

QUALITY ASSURANCE MANUAL FOR MIAMI-DADE COUNTY PRODUCTS

1. SCOPE

1.1. This document defines the overall requirements for documenting the quality assurance program for products holding a Notice of Acceptance issued by the Miami-Dade County Building Code Compliance Office, Product Control Division.

1.2. DEFINITIONS

1.2.1. NOA: A document prepared by the Miami-Dade County Building Code Compliance Office Product Control Division accepting the applicant's request. Notices of Acceptance are only issued to manufacturers of a product and/or a system.

1.2.2. Quality Assurance Manual: The documentation which comprises the quality assurance program.

1.2.3. Quality Assurance Entity: Quality assurance entity means an entity approved by the Florida Building Commission pursuant to subsection 9B-72.100(5), F.A.C., to provide oversight and determine that the product or system is being manufactured or assembled, per the submitted description, test results, or calculations to establish continual product performance.

2. QUALITY MANUAL

2.1. Captive-Aire Systems has a philosophy of quality at the source. When a quality issue arises, the problem is immediately solved at the root cause of the problem. Captive-Aire Systems maintains a continuous improvement quality department that constantly reviews every product and process.

2.2. There are multiple facilities that manufacture this product and maintain quality standards for this product. The following list illustrates these manufacturing facilities:

Captive-Aire Systems, Inc.	Captive-Aire Systems, Inc.	Captive-Aire Systems, Inc	RUPP Air Management Systems	Captive-Aire Systems, Inc.
360 Northbrook Drive	4031 Tull Avenue	6856 Lockheed Drive	101 North Industrial Parkway	6 Commerce Court
Youngsville, NC 27596	Muskogee, OK 74403	Redding, CA 96002	West Union, IA 52175	Bedford, PA 15522
Phone: 919-554-2414	Phone: 918-686-6717	Phone: 530-351-7150	Phone: 563-422-8894	Phone: 918-577-1254
Fax: 919-554-1338	Fax: 918-686-0649	Fax: 530-351-7159	Fax: 563-422-9207	Fax: 919-573-6993

Table 1 Manufacturing Locations

3. PERSONNEL, RESPONSIBILITY AND AUTHORITY

3.1. The quality manager responsible for components, process, and design is Nick Perry. Nick will be responsible for the following.

3.1.1. Ensuring that processes are established, implemented and maintained,

3.1.2. Reporting and resolving quality assurance issues related to third parties on matters related to the quality assurance program.

3.1.3. Has direct access to top management.

3.1.4. Nick Perry has been assigned this role by the VP of Engineering and is in direct contact with the engineering department.

3.1.5. There are multiple levels of personnel inspecting this product. General quality personnel will inspect the general parameters of the product whereas administrative quality personnel will inspect the details of the product pertaining to the Miami-Dade certification.

3.1.6. Administrative quality control will be trained by Nick Perry to review this.

4. DOCUMENTATION REQUIREMENTS

- 4.1. This manual will be reviewed at planned intervals not to exceed 12 months to ensure the continuing suitability, adequacy and effectiveness of the system.
 - 4.1.1. The revision of this manual will be tracked by the date and revision expressed in the upper right hand corner of every page in this document.

5. IDENTIFICATION AND TRACEABILITY

- 5.1. Multiple fabricating facilities manufacture this product and the product will be labeled accordingly with the statement “Miami-Dade County Product Control Approved”. The permanent label will be applied in two places on every product including the interior and exterior of the product.
- 5.2. The product must be labeled with a control number that identifies the address and company at which it was manufactured.

6. PRODUCT REALIZATION

- 6.1. This product must be manufactured on an assembly line with multiple sign off areas. The main areas of the assembly line are wheel assembly, base construction, shell construction, final assembly and quality control being the final process.
- 6.2. The products referenced in this manual below are to be manufactured to the specifications, assembly drawings and the manufacturing tolerances outline and kept on file by Captive-Aire Systems corporate engineering department. All components utilized in the assembly of these products must be in accordance with the guidelines of the Captive-Aire Systems corporate engineering department. These documents are available by contacting the person referenced in section 3.1.
- 6.3. Product realization is conducted according to planned and developed processes needed to achieve conformity to product requirements.

NOA 1 Products Covered (ATI 08033)	NOA 2 Products Covered (ATI 08034)
NCA Series (Belt Drive Aluminum Centrifugal Up-blast Exhaust)	BI-CA Series (Belt Drive Steel Utility Set Exhaust)
NCAHP Series (Belt Drive Aluminum Centrifugal High Pressure Up-blast Exhaust)	CB Series (Belt Drive Steel Utility Set Exhaust)
DU Series (Direct Drive Aluminum Centrifugal Up-blast Exhaust)	HRE Series (Belt Drive Steel Utility Set Exhaust)
BDCR Series (Belt Drive Aluminum Centrifugal Down-blast Exhaust)	USI Series (Belt Drive Steel Utility Set Exhaust)
DR Series (Direct Drive Aluminum Centrifugal Down-blast Exhaust)	NSAU Series (Steel Supply)
DMUA Series (Direct Drive Aluminum Axial Supply)	A Series (Modular Steel Supply)
DDAR Series (Direct Drive Aluminum Axial Exhaust)	A-D Series (Modular Steel Direct Fired Heated Supply)
EMUA Series (Aluminum Gravity Relief)	A-E Series (Modular Steel Electric Heated Supply)
	A-I Series (Modular Steel Indirect Heated Supply)
	RE Series (Belt & Direct Steel Utility Set Exhaust)

Table 2 Product Certified

7. QUALITY AUDITS AND INSPECTIONS

- 7.1. Quarterly audits of a national recognized certification laboratory are conducted. Captive-Aire Systems shall use the records of audits and inspections to demonstrate its ability to correct and prevent quality issues.
- 7.2. All third-party audit or inspection reports, when applicable, are to be filed with the Product Control Division no later than ten (10) days after the actual date in which they were conducted.
- 7.3. All corrective action responses when requested are to be addressed in writing to the Product Control Division. Corrective actions taken shall eliminate the cause of any nonconformity in order to prevent recurrence.
- 7.4. Field complaints involving Miami-Dade County approved products brought by a Building Official, a Product Control Inspector, a customer or a member of the general public shall be addressed and documented by Captive-Aire Systems. All complaints shall be investigated and submitted to the Product Control Division addressing the root cause of the problem and the corrective action.
- 7.5. A copy of the entire NOA shall be available and provided to the auditor and/or inspector upon request at the Captive-Aire Systems manufacturing facility, distribution center, or at the field.

8. CONTROL OF INCOMING MATERIALS

- 8.1. All purchased components are randomly inspected to the manufacturing prints by Captive-Aire Systems production quality engineers. If deviations to the print are determined, the supplier of these components is given the choice of reworking or repairing the issue.
- 8.2. Captive-Aire has the responsibility to retain all purchasing records of incoming materials including but not limited to; inspection and mill test reports, certificates of compliance, measurements, etc... Captive-Aire Systems shall have these records readily available for inspection.

9. PRESERVATION OF PRODUCT

- 9.1. The product shall be manufactured per the quality standards outlined in this document. Labeling of the product must be performed to the requirements of this document. The product must be packaged in a method to prevent shipping damage and ensure an as built delivery of the product. Possible methods include fully crating the product and fully boxing the product with a cushion material.

10. CONTROL OF NONCONFORMING PRODUCT

- 10.1. Captive-Aire Systems shall provide means to ensure that product that does not conform to the product requirements is identified and controlled to prevent unintended use or delivery of a nonconforming product.
- 10.2. The control of nonconforming products shall be defined in the documentation system. A sample of this is shown below and is integral to the Captive-Aire Systems web based production software called "JobTracker"
- 10.3. All nonconforming products shall be segregated from production until disposition of the product is made by a relevant authority.

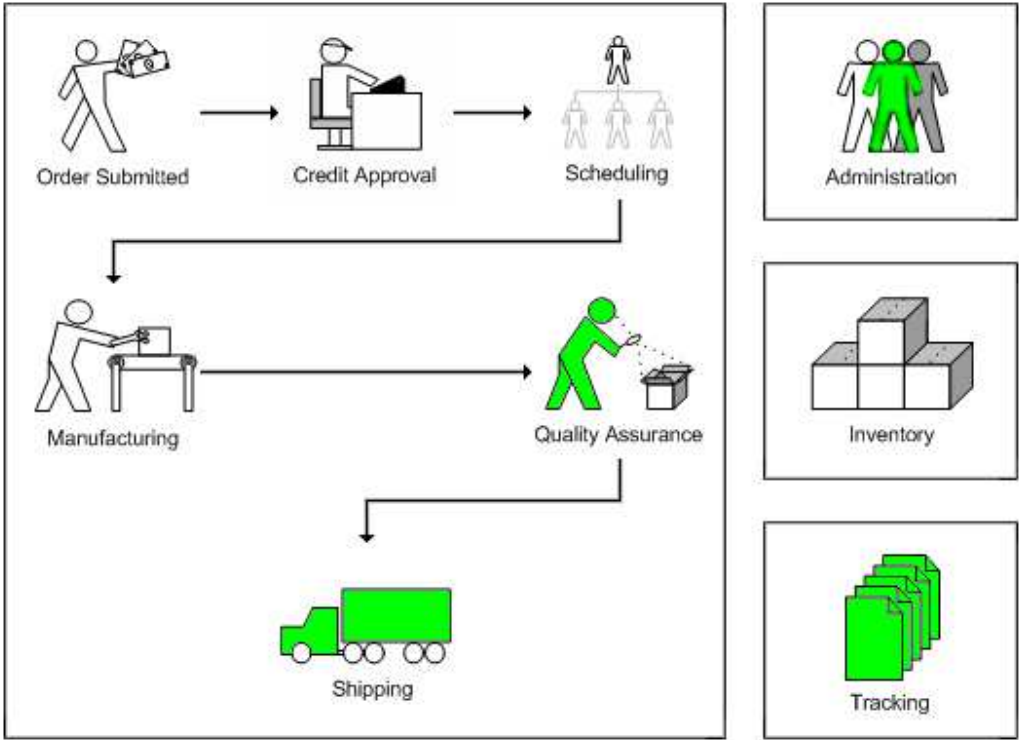


Figure 1 JobTracker Main Screenshot

JOB SEARCH:

Job Number:

Manufacturing Site:

JOB #: 863235 NAME: BOCA DEL MAR MFG. SITE: Youngsville, NC - Manufacturing

PRODUCT SELECTION:

Product Types:

Products:

PRODUCT SURVEY:

Exhaust Fan Performance Test

Fan #1 NCA14FA - Exhaust Fan

Belt Drive Centrifugal Upblast Exhaust Fan with 15.75" wheel

Exhaust Motor Frame Size: 56

COMPLETED
 Modified by Kenneth Crudup on 11/5/2008 2:42:16 PM
 Completed by Kenneth Crudup on 11/5/2008 2:42:18 PM

EXHAUST FAN		
Test	Expected	Actual
Wheel Rotation Correct	Yes	<input type="text" value="Yes"/>
Fan Vibration Level at Center of Side of Fan Base	<= 0.25	<input type="text" value=".213"/> in/sec pk
Dielectric Test	Yes	<input type="text" value="Yes"/>
Exhaust Fan Measured RPM	1,083	<input type="text" value="1130"/> RPM
Exhaust Motor Measured Amperage (FLA=8.0)	< 9.200	<input type="text" value="7.6"/> FLA
Exhaust Motor Part Number	.5018OS1BSPAOC56-60PP	<input type="text" value=".5018OS1BSPAOC56-60PP"/>
Actual Exhaust Fan Pulley Installed	AK54 x 3/4	<input type="text" value="AK54 x 3/4"/>
Actual Exhaust Fan Belt Installed	AX22	<input type="text" value="AX22"/>
Exhaust Fan Variable Pitch Pulley Installed	1VL40 x 5/8	<input type="text" value="1VL40 x 5/8"/>
Is Exhaust Fan Belt Tensioned Correctly	Yes	<input type="text" value="Yes"/>
Exhaust Contactor/Overload Matches Schematic	Yes	<input type="text" value="Yes"/>
Wire connection Checked for Tightness	Yes	<input type="text" value="Yes"/>
Fasteners Checked for Tightness and Marked	Yes	<input type="text" value="Yes"/>
Disconnect Switch Matches Paperwork	Yes	<input type="text" value="Yes"/>
Labels in correct location	Yes	<input type="text" value="Yes"/>
Wiring schematic and documentation checked	Yes	<input type="text" value="Yes"/>

Figure 2 Quality Control Example Screenshot

11. MONITORING AND MEASUREMENT OF PRODUCT

- 11.1. The "JobTracker" software must ask all pertinent questions and maintain allowable tolerances that are acceptable to product conformability. This information is data driven and is maintained by Captive-Aire Systems engineering and information technology departments.
- 11.2. Where product test equipment requires calibration, these items must be kept calibrated within the date range indicated on the calibration sticker must be maintained.

12. CONTROL OF DOCUMENTS AND RECORDS

- 12.1. All documents and records related to the quality assurance of the product are controlled. All documents shall be legible and readily identifiable. All documents are electronically stored and backed up on a daily basis.
- 12.2. All records are maintained and are electronically available.
- 12.3. All files related to production and quality of this product will be identified by the product specific job number and fan number on the job.
- 12.4. All records pertaining to third-party audits and inspections shall be maintained for a minimum of three (3) years.
- 12.5. Advertising of a Miami-Dade product approved on any media shall be in compliance with the NOA page requirements. The NOA number shall always be preceded the words Miami-Dade County, Florida, and followed by the correspondent expiration date. If displayed, the NOA document shall be shown in its entirety.

13. CONTROL OF DESIGN AND DEVELOPMENT CHANGES

- 13.1. Design and development changes for product that have been issued an NOA shall be identified and records shall be maintained. All changes shall be reviewed, verified and issued a revised NOA by the Miami-Dade County Building Code Compliance Product Control Division before implementation.
- 13.2. Records of the result of the review of changes and any necessary actions shall be maintained for a minimum of ten (10) years electronically.