Brasscraft Manufacturing Company

Supplier Manual

Revision A

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1 Scope

This Supplier Manual is applicable for all new and existing Suppliers. It is meant to outline the basic requirements for being a Supplier to Brasscraft Manufacturing Company, which will be referred to as "Brasscraft" throughout this Supplier Manual. This Manual shall additionally be binding between Brasscraft's Taiwanese affiliate, Tempered Products, Inc, also referred to as Brasscraft Asia.

Wherever the term "Brasscraft Buyer" appears in this Manual, this refers to the Supplier's purchasing point of contact at either Brasscraft Novi or Brasscraft Asia. In addition, wherever the term "Brasscraft Quality Representative" appears in this Manual, this refers to the Supplier's quality point of contact at either Brasscraft Novi or Brasscraft Asia.

The Supplier Manual dictates system level requirements, as well as how Brasscraft assesses the Supplier or new product lines. It is the Supplier's responsibility to determine how they will implement these requirements into their systems.

The Supplier is also required to sign an Acknowledgment Form stating they conform with all requirements set forth by the Supplier Manual. Signature of the Acknowledgment Form is required to continue business with Brasscraft. If the Supplier does not conform with all requirements, they may provide an action plan to demonstrate progress toward complete conformance of the Supplier Manual.

2 General Requirements

2.1 Masco SBP

The Supplier must comply to the Masco Standard Business Practices Policy, found online at https://masco.com/our-suppliers/.

2.2 **CTPAT**

As part of Brasscraft's continued compliance with CTPAT requirements, the Supplier must comply with all Minimum Security Criteria, or MSC. Requirements can be found online at cbp.gov/border-security. In addition, the Supplier must not participate in any activity related to money laundering or terrorist funding.

2.3 Supply Agreement

In the case where the Supplier has signed the Brasscraft Supply Agreement and there is an article of conflict between the Supply Agreement and Supplier Manual, the Supply Agreement will supersede all other documents.

2.4 Communication

The Supplier shall employ at minimum one English speaking person to be able to clearly communicate with Brasscraft. It is the Supplier's responsibility to translate to their team and to translate responses back to Brasscraft.

The Supplier must also maintain a list of key contacts for the following functions:

- Purchasing
- Supply Planning
- Quality
- Engineering

These contacts must be shared with the Brasscraft Buyer, and it is the Supplier's responsibility to send an updated list of contacts whenever a contact may change.

2.5 Supplier Visits

Brasscraft reserves the right to visit the Supplier unannounced, and the Supplier must be able to allocate resources to Brasscraft on site. In addition, if a situation were to arise requiring access to a Sub-Supplier, the Supplier must work between Brasscraft and the Sub-Supplier to ensure proper access to the Sub-Supplier's location.

2.6 Use of Brasscraft Name

The Supplier is not permitted to use Brasscraft Manufacturing Company's name in any of their created media distributed outside of Brasscraft, including but not limited to advertisements, brochures, presentations, and manufacturing and office sites. The Supplier is also not permitted to use any brand name which is sold to Brasscraft in the aforementioned media without prior approval from the Brasscraft Buyer.

2.7 Organizational Structure

The Supplier shall maintain an updated organizational structure and will send to Brasscraft upon request. The Supplier shall maintain a contingency plan for their organizational structure if a member of their management team were to leave the company.

2.8 Termination Security

In the case where the Supplier terminates an employee or contractor, the Supplier shall ensure the person affected has all access revoked, including, but not limited to, facility access and systems access.

3 Quality Requirements

3.1 Quality Management System

The Supplier shall maintain an auditable Quality Management System. This includes establishment of quality objectives and a well communicated quality policy.

The Supplier shall also maintain an audit program. The Supplier must conduct quality audits as well as environmental audits and 5S audits.

3.2 Document Controls

The Supplier shall maintain a document control system to control any Brasscraft supplied documentation, including, but not limited to, specifications and drawings. The Supplier shall also maintain a document control system to control their own documents, including, but not limited to, drawings, specifications, procedures, control plans, and work instructions. Work instructions are required for all processes that produce Brasscraft products. Controlled documents must contain a document number and revision level, and the revision level must reflect current approved processes. Obsoleted documents must be removed from general access.

3.3 Process Controls

The Supplier shall have control plans for all Brasscraft products. These control plans must contain inspection criteria, and the Supplier must be performing inspections as per these criteria. The Supplier must be able to produce evidence of inspection and testing during an audit or upon request, including receiving inspection, in-process inspection, and final product audits per shipment. The Supplier shall have visual controls easily accessible so operators can ensure adherence to quality.

3.4 Gauge Controls

The Supplier shall ensure that monitoring and measuring devices are validated prior to use. This shall ensure the Supplier is providing conforming product. In order to achieve valid results, the Supplier must ensure measuring equipment (including those provided by customers) is calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards. When no such standards exist, the basis used for calibration or verification shall be retained as documented information. Measuring equipment must be clearly identified to determine its status.

3.5 Product Identification and Traceability

The Supplier shall maintain traceability of product manufacturing lots unless otherwise specified. Upon request, the Supplier must be able to provide process documentation from a particular manufacturing lot.

3.6 Product Conformance

The Supplier shall ensure all product being shipped meets all product specifications. It is the responsibility of the Supplier to demonstrate the conformance of the product. In the case of source inspection, a Brasscraft auditor will perform an on-site product inspection. This source inspection does not relieve the Supplier from performing their own inspection, and if an issue is found, the Supplier must perform corrective action to determine why the issue occurred and why the issue was not caught during their own inspection. The Supplier will also be responsible for reworking the product, so it meets all product specifications.

3.7 Control of Nonconforming Product

A Supplier shall not knowingly ship any product that deviates from the Brasscraft approved drawing or specification without written authorization from Brasscraft. In case of nonconforming product, the Supplier must immediately notify the Brasscraft buyer and Brasscraft quality representative and contain all product that is nonconforming. This product is to be clearly identified on site at the Supplier.

If such a condition exists, the Supplier may complete a Supplier Deviation Request to request authorization of use of the product. If the Brasscraft Buyer requests samples of the deviating items, the Supplier must send samples to Brasscraft for further evaluation. The cost of shipping, inspection, and testing will be charged to the Supplier. Upon approval, Brasscraft will send a signed copy of the Supplier Deviation Request to the Supplier, and this will enable shipment of the product. If the deviation is rejected, the Supplier must not ship the product, and they will be held responsible for these items.

A deviation is applicable only to the product and timeframe for which it was submitted, and it shall not be used as a permanent engineering change. The Supplier must immediately begin the process of identification of root cause and implementation of corrective action. The approved Supplier Deviation Request form shall indicate how to identify the deviating product, and the Supplier must adhere to these guidelines.

Nonconforming product can be reworked. Rework is defined as additional operations that are not part of the normal production flow that will bring a product back into conformance with specifications. The Supplier is responsible for generating work instructions and re-inspection requirements to support rework operations, and these rework instructions must be retained as a record. All rework must be inspected and approved by a qualified supervisor of the Supplier.

3.8 Nonconformance Report and Response Timing

Nonconforming product may be found during inspection or assembly at Brasscraft manufacturing locations or as returns from the field. If this occurs, a Nonconformance Report, or NCR, will be addressed to the Supplier. In this occurrence, the Supplier will receive an automated notification with a link to the NCR workflow. In this workflow, the Supplier must enter containment activities performed, a well thought out root cause analysis with supporting methods (5 Why, Fishbone, etc.), and a timeline for implementing corrective action and preventive action. Upon Brasscraft approval of the corrective action, the Supplier will be required to input proof of implementation of the corrective action into the workflow as well.

When the Supplier is notified of any issue, containment activities must be performed and submitted within (3) calendar days. A root cause analysis must be performed and submitted to the requester within (7) calendar days of notification of the issue. A timeline for corrective action must be submitted to the requester within (14) calendar days of notification.

Cost associated with all product found as nonconforming by Brasscraft or its customers will be the responsibility of the Supplier. Also, all NCRs assigned to a supplier will be accompanied by an applicable administrative fee.

3.9 Sub-Supplier control

The Supplier shall maintain a system to control sub-suppliers.

3.10 Document Retention

As per Brasscraft Policy, the Supplier is required to retain all quality documentation for the life of the product plus 7 years.

4 Logistics

4.1 Fill rate

The Supplier shall ship in full to accomplish a defined fill rate. Refer to the Supplier Evaluation section of this manual for the fill rate requirements.

4.2 On Time Delivery

The Supplier shall ensure shipments are on time. Refer to the Supplier Evaluation section of this manual for the on-time delivery requirements.

4.3 Customer Fines

In the case that Brasscraft is fined by a customer due to a fill rate or on-time delivery issue and the issue can be traced back to the Supplier, Brasscraft reserves the right to charge these fines back to the Supplier. These chargeback fines are in addition to any applicable fees that may be charged to the Supplier.

4.4 Non-conformance Notification

If a shipment will either not meet fill rate or on-time delivery requirements, the Supplier must notify Brasscraft immediately.

4.5 Transportation

Through January 2021, the Supplier shall schedule transportation using the Ratelinx portal unless otherwise specified.

In February 2021 and later, the Supplier shall schedule transportation using the RoutingGuides portal unless otherwise specified.

The Supplier shall ensure the product is packaged and loaded properly for transportation as to not affect the condition of the shipment upon arrival. The condition of the shipment upon arrival shall allow for safe unloading.

5 Engineering

5.1 Design Review

If the Supplier is submitting a new or updated design, Brasscraft may request a Design Review. The Design Review will review the design requirements, industry standards, and Design Failure Modes and Effects Analysis, or DFMEA. The purpose of the Design Review is to ensure the Supplier understands the requirements of the product and can design a product that meets Brasscraft specifications.

5.2 Design Requirements

The Supplier shall ensure product is manufactured to Brasscraft's specification and requirements, and Brasscraft's specifications and requirements will always supersede the Supplier's specifications. The Supplier shall sign the Design & Manufacturing Feasibility Sign Off which formally states an understanding of manufacturing the design on a continual basis according to all specifications and quality expectations.

5.2.1 Industry Standard

The Supplier shall ensure that products meet all applicable industry standards, including but not limited to, ASME standards and CSA standards.

5.2.2 DFMEA

If the product is the Supplier's design, a Design Failure Mode and Effect Analysis, or DFMEA, is expected to be developed. The purpose of the DFMEA is to identify risks associated with the product design and work to mitigate those risks.

5.2.3 Drawing Explanations (KPC/STPC)

Brasscraft drawings are identified with various product characteristics.

Key Product Characteristics, or KPCs, are product characteristics that are critical to form, fit, and function of the part and/or final product. These characteristics can adversely affect safety, subsequent operations, product function, compliance with regulations or standards, and customer satisfaction. KPCs are identified by a Diamond on the drawing. KPCs will also be identified on a table in the drawing. The Supplier must ensure any dimension marked as a KPC meets a minimum Cpk of 1.33. Dimensions that do not meet the Cpk requirements must perform a 100% inspection on the dimension or the characteristic.

Key Characteristic Designation PER INRASS CRAFE SPECIFICATION 900 9				
KPC	DESCRIPTION			
\Diamond	.250 WDTH			

Figure 1 - KPC sample

Standard Product Characteristics, or STPCs, are product characteristics that are important to form, fit, and function of the part and/or the final product. For these characteristics, reasonable anticipated variation is unlikely to significantly affect safety, subsequent operations, product function, compliance with regulations or standards, or customer satisfaction. STPCs are identified by a Triangle on the drawing. Inside the triangle will be either a number or a series of letters. Refer to the table below for STPC definitions. The Supplier must ensure any dimension marked as a STPC meets a minimum Cpk of 1.00.

Abbreviation	Description		
"xxx"	Any number sequence is a direct reference to the corresponding attribute gauge. 1428 would require		
	use of the 1428 gauge		
VIS	Visual review		
DHI Drop height indicator			
MIC	Micrometer		
BMIC Bore Micrometer			
DMIC Depth micrometer			
GMIC	Groove micrometer		
TOOL	Check tool. Usually used for diecast or injection		
	molded parts		
CMM	Coordinate measuring machine		
00	Vision System / Optical Comparator		

Figure 2 - STPC Definitions

5.3 Drawing Requirements

Every time a drawing is created or updated; the Supplier shall send a copy of the drawing to Brasscraft for entry into Brasscraft's drawing database.

The Supplier shall send .dwg files in AutoCAD release 14 format. All model formats must be made upon request if available.

All drawings submitted to Brasscraft must be in English. Imperial units must be present on the drawing. The Supplier may choose to use dual dimensions on their drawings.

5.4 Tooling and Molding Review

If the Supplier is using a new or updated tool or mold, Brasscraft must be notified. Brasscraft's Engineering department will determine if a tool or mold review is required. Brasscraft reserves the right to determine if this tool or mold review will occur via meeting directly with the Supplier or if a Brasscraft drawing review will be sufficient.

5.5 Change Management

The Supplier shall notify Brasscraft if there is any kind of product change, process change, packaging change, location change, or sub-supplier change. The Supplier shall complete a Supplier Process Change Request, Form FR-PUR-101, and describe the change being made and the reason for requested change. The Supplier shall then submit the form to their Brasscraft Buyer.

Once Brasscraft receives the form, the change will be reviewed. If Brasscraft determines to perform further testing, samples may be required. Upon approval, Brasscraft will submit a signed copy to the Supplier. The Supplier will only implement the change upon receiving an accepted copy of the Supplier Process Change Request signed by the Brasscraft Buyer.

5.6 Certification

Unless otherwise specified, the Supplier shall apply and maintain certification with the applicable certifying bodies. If the Supplier is providing a finished good to Brasscraft, the Supplier shall ensure Brasscraft's name and part number are on the certification.

5.7 Masco Compliance

The applicable product compliance requirements will be provided by Product Engineering. The product compliance requirements will be outlined in the request for quote. The Supplier is responsible for maintaining these compliance requirements throughout the life of the product. In the case where product compliance requirements change during the life of the product, the Brasscraft Buyer will inform the Supplier, and the Supplier is expected to comply with the updated product compliance requirements.

6 Supplier Qualification

6.1 Qualification Criteria

The Supplier will be evaluated based on their systems quality and capability, product sample quality, and cost competitiveness. Brasscraft reserves the right to qualify the Supplier based on these criteria in addition to other criteria that Brasscraft may see fit.

6.2 Supplier Survey

If the Supplier is new to Brasscraft's supply base, the Supplier will be required to complete a Supplier Survey. The purpose of the Supplier Survey is to acquire demographical information about the Supplier in addition to their capabilities. The Supplier must complete the Supplier Survey in its entirety and accurately to move forward during the Supplier Qualification process. In the case where the Supplier Survey is not completed, the Supplier will not be considered for business pending completion of the Supplier Survey.

6.3 Supplier Assessment

Brasscraft may determine that an assessment is required. The assessment will focus on:

- General Business
- Quality Management
- Purchasing Material Control
- Production Capability
- Logistics and Delivery
- Engineering Development and Capability

Brasscraft reserves the right to determine if the assessment will be a Supplier Self-Assessment, Brasscraft On-Site Assessment, or a combination of these two assessments.

If a Supplier Self-Assessment is required from the Supplier, all sections must be completed truthfully and accurately and returned to Brasscraft within 14 days. Additional evidence may be requested after Brasscraft review.

If an On-Site Assessment is required, Brasscraft will communicate with the Supplier to determine a date to perform the audit. Once the date is finalized, Brasscraft reserves the right to change the date if required.

Once the audit is complete, the Supplier will be assigned a score. A score of 60 is acceptable and means all Supplier Manual Requirements are met.

If the Supplier achieved a score below 60, the Supplier will be required to complete immediate corrective action. The timing for providing root cause and corrective action can be found in the Root Cause Timing section.

Brasscraft will maintain an audit schedule, and the results of the previous audit will help determine the timeframe between audits.

7 Product Qualification

7.1 PPAP

The PPAP is identification of requirements and specifications for the products and any required packaging included in the Request for Quote, or RFQ. It is the expectation that the Supplier meets all identified requirements and specifications with no exception. The Supplier will be required to submit samples according to requirements identified in the RFQ. Samples must be production and equipment intent unless otherwise specified. Brasscraft will also determine other documentation that is required to be submitted with samples, including but not limited to Process Flow, DFMEA, PFMEA, and Control Plans. The expectations for these documents can be found in the following sections of the Manual. All documents are required to be submitted in English.

7.1.1 Process Flow

The process flow needs to have clear start and end criteria. If the process flow has a decision diamond, the outputs of the decision are expected to be clear and concise. Outsourced processes are also expected to be shown on the process flow. Brasscraft expects a copy of the process flow submitted in English.

7.1.2 DFMEA (if supplier's design)

If the product is the Supplier's design, a Design Failure Mode and Effect Analysis, or DFMEA, is expected to be submitted.

Brasscraft will be reviewing the DFMEA to ensure all failure modes have been considered, the severity ranking, occurrence ranking, and detection rankings are sufficient, and high RPN items have a clear action plan assigned. Brasscraft expects a copy of the DFMEA submitted in English.

7.1.3 PFMEA

The purpose of the Process Failure Modes and Effect Analysis, or PFMEA, is to identify risks associated with the production of the product.

Brasscraft will be reviewing the PFMEA to ensure all process steps are included, all failure modes have been considered, the severity ranking, occurrence ranking, and detection rankings are sufficient, and high RPN items have a clear action plan assigned. Brasscraft expects a copy of the PFMEA submitted in English.

7.1.4 Control Plan

The Supplier is expected to submit a Control Plan. The control plan documents the elements of quality control that are required to ensure a product meets quality standards. The outputs of the DFMEA and PFMEA should help provide input to the control plan.

Brasscraft will be reviewing the control plan to ensure all process steps are included, all parameters to be measured are indicated, the quantity and frequency of sampling are adequate, and there are clear reaction plans in place. Brasscraft expects a copy of the control plan submitted in English.

7.2 ISIR Process

Once the samples and documentation are submitted by the Supplier, Brasscraft opens an Initial Sample Inspection Report, or ISIR. The ISIR is the internal approval process used to validate the samples and documentation. The ISIR process includes product review, packaging review, document review, and compliance review. If the samples do not pass any of these reviews, the ISIR will be rejected and the Supplier will be required to resubmit samples. ISIR approval is required to move into the Feasibility Review.

7.3 Feasibility Review

The Feasibility Review will be required to begin mass production. The purpose of the Feasibility Review is to ensure the Supplier can consistently provide quality product as well as the capability to support Brasscraft's business needs.

Brasscraft reserves the right to determine if the Feasibility Review will be a Supplier Self-Review, Brasscraft On-Site Review, or a combination of these two reviews.

If a Supplier Self-Review is required from the Supplier, all sections must be completed truthfully and accurately and returned to Brasscraft within 7 days.

If an On-Site Review is required, Brasscraft will communicate with the Supplier to determine a date to perform the review. Once the date is finalized, Brasscraft reserves the right to change the date if required.

The Supplier will be required to sign off on the Feasibility Review in order to begin mass production.

Completion of the Feasibility Review may also be required as a result of a product change, process change, packaging change, location change, or sub-supplier change as per Section 5.5 – Change Management.

7.4 Manufacturing Validation

Manufacturing Validation ensures the Supplier can maintain quality product in a mass production run. Brasscraft will request samples from the Supplier. Samples must come directly

from the production line and in final packaging. These samples will be sent to Brasscraft, and validation testing will be performed on these samples. If any issues arise during validation testing, the Supplier must respond as per the timelines set forth in the section Root Cause Analysis and Timing. Product must pass Manufacturing Validation prior to shipping.

7.5 Safe Launch

It is the Supplier's responsibility to ensure the product meets Brasscraft expectations prior to leaving their facility. The Safe Launch process is intended to be a short-term process meant to validate controls in the manufacturing process are robust and repeatable. Safe Launch is required for:

- New product
- Change in design, process, product, location, or material

A Safe Launch plan will be submitted to the Supplier by either the Brasscraft Buyer or the Brasscraft Quality Representative, and this Safe Launch plan will detail the inspections that must be completed and documented per shipment. Once inspections are completed by the Supplier, they must submit an Inspection Report to their Brasscraft Buyer and Quality Representative.

The Supplier will not be able to ship product until they are approved to do so by Brasscraft Quality. If the shipment is rejected, rework is required by the Supplier. The Supplier is then required to re-submit an Inspection Report to their Brasscraft Buyer and Quality Representative. In the case where an inspection must be validated and a Brasscraft representative cannot make an on-site visit, a third party inspection may be required at the Supplier's cost.

Safe Launch will occur until Brasscraft Quality determines the manufacturing process will continuously produce to Brasscraft expectations. At this time, the Supplier will be notified that Safe Launch has closed on the products by the Brasscraft Buyer or Brasscraft Quality Representative. After closure by Brasscraft, the Supplier may choose to continue Safe Launch activities on their own.

Once Safe Launch is closed, the Supplier will no longer need to follow the Safe Launch plan or send Inspection Reports to Brasscraft per shipment. The Supplier will still be expected to maintain internal quality records, and Brasscraft can request a copy of these records at any time.

8 Supplier Evaluation

8.1 Scorecard Inputs

The Supplier will be measured in a scorecard. As of this revision of the Supplier Manual, the Scorecard is in development. The intended inputs of the scorecard will be as follows:

- Service and Relationship: This will be a manual measure of the Supplier's service. Inputs will include response timing, adherence to Supplier Manual, commercial excellence, etc.
- On-Time Delivery: The Supplier must meet a minimum of 98% on-time delivery.
- Fill Rate: The Supplier must meet a minimum of 98% fill rate.

- Inspection: The Supplier must meet a 100% conformance rate during source inspection. This inspection will be performed by Brasscraft. If inspection does not occur, the Supplier will automatically receive a maximum score in this category.
- Nonconformances: The Supplier must not have any nonconformances. Any nonconformances will be recorded in the month of finding the nonconformance, not the month of manufacture. For example, a product manufactured in August 2019, but returned in March 2020 will impact the Supplier in March 2020.

8.2 Periodic On-Site Assessment

As described in Supplier Assessment, Brasscraft will maintain a schedule for assessing the Supplier. The result of the assessment will output a score between 50 and 90. A score of 60 is required to pass.

8.3 Partnerships

The Supplier will be evaluated based on recent scorecard performance and latest assessment score. These items will be key inputs to the strategic direction Brasscraft decides to take with the Supplier. These strategic directions are as follows:

- Grow The Supplier has opportunity to gain new business
- Maintain The Supplier will neither receive new business nor lose existing business
- Exit The Supplier has opportunity to lose current business

9 Supplier Improvement

9.1 Growth from Supplier Assessment

Brasscraft's Supplier Assessment is intended to determine the current capabilities of the Supplier, but it is also used for improvement opportunities. The assessment will output a ranking that will be shared with the Supplier. In reviewing the output ranking, the Supplier may be asked to create an improvement plan for current gaps to expectations.

9.2 On-Site Workshops

During assessments or discussions, either Brasscraft or the Supplier may identify the potential for an on-site workshop for enhancement. If the potential is identified, Brasscraft will organize an on-site workshop at the Supplier's location. Participants must be provided by the Supplier, and these participants are expected to actively participate.

If process changes are identified in the workshop, Brasscraft must validate these changes through the Change Management process.

If there is a process or design change output from the workshop, realized cost savings must be shared with Brasscraft. If a component is eliminated, Brasscraft will receive 100% of the savings. If there are any costs associated with the implementation of the savings, the expectation is that these will also be shared.

10 Acknowledgement

By signing this acknowledgement, the Supplier fully understands, accepts, and agrees to comply with all requirements contained within this revision of the Supplier Manual. The Supplier must submit a signed copy of this acknowledgment to Brasscraft.

Supplier Name	
Supplier Address	
Name (Print)	
Name Signature	
Title	
Date	

Revision History

Revision	Date	Change By	Approved By	Description of Change
А	11/6/2020	SG	YF	Initial Release