CAPTIVE-AIRE DU12HFA

User Manual for CAPTIVE-AIRE DU12HFA Restaurant Exhaust Fan

High Speed Direct Drive Centrifugal Upblast Exhaust Fan

1. Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your CAPTIVE-AIRE Model DU12HFA Restaurant Canopy Hood Grease Rated Exhaust Fan. Please read this manual thoroughly before attempting to install or operate the unit. Retain this manual for future reference.
The CAPTIVE-AIRE DU12HFA is a high-speed, direct-drive centrifugal upblast exhaust fan designed specifically for restaurant grease and general ventilation applications. It features a robust aluminum housing, a backward-inclined wheel, and integrated speed control for optimal performance.

2. Safety Information

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment.

- Always disconnect power before servicing the unit.
- Ensure all electrical connections comply with local codes and national electrical codes (NEC).
- Installation must be performed by qualified personnel.
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.
- Do not operate the fan if any parts are damaged or missing.
- This unit is designed for outdoor, upblast exhaust applications.

The unit is ETL Listed and complies with UL705 (electrical) Standards and CSA Std C22.2, No 113. Models 12 thru 85 are ETL Listed and comply with UL762 and ULC-S645 Standards for grease-rated applications.

3. Setup and Installation

The CAPTIVE-AIRE DU12HFA exhaust fan is designed for rooftop installation, typically on a roof curb (not included). A hinge kit is provided for exhaust fan roof curbs to allow for easy access for maintenance.

3.1 Unpacking and Inspection

Upon receipt, inspect the unit for any shipping damage. Report any damage to the carrier immediately. Verify all components are present according to the packing list.

Figure 1: CAPTIVE-AIRE DU12HFA Exhaust Fan. This image shows the complete exhaust fan unit, highlighting its robust aluminum construction and the integrated control box on the side.

3.2 Mounting the Fan

1. Ensure the roof curb is properly installed and sealed to prevent leaks.
2. Carefully lift the exhaust fan onto the roof curb. The fan base dimensions are 19" x 19".
3. Secure the fan to the roof curb using appropriate fasteners.
4. Install the provided hinge kit to allow the fan to pivot open for maintenance access.

Figure 2: CAPTIVE-AIRE DU12HFA Exhaust Fan installed on a rooftop. This image illustrates the fan mounted on a roof curb,

connected to the electrical supply, and ready for operation.

3.3 Electrical Connections

The DU12HFA operates on 115 Volt Single Phase power. It includes a safety disconnect switch and a variable speed control.

- Ensure the power supply matches the fan's requirements (115V, single phase).
- Connect the fan to a dedicated circuit with appropriate overcurrent protection.
- Wire the disconnect switch and variable speed control according to the wiring diagram provided with the unit and local electrical codes.
- The main unit input is 2.4 Amps MCA, 15 Amps MOP, 115 V, 14 AWG Wire Min.

Figure 3: Close-up view of the electrical control box on the CAPTIVE-AIRE DU12HFA Exhaust Fan. This box houses the safety disconnect switch and provides access for electrical wiring.

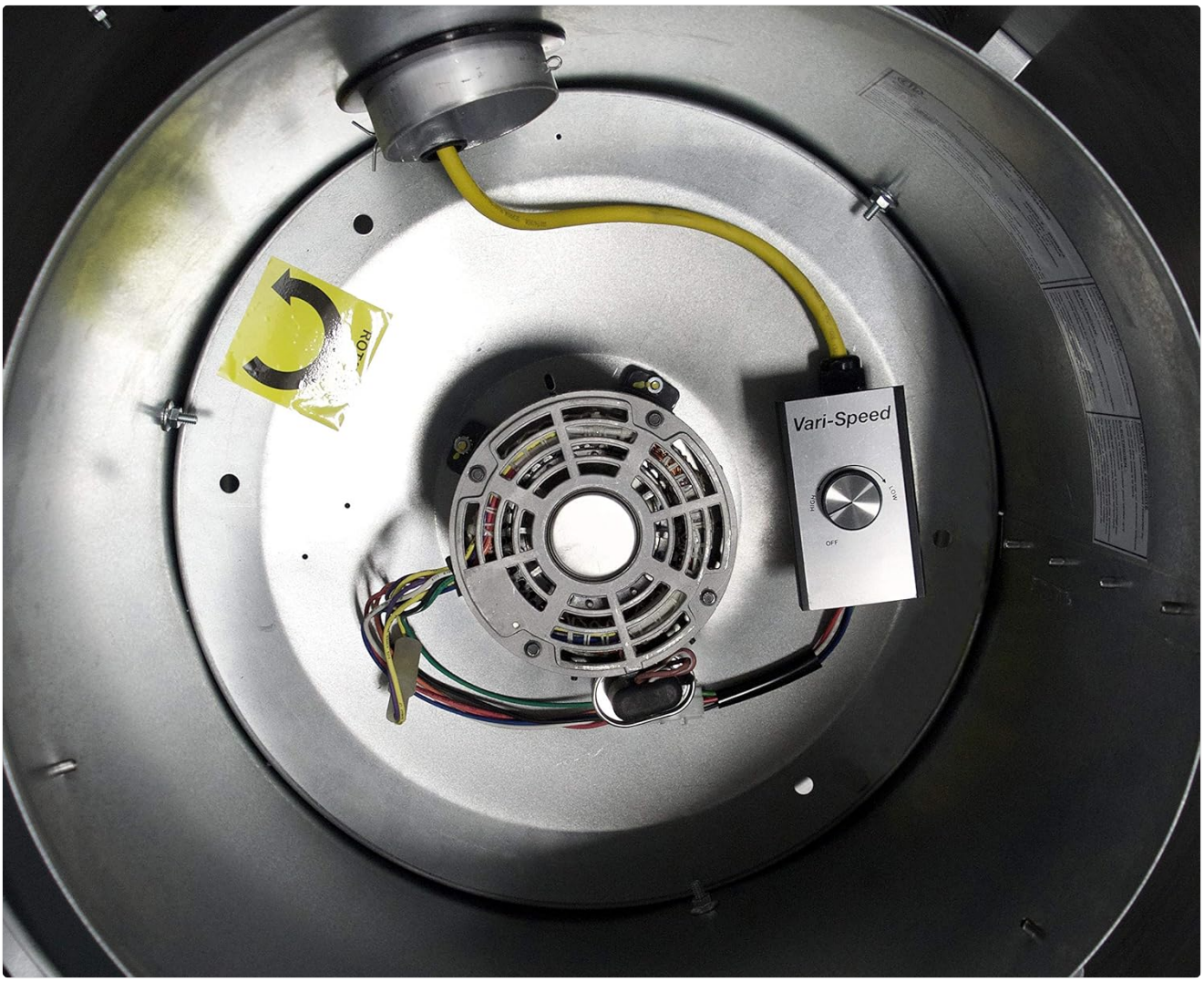


Figure 4: Internal view of the CAPTIVE-AIRE DU12HFA Exhaust Fan, showing the motor, wiring, and the Varispeed control unit. This illustrates the direct-drive mechanism and speed adjustment components.

4. Operating Instructions

The DU12HFA fan is designed for continuous operation in commercial kitchen environments.

4.1 Initial Startup

1. Before starting, ensure all installation steps are complete and verified by a qualified electrician.
2. Turn the disconnect switch to the "ON" position.
3. Adjust the variable speed control to the desired exhaust rate. The fan operates within a range of 100-500 CFM.
4. Monitor the fan for any unusual noises or vibrations during initial operation.

4.2 Speed Control

The integrated variable speed control allows adjustment of the fan's CFM output. Rotate the knob on the control unit to increase or decrease the fan speed as needed for your ventilation requirements.

5. Maintenance

CAUTION: Always disconnect power to the unit before performing any maintenance or cleaning.

5.1 Routine Inspection

- **Monthly:** Inspect the fan wheel for grease buildup. Clean as necessary.
- **Quarterly:** Check motor bearings for wear and lubrication (if applicable, direct drive motors are often sealed). Inspect electrical connections for tightness and corrosion.
- **Annually:** Perform a thorough inspection of the entire unit, including housing, mounting, and wiring.

5.2 Cleaning

The DU12HFA is grease-rated and includes a restaurant duty grease cup and down spout. Regular cleaning is crucial for optimal performance and fire safety.

1. Disconnect power to the fan.
2. Open the fan housing using the quick-release latches and hinge kit.
3. Remove and empty the grease cup. Clean it thoroughly.
4. Clean the fan wheel and interior surfaces of the housing using a suitable degreaser. Ensure all grease is removed.
5. Inspect the down spout for blockages and clear if necessary.
6. Reassemble the fan, ensuring all latches are securely fastened.

6. Troubleshooting

Problem	Possible Cause	Solution
Fan does not start	No power; Disconnect switch OFF; Motor overload; Faulty wiring	Check circuit breaker/fuse; Turn disconnect switch ON; Reset motor overload; Inspect wiring (qualified electrician only)
Reduced airflow	Grease buildup on wheel; Blocked ductwork; Incorrect speed setting	Clean fan wheel; Inspect and clear ductwork; Adjust speed control to higher setting
Excessive noise/vibration	Unbalanced fan wheel (grease buildup); Loose mounting; Worn motor bearings	Clean fan wheel thoroughly; Tighten mounting bolts; Contact technical support for motor inspection
Motor overheats	Insufficient airflow; Motor overload; Incorrect voltage	Check for blockages; Reset overload; Verify power supply voltage

If troubleshooting steps do not resolve the issue, contact CAPTIVE-AIRE technical support.

7. Specifications - Model DU12HFA

CAPTIVE-AIRE
COMMERCIAL KITCHEN VENTILATION

Fan #1 DU12HFA (63 lbs.)

High Speed Direct Drive Centrifugal Upblast Exhaust Fan with speed control (speed control included for single phase only), disconnect switch and 10-1/2" wheel.

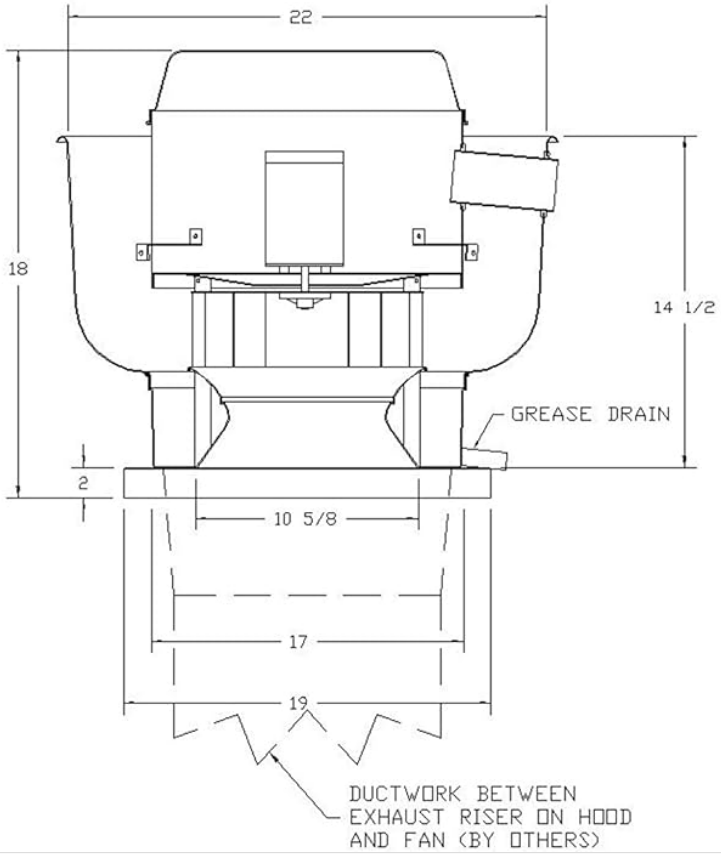
Exhaust Motor:
Model CK42BS04M01-60-115, 0.180 HP, 1 Phs, 115 V, 60Hz, 1.9 FLA, ODP (Open Drip Proof)

Exhaust Performance:
Volume: 300 cfm
RPM: 1245
TS: 3422 ft/min
SP: 0.500" w.g.
BHP: 0.085
Discharge Velocity: 213 FPM
Altitude: 0'
Ambient Temp: 70°F

Exhaust Installation Information:
Unit Main Input: 2.4 Amps MCA, 15 Amps MOP, 115 V, 14 AWG Wire Min.
Exhaust Unit Voltage: 1 phs 115 V 60Hz

Construction Features
Housing constructed of heavy gauge aluminum • Centrifugal backward inclined, non-overloading wheel • Weatherproof safety disconnect switch • Grease spout welded to housing • Vibration isolators • Continuous duty, thermal protected, permanently lubricated, direct drive motor • Forces fresh air through motor to ensure long motor life • Variable Speed Control on Single Phase Units Only. (VFDs required to adjust speed for 3 phase versions) • Corrosion resistant fasteners • Thermal overload protection • High heat operation (400 °F) • Rated for restaurant and general ventilation applications • Grease classification tested

Selected Options:
- Grease Cup for kitchen-duty centrifugal exhaust fans, Box Dimensions 17-1/8 L X 5-1/16 W X 3-3/4 H (18 GA.) (Includes Down Spout)
- HINGE KIT - Standard Hinge kit for exhaust fan roof curbs. Includes Hardware to attach hinge to curb and hinge to base. Ships Loose. Used on Fans with wheels 20 inches or smaller. 12 GA Galvanized.



FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS)
- ROOF MOUNTED FANS
- RESTAURANT MODEL
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL
- INTERNAL WIRING
- WEATHERPROOF DISCONNECT
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE)
- HIGH HEAT OPERATION 300°F (149°C)
- GREASE CLASSIFICATION TESTING

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

Figure 5: Technical diagram of the CAPTIVE-AIRE DU12HFA Exhaust Fan, illustrating key dimensions and components such as the

grease drain and ductwork connection.

Feature	Detail
Model Name	DU12HFA
Brand	CAPTIVE-AIRE
Electric Fan Design	Exhaust Fan (Centrifugal Upblast)
Motor	0.180 HP, 115 Volt, Single Phase, Direct Drive
Air Flow Capacity	100-500 CFM (Cubic Feet Per Minute)
Fan Base Dimensions	19" x 19"
Wheel Size	10-1/2"
Item Weight	62 Pounds
Power Source	Corded Electric
Voltage	115 Volts
Wattage	134 watts
Control Method	Variable Speed Control (Touch-type adjustment)
Housing Material	Heavy Gauge Aluminum
Certifications	UL705, UL762, ULC-S645, ETL Listed
Recommended Use	Restaurant Canopy Hood Grease Exhaust, General Ventilation
Special Features	Disconnect Switch, Variable Speed Control, Vibration Isolators, Quick Release Latches, Restaurant Duty Grease Cup, Down Spout, Hinge Kit

8. Warranty

The CAPTIVE-AIRE DU12HFA exhaust fan comes with a**one-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use and service. For specific warranty terms and conditions, please refer to the documentation included with your product or contact CAPTIVE-AIRE customer service.
This warranty does not cover damage resulting from improper installation, misuse, abuse, unauthorized repairs, or lack of proper maintenance.

9. Technical Support

Technical support is available upon purchase of your CAPTIVE-AIRE DU12HFA exhaust fan. If you encounter any issues during installation, operation, or maintenance that are not covered in this manual, please contact CAPTIVE-AIRE directly.

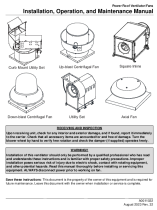
For assistance, please visit the official CAPTIVE-AIRE website or refer to the contact information provided with your product documentation.

CAPTIVE-AIRE Systems

www.captiveaire.com

Model: DU12HFA | Document Version: 1.0

Related Documents

	CaptiveAire Power Roof Ventilator/Fans: Installation, Operation & Maintenance Manual (A0011032) This official Installation, Operation, and Maintenance Manual (Document A0011032, Rev. 32) from CaptiveAire details the setup, use, and upkeep of Power Roof Ventilator/Fans. It covers various fan types including Curb Mount Utility Sets, Up-blast and Down-blast Centrifugal Fans, Square Inline Fans, Utility Sets, and Axial Fans, providing essential safety, installation, and troubleshooting guidance for qualified professionals.

Documents - CAPTIVE-AIRE – DU12HFA

[pdf] Catalog

captiveaire catalog fanCatalog asp lprint 1 cati scott Du hfa DU HFA CENTRIFUGAL UPBLAST DIRECT DRIVE FANS Air Volume 41 3489 cfm Maximum SP 2 48 wg @ standard air density FEATURES BENEFITS Completely enclosed drive compartment protects motor from airborne contaminants Exhaust sefa details Captive Aire

DU-HFA CENTRIFUGAL UPBLAST DIRECT DRIVE FANS Air Volume: 41 - 3489 cfm Maximum SP: 2.48 wg. stand ... e number 3049729-002 and comply with UL705 electrical Standards and CSA Std C22.2, No 113. Models **DU12HFA** thru DU85HFA are ETL Listed under file number 3049729-001 and comply with UL762 Standards. ... lang:en score:21 filesize: 138.36 K page_count: 6 document date: 2009-12-01