

# Chromalox®

## Installation, Operation and

## RENEWAL PARTS IDENTIFICATION

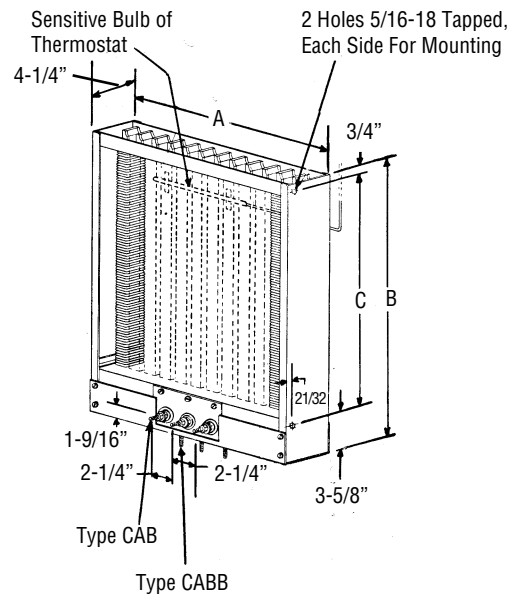
### SERVICE REFERENCE

DIVISION 4		SECTION CAB
SALES REFERENCE	(Supersedes PF412-6)	PF412-7
161-048224-001		

## Type CAB and CABB Forced Air Duct Heaters



Special Cover for Side or Bottom Terminals



### Specifications –

Model		Weight (Lbs.)	Volts	Phase	kW	No. Finstrips	No. Ckts.	Dimensions (In.)		
(Note 1)	(Note 2)							A	B	C
CAB-62	CAB-611	25	120, 208, 240 or 480	1 or 3	6	6	1	10-3/4	15-7/8	11-1/2
CABB-62	CABB-611									
CAB-122	CAB-1211	35	208, 240 or 480	1 or 3	12	9	1	15-3/8	18-1/2	14-1/8
CABB-122	CABB-1211									
CAB-152	CAB-1511	40	208, 240 or 480	1 or 3	15	9	1	15-3/8	21-5/8	17-1/4
CABB-152	CABB-1511									
CAB-202	CAB-2011	55	208 or 240	3	20	12	1	20-1/8	21-5/8	17-1/4
CABB-202	CABB-2011		480	1 or 3						
CAB-252	CAB-2511	65	208 or 240	3	25	12	1	20-1/8	26-1/8	21-3/4
CABB-252	CABB-2511		480	1 or 3						
—	CABB-3011	75	480	3	30	18	2	29-1/2	21-5/8	17-1/4
CAB-402	CAB-4011	90	208 or 240	3	40	18	2	29-1/2	27-3/8	23
CABB-402	CABB-4011		480	1 or 3						
CAB-502	CAB-5011	110	208 or 240	3	50	18	2	29-1/2	33-1/8	28-3/4
CABB-502	CABB-5011		480	1 or 3						
CAB-752	CAB-7511	200	208 or 240	3	75	27	3	44-7/16	42-1/8	37-3/4
CABB-752	CABB-7511		480	1 or 3						
CAB-1002	CAB-10021	220	208 or 240	3	100	27	3	44-7/16	47-1/2	43-1/8
CABB-1002	CABB-10021		480	1 or 3						

1. Iron sheath strip heaters — for sheath temperatures to 750°F.
2. Chrome steel sheath strip heaters — for sheath temperatures to 950°F.

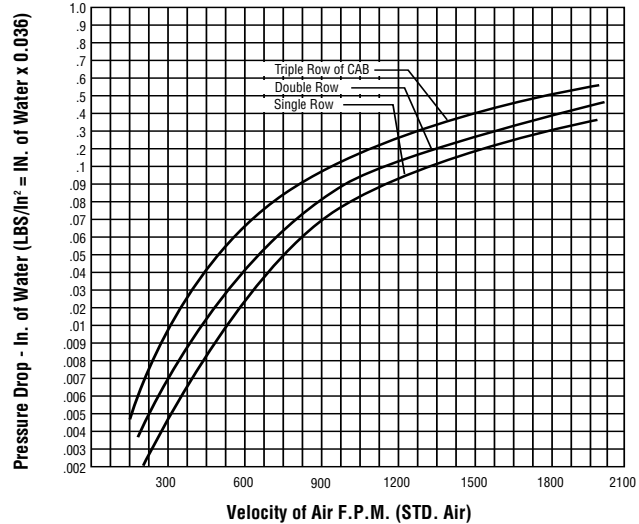
## GENERAL

**WARNING: This heater is not intended for use in hazardous atmospheres where flammable vapors, gases, liquids or other combustible atmospheres are present as defined in the National Electrical Code. Failure to comply can result in explosion or fire.**

1. **Heat Construction Characteristics:**
  - A. Finstrip® elements of either rust resisting iron or chrome steel sheath, and aluminized steel fins.
  - B. 14 gage cold rolled steel frame painted with a black powder coat paint.
  - C. Internal electrical connections consist of buss bars and jumper straps of either Mn-Ni or Monel.
  - D. Field wiring terminals of heavy duty 3/8" diameter bolts of either brass (iron sheath units) or stainless steel (chrome steel sheath units) with hardware are provided for field wiring connections.
2. **Maximum temperatures** — Type CAB and CABB air duct heaters can generally be used at the following maximum temperatures provided the minimum air velocity is maintained uniformly through the heater. Table 2 is based on the standard unit of 26 watts per square inch. If unit watt density is lower, higher temperatures can be achieved. If higher watt densities are used, outlet air temperature should be lowered.
3. Several heaters may be mounted in tandem as long as proper controls are used to limit the maximum temperature attained. See pressure drop curve G112S1 for effect of mounting in tandem.
4. **Overtemperature protection** — A thermal cutout should be installed at the exhaust side of the heater for protection against low airflow conditions.

Air Velocity (Ft./Sec.)	Max. Outlet Air Temp. (°F)	
	Iron Sheath	Chrome Steel Sheath
4	—	200
9	90	330
16	220	440

Table 2



Curve G112S1 - Resistance to Air Flow

## INSTALLATION

**WARNING: Hazard of Electric Shock. Disconnect all power before installing heater.**

1. Install heater into desired location in air duct with terminals on bottom.
2. For installation where the duct heater is larger than the ductwork, the duct area must be increased by a sheet metal transition. The slope of the transition piece on the upstream side is limited to 30° as indicated in Figure 2. On the leaving side, the slope should not be more than 45°.
3. Make sure ductwork is of sufficient strength to contain the heater. Refer to Table 1 for heater weights. Consult your local sheet metal contractor if in doubt.
4. Two holes 5/16-18 tapped are located on each side of the heater for mounting.
5. Air velocity must be sufficient enough to prevent element failure. See Table 2 for guidelines.
6. For protection against accidental air stoppage, mount a thermal cutout on the exhaust side of the heater.
7. Insert thermal cutout sensitive bulb through duct and attach to heater case with mounting clips provided.
8. **DANGER: Hazard of Fire.** Since these heaters are capable of developing high temperatures, extreme care should be taken to:

- a. Avoid installing heaters in an atmosphere containing combustible gases and vapors.
- b. Avoid contact between heater and combustible material.
- c. Keep combustible material far enough away to be free of the effects of high temperatures.

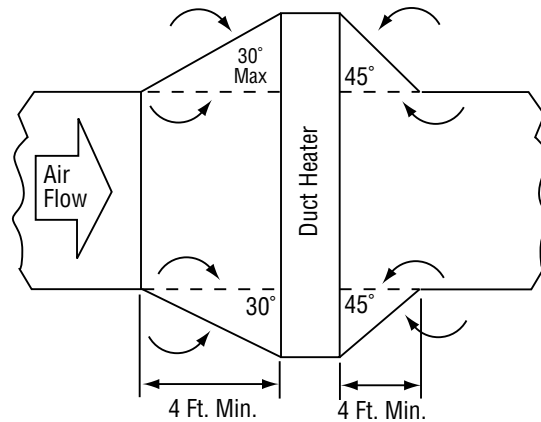


Figure 2

## WIRING

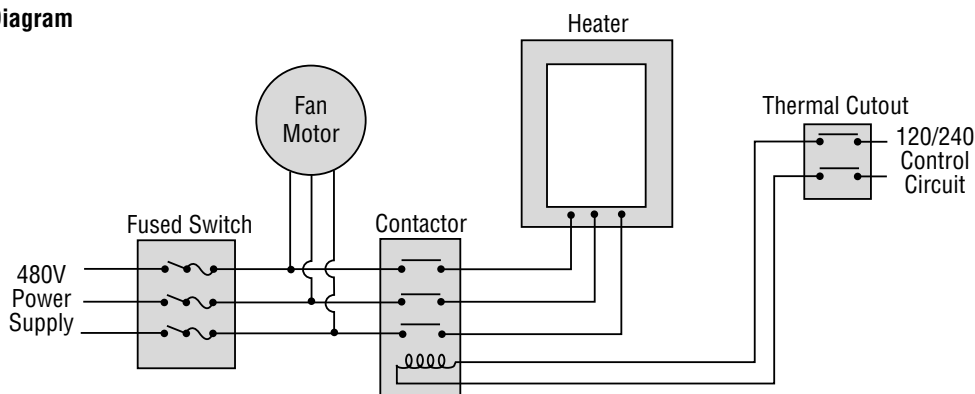
**WARNING: Hazard of Electric Shock. Any installation involving electric heaters must be effectively grounded in accordance with the National Electrical Code to eliminate shock hazard.**

1. All wiring should be done in accordance with the National Electrical Code and with local codes by a qualified person.
2. Connect air heaters to same line voltage, phase and frequency as on heater nameplate.
3. Teflon insulated nickel plated copper wire or buss bar is recommended for power connections to heater terminals and for

wiring runs in heated zones. When ambient temperature in heated zone exceeds that for which insulated wire is recommended use bare nickel-plated copper with porcelain beads, tubing or buss bar. Consult local Chromalox representative.

4. Users should install adequate back-up controls and safety devices with their electric heating equipment. Selection of controls, thermostat, SCR units, contactors and etc. depends on the degree of accuracy required, reliability, electrical rating of heater and economic considerations.
5. Below is an example of standard CAB 122 480V 3P 12 kW wired with recommended back-up controls (Figure 3).

Figure 3 - Wiring Diagram



## OPERATION

**WARNING: Users should install adequate back-up controls and safety devices with their electric heating equipment. Where the consequences of failure may be severe, back-up controls are essential. Although the safety of the installation is the responsibility of the user, Chromalox will be glad to assist in making equipment recommendations.**

1. Do not operate heaters at voltages in excess of that stamped on the heater since excess voltage will shorten heater life.

## MAINTENANCE

**WARNING: Hazard of Severe Shock. Disconnect all power to heater before servicing or replacing heaters.**

1. Periodically clean terminals and terminal covers of dust and corrosion to maintain good electrical connections and to permit rapid heat dissipation. Use airblast, and be careful to avoid damage to mica insulation.

2. Check for loose terminal connections.

## RENEWAL PARTS IDENTIFICATION

Model	kW	Heating Element			
		120 Volt	208 Volt	240 Volt	480 Volt
CAB-62 CABB-62	6	117-013851-001 (6)	117-013851-002 (6)	117-013851-003 (6)	117-013851-004 (6)
CAB-611 CABB-611		117-013852-001 (6)	117-013852-002 (6)	117-013852-003 (6)	117-013852-004 (6)
CAB-122 CABB-122	12	—	117-013851-006 (9)	117-013851-007 (9)	117-013851-008 (9)
CAB-1211 CABB-1211		—	117-013852-006 (9)	117-013852-007 (9)	117-013852-008 (9)
CAB-152 CABB-152	15	—	117-013851-010 (9)	117-013851-011 (9)	117-013851-012 (9)
CAB-1511 CABB-1511		—	117-013852-010 (9)	117-013852-011 (9)	117-013852-012 (9)
CAB-202 CABB-202	20	—	117-013851-010 (12)	117-013851-011 (12)	117-013851-012 (12)
CAB-2011 CABB-2011		—	117-013852-010 (12)	117-013852-011 (12)	117-013852-012 (12)
CAB-252 CABB-252	25	—	117-013851-014 (12)	117-013851-015 (12)	117-013851-016 (12)
CAB-2511 CABB-2511		—	117-013852-014 (12)	117-013852-015 (12)	117-013852-016 (12)
CABB-3011	30	—	—	—	117-013852-012 (18)
CAB-402 CABB-402	40	—	117-013851-018 (18)	117-013851-019 (18)	117-013851-020 (18)
CAB-4011 CABB-4011		—	117-013852-018 (18)	117-013852-019 (18)	117-013852-020 (18)
CAB-502 CABB-502	50	—	117-013851-022 (18)	117-013851-023 (18)	117-013851-024 (18)
CAB-5011 CABB-5011		—	117-013852-022 (18)	117-013852-023 (18)	117-013852-024 (18)
CAB-752 CABB-752	75	—	117-013851-026 (27)	117-013851-027 (27)	117-013851-028 (27)
CAB-7511 CABB-7511		—	117-013852-026 (27)	117-013852-027 (27)	117-013852-028 (27)
CAB-1002 CABB-1002	100	—	117-013851-030 (27)	117-013851-031 (27)	117-013851-032 (27)
CAB-10021 CABB-10021		—	117-013852-030 (27)	117-013852-031 (27)	117-013852-032 (27)

Number in parenthesis indicates total quantity in unit.

Terminal Cover — 306-021921-001

Bulb Mounting Strap — 283-033234-001

### Limited Warranty:

Please refer to the Chromalox limited warranty applicable to this product at  
<http://www.chromalox.com/customer-service/policies/termsofsale.aspx>.

# Chromalox®

**PRECISION HEAT AND CONTROL**

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