (12.7 mm) O.D	
Current draw	57 amps at 27 VDC (Rated @ high speed and ½" static)	
Cooling coil	6 rows deep, galvanized steel tube sheets with internally enhanced 0.4" (9.5 mm) diameter copper tubes expanded into 0.006" (0.15 mm) aluminum fins	
Motors	Fully re-buildable 56-series frame construction capable of a constant duty design life rating of no less than 10000 hours. Motor shafts are a series-300 stainless steel for corrosion resistance. Motors are two speed (hi/low) through use of an external voltage dropping resistor.	
Blowers	Rated at 2060 CFM (3500 m ³ /hr) @ 0.5" (13 mm) static @ 27 volts and dynamical balanced for quiet operation.	
Blower housings	Steel construction coated with a heat-resistant sound dampening foam to aid in noise reduction	
Expansion valve	Externally equalized right-angle valve with a replaceable power head and cage assembly. The superheat is factory preset.	
Return air filter	Constructed of a durable aluminum mesh rated to pass FMVSS302.	

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH
 [2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH

Evaporator IW-1

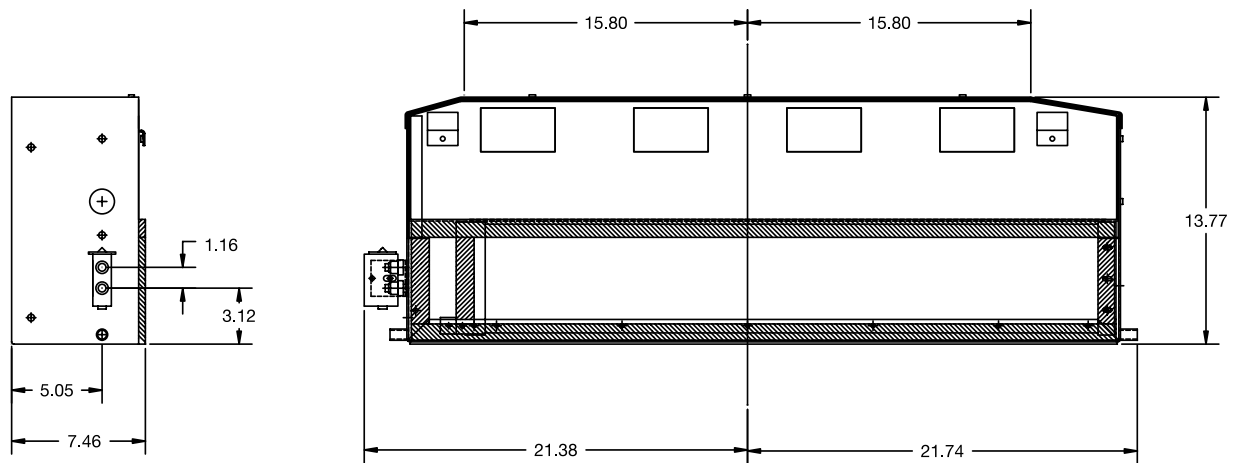
The IW-1 is designed to free up the overhead compartment where traditional evaporators are located. The IW-1 evaporator can also be matched with other MCC compo-

nents to provide a complete air conditioning system that meets your exact vehicle size, operating mode, and climate.



Features

- Lightweight aluminum frame construction
- Flexible mounting configurations for every make of body
- Integrated motor cover panel for ease of service
- State-of-the-art enhanced coils for maximum cooling capacity
- Flush mount installation provides maximum head clearance and clean OEM appearance
- Easy access hinged return air filter provides for reduced service time



Technical Data

Cooling capacity	55000 Btu/hr (16.11 kW) IMACA ^[1] 27005 Btu/hr (8 kW) ARI ^[2]
Air flow	1600 CFM (2718.42 m ³ /hr)
Refrigerant	R134a
Length	43.12" (1095.2 mm)
Width	7.46" (189.5 mm)
Height	13.77" (349.8 mm)
Weight	50 lbs (22.7 kg)
Condensate drain connection	½" (12.7 mm) OD
Max amperage requirement	23.7 A @ 13.5 V dc (High Speed)
Voltage	12 or 24 VDC
Cover color	Snow White or Dove Gray

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH
 [2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH



Evaporator **IW-2**

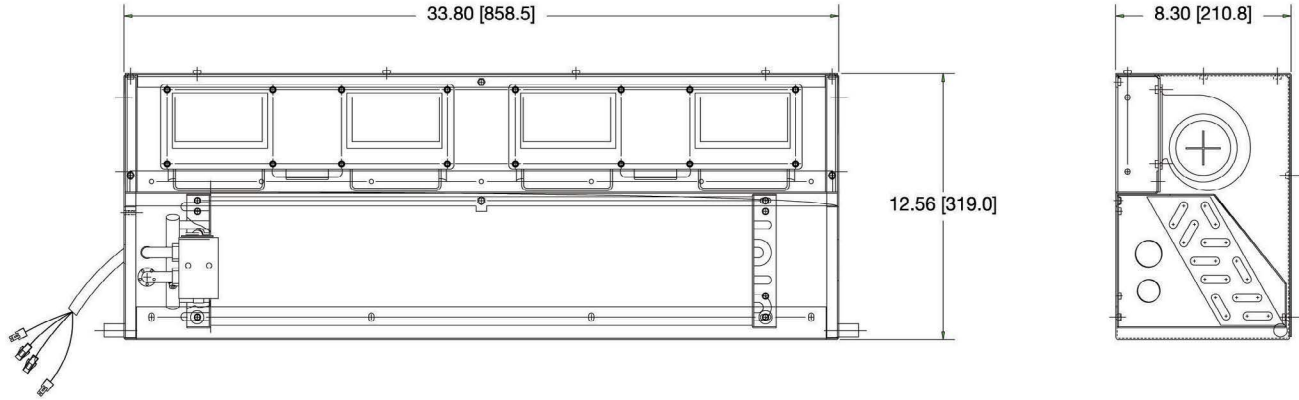
The IW-2 is designed to free up the overhead compartment where traditional evaporators are located. The IW-2 evaporator can also be matched with other MCC compo-

nents to provide a complete air conditioning system that meets your exact vehicle size, operating mode, and climate.



Features

- Lightweight aluminum frame construction
- Flexible mounting configurations for every make or body
- Integrated motor cover panel for ease of service
- State-of-the-art enhanced coils for maximum cooling capacity
- Flush mount installation provides maximum head clearance and clean OEM appearance
- Easy access return air filter provides for reduced service time



Technical Data

Cooling capacity	45000 Btu/hr (13.2 kW) IMACA ^[1]	18500 Btu/hr (5.42 kW) ARI ^[2]
Air flow	800 CFM (1359.2 m ³ /hr)	
Refrigerant	R134a	
Length	33.8" (858.5 mm)	
Width	8.30" (211 mm)	
Height	12.56" (319 mm)	
Weight	45 lbs (20.41 kg)	
Condensate drain connection	½" (12.7 mm) OD	
Max amperage requirement	23.7 A @ 13.5 V dc (High Speed)	
Voltage	12 or 24 VDC	
Cover color	Snow White or Dove Gray	

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH
 [2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH



Evaporator **IW-4**

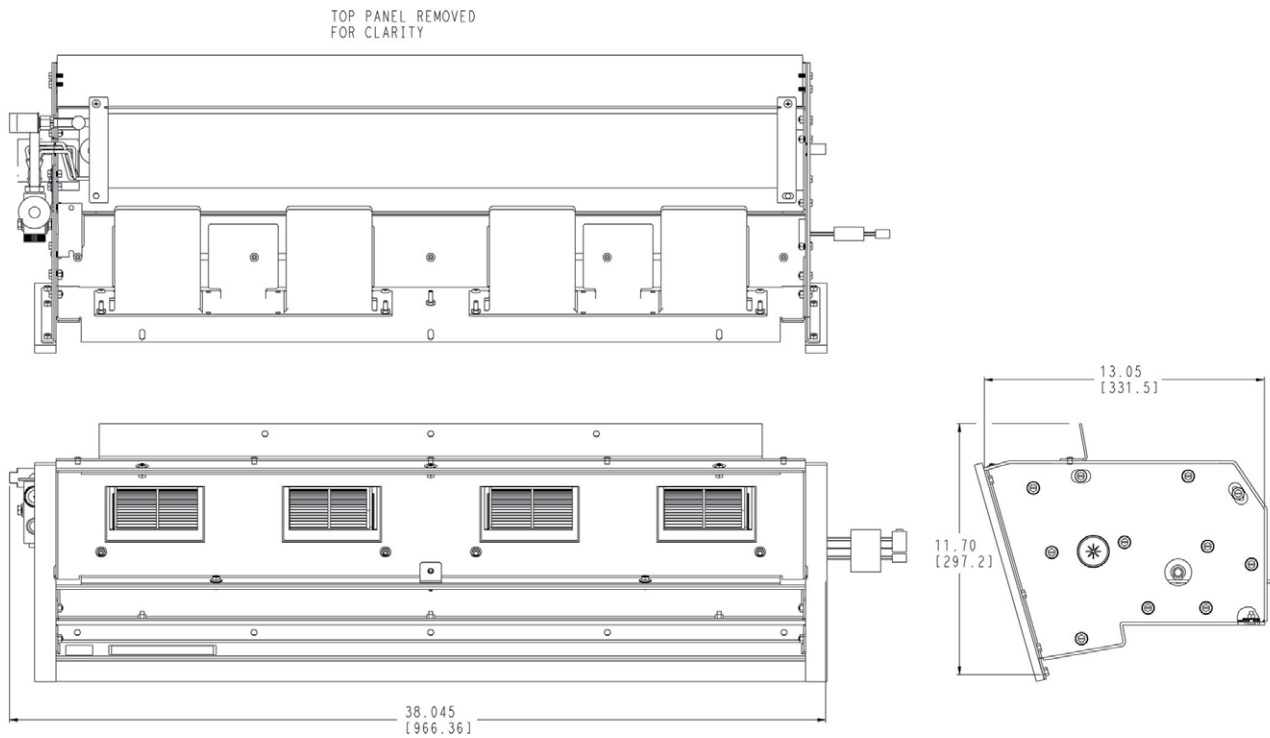
The IW-4 unit frees up the front bulkhead of Thomas Built Buses C2 conventional buses. The IW-4 evaporator can also be matched with other MCC components to provide a

complete air-conditioning system that meets your exact vehicle size, operating mode and climate.



Features

- Lightweight aluminum frame construction
- Integrated motor cover panel for ease of service
- Enhanced coils for maximum cooling capacity
- Easy access return air filter helps to reduce service time
- Drop-in one-piece construction simplifies installation time and provides maximum head clearance and clean OEM appearance



Technical Data

Cooling capacity	55000 Btu/hr (16.1 kW) IMACA ^[1]	28450 Btu/hr (8.33 kW) ARI ^[2]
Air flow	1500 CFM (2548.5 m ³ /hr)	
Refrigerant	R134a	
Length	38.10" (967.7 mm)	
Width	13.64" (346.5 mm)	
Height	10.30" (261.6 mm)	
Weight	40 lbs (18.1 kg)	
Condensate drain connection	½" (12.7 mm) OD	
Max amperage requirement	23.7 A @ 13.5 V dc (High Speed)	
Voltage	12 or 24 VDC	
Cover color	Snow White or Dove Gray	

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH

Evaporator IW-10

The IW-10 unit frees up the overhead compartment where traditional evaporators are located. The IW-10 evaporator can also be matched with other MCC components to

provide a complete air conditioning system that meets your exact vehicle size, operating mode and climate.



Features

- Lightweight aluminum construction
- Flexible mounting configurations
- Enhanced coils for maximum cooling capacity
- Easy access return air filter helps to reduce service time
- Flat or formed ABS cover
- Covers available in white or gray
- Flush mount installation provides maximum head clearance and clean OEM appearance



Technical Data

Cooling capacity	55000 Btu/hr (16.1 kW) IMACA ^[1]	20580 Btu/hr (6.87 kW) ARI ^[2]
Air flow	1300 CFM (2208.7 m ³)	
Refrigerant	R134a	
Length	43.30" (1100 mm)	
Width	7.00" (177.8 mm)	
Height	10.19" (259 mm)	
Weight	32 lbs (14.5 kg)	
Condensate drain connection	½" (12.7 mm) OD	
Max amperage requirement	23.7 A @ 13.5 V dc (High Speed)	
Voltage	12 or 24 VDC	
Cover color	Snow White or Dove Gray	

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH

[2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH

Slim Line Series **Condenser CM-2**

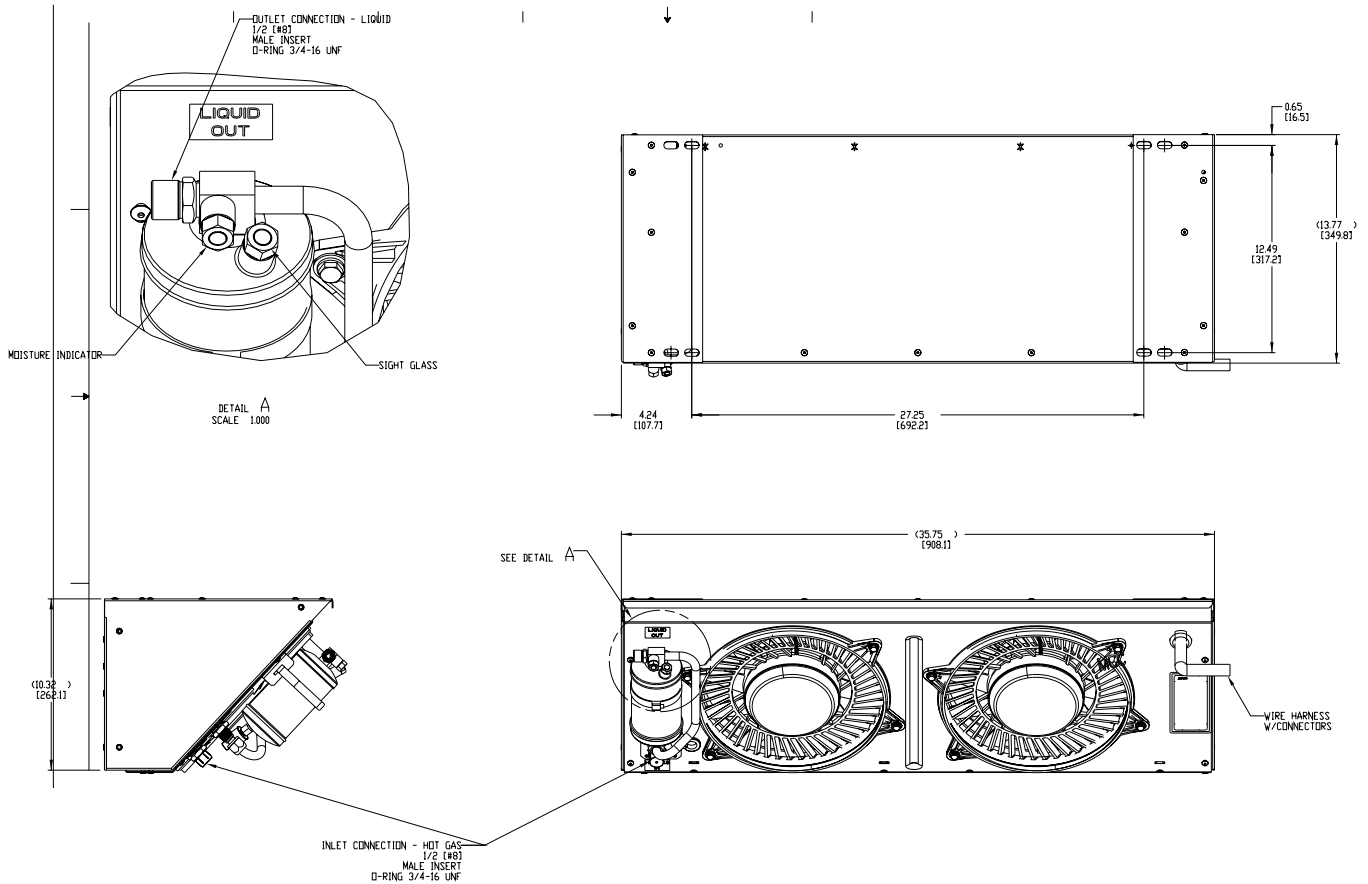
Field experience led to our innovative CM-2 condenser design for commercial and school bus air conditioning. Lower condensing temperatures and pressures result in enhanced cooling, longer compressor life and more efficient system operation. In this MCC unique design, air is channeled away from the vehicle undercarriage, eliminat-

ing recirculation of hot air. Need high performance in new or retrofit applications, specify the MCC CM-2 condenser. The CM-2 condenser can be matched with other MCC components to provide a complete air conditioning system that meets your exact vehicle size, operating mode and environment.



Features

- Slim Line CM-2 cabinet is constructed using rugged, powder coated, steel construction
- Zinc coated for added durability and corrosion protection.
- Integrated high pressure safety switch as standard equipment
- Unitized motor/fan package increases service access and decreases service time
- Winter protection package
- Skirt mount or component mount air inlet grill
- 12V or 24V operation
- Stackable kit available
- Plug-n-Play connectors on unit and fan motor provide for ease of installation and motor service
- Incorporated single piece receiver/dryer and system moisture indicator reduced possible leak joints



Technical Data

Capacity	60000 Btu/hr (17.58 kW) IMACA ^[1]
Air flow	900 CFM (1529 m ³ /hr)
Condenser coil	Advanced technology Micro Channel Heat Exchanger (MCHX)
Condenser fans	Unitized, low-profile, axial-flow type propeller fans balanced for quiet, vibration-free operation with finger guard
Fan motors	Totally enclosed, pancake-style, permanent-magnet type with extended-life, permanently lubricated bearings
Max amperage requirement	14 amps @ 13.5 VDC; 7 amps @ 27.0 VDC
Safety controls	High refrigerant pressure cut-out 400 psi (28 bar); cut-in 300 psi (21 bar)
Receiver filter dryer	16 in ³ (262 cm ³), 1/2" [#8] Male Insert O-Ring (MIOR)
Weight	45 lbs (20.5 kg)
Available color	Midnight black

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH



Slim Line Series **Condenser CM-3**

Field experience led to our innovative CM-3 condenser design for commercial and school bus air conditioning. Lower condensing temperatures and pressures result in enhanced cooling, longer compressor life and more efficient system operation. In this MCC unique design, air is

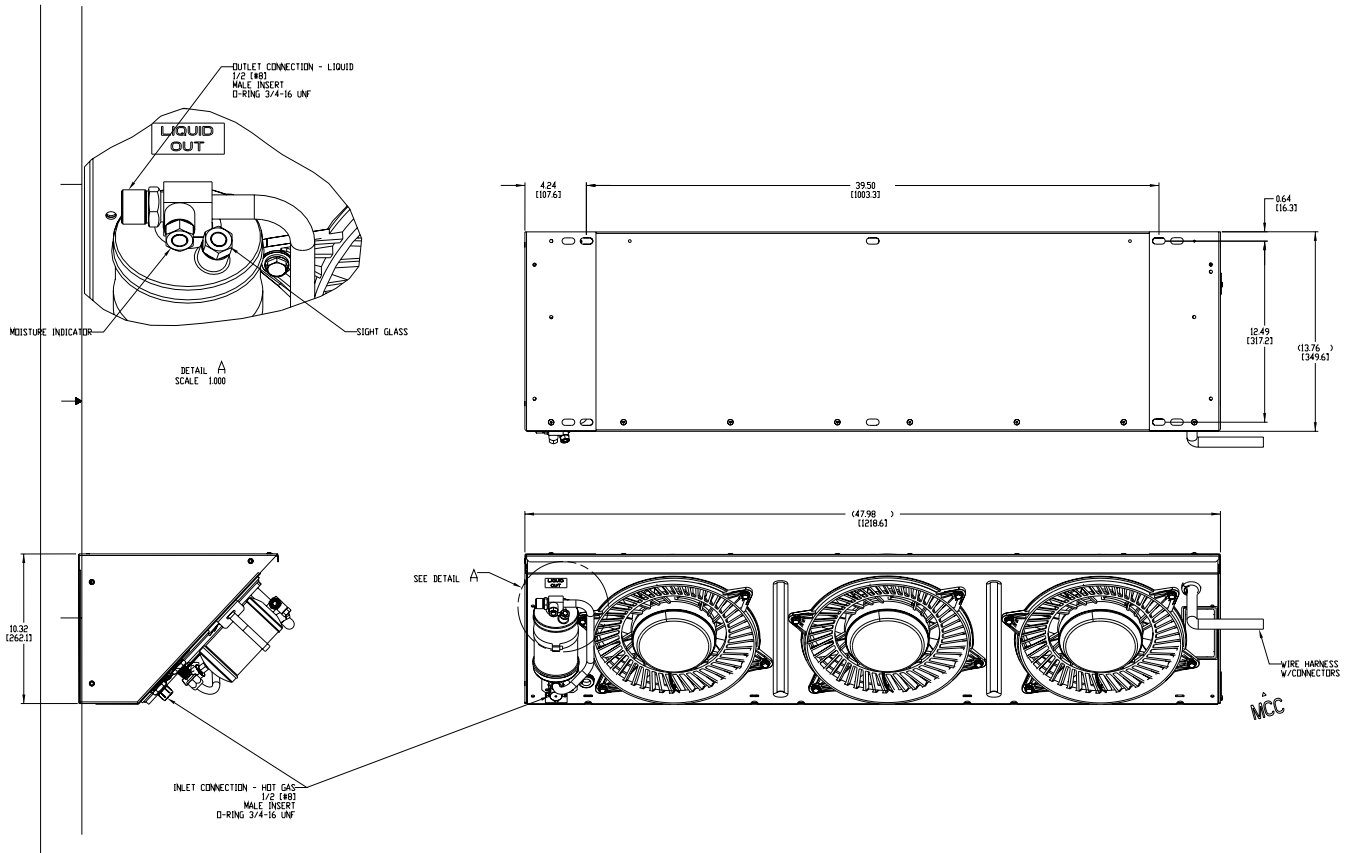
channeled away from the vehicle undercarriage, eliminating recirculation of hot air. For high performance in new or retrofit applications, specify the MCC CM-3 condenser. The CM-3 condenser can be matched with other MCC components to provide a complete air conditioning system that meets your exact vehicle size, operating mode and climate.



Features

- Micro channel all aluminum coil design for unmatched-heat transfer
- Zink coated for added durability and corrosion protection
- Rugged coated steel construction
- Integrated high pressure safety switch as standard equipment
- Unitized motor/fan package increases service access and decreases service time
- Winter protection package
- Skirt mount or component mount air inlet grill
- 12V or 24V operation
- Stackable kit available
- Incorporated single piece receiver/dryer and system moisture indicator reduced possible leak joints
- Plug-n-Play connectors on unit and fan motor provide for ease of installation and motor service

Slim Line Series **Condenser CM-3**



Technical Data

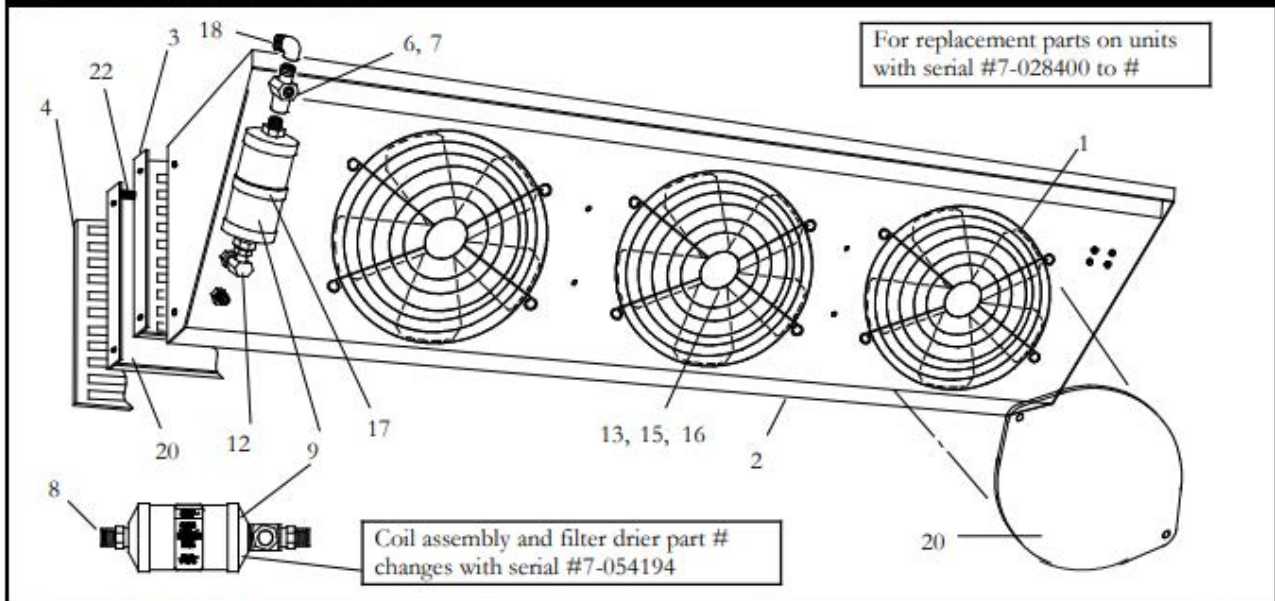
Capacity	80000 Btu/hr (23.44 kW) IMACA ^[1]
Air flow	1350 CFM (2294 m ³ /hr)
Condenser coil	Advanced technology Micro Channel Heat Exchanger (MCHX)
Condenser fans	Unitized, low-profile, axial-flow vector fans balanced for quiet, vibration-free operation with finger guard
Fan motors	Totally enclosed, pancake-style, permanent-magnet type with extended-life, permanently lubricated bearings
Max amperage requirement	21 amps @ 13.5 VDC; 11.5 amps @ 27.0 VDC
Safety controls	High refrigerant pressure cut-out 400 psi (28 bar); cut-in 300 psi (21 bar)
Receiver filter dryer	16 in ³ (262 cm ³), 1/2" [#8] Male Insert O-Ring (MIOR)
Weight	51 lbs (23.2 kg)
Available color	Midnight black

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH



SECTION 2.2 CM-3 CONDENSERS

2.2.1 CONDENSER, CM-3, GEN 4



Item	Part Number	Description	Qty
1	AC030-234	Guard, Fan (Not used with 54-00618-01)	3
2	AC033-220	Coil Assembly, With Pressure Switches, (Before serial #7-054194)	1
	08-62035-01	Coil Assembly (Beginning w/serial #7-054194)	1
3	AC033-133P	Grill, Condenser Mounted, Black	1
	68-15461-00	Grill, Condenser Mounted, Black (MCHX)	1
4	AC033-135	Grill, Bus Skirt Mounted	1
5	AC033-144	Assembly, Tab, (Used with Condenser Mounted Grill)	1
6	AC101-200	Sightglass	1
7	AC801-220	O-Ring, 1/2 Inch MF-O, (Old)	2
8	AC801-202	O-Ring, 1/2 Inch HNBR, (New)	2
9	AC101-312	Filter Drier, 16 Cubic Inch, 1/2 Inch MFL-O, (Before serial #7-054194)	1
	14-00288-00	Filter Drier/Sightglass Combination, (Beginning with serial #7-054194)	1
10	AC201-414	Switch, High Pressure	1
11	AC201-412	Switch, Low Pressure	1
12	AC301-441	Fitting, Swivel Union, 1/2 Inch Female Flare X 1/2 Inch Female Flare (Old)	1
	40-62036-00	Fitting, Swivel Union, 1/2 Inch Female O-Ring X 1/2 Inch Female O-Ring	1
13	54-00618-01	Fan & Motor Assy, Vector, 12V W/Fuse, (No Repl. Motor) Includes:	3
	AC401-110	Assembly, Fan, 12 VDC - Includes:	3
13A	22-02336-25	...Fuse, 20 Amp	1
14	54-50080-00	...Motor, Fan, 12 VDC	1
	44-50024-00	...Clip, Fan Blade	1
15	CM205-197	Assembly, Fan, 24 VDC	3
16	22-62124-00	Harness, Condenser, CM-3	1
17	AC701-269	Clamp, Worm Gear, (Filter Drier)	1
18	-	Fitting, 90°, 1/2 Inch Male Flare X 1/2 Inch Female Flare, (Brass)	NSI



Condenser **CM-14**

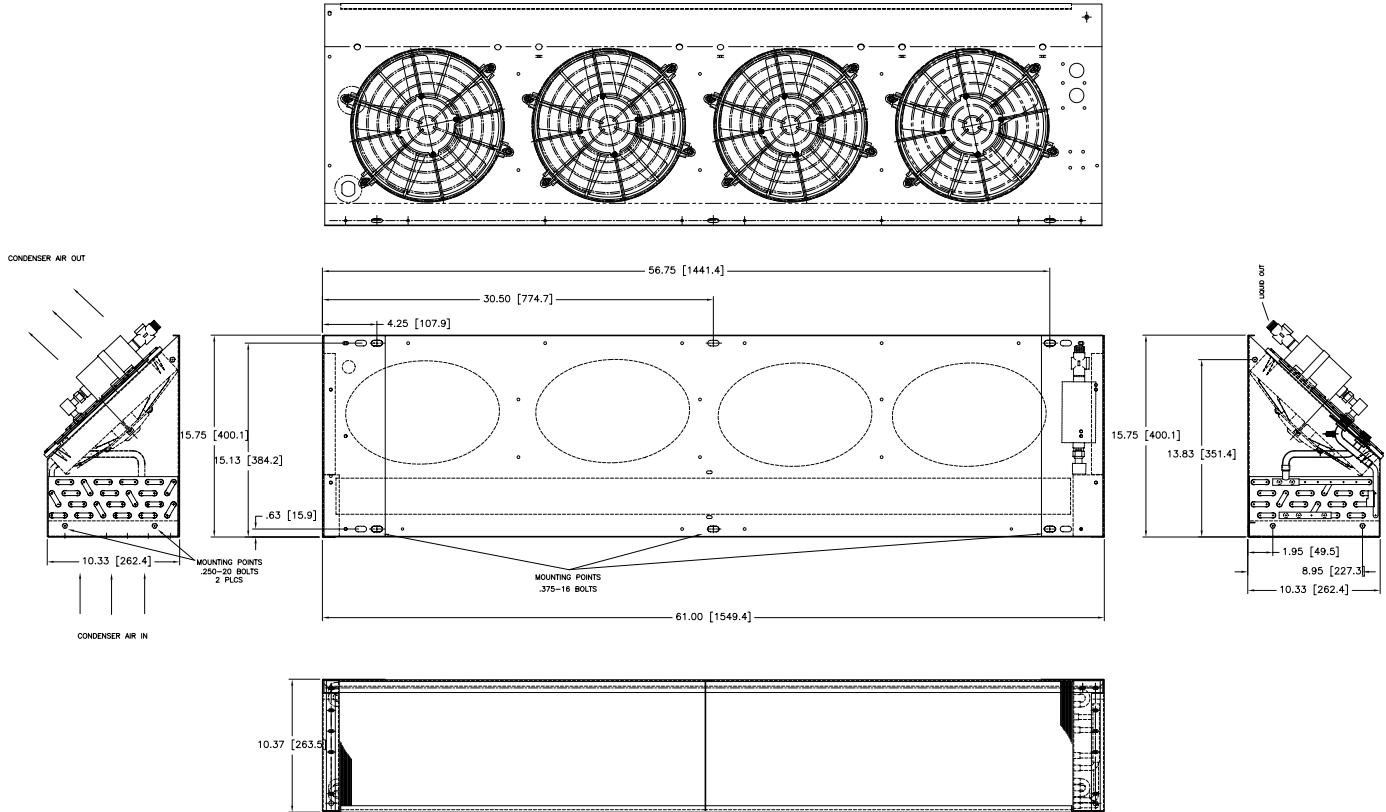
Field experience led to our innovative CM-14 condenser design for commercial and school bus air conditioning. Lower condensing temperatures and pressures result in enhanced cooling, longer compressor life and more efficient system operation. In MCC unique design, air is channeled away from the vehicle undercarriage, eliminat-

ing recirculation of hot air. For best possible performance in new or retrofit applications, specify the MCC CM-14 condenser. The CM-14 condenser can be matched with other MCC components to provide a complete air conditioning system that meets your exact vehicle size, operating mode and climate.

Features

- Enhanced Copper Tube and Aluminium fin coil design for unmatched heat transfer coil
- Zinc coated for added durability and corrosion protection
- Rugged coated steel construction
- Integral high-pressure switch eliminates high-side compressor cycling
- Unitized motor/fan package increases service access and decreases service time
- Winter protection package
- Incorporated single piece combination filter drier and sight glass with system moisture indicator reduces possible leak joints
- Skirt mount or component mount air inlet grille
- 12 V or 24 V operation
- Stackable kit available
- Plug-n-Play connectors on unit and fan motor provide for ease of installation and motor service

Condenser CM-14



Technical Data

Capacity	107000 Btu/hr (31.35 kW) IMACA ^[1]
Air flow	3200 CFM (5437 m ³ /hr)
Condenser coil	Four rows deep, patented, internally enhanced copper tubes expanded into aluminum fins
Condenser fans	Unitized, low-profile, axial-flow vector fans balanced for quiet, vibration-free operation with finger guard
Fan motors	Totally enclosed, pancake-style, permanent-magnet type with extended-life permanently lubricated bearings
Max amperage requirement	29 amps @ 13.5 VDC; 26 amps @ 27.0 VDC
Safety controls	High refrigerant pressure cut-out 400 psi (28 bar); cut-in 300 psi (21 bar)
Receiver filter dryer	16 in ³ (262 cm ³)
Weight	95 lbs (43.1 kg)
Available color	Midnight Black

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH



Condenser **CR-4**

MCC's KR-4 high-capacity roof mount condenser has been specifically engineered for use in school and commercial buses that are 20'– 40' (7620 – 12192 mm) long.

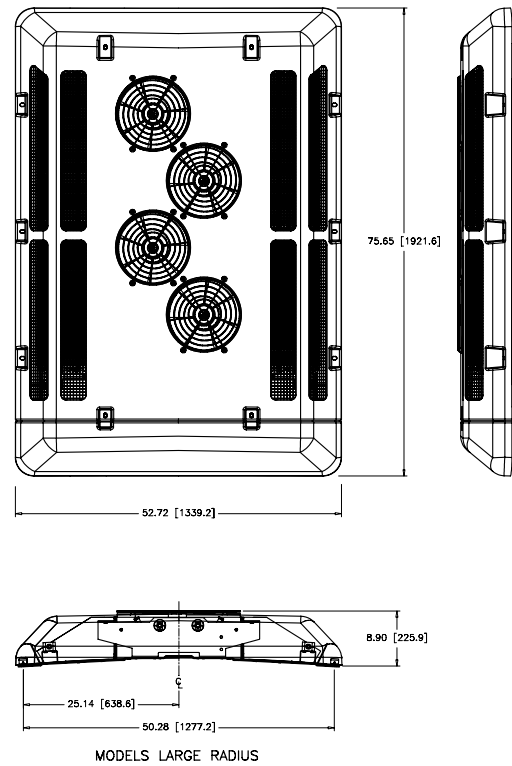
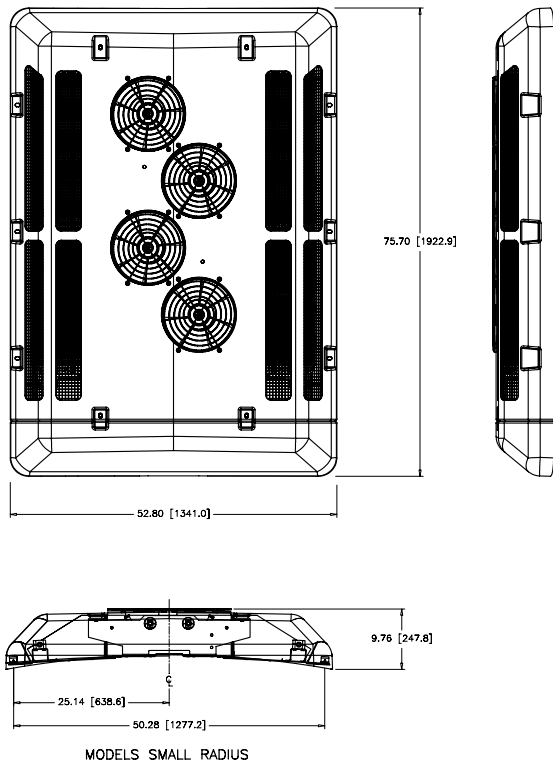
The ultra-low-profile KR-4 roofmount condenser frees up the skirt area for a variety of options including CNG tanks, wheelchair lifts and luggage boxes. Simply mount it on the roof and free up space inside.



Standard Features

- Delivers the highest capacity in its class using R134a
- The sleek, low-profile design looks like part of the roof
- Transit-duty construction: Combines the toughness of steel with the light weight and corrosion resistance of aluminum fiberglass
- Swiss-made, stainless steel shaft with long-life, ball-bearing motors
- Available in both 12V and 24V configurations
- All refrigerant termination points feature O-ring connections for ease of installation and leak-free reliability
- The KR-4 can be matched with a wide variety of MCC evaporators including our EM-1, EM-3, EM-9 and EM-17
- MCC's newest "whisper quiet" fan technology, which delivers the highest-rated CFM at the industry's lowest decibel rating
- Two cover radiuses available to better fit your application. Small (15" red) and larger (300" red)

Condenser KR-4



Technical Data

Capacity	163000 Btu/hr (47.7 kW) IMACA ^[1]
Coil	Four rows deep. Aluminum tube sheets with MCC's patented, internally enhanced 3/8" diameter copper tubes expanded into .008"-thick aluminum-coated fins
Motors	Four permanent-magnet fan motors. Stainless steel shafts and sealed ball-type bearings rated at 20000 hours
Air flow	3500 CFM (5946.5 m ³ /hr) at 2950 rpm; zero-static rating condition
Fan blade	Four tri-blade glass-filled ABS propeller-type fans, 14" in diameter
Housing	Corrosion-resistant, lightweight, hand-laid fiberglass with UV-resistant gel-coated exterior layer
Fitting connections	Single Circuit – Outlet – #12 male ORFS Inlet – #16 male ORFS Dual Circuit – Outlet – # 8 (3/4"-16) male insert O-ring Inlet – #10 (7/8"-14) male insert O-ring
Max amperage requirement	44 amps @ 13.5 VDC; 22 amps @ 27.0 VDC
Weight	187 lbs (85 kg)

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH



Roof top Condenser **CR-410**

Our K-410 high capacity roof mount condenser has been specifically engineered for use in commercial, light transit and school bus applications. This unit is the perfect marriage of sleek, low profile European styling and American innovation.

The rugged fiberglass cover shrouds the high strength steel and lightweight aluminum structure underneath, while allowing complete service access without cover removal.

The highly adjustable mounting rails are designed to attach this unit to any exterior roof radius without leaving visually unsightly gaps between roof and unit cover.

MCC's innovative introduction of the roofmount condenser series to the North American bus market has given body builders the opportunity to free up skirt space for a variety of options including CNG tanks, wheelchair lifts and luggage compartments, while maintaining an aerodynamic exterior appearance to your vehicle.

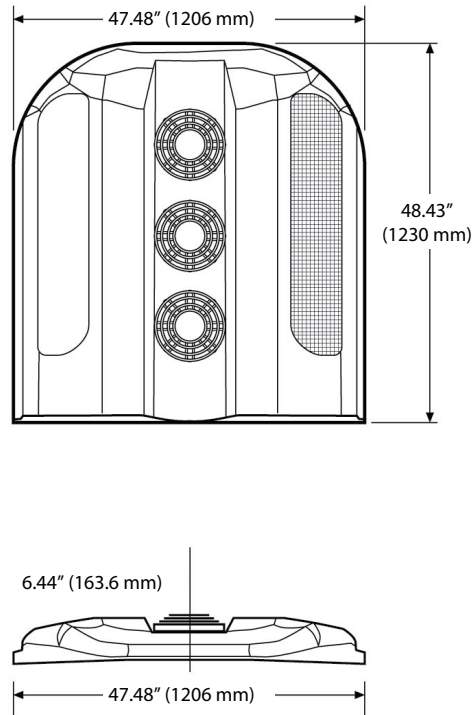
The roofmount condenser is the answer to severe road salt corrosion and high radiant ground temperature environments.



Features

- Half the height of current models
- Lower condensing temperatures and pressures than skirt-mounted condensers provide enhanced cooling and better efficiency
- Adaptable to 12V and 24V applications
- Corrosion resistant, lightweight frame
- Lightweight, durable fiberglass cover
- Optional fan winter guard kit

Condenser KR-410



Technical Data

Capacity	82000 Btu/hr (24 kW) IMACA ^[1] 57000 Btu/hr (16.7 kW) ARI ^[2]
Air flow	1700 CFM (288 m ³ /hr)
Condenser coil	Two coils each, two rows deep with internally enhanced copper tubes expanded into aluminium fins
Condenser fans	3
Fan motors	Totally enclosed, pancake-style, permanent-magnet type with extended-life permanently lubricated, sealed bearings and 4-pole graphite brushes
Max amperage requirement	23 amps @ 13.5 VDC; 11 amps @ 24 VDC
Safety controls	High refrigerant pressure cut-out 400 psi (28 bar); cut-in 300 psi (21 bar)
Filter dryer	16 in ³ (262 cm ³)
Weight	Installed weight 80 lbs (36.3 kg)
Available color	Gel coat white

[1] IMACA conditions: 100°F (38°C) / 90°F (32°C) / 50% RH
 [2] ARI conditions: 95°F (35°C) / 80°F (27°C) / 50% RH



Roof Mount Condenser **CR-430**

Roof mount Air-conditioning condenser module

The CR-430 roof mounted condenser module has been designed to meet the demanding and varied needs of the Global HVAC market. The CR-430 with its attractive, lightweight, and low profile design provides improved condensing performance, reliability, and ease of installation as compared to its predecessors. The all steel powder coated cabinet construction provides unparalleled strength and

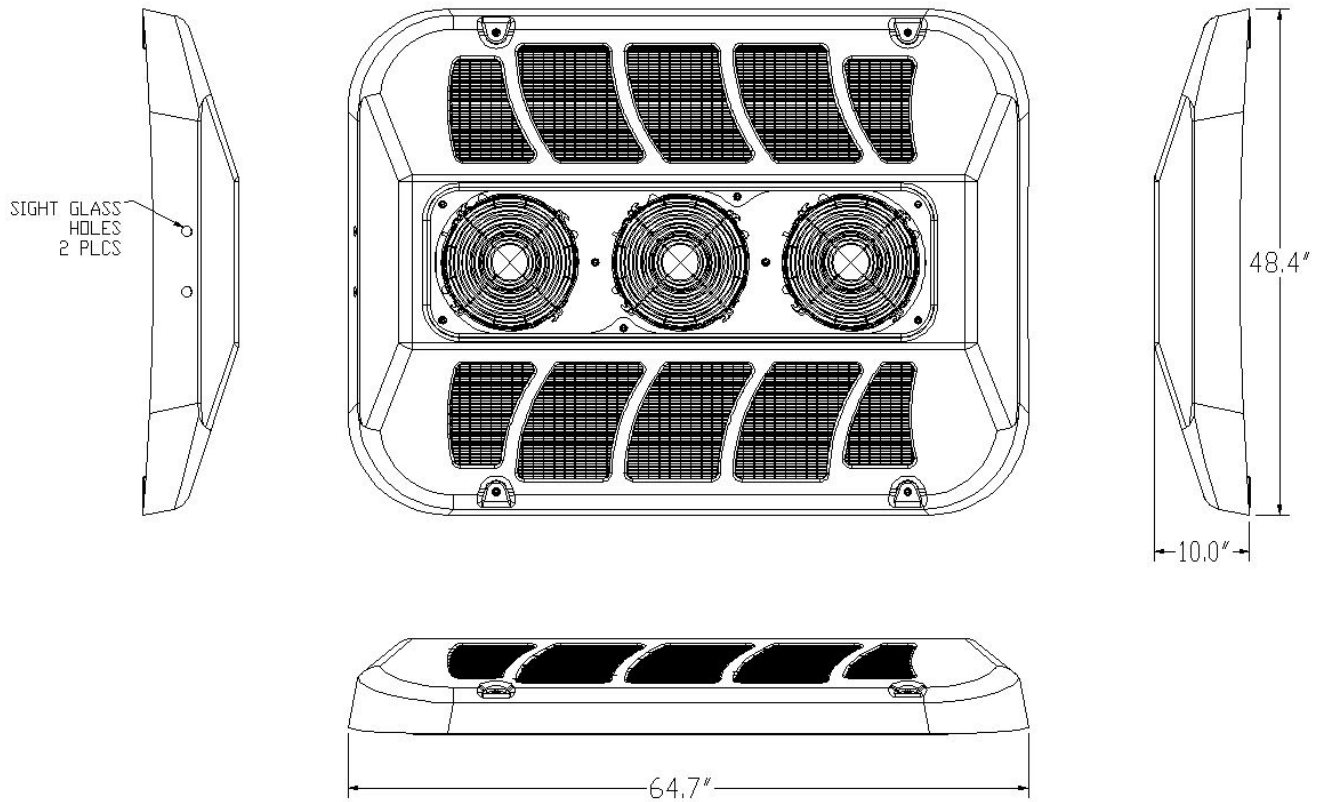
reliability while the attractive TPO cover with integrated stainless steel grills helps keep the weight down without sacrificing functionality or reliability. The system utilizes MCC's signature micro-channel heat exchanger (MCHX) coil technology that delivers maximum capacity through improved heat transfer performance.



Features

Benefits

<ul style="list-style-type: none"> • Designed for use with R134a Refrigerant 	<ul style="list-style-type: none"> • Lower cost, less system weight, environmentally friendly
<ul style="list-style-type: none"> • Utilizes Micro Channel Condenser Coil (MCHX) 	<ul style="list-style-type: none"> • Improved performance/efficiency, reduced weight, reduced refrigerant charge
<ul style="list-style-type: none"> • Powder coated galvanized steel frame 	<ul style="list-style-type: none"> • Increased strength and durability
<ul style="list-style-type: none"> • TPO plastic cover 	<ul style="list-style-type: none"> • Durable, lightweight, flexible, UV resistant
<ul style="list-style-type: none"> • Large capacity receiver tank(s) w/sight glass 	<ul style="list-style-type: none"> • Increases charge holding capacity for system variation, ease of charge with easy to view sight glass
<ul style="list-style-type: none"> • Large capacity filter drier(s) (30 cu.in.) 	<ul style="list-style-type: none"> • Improved system reliability, cleaner dryer refrigerant and refrigerant oil
<ul style="list-style-type: none"> • Single loop version includes single liquid line service valve 	<ul style="list-style-type: none"> • Allows for low side pump down for ease of service
<ul style="list-style-type: none"> • Service-ability/Install friendly 	<ul style="list-style-type: none"> • Unit was design with install- ability and service ability in mind
<ul style="list-style-type: none"> • Multiple unit configurations available 	<ul style="list-style-type: none"> • Allow unit to be used in various applications and climates
<ul style="list-style-type: none"> • Available options and upgrades 	<ul style="list-style-type: none"> • Brushless fans, branch guards, etc



Technical Data

Condensing capacity	137,000 Btu/hr (37kW) Modeled Max Capacity Condition ^[1]
Air flow	3-Fan: 3500 CFM (5950 m ³ /h) 2-Fan: 2400 CFM (4100 m ³ /h)
Refrigerant	R134a
Current	3-Fan: 47 A at 13.5 Vdc / 31 A at 27.5 Vdc 2-Fan: 31 A at 13.5 Vdc / 21 A at 27.5 Vdc
Weight	160lbs (72.5 kg)
Dimensions (LWH)	64.7" x 10" x 48.4"

[1] Max Capacity: Air in 100°F/50%RH, refrigerant 140°F DST/170°F, refrig exit. 0°F Sub-Cool



II. Convertors



Convector UC-1

All the heat you need in one light and compact convector

Combining modern design and high capacity, the UC-1 single pipe convector is the lightest in MCC's product range and small enough to fit in tight spaces. The UC-1 Convector

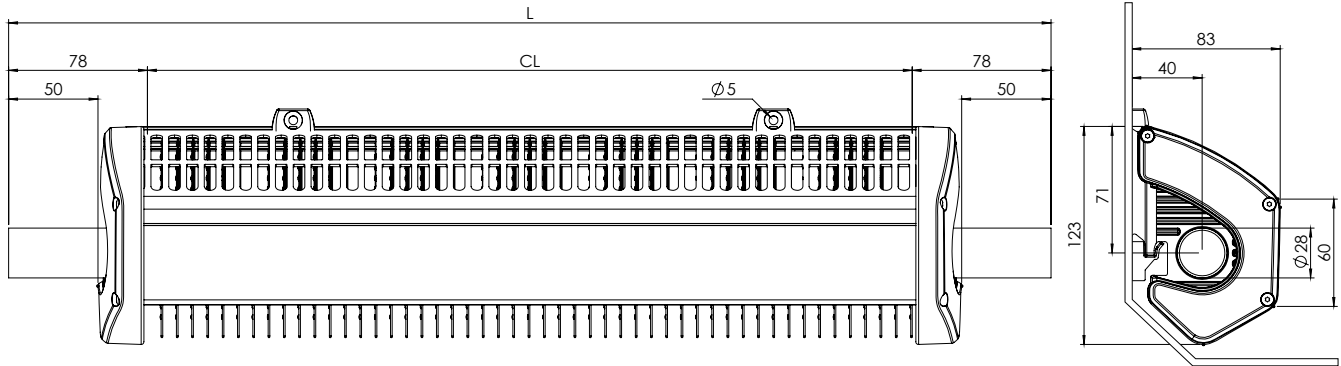
is built around a single pipe made of aluminum or copper. This means the convector is very compact and requires a small mounting footprint.



Features

- Suitable for heating in buses and coaches
- Designed for vehicles with water glycol based heating systems
- Quiet and draft-free heating
- Maintenance free
- Single pipe for compact design
- Shaped to fit reinforced wall structures

Convector UC-1



Face is shaped for reinforced wall structure

Dimensions in mm

Technical Data

Heat output	1604 Btu/hr (0.47 kW) $Q_{60}^{[1]}$	2661 Btu/hr (0.78 kW) $Q_{100}^{[1]}$
Piping	Copper or aluminium \varnothing 1.1" (28 mm) for hose connection	
Weight	Copper 14 lbs/ft (1.93 kg/m) , aluminium 12 lbs/ft (1.71 kg/m)	
Maximum length	197" (5 m)	
Color	Silver anodized aluminium	
	Please contact your MCC representative for more details	

[1] The Q_x value stands for the power in kW emitted from a unit length (1 m) of the convector at a temperature difference between coolant inlet and room air equal to the subscript (x) .

Convector P-90

Highly efficient and comfortable bus heating

MCC Convector P-90 is based on a twin copper pipe system that supplies efficient heat in a space saving design. Can be used as a stand alone unit or part of a complete heat-

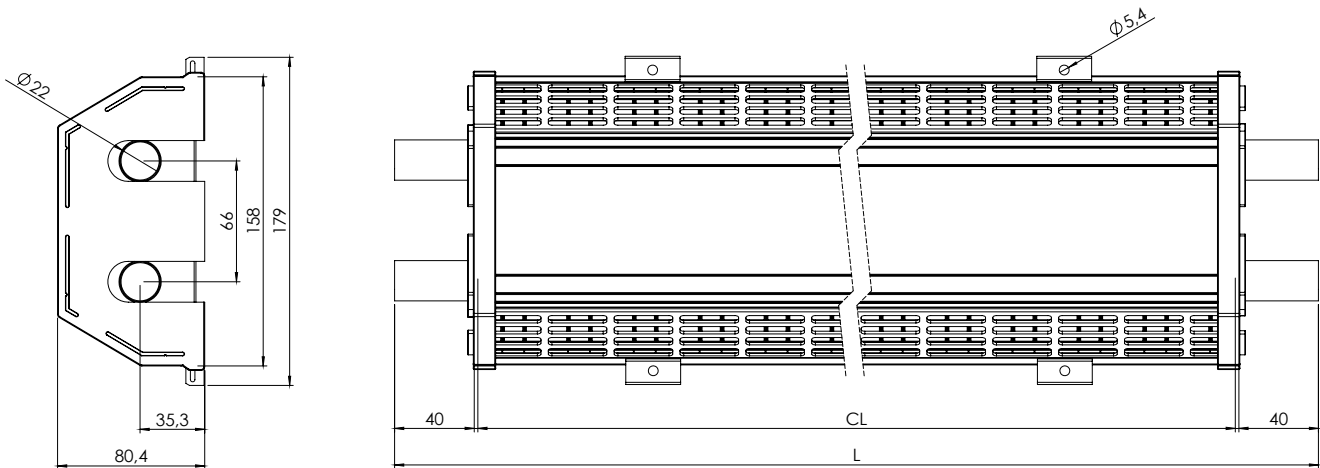
ing system. Transition pieces are available to accommodate bulk heads, wheel wells and doors.



Features

- Suitable for heating buses, coaches and other vehicles
- Designed for vehicles with water/glycol heating systems
- Quiet and draft-free heating
- Maintenance free
- Robust design
- Twin pipe design for optimized heat output

Convector P-90



Dimensions in mm

Technical Data

Heat output	1880 Btu/hr (0.55 kW) $Q_{60}^{[1]}$	3347 Btu/hr (0.98 kW) $Q_{100}^{[1]}$
Piping	Copper Ø 0.8" (22 mm)	
Weight	25 lbs/ft (3.14 kg/m)	
Maximum length	197" (5 m)	
Color	Silver anodized aluminium	
	Please contact your MCC representative for more details	

[1] The Q_x value stands for the power in kW emitted from a unit length (1 m) of the convector at a temperature difference between coolant inlet and room air equal to the subscript (x) .



Convector P-20

Compact design for small spaces

MCC Convector P-20 is designed for use in small spaces such as boats, caravans and bus sleeping cabins and driver compartments. The P-20 distributes heat uniformly, cre-

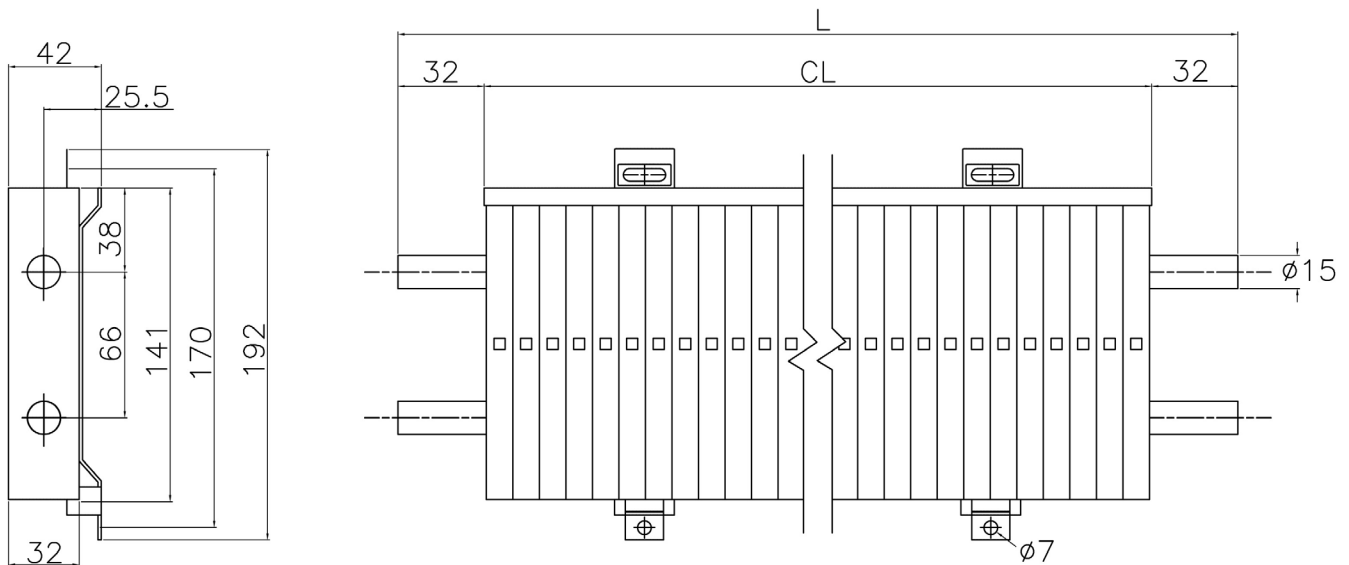
ating a comfortable environment with gentle air flow. The advantage with the P-20 convector is of course its small footprint which make maintenance and installation simple.



Features

- Suitable for heating in buses, minivans, caravans, mobile homes and marine applications
- Designed for vehicles with water/glycol heating systems
- Quiet and draft free heating
- Maintenance-free
- Very compact design
- Twin pipe design for optimized heat output

Convector P-20



Technical Data

Output	Heat output 384 W/m $Q_{60}^{[1]}$ (640 W/m $Q_{100}^{[1]}$)
Piping	Copper or aluminum ϕ 15 mm
Weight	Copper 1.54 kg/m, aluminium 1.31 kg/m
Flow rate	0.30 l/m
Depth	32 mm
Height	141 mm
Lengths	250, 500, 750, 1000 mm
Fins	Anodized aluminium

[1] The Q_x value stands for the power in kW emitted from a unit length (1m) of the convector at a temperature difference between coolant inlet and room air equal to the subscript (x).

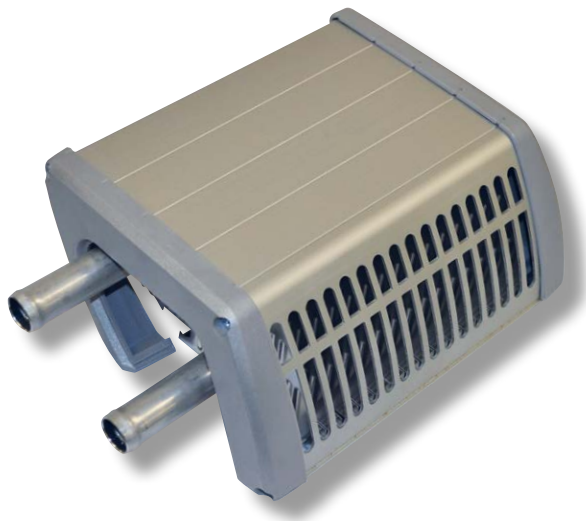


Convector **UC-9**

High heat output at a low weight

The new MCC Convector UC-9 provides efficient heating in a compact design. This convector has been specially designed to deliver maximum heat output. It is designed to fit

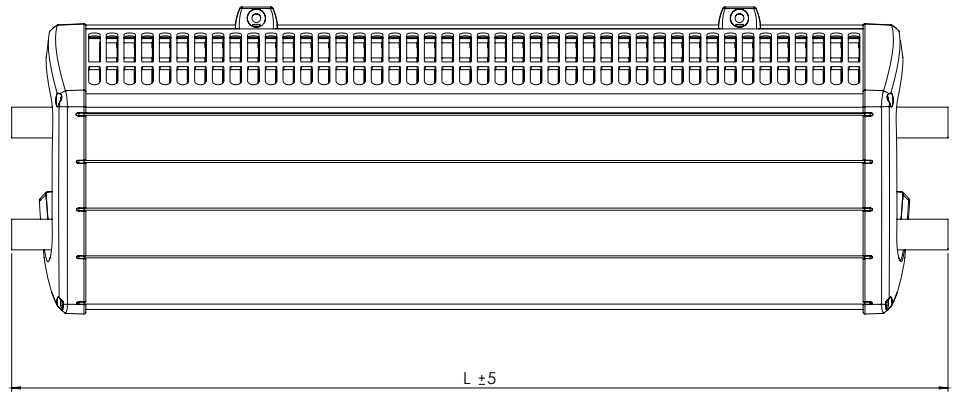
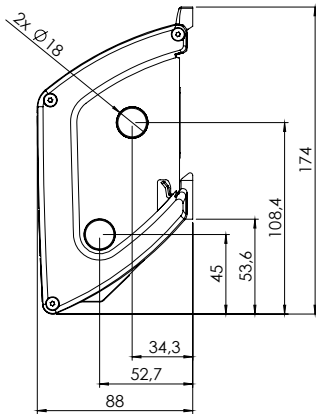
in buses with reinforced wall structure and comes with the necessary hardware to make installation easy.



Features

- Designed to heat buses, coaches and marine applications
- Suitable for vehicles with water/glycol based heating systems
- High output
- Light and compact
- Quiet and draft-free heating
- Maintenance free
- Twin pipe for optimized heat output
- Shaped to fit reinforced wall structure

Convector UC-9



Dimensions in mm

Technical Data

Heat output	2091 Btu/hr (0.61 kW) Q_{60}	3467 Btu/hr (1 kW) Q_{100} [1]
Piping	Copper Ø 0.7" (18 mm) + aluminium with hose connections	
Weight	Copper 2.6 kg/m, aluminium 2.34 kg/m	
Maximum length	197" (5 m)	
Color	Silver anodized aluminium	
	Please contact your MCC representative for more details	

[1] The Q_x value stands for the power in kW emitted from a unit length (1 m) of the convector at a temperature difference between coolant inlet and room air equal to the subscript (x) .



Convector P-200

Efficient bus heating

MCC convector P-200 offers efficient heating and can be integrated with the Whisper 200 family. The P-200 is a twin pipe design made of copper or aluminum that carries

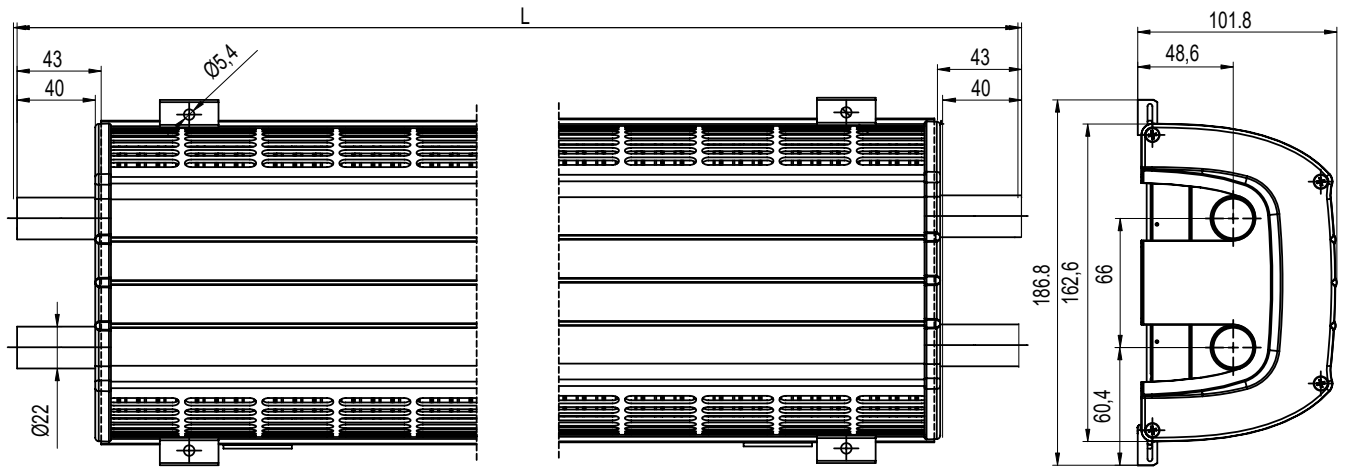
glycol based coolant through the convector. Coil producing up to as much as 714W/m of heat.



Features

- Suitable for heating buses, coaches where highly efficient heating is required
- Designed for vehicles with water/glycol based heating systems
- High output
- Quiet and draft-free heating
- Maintenance free
- Fully compatible with Whisper 200 heaters

Convector P-200



Dimensions in mm

Technical Data

Heat output	2436 Btu/hr (0.71 kW) Q_{60}^*	4060 Btu/hr (1.2 kW) Q_{100}^*
Piping	Copper or aluminum $\varnothing 0.8''$ (22 mm)	
Weight	Copper 27 lbs/ft (3.71 kg/m) , aluminium 24 lbs/ft (3.34 kg/m)	
Maximum lengths	197" (5 m)	
Color	Silver anodized aluminium	
	Please contact your MCC representative for more details	

* The Q_x value stands for the power in kW emitted from a unit length (1 m) of the convector at a temperature difference between coolant inlet and room air equal to the subscript (x) .



Power Convector **PC-500**

Even temperature distribution, small footprint, numerous layout options and easy to install

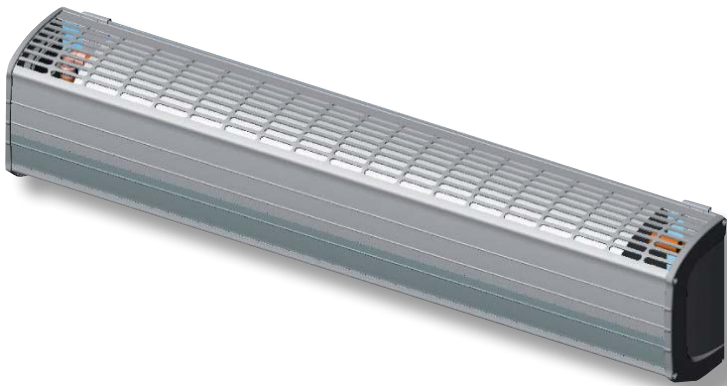
PC-500 (Power Convector) is a patented “crossover” product featuring the benefits of a normal convector and that of a fan assisted heating unit.

The PC-500 has three operating modes:

Normal convector mode, (Free-Flow) warm air rises naturally (convection) from the unit.

Fan half-speed mode, (Forced-Air) draws the air from the top of the unit through the fins and out to the floor. Once on the floor the warm air mixes and rises to the top.

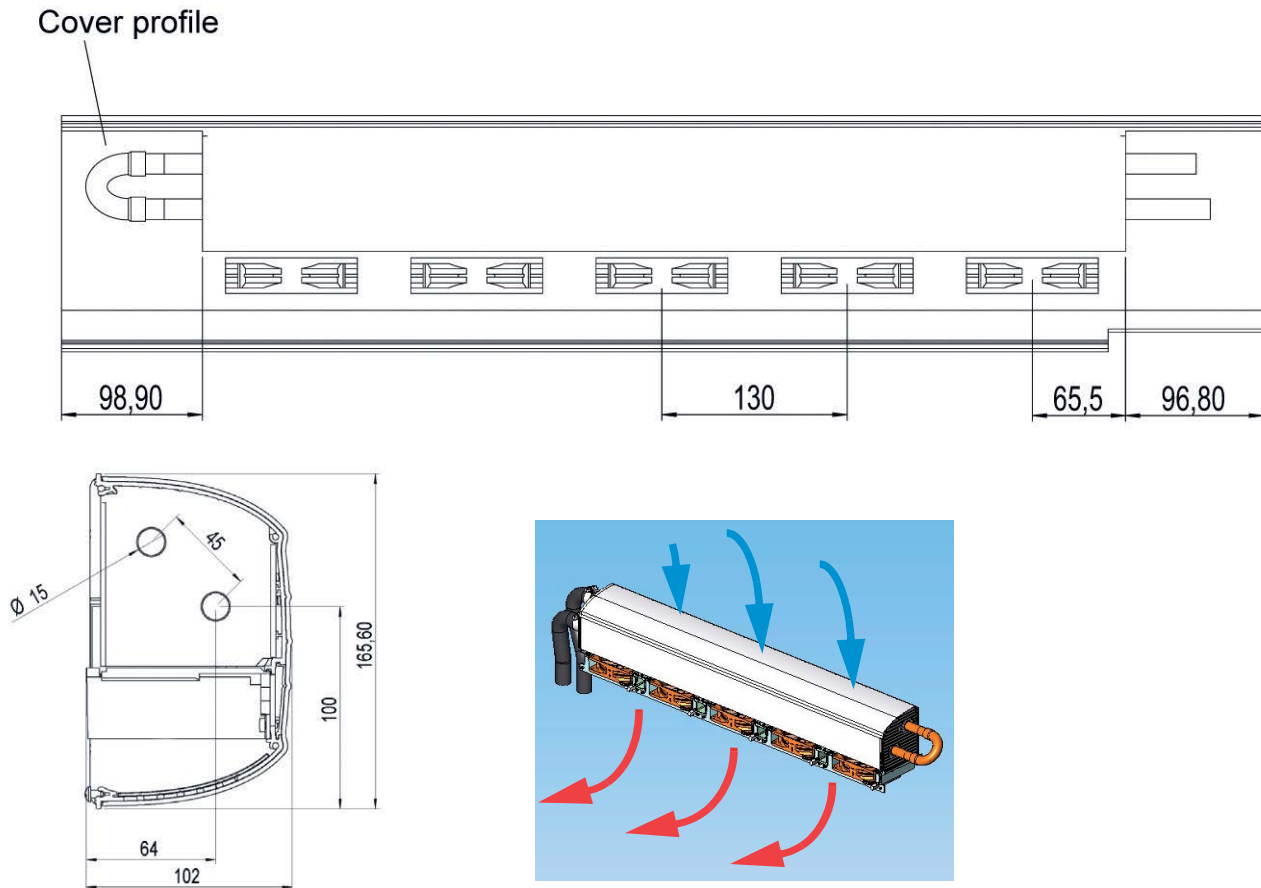
Fan full-speed mode, (Forced-Air) gives instant heating results by taking maximum heat from the PC 500 and distributing this air all over the floor.



Features

- Ideal for buses, coaches and other vehicles
- Designed to work in any climate region
- Can be ordered with one fan (10"/250 mm unit) up to 15 fans (236"/6 m unit)
- Available both 12V and 24V versions
- Covers can be easily removed for maintenance
- Max number of PC-500 in series 3 units connection
- Multiple fans can be mounted according to customer's heating specifications

Power Convector PC-500



Note: Dimensions in mm only.

Technical Data

	Fan Mode – One meter section, 5 fans	Radiant Mode – One meter section
Heat output	10236 Btu/hr (3kW) Q_{60} ^[1]	1587 Btu/hr (0.46 kW) Q_{60} ^[1]
	16378 Btu/hr (4.8 kW) Q_{100} ^[1]	2423 Btu/hr (0.71 kW) Q_{100} ^[1]
Piping ^[2]	Ø 0.59" (15 mm)	Ø 0.59" (15 mm)
Weight Copper	9.5 lbs (4.3 kg)	8 lbs (3.7 kg)
Weight Aluminium	8.5 lbs (3.9 kg)	7 lbs (3.3 kg)
Maximum length	197" (5 m)	197" (5 m)
Color	Silver anodized aluminium	Silver anodized aluminium
Please contact your MCC representative for more details		

[1] The Qx value stands for the power in kW emitted from a unit length (1m) of the convector at a temperature difference between coolant inlet and room air equal to the subscript (x).

[2] Custom piping may be available



III. Heaters

Heater **Whisper UW-9**

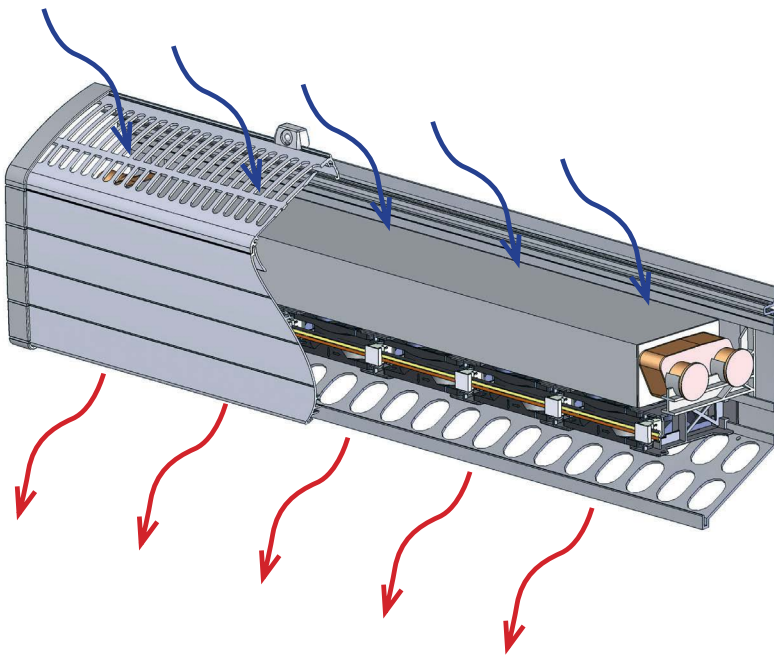
Very compact heater

Having the same profile as the UC-9 convector, MCC heater whisper UW-9 is the ideal wall mounted heater when extra heat output is required.

As a part of the UC-9 family, the UW-9 heater is compact, it is also highly customizable suitable for motor coaches

and transit buses. The unit consists of heat exchanger with configurable water connections, two speed fans.

The UC-9 can be also be used in as a standalone heating unit or in combination with other heaters and convectors. An electrostatic or mesh filter can also be added as an option.

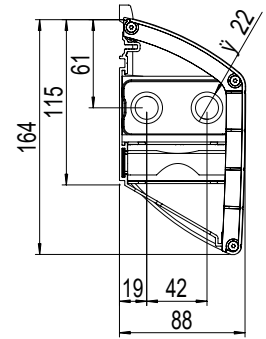
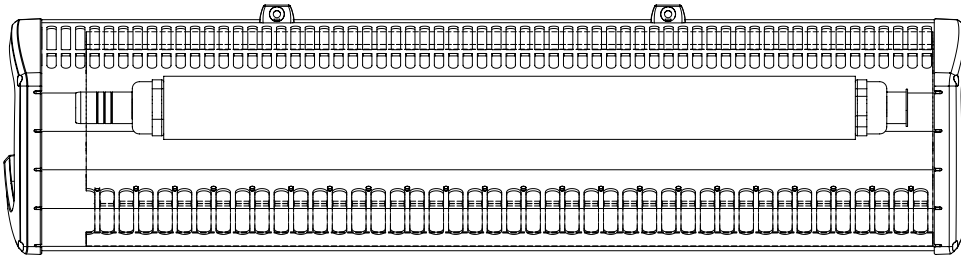


Features

- Smooth air distribution
- Rugged design
- Suitable for sloping floors
- Flexible design (3-18 fans)
- Two speed long life fans
- Lightweight



Dimensions



Dimensions in mm

Technical Data

Heat	15013 Btu/hr (4.4 kW) Q_{80}	18767 Btu/hr (5.5 kW) Q_{100}
Air flow @ 28V (6 fans)	61 CFM (182 m ³ /h)	
Coolant connection	Copper Ø 0.9 (22 mm)	
Voltage	12 or 24V	
Height	6.5" (165 mm)	
Lengths	10-79" (250-2000 mm)	
Cover sections	Anodized aluminum	

* The Q_x value stands for the temperature difference between the water inlet temp and the air temp in the room where the heat exchanger is. For instance water inlet temp +80°C and air temp +20°C is known as Q_{60} .



Heater **Whisper 3C, 7C and 12C**

High performance heating system

The Whisper 3C, 7C and 12C heaters are units designed for high output.

Whisper 3C available only in 24V, 7C and 12C are available in 12V and 24V versions. Thanks to its modular

design, piping can be mounted on either left or right side for easy installation. 3C, 7C and 12C are electro-magnetic interference conformance (EMC) approved according to 72/245/EG including revision 2005/83/EG.



Whisper 3C



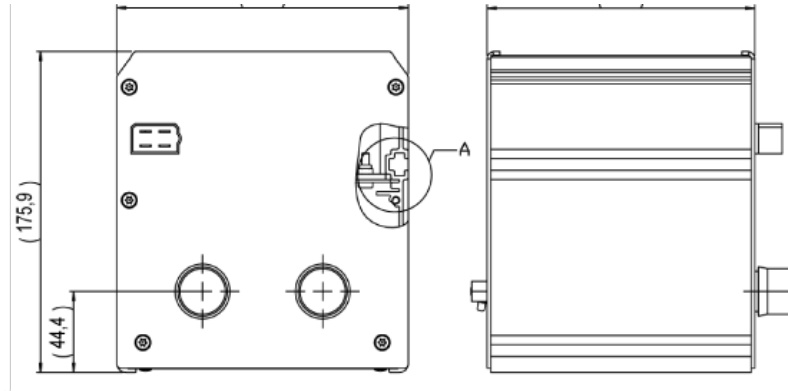
Whisper 7C & 12C

Features

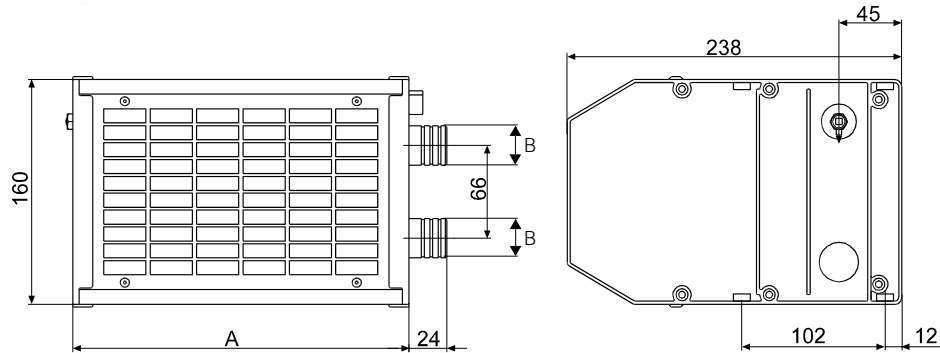
- Design for buses, off-road and marine applications
- High performance
- Rugged design
- Piping can be mounted either left or right side
- Can be mounted in horizontal or vertical position



Whisper 3C



Whisper 7C & 12C



Technical Data

	3C	7C	12C
Heat @ 24V	10577 Btu/hr (3.1 kW) Q_{80} ^[1]	24567 Btu (7 kW) Q_{80} ^[1]	39240 Btu (11.5 kW) Q_{80} ^[1]
Heat @ 12V	N/A	21496 Btu (6 kW) Q_{80} ^[1]	35827 Btu (10.5 kW) Q_{80} ^[1]
Air flow @ 24 V	102 CFM (175 m ³ /h)	212 CFM (360 m ³ /h)	309 CFM (525 m ³ /h)
Air flow @ 12 V	N/A	182.5 CFM (310 m ³ /h)	256 CFM (435 m ³ /h)
Max current @ 24 V (A)	2.6 Amp	4.3	6.2
Max current @ 12 V (A)	N/A	8.3	11.7
Hose connection	22/28 mm	22/28 mm	22/28 mm
Weight	6 lbs (2.6 kg)	11.2 lbs (5.1 kg)	14.5 lbs (6.6 kg)
Depth	6.3" (160 mm)	9.3" (238 mm)	9.3" (238 mm)
Height	6.9" (175 mm)	6.3" (160 mm)	6.3" (160 mm)
Length	5.7" (147 mm)	9.4" (239 mm)	14" (356 mm)
Electrical connection	4 pin AMP 180901-0 connector		
Heat exchanger	Copper fins with brass and plates		
Casing	Natural anodised aluminium sections		
Standard colour	Natural aluminium		
Accessories	Different types of hoses, brackets etc, see product sheet		

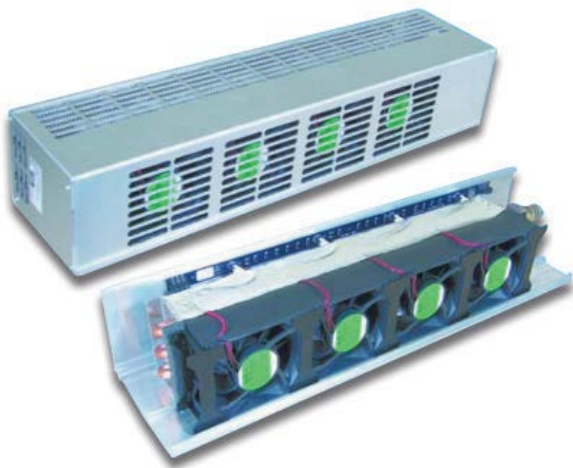
[1] The Q_x value stands for the temperature difference between the water inlet temp and the air temp in the room where the heat exchanger is. For instance water inlet temp +80°C and air temp +20°C is known as Q_{60} .

Heater **Whisper K-200**

Economical Compact Heater

MCC Whisper K-200 compact heating unit is a part of the Whisper 200 family, its compact size means that it can be mounted anywhere. The whisper K-200 consists of a heat exchanger and four brushless fans (12VDC or 24VDC) with

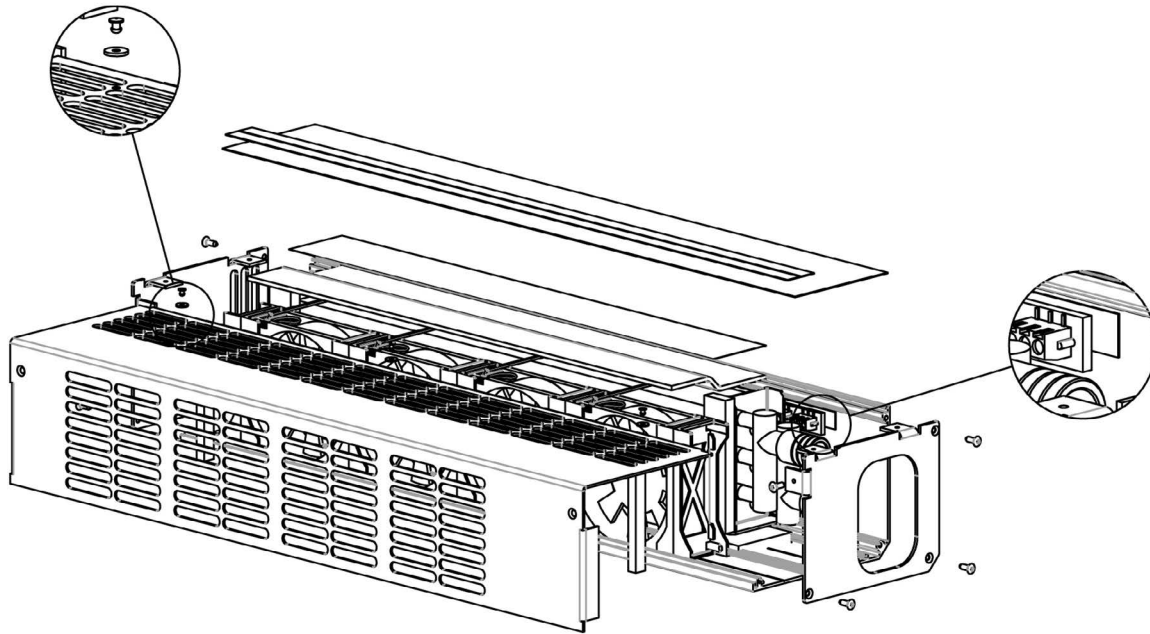
long life bearings for quiet operation. All components are mounted in a rugged anodized aluminum case with integrated mounting bracket for simple installation.



Features

- Heater system for interior heating in buses with water/ glycol based heating systems
- Piping can be mounted either left or right side
- Smooth air distribution
- Compact and light weight design
- Long life brushless fans

Dimensions



Dimensions in mm

Technical Data

Operating voltage/Maximum operating voltage	24/28 VDC	
Power consumption	0.8A/19W	
K 200 meets the requirements according to:	Low Voltage Directive 73/23/EEC EMC Directive 89/336/EEC CE Marking Directive 93/68/EEC	
Standard connection	Direct to circuit board	Black=Ground Red=High speed Blue=Low speed
Heat ^[1]	8190 Btu/hr (2.4 kW) Q ₆₀	13649 Btu/hr (4.0 kW) Q ₁₀₀ AMP plug P/N 1-350346-0
Air flow	103 CFM (175 m ³ /h)	
Coolant connections	Connections to K200 are with Ø 0.9" (22 mm) hoses.	

[1] The Q_x value stands for the temperature difference between the water inlet temp and the air temp in the room where the heat exchanger is. For instance water inlet temp +80°C and air temp +20°C is known as Q₆₀.

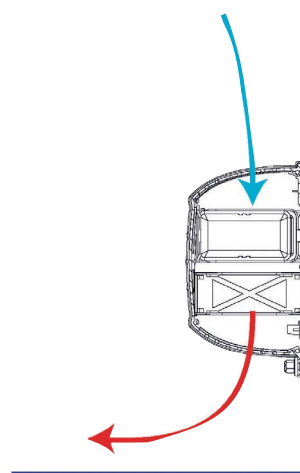
Heater **Whisper 200/2-3-5 fans**

High performance with unique flexibility

The Whisper 200 family is a highly customizable wall mounted heating unit designed for motor coaches and buses. It consists of a coolant type heat exchanger with various fan configurations in 24V or 12V. The Whisper 200 can be customized in different configurations, with two to five fans and

front or rear water connections. It can be used as stand alone heating source or in combination with convectors.

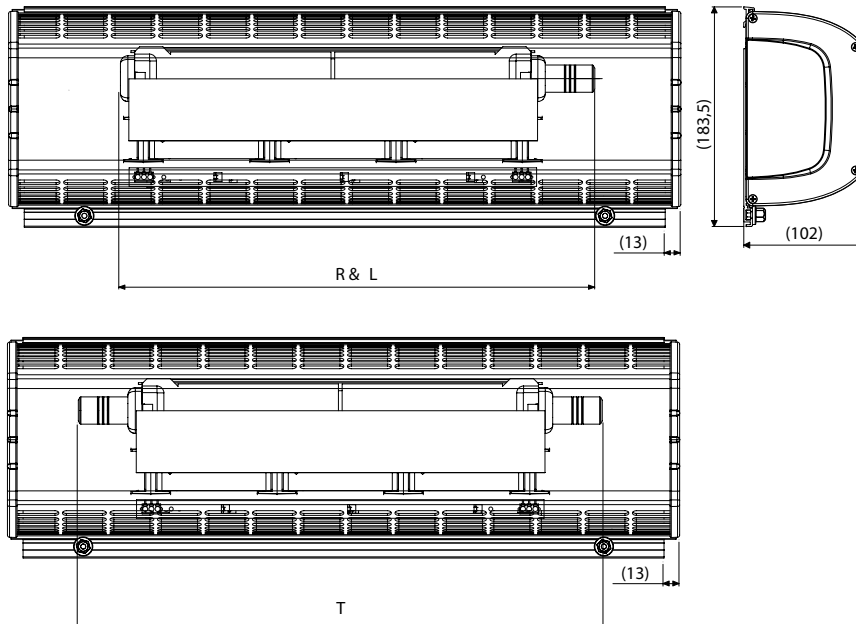
The Whisper 200 is EMC approved according to directive 72/245/EEG including rev 2006/28/EG.



Features

- Heater blower system for buses with water/glycol based heating systems
- Smooth air distribution
- Whisper quiet operation
- Many configurations possible thanks to flexible design
- Long life two speed fans
- Low weight

Dimensions



Dimensions in mm

Variant	2 Fans	3 Fans	5 Fans
Left or Right Connection (R&L)	10.2" (260 mm)	15.1" (383 mm)	23.3" (591 mm)
Through water Connection (T)	11.8" (300 mm)	17" (423 mm)	25" (631 mm)

Technical Data

	2 Fans	3 Fans	5 Fans
Heat	6824 Btu/hr (2 kW) Q_{80}	9554 Btu/hr (2.8 kW) Q_{80}	16037 Btu/hr (4.7 kW) Q_{80}
	8530 Btu/hr (2.5 kW) Q_{100}	11942.5 Btu/hr (3.5 kW) Q_{100}	20131 Btu/hr (5.9 kW) Q_{100}
Air flow	153 CFM (260 m ³ /h) \emptyset	92 CFM (156 m ³ /h)	153 CFM (260 m ³ /h)
Heat exchanger water connection	\emptyset 0.9" (22 mm)	\emptyset 0.9" (22 mm)	\emptyset 0.9" (22 mm)
Voltage	12 or 24V	12 or 24V	12 or 24V
Depth	4" (102 mm)	4" (102 mm)	4" (102 mm)
Height	7.2" (183.5 mm)	7.2" (183.5 mm)	7.2" (183.5 mm)
Length	According to request, see Whisper 200 product configuration		
Cover sections	Anodized aluminum		

* The Q_x value stands for the temperature difference between the water inlet temp and the air temp in the room where the heat exchanger is. For instance water inlet temp +80°C and air temp +20°C is known as Q_{60} .



Compact Under-Seat Heater T12-12801

Robust, Light-weight and Cost Competitive Heater

Compact under-seat heater with all aluminum heater core designed for low pressure and low coolant flow, suited for all climates and vehicles.

Can be filled as a stand alone unit for multiple placements. This low cost multi-functional heater will suit all budgets.

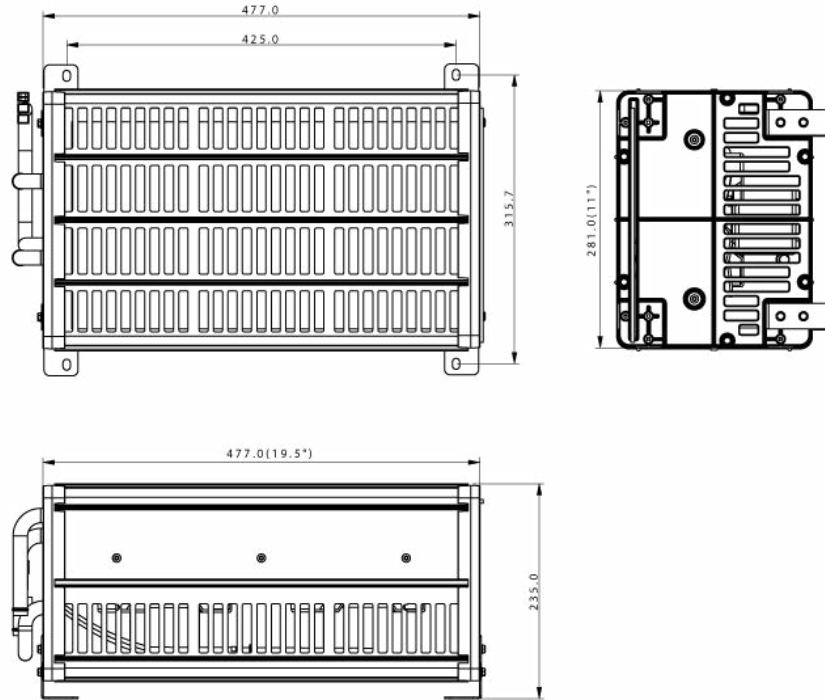


Features

- Simple compact design
- All aluminum heater core
- Single or multi-pack use
- Available in 12 and 24 vdc
- Connection in minutes
- Brush or brushless motors

Benefits

- Light-weight
- Adapts to any application
- Many configurations possible due to flexible design
- Simple installation
- Low cost



Technical Data

Heating capacity @ max	45000 Btu/hr (13kW)	50000 BTU/hr option with higher output motor
Length	18.7" (477mm)	
Width	12.4" (315.7mm)	
Height	9.2" (235mm)	
Weight	15 lbs (6.8 kg)	
Fans	2 fan	
Current Draw (Max)	12.8 amps at 13.5 VDC	

Hose Connection: 5/8" OD
 Conditions: Ambient temperature 0°F, Glycol temperature 150°F, Glycol-water 50-50, Coolant flow rate 8 GPM

Compact Under-Seat Heater T12-12807

Robust, Light-weight and Cost Competitive Heater

Compact under-seat heater with all aluminum heater core designed for low pressure and low coolant flow, suited for all climates and vehicles.

Can be filled as a stand alone unit for multiple placements. This low cost multi-functional heater will suit all budgets.

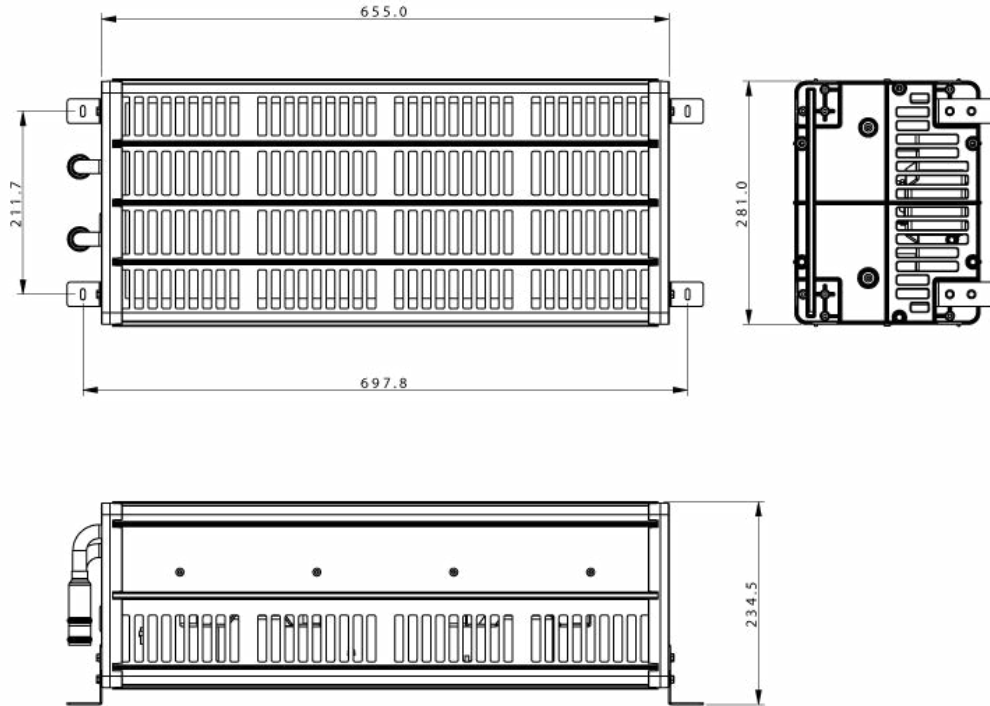


Features

- Simple compact design
- Copper/Aluminum heater core
- Single or multi-pack use
- Available in 12 and 24 vdc
- Connection in minutes
- Brush or brushless motors

Benefits

- Light-weight
- Adapts to any application
- Many configurations possible due to flexible design
- Simple installation
- Low cost



Technical Data

Heating capacity @ max	60000 Btu/hr (17.6 kW)	70000 Btu/hr option with higher output motor
Length	27.4" (697.8mm)	
Width	11" (281mm)	
Height	9.2" (234.5mm)	
Weight	15 lbs (6.8 kg)	
Fans	2 fan	
Current Draw (Max)	16.5 amps at 13.5 VDC	

Hose Connection: 1" OD
Conditions: Ambient temperature 0°F, Glycol temperature 150°F, Glycol-water 50-50, Coolant flow rate 8 GPM



Compact Under-Seat Heater T12-12809

Robust, Light-weight and Cost Competitive Heater

Compact under-seat heater with all aluminum heater core designed for low pressure and low coolant flow, suited for all climates and vehicles.

Can be filled as a stand alone unit for multiple placements. This low cost multi-functional heater will suit all budgets.

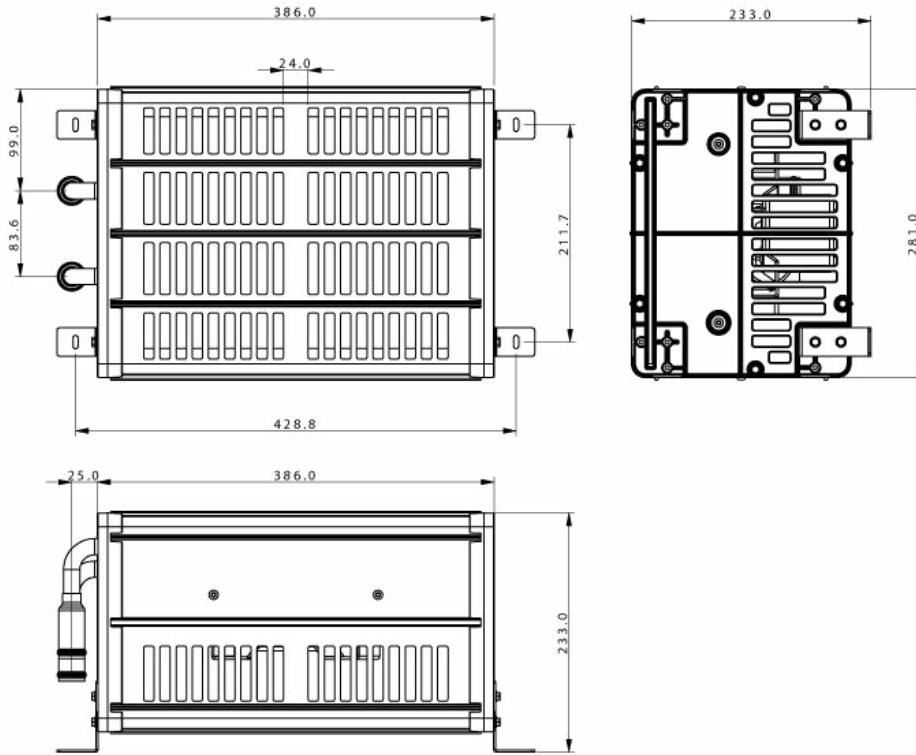


Features

- Simple compact design
- Copper/Aluminum heater core
- Single or multi-pack use
- Available in 12 and 24 vdc
- Connection in minutes
- Brush or brushless motors

Benefits

- Light-weight
- Adapts to any application
- Many configurations possible due to flexible design
- Simple installation
- Low cost



Technical Data

Heating capacity @ max	35000 Btu/hr (10.3 kW)	45000 Btu/hr option with higher output motor
Length	16.8" (428.8mm)	
Width	11" (281mm)	
Height	9.1" (233mm)	
Weight	15 lbs (6.8 kg)	
Fans	1 fan	
Current Draw (Max)	8 amps at 13.5 VDC	

Hose Connection: 1" OD

[1] Conditions: Ambient temperature 0°F, Glycol temperature 150°F, Glycol-water 50-50, Coolant flow rate 8 GPM



Compact Under-Seat Heater T12-12811

Robust, Light-weight and Cost Competitive Heater

Compact under-seat heater with all aluminum heater core designed for low pressure and low coolant flow, suited for all climates and vehicles.

Can be filled as a stand alone unit for multiple placements. This low cost multi-functional heater will suit all budgets.

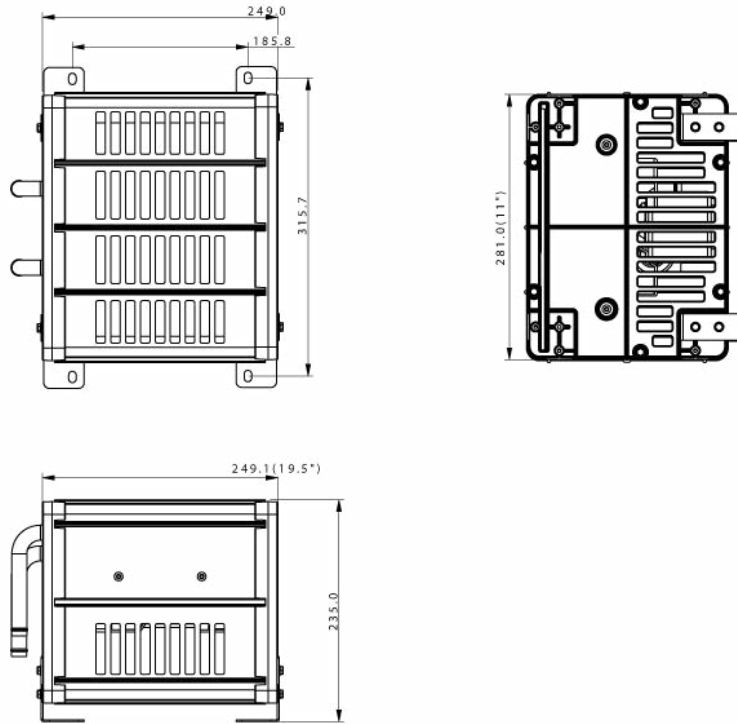


Features

- Simple compact design
- All aluminum heater core
- Single or multi-pack use
- Available in 12 and 24 vdc
- Connection in minutes
- Brush or brushless motors

Benefits

- Light-weight
- Adapts to any application
- Many configurations possible due to flexible design
- Simple installation
- Low cost

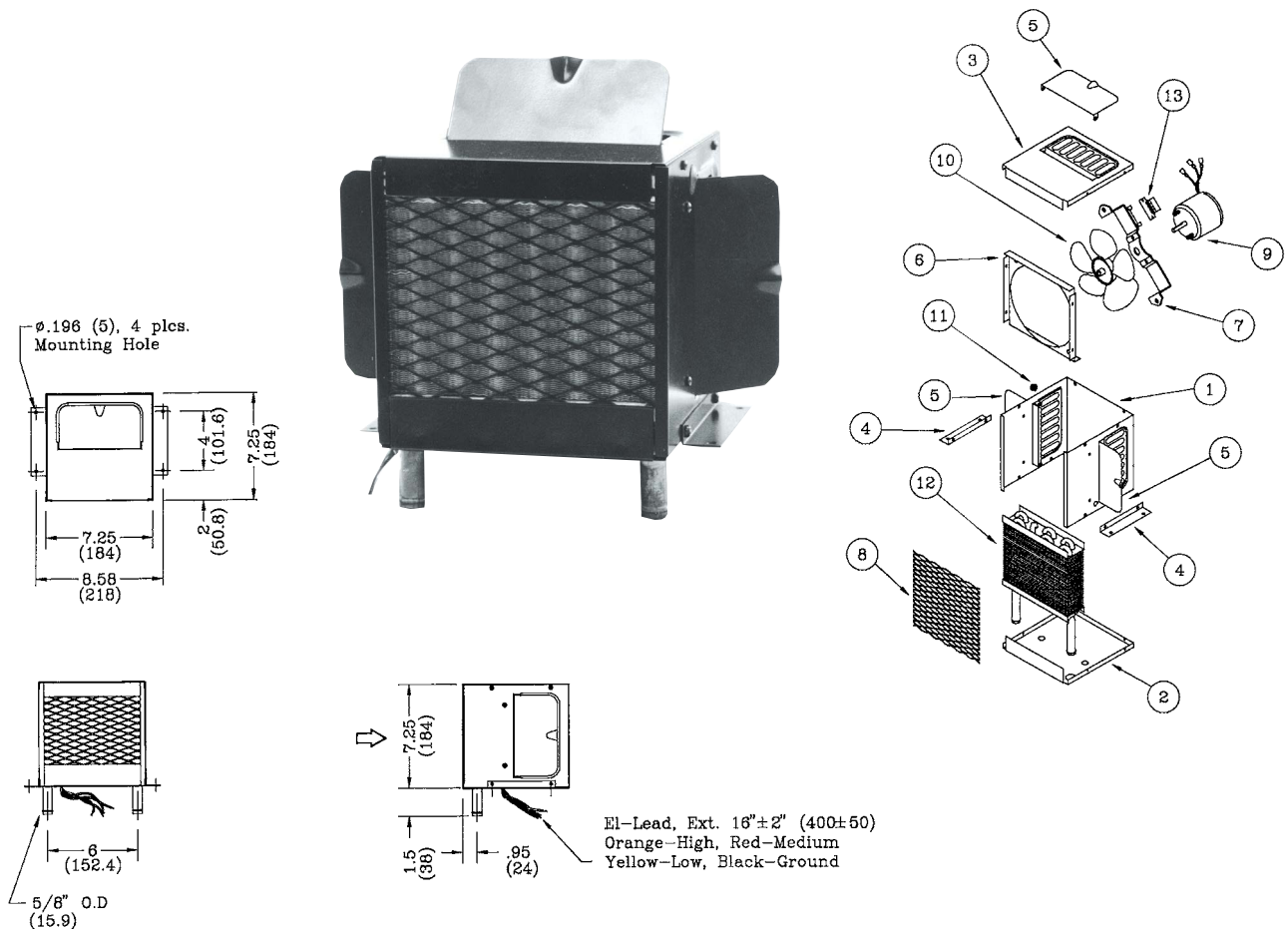


Technical Data

Heating capacity @ max	25000 Btu/hr (7.3 kW)	30000 BTU/hr option with higher output motor
Length	9.8" (249mm)	
Width	12.4" (315.7mm)	
Height	9.2" (235mm)	
Weight	15 lbs (6.8 kg)	
Fans	1 fan	
Current Draw (Max)	6.7 amps at 13.5 VDC	

Hose Connection: 5/8" OD
Conditions: Ambient temperature 0°F, Glycol temperature 150°F, Glycol-water 50-50, Coolant flow rate 8 GPM

Fan Heater Model 201



Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description	
12-0103	Heater 12V	1	24-0135	Casing	8	24-0172	Coil Protector
12-0102	Heater 24V	2	24-0136	Cover	9	25-0105	Motor 12V
		3	24-0137	Cover		25-0107	Motor 24V
		4	24-0133	Mounting Bracket	10	25-0023	Fan
		5	23-0009	Door (3 Pcs.)	11	28-0014	Grommet
		6	24-0138	Venturi	12	22-0042	Heater Coil
		7	24-0113	Motor Bracket	13	25-0095	Resistor

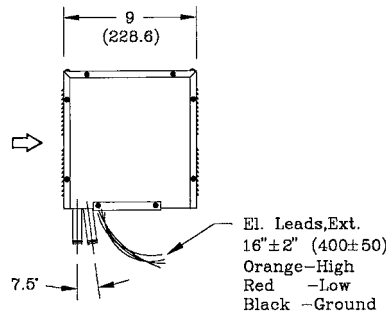
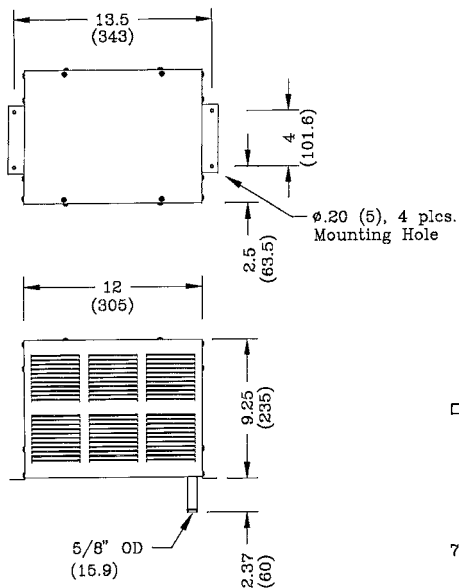
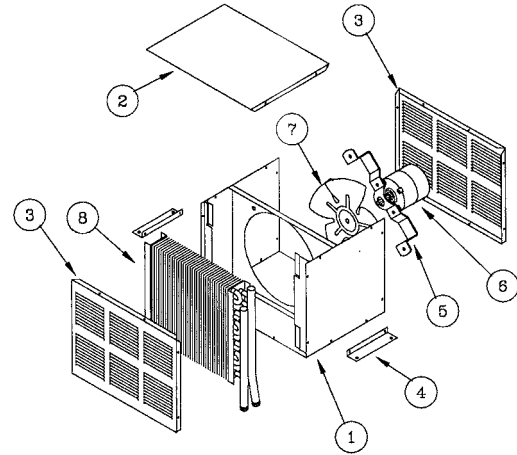
Specifications

Heating -13500 Btu/hr (3960 W)
 Air Flow -185 CFM (315 m³/h)
 Current -5.8 Amps/12V
 -2.9 Amps/24V
 Weight -7.5 lbs. (3.4 kg)
 3-Speed operated motor.

Features

The compact design of the 201 is ideal for dash or under seat mounting. Air is delivered to sides of unit and can be controlled by air doors.

Fan Heater Model 209



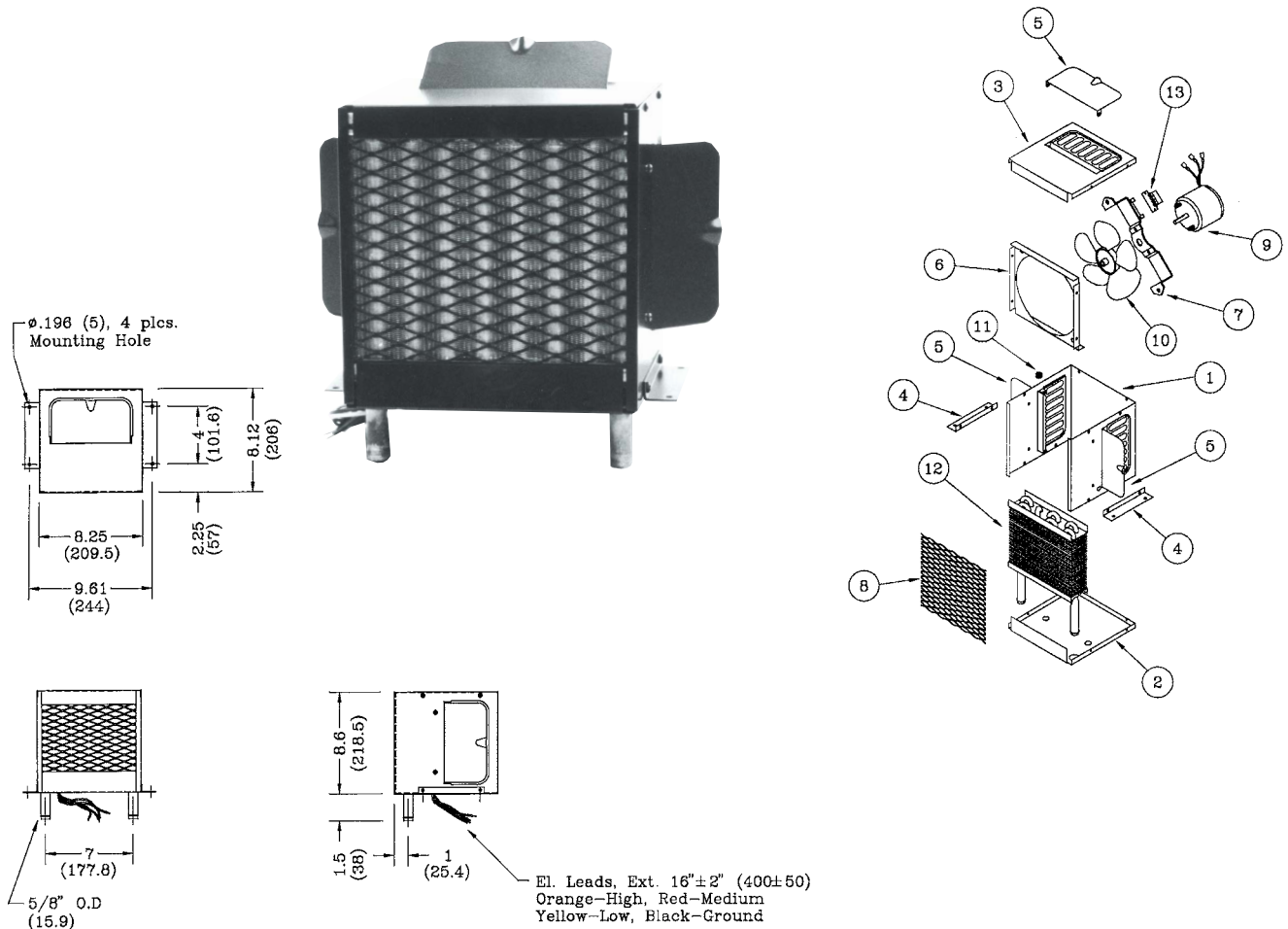
Part Descriptions: Specifications

Part No.		No.	Part No.	Description
12-0903	Heater 12V	1	24-0353	Casing
12-0904	Heater 24V	2	24-0354	Cover
		3	24-0355	Grill
		4	24-0133	Mounting Bracket
		5	24-0223	Motor Bracket
		6	25-0344	Motor 12V
			25-0107	Motor 24V
		7	25-0121	Fan C.W. (8")
		8	22-0029	Heater Coil

Features

High capacity design can be used as auxiliary heater for bus, or as stand alone cab heater.

Fan Heater Model 211



Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description	
12-1103	Heater 12V	1	24-0140	Casing	9	25-0105	Motor 12V
12-1104	Heater 24V	2	24-0142	Cover		25-0107	Motor 24V
		3	24-0143	Cover	10	25-0023	Fan
		4	24-0133	Mounting Bracket	11	28-0014	Grommet
		5	23-0009	Door (3 Pcs.)	12	22-0023	Heater Coil
		6	24-0141	Venturi	13	25-0095	Resistor
		7	24-0113	Motor Bracket			
		8	24-0171	Coil Protector			

Specifications

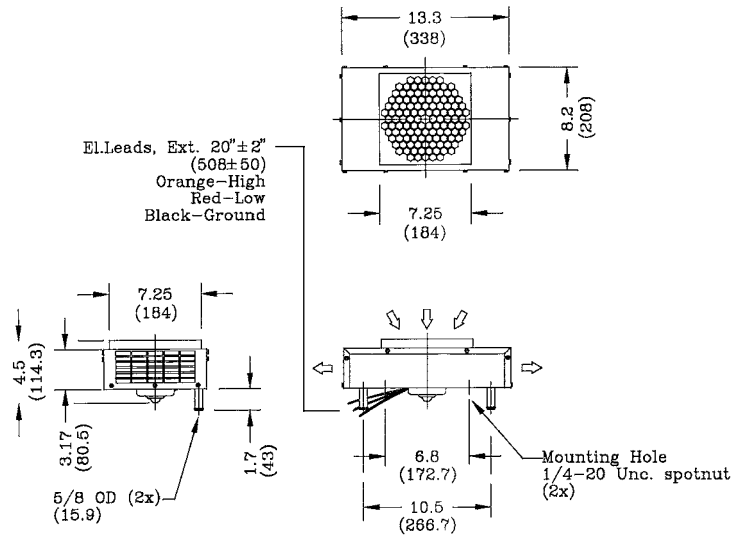
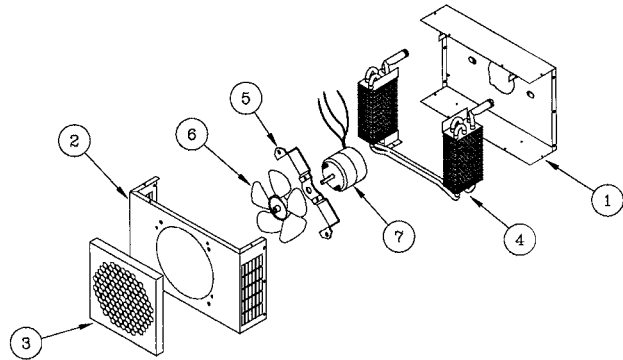
Heating	-21000 Btu/hr (6150 W)
Air Flow	-265 CFM (450 m ³ /h)
Current	-5.8 Amps/12V
	-2.9 Amps/24V
Weight	-9 lbs. (4 kg)

3-Speed motor.

Features

Similar design as our popular 201. The 211 offers a higher quality heater with controllable air doors.

Fan Heater Model 213



Part Descriptions: Specifications

Part No.		No.	Part No.	Description
12-1301	Heater 12V	1	24-1120	Casing
12-1302	Heater 24V	2	24-1121	Cover
		3	25-1122	Fan Guard
		4	22-0196	Heater Coil
		5	24-0110	Motor Bracket
		6	25-0023	Fan
		7	25-0105	Motor 12V
			25-0107	Motor 24V

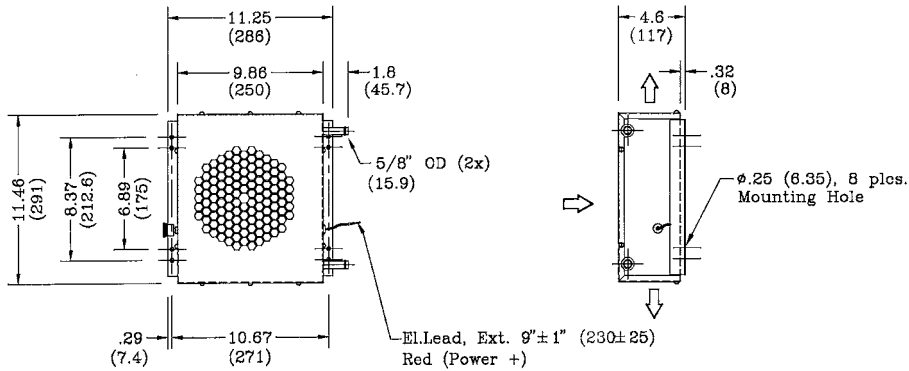
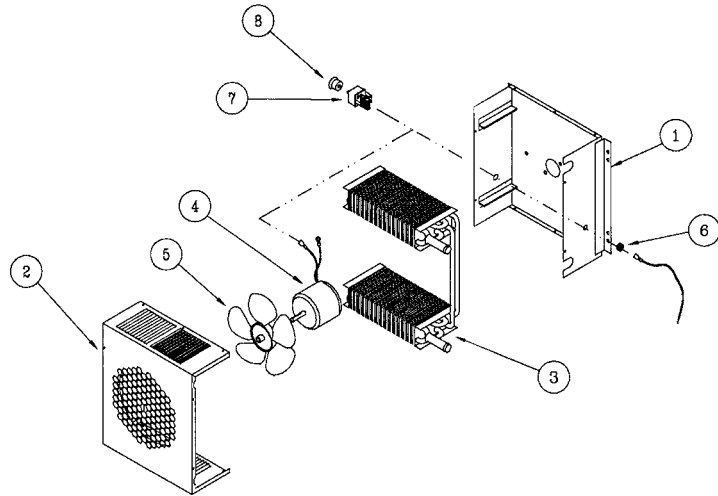
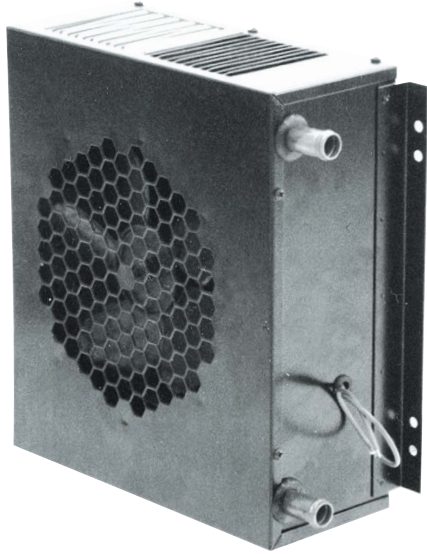
Specifications

Heating	-12500 Btu/hr (3660 W)
Air Flow	-150 CFM (255 m ³ /h)
Current	- 5.8 Amps/12V - 2.9 Amps/24V
Weight	- 7 lbs. (3.2 kg)
2-Speed motor.	

Features

Slim design allows for mounting in tight spots. Can be wall mounted with heater connectors exiting the back of the unit.

Fan Heater Model 214



Part Descriptions: Specifications

Part No.		No.	Part No.	Description
12-1411	Heater 12V	1	24-0042	Casing
12-1412	Heater 24V	2	24-0043	Cover
		3	22-0073	Heater Coil
		4	25-0039	Motor 12V
			25-0043	Motor 24V
		5	25-0015	Fan
		6	28-0014	Grommet
		7	25-0028	Switch
		8	25-0067	Knob

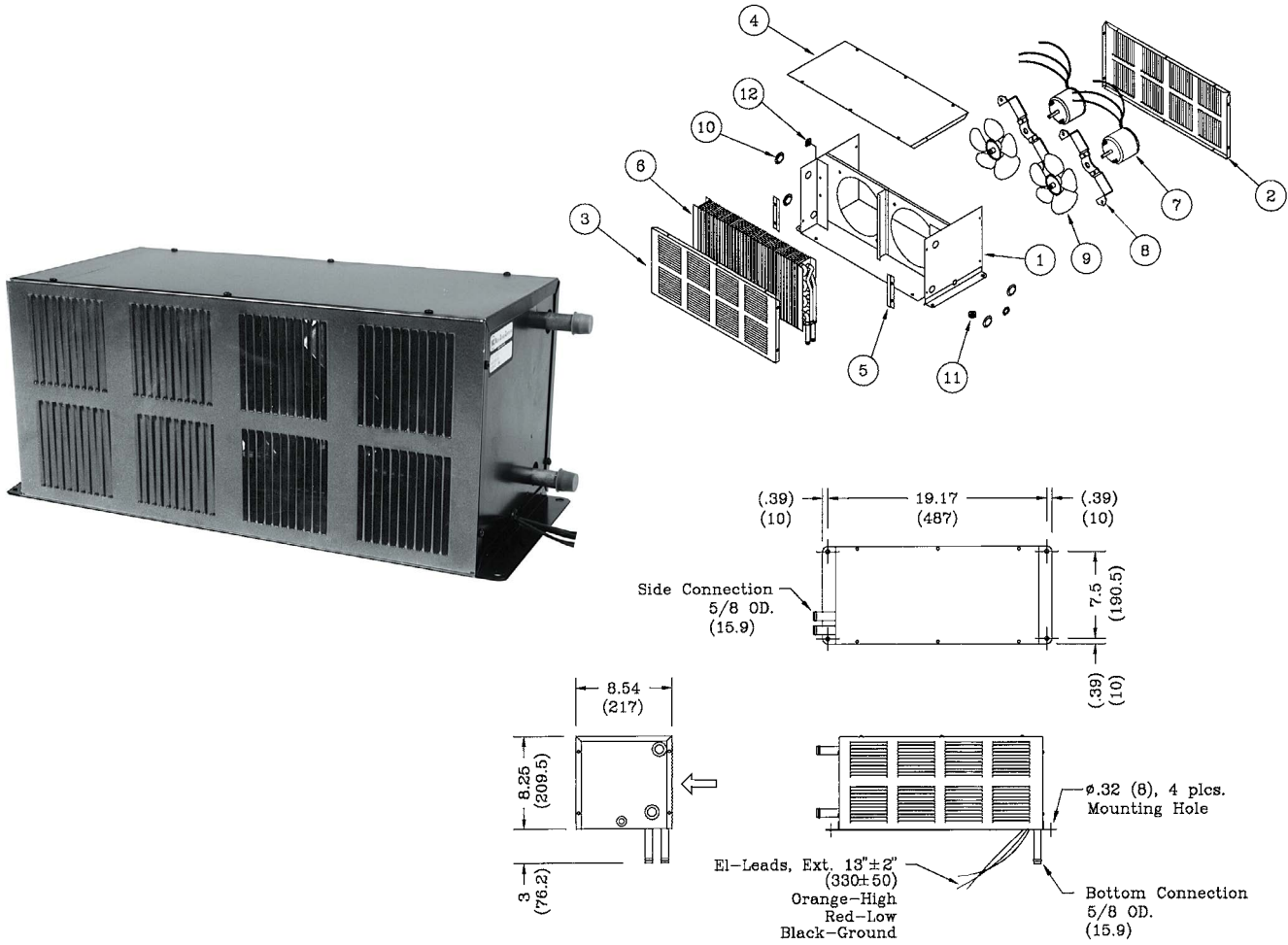
Specifications

Heating -18500 Btu/hr (5420 W)
 Air Flow -175 CFM (300 m³/h)
 Current -4.4 Amps/12V
 -2.2 Amps/24V
 Weight -9 lbs. (4 kg)
 3-Speed motor and internally grounded.

Features

With a larger capacity than the 213, the 214 offers flexible mounting solutions for wall mount situations. Fittings exit the side of the 214.

Fan Heater Model 216



Part Descriptions: Specifications

Part No.		No.	Part No.	Description	No.	Part No.	Description
12-1601	Heater 12V -R.H.C.	1	24-0130	Casing	7	25-0105	Motor 12V
12-1602	Heater 24V -R.H.C.	2	24-0131	Grill (Inlet)		25-0107	Motor 24V
12-1621	Heater 12V -B.C.	3	24-0132	Front (Outlet)	8	24-0110	Motor Bracket
12-1622	Heater 24V -B.C.	4	24-0105	Cover	9	25-0023	Fan
		5	24-0146	Coil Support	10	28-0010	Snap-in Plug
			24-0162	Coil Support (B.C.)	11	28-0004	Grommet
			24-0163	Coil Support (B.C.)	12	28-0011	Snap-in Plug
		6	22-0038	Heater Coil			
			22-0039	Heater Coil (B.C.)			

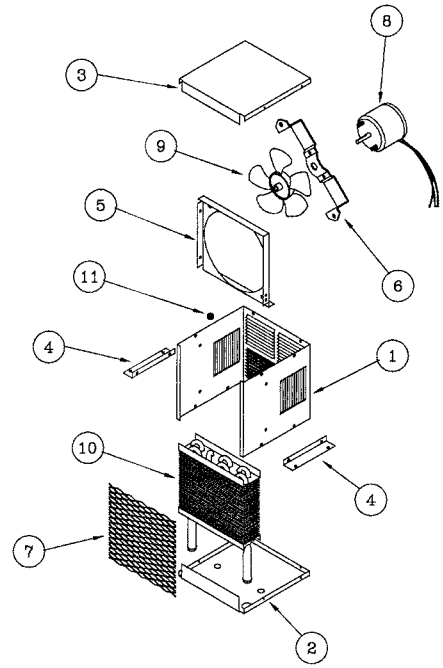
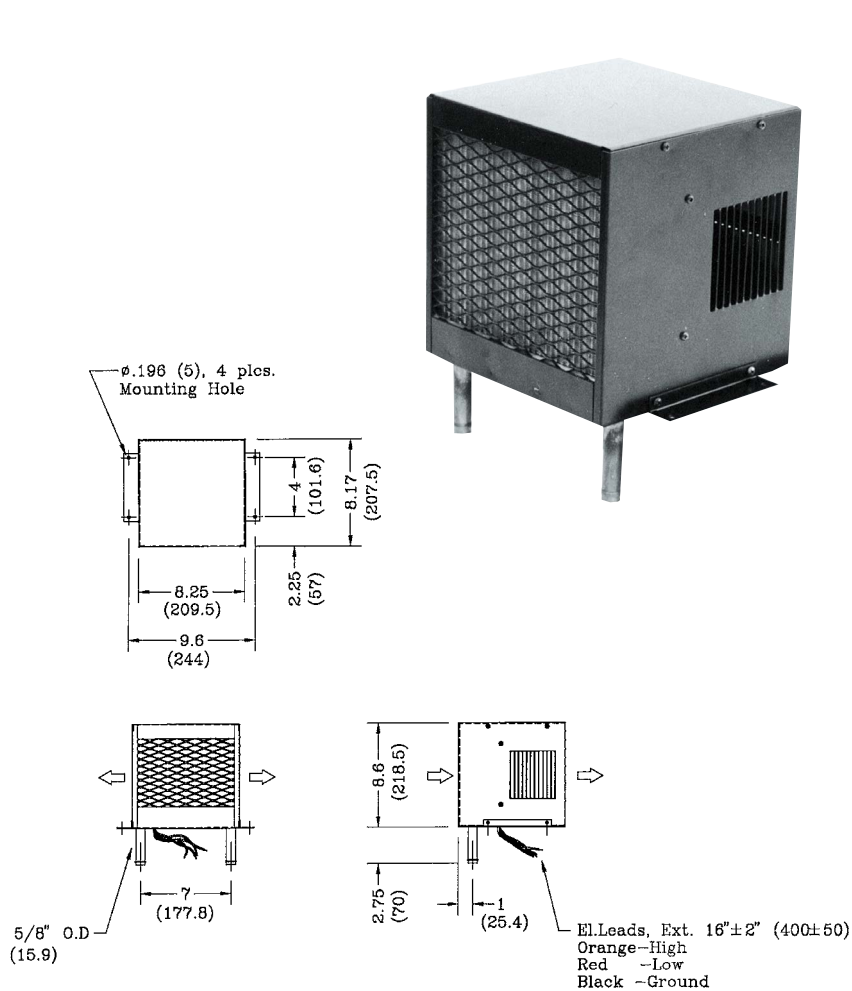
Specifications

Heating	-42000 Btu/hr (12300 W)
Air Flow	-500 CFM (850 m ³ /h)
Current	-11.6 Amps/12V -5.8 Amps/24V
Weight	-18.5 lbs. (8.4 kg)
2-Speed motor.	

Features

High capacity heating solution for buses, fire trucks and truck bodies. The 216 delivers maximum performance for large capacity heating requirements.

Fan Heater Model 222



Part Descriptions: Specifications

Part No.		No.	Part No.	Description
12-2251	Heater 12V	1	24-0167	Casing
12-2252	Heater 24V	2	24-0142	Cover
		3	24-0161	Cover
		4	24-0133	Mounting Bracket
		5	24-0141	Venturi
		6	24-0110	Motor Bracket
		7	24-0171	Coil Protector
		8	25-0105	Motor 12V
			25-0107	Motor 24V
		9	25-0023	Fan
		10	22-0033	Heater Coil
		11	28-0014	Grommet

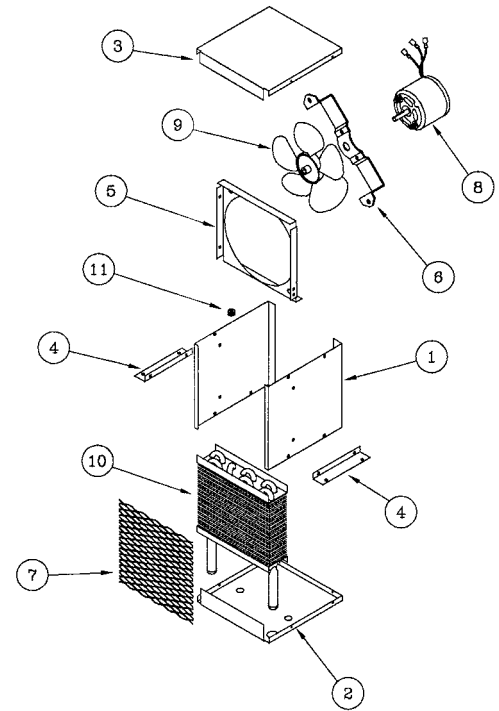
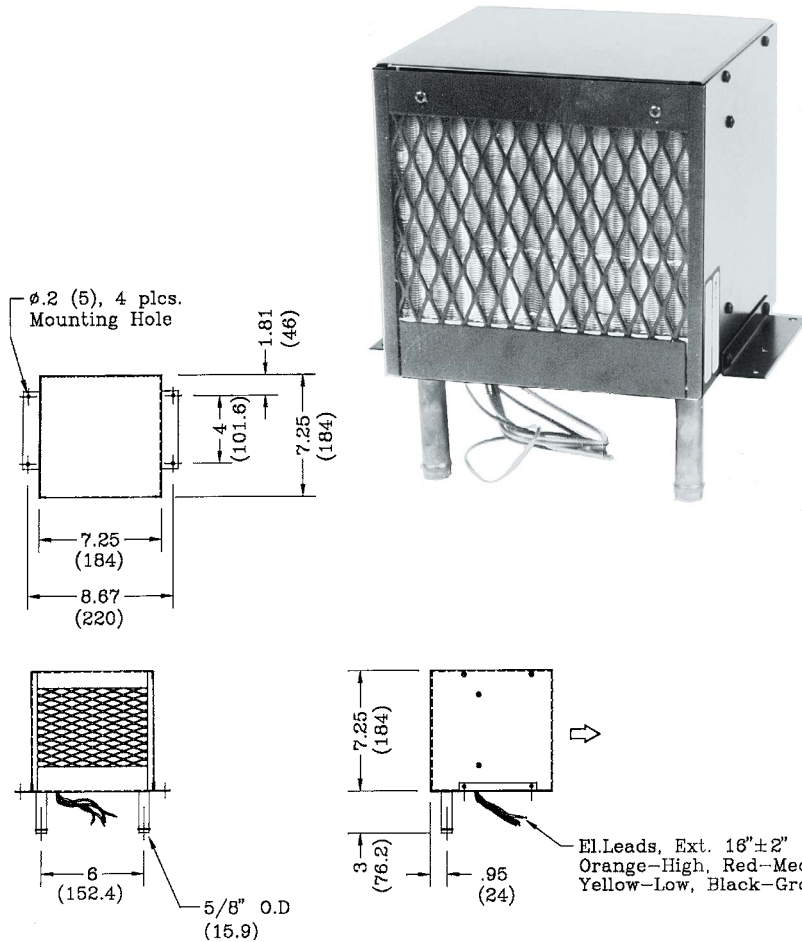
Specifications

Heating	-21000 Btu/hr (6150 W)
Air Flow	-265 CFM (450 m ³ /h)
Current	-5.8 Amps/12V -2.9 Amps/24V
Weight	-9 lbs. (4 kg)
2-Speed motor.	

Features

The compact design of the 222 is ideal for dash or under seat mounting.

Fan Heater Model 226



Part Descriptions: Specifications

Part No.	No.	Part No.	Description
12-2611		Heater 12V	
	1	24-0173	Side Plate
	2	24-0136	Cover
	3	24-0160	Cover
	4	24-0133	Mounting Bracket
	5	24-0138	Venturi
	6	24-0110	Motor Bracket
	7	24-0172	Coil Protector
	8	25-0105	Motor 12V
	9	25-0023	Fan
	10	22-0052	Heater Coil
	11	28-0014	Grommet

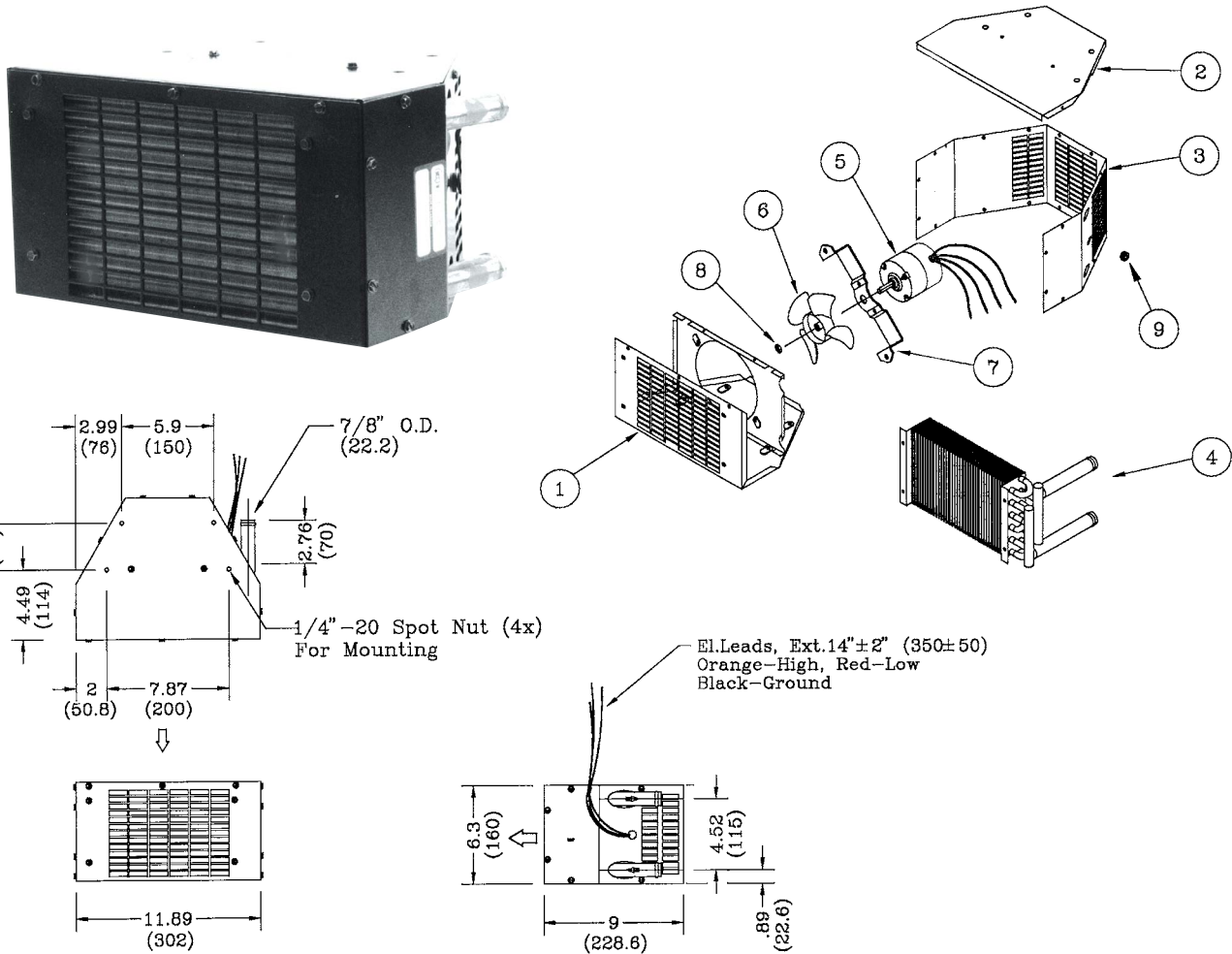
Specifications

Heating	-13500 Btu/hr (3960 W)
Air Flow	-185 CFM (315 m ³ /h)
Current	-5.8 Amps
Weight	-4.5 lbs. (2 kg)
2-Speed motor.	

Features

The 226 was designed to offer flexible mounting and deliver air directly out front of the heater.

Fan Heater **Model 238**



Part Descriptions: Specifications

Part No.		No.	Part No.	Description
12-3811	Heater 12V	1	24-0147	Casing
12-3812	Heater 24V	2	24-0148	Top Cover
		3	24-0149	Side Cover
		4	22-0110	Heater Coil
		5	25-0105	Motor 12V
			25-0107	Motor 24V
		6	25-0041	Fan
		7	25-0110	Motor Bracket
		8	29-0039	Retaining Ring
		9	28-0014	Grommet

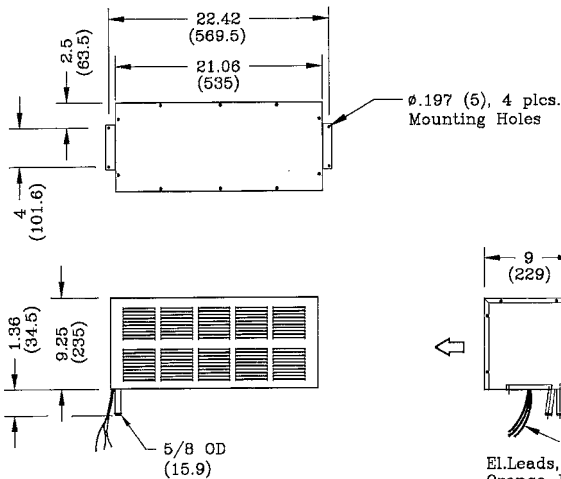
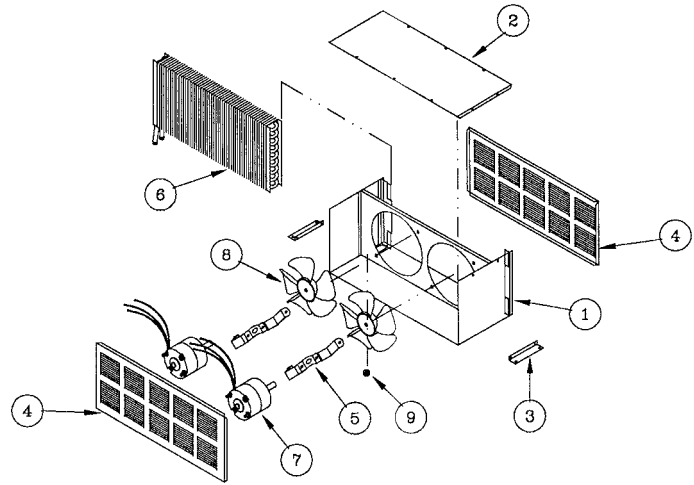
Specifications

Heating	-22500 Btu/hr (6600 W)
Air Flow	-250 CFM (425 m ³ /h)
Current	-4 Amps/12V -2 Amps/24V
Weight	-11.5 lbs. (5.2 kg)
2-Speed motor.	

Features

The 238 is ideal for underseat mounting. Air is disbursed to the front of the unit.

Fan Heater Model 239



El.Leads, Ext. 16"±2" (400±50)
 Orange-High, Red-Low
 Black-Ground

Part Descriptions: Specifications

Part No.		No.	Part No.	Description
12-3903	Heater 12V	1	24-0356	Casing
12-3904	Heater 24V	2	24-0357	Cover
		3	24-0133	Mounting Bracket
		4	24-0358	Grill
		5	24-0223	Motor Bracket
		6	22-0030	Heater Coil
		7	25-0344	Motor 12V
			25-0107	Motor 24V
		8	25-0121	Fan (8" C.W.)
		9	28-0004	Grommet

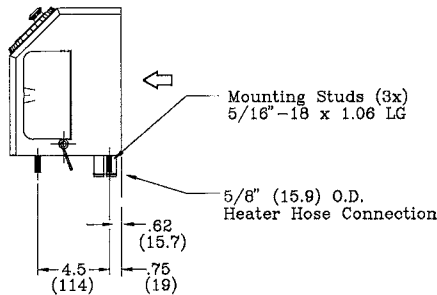
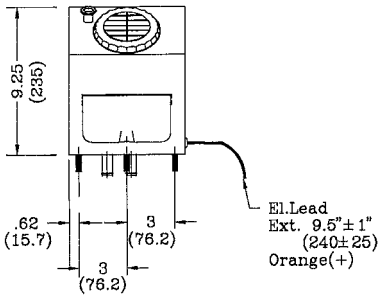
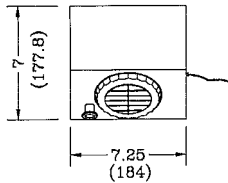
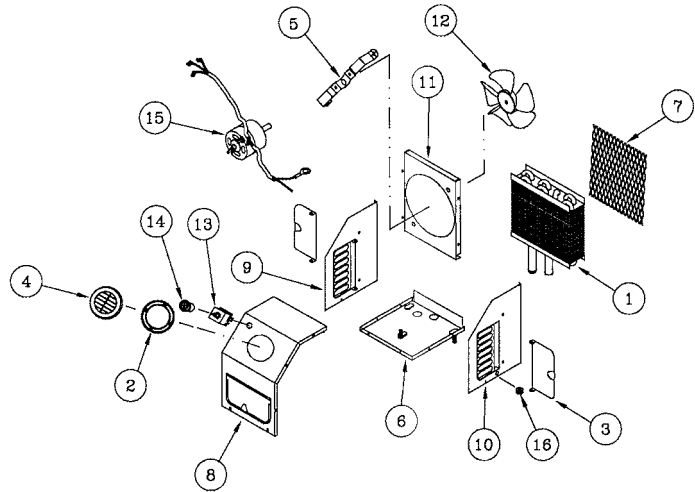
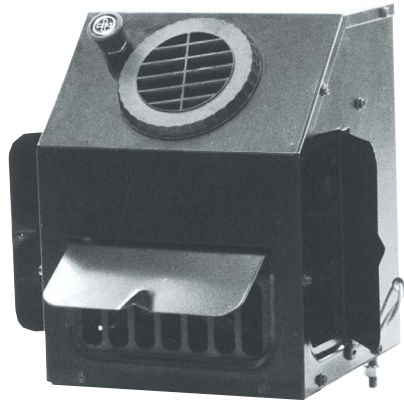
Specifications

Heating - 64000 Btu/hr (18760 W)
 Air Flow - 800 CFM (1360 m³/h)
 Current - 13 Amps/12V
 - 6.5 Amps/24V
 Weight - 25 lbs. (11.3 kg)
 2-Speed motor.

Features

The 239 is our largest capacity fan heater - ideal for buses and other large capacity requirements.

Fan Heater Model 245



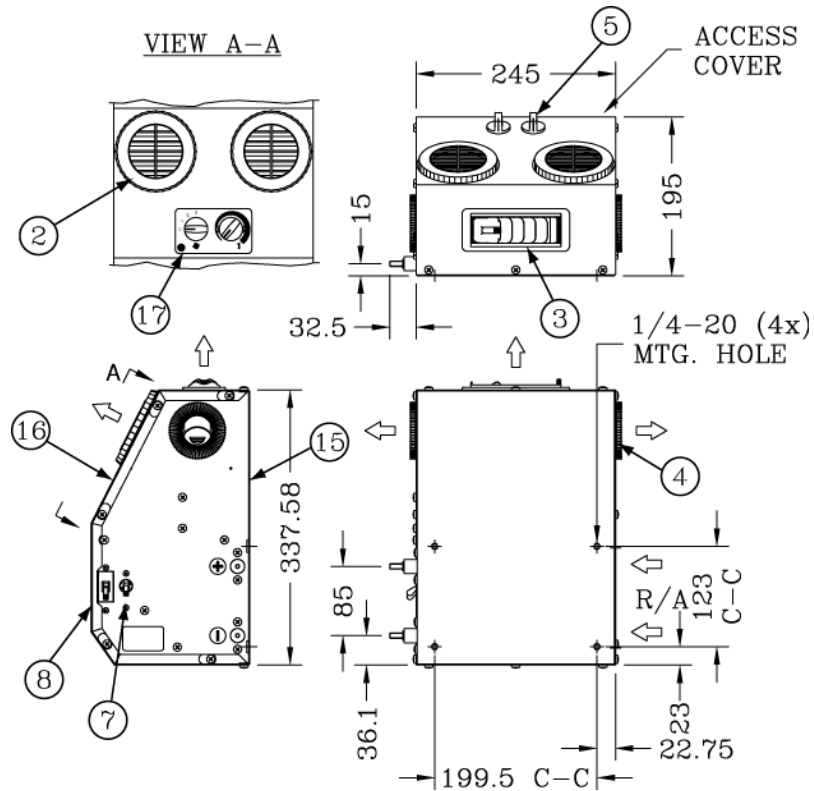
Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description			
12-4503	Heater 12V	1	22-0140	Heater Coil	10	24-0893	Side (R)		
12-4504	Heater 24V	2	23-0048	Adapter	11	24-0894	Venturi		
Specifications				3	23-0009	Door	12	25-0023	Fan (6.6" C.C.W.)
Heating	-20000 Btu/hr (5860 W)	4	23-0045	Louver	13	25-0029	Switch		
Air Flow	-265 CFM (450 m ³ /h)	5	24-0110	Motor Bracket	14	25-0067	Knob		
Current	-5.8 Amps/12V	6	24-0175	Base	15	25-0105	Motor 12V		
	-2.9 Amps/24V	7	24-0890	Coil Protector		25-0107	Motor 24V		
Weight	-8.5 lbs. (3.8 kg)	8	24-0891	Cover	16	28-0014	Grommet		
	2-Speed motor.	9	24-0892	Side (L)					
	Heater is internally grounded.								

Features

The 245 offers the ability to control fan speed with a control on the box. Ideal for auxiliary heaters or small cab applications.

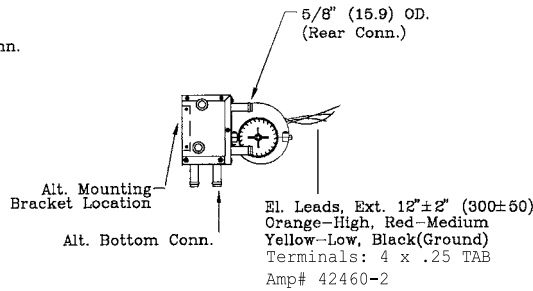
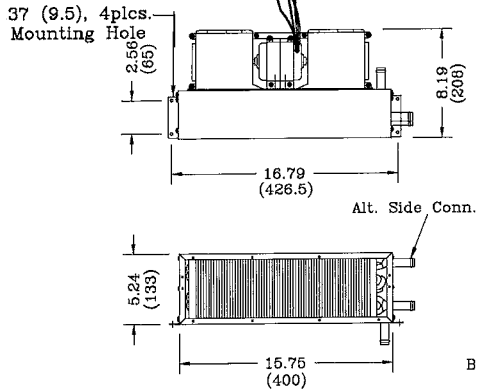
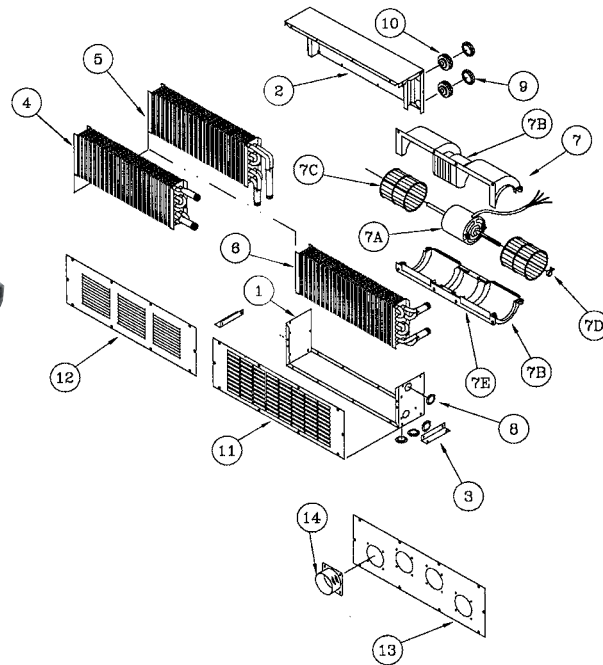
Fan Heater **Electric Model 290N** (North America only)



Part Descriptions: Specifications

Specifications	No.	Part No.	Description	No.	Part No.	Description	
Heating		3	23-0145	Louver	11	25-1204	Contactors
		4	23-0171	Louver	12	25-1373	Resistor 10Ω (12-9038)
		5	25-0435	Knob	13	25-1760	Resistor 4Ω (12-9050)
Air flow		6	25-1160	Heater Element 48V	14	25-1761	Resistor 2.5Ω (12-9038/12-9050)
		6	25-1169	Heater Element 36V	15	24-4796	Casing Stainless Steel
Current		7	25-1372	Circuit Breaker 8A/80V	16	24-4797	Cover Stainless Steel
Weight		8	25-1481	Circuit Breaker 50A/80V	17	28-0722	Overlay
		8	25-2459	Circuit Breaker 60A/80V			Items 1,6,10 to 14 are not shown

Blower Heater Model 202



Part Descriptions: Specifications

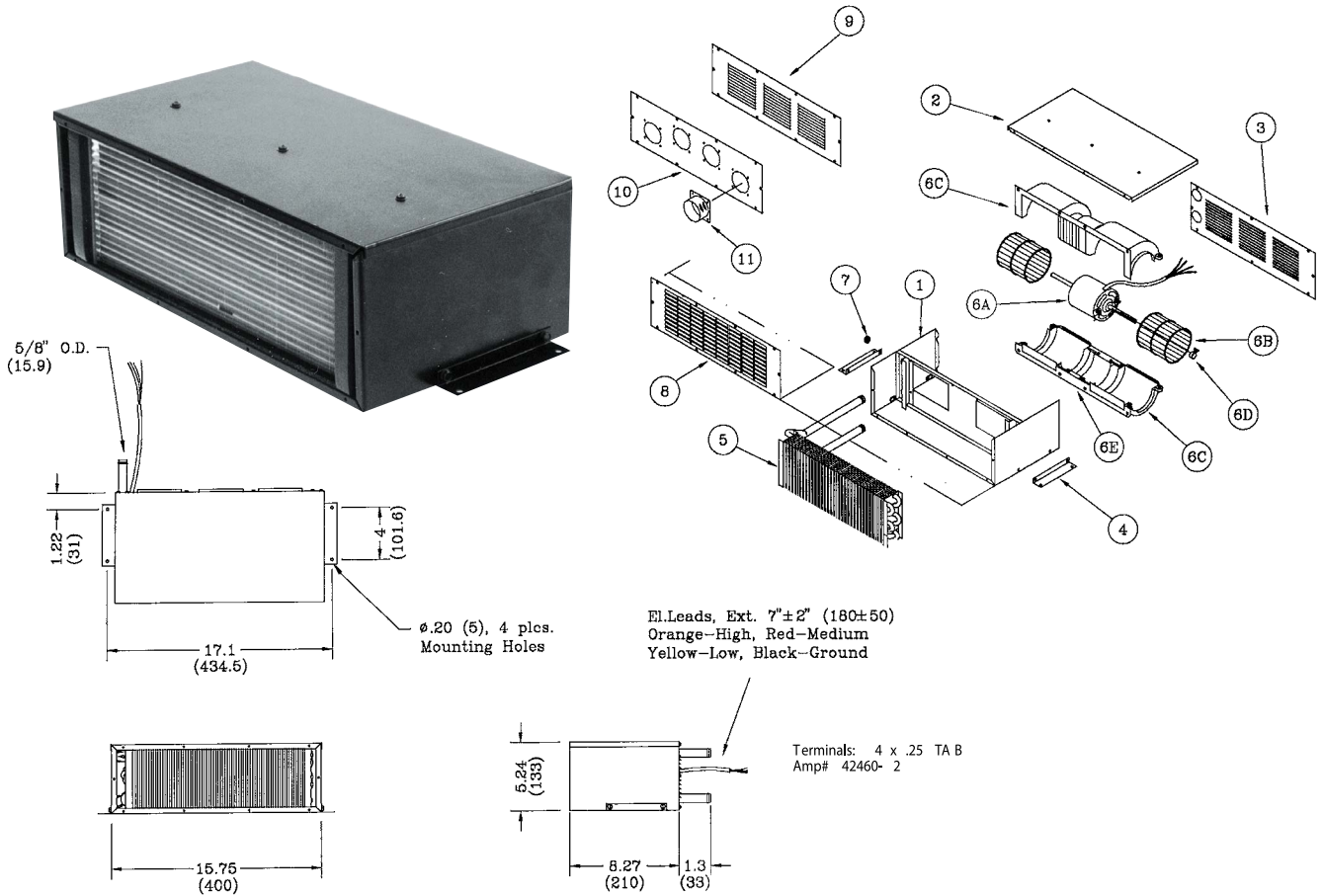
Part No.	No.	Part No.	Description	No.	Part No.	Description
12-0203		1	Heater 12V - Rear Conn.	7D	25-0022	Clip
12-0213		2	Heater 12V - Side Conn.	7E	25-0020	Motor Tape
12-0204		3	Heater 24V - Rear Conn.	8	28-0010	Snap-in Plug
12-0214		4	Heater 24V - Side Conn.	9	28-0013	Snap-in Plug
12-0293		5	Heater 12V - Bottom Conn.	10	28-0005	Grommet (Rear Conn.)
		6	Heater Coil (Rear Conn.)	11	24-0060	Grill
		7	Blower Assy. 12V	12	24-0045	Grill
		7A	Blower Assy. 24V	13	24-0066	Front (4 x 2" HA)
		7B	Motor 12V	14	24-0067	Front (4 x 2 1/2" HA)
		7C	Motor 24V		23-0110	Hose Adapter 2"
			Blower Housing		23-0125	Hose Adapter 2 1/2"
			Blower Wheel			

Items 11-14 are optional and have to be ordered separately.

Features

The 202 offers flexible installation options to fit a wide range of applications. Can be ducted for defrost capabilities. Also available with an oil coil.

Blower Heater Model 205



Part Descriptions: Specifications

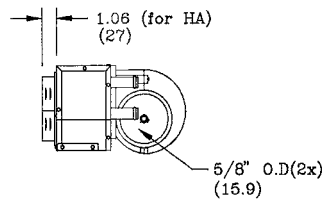
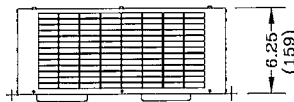
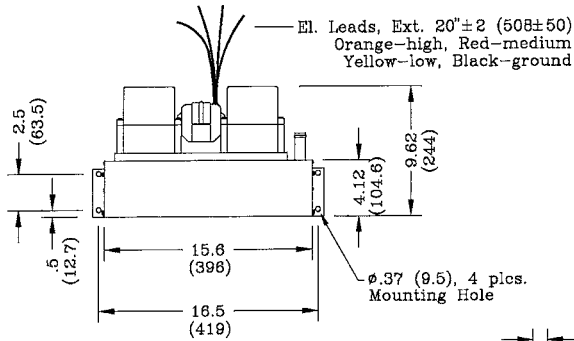
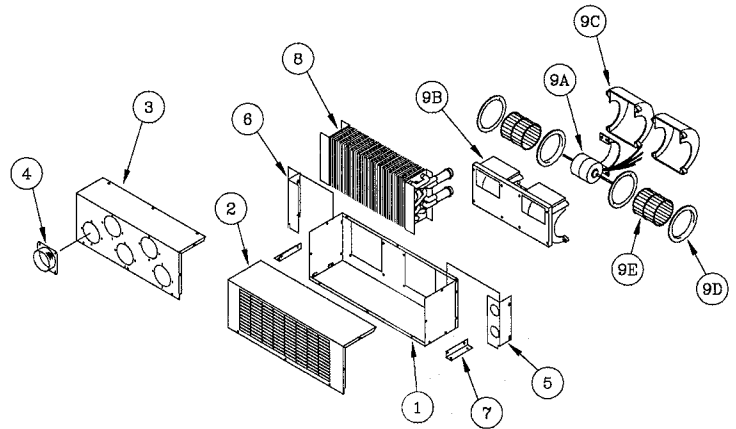
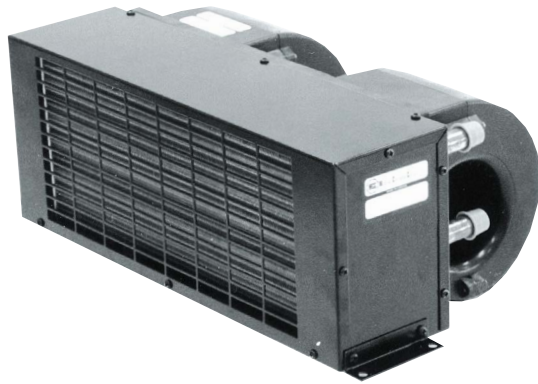
Part No.		No.	Part No.	Description	No.	Part No.	Description
12-0503	Heater 12V	1	24-0225	Casing	7	28-0014	Grommet
12-0504	Heater 24V	2	24-0226	Cover	8	24-0060	Grill
		3	24-0199	Grill	9	24-0045	Grill
		4	24-0133	Mounting Bracket	10	24-0066	Front (4 x 2" HA)
		5	22-0060	Heater Coil		24-0067	Front (4 x 2 1/2" HA)
		6	15-0503	Blower Assy. 12V	11	23-0110	Hose Adapter 2"
			15-0504	Blower Assy. 24V		23-0125	Hose Adapter 2 1/2"
		6A	25-0070	Motor 12V			
			25-0075	Motor 24V			
		6B	25-0021	Blower Wheel			
		6C	25-0017	Blower Housing			
		6D	25-0022	Clip			
		6E	25-0020	Motor Tape			

Items 8-11 are optional and have to be ordered separately.

Features

A more heavy duty option than the 202. The 205 offers the same installation flexibility. Also available with an oil coil.

Blower Heater Model 212



Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description
12-1203	1	24-0055	Casing	9	15-1513	Blower Assy. 12V
12-1204	2	24-0056	Cover		15-1514	Blower Assy. 24V
12-1223	3	24-1011	Cover (5 HA's)	9A	25-0053	Motor 12V, 3-Speed
12-1224	4	23-0125	Hose Adapter 2 1/2"		25-0076	Motor 24V, 3-Speed
	5	24-0057	Coil Bracket	9B	25-0048	Blower Housing
	6	24-0058	Coil Bracket	9C	25-0348	Housing Top
	7	24-0012	Mounting Bracket	9D	25-0060	Venturi
	8	22-0090	Heater Coil	9E	25-0200	Blower Wheel
					25-0022	Clip (B.W.)

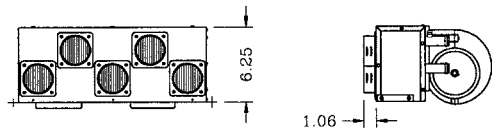
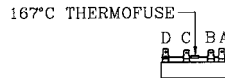
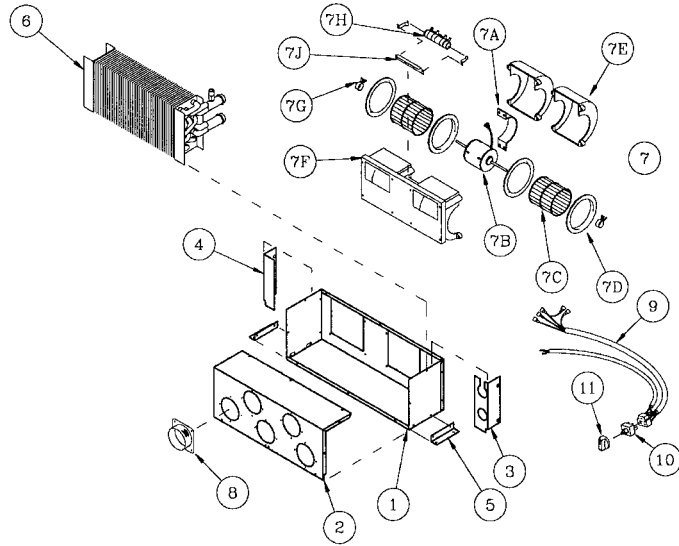
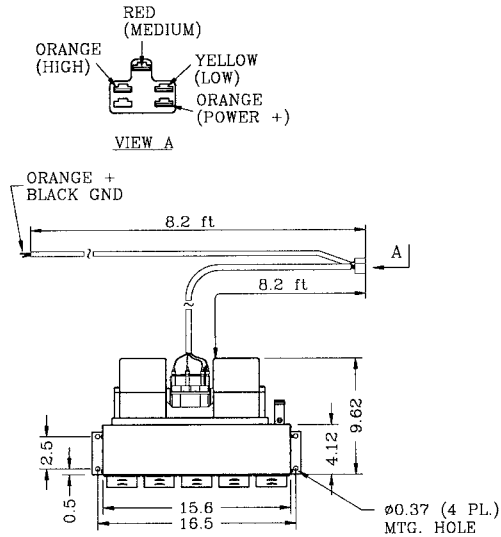
Specifications

Heating	-36000 Btu/hr (10550 W)
Air Flow	-400 CFM (680 m ³ /h)
Current	-14 Amps/12V
	-8 Amps/24V
Weight	-12 lbs. (5.5 kg)
3-Speed motor.	

Features

A higher capacity heater than the 202 and 205, the 212 equipped with hose adapters offers installation flexibility for defrosting and cab ducting requirements.

Blower Heater Model 212 Marine



DETAIL OF RESISTOR

- A - TO MOTOR (ORANGE)
- B - LOW SPEED
- C - MED. SPEED
- D - HIGH SPEED

Important! Motor is of a non-explosion proof design. The heater must be installed in areas where flammable liquids and vapors are not present.

Part Descriptions: Specifications

Part No.		No.	Part No.	Description	No.	Part No.	Description
12-1239	Heater 12V	1	24-3937	Casing	7D	25-0060	Venturi
		2	24-3938	Cover	7E	25-0348	Housing Top
		3	24-3939	Coil Bracket	7F	25-0048	Blower Housing
		4	24-3940	Coil Bracket	7G	28-0022	Clip
		5	24-3945	Mounting Bracket	7H	25-0601	Resistor 12V w/Bkt
		6	22-0520	Heater Coil	7J	29-0130	Resistor Bracket
		7	15-1561	Blower Assy. 12V	8	23-0125	Hose Adapter 2 1/2"
		7A	25-0861	Motor Mount	9	25-1126	Wiring Harness
		7B	25-0655	Motor 12V	10	25-0044	Switch 25 Amp
		7C	25-0200	Blower Wheel	11	25-0067	Knob

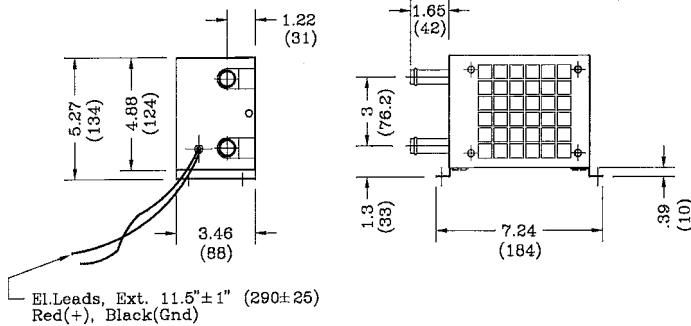
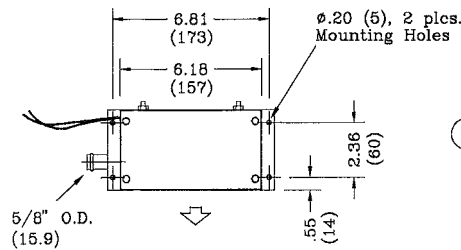
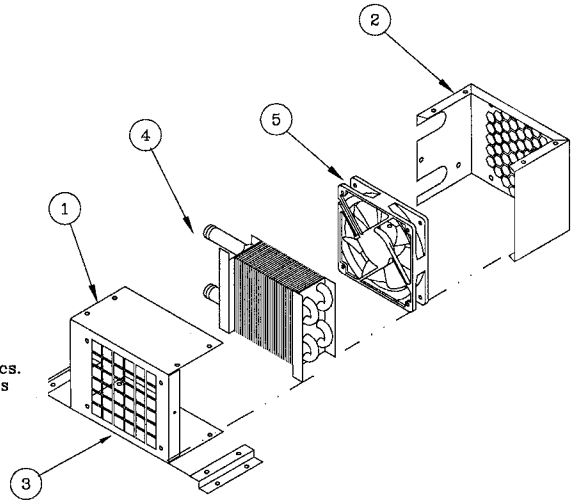
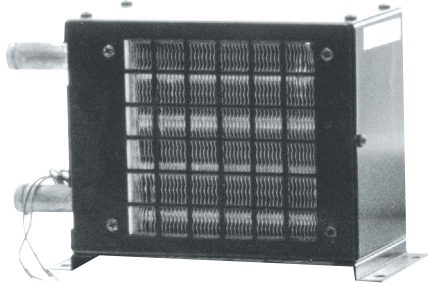
Specifications

Heating	- 40000 Btu/hr (11700 W)
Air Flow	- 500 CFM (850 m ³ /h)
Current	- 22 Amps/12V
Weight	- 15 lbs. (6.8 kg)
PM Motor	3-Speed motor.
All Hardware	Stainless Steel

Features

This powerful version of the popular #212 family of heaters is specifically designed for the corrosive ocean environment. Coil is made of copper with stainless steel (SS) end plates. Hardware and casing are made of SS as well. Engineering plastics are used for hose adapters and blower. Details of the blower can be found in the blower section. Hose adapters make the heater suitable for ducting to windshields etc. Switch for 3 speed operation, wiring harness and knob are included.

Low Amp Heater Model 234



Part Descriptions: Specifications

Part No.		No.	Part No.	Description
12-3421	Heater 12V	1	24-1105	Casing (Front)
12-3422	Heater 24V	2	24-1106	Casing (Rear)
		3	24-1107	Mounting Bracket
		4	24-0041	Heater Coil
		5	25-0172	Fan 12V
			25-0244	Fan 24V

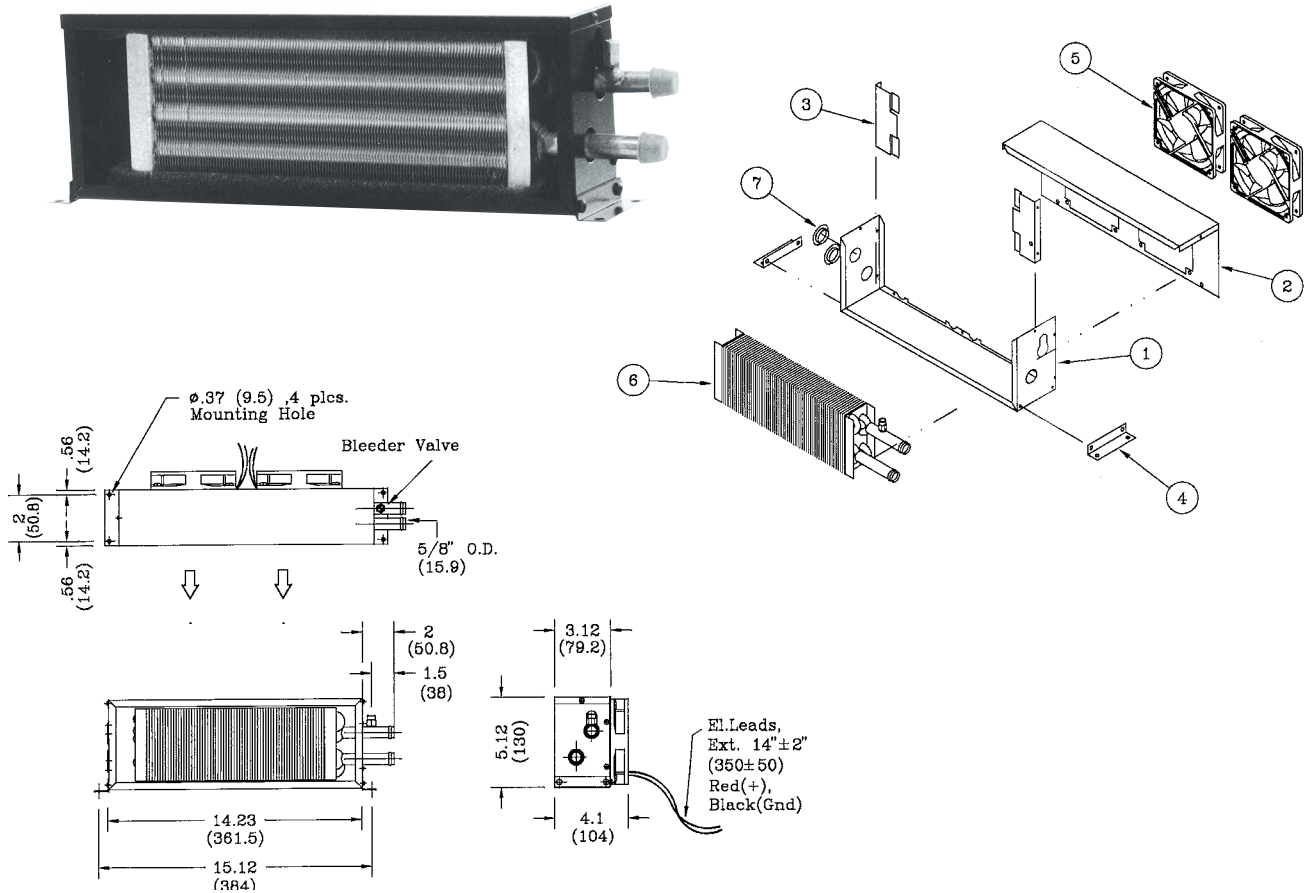
Specifications

Heating - 32000 Btu/hr (9380 W)
 Air Flow - 350 CFM (595 m³/h)
 Current - 12 Amps/12V
 - 6 Amps/24V
 Weight - 25.5 lbs. (11.5 kg)
 2-Speed motor.

Features

The low amp current of the 234HD allows for mounting in applications such as motor homes, where an auxiliary heater is required.

Low Amp Heater Model 236



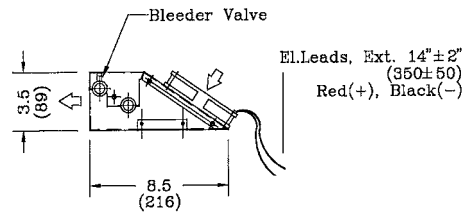
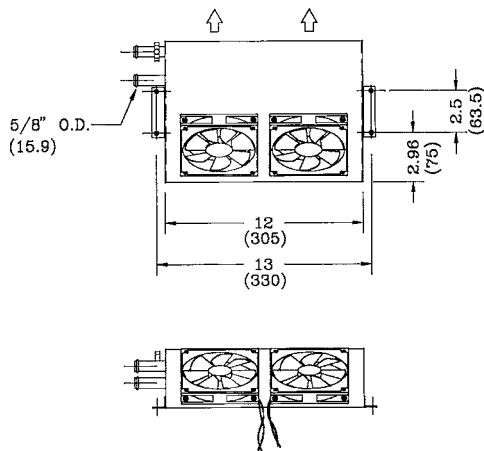
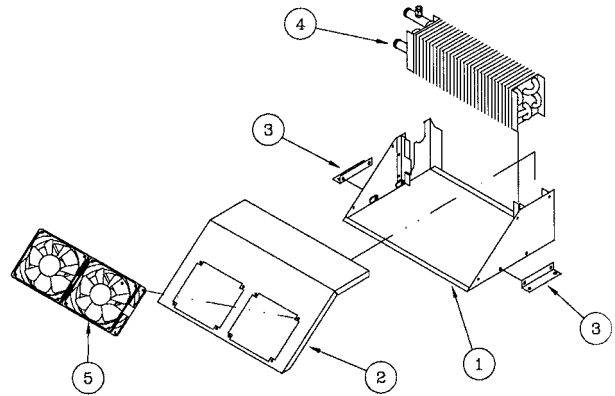
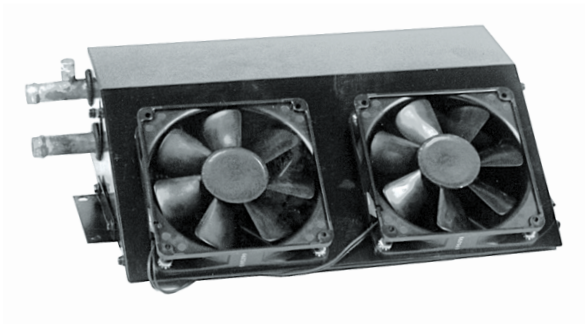
Part Descriptions: Specifications

Part No.		No.	Part No.	Description
12-3601	Heater 12V	1	24-0369	Casing
12-3602	Heater 24V	2	24-0370	Cover
Specifications		3	24-0380	Coil Bracket
Heating	-8700 Btu/hr (2550 W)	4	24-0012	Mounting Bracket
Air Flow	-130 CFM (220 m ³ /h)	5	25-0172	Fan 12V
Current	-0.7 Amps/12V		25-0244	Fan 24V
	-0.35 Amps/24V	6	22-0083	Heater Coil
Weight	-5 lbs. (2.3 kg)	7	28-0010	Snap-in Plug
	1-Speed motor.			

Features

A larger capacity heater than the 234HD, the 236 offers the capacity to handle larger low amp heater requirements.

Low Amp Heater **Model 247**



Part Descriptions: Specifications

Part No.		No.	Part No.	Description
12-4701	Heater 12V	1	24-1114	Casing
12-4702	Heater 24V	2	24-1115	Cover
		3	24-0012	Mounting Bracket
		4	22-0171	Heater Coil
		5	25-0172	Fan 12V
			25-0144	Fan 24V

Specifications

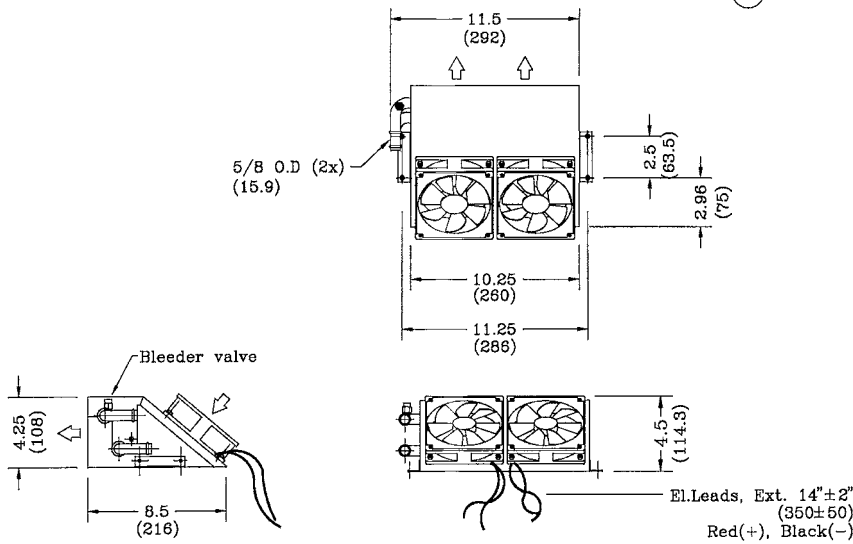
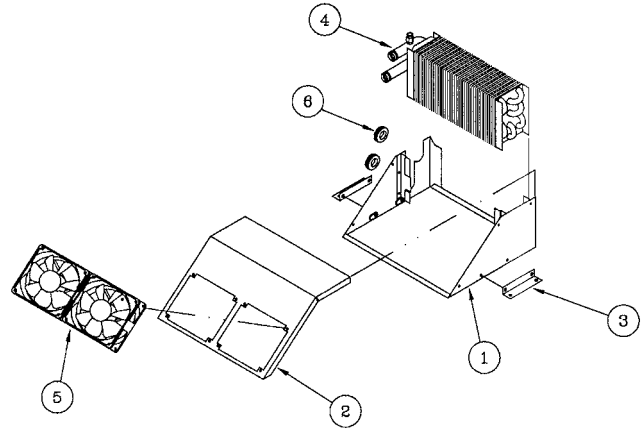
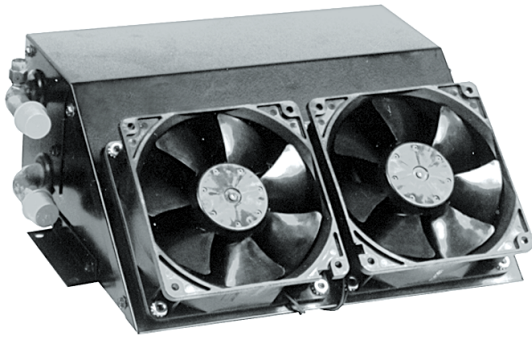
Heating	-8700 Btu/hr (2550 W)
Air Flow	-130 CFM (220 m ³ /h)
Current	-0.70 Amps/12V -0.35 Amps/24V
Weight	-6.1 lbs. (2.8 kg)
1-Speed motor.	

Features

The 247 is another option for low amp heater requirements.



Low Amp Heater Model 249



Part Descriptions: Specifications

Part No.		No.	Part No.	Description
12-4901	Heater 12V	1	24-1189	Casing
		2	24-1190	Cover
		3	24-0012	Mounting Bracket
		4	22-0203	Heater Coil
		5	25-0447	Fan 12V
		6	28-0009	Grommet
Specifications				
Heating	-10000 Btu/hr (2930 W)			
Air Flow	-160 CFM (270 m ³ /h)			
Current	- 1.0 Amps/12V			
Weight	-7.5 lbs. (3.4 kg)			
1-Speed motor.				

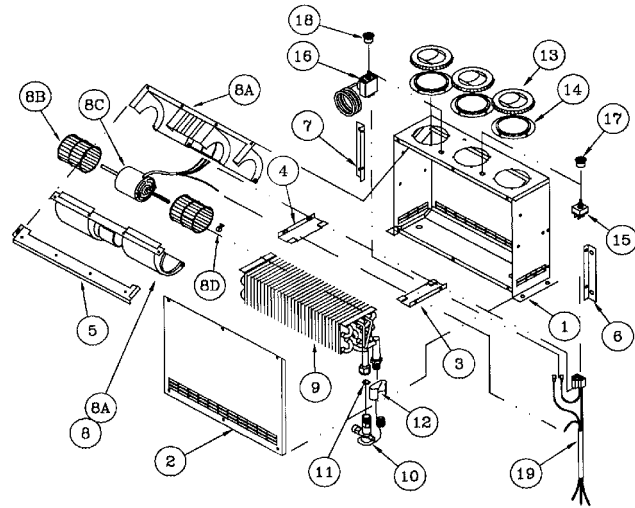
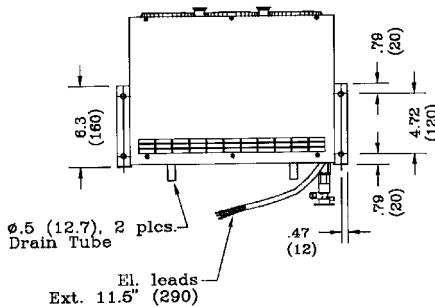
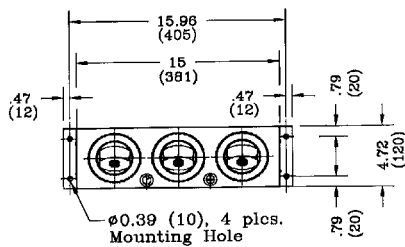
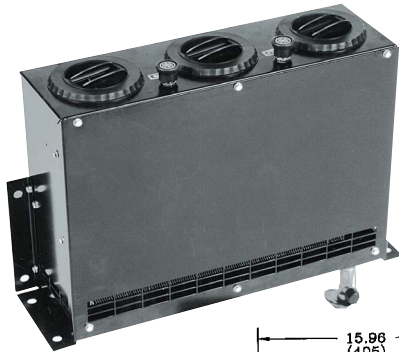
Features

The 249 offers similar mounting and installation to the 247, in a larger capacity package.



IV. Compact AC

Air Conditioner Model 301



5/8" - 18 Male (OR #8)
7/8" - 14 Male (OR #10)
Refr. Hose Connection

El. Connection

Orange - Power(+)
Black - Ground(-)
White - To pressure switch/
compressor
Blue - To condenser/relay
(if fan condenser)

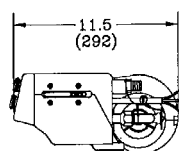
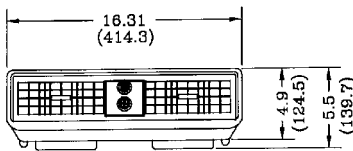
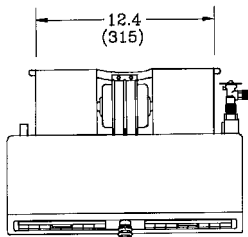
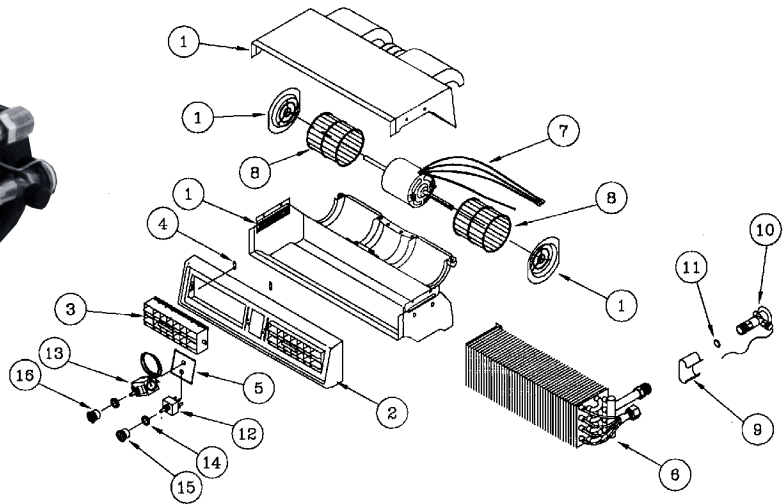
Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description
13-0121		Air Conditioner 12V		1	24-1584	Casing
13-0122		Air Conditioner 24V		2	24-1585	Cover
				3	24-1586	Coil Bracket (R)
				4	24-1587	Coil Bracket (L)
				5	24-1588	Blower Support
				6	24-1941	Mounting Bracket (R)
				7	24-1942	Mounting Bracket (L)
				8	15-0503	Blower 12V
					15-0504	Blower 24V
				8A	25-0017	Blower Housing
				8B	25-0021	Blower Wheel
				8C	25-0070	Motor 12V
					25-0076	Motor 24V
				8D	25-0022	Clip
				9	21-0276	Evaporator Coil
				10	26-0162	Expansion Valve
				11	27-0602	O-Ring #8
				12	26-0006	Bulb Clamp
				13	23-0005	Louver
				14	23-0048	Adapter
				15	25-0029	Blower Switch
				16	25-0045	Thermostat
				17	25-0067	Knob
				18	25-0068	Knob
				19	25-0586	Wiring Harness

Features

The 301 is a compact air conditioner that is ideal for small cabs. It can be wall mounted or used as a stand alone floor mount.

Air Conditioner **Model 302**



El. leads, Ext.18±2
(400±50)
White -from Thermostat
Orange -Power
Black-Ground

0.5 (12.7) OD, 2 plds.
Drain Tube

Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description	
13-0221		1	28-0001	Case	9	26-0006	Bulb Clamp
13-0222		2	28-0002	Bezel	10	26-0162	Expansion Valve
		3	23-0011	Louver	11	27-0602	O-Ring #8
		4	23-0028	Louver Strip	12	25-0029	Switch
		5	25-0032	Switch Plate	13	25-0030	Thermostat
		6	21-0003	Evaporator Coil	14	25-0059	Nut Cover
		7	25-0677	Motor 12V	15	25-0067	Knob
			25-0678	Motor 24V	16	25-0068	Knob
		8	25-0021	Blower Wheel	17	25-0679	Wiring Harness (Not Shown)

Specifications

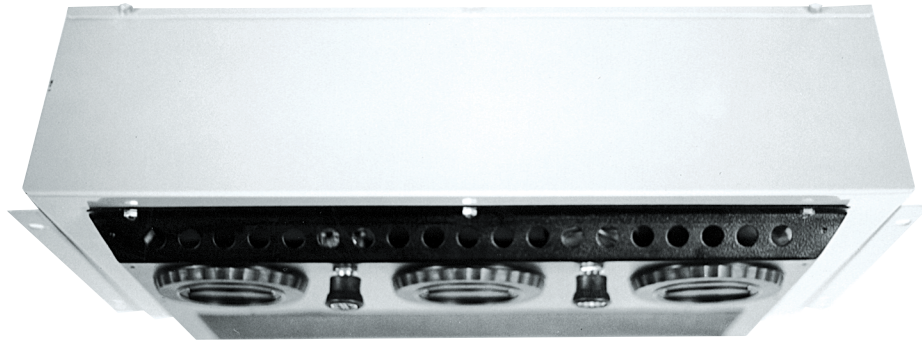
Cooling	-17950 Btu/hr (5260 W)
Air Flow	-250 CFM (425 m ³ /h)
Current	-11 Amps/13.5V -5.5 Amps/27V
Weight	-9 lbs. (4 kg)

3-Speed motor.

Features

The 302 is a compact unit that can be ducted to deliver air flow where desired. Ideal for dash or compartment mounting.

Air Conditioner **Model 355**



Part Descriptions: Specifications

Part No.		Specifications		
13-5521	Air Conditioner 12V	Cooling	-20000 Btu/hr (5860 W)	Made of 18GA (1.25mm) Cold Rolled Steel and finished in grey epoxy powder coat.
13-5522	Air Conditioner 24V	Air Flow	-275 CFM (468 m ³ /h)	
		Current	-12 Amps/13.5V -6 Amps/27V	
		Weight	-31 lbs. (14 kg)	

Features

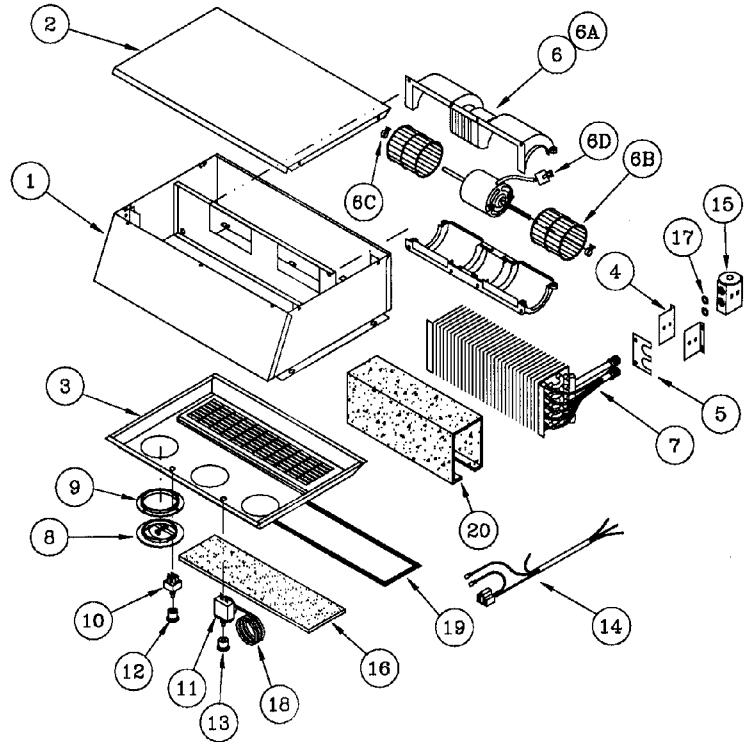
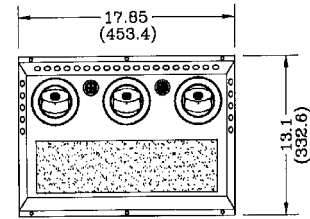
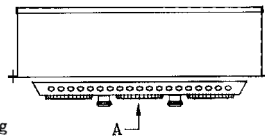
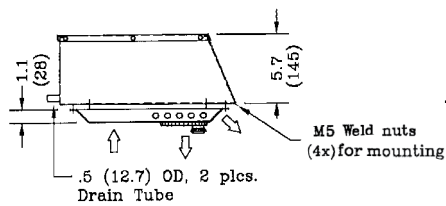
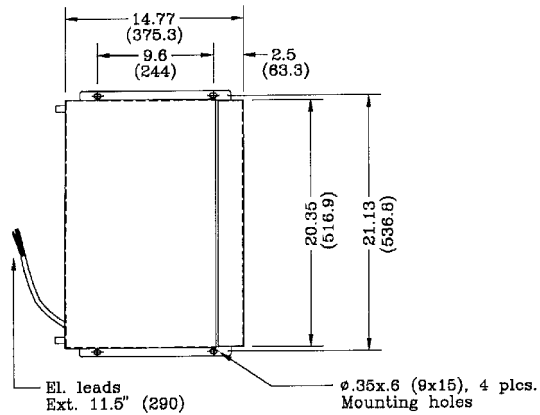
The 355 is a low profile roof mount air conditioner.



Dimension Profiles

El. Connection

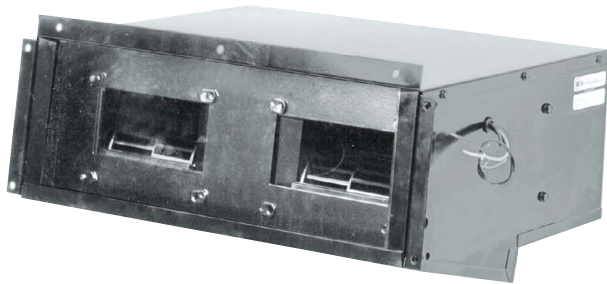
- Orange—Power(+)
- Black—Ground(-)
- White—To pressure switch/ compressor
- Blue—To condenser/relay (if fan condenser)



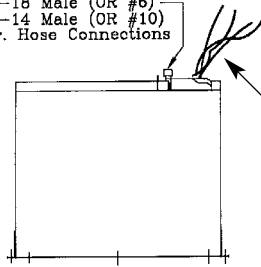
Part Descriptions: Specifications

No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-2177	Casing Assy.	6C	25-0643	Motor 12V	13	25-0068	Knob (Temp.)
2	24-2296	Cover Assy.		25-0644	Motor 24V	14	25-0672	Wiring Harness
3	24-2437	Air Plenum	6D	25-0022	Clip	15	26-0190	Block Valve
4	24-2439	Support Bracket	7	21-0399	Evaporator Coil	16	26-0431	Air Filter
5	24-2440	Cover Plate	8	23-0005	Louver	17	27-0602	O-Ring #8
6	15-0533	Blower 12V	9	23-0048	Adapter	18	28-0031	PVC Hose
	15-0534	Blower 24V	10	25-0044	Blower Switch	19	28-0166	Hook Tape
6A	25-0017	Blower Housing	11	25-0045	Thermostat	20	28-0230	Reticulated Foam
6B	25-0021	Blower Wheel	12	25-0067	Knob(Fan)			

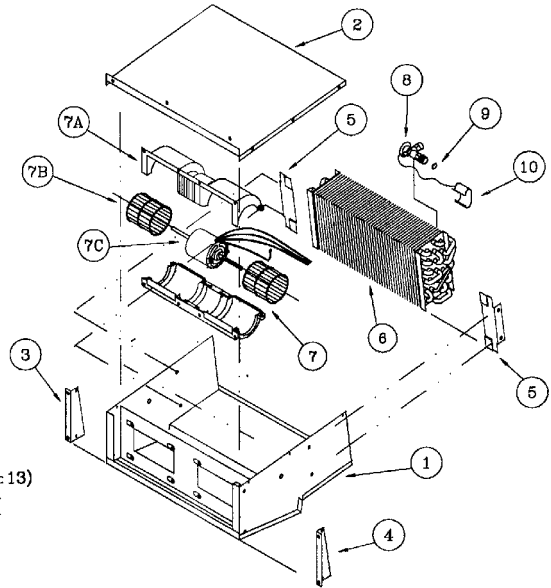
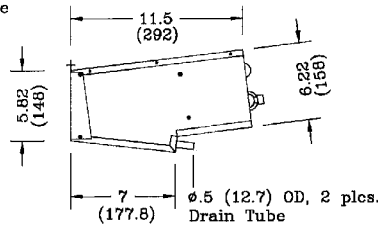
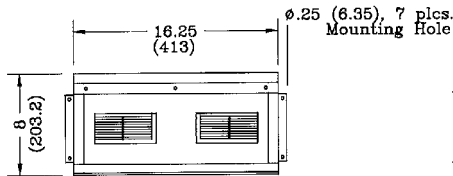
Air Conditioner **Model 311**



5/8-18 Male (OR #6)
7/8-14 Male (OR #10)
Refr. Hose Connections



EL Leads, Ext. 5"±.5" (127±13)
Orange-High, Red-Medium
Yellow-Low, Black-Ground



Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description	
13-1153		1	24-0267	Casing	7A	25-0017	Blower Housing
13-1154		2	24-0270	Cover	7B	25-0021	Blower Wheel
		3	24-0192	Mounting Bracket (L)	7C	25-0070	Motor 12V
		4	24-0193	Mounting Bracket (R)		25-0075	Motor 24V
		5	24-0194	Coil Bracket	8	26-0162	Expansion Valve
		6	21-0045	Evaporator Coil	9	27-0602	O-Ring #8
		7	15-0503	Blower Assy. 12V	10	26-0006	Bulb Clamp
			15-0504	Blower Assy. 24V			

Specifications

Cooling	-21800 Btu/hr (6390 W)
Air Flow	-325 CFM (552 m ³ /h)
Current	-11.6 Amps/13.5V -5.8 Amps/27V
Weight	-17 lbs. (7.7 kg)

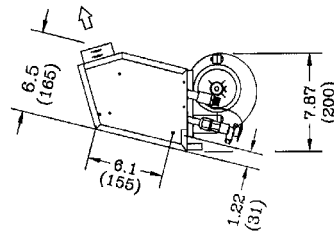
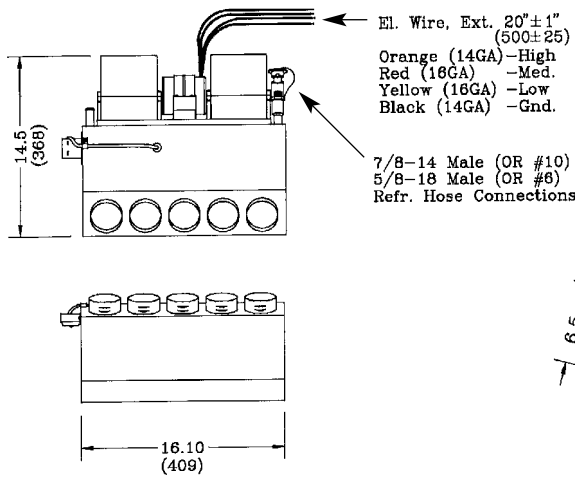
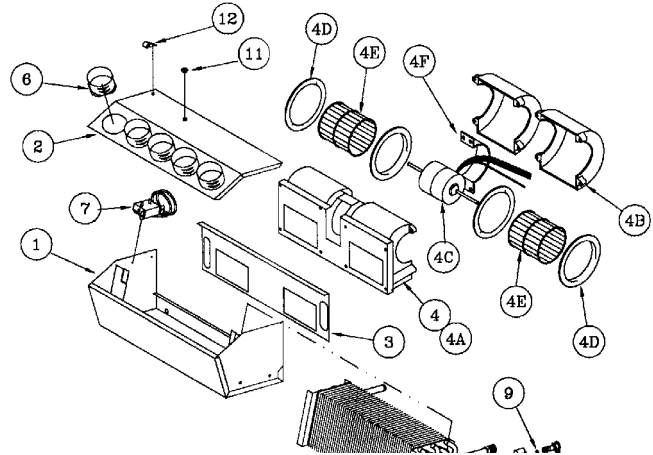
3-Speed motor.

Made of 18GA (1.25mm) Cold Rolled Steel and finished in black semi-gloss epoxy powder coat. Louvers have to be ordered separately.

Features

The 311 is ideal for ambulance requirements.

Heater-Air Conditioner **Model 306**



Part Descriptions: Specifications

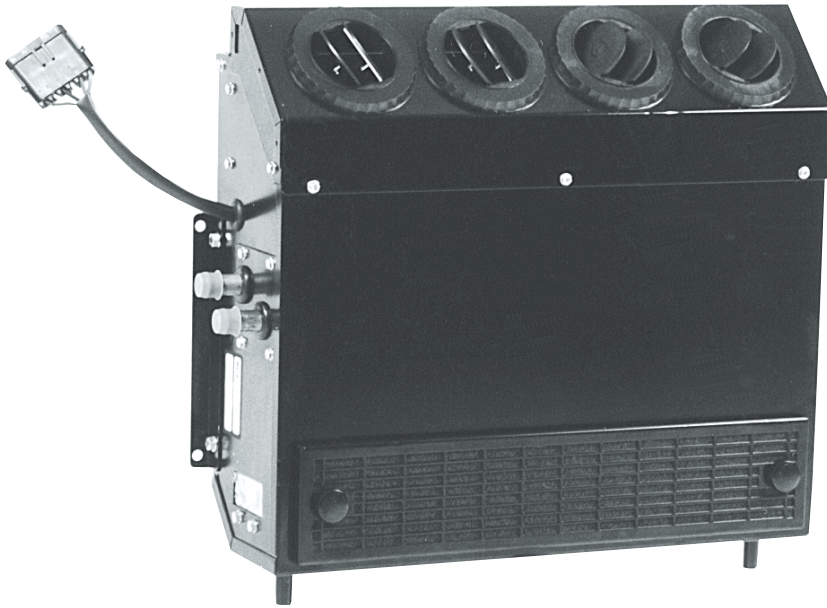
Part No.		No.	Part No.	Description	No.	Part No.	Description
13-0651	Heater-AC 12V	1	24-0035	Casing	4E	25-0200	Blower Wheel
13-0652	Heater-AC 24V	2	24-0404	Cover	4F	25-0271	Motor Mount
Specifications		3	24-0497	Blower Plate	5	21-0005	Combo Coil
Heating	-33000 Btu/hr (9675 W)	4	15-1513	Blower 12V	6	23-0038	Hose Adapter 2 1/2"
Cooling	-22500 Btu/hr (6685 W)		15-1514	Blower 24V	7	25-0069	Thermostat
Air Flow	-400 CFM (680 m ³ /h)	4A	25-0048	Blower Housing	8	26-0162	Expansion Valve
Current	-14 Amps/13.5V	4B	25-0348	Housing Top	9	27-0602	O-Ring #8
	-7 Amps/27V	4C	25-0053	Motor 12V	10	26-0006	Bulb Clamp
Weight	-19 lbs. (8.6 kg)		25-0076	Motor 24V	11	28-0021	Snap-in Plug
		4D	25-0060	Venturi	12	29-0139	Half Clamp 5/16"

Casing made of 18GA (1.25mm) Cold Rolled Steel and finished in black semi-gloss epoxy powder coat.

Features

The 306 is ideal for under seat or dash mounting. It's high performance capacity can handle most cab requirements. It can also be used in limousine applications.

Heater-Air Conditioner **Model 310**



Part Descriptions: Specifications

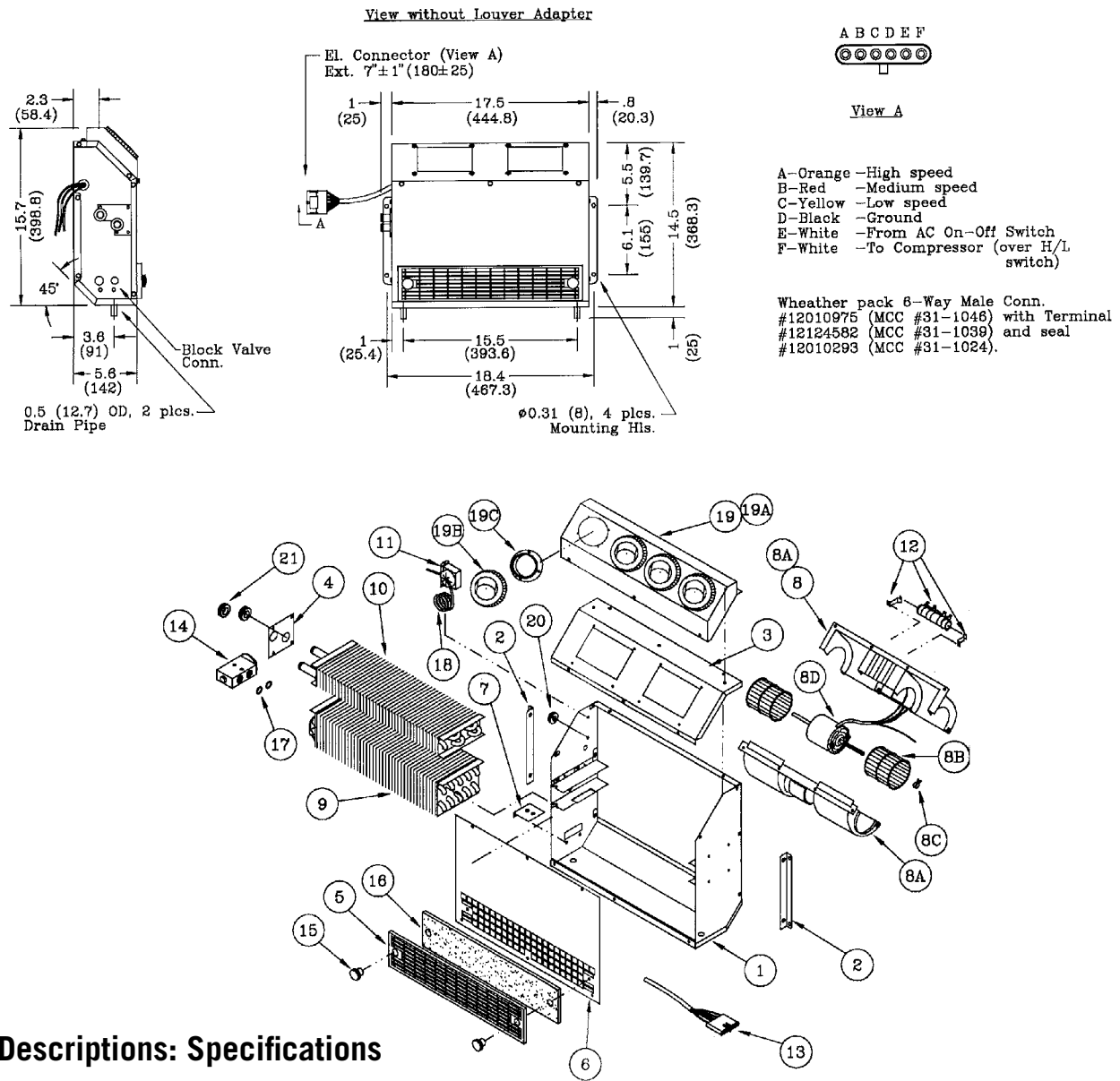
Part No.		Specifications		
13-1003	Heater-AC 12V	Heating	-25500 Btu/hr (7480 W)	Made of 18GA (1.25mm) Cold Rolled Steel and finished in black semi-gloss epoxy powder coat.
13-1004	Heater-AC 24V	Cooling	-19775 Btu/hr (5800 W)	
13-1023	Air Conditioner 12V	Air Flow	-300 CFM (510 m ³ /h)	
13-1024	Air Conditioner 24V	Current	-12 Amps/13V	
13-1090	Plenum Assy. Incl.19A, 19B, 19C	Weight	-6 Amps/27V -27.3 lbs. (12.4 kg)	

Features

The 310 is a compact unit that can be used as a free blowing or ducting unit to direct air around the cab. A remote mount control panel is required for this system.



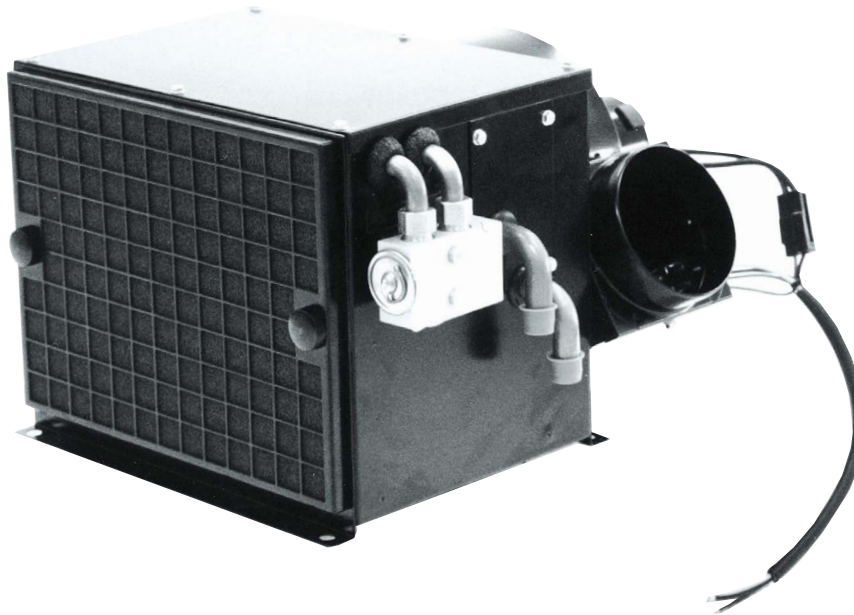
Dimension Profiles



Part Descriptions: Specifications

No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-2124	Casing	8B	25-0021	Blower Wheel	15	26-0263	Knurled Knob
2	24-2125	Mounting Bracket	8C	25-0022	Clip	16	26-0399	Air Filter
3	24-2126	Blower Plate	8D	25-0228	Motor 12V	17	27-0602	O-Ring
4	24-2166	Cover Plate		25-0298	Motor 24V	18	28-0031	PVC Hose
5	24-2167	Grill	9	21-0364	Evaporator	19	13-1090	Plenum Assy. Inc. 19A, B, C.
6	24-2168	Front Cover	10	22-0319	Heater Coil	19A	24-2396	Plenum
7	24-2211	Expansion Valve Bkt.	11	25-0069	Thermostat	19B	23-0005	Louver
8	15-0551	Blower 12V	12	25-0601	Resistor 12V	19C	23-0048	Adapter
	15-0552	Blower 24V		25-0602	Resistor 24V	20	28-0004	Grommet
8A	25-0017	Blower Housing	13	25-0664	Wiring Harness	21	28-0009	Grommet
			14	26-0190	Block Valve			

Heater-Air Conditioner **Model 316**



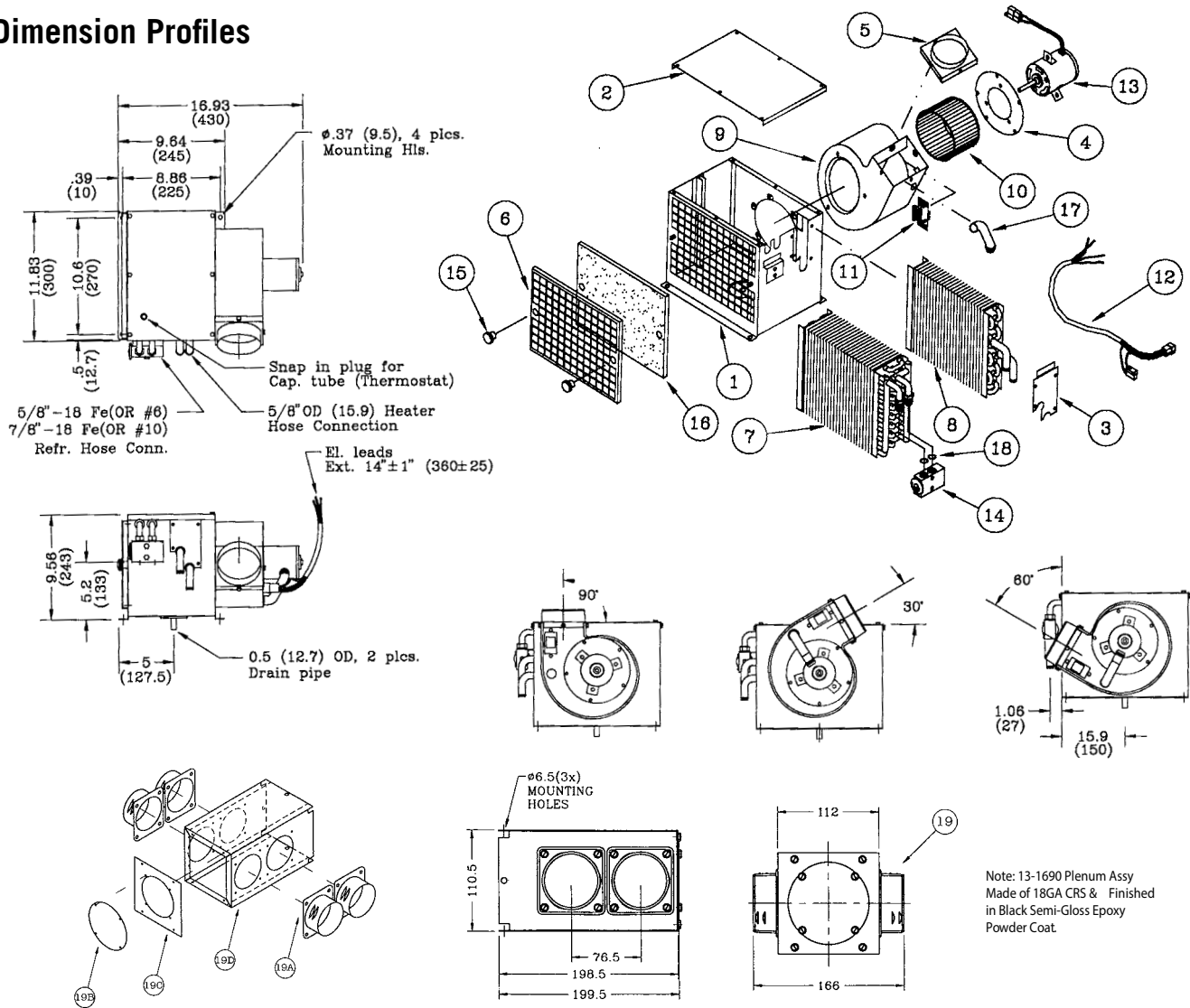
Part Descriptions: Specifications

Part No.		Specifications		
13-1601	Heater-AC 12V	Heating	-32500 Btu/hr (9525 W)	The unit is supplied w/o heater valve and de-icing thermostat, which have to be installed if needed.
13-1602	Heater-AC 24V	Cooling	-26500 Btu/hr (7770 W)	
13-1690	Plenum Assy. Inc. 19A -19D	Air Flow	-350 CFM (595 m ³ /h)	
		Current	-24 Amps/12V -12 Amps/24V	
		Weight	-26 lbs. (11.8kg)	

Features

The 316 is designed for behind the seat installations or for sleeper bunks. It is also designed to duct air around the cab. The blower can be rotated as shown in dimension profiles.

Dimension Profiles



Part Descriptions: Specifications

No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-2425	Casing	10	25-0098	Blower Wheel	16	26-0430	Air Filter
2	24-2426	Cover	11	25-0136	Resistor 12V	17	27-0105	Vent Tube
3	24-2427	Cover Plate		25-0552	Resistor 24V	18	27-0602	O-Ring #8
4	24-2431	Motor Plate	12	25-0538	Wiring Harness	19*	13-1690	Plenum Assy
5	24-2432	Hose Adapter	13	25-0675	Motor 12V	19A	23-0125	Hose Adapters 2.5"
6	24-2501	Filter Grill		25-0676	Motor 24V	19B	23-0006	Cover Plate
7	21-0395	Evaporator Coil	14	26-0190	Block Valve	19C	24-3317	Covers
8	22-0339	Heater Coil	15	26-0263	Knurled Knob	19D	24-3316	Plenum
9	25-0668	Blower Housing						

Item 19 is optional and has to be ordered seperately.

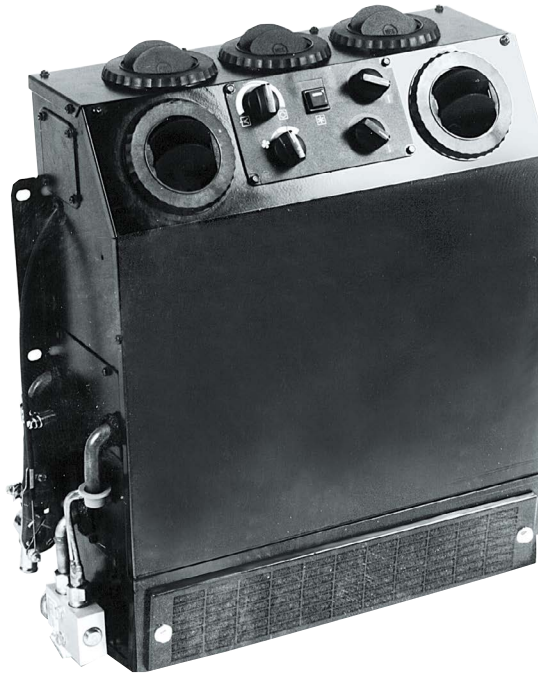
Features

The 316 is designed for behind the seat installations or for sleeper bunks. It is also designed to duct air around the cab. The blower can be rotated as shown in dimension profiles.

Heater-Air Conditioner **Model 320**

Note:

Switch is not as depicted in photo, has been changed to sealed rocker switch.



Part Descriptions: Specifications

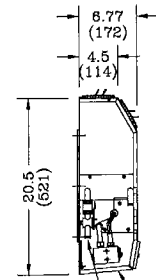
Part No.		Specifications		
13-2021	Heater-AC 12V	Heating	-28000 Btu/hr (8200 W)	Made of 18GA (1.25mm) Cold Rolled Steel and finished in black semi-gloss epoxy powder coat.
13-2022	Heater-AC 24V	Cooling	-21000 Btu/hr (6150 W)	
13-2051	Air Conditioner 12V	Air Flow-	380 CFM (646 m ³ /h)	
13-2052	Air Conditioner 24V	Current	-18 Amps/13.5V -9 Amps/27V	
		Weight	-40 lbs. (18 kg)	
		3-Speed blower.		

Features

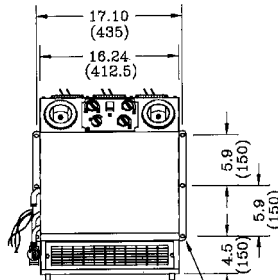
The 320 is a universal wall mounted unit that can handle the requirements of most off-road cabs. An outside filter kit and damper door can be added for outside air.



Dimension Profiles



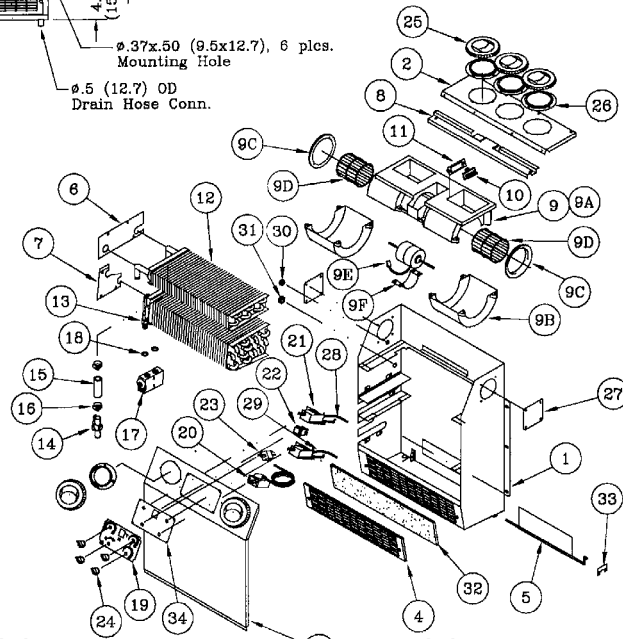
5/8 OD (2x) Heater Hose Connection
 5/8-18 Fe (OR #6)
 7/8-18 Fe (OR #10) Refr. Hose connection



17.10 (435)
 16.24 (412.5)
 5.9 (150)
 5.9 (150)
 4.5 (114)
 0.37x.50 (9.5x12.7), 6 ples. Mounting Hole
 0.5 (12.7) OD Drain Hose Conn.

El. connection

- Orange - Power (+)
- Black - Ground (-)
- White - To compressor/Press. Switch
- Blue - To Condenser/Relay (if Fan Condenser)



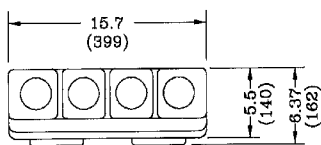
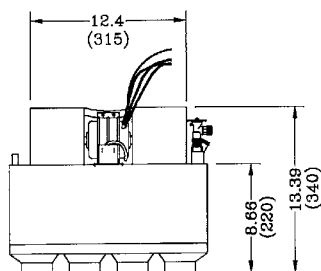
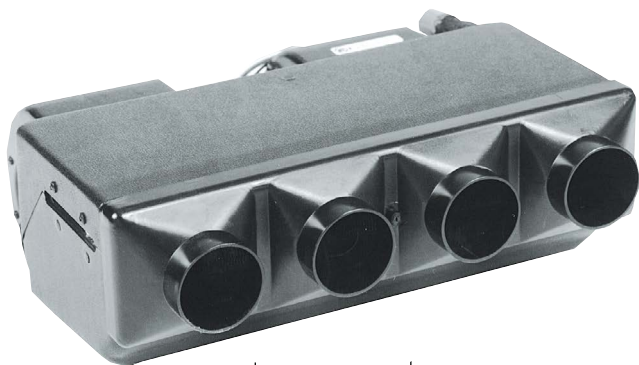
Part Descriptions: Specifications

No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-1182	Casing	9E	25-0665	Motor 12V	22	25-0631	Switch Push 12V
2	24-1183	Top Cover		25-0650	Motor 24V		25-0632	Switch Push 24V
3	24-1184	Front Cover	9F	25-0271	Motor Mount	23	25-0044	Blower Switch
4	24-1185	Filter Holder	10	25-0120	Resistor 12V	24	25-0435	Knob
5	24-1186	Flapper		25-0139	Resistor 24V	25	23-0005	Louver
6	24-1230	H.C. Cover Plate	11	24-0836	Mounting Plate	26	23-0048	Adapter
7	24-1243	E.C. Cover Plate	12	22-0207	Heater Coil	27	24-0320	Cover Plate
8	24-1187	Blower Bracket	13	21-0212	Evaporator Coil	28	26-0242	Bowden Cable
9	15-1503	Blower 12V	14	26-0025	Heater Valve	29	26-0243	Bowden Cable
	15-1502	Blower 24V	15	27-0225	Heater Hose 5/8"	30	28-0014	Grommet
9A	25-0048	Blower Housing	16	27-0059	Gear Clamp	31	28-0004	Grommet
9B	25-0348	Blower Housing Top	17	26-0190	Block Valve	32	26-0258	Filter
9C	25-0060	Venturi	18	27-0602	O-Ring #8	33	24-1188	Flapper Holder
9D	25-0200	Blower Wheel	19	28-0110	Overlay	34	24-1128	Control Plate
			20	25-0045	Thermostat	35	25-0436	Wiring Harness (Not Shown)
			21	26-0095	Rotary Control			

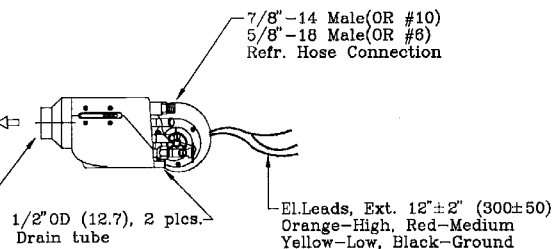
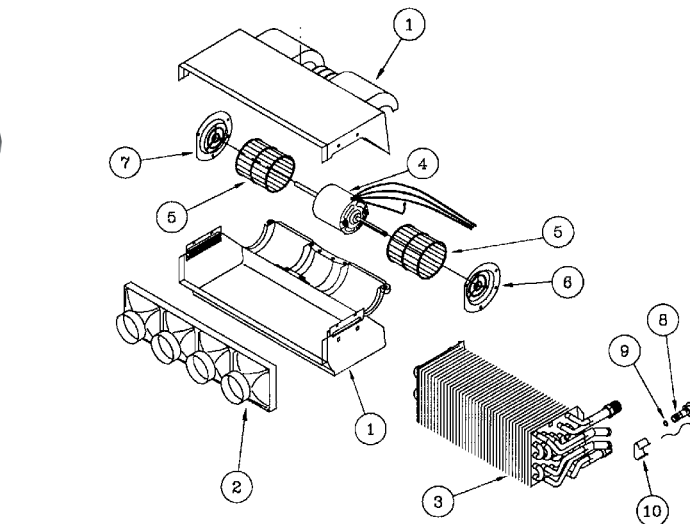
Features

The 320 is a universal wall mounted unit that can handle the requirements of most off-road cabs. An outside filter kit and damper door can be added for outside air.

Heater-Air Conditioner **Model 309**



Air Outlet 2 1/2" (4x)



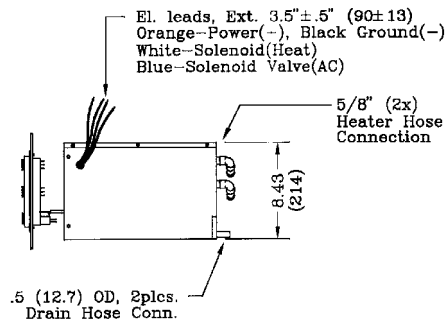
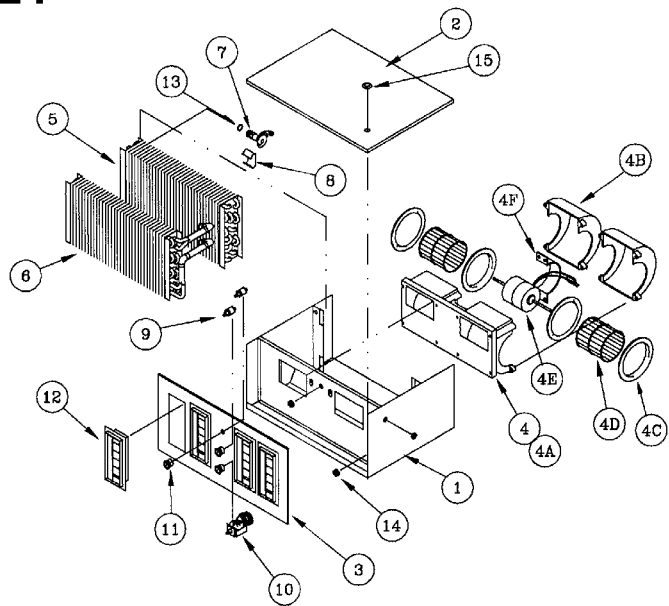
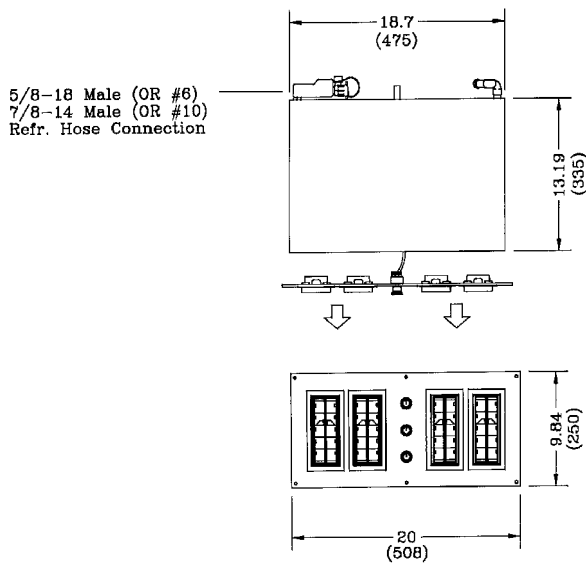
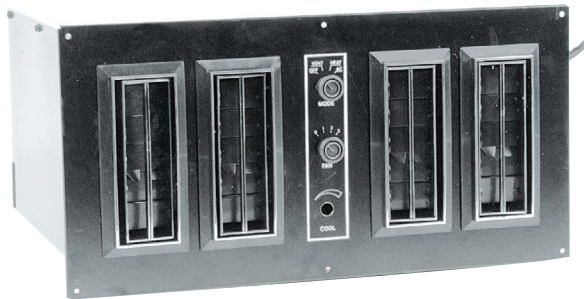
Part Descriptions: Specifications

Part No.		No.	Part No.	Description	No.	Part No.	Description
13-0953	Heater-AC 12V	1	28-0016	Case	6	28-0019	Venturi (R)
13-0954	Heater-AC 24V	2	28-0006	Bezel	7	28-0020	Venturi (L)
Specifications		3	21-0012	Combo Coil	8	26-0162	Expansion Valve
Heating	-20200 Btu/hr (5920 W)	4	25-0070	Motor 12V	9	27-0602	O-Ring #8
Cooling	-15100 Btu/hr (4425 W)	5	25-0076	Motor 24V	10	26-0006	Bulb Clamp
Air Flow	-310 CFM (530 m ³ /h)		25-0021	Blower Wheel			
Current	-11 Amps/13.5V						
	-5.5 Amps/27V						
Weight	-10.5 lbs. (4.8 kg)						
	3-Speed motor.						
	Casing made of ABS.						

Features

The 309 is a compact unit that can be ducted to deliver air flow where desired. Ideal for dash or compartment mounting.

Heater-Air Conditioner **Model 321**



Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description	
13-2155	Heater-AC 12V	1	24-0539	Casing	6	22-0130	Heater Coil
		2	24-0274	Cover	7	26-0162	Expansion Valve
		3	24-0275	Front	8	26-0006	Bulb Clamp
		4	15-1513	Blower 12V	9	25-0029	Switch
		4A	25-0048	Blower Housing	10	25-0045	Thermostat
		4B	25-0348	Housing Top	11	25-0072	Knob
		4C	25-0060	Venturi	12	23-0055	Louver
		4D	25-0200	Blower Wheel	13	27-0602	O-Ring #8
		4E	25-0053	Motor 12V	14	28-0004	Grommet
		4F	25-0271	Motor Mount	15	28-0021	Snap-in Plug
		5	21-0046	Evaporator Coil			

Specifications

Heating	-40000 Btu/hr (11720 W)
Cooling	-27300 Btu/hr (8000 W)
Air Flow	-450 CFM (765 m ³ /h)
Current	-17 Amps/12V
Weight	-31 lbs. (14 kg)

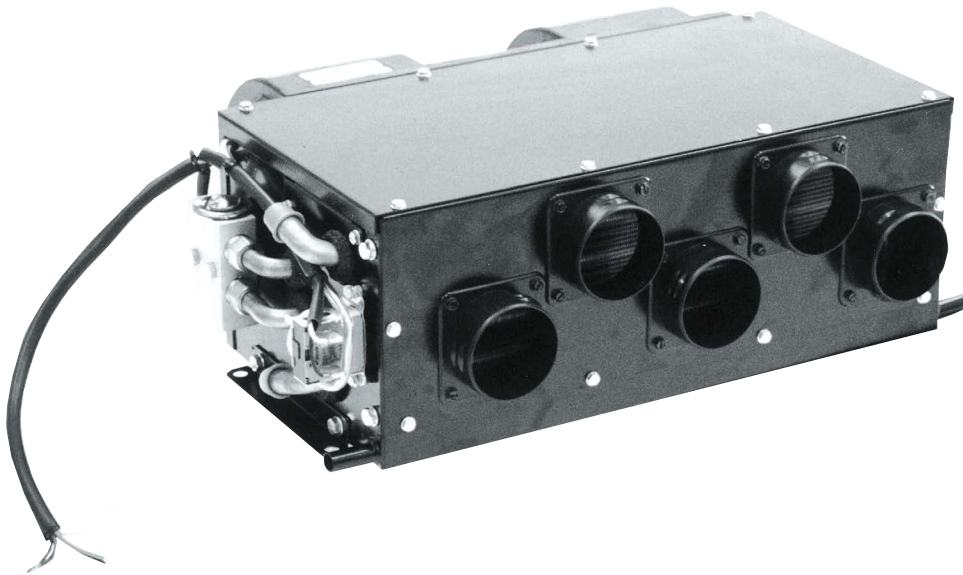
Made of 18GA (1.25mm) Cold Rolled Steel and finished in black semi-gloss epoxy powder coat.

Features

The 321 was designed for ambulance installation. It can be used for any deck mounting application. The high capacity of the 321 makes this unit ideal for ambulance and large cabs.



Heater-Air Conditioner **Model 325**



Part Descriptions: Specifications

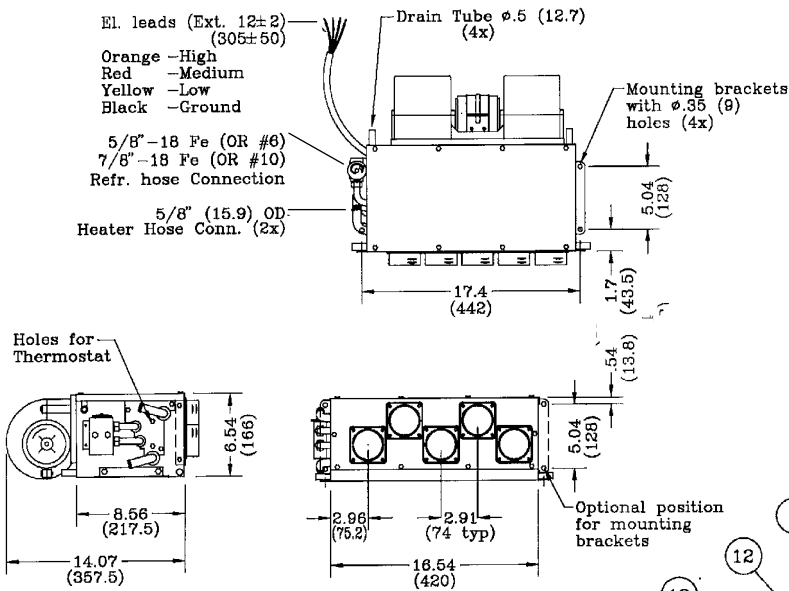
Part No.		Specifications	
13-2503	Heater-AC 12V	Heating	-36000 Btu/hr(10500 W)
13-2504	Heater-AC 24V	Cooling	-28500 Btu/hr (8350 W)
		Air Flow	-450 CFM (765 m ³ /h)
		Current	-16 Amps/13.5V -8 Amps/27V
		Weight	-19 lbs. (8.6 kg)
			Permanent magnet motor with ball bearings. Casing made of 18GA (1.25mm) Cold Rolled Steel and finished in black semi-gloss powder coat.

Features

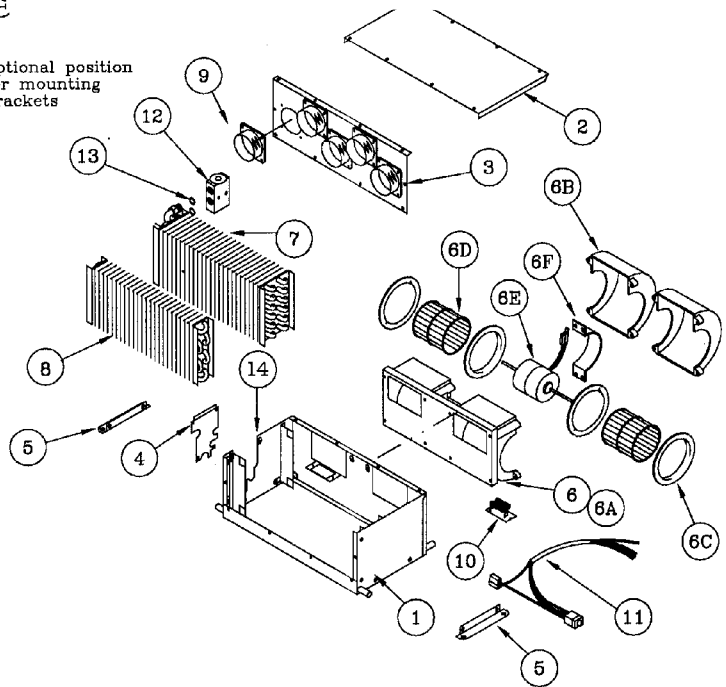
The 325 is a universal unit that fits all ducting requirements.



Dimension Profiles



Note:
 This Unit is supplied w/o Heater Valve and De-icing Thermostat wich have to be installed if needed.



Part Descriptions: Specifications

No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-0027	Casing	6B	25-0348	Housing Top	9	23-0125	Hose Adapter 2.5"
2	24-0028	Cover	6C	25-0060	Venturi	10	25-0136	Resistor 12V
3	24-0013	Cover	6D	25-0200	Blower Wheel		25-0552	Resistor 24V
4	24-0017	Coil Cover (H)	6E	25-0645	Motor 12V	11	25-0671	Wiring Harness
5	24-0033	Mounting Bracket		25-0650	Motor 24V	12	26-0190	Block Valve
6	15-1501	Blower 12V	6F	25-0271	Motor Mount	13	27-0602	O-Ring #8
	15-1502	Blower 24V	7	21-0091	Evaporator Coil	14	25-0069	Thermostat
6A	25-0048	Blower Housing	8	22-0348	Heater Coil			

Features

The 325 is a universal unit that fits all ducting requirements.

Heater-Air Conditioner **Model 330**

Note:

Switch is not as depicted in photo, has been changed to sealed rocker switch.



Part Descriptions: Specifications

Part No.		Specifications	
13-3061	Heater-AC 12V	Heating	-42200 Btu/hr(12370 W)
13-3062	Heater-AC 24V	Cooling	-28500 Btu/hr (8350 W)
13-3063	Air Conditioner 12V	Air Flow	-450 CFM (765 m ³ /h)
13-3064	Air Conditioner 24V	Current	-22 Amps/13.5V
13-3067	Heater 12V		-11 Amps/27V
		Weight	-38 lbs. (17.2 kg)

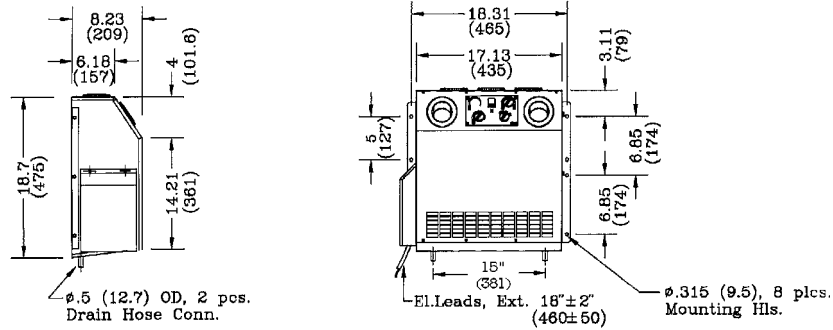
Permanent magnet motor with long life brushes.
3-Speed blower.
Made of 18GA (1.25mm) Cold Rolled Steel and finished in black semi-gloss epoxy powder coat.
Items 31-35 are optional and have to be ordered separately

Features

Although similar in design and function, the 330 is a larger capacity unit than the 320. It is ideal for street sweepers and large off-road cabs. Outside air can be achieved by adding a filter kit.

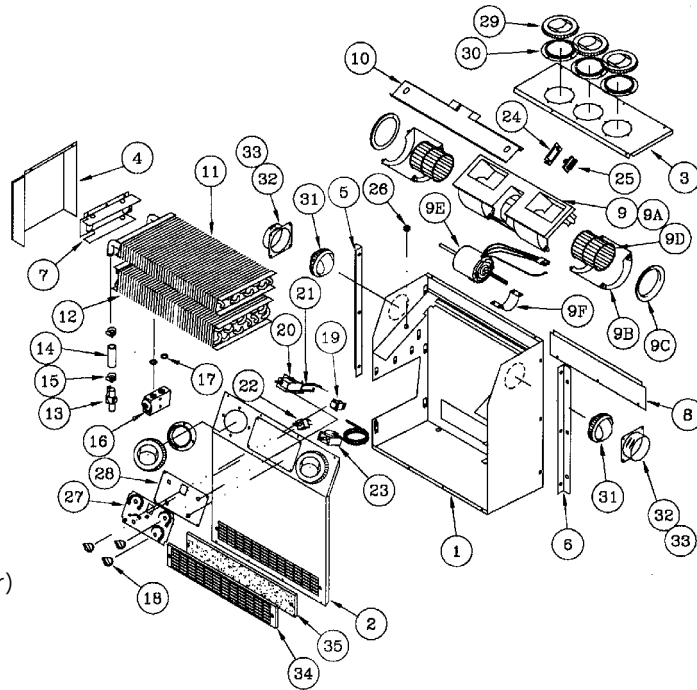


Dimension Profiles



Note:
 5/8-18 Male (OR #6)
 7/8-14 Male (OR #10)
 Refr. Hose Conn.
 5/8" OD Heater Hose Conn.
 All behind protection cover.

Electrical Connections
 Orange - Power (+)
 Black - Ground (-)
 White - To Compressor/Pressure Switch
 Blue - To Condensor/Relay (if fan condensor)



Part Descriptions: Specifications

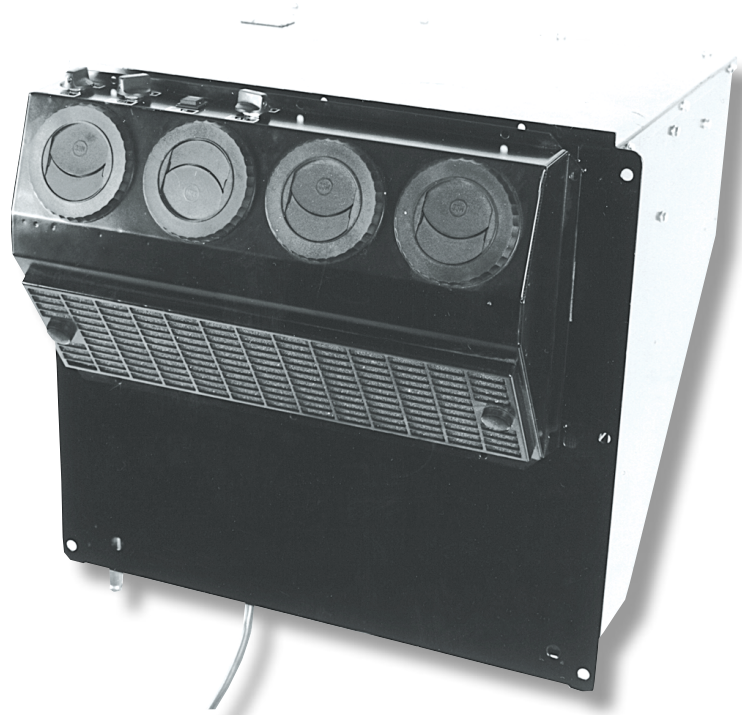
No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-1157	Casing	9F	24-0271	Motor Mount	23	25-0045	Thermostat
2	24-1158	Front Cover	10	24-1160	Blower Mount	24	24-0836	Resistor Bracket
3	24-1159	Top Cover	11	22-0078	Heater Coil	25	25-0120	Resistor 12V
4	24-0205	Protection Cover	12	21-0063	Evaporator Coil		25-0139	Resistor 24V
5	24-0290	Mounting Bracket (L)	13	26-0025	Heater Valve	26	28-0014	Grommet
6	24-0279	Mounting Bracket (R)	14	27-0225	Heater Hose 5/8"	27	28-0110	Overlay
7	24-0242	Coil Bracket	15	27-0059	Gear Clamp	28	24-1128	Control Plate
8	24-0291	Fresh Air Cover	16	26-0190	Block Valve	29	23-0005	Louver
9	15-1503	Blower 12V	17	27-0602	O-Ring #8	30*	23-0048	Adapter
	15-1502	Blower 24V	18	25-0435	Knob	31*	23-0087	Ball Louver
9A	25-0048	Blower Housing	19	25-0631	Switch Push 12V	32*	23-0110	Hose Adapter 2"
9B	25-0348	Blower Housing Top		25-0632	Switch Push 24V	33*	23-0125	Hose Adapter 2.5"
9C	25-0060	Venturi	20	26-0095	Rotary Control	34*	24-2018	Grill
9D	25-0200	Blower Wheel	21	26-0320	Bowden Cable	35*	26-0425	Air Filter
9E	25-0665	Motor 12V	22	25-0044	Blower Switch	36	25-0436	Wiring Harness (Not Shown)
	25-0650	Motor 24V						



Heater-Air Conditioner **Model 344**

Note:

Switch is not as depicted in photo, has been changed to sealed rocker switch.



Part Descriptions: Specifications

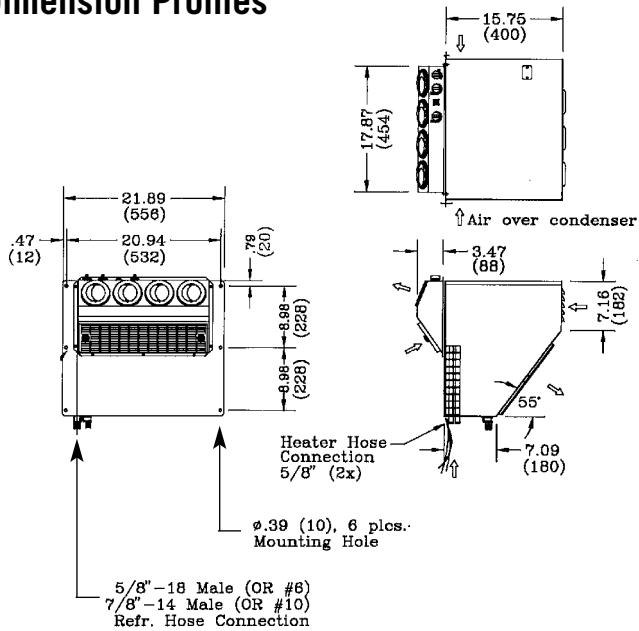
Part No.		Specifications		
13-4401	Heater-AC 12V	Heating	-34000 Btu/hr (9960 W)	Casing made of 16GA (1.5mm) Cold Rolled Steel and finished in black semi-gloss epoxy powder coat.
13-4402	Heater-AC 24V	Cooling	-17000 Btu/hr (4980 W)	
		Air Flow	-265 CFM (450 m ³ /h)	
		Current	-33.4 Amps/3.5V	
			-16.7 Amps/27V	
		Weight	-77 lbs. (35 kg)	

Features

The 344 is a unit that has the condenser mounted in the same compartment as the heater-air conditioner. This unit is mounted on the side of any cab and blows air into a louver console. Outside air is standard.

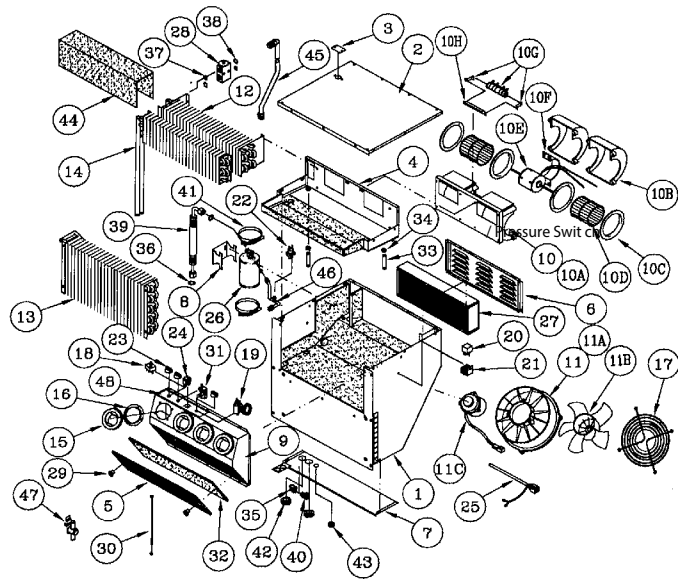


Dimension Profiles



El.Connection

Orange - Power (+)
Black - Ground (-)
White - To Compressor
Wiring Harness Ext. 3.5" ± .5"



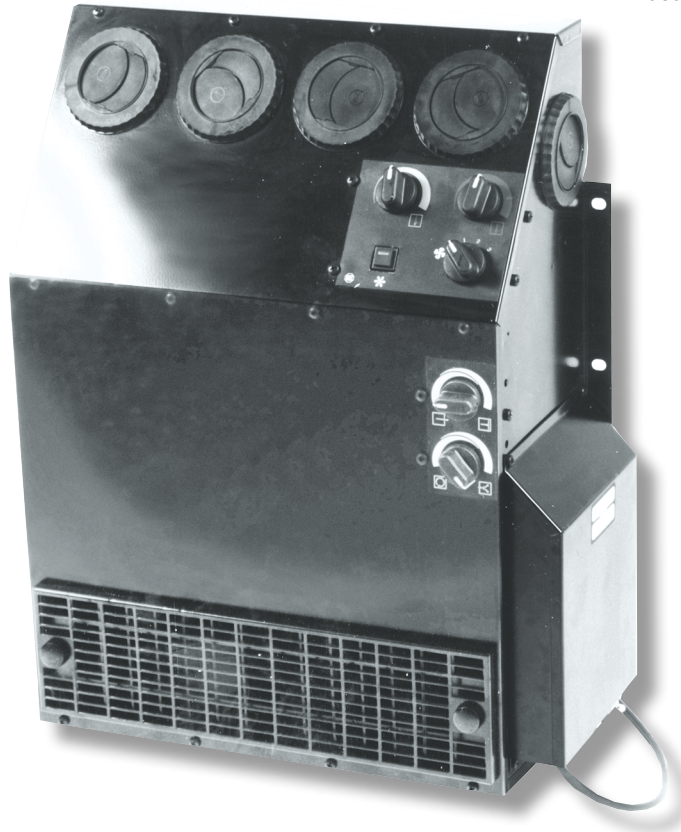
Part Descriptions: Specifications

No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-2229	Casing Assy.	11	15-7512	Fan Assy. 24V	27	26-0041	Air Filter
2	24-2230	Cover Assy.	11A	25-0577	Venturi	28	26-0190	Block Valve
3	24-1919	Sight Glass Cover	11B	25-0579	Fan	29	26-0263	Knurled Knob
4	24-2231	Drain Pan Assy.	11C	25-0621	Motor 12V	30	26-0347	Bowden Cable
5	24-1921	Recirc. Grill		25-0622	Motor 24V	31	26-0350	Rotary Control
6	24-1922	Filter Cover	12	21-0318	Evaporator Coil	32	26-0374	Air Filter (Recirc.)
7	24-1923	Bottom Plate	13	21-0319	Condenser Coil	33	27-0030	Drain Hose
8	24-1924	R/D Bracket	14	22-0292	Heater Coil	34	27-0091	Drain Hose Clamp
9	24-2010	Plenum	15	23-0005	Louver	35	27-0502	Clamp
10	15-1561	Blower 12V	16	23-0048	Adapter	36	27-0601	O-Ring #6
	15-1562	Blower 24V	17	23-0148	Finger Guard	37	27-0602	O-Ring #8
10A	25-0048	Blower Housing	18	25-0044	Blower Switch	38	27-0603	O-Ring #10
10B	25-0348	Blower Top	19	25-0045	Thermostat	39	27-1107	Refr. Hose Assy. #6
10C	25-0060	Venturi	20	25-0251	Relay 12V	40	27-1108	P-Clamp #8
10D	25-0200	Blower Wheel		25-0219	Relay 24V	41	27-1121	Gear Clamp
10E	25-0655	Motor 12V	21	25-0221	Socket/Relay	42	28-0005	Grommet
	25-0660	Motor 24V	22	25-0343	Pressure Switch	43	28-0045	Grommet
10F	25-0271	Motor Mount	23	25-0435	Knob	44	28-0210	Reticulated Foam
10G	25-0601	Resistor 12V	24	25-0631	Switch Push 12V	45	34-0164	Copper Tube Assy.
	25-0602	Resistor 24V		25-0632	Switch Push 24V	46	34-0167	Copper Tube Assy.
10H	29-0130	Resistor Bracket	25	25-1015	Wiring Harness	47	26-0025	Heater Valve
11	15-7511	Fan Assy. 12V	26	26-0018	Drier Receiver	48	28-0191	Overlay

Heater-Air Conditioner **Model 345**

Note:

Switch is not as depicted in photo, has been changed to sealed rocker switch.



Part Descriptions: Specifications

Part No.		Specifications	
13-4503	Heater-AC 12V	Heating	-46000 Btu/hr(13480 W)
13-4504	Heater-AC 24V	Cooling	-33000 Btu/hr (9670 W)
13-4590	Air Plenum Assy.	Air Flow	-450 CFM (765 m ³ /h)
13-4595	Rear Outlet Flapper Kit	Current	-22 Amps/13.5V -11 Amps/27V
		Weight	-48 lbs. (22 kg)

Made of 18GA (1.25mm) Cold Rolled Steel and finished in black semi-gloss "texture" epoxy powdercoat.

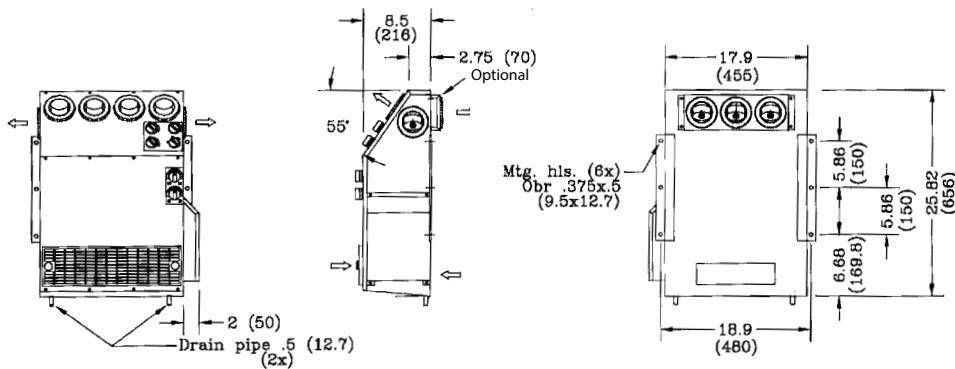
13-4595 Rear Outlet Flapper Kit includes 1 piece 26-0350, 25-0581, 26-0421 and 26-0079 with hardware. Kit is optional and has to be ordered separately

Features

The 345 is an excellent choice for armored cars and large cabs. Its many options include outside air, rear air damper control, and side air louvers.

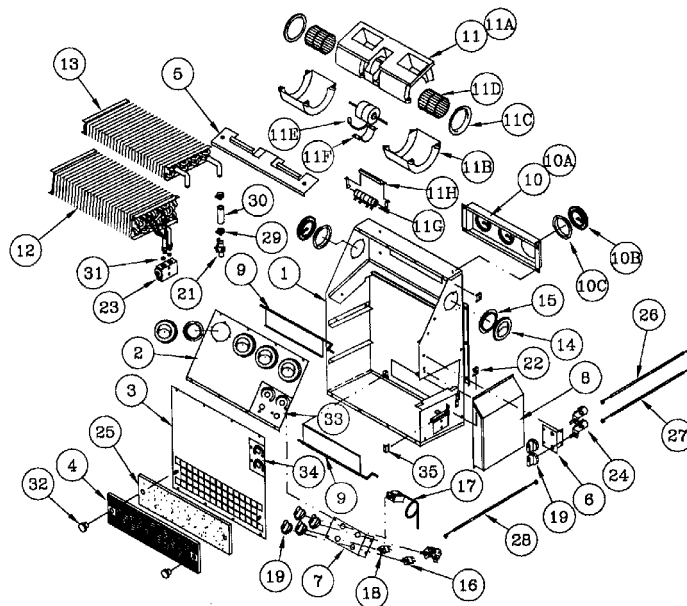


Dimension Profiles



El. Connection

- Orange - Power (+)
- Black - Ground (-)
- White - To Compressor/Press. Switch
- Blue - To Condenser/Relay (if Fan Condenser)



Part Descriptions: Specifications

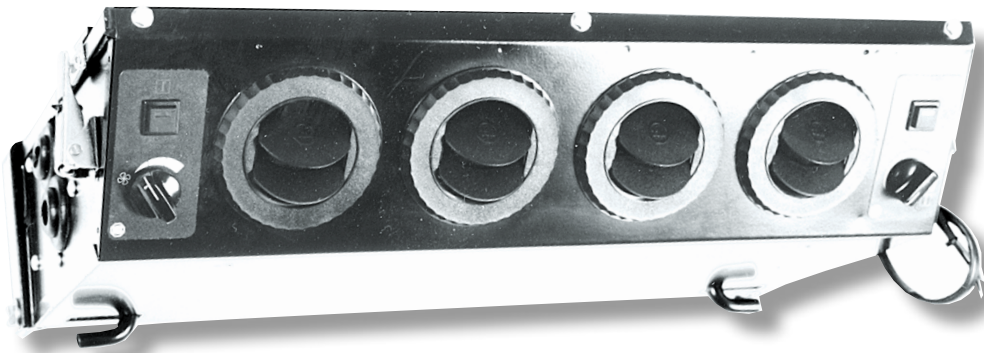
No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-2235	Casing	11C	25-0060	Venturi	21	26-0025	Heater Valve
2	24-2236	Face Cover	11D	25-0200	Blower Wheel	22	26-0079	Cable Clamp
3	24-2237	Front Cover	11E	25-0228	Motor 12V	23	26-0190	Block Valve
4	24-2238	Grill		25-0298	Motor 24V	24	26-0350	Rotary Control
5	24-2239	Blower Support	11F	25-0271	Motor Mount	25	26-0400	Air Filter
6	24-2240	Control Bracket	11G	25-0601	Resistor 12V	26	26-0421	Bowden Cable (R/A-Option)
7	24-2241	Control Bracket		25-0602	Resistor 24V	27	26-0422	Bowden Cable (F/A)
8	24-2242	Protection Cover	11H	29-0130	Resistor Bracket	28	26-0423	Bowden Cable (Heat)
9	24-2243	Flapper Door	12	21-0362	Evaporator Coil	29	27-0059	Gear Clamp
10	13-4590	Air Plenum Assy.	13	22-0318	Heater Coil	30	27-0225	Heater Hose
10A	24-2447	Plenum	14	23-0005	Louver	31	27-0602	O-Ring #8
10B	23-0005	Louver	15	23-0048	Adapter	32	26-0263	Knurled Knob
10C	23-0048	Adapter	16	25-0044	Blower Switch	33	28-0212	Overlay
11	15-1551	Blower 12V	17	25-0118	Thermostat Assy.	34	28-0213	Overlay
	15-1552	Blower 24V	18	25-0307	Switch	35	24-2274	Mounting Bracket
11A	25-0048	Blower Housing	19	25-0581	Knob			
11B	25-0348	Housing Top	20	25-0669	Wiring Harness (Not Shown)			



Heater-Air Conditioner **Model 346**

Note:

Switch is not as depicted in photo, has been changed to sealed rocker switch.



Part Descriptions: Specifications

Part No.		Specifications	
13-4603	Heater-AC 12V	Heating	- 17500 Btu/hr (5130 W)
13-4604	Heater-AC 24V	Cooling	- 17300 Btu/hr (5070 W) -AC
13-4623	Air Conditioner 12V	only	
13-4624	Air Conditioner 24V		- 14250 Btu/hr (4180 W) - Heater-AC
		Air Flow	- 250 CFM (425 m ³ /h)
		Current	- 12 Amps/13.5 V - 6 Amps/27V
		Weight	- 33 lbs. (15 kg)

3-Speed motor.
Made of 18GA (1.25mm) Cold Rolled Steel finished in black textured epoxy.

* Only for Heat/AC version.

** Only for AC version

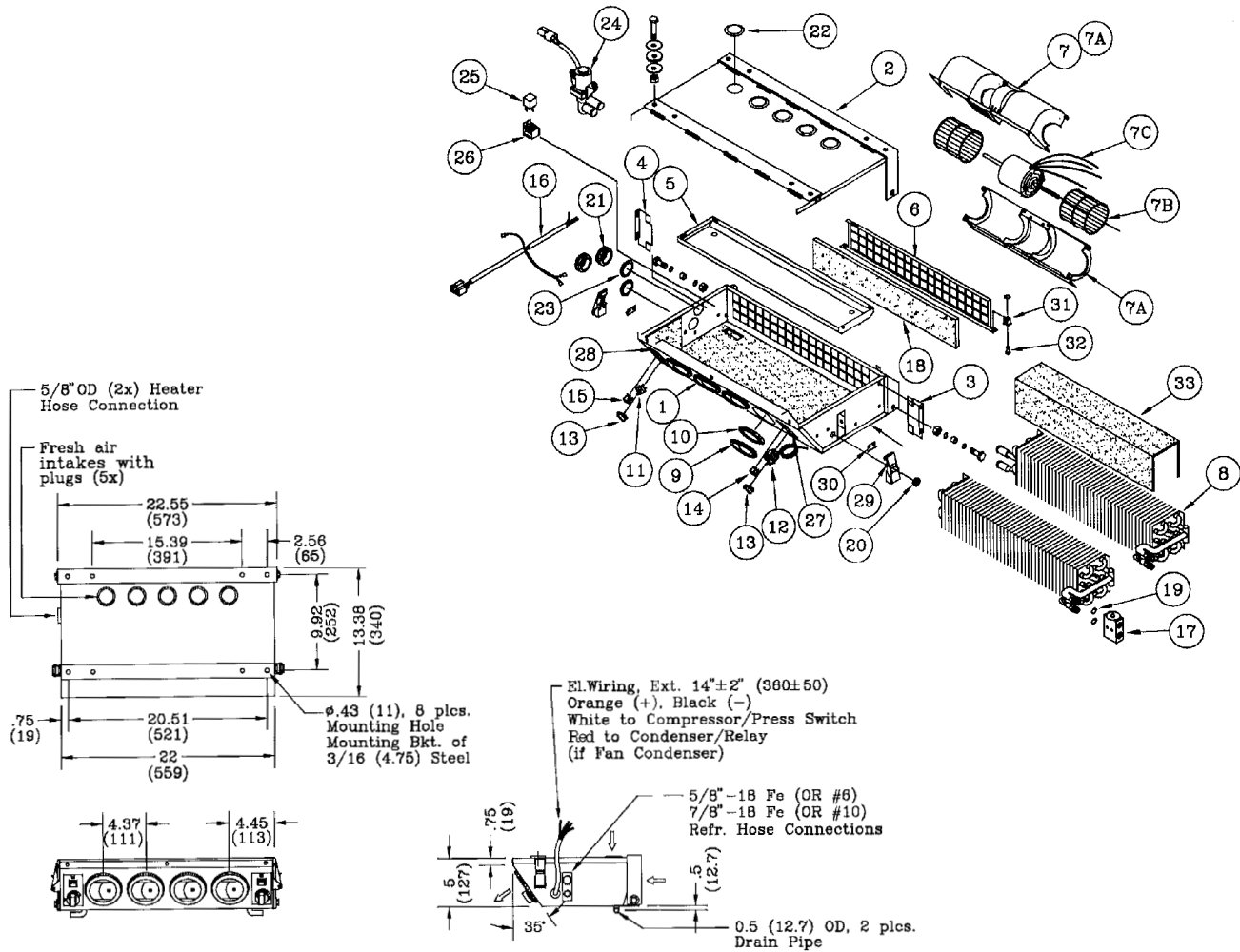
Features

The 346 is a compact overhead with a heater option. Its compact design makes it an excellent choice for many off-road cabs.

The convenient swing-down unit makes for easy service.



Dimension Profiles



Part Descriptions: Specifications

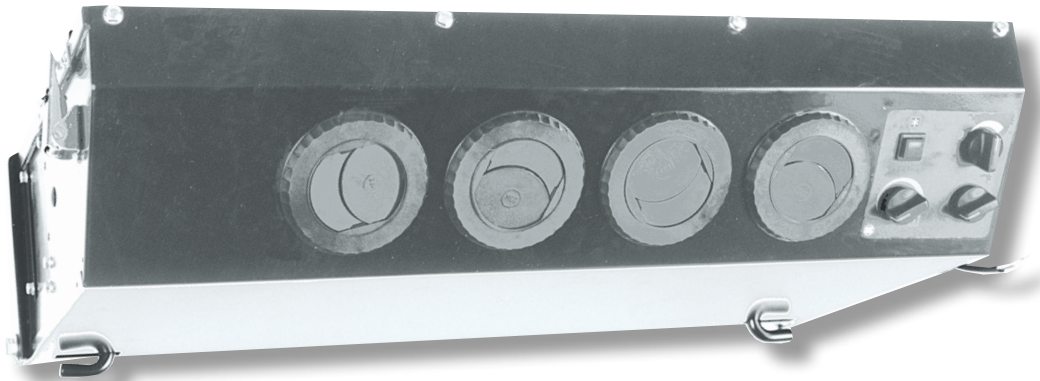
No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-1991	Casing Assy.	10	23-0048	Adapter	22	28-0012	Snap-in Plug
2	24-1992	Cover Assy.	11	25-0029	Blower Switch	23	28-0013**	Snap-in Plug
3	24-1979	Coil Bracket	12	25-0118	Thermostat	24	26-0348	Solenoid Valve 12V
4	24-1980	Coil Bracket	13	25-0435	Knob	26-0194	Solenoid Valve 24V	
5	24-1981	Drain Pan	14	25-0631	Switch Push 12V(AC)	25	25-0251	Relay 12V
6	24-1982	Filter Holder		25-0632	Switch Push 24V(AC)	25-0219	Relay 24V	
7	15-0533	Blower 12V	15	25-0633*	Switch Push 12V (Heat)	26	25-0221	Socket Relay
	15-0534	Blower 24V		25-0634*	Switch Push 24V (Heat)	27	28-0173	Overlay
7A	25-0017	Blower Housing	16	25-0636**	Wiring Harness	28	28-0174	Overlay
7B	25-0021	Blower Wheel		25-0637*	Wiring Harness	29	29-0221	Latch
7C	25-0643	Motor 12V	17	26-0190	Block Valve	30	29-0222	Latch Hook
	25-0644	Motor 24V	18	26-0375	Air Filter	31	29-0075	Receptacle
8	21-0315**	Evaporator Coil Combo Coil (HE)	19	27-0602	O-Ring #8	32	29-0076	Stud, Oval Slotted
9	21-0314*	Louver	20	28-0004	Grommet	29-0077	Retainer	
	23-0005		21	28-0005*	Grommet	33	28-0185	Reticulated Foam



Heater-Air Conditioner **Model 347**

Note:

Switch is not as depicted in photo, has been changed to sealed rocker switch.



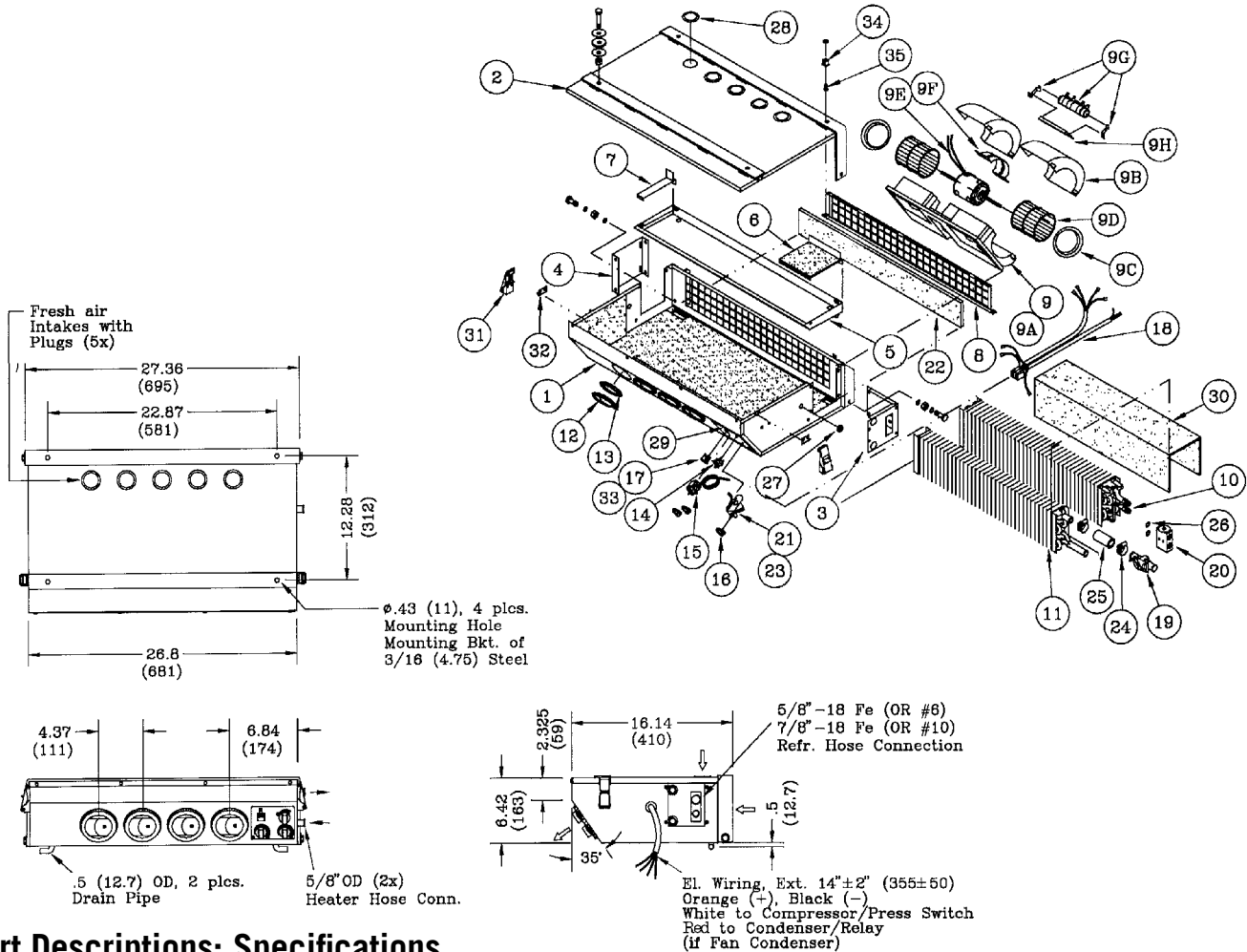
Part Descriptions: Specifications

Part No.		Specifications		
13-4703	Heater-AC 12V	Heating	-40000 Btu/hr (11720 W)	3-Speed motor.
13-4704	Heater-AC 24V	Cooling	-21000 Btu/hr (6150 W)	Made of 18GA (1.25mm) Cold Rolled Steel and finished in black textured epoxy powder coat.
13-4723	Air Conditioner 12V	Air Flow	-450 CFM (765 m ³ /h)	* Only for Heat/AC version.
13-4724	Air Conditioner 24V	Current	-23 Amps/13.5V	Heater and Evaporator Coil can be changed to have opposite connections.
13-4795	Heater Conv. Kit		-11.5 Amps/27V	
		Weight	-49 lbs. (22.2 kg)	

Features

The 347 is a larger capacity version of the 346. The coils can be flipped to either side of the unit to accommodate different installations. Outside air is available. This high capacity unit will handle most off-road cabs.

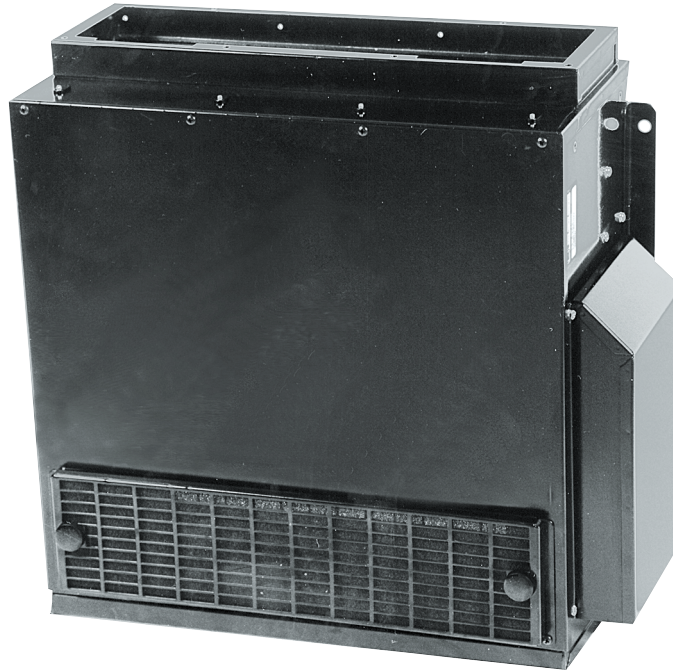
Dimension Profiles



Part Descriptions: Specifications

No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-2215	Casing Assy.	9F	25-0271	Motor Mount	21	26-0350*	Rotary Control
2	24-2216	Cover Assy.	9G	25-0601	Resistor 12V	22	26-0376	Air Filter
3	24-1956	Coil Bracket		25-0602	Resistor 24V	23	26-0377*	Bowden Cable
4	24-1957	Coil Bracket	9H	29-0130	Resistor Bracket	24	27-0059*	Gear Clamp
5	24-1958	Drain Pan	10	21-0313	Evaporator Coil	25	27-0225*	Heater Hose
6	24-2228	Coil Support Assy.	11	22-0290*	Heater Coil	26	27-0602	5/8"(HD)
7	24-1960	Coil Support	12	23-0005	Louver	27	28-0004	O-Ring #8
8	24-1961	Filter Holder	13	23-0048	Adapter	28	28-0012	Grommet
9	15-1561	Blower 12V	14	25-0044	Blower Switch	29	28-0172	Snap-in Plug
	15-1562	Blower 24V	15	25-0118	Thermostat	30	28-0187	Overlay
9A	25-0048	Blower Housing	16	25-0435	Knob		28-0189*	Reticulated Foam
9B	25-0348	Housing Top	17	25-0631	Switch Push 12V	31	29-0221	Reticulated Foam
9C	25-0060	Venturi		25-0632	Switch Push 24V	32	29-0222	Latch
9D	25-0200	Blower Wheel	18	25-0638	Wiring Harness	33	29-0075	Latch Hook
9E	25-0655	Motor 12V	19	26-0025*	Heater Valve	34	29-0076	Receptacle
	25-0660	Motor 24V	20	26-0190	Block Valve		29-0077	Stud, Oval Slotted Retainer

Heater-Air Conditioner **Model 353**



Part Descriptions: Specifications

Part No.		Specifications	
13-5303	Heater-AC 12V	Heating	-46000 Btu/hr (13480 W)
13-5304	Heater-AC 24Vt	Cooling	-34000 Btu/hr (9970 W)
		Air Flow	-450 CFM (765 m ³ /h)
		Current	-10.2 Amps/27V
			-20.4 Amps/13.5V
		Weight	-44 lbs. (22 kg)

Made of 18GA (1.25mm) Cold Rolled Steel and finished in black epoxy powder coat. Dim. marked (*) are inlet and outlet openings. **Items 18 to 28 are optional and have to be ordered separately.**

Features

The 353 was designed for log loader applications in Western North America. It is available in many different hose adapter options. It also has a 32" cover option for cab wall mount applications.

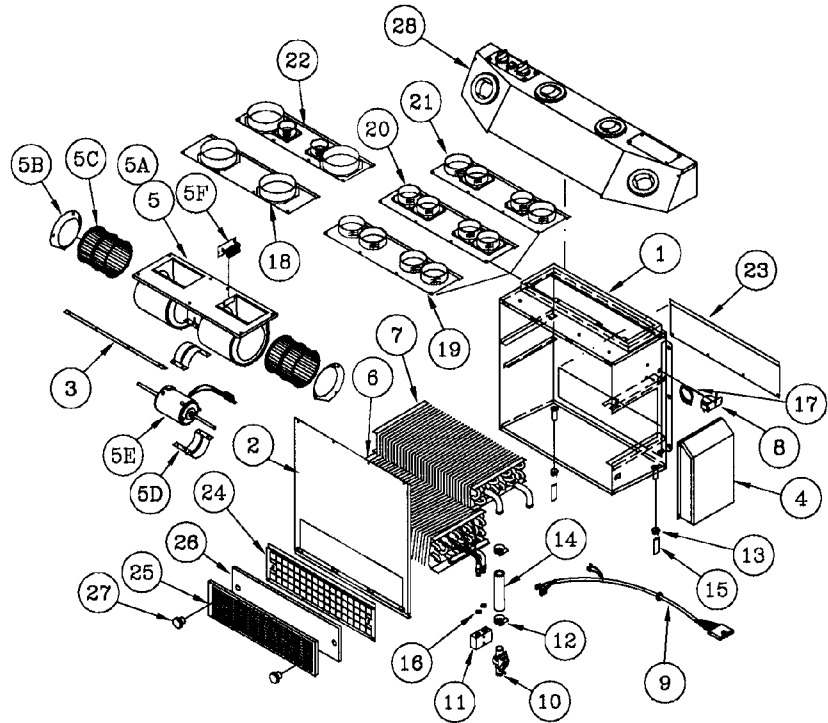
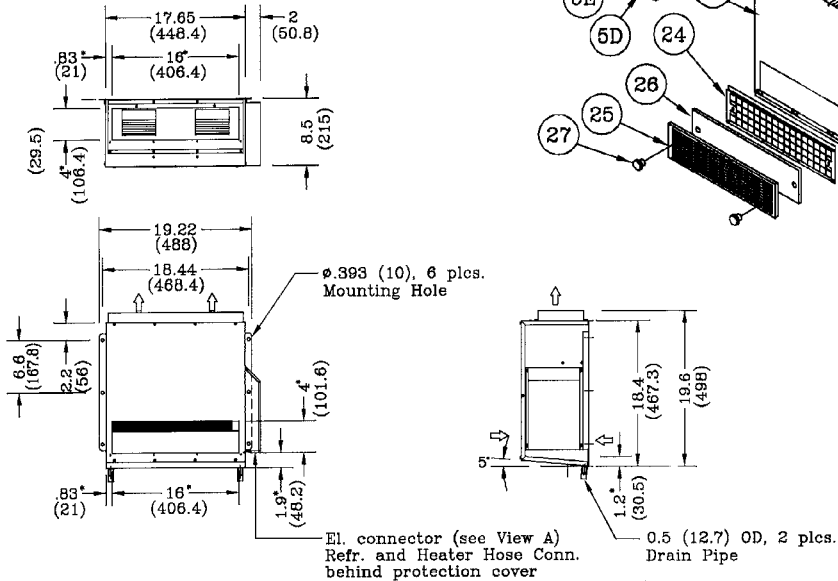
Dimension Profiles



VIEW A

- A - Orange - High speed
- B - Red - Medium speed
- C - Yellow - Low speed
- D - Black - Ground
- E - White - From AC On-Off Switch
- F - White - To compressor (over H/L switch)

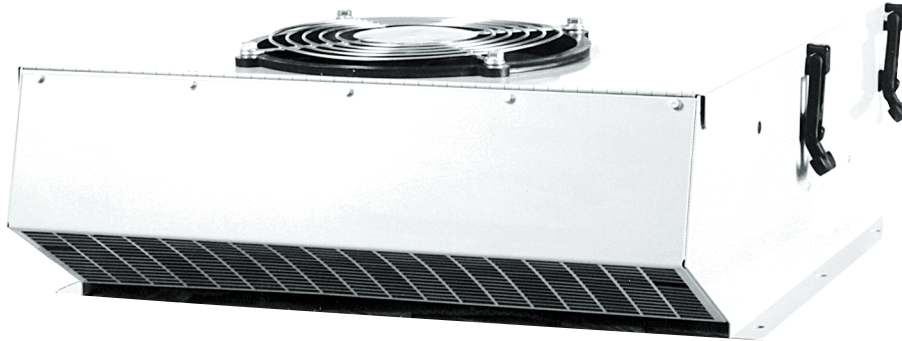
Weather pack 6-Way Male Connector
 #12010975 (MCC #31-1046) with terminal
 #12024582 (MCC #31-1039) and seal
 #12010293 (MCC #31-1024)



Part Descriptions: Specifications

No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-2204	Casing	6	21-0337	Evaporator Coil	18	23-0160	HA Plate (2x4")
2	24-2205	Cover	7	22-0299	Heater Coil	19	23-0161	HA Plate (4x3")
3	24-2206	Blower Mount	8	25-0069	Thermostat	20	23-0162	HA Plate (4x2 1/2")
4	24-2207	Protection Cover	9	25-0661	Wiring Harness	21	23-0165	HA Plate (2x3"/2x2 1/2")
5	15-2033	Blower 12V	10	26-0025	Heater Control Valve	22	23-0167	1/2")
	15-2034	Blower 24V	11	26-0190	Block Valve	23	24-1436	HA Plate (2x4"/2x2")
5A	25-0159	Blower Housing	12	27-0059	Gear Clamp	24	24-2212	Cover Plate
5B	25-0164	Venturi	13	27-0091	Drain Hose Clamp	25	24-1524	Grill Support
5C	25-0047	Blower Wheel	14	27-0225	Heater Hose	26	26-0412	Grill
5D	24-0234	Motor Mount	15	27-0421	Drain Valve	27	26-0263	Air Filter
5E	25-0265	Motor 12V	16	27-0602	O-Ring #8	28	13-5391	Knurled Knob
	25-0270	Motor 24V	17	28-0031	PVC Hose		13-5392	Plenum 12V
5F	25-0136	Resistor 12V						Plenum 24V
	25-0552	Resistor 24V						

Heater-Air Conditioner **Model 360**



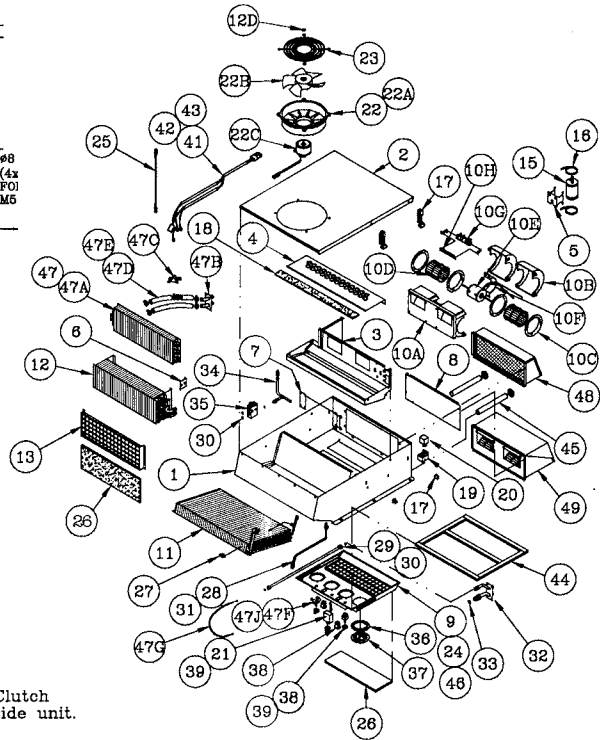
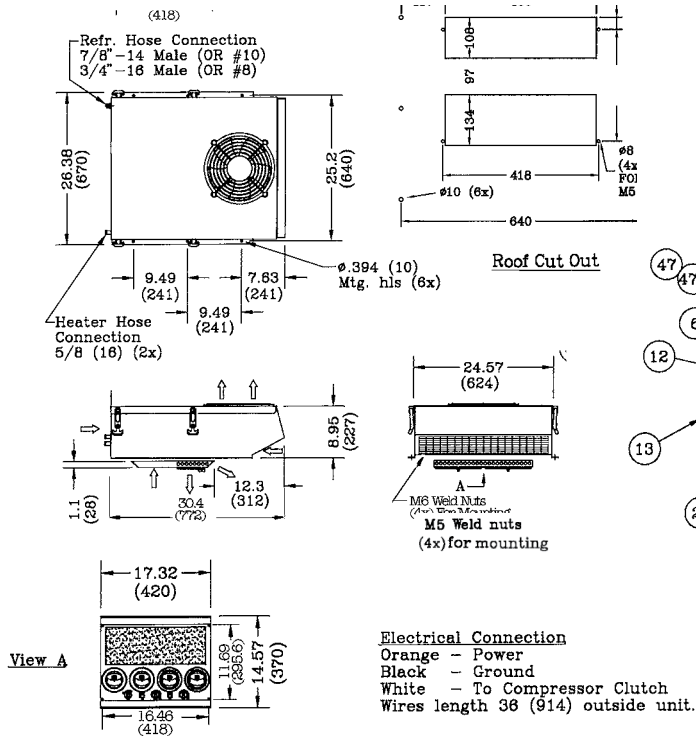
Part Descriptions: Specifications

Part No.		Specifications		
13-6023	Air Conditioner 12V	Heating	-46000 Btu/hr (13500 W)	Made of 14 (1.5mm) and 16 (1.5mm) GA Cold Rolled Steel and finished in grey semi-gloss epoxy powder coat. Items 47 to 49 are optional and have to be ordered separately.
13-6024	Air Conditioner 24V	Cooling	-27000 Btu/hr (7900 W)	
13-6095	Heater Conv. Kit	Air Flow	-400 CFM (680 m ³ /h)	
		Current	-40 Amps/12V -20 Amps/24V	
		Weight	-77 lbs. (35 kg)	

Features

The 360 was designed to offer a variety of installation options. It can be set up with an outside air or positive fan presswinger. It is also available with heat. A water and corrosion resistant condenser ensures years of service. Four nylon latches allow easy service access.

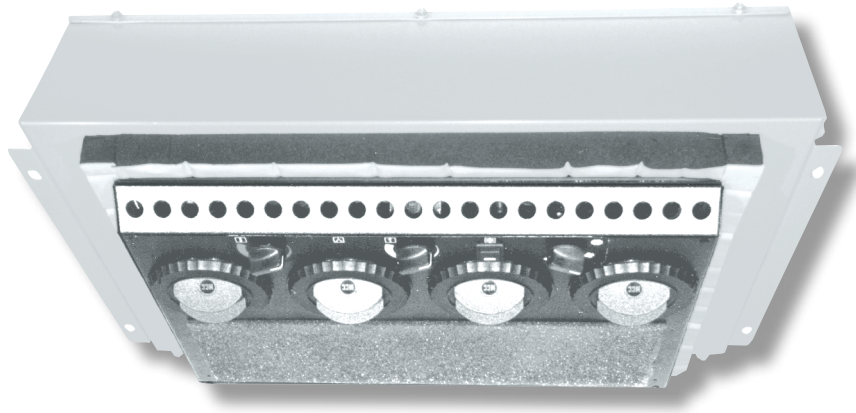
Dimension Profiles



Part Descriptions: Specifications

No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-2219	Casing Assy.	17	29-0236	Draw Latch Assy.	37	23-0005	Louver
2	24-2208	Cover Assy.	18	28-0242	Foam	38	25-0044	Blower Switch
3	24-2221	Drain Plate	19	25-0221	Socket Relay	39	25-0435	Knob
4	24-2270	Coil Support	20	25-0251	Relay 12V	40	25-0631	Switch Push 12V
5	24-2429	R.D. Bracket	21	25-0219	Relay 24V	41	25-0632	Switch Push 24V
6	24-2428	Bracket	22	25-0118	Thermostat	42	25-0693	Wiring Harness
7	24-2505	Plate	22	15-7501	Fan Assy. 12V	42	25-0689	Fuse 40A/12V (Blower)
8	24-2226	Cover Plate		15-7502	Fan Assy. 24V		25-0686	Fuse 20A/24V (Blower)
9	24-2430	Air Plenum	22A	25-0577	Venturi	43	25-0688	Fuse 30A/12V (Fan)
10	15-1561	Blower 12V	22B	25-0579	Fan	44	25-0685	Fuse 15A/24V (Fan)
	15-1562	Blower 24V	22C	25-0591	Motor 12V	44	28-0225	Gasket
10A	25-0048	Blower Housing		25-0592	Motor 24V	45	27-0030	Drain Hose
10B	25-0348	Housing Top	22D	29-0167	"C" Clip		27-0091	Drain Hose Clip
10C	25-0060	Venturi	23	23-0148	Finger Guard	46	28-0248	Overlay
10D	25-0200	Blower Wheel	24	28-0221	EPDM Seal	47	13-6095	Heater Conv. Kit
10E	25-0655	Motor 12V	25	29-0235	Cable Assy.	47A	22-0301	Heater Coil
	25-0660	Motor 24V	26	28-0244	Air Filter	47B	34-0267	Copper Tube Assy.
10F	25-0130	Motor Mount	27	25-0343	Pressure Switch	47C	26-0074	Heater Valve
10G	25-0601	Resistor 12V	28	34-0397	Copper Tube 3/8"	47D	27-0225	Heater Hose 5/8"
	25-0602	Resistor 24V	29	34-0398	Copper Tube 1/2"	47E	27-0059	Gear Clamp
10H	29-0130	Resistor Bracket	30	27-0602	O-Ring #8	47F	26-0345	Rotary Control
11	21-0341	Condenser Coil	31	27-0601	O-Ring #6	47G	26-0441	Bowden Cable
12	21-0339	Evaporator Coil	32	34-0261	Copper Tube Assy.	47J	25-0435	Knob
13	24-2433	Filter Support	33	27-0603	O-Ring #10	48	16-0200	Filter Unit
14	28-0243	Reticulated Foam	34	34-0364	Copper Tube 3/8"	49	16-0303	Filter Kit 12V
15	26-0018	Receiver Drier	35	26-0190	Block Valve		16-0304	Filter Kit 24V
16	27-1121	Gear Clamp 4"	36	23-0048	Adapter			

Heater-Air Conditioner **Model 369**



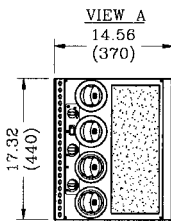
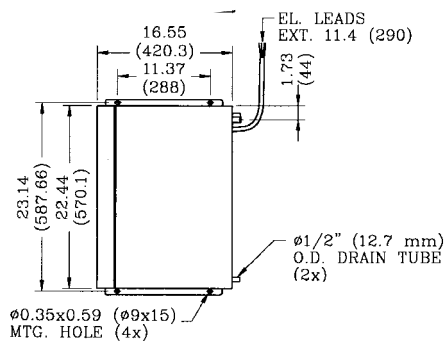
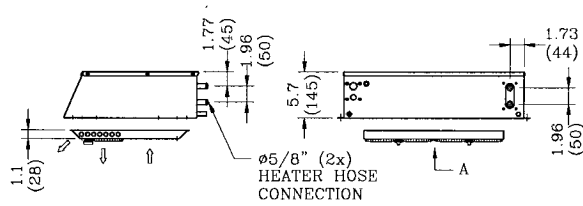
Part Descriptions: Specifications

Part No.		Specifications		
13-6903	Combo Unit 12V	Heating	-28000 Btu/hr (8200 W)	Casing made of 18GA (1.25mm) Cold Rolled Steel and finished in grey epoxy powder coat.
13-6904	Combo Unit 24V	Cooling	-20000 Btu/hr (5860 W)	
		Air Flow	-275 CFM (468 m ³ /h)	
		Current	-12 Amps/12V -6 Amps/24V	
		Weight	-30.9 lbs. (14 kg)	

Features

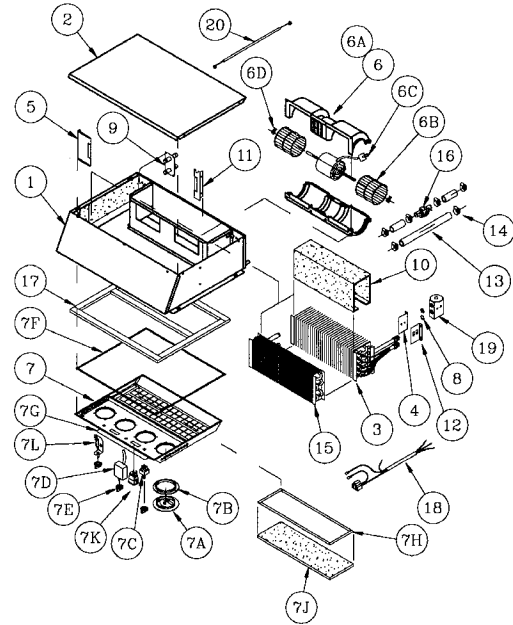
The 369 is a low profile roof mount heater-air conditioner.

Dimension Profiles



EL. CONNECTIONS

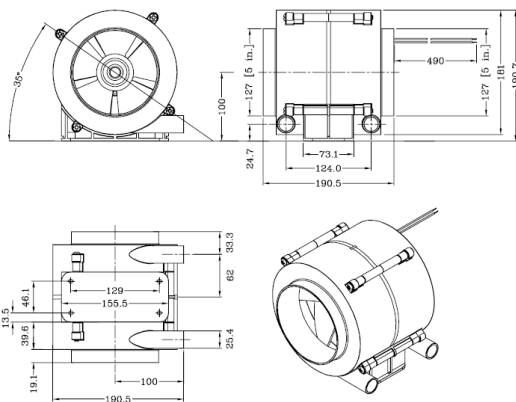
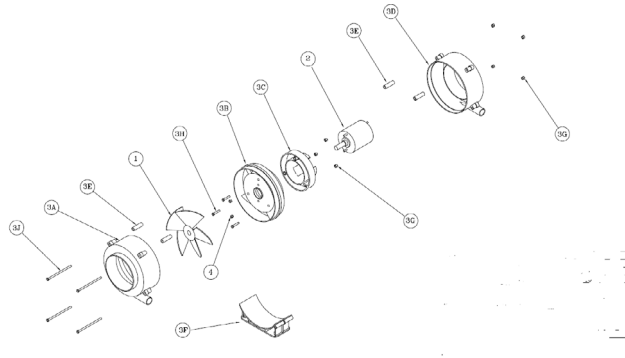
ORANGE - POWER (+)
 BLACK - GROUND (-)
 WHITE - TO PRESSURE SWITCH/COMPRESSOR
 BLUE - TO CONDENSER/RELAY (IF FAN COND.)



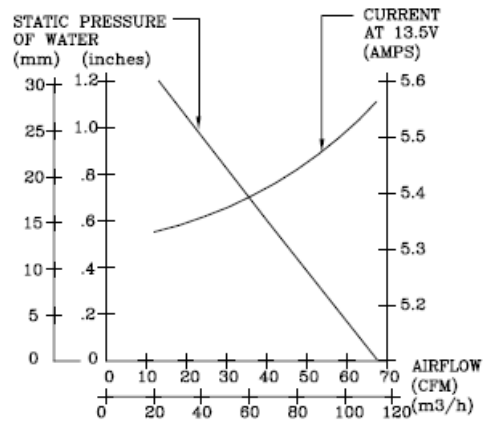
Part Descriptions: Specifications

No.	Part No.	Description	No.	Part No.	Description	No.	Part No.	Description
1	24-2842	Casing Assembly	7b	23-0048	Adapter	11	24-2722	Coil Support Bracket
2	24-2843	Cover Assembly	7c	25-0044	Blower Switch	12	24-2719	Valve Mtg. Bracket (R)
3	21-0399	Evaporator Coil	7d	25-0118	Thermostat	13	27-0225	Heater Hose (2x70mm&180mm)
4	24-2718	Valve mtg. brkt (L)	7e	25-0435	Knob	14	27-0059	Gear Clamp
5	24-2721	Coil Support (Long)	7f	28-0161	EPDM Seal (10mm)	15	22-0376	Heater Coil
6	15-0533	Blower 12V	7g	28-0248	Overlay	16	26-0025	Heater Valve
6	15-0534	Blower 24V	7h	28-0166	Hook Tape	17	28-0225	Gasket
6a	25-0017	Blower Housing	7j	28-0244	Air Filter	18	25-0737	Wiring Harness
6b	25-0021	Blower Wheel	7k	25-1106	Rocker Switch (G) 24V	19	26-0190	Block Valve
6c	25-0644	Motor 24V	7k	25-1105	Rocker Switch (G) 12V	20	26-0590	Bowden Cable
6c	25-0643	Motor 12V	7L	26-0350	Rotary Control w/nut			
6d	25-0022	Clip	8	27-0602	O-Ring #8			
7	26-0584	Air Plenum Assy. 24V	9	34-0560	Copper Tube Assy.			
7	26-0583	Air Plenum Assy. 12V	10	28-0230	Reticulated Foam			
7a	23-0005	Louver						

Filter Kit 605 - Pressurizer



Airflow



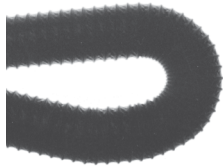
Part Descriptions: Specifications

No.	Part No.	Description
4	29-0230	HEX NUT (10-32)
3K	29-0746	BASE INSERT (M6)
3J	29-0745	¼ - 20X5" SLOT SCREW
3H	29-0744	¼ - 20X1.25" HEX HEAD BOLT
3G	29-0743	HEX LOCK NUT (1/4-20)
3F	28-0623	BASE
3E	28-0622	SPACERS
3D	28-0621	OUTLET
1	25-0013	FAN

No.	Part No.	Description
3C	28-0620	MOTOR MOUNT
3B	28-0619	LOUVER MOUNT
3A	28-0881	Ø3" INLET
3	28-0649	BODY ASSY. (Ø3" INLET)
2	25-0894	MOTOR 24V



Flex Hose



23-0102
2" Low friction, non collapsible,
sold in length of 47" (1200 mm)
23-0104
2.5" Low friction, non collapsible,
sold in length of 47" (1200 mm)



23-0015	2"	Collapsible	sold in multiples of 50 feet
23-0020	2.5"	"	"
23-0025	3"	"	"
23-0035	3.5"	"	"
23-0040	4"	"	"

Adapters



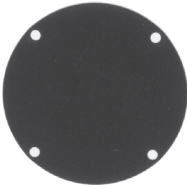
23-0048
Adapter, Nylon 66



23-0017
Hose adapter, 2"
23-0018
Hose adapter, 2.5"



23-0032
Hose adapter, 3",
Nylon 66



23-0006
Cover plate (ABS)



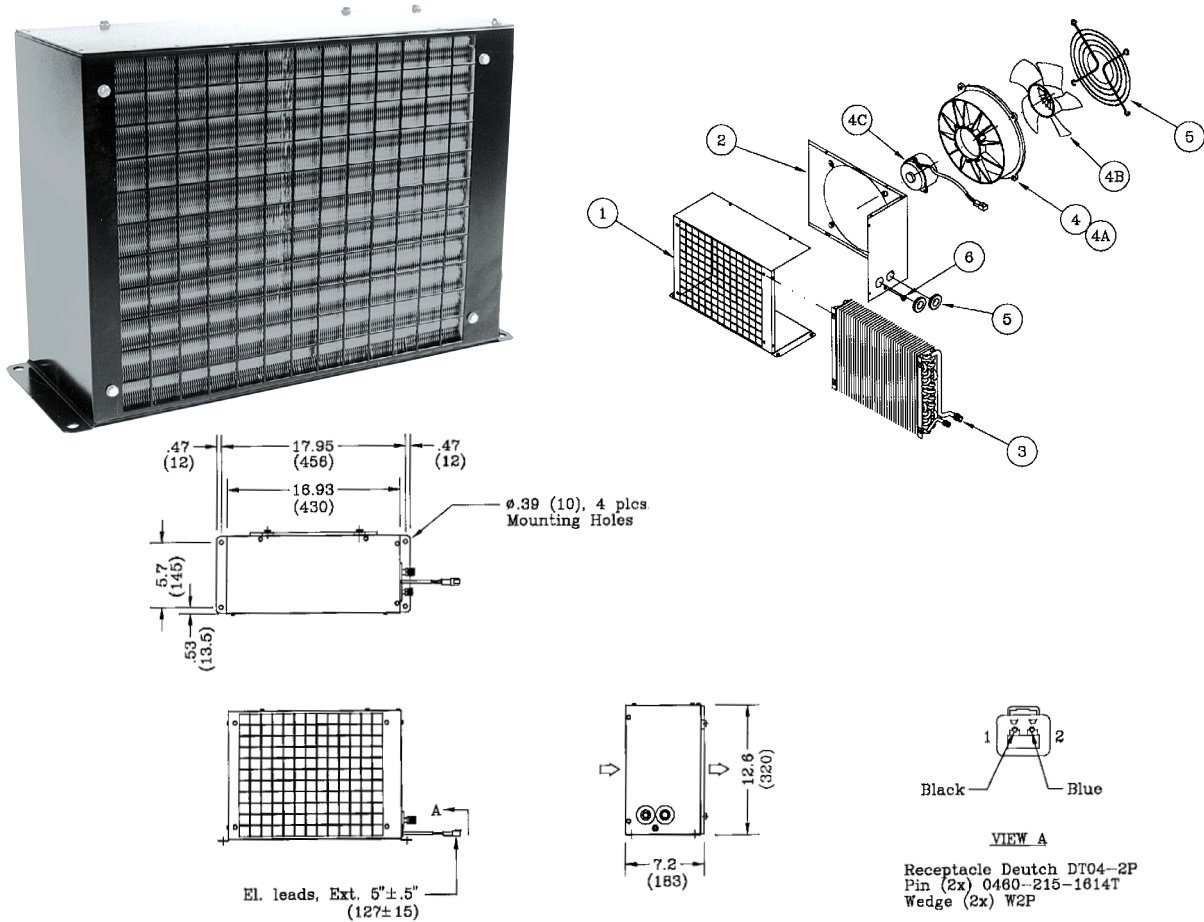
23-0143
Hose adapter, 60mm, Nylon 66

Mounting hole \varnothing 3.1" (79mm) . Screw hole 4 x \varnothing 84 mm.



V. Compact Condensers

Electric Condenser Model 402



Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description
14-0201	1	24-1591	Casing	4B	25-0579	Fan
14-0202	2	24-1592	Cover	4C	25-0621	Motor Assy. 12V
Specifications	3	21-0278	Condenser Coil		25-0622	Motor Assy. 24V
Capacity	4	15-7511	Fan Assy. 12V	5	28-0005	Grommet
		15-7512	Fan Assy. 24V	6	28-0014	Grommet
	4A	25-0577	Venturi	7	23-0148	Finger Guard

Capacity -to support a cooling capacity of 26500 Btu/hr (7770 W)

Air Flow -1025 CFM (1735 m³/h)

Current -21.2 Amps/13.5V
-10.6 Amps/27V

Weight -24 lbs. (11 kg)

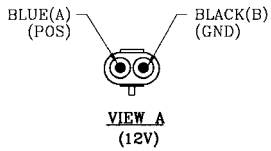
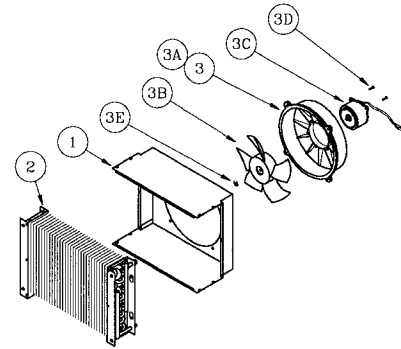
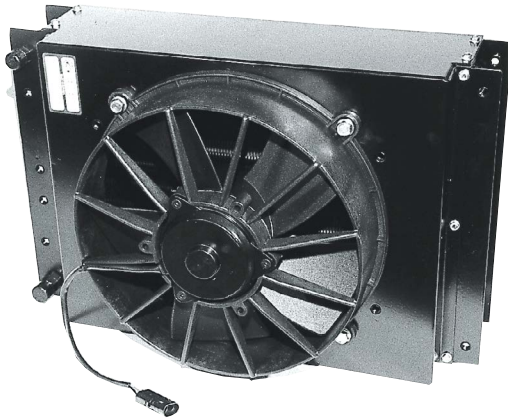
Casing made of 14/18GA (2/1.25mm) Cold Rolled Steel finished in black semi-gloss epoxy powder coat.

Features

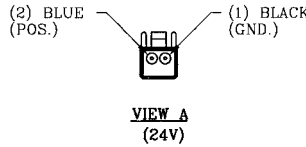
The 402 is an excellent light duty application condenser. It provides the option of deck or roof mounting.

Electric condensers are used when radiator mounted types cannot be installed. The reasons being insufficient air flow and/or when additional heat load over the engine cannot be tolerated. Condensing capacity will remain constant and will not be dependent on engine RPM.

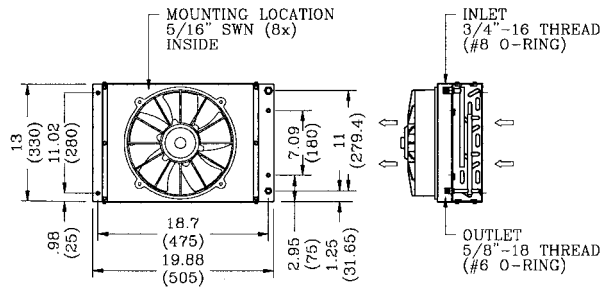
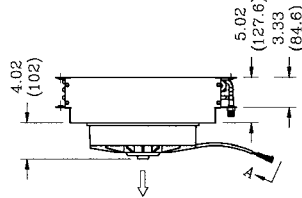
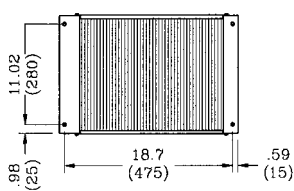
Electric Condenser Model 403



Electrical Connections
2-way male weather pack connector, packard #12010973 (MCC #31-1068) with male terminal #12124582-L (2x) (MCC #31-1039) and seal #12010293 (2X) (MCC #31-1024)



Electrical Connections
2-way deutsch plug DT06 - 25 (MCC #31-1123) with #W2S wedge (MCC #31-1124) and 2 contact s 14/16Ga #0462-209-1614 (MCC #31-1125)



Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description			
14-0301	Condenser 12V	1	24-2514	Casing	25-0778	Motor 24V			
14-0302	Condenser 24V	2	21-0412	Condenser Coil	3C	25-0591	Motor 12V		
Specifications	Capacity	-To support a cooling capacity of 29700 Btu/hr (8700 W)	3	15-7604	Fan Assembly 24V	3D	29-0166	#10-32 Hex. Socket	
		Airflow	-1150 CFM (1950 m ³ /h)	3	15-7601	Fan assembly 12V	3E	29-0197	"C" Clip
		Current	-19.2 Amps (at 13.5V)	3A	25-0577	Venturi			
			-9 amps (at 27V)	3B	25-0728	Fan			
Weight	-28.7 lbs (13kg)								

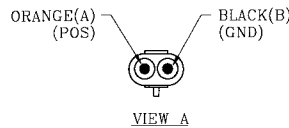
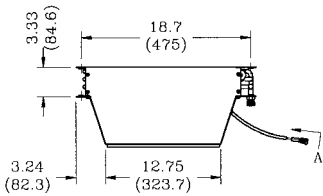
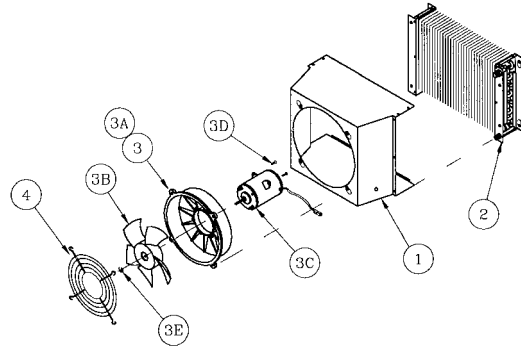
Note: Casing made of 16GA satin coat steel, endplates made of 14GA satin coat steel and both finished in black semi gloss epoxy powder coat.

Electrical condensers are used when radiator mounted types cannot be installed. The reasons being insufficient air flow and /or when additional heat load over the engine cannot be tolerated. Condensing capacity will remain constant and will not be dependent on engine RPM.

Features

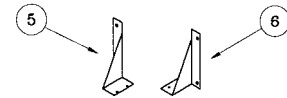
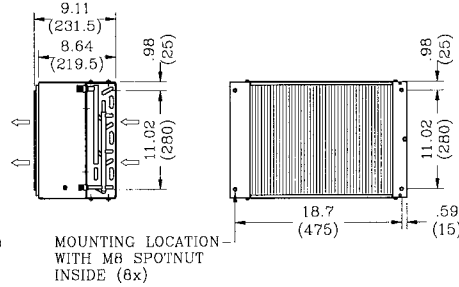
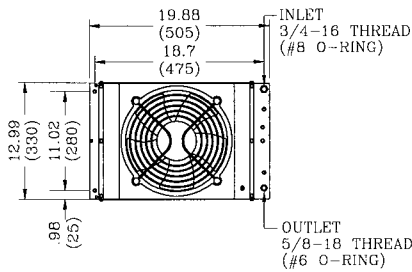
The 403 is a compact high performance condenser.

Electric Condenser Model 405



Electrical Connections:

2-way male weather pack connector, packard #12010973 (MCC #31-1068) with male terminal #12124582-L(2x) (MCC #31-1039) and seal #12010293 (2x) (MCC #31-1024)



Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description
14-0513		Condenser 12V		1	24-2892	Casing
14-0514		Condenser 24V		2	21-0412	Condenser Coil
Specifications						
Capacity		-to support a cooling capacity of 29650 Btu/hr (8700 W)		3	15-7551	Fan Assy. 12V
Air Flow		-1150 CFM (1950 m ³ /h)		3A	15-7552	Fan Assy. 24V
Current		-17 Amps (1.35V)			25-0577	Venturi
Weight		-8.5 Amps at (27V)		3B	25-0579	Fan
		-28.5 lbs. (13 kg)				
				3C	25-0745	Motor 12V
					25-0746	Motor 24V
				3D	29-0166	#10 -32 HEX. Socket CTR.Sunk
				3E	29-0167	"C" clip
				4	23-0148	Finger Guard
				5	24-3639	Bracket, Left (Opt.)
				6	24-3640	Bracket, Right (Opt.)

Items 5 and 6 have to be ordered separately.

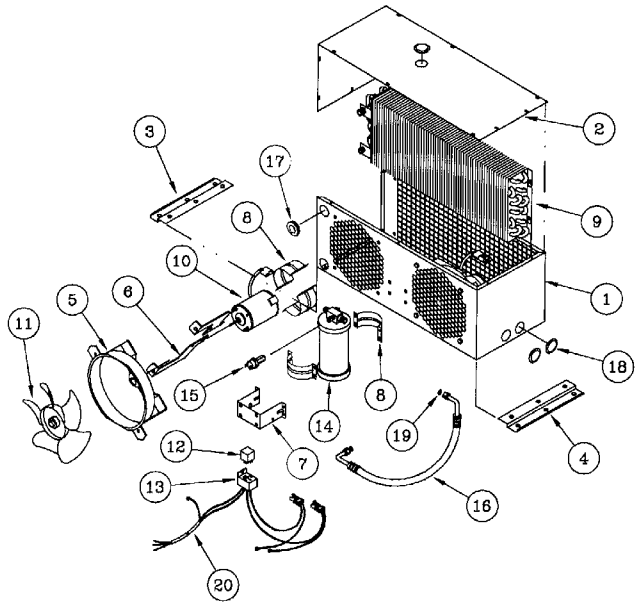
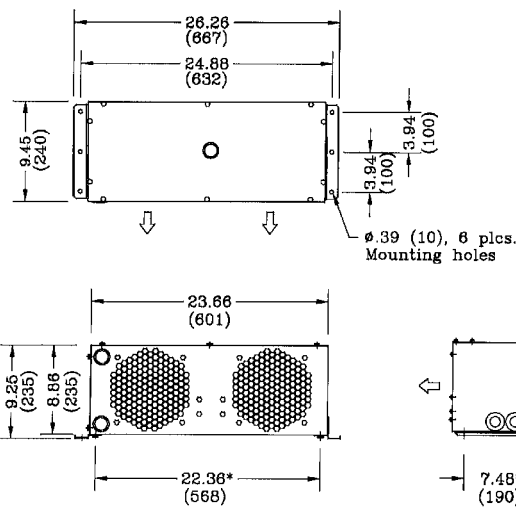
Casing made of 16GA (1.5mm) Satin Coat Steel. Endplates made of 14GA (2mm) Satin Coat Steel. Both are finished in black semi-gloss epoxy powder coat.

Electric condensers are used when radiator mounted types cannot be installed. The reasons being insufficient air flow and /or when additional heat load over the engine cannot be tolerated. Condensing capacity will remain constant and will not be dependent on engine RPM.

Features

The 405 is a compact, high capacity unit. Its compact design allows for wall or flush mounting applications in engine compartments. A motor with longer life than in the 403 is used in this condenser which makes it slightly deeper.

Electric Condenser Model 406



Note
El. Wiring and Refr. Hose to be connected inside casing

Wiring
Orange(+), Black(-)
Blue (from On-Off AC)

Refrigerant
Inlet-3/4"-18 Male (# 8 O-Ring)
Outlet-5/8"-18 Male (#6 O-Ring)

(*) - Dimensions of Mounting Hole (M8 Thd)

Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description	
14-0611	Condenser 12V	1	24-0145	Casing	11	25-0251	Relay 12V
14-0612	Condenser 24V	2	24-0159	Cover		25-0219	Relay 24V
Specifications		3	24-1993	Mounting Bracket (L)	12	25-0221	Socket, Relay
Capacity	-to support a cooling capacity of 23600 Btu/hr (6925 W)	4	24-1998	Mounting Bracket (R)	13	26-0220	Receiver Drier
Air Flow	-950 CFM (560 m ³ /h)	5	25-0309	Venturi Assy.	14	25-0343	Pressure Switch
Current	-14 Amps/13.5V	6	25-0434	Motor Support	15	27-0288	Refr. Hose Assy. #6
	-7 Amps /27V	7	24-0343	Receiver Drier Bracket	16	28-0005	Grommet
Weight	-30 lbs. (13.6 kg)	8	24-0234	Mount	17	28-0013	Snap-in Plug
		9	21-0122	Condenser Coil	18	27-0601	O-Ring #6
		10	25-0470	Motor 12V	19	25-0451	Wiring Harness
			25-0490	Motor 24V			

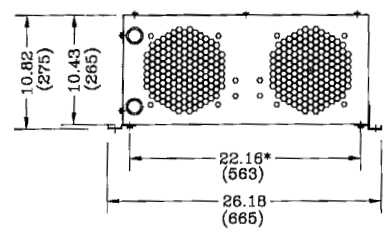
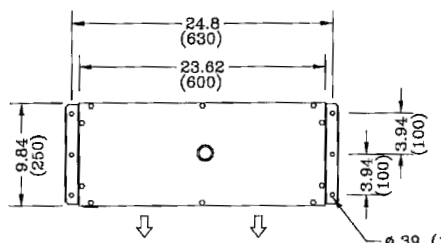
Casing made of 16GA (1.5mm) and mounting brackets of 14GA (2mm) Cold Rolled Steel finished in black semi-gloss epoxy powder coat.

Electric condensers are used when radiator mounted types cannot be installed. The reasons being insufficient air flow and /or when additional heat load over the engine cannot be tolerated. Condensing capacity will remain constant and will not be dependent on engine RPM.

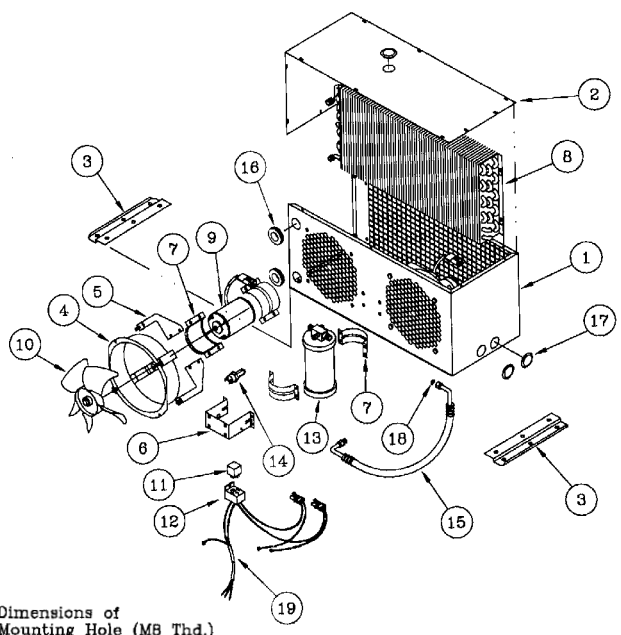
Features

The 406 is a deck or roof mount condenser that has the receiver/drier mounted internally. The hose can exit either side of the 406. Condenser must be mounted as shown in picture.

Electric Condenser Model 407



φ.39 (10), 6 plcs. (*) - Dimensions of Mounting Hole (M8 Thd.)



Note
 El.Wiring and Refr. Hose to be connected inside casing
Wiring
 Orange(+), Black(-)
 Blue (from On-Off AC)
Refrigerant
 Inlet-3/4"-16 Male (# 8 O-Ring)
 Outlet-5/8"-16 Male (#6 O-Ring)

Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description	
14-0701	Condenser 12V	1	24-1199	Casing	11	25-0108	Fan
14-0702	Condenser 24V	2	24-1200	Cover	12	25-0251	Relay 12V
Specifications		3	24-1984	Mounting Bracket		25-0219	Relay 24V
Capacity	-to support a cooling capacity of 29000 Btu/hr (8500 W)	4	25-0388	Venturi	13	25-0221	Socket, Relay
Air Flow	-1100 CFM (1870 m ³ /h)	5	25-0434	Motor Support	14	26-0220	Receiver Drier
Current	-14 Amps/13.5V -7 Amps /27V	6	24-0343	Receiver Drier Bracket	15	25-0343	Pressure Switch
Weight	-33 lbs. (15 kg)	7	24-0234	Mount	16	27-0288	Refr. Hose Assy. #6
		8	21-0203	Condenser Coil	17	28-0005	Grommet
		9	25-0470	Motor 12V	18	28-0013	Snap-in Plug
			25-0490	Motor 24V	19	27-0601	O-Ring #6
		10	25-0181	Fan	20	25-0451	Wiring Harness

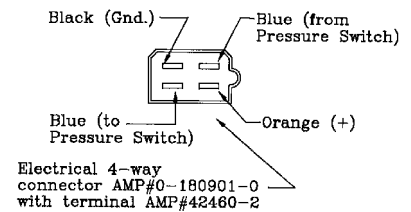
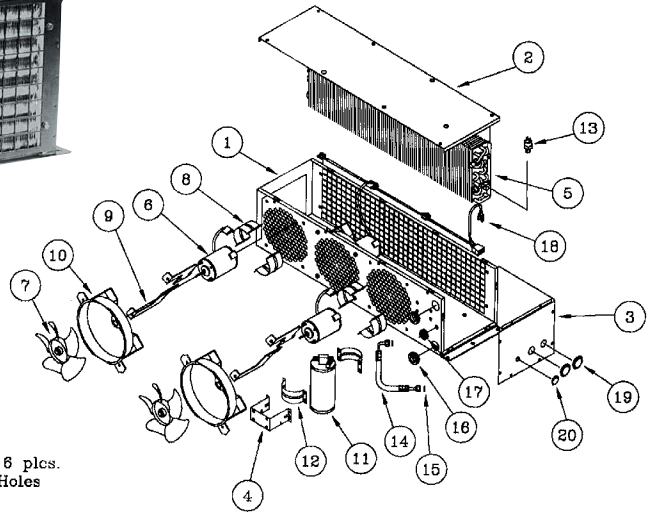
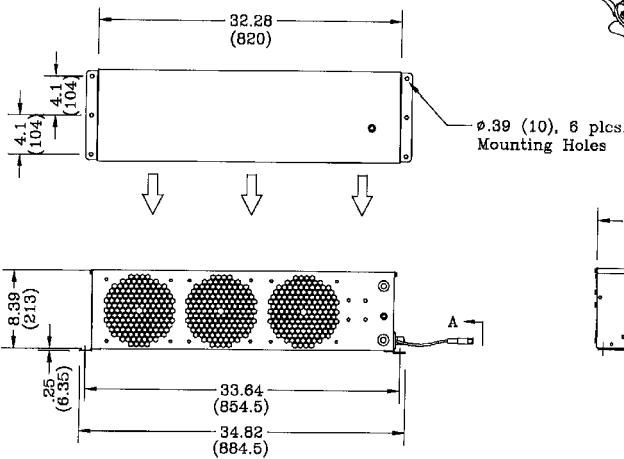
Casing made of 16GA (1.5mm) and mounting brackets of 14GA (2mm) Cold Rolled Steel finished in black semi-gloss epoxy powder coat.

Electric condensers are used when radiator mounted types cannot be installed. The reasons being insufficient air flow and /or when additional heat load over the engine cannot be tolerated. Condensing capacity will remain constant and will not be dependent on engine RPM.

Features

The 407 is a larger capacity version of the 406. With the receiver/drier mounted internally, installation time is minimized. Condenser must be mounted as shown in picture.

Electric Condenser **Model 408**



View A

Part Descriptions: Specifications

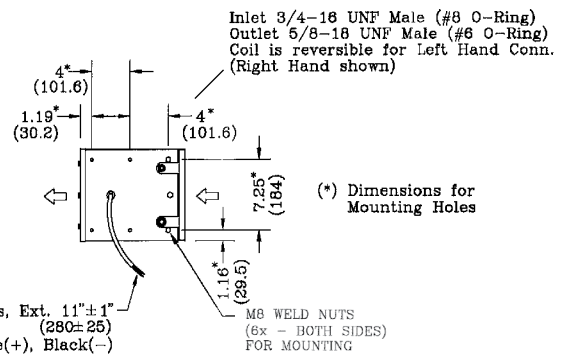
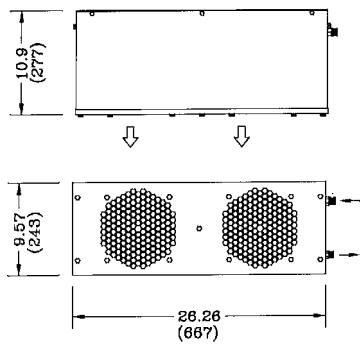
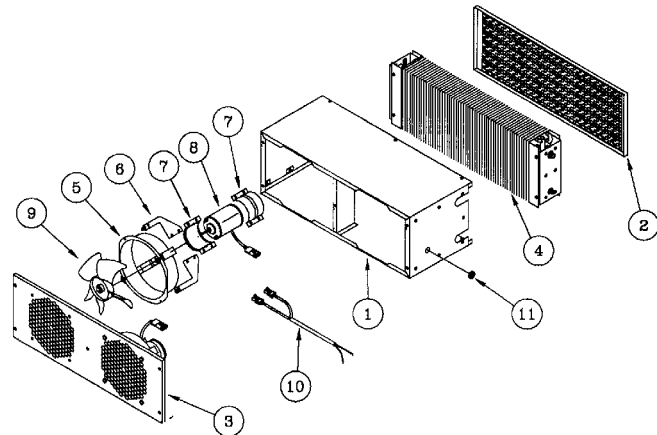
Part No.	No.	Part No.	Description	No.	Part No.	Description	
14-0851	Condenser 12V	1	24-0964	Casing	11	26-0219	Receiver Drier
14-0852	Condenser 24V	2	24-0965	Cover	12	25-0297	Mount
Specifications		3	24-0966	Side Cover	13	25-0308	Pressure Switch
Capacity	-to support a cooling capacity of 29000 Btu/hr (8500 W)	4	24-0967	Receiver Drier Bracket	14	27-0373	Refrigerant Hose #6
Air Flow	-1050 CFM (1785 m ³ /h)	5	21-0166	Condenser Coil	15	27-0601	O-Ring #6
Current	-20 Amps/13.5V	6	25-0185	Motor 12V	16	28-0005	Grommet
	-10 Amps/27V	7	25-0190	Motor 24V	17	28-0004	Grommet
Weight	-47 lbs. (21.3 kg)	8	25-0108	Fan C.C.W.	18	25-0450	Wiring Harness
Casing made of 16GA (1.5mm) and mounting bracket of 14GA (2mm) Cold Rolled Steel finished in black semi-gloss epoxy powder coat.		9	24-0234	Motor Mount	19	28-0013	Snap-in Plug
		10	25-0434	Motor Support	20	28-0011	Snap-in Plug
			25-0309	Venturi Assy.			

Electric condensers are used when radiator mounted types cannot be installed. The reasons being insufficient air flow and /or when additional heat load over the engine cannot be tolerated. Condensing capacity will remain constant and will not be dependent on engine RPM.

Features

The 408 was designed for large capacity requirements in the forestry, construction and mining industries. Its three fan design ensures high capacity performance in the most demanding conditions. Receiver/drier mounted internally. Condenser must be mounted as shown in picture.

Electric Condenser **Model 409**



Part Descriptions: Specifications

Part No.	No.	Part No.	Description	No.	Part No.	Description
14-0901	1	24-1967	Casing	7	24-0234	Motor Mount
14-0902	2	24-1966	Grill	8	25-0181	Fan
	3	24-1968	Cover	9	25-0470	Motor 12V
	4	21-0309	Condenser Coil		25-0490	Motor 24V
	5	25-0388	Venturi	10	25-0635	Wiring Harness
	6	25-0434	Motor Support	11	28-0045	Grommet

Specifications

Capacity -to support a cooling capacity of 28500 Btu/hr (8350 W)

Air Flow -1100 CFM (1870 m³/h)

Current -14 Amps/13.5V
-7 Amps/27V

Weight -46 lbs. (21 kg)

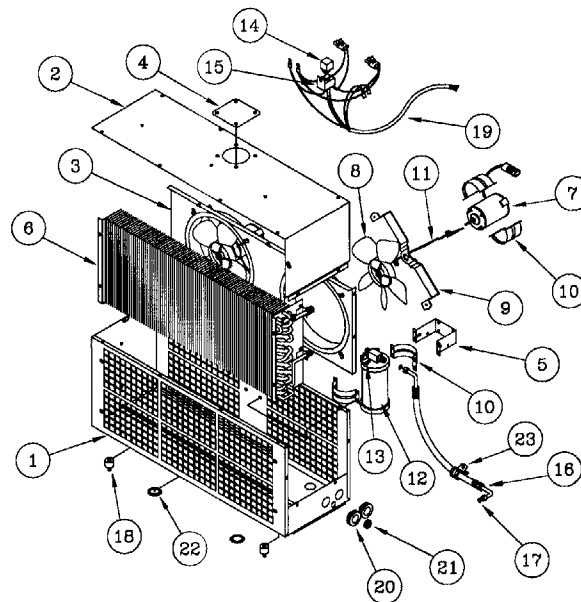
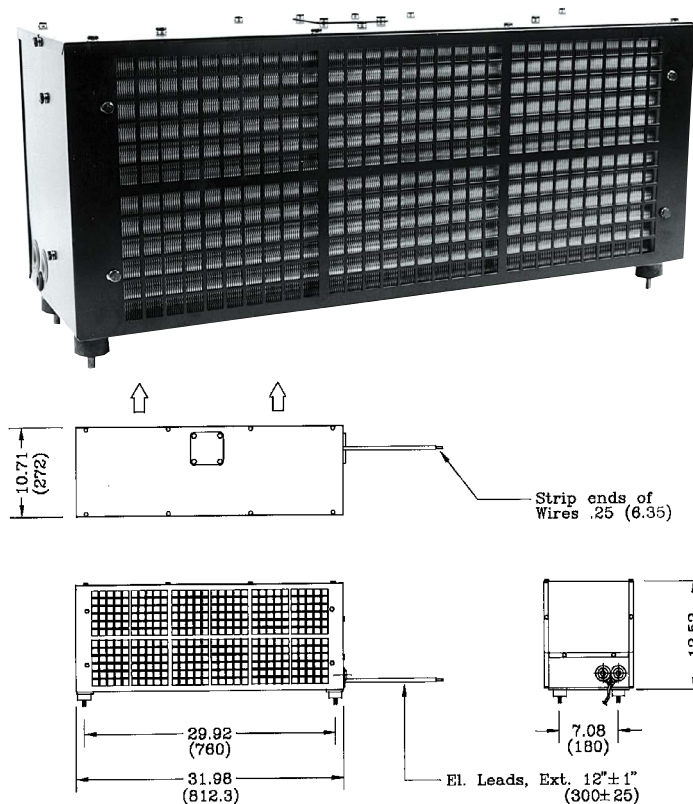
Casing made of 16GA (1.5mm) Cold Rolled Steel finished in black semi-gloss epoxy powder coat.

Electric condensers are used when radiator mounted types cannot be installed. The reasons being insufficient air flow and/or when additional heat overload the engine cannot be tolerated. Condensing capacity will remain constant and will not be dependent on engine RPM.

Features

The 409 is a universal mount electric condenser. It does not have the receiver/drier mounted internally. This allows for many different installation options. Condenser can be mounted vertically or horizontally.

Electric Condenser **Model 410**



Part Descriptions: Specifications

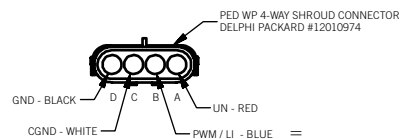
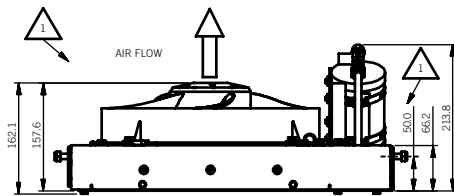
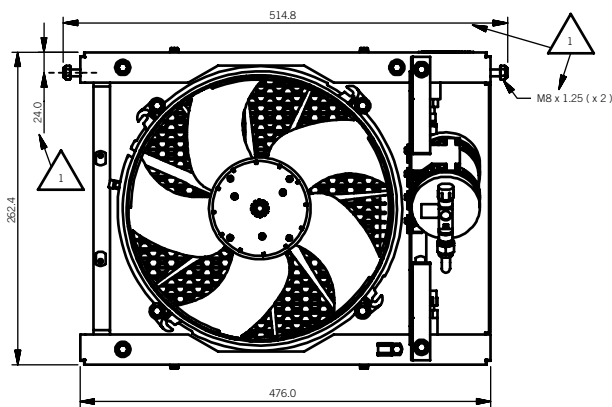
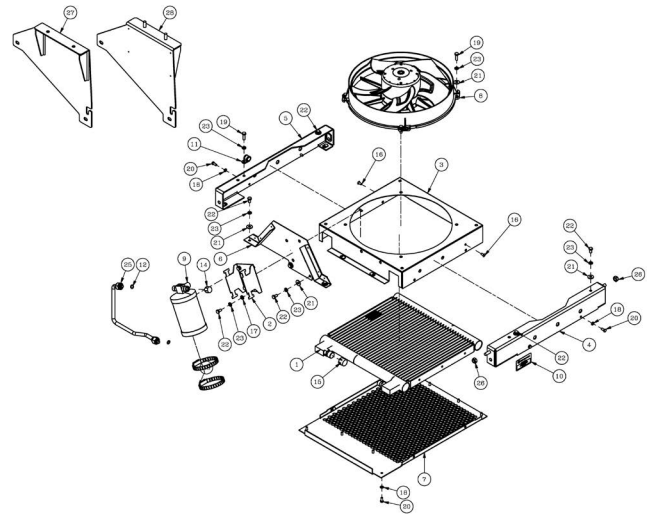
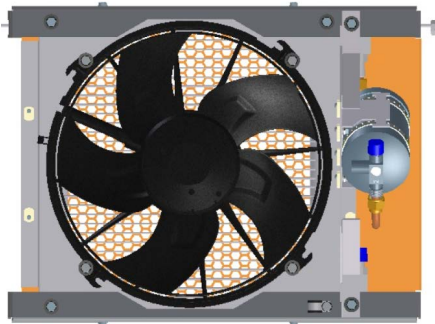
Part No.	No.	Part No.	Description	No.	Part No.	Description	
14-1001		14-1001	Condenser 12V	13	25-0308	Pressure Switch	
14-1002		14-1002	Condenser 24V	14	25-0251	Relay 12V	
Specifications							
Capacity	-to support a cooling capacity of 41600 Btu/hr(12200 W)	1	24-0925	Casing	15	25-0219	Relay 24V
Air Flow	-1900 CFM (3230 m ³ /h)	2	24-0926	Cover	16	27-0379	Refrigerant Hose #6
Current	-24 Amps/13.5V	3	24-0927	Fan Mounting Plate	17	27-0601	O-Ring #6
	-12 Amps/27V	4	24-0928	Cover Plate	18	28-0057	Vibration Mount
Weight	-65 lbs. (29.5 kg)	5	24-0929	Receiver Drier Bracket	19	25-0394	Wiring Harness
Casing made of 16GA (1.5mm) Cold Rolled Steel and finished in black semi-gloss epoxy powder coat.		6	21-0188	Condenser Coil	20	28-0045	Grommet
		7	25-0470	Motor 12V (B.B.)	21	28-0005	Grommet
		8	25-0229	Motor 24V (B.B.)	22	28-0013	Plastic Plug
		9	25-0302	Fan	23	27-0012	Hose Clamp #6
		10	24-0963	Motor Bracket			
		11	24-0234	Motor Mount			
		12	24-0962	Motor Support			
			26-0219	Receiver Drier			

Electric condensers are used when radiator mounted types cannot be installed. The reasons being insufficient air flow and /or when additional heat load over the engine cannot be tolerated. Condensing capacity will remain constant and will not be dependent on engine RPM.

Features

The 410 was designed for high capacity off-road applications. Its large design has flexible hose routing options. The receiver/drier is mounted internally. Condenser must be mounted as shown in picture.

Electric Condenser **Model 443**



Part Descriptions: Specifications

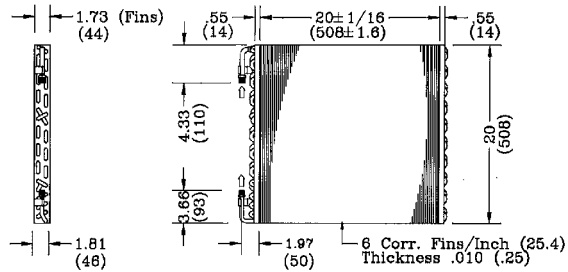
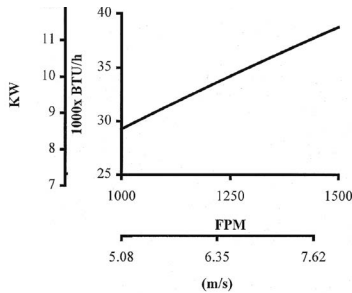
Part no.	No.	Part No.	Description	No.	Part No.	Description	
14-4302	Condenser 24V	1	21-1855	CONDENSER	11	27-0082	P-Clamp #08
		2	24-12022	Receiver Bracket	12	27-0601	O-Ring #6
		3	24-12040	Condenser Casing	13	27-1211	Gear Clamp 3"
		4	24-12041	Condenser Supp. Back	14	28-0345	Plastic Cap #6
		5	24-12042	Condenser Supporter	15	28-0348	Plastic Cap #8
Specifications		6	24-12043	Receiver Support	16	29-0315	Pop Rivet 3/16"x.44"
Heating	23.000 Btu/hr	7	24-12044	Condenser Cover	17	29-0500	Washer M6 SS
Air flow	1000 CFM	8	25-3089	Fan EBm 24V	18	29-0514	Washer M5 SS
Current	2.0 AMPS	9	26-0018	Receiver Drier	19	29-0520	Bolt M6x20 SS
Weight	10.7KG	10	26-1916	MCC Label for 14-4302	20	29-0626	Bolt M5x12 SS
	(13.8KG with mounting brackets and mtg. fastners)				21	29-0555	Washer M6 S.S.
					22	29-0753	Bolt M6x12 SS
					23	29-1252	Lock Washer M6
					24	31-1164	Conduit 3/8" L=300mm
					25	34-4810	Copper Tube 3/8"
					26	29-1455	M8 LOCKNUT w/NYLON IN



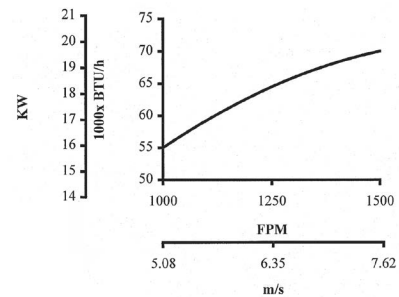
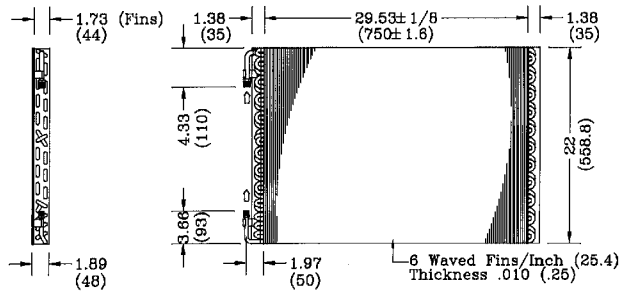
Condensers Radiator Mount

MCC's heavy duty radiator mounted condensers are the least expensive alternative compared to forced air types. They are manufactured in-house using 0.008-0.010" (0.20mm-0.25mm) thick aluminum fins and copper tubes. With endplates made of 16GA (1.5mm) Satin Coat Steel. Waved or corrugated fins are available, as indicated on the drawings. In addition to the heavy fin thickness, the edges are rippled, increasing the strength further. Low fin density makes cleaning easier and provides less pressure drop. Please keep in mind that the MCC condensers are developed for off-road environments. Condensers are painted black. In and outlet tubes are reinforced with metal brackets where required. All coils are pressure tested to a minimum of 300 psi (2.1 MPa) .

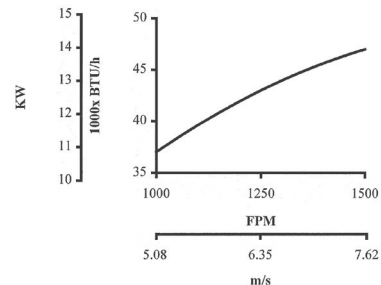
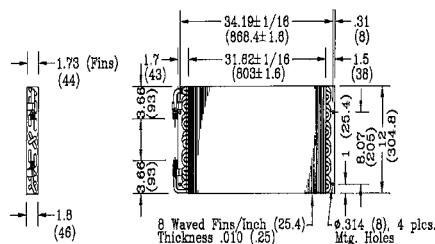
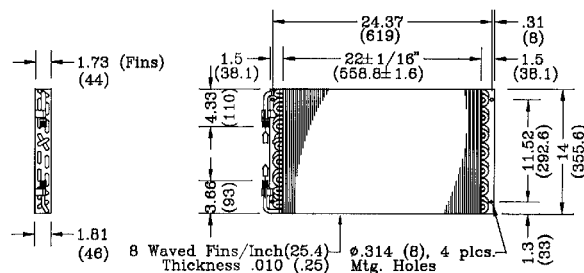
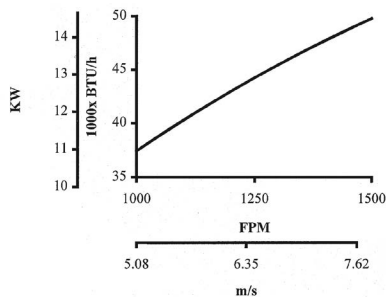
21-0089 Condenser



21-0176 Condenser



21-0320 Condenser

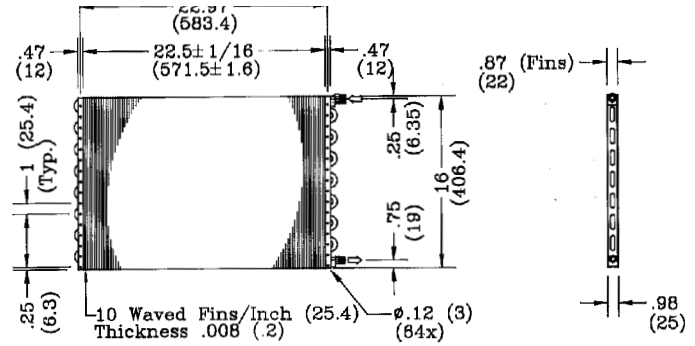
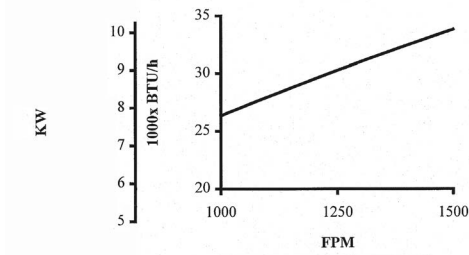


Note: Capacity based on 100°F (38°C) air temp. and 140°F (60°C) condensing temp.
Inlet -3/4-16 UNF Male (O-Ring #8) Outlet -5/8-18 UNF Male (O-Ring #6)

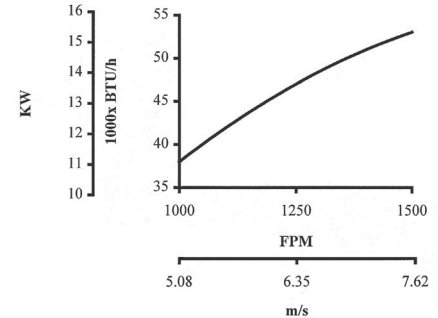
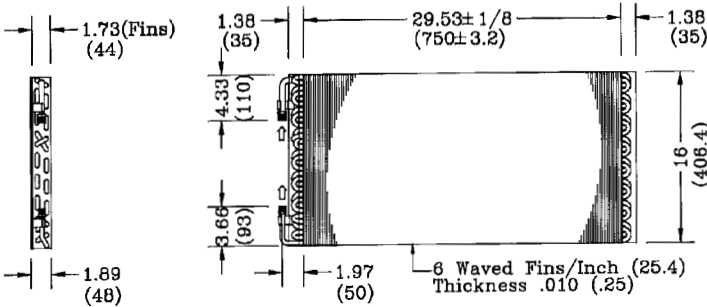


Condensors Radiator Mount

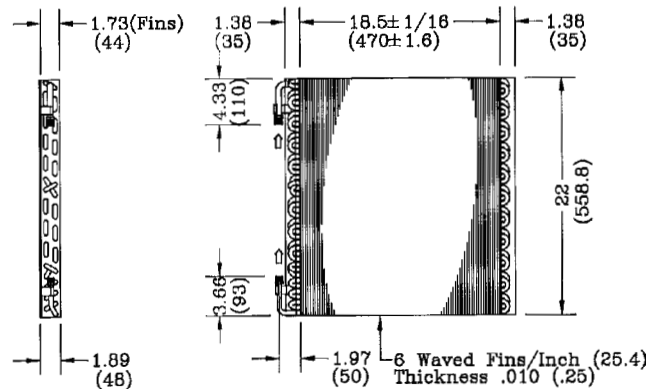
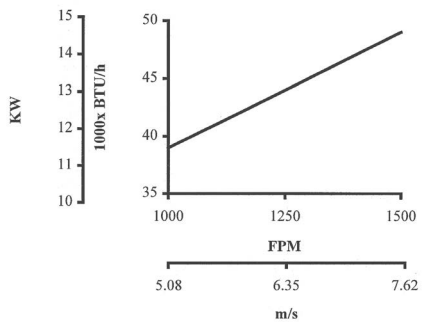
21-0020 Condenser



21-0322 Condenser



21-0324 Condenser



Note: Capacity based on 100°F (38°C) air temp. and 140°F (60°C) condensing temp.
 Inlet -3/4-16 UNF Male (O-Ring #8) Outlet -5/8-18 UNF Male (O-Ring #6)



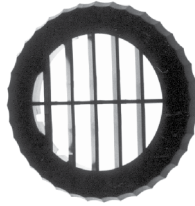
VI. Louvers



Round Louvers



58-62077-00
3" Round Louver with Louver Ring



23-0045
Nylon strap up to 3" diameter

Louvres shown have diameters of 3.94" (100 mm) and are manufactured of super tough nylon. The ST801 was specially designed for extreme low temperatures. The louvres must be used with any of the adapters below.



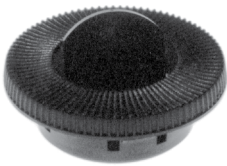
Y23-00002-00
Louver, 2.5 in fixed vane



58-62077-00
Louver, air diffuser, round, gen5



23-0005
Round Louver



23-0171
Rotates and closes,
adapter include



23-0172
Rotates and closes, hose
adapter 2" included

Above louvres are manufactured of prime grade ABS. The overall Ø 2.75" (70 mm), screw hole Ø 2.204" (56 mm) (4x), mounting hole Ø 2.10" (53.5mm). Adapter will also accept snap in installation without screws.



23-0100
Rotates and closes comes with 4" hose
adapter (ABS) . Four screw holes at Ø 4.93"
(125.2mm)
Used in the RV and motor home industry.



23-0065
Non adjustable, mounts in 3"
(76.2mm) hole.
Mounting spring included.
Low cost (ABS) .



Ball Type Louvers (ABS)



23-0164
Black ball, hose adapter 2" included
23-0067
Black ball, hose adapter 2.5" included



23-0087
Black ball, adapter included
23-0097
Large black ball, adapter included
mounts in a Ø 3" (76.2mm) hole.



23-0098
Large black ball, hose adapter Ø 2.5" included
Louvers 23-0097 and 23-0098 mounts in a Ø 3" (76.2mm) hole.

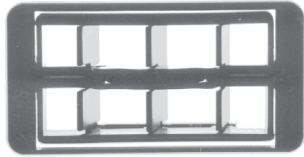


23-0057
Chrome ball, hose adapter 2.5" included

Louvers
23-0164, 23-0057, 23-0067, and 23-0087
Mount in a Ø2.5" (63.5 mm) hole.



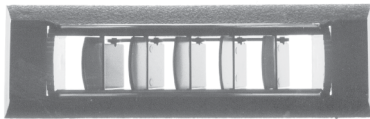
Rectangular and Square Louvers (closable and adjustable)



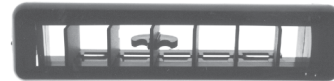
23-0042
3.65" (92.2mm) x 1.88" (47.8mm) , (ABS)
snaps into hole
3.41" (86.6mm) x 1.72" (43.7mm)



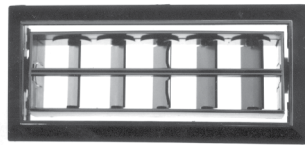
23-0027
2.45" (62.2mm) x 2.44" (62mm) , (ABS)
2" hose adapter included, snaps into hole
2.2" (55.9mm) x 2.375" (60.3mm)



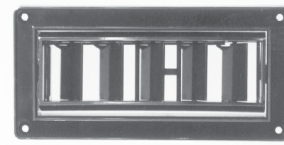
23-0029
6" (152.4mm) x 1.87" (47.6mm) , (ABS)
snaps into hole
5.73" (145.5mm) x 1.72" (43.7mm)



23-0046
6" (152.4mm) x 1.562" (39.7mm), (ABS)
snaps into hole
5.75" (146mm) x 1.375" (34.9mm)



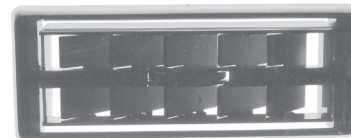
23-0055
7.1" (180.3mm) x 3.3" (83.8mm) , (ABS)
snaps into hole
6.38" (162.1mm) x 2.48" (63mm)



23-0053
5.43" (137.9mm) x 2.68" (68.1mm) ,
(ABS) fits hole
4.75" (120.7mm) x 2" (50.8mm)



23-0054
Adapter for 23-0053 with 2.5" (63.5mm)
hose adapter. (ABS)



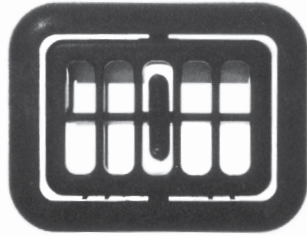
23-0116
5.43" (138mm) x 2.17" (55mm) , (ABS)
snaps into hole
5.12" (130mm) x 1.81" (46mm)



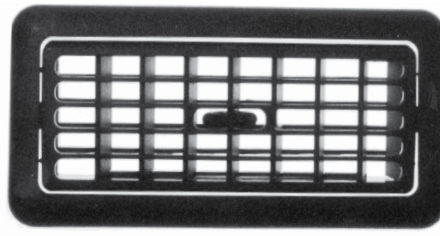
58-62042-00
LOUVER, RECTANGULAR, GEN. 5



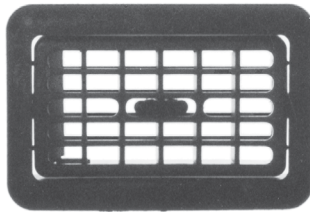
Rectangular and Square Louvers (closeable & adjustable)



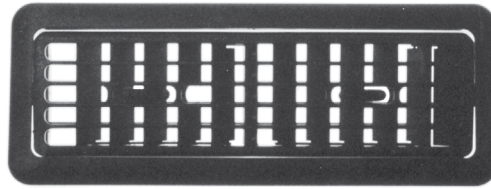
23-0173



23-0175



23-0174



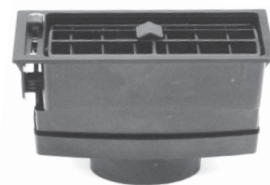
23-0176

DIMENSIONS						
ABOVE LOUVERS SNAP INTO 1/16" (1.59mm) TO 1/8" (3.19mm) WALL THICKNESS OPENINGS						
Part No.	Overall Size		Mounting Hole		Snap-in	Hose* Adapter
	in.	mm	in.	mm		
23-0173	2.62 x 3.45	66.5 x 87.6	2.02 x 2.85	51.3 x 72.4	yes	no
23-0174	3.82 x 5.64	97.0 x 143.3	2.82 x 5.13	71.6 x 130.3	yes	no
23-0175	3.82 x 7.87	97.0 x 199.9	2.85 x 7.34	72.4 x 186.5	yes	no
23-0176	3.82 x 10.11	97.0 x 256.8	2.82 x 9.61	71.6 x 244.1	yes	no

*Louvers available on request with Ø2.5" (63.5 mm) hose adapter as a one piece design.



23-0177

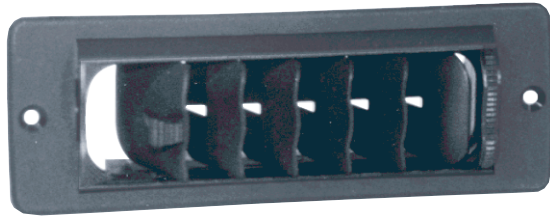


23-0178

DIMENSIONS					
ABOVE LOUVERS SNAP INTO 1/16" (1.59mm) TO 1/8" (3.19mm) WALL THICKNESS OPENINGS					
Part No.	Overall Size		Mounting Hole	Snap-in	Hose* Adapter
	in.	mm			
23-0177	2.17x 6.08	55.1 x 154.4	request sample	yes	No
23-0178	2.17 x 6.08	55.1 x 154.4	request sample	yes	No



Rectangular and Square Louvers (closable and adjustable)

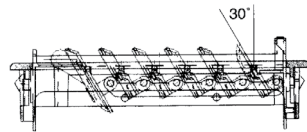
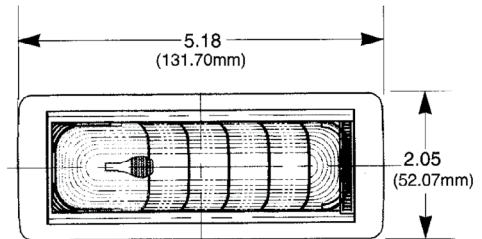
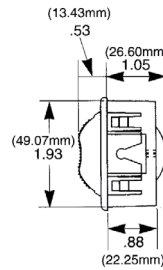
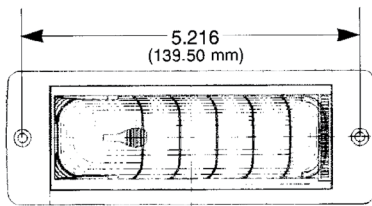


23-0186

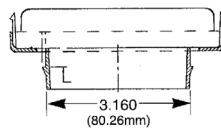
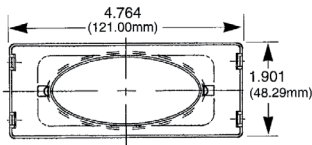


23-0145

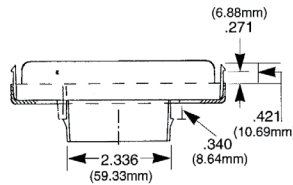
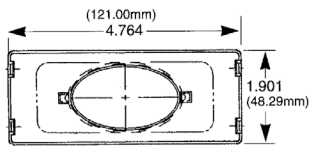
Louver Vents



Hose Adapters



23-0203 Hose Adapter \varnothing 2.5" (63.5 mm)



Hose Adapter \varnothing 2" (50.8 mm)



Windshield Louvers



23-0094
9.33" (237mm) x 1.18" (30mm) .
Two centered screw holes at 8.70" (221mm) .(ABS)



23-0115
8.07" (205mm) x 1.02" (26mm) (ABS)
Snaps into oblong hole 7.80" (98mm) x 0.69" (17.5mm) (ABS)



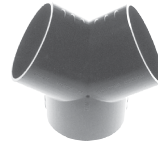
23-0095
As 23-0094 but angled 40° from vertical line

Hose adapters

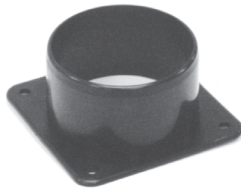


23-0110 /2"
2.36" (60mm) , four screw holes Ø 2.56" (65mm) , mounts in 2" (50.8mm) hole (ABS)

23-0125 /2.5"
2.91" (74mm) , four screw holes Ø 3.25" (83mm) , mounts in 2.48" (62.8mm) hole (ABS)



23-0049 y-splicer 2.5" (ABS)



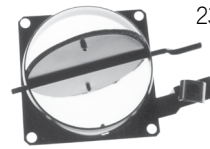
23-0141
60mm, nylon 66



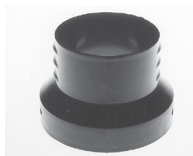
23-0051 Reducer from 2.5" - 3" (ABS)



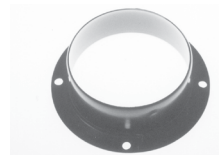
23-0037 2" Snap in mounting (ABS)
23-0038 2.5" Snap in mounting (ABS)
23-0039 3" Snap in mounting (ABS)



23-0129 4" Steel with flapper door: four screw holes at Ø 5.30" (134.6mm)



23-0050 Reducer from 2.5" - 2" (ABS)



23-0091 3" Steel four screw holes at Ø 3.54" (90mm)

23-0090 4" Steel four screw holes at Ø 4.72" (120mm)

23-0142 3.5" (88mm) , nylon 66



Notes



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