



CTMAC-12


12-Ton Portable Air Conditioner & Heater


Installation & Operation Manual



Before installing or operating the ClimaTemp CTMAC-12 portable air conditioner and heater, read this manual thoroughly to ensure safe and effective use. Only qualified technicians should perform installation and maintenance tasks. The manufacturer is not liable for issues caused by unqualified personnel.

Nameplate Label

CTMAC-12 PORTABLE SPOT COOLER	
Power	230V/3PH/60Hz
Cooling Capacity	144000BTU/HR
Cold Air Flow	2×1765CFM
Hot Air Flow	7067CFM
Cooling AMPS	50A
Max Cooling AMPS	60A
Cooling WATTS	16000W
Max Cooling WATTS	19000W
Electric Heating	24kW (81891BTU/HR)
Hot Air Flow	2×1178CFM
Heating AMPS	62A
Heating WATTS	25000W
Compressor	Scroll compressor
Refrigerant	R32  Refrigerant Safety Group A2L
Refrigerant Capacity	6200g(13.67Lb)
Discharge Pressure	3.1MPa
Suction Pressure	1.2MPa
Max Operating Pressure	4.2MPa
Environment Conditions	18°C ~ 45°C (64°F ~ 113°F)
Dimensions	D70.1"×W32.5"×H67.7"
Weight	530Kg(1168.5Lb)
Serial Number	



Conforms to UL Std.60335-1& 60335-2-40
 Certified to CSA Std. C22.2 NO.60335-1& 60335-2-40

MADE IN P.R.C.

Unit Identification

The Nameplate Label, located on the unit, provides critical information including model number, serial number, and specifications. Verify this information before installation or servicing.

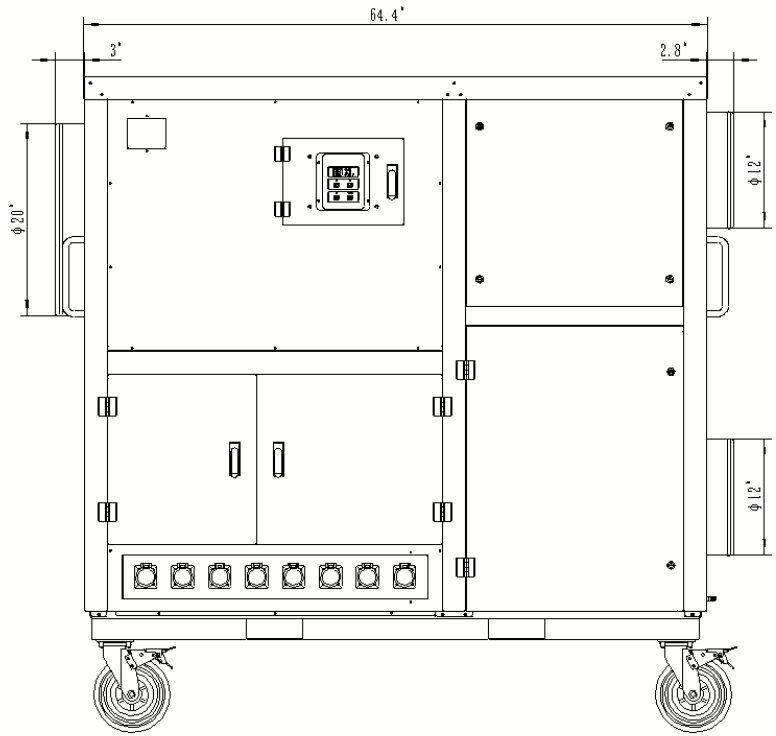
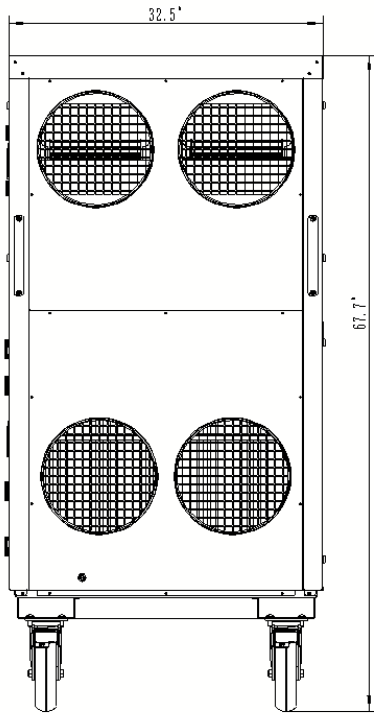
Note: Performance data is based on testing at 95°F and 60% relative humidity.



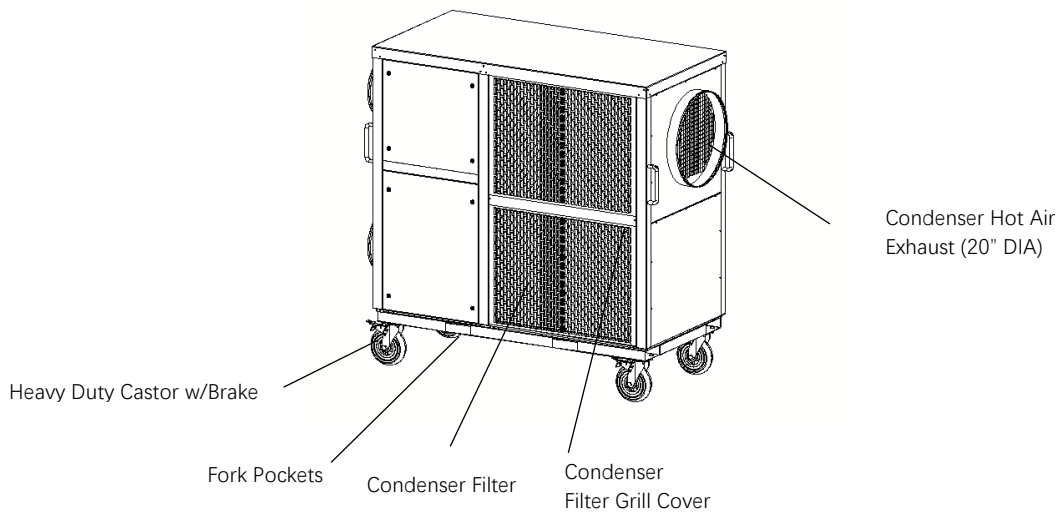
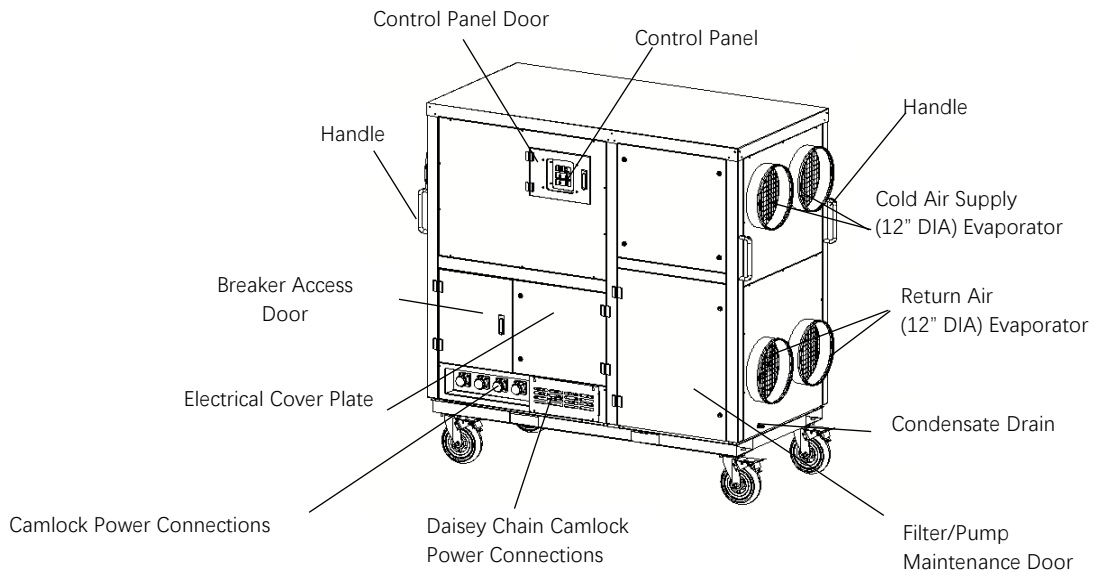
CTMAC-12 I/O Portable Air Conditioner (12ton)

Cooling Capacity	Btu/hr @ 95° / 60% RH Operating Range: Evaporator Min-Max F°	144,000 64°-113°
Heating Capacity	Heat Strips/BTU	24Kw/81,891
Dimensions	Width (Inches) Depth (Inches) Height (Inches) Weight (Pounds)	32.5 70.1 67.7 530Kg (1168Lb)
Duct Specifications	Evaporator Supply (2) / Return (2) Condenser Exhaust (1) Total Max Ducting	12" 20" 200'
Electrical Specifications	Power Supply (Volts) Max Cooling Amps Max Heating Amps Fuse/Breaker Size (Amps) CamLoc Connections 4/0	230V/60Hz/3Ph 60A 62A 70A Yes
Fan	1 Speed Evaporator Air Flow (CFM) Condenser Air Flow (CFM)	3530 7067
Compressor	Compressor Type Refrigerant Type Refrigerant Capacity Discharge Pressure Suction Pressure	Scroll R-32 6200g (13.67Lb) 3.1MPa 1.2MPa
Condensate Removal	Built in Plug N Play Pump w/17' lift Manual gravity drain w/built in P-Trap	(Primary) (Secondary)
Features	Compressor Overcurrent Protection Fan Motor Protection Anti-Freeze Thermostat Digital Controller Display Hot Gas Bypass Automatic Restart Built In Safety Switch for Condensate Pump Built In P-Trap Fork Pockets Outdoor Rated 4/0 Cam Loc Daisy Chain Connections Heavy Duty Locking Castors	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes





Main components



Safety Information

Warnings and Cautions

- **High Voltage Warning:** Disconnect power before servicing to avoid severe injury or death.
 - **Grounding:** Reconnect all grounding components (wires, screws, straps, clips, nuts, or washers) after servicing to ensure safe operation.
 - **Qualified Personnel:** Installation and maintenance must be performed by licensed professionals.
 - **Operational Hazards:** Exercise extreme caution when inspecting an operational unit due to high-voltage components and moving parts.
-

Specifications

Power Requirements

- **Power Source:** 208V–230V, 3-Phase, 60Hz, 70A.
- **Power Cable Length:**
 - Up to 66 ft: 4 AWG (single unit).
 - Up to 164 ft: 4 AWG (two units).
- **Warning:** Using an undersized or overly long cable may cause voltage drops, equipment malfunction, or fire hazards.

Ducting Requirements

- The CTMAC-12 portable air conditioner requires a minimum of 50' of flex duct to operate properly. **Note:** Maximum Duct (Total Ducting) length is 200'. Please do not install over 200' of total ducting on the CTMAC-12. Installing more than 200' of ducting can cause the unit to malfunction, evaporator coil to freeze or evaporator motor shut down. The flex is a 12" duct size and is attached to the units' cold air supply and return collars. **Note:** the CTMAC-12 must have a minimum of 50' of flex to operate or the units fan motor will malfunction and not operate properly.
- **Cold Air Supply/Return Duct:** 12" diameter, minimum 50 ft, maximum 200 ft total.
- **Hot Air Discharge Duct:** 20" diameter (optional for confined spaces).
- **Note:** Exceeding 200 ft of ducting may cause evaporator coil freezing or motor shutdown. Ensure straight duct runs with minimal 90° bends for optimal airflow.

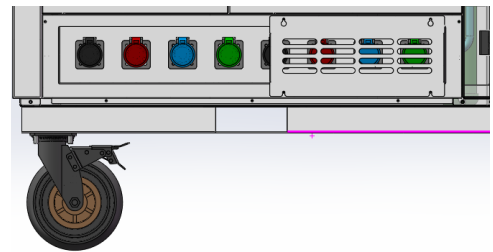
Condensate Management

- **Automatic Pump:** 17 ft vertical lift (default).
 - **Manual Drain:** Gravity drain with built-in P-trap.
 - **Drain Hose:** 3/8" ID.
-

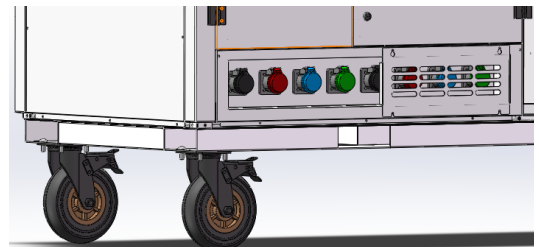
Installation Instructions

Power Connections

1. Verify the power source matches the Nameplate Label (208V–230V, 3-Phase, 60Hz, 70A). Consult a licensed electrician if unsure.
2. Ensure the main breaker is OFF before connecting power.
3. Connect the Camlock power cable:
 - Green: Ground.
 - Black/Red/Blue: Hot.



4. Insert cables into the unit's Camlock connectors (below the breaker panel) and rotate 90° clockwise to lock.



Phase Sequence Verification

- **Correct Sequence:**
 1. Connect cables and turn on power.
 2. Confirm the unit beeps and the controller displays a green light on the power button.
- **Incorrect Sequence (E3 Code):**
 1. Turn off power.
 2. Swap any two hot cables (do not swap ground).

3. Turn power back on and verify the green light.

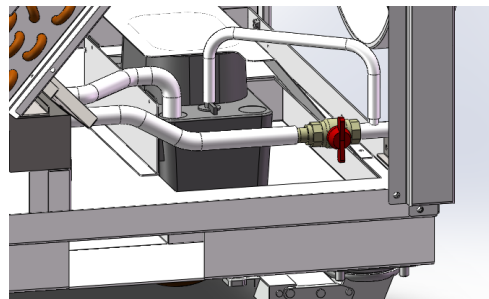
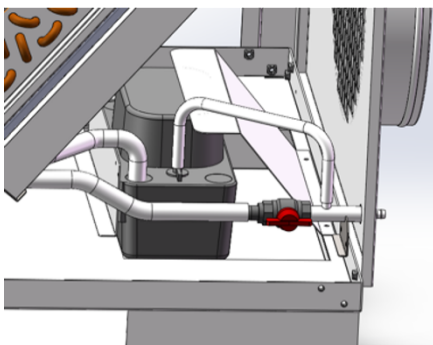
Daisy Chain Power Setup (Optional, Up to 3 Units)

1. Ensure all unit breakers are OFF.
2. Remove the metal safety plate covering the daisy chain connectors.
3. Connect Camlock cables from the first unit to the second (and third, if applicable).
4. Turn on the main power source.
5. Switch the first unit's daisy chain breaker to ON to pass power to subsequent units.
6. Turn on each unit's breaker and verify the green light on the control panel.
7. Operate each unit via its control panel, allowing 3 minutes of cooling before activating the next unit.
8. **Note:** Calculate increased amperage requirements for multiple units. Keep daisy chain breakers OFF when not in use.

Duct Installation

1. **Cold Air Supply Duct:**
 - o Connect 12" duct to the supply collar.
 - o Extend duct to the cooling area, minimizing 90° bends.
2. **Cold Air Return Duct:**
 - o Connect 12" duct to the return collar (below supply collar).
 - o Position duct to pull air from the highest heat load area.
 - o Secure duct to prevent collapse, which can cause coil freezing or shutdown.
 - o Do not add a second filter box to the return duct to avoid airflow restriction.
3. **Hot Air Discharge Duct (Optional):**
 - o Use 20" duct for indoor applications to vent hot air outside.
 - o Ensure adequate make-up air for the condenser.

Condensate Drain Setup



1. **Automatic Pump (Default):**
 - o Attach 3/8" ID hose to the condensate barb.

- Open the filter/pump access door and set the drain valve to the vertical position.
 - Close and lock the access door.
2. **Manual Drain (Optional):**
- Attach 3/8" ID hose to the condensate barb (do not exceed barb height).
 - Set the drain valve to the horizontal position.
 - Close and lock the access door.
-

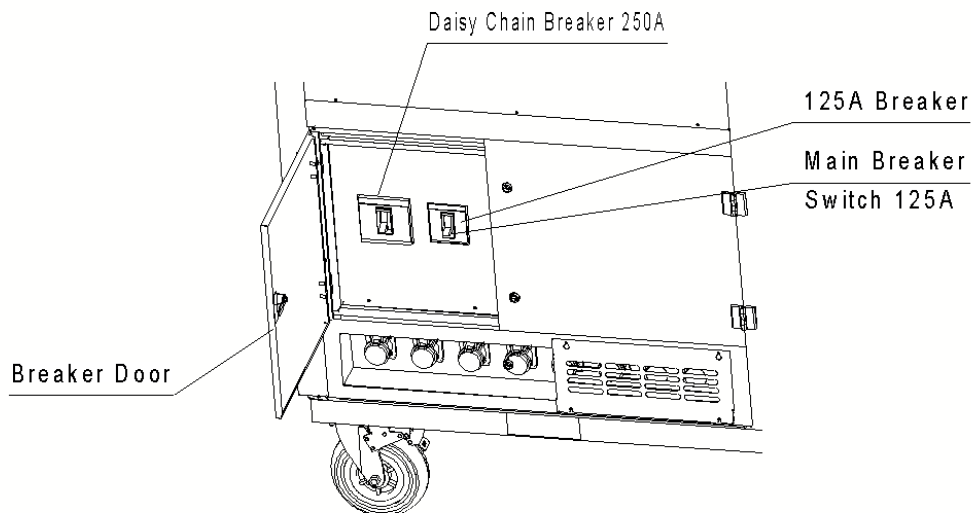
Operation Instructions

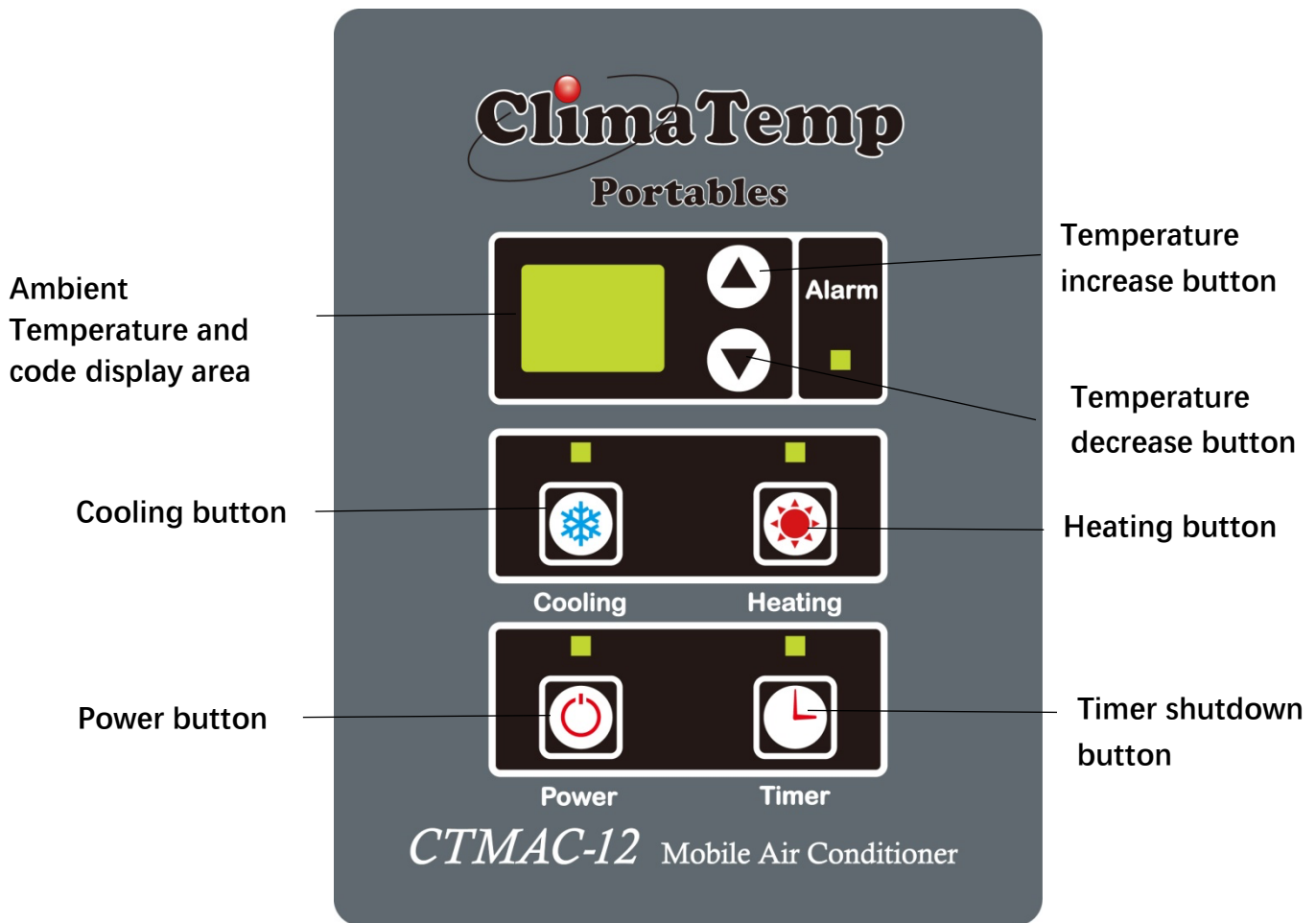
Pre-Use Inspection

- Confirm the power supply matches the unit's requirements.
- Ensure all ducts and drains are properly installed.

Powering On

1. Open the circuit breaker door.
2. Switch the breaker to ON.
3. Close the breaker door.





- **Power Switch:** Press to turn the unit ON/OFF. The LED illuminates when power is connected.
- **Temperature Display change to (Fahrenheit/Celsius):**
 1. Turn the breaker OFF.
 2. Hold the Timer button while turning the breaker ON until "CF" appears.
 3. Release the Timer button.
 4. Press Cooling (Celsius) or Heating (Fahrenheit) to select, then press Timer to save.

Cooling Mode

1. Press the Power button, then the Cooling button.
2. Set the desired temperature (65°F–95°F).
3. The compressor engages if the ambient temperature exceeds the setpoint and disengages when below.
4. Allow up to 5 minutes for full cooling activation when switching from heating mode.
5. **Note:** Do not set below 72°F to prevent evaporator coil freezing.

Heating Mode

1. Press the Power button, then the Heating button.
2. Set the desired temperature (55°F–80°F, recommended 80°F).
3. Allow up to 5 minutes for full heating activation.
4. When shutting down, the fan runs for 5 minutes to cool the heat strip.
5. **Note:** Ensure the power supply can handle the increased amperage for heating.

Fan-Only Mode

1. Set the unit to Cooling mode.
 2. Press the UP button to set the temperature to 95°F.
 3. The unit operates in fan-only mode (effective below 95°F ambient).
-

Troubleshooting

Condensate Pump Issues

- **FL Code at Startup:**
 - Cause: Excess water in the evaporator pan overfills the pump reservoir.
 - Solution: Siphon water from the reservoir and reset the breaker (OFF to ON).
- **FL Code During Operation:**
 - Cause: Blocked, kinked, or clogged condensate line, or vertical lift exceeds 17 ft.
 - Solution: Siphon water from the reservoir, clear blockages, ensure proper hose setup, remove debris, and reset the breaker.
- **Pump Replacement:**
 - Unplug the defective pump from the wiring harness.
 - Connect a new ClimaTemp CTMAC-12 (208V) pump via the plug-and-play connector.

Error Codes

Code	Description	Cause	Solution
1P	High Pressure (Cooling)	High ambient temperature, blocked exhaust, dirty condenser.	Use within temperature range, clear exhaust, clean filter.
1L	Low Pressure (Cooling)	Low ambient temperature, refrigerant leak.	Use within temperature range, contact HVAC technician.
1C	Compressor Overcurrent	Voltage issues, faulty relay, dirty condenser, faulty compressor.	Use correct voltage, clean filter, contact technician.
C1	Condenser Fan Overcurrent	Voltage issues, faulty relay, faulty fan.	Use correct voltage, contact technician.
C3	Evaporator Fan Overcurrent	Voltage issues, faulty relay, faulty fan.	Use correct voltage, contact technician.
E1	Faulty Temperature Sensor	Short circuit or disconnected sensor.	Contact technician for replacement.
E3	Phase Sequence/Missing	Incorrect phase sequence, missing phase.	Swap two hot cables, contact technician.
FL	Full Water Alarm	Blocked condensate line, full pump, faulty pump.	Clear blockages, empty pump, replace pump.
PC	High Temperature (Heating)	High ambient temperature, restricted return air.	Use within temperature range, clear blockages, contact technician.
E2	Faulty Defrost Sensor	Short circuit or disconnected sensor.	Contact technician for replacement.
1H	Condenser Fan Overheat	High ambient temperature, blocked exhaust, faulty fan.	Clear exhaust, contact technician.
2H	Evaporator Fan Overheat	High internal temperature, faulty fan.	Check temperature, contact technician.
dB	Defrost Mode	Normal operation (anti-freeze).	No action needed.

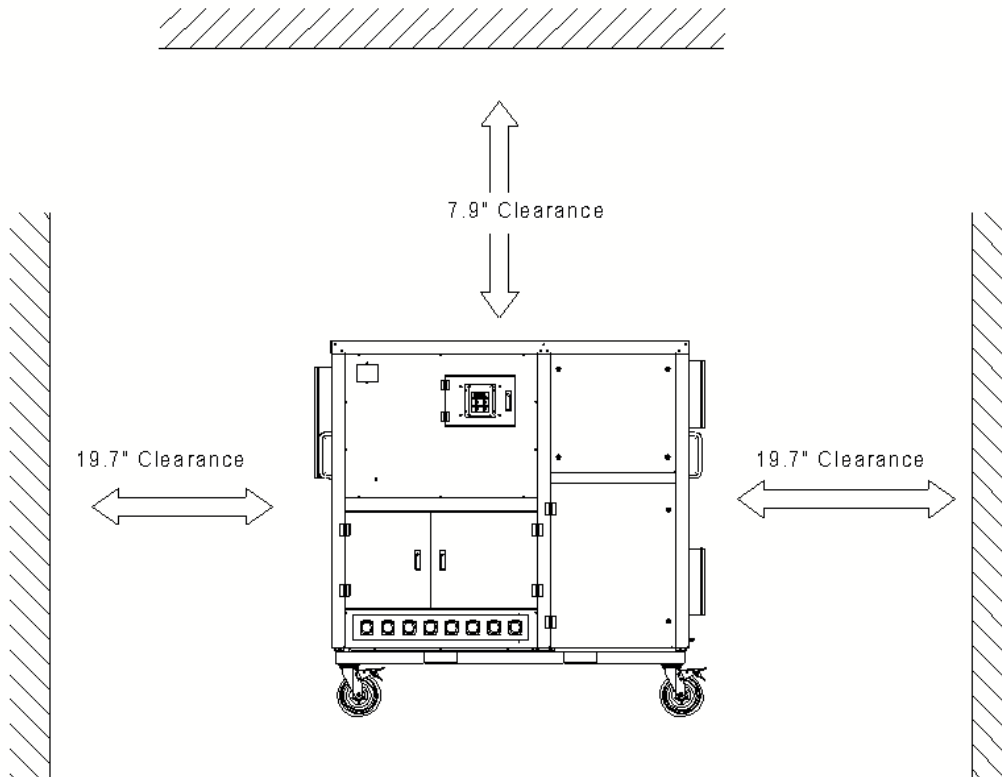
Safety Features

- **Automatic Restart:** Resumes operation after power loss.
 - **Time Delay:** 2–3 minute compressor delay to equalize pressures.
 - **Compressor Overload Protection:** Shuts down on abnormal current draw.
 - **Thermal Overload Protection:** Protects evaporator/condenser fans from overheating.
 - **High/Low Pressure Switches:** Automatically shut down the unit on abnormal pressures, resetting when conditions normalize.
 - **Anti-Freeze Sensor:** Engages Defrost Mode at 32°F coil temperature, restarting after 10 minutes if above 32°F.
 - **Hot Gas Bypass:** Prevents coil freezing under low load conditions.
-

Maintenance

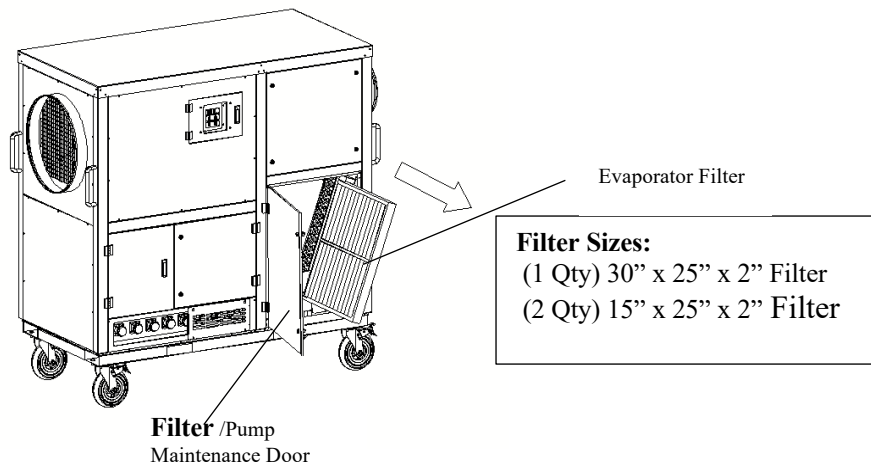
Site Requirements

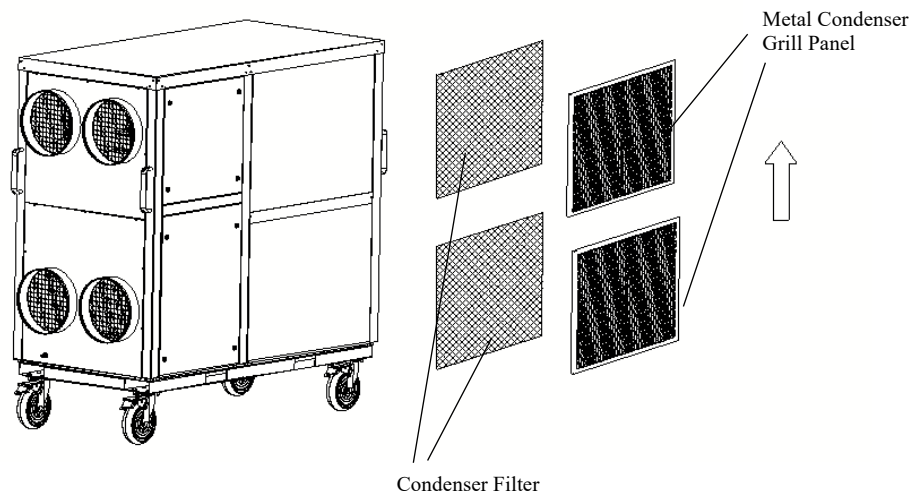
- Place the unit on a level surface to ensure proper condensate drainage.
- Position near heat-generating equipment with unobstructed return air duct.



Routine Maintenance

- **Filters:**
 - **Condenser Filter:** Lift and remove the metal grill, clean the filter with a vacuum or water, dry, and reinstall.
 - **Evaporator Filter:** Open the filter maintenance door, replace with 30"x25"x2" or two 15"x25"x2" filters, and lock the door.





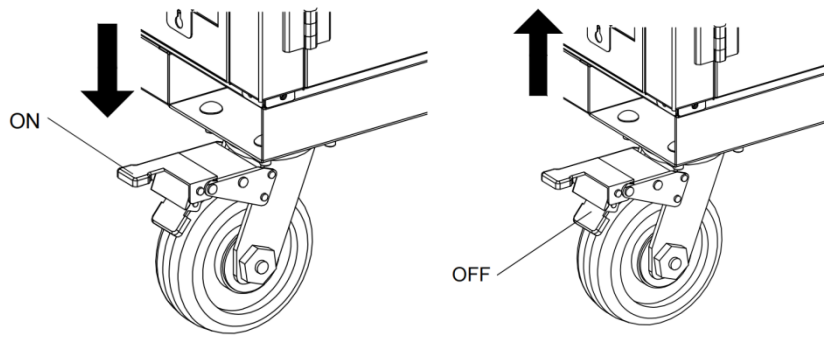
- **General:**
 - Turn off power before maintenance.
 - Tighten loose screws/bolts.
 - Avoid storing in extreme heat, horizontally, upside down, or stacked.
 - Disconnect power during storage.

Refrigerant Servicing

- **Refrigerant:** R32 (A2L-certified technicians only).
 - **Access:** Schrader valves via filter/pump maintenance door or side panels.
 - Suction Pressure and Discharge Pressures can be found on unit Nameplate Label.
 - Refrigerant Capacity can be found on unit Nameplate Label.
-
-

Additional Features

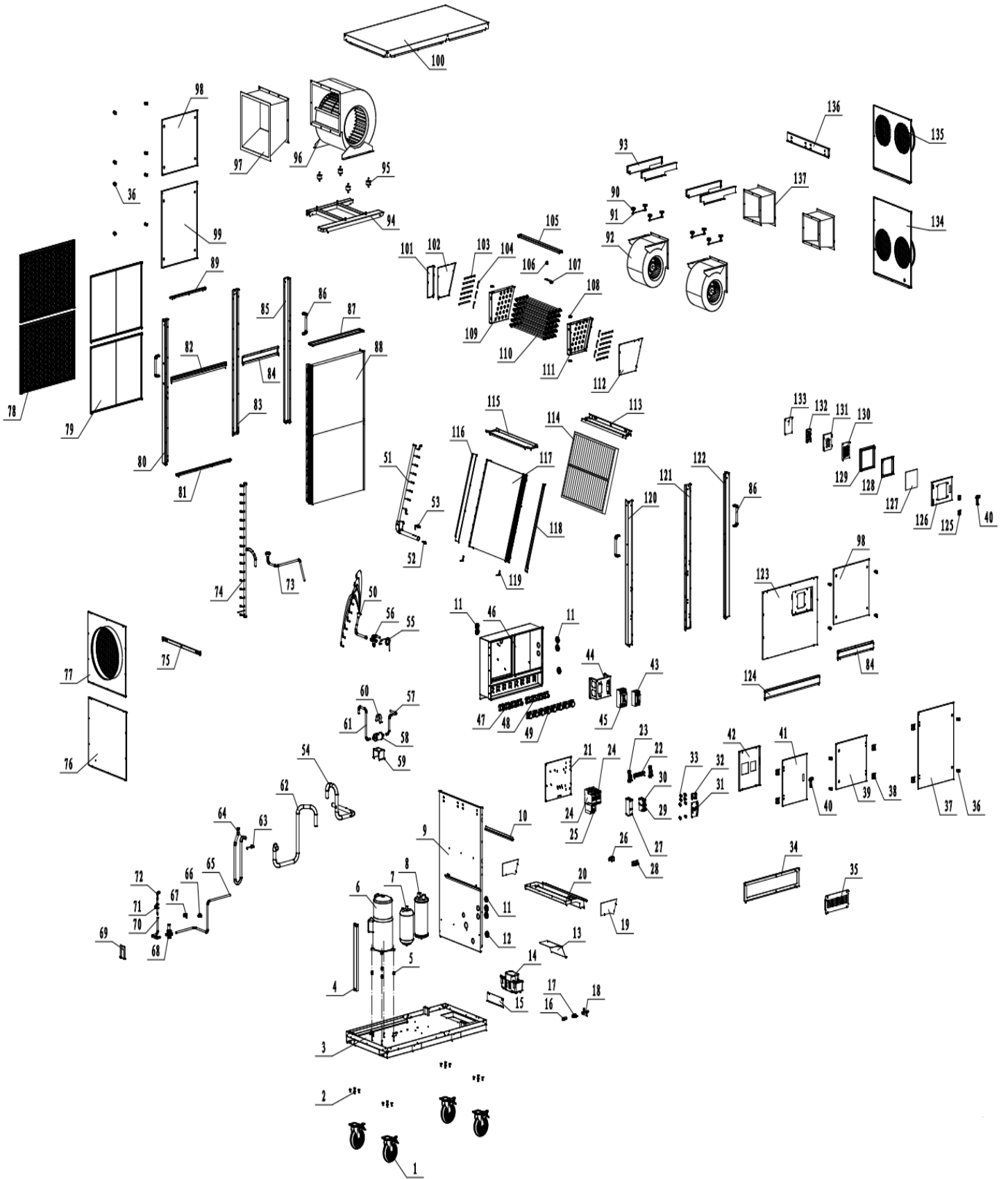
- **Fork Pockets:** 4 pockets for forklift maneuvering.
- **Heavy-Duty Locking Casters:** Lock wheels after positioning (brake ON) and unlock to move (brake OFF).



Contact Information

For further assistance, refer to ClimaTemp's official support channels or contact a licensed HVAC technician.

CTMAC-12 Parts Breakdown List



CTMAC-12 Parts List

PARTS NO.	DESCREPTION	QTY	PARTS NO.	DESCREPTION	QTY
1	Swivel wheel	4	35	Power protection board	1
2	Coach screw	16	36	Retractable lock	14
3	Chassis assembly	1	37	Filter maintenance screen	1
4	Condenser fan support	1	38	Hinge	6
5	Compressor shock pad	4	39	Electric control box door 2	1
6	Compressor	1	40	Electric cabinet door lock	2
7	Liquid reservoir	1	41	Electric control box door 1	1
8	Gas-liquid separator	1	42	Circuit breaker panel	1
9	Middle partition plate assembly	1	43	Circuit breaker 125A, 3P	1
10	Wiring-channel	1	44	Circuit breaker bracket	1
11	Wire protection ring ϕ 30	3	45	Circuit breaker 250A, 3P	1
12	Wire protection ring ϕ 38	6	46	Electronic control box assembly	1
13	Water pump dust cover	1	47	Male plug 400A	4
14	Condensate drain pump	1	48	Female plug 400A	4
15	Water pump hanging plate	1	49	Dust cover	8
16	Water pipe joint	1	50	Evaporator liquid separation tank assembly	1
17	Drainage ball valve	1	51	Evaporator return gas pipe assembly	1
18	Drainage joint assembly	1	52	Needle valve	1
19	Drain Pan baffleplate	2	53	Low-voltage switch	1
20	Drain Pan assembly	1	54	Evaporator return gas header	1
21	Electrical installation board	1	55	Expansion valve balancing tube	1
22	Guide rail	1	56	Expansion valve	1
23	Guide rail fixing bracket	2	57	Filter outlet pipe	1
24	Contactora	2	58	Dry filter	1
25	Compressor thermal relay	1	59	Filter support	1
26	Transformer	1	60	Filter clamp	1
27	Soft starter	1	61	Filter inlet pipe	1
28	Transition terminal	3	62	Suction pipe assembly	1
29	Evaporator fan thermal relay	1	63	High-voltage switch	1
30	Evaporator fan contactora	1	64	Exhaust pipe	1
31	Control mainboard	1	65	Bypass valve outlet pipe	1
32	Phase sequence board	1	66	Copper pipe fixing clamp	1
33	PC board spacer	8	67	Regulating valve clamp	1
34	Connector panel assembly	1	68	Bypass-valve	1

PARTS NO.	DESCREPTION	QTY	PARTS NO.	DESCREPTION	QTY
69	Regulating valve bracket	1	104	Plate 2	6
70	Connection pipe 1	1	105	Electric heating support plate	1
71	Ball valve	1	106	Temperature protector	1
72	Connection pipe 1	1	107	Temperature protector bracket	1
73	Condenser liquid separation tube assembly	1	108	Wire protection ring φ25	3
74	Condenser flute tube assembly	1	109	Electric heating right end plate	1
75	Panel fixing strip	1	110	Electric heating tube	24
76	Condensing panel assembly	1	111	Electric heating left end plate	1
77	Condensing outlet air plate	1	112	Electric heating left cover plate	1
78	Condensing inlet air plate assembly	2	113	Filter screen upper guide plate	1
79	Condensation filter screen	2	114	Cold air filter	1
80	Right rear pillar	1	115	Evaporator top baffle	1
81	Filter lower bar	1	116	Evaporator right baffle	1
82	Filter middle bar	1	117	Evaporator	1
83	Right middle pillar	1	118	Evaporator left baffle	1
84	Support plate 2	2	119	Evaporator fixing plate	2
85	Front left and right pillar	1	120	Rear left pillar	1
86	Handle	4	121	Left middle pillar	1
87	Condenser top baffle	1	122	Front left and right pillar	1
88	Condenser assembly	1	123	Control panel assembly	1
89	Side panel rail	1	124	Support plate 1	1
90	Rubber washer	12	125	Hinge 40*40	2
91	Screw fixing plate	4	126	Control protective door	1
92	Evaporator Fan	2	127	Protective glass	1
93	Evaporator Fan hanging plate	4	128	Glass pressure plate	1
94	Fan holder assembly	1	129	Waterproof frame	1
95	Fan vibration damper	4	130	Control sticker	1
96	Condenser fan	1	131	Electric control box	1
97	Condenser guide frame	1	132	Control board	1
98	Left side plate	2	133	Electric control box cover plate	1
99	Right side plate	1	134	Cold air inlet panel	1
100	Top cover component	1	135	Cold air outlet panel	1
101	Electric heating right cover plate 2	1	136	Fan support plate	1
102	Electric heating right cover plate 1	1	137	Cold air guide frame	1
103	Plate 1	12			