

BUSINESS MANAGEMENT SYSTEM MANUAL

"We want you to enjoy doing business with us"



Chicago Blower Corporation, 1675 Glen Ellyn Road, Glendale Heights, IL, 60139

1. SCOPE

CBC's business activities include sales, designing, manufacturing, supplying and servicing of air movement equipment and components for customers from a wide variety of industries including aerospace, automotive, nuclear, marine, mining, transportation, railroad and many others.

CBC's Business Management System sets the requirements for these activities and addresses expectations for sustainable business relationships and continuing profitability through providing high quality products consistently with a competitive price while being environmentally conscious.

2. PROCESS FLOW



SUCCESS CIRCLE

Flowchart above represents the sequence and relationship between main processes.

M & Q: Management & Quality SA: Sales ENG: Engineering PUR: Purchasing MFG: Manufacturing SE: Service

3. TRAINING AND COMPETENCE

CBC has an extensive library of documented procedures, instructions and engineering standards which define the requirements, characteristics and sequence of operations of its processes as well as the necessary knowledge for its products. This library of documents stands as the *organizational knowledge*. Training is provided to employees within the guidance of CBC's organizational knowledge, in accordance with *CBP-Q02-Training Procedure*.

4. SALES AND SERVICE

Sales process is carried out by Outside Sales Representatives and CBC's Inside Sales personnel (Engineers and Representatives). Inside Sales provides technical support to Outside Sales Representatives for reviewing customer requirements and translating them into quotes and sales orders. Sales Orders are written and accepted in accordance with *CBP-S02 Accepting and Writing Up Orders* procedure.

Service Department handles the start-up, repair and troubleshooting requirements of customers that occur after the delivery of CBC product, per *CBP-S11 Service Department Procedure*.

5. ENGINEERING

Engineering process is carried out by Design Engineers and Drafters. CBC has a large catalog of preengineered fan designs for various applications. Fan configurations are developed from these fan designs based on specific customer requirements.

When there is need for a new fan design development or design change, a project plan is prepared and submitted to management for approval. If approved, new design is developed, or the change is implemented in accordance with CBC procedures as listed below:

- CBP-E01 Product Development and Design Control Procedure
- CBP-E02 Special Order Control Procedure & Flowchart
- CBP-E03 Product Change Request Procedure & Flowchart

CBC follows the guidelines of AMCA Publication 210 for aerodynamic performance rating tests of fans and blowers, which is the main validation method of new design products and functional design changes.

6. PURCHASING

CBC's Purchasing Department works closely with Engineering and Sales departments; creates purchase orders with adequate and accurate information and ensures timely procurement of items needed for CBC's processes and products. This process is defined in *CBP-P01 Purchasing* procedure.

CBC's suppliers are qualified and evaluated in accordance with established procedures and criteria, as defined in:

- CBP-P05 Supplier Qualification and Evaluation procedure
- CBP-P18 Vendor Performance Grading procedure

7. MANUFACTURING

CBC's production operations consist of laser & plasma sheet metal cutting, press forming of sheet metal, welding, balancing, assembly, paint and run test of assembled fans and blowers. Work instructions and specifications for production operations are developed as applicable, approved and made available at areas of use.

The equipment necessary for carrying out the operations are provided and regularly maintained in accordance with *CBP-M53 Preventive Maintenance Procedure*.

When it is required by AWS code as part of the customer order requirement, CBC ensures that qualification of welding technicians, welding procedure specifications and equipment complies with applicable requirements and related records are maintained.

All parts and products on the shop floor are identified with tags, which show the PO#, Job# and/or Item#, as applicable. Status of parts and products that are tagged with PO or Job numbers can be identified via the ERP system. This process is defined in: *CBP-MO3 Product ID and Traceability* procedure.

8. QUALITY

8.1 Inspection: CBC plans the inspection and test activities prior to manufacturing. Inspection and test activities from receiving to final inspection are outlined in *CBP-Q25 Inspection and Test Plan* procedure.

8.2 Control of Measuring and Test Equipment: Measuring and test equipment used for acceptance or rejection are identified, controlled and calibrated. Calibration is performed internally at CBC or outsourced to qualified service providers at specified intervals, ensuring traceability to NIST standards. Calibration process and related activities are defined in *CBP-Q07 Control of Measuring and Test Equipment* procedure.

8.3 Control of Nonconformities: CBC controls nonconformities by various methods based on where and when the nonconformity is detected.

For nonconformities detected on purchased items at receiving inspection:

• CBP-Q19 Receiving Inspection, Accept or Reject Parts procedure

For nonconformities detected during production or final inspection:

• CBP-Q02 CW – "Customer is Waiting" form and Problem Orders procedure

For nonconformities detected after the product is shipped:

• CBP-S10 Current Problem Procedure

8.4 Corrective Actions: CBC continually works on improving its processes in order to eliminate the causes behind problems. Corrective Actions are taken in order to prevent recurrence of existing nonconformities or occurrence of potential problems. The principals of this process are defined in: *CBP-Q01 Corrective Action Process* procedure.

8.5 Internal Audit: CBC conducts internal audits to verify the conformity and effectiveness of its Business Management System. Internal audits are led by the Quality Manager and performed in accordance with *CBP-Q04 Internal Audits* procedure.

8.6 Management Review: CBC conducts management review meetings four times a year. Meetings are facilitated by the Quality Manager and held with iBOD members' attendance. The general agenda of the meetings is outlined on: *CBF-5.6-01 Management Review Agenda & Meeting* form.

9. CONTROL OF DOCUMENTED INFORMATION

CBC controls documented information under four categories:

- 1. Quality System Procedures, Work Instructions and Forms
- 2. Design and Engineering Data
- 3. Quality Records
- 4. External Documents

Necessary controls for the documented information are defined in *CBP-Q27 Control of Documented Information* procedure.

10. PERFORMANCE OF PROCESSES

Performance of processes is evaluated by measuring and monitoring Key Performance Indicators (KPI's). Internal Board of Directors (iBOD) and the Quality Manager determine the KPI's and Quality Goals for continual improvement, within the guidance of CBC's Quality Policy and Quality Objectives. Evaluation of KPI's, as well as planning and monitoring of Quality Goals are done during the Management Review Meetings and related records are retained.

Quality Objectives:

- A. Keep existing customers while attracting new customers by maintaining the necessary flexibility to adapt to our customers' needs.
- B. Have a clean, safe work environment where employees are encouraged to participate in continuous improvement, creativity and innovation.
- C. Remain ever growing and profitable, insuring our customers a stable supplier, our employees a secure future, and owners a fair return on investment.

11. ENVIRONMENTAL RESPONSIBILITY

CBC recognizes its environmental responsibilities and has established an Environmental Management System (EMS). Necessary guidelines and requirements of the EMS are defined on *CBC Environmental Management System Manual*.

See the Primary Documents Master List for the complete list of CBC Procedures and Work Instructions

Definitions

Form	Template of record, which can be filled out with information gathered from a		
	process or operation.		
Instruction	Document which provides specific information regarding how to perform a certain		
	operation		
Procedure	Document which outlines requirements of a process		
Process	Series of operations to accomplish one main objective		
The term "Business Management System" is meant to be interchangeable with "Quality Management System".			

Abbreviations

AAR	Association of American Railroads
AMCA	Air Movement and Control Association
AWS	American Welding Society
CAR	Corrective Action Report
CBC	Chicago Blower Corporation
CBF	Chicago Blower Form
CBI	Chicago Blower Instruction
CBP	Chicago Blower Procedure
CPR	Current Problem Report
cw	Customer is Waiting
EMS	Environmental Management System
EMSI	Easy Money SyteLine Interface
ERP	Enterprise Resource Planning (software)
НАР	Hazardous Air Pollutant
iBOD	Internal Board of Directors
KPI	Key Performance Indicator
MRO	Maintenance, Repair, Operating
MRP	Materials Requirement Planning
PMNR	Purchased Material Nonconformity Report
	Formerly known as PMIR: Purchased Material Inspection Report.
PND	Part Number Driven
РО	Purchase Order
ΡΡΑΡ	Production Part Approval Process
PQR	Procedure Qualification Record
RCA	Root Cause Analysis
SIP	System Improvement Project
SK	Standard Knowledge
SKE	Standard Knowledge (Engineering)
SKG	Standard Knowledge (Generic)
SO	Sales Order
SOD	Shop Order Department
SPAP	Supplier Part Approval Process
S-CAR	Supplier Corrective Action Report
VOC	Volatile Organic Compound
WPS	Welding Procedure Specification

HISTORY OF REVISIONS

Changes	Revision	Date
Initial release	0	3/19/2020
Added EMS elements		01/01/2021

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