

SUPPLIER MANUAL

Introduction

The Supplier Manual is a guide detailing mandatory requirements for suppliers of Metal-Core Technologies. In all cases, purchase orders or documented supplier agreements take precedence over this guide. Metal-Core Technologies supplier quality system requirements are based upon the latest edition of IATF-16949 Quality System Requirements. It is intended to provide a concise understanding of Metal-Core Technologies expectations. Suppliers are responsible for meeting the requirements detailed in this manual.

Objective

To meet our customer's expectations, Metal-Core Technologies has established appropriate standards to ensure the quality of our products and operations.

I. Supplier Selection

Metal-Core Technologies Purchasing chooses suppliers based on their ability to demonstrate the following:

- Diversity in product offering and capability
- Competitive total cost (including cost of quality, on-time delivery, etc.)
- Geographic proximity to JD Norman facilities
- Strength of quality systems
- Capacity to handle fluctuations and demand
- Willingness to keep stock available
- Commercial items (payment terms, discount programs, etc.)
- Financial stability

New Production, Processes or Service Suppliers who wish to be added as an approved supplier to Metal-Core Technologies shall:

- Complete a Supplier Assessment Form (F-00-8.4.1.2-01)
- Complete Supplier Addition or Modification Form and ACH Form (F-00-8.4.1.2-02)
- Return a signed Acknowledgement agreeing to comply with the Metal-Core Technologies Supplier Manual (F-00-8.4.2.4-01)
- Submit ISO/IATF, Minority Owned Business (MBE) or Women Owned Business (WBE) certification(s)
- Allow access for members of Metal-Core Technologies to visit and evaluate processes

Upon approval, Metal-Core Technologies purchasing will have the new supplier added consistent with the procedure (SOP-00-8.4.1.2-03 Addition or Modification of Supplier and Team Member). The approved supplier list is maintained within PLEX, the company's ERP system. It is the responsibility of the supplier to notify Metal-Core Technologies of any major changes to the organization that would affect the outcome of product, process or service being supplied.

II. Supplier Expectations

Facility Access

Suppliers shall allow Metal-Core Technologies and Metal-Core Technologies customers' access to their facilities for, the purpose of evaluating parts, processes, documents and systems used in the manufacturing of Metal-Core Technologies products. Advanced notice will be given and coordinated thru Metal-Core Technologies Purchasing.

Metal-Core Technologies may, at its discretion, use independent auditors. Such auditors represent Metal-Core Technologies and will audit the supplier's processes to establish conformance to quality systems.

Additionally, Suppliers or Contractors that enter a Metal-Core Technologies facility to perform work must meet requirements of the Health & Safety Policy pertaining to that plant. It is the Supplier's responsibility to obtain policy from Metal-Core Technologies plant representative.

Quality

Supplier Quality System Certification Status

Metal-Core Technologies Production or Prototype Suppliers are expected to develop, implement, and improve a quality management system certified to the current revision of IATF 16949, or ISO 9001 with a plan to obtain IATF 16949 approval. The Supplier is also highly encouraged to have ISO 14001 certification, or certification of an equivalent standard. Metal-Core Technologies requires a valid certificate on file at all times. Certificates are to be sent immediately after issued and can be sent via e-mail to purchasing@metal-core.com. For those Production or Prototype Suppliers not certified to the appropriate standard, JD Norman requires an action plan and timeline for certification, or a letter of explanation with supporting rationale.

The Supplier endeavors to implement a policy of management and of continual improvement of its industrial facilities geared towards protection of the environment. It operates the necessary systems of control using permanent and reliable measures.

Metal-Core Technologies recommends suppliers use the latest Automotive Industry Action Group (AIAG) guidelines for their quality systems development and take appropriate training as offered by AIAG. Suppliers are required to cascade down to supply chain any, and all applicable requirements.

Product Conformance / Non-Conformances

Supplier must obtain PPAP approval prior to shipping any product to Metal-Core Technologies. Metal-Core Technologies must also approve in writing all casting or forging drawings and any changes to the production drawings or engineering specifications.

It is the policy of Metal-Core Technologies to accept product that meets the requirements of the purchase order specifications or print specifications noted. Metal-Core Technologies reserves the right to apply additional controls to the extent necessary for ensuring product conformance. In addition, all products should meet industry standards on non-specified characteristics. It is the Supplier's responsibility to obtain receiving criteria from the appropriate Metal-Core Technologies plant. Request to ship product in contrary to the purchase order must receive an approved deviation from the Quality department. A deviation must be received prior to shipping material.

When suspect or nonconforming product is identified, it is the supplier's responsibility to initiate containment, replace the suspect or nonconforming product, and implement actions to permanently correct and prevent recurrence. The supplier is required to notify Purchasing and the plant effected in writing along with a contingency plan in the event of a performance issue or disruption in the process (i.e. EDI, transportation, packaging, equipment failure, etc.). We may require a supplier to implement third-party containment activity if warranted by the severity of the performance issues at the supplier's cost.

Product Specific Quality Requirements

All chemicals (i.e. coolants, rust inhibitors, lubricants, etc.) used in the manufacturing and preservation of finished parts must be approved by Metal-Core Technologies before the start of production. If applicable, Suppliers of automotive product-related software, or automotive products with embedded software shall implement and maintain a process for software quality assurance for their products.

Product Traceability

Suppliers to Metal-Core Technologies shall have an effective batch/lot definition and traceability procedure. The shipper number will be linked to the batch/lot traceability procedure in such a way that the delivered product can be traced back to the raw material. Suppliers shall ensure that their lot traceability system maintains its integrity throughout the entire extended supply chain. Rework and/or sorted products and material must retain traceability. Traceability data must be available upon request.

Delivery

Metal-Core Technologies expects suppliers to give their best effort to achieve 100% conformance to delivery requirements. It is the supplier's responsibility to inform Metal-Core Technologies immediately of any potential difficulties in meeting delivery schedule to avoid production downtime and/or premium freight debits.

Metal-Core Technologies reserves the right to refuse any delivery that does not conform to the logistic requirements stated on the purchase order. Failure to comply may also result in a rejection of the delivery and/or debit to the supplier's account for all incurred costs.

It is the supplier's responsibility to ensure that goods are available at the right location on time as required by the buyer and/or Metal-Core Technologies purchase order.

The quantity of material delivered is expected to match the quantity of material ordered. If there is a variance (10% for raw material only) in the quantity delivered versus the quantity ordered, the supplier must obtain approval from the buyer prior to shipment.

All relevant shipping documents, particularly the packing slip and material certification, are expected to be received with the corresponding material upon delivery. If multiple materials are delivered on the same purchase order, a packing slip and material certification is expected for each unique material. Each individual package or skid must be referenced on the corresponding packing slip along with the weight, heat lot and Metal-Core Technologies component number.

In cases of delivery failure, Metal-Core Technologies may issue a non-conformance and a corrective action may be requested from the supplier. Delivery costs must be included in the purchase price or accepted by the buyer before the time of delivery.

If delivery containers are reusable, it is the responsibility of the supplier to coordinate pick-up of all containers. If the supplier does not coordinate the pick-up within a reasonable amount of time, Metal-Core Technologies will dispose of them as space is needed.

Pricing

Metal-Core Technologies will pay for goods or services received only to the amount that has been issued on the purchase order. Surcharges or additional charges will be rejected unless agreed to by Metal-Core Technologies Purchasing and subsequently included in the purchase order document. Any price increases for ongoing purchases will need to be negotiated with Metal-Core Technologies Purchasing and updated purchase orders shall be issued prior to any increase taking effect.

Payables

It is the responsibility of the supplier to send all invoices timely via e-mail (the preferred method of delivery) to the appropriate e-mail address as noted in the Credit Reference Summary per location. The Credit Reference Summary is located on Metal-Core Technologies Supplier Portal (www.metal-core.com in the "Suppliers" section). Metal-Core Technologies standard payment terms are Net 60 days after receipt of goods or services. Any non-standard payment terms should be discussed and negotiated with the appropriate Metal-Core Technologies buyer.

III. Supplier On-going Evaluation Process

Metal-Core Technologies evaluates top suppliers on, a monthly basis, measuring suppliers' quality and delivery performance. The data for these items is compiled and reported on the supplier's scorecard. The scorecards will be shared with each vendor, providing both actual performance data as well as goals. All suppliers are expected to maintain minimum monthly delivery score of 90% and a monthly quality score of 91% in, order to assure their active supplier status.

Ranges by Commodity.							
Forgings		Castings / Camshaft Supplier		Steel / Wire / OSS / Ferro Alloys		Purchased Components (Bushings, Bearings, Fasteners, Plastic, Rubber, Stampings, Springs)	
PPM (Min/Max)	Score	PPM (Min/Max)	Score	PPM (Min/Max)	Score	PPM (Min/Max)	Score
0	30	0	30	0	30	0	30
1-250	27	1-10,000	27	1-2000	27	1-10	27
251-500	24	10,001-20,000	24	2001-4000	24	11-25	24
501-1000	21	20,001-30,000	21	4001-6000	21	26-50	21
1001-2000	18	30,001-40,000	18	6001-8000	18	51-100	18
2001-3000	15	40,001-50,000	15	8001-10000	15	101-200	15
3001-4000	12	50,001-60,000	12	10001-12000	12	201-400	12
4001-5000	9	60,001-70,000	9	12001-14000	9	401-600	9
5001-6000	6	70,001-80,000	6	14001-16000	6	601-800	6
6001-7000	3	80,001-90,000	3	16001-18000	3	801-1000	3
7001+	0	90,000-100,000	0	18001+	0	1001+	0

*Minimum acceptable score: 21

The maximum score for the Quality Metrics is 100; 30 points for PPMs (range by commodity), 30 points for 8Ds and 40 points for customer claims. The maximum score for the Delivery Metrics is 100; 40 points for customer disruptions, 20 points for premium freight and 40 points for on time delivery.

If the supplier posts a score that is out of the acceptable range, Purchasing, with the guidance of Quality, will decide if a correction action request (CAR) shall be issued. Whether a CAR is issued or not, Purchasing will closely monitor the performance of the underperforming supplier in the future months. If a CAR is to be issued, JD Norman’s Purchasing Department will communicate the request to the supplier.

Suppliers with three consecutive reports with unacceptable scores will be required to present a comprehensive corrective action plan (preferably on-site) and supplier will enter a Supplier Development Program. Metal-Core Technologies Purchasing and Quality shall require and will perform an on-site supplier evaluation focusing on the reasons for on-going supplier non-conformances. The Purchasing Department will use the information obtained in these meetings to decide whether to continue using that supplier.

In the event, the correction action plan is not acceptable or effective once implemented, Metal-Core Technologies will visit and audit supplier. Supplier will remain in Supplier Development until Metal-Core Technologies Quality approves supplier’s performance and successful implementation of corrective action plan and release supplier from Supplier Development.

Additionally, Supplier Development Program may be required based on results from third-party audit or supplier assessment (risk analysis). Supplier shall implement actions necessary to resolve open (unsatisfactory) performance issues and pursue opportunities for continual improvement.

IV. Standard Supplier Chargeback Guidelines

Errors in workmanship or discrepancies in delivery may result in a chargeback to the supplier. The actual charge to the supplier is determined by the costs incurred by Metal-Core Technologies resulting from the discrepancy. Chargebacks are typically transacted as a debit against open invoices. The following is a summary of the charges typically assessed. Additional charges may be assessed based on actual costs incurred on behalf of the supplied product.

- 1.5 times purchased component cost will be used for cost recovery charge.
- The charges listed below may also apply.
 - Any, and all Metal-Core Technologies customer charges incurred as, a result of our suppliers' non-conforming product.
 - A \$100.00 per man-hour charge on behalf of Metal-Core Technologies for time spent sorting and/or re-working our suppliers' product.
 - Any, and all line stoppages based on both man-hour & machine idle time. (Charges will be determined by Metal-Core Technologies Finance Department.)
 - A \$100.00 charge for all incomplete, incorrect or otherwise discrepant PPAP submissions.
 - Negotiated rate for 3rd party inspection service.
 - A \$300.00 administrative fee will apply to all chargebacks.

Debits for charges incurred will be made in the currency specified on the Purchase Order, and shall equal the above amounts in US currency.

If Metal-Core Technologies finds defective parts or material in a shipment, the supplier must, at a minimum, document and submit a reply to the Supplier Problem Notification on the following actions:

- Hold and inspect all suspect material
- Investigate the process and or quality system to determine probable causes
- Identify the most probable causes utilizing root cause analysis methods
- Determine the true root cause(s) and correct it (them).
- Complete Return Material Authorization (RMA) and cost.
- Implement corrective and preventative action to avoid recurrence
- Evaluate the effectiveness of the corrective action taken

The supplier shall provide complete documentation of the steps taken to eliminate future defects within 24 hours with interim actions and within 10 days with permanent corrective actions. If additional time is required, the supplier must ask for approval from Metal-Core Technologies Quality Manager and provide a detailed action plan. This action plan will be updated every 5 days until

permanent corrective actions are taken. The corrective actions must be implemented no more than 30 days. The documentation must state the detected cause of the problem, in-plant inspection results, and the corrective actions taken to prevent recurrence, including first manufacturing date, run, or lot number of corrected materials. The verification of corrective actions must be during 60 days with no occurrence.

V. Social Responsibility

Metal-Core Technologies is committed to growth founded on actions and behaviors which are socially responsible in all countries in which it does business. Metal-Core Technologies expects its suppliers to follow these principles but also highly encourages its suppliers to enforce within their supply base. Suppliers are expected to operate honestly and equitably in accordance with local law.

The Supplier respects human rights in all, of the countries in which it operates, including in geographical areas where human rights are not yet sufficiently protected. The Supplier agrees to work towards preventing situations of complicity or acts of collusion concerning fundamental human rights violation.

The Supplier recognizes the principle of the freedom of choice of employment. The Supplier must not, under any circumstances, resort to forced or compulsory labor. Labor is deemed to be forced or compulsory when it is imposed by means of a threat (withholding of food, confiscation of land, non-payment of salary, physical violence, sexual abuse, or non-voluntary prison labor, etc.) (ILO Conventions nos. 29 and 105). The Supplier should offer its employees compensation and benefits that are competitive and comply with applicable local laws. In addition, working hours, including overtime, should comply with applicable local laws regulating hours of work.

The Supplier is prohibited from employing children in violation of the stipulations of the International Labor Organization's Conventions (ILO Convention no. 138).

The Supplier is prohibited from employing any discrimination or harassment based on culture, nationality, gender, religion, political or union activities, differing experiences, physical appearance, career paths, age, health or sexual orientation in recruitment and career advancement (ILO Convention no. 111).

The Supplier is committed to work against all forms of corruption. The Supplier ensures that its employees avoid any situation where a conflict exists between the interests of their company and their personal interests or those of a close relative. Supplier ensures employees have Freedom of Association.

The Supplier is committed to adopt a voluntary policy in the field of research in, order to develop its products in support of a higher environmental standard. Metal-Core Technologies recommends Supplier to partake in training for Corporate Compliance & Ethics, Diversity, and Supply Chain Corporate Responsibility.

The supplies, products, processes or services bought from the Supplier by Metal-Core Technologies, whether they are standard or specifically developed by the Supplier for the Group, must not contain any product, material or substance prohibited by the legislations or regulations applicable in the Supplier's countries, the European Union and, more generally, in all, of the countries in which these supplies, products or parts are marketed and used.

VI. Reference Documents

- Metal-Core Technologies Industries Terms & Conditions
- Supplier Diversity Policy
- Conflict Minerals Policy
- Environmental Policy
- Quality Policy
- Supplier Manual
- Supplier Assessment Form
- Metal-Core Technologies Supplier Portal (www.metal-core.com in the "Suppliers" section)
 - To obtain access and credentials to Metal-Core Technologies Supplier Portal, please send an email request to purchasing@metal-core.com

Supplier Acknowledgement

Metal-Core Technologies has developed this Supplier Manual to communicate our requirements to our suppliers. It is the supplier's responsibility to always reference the current manual which can be found on our website at www.metal-core.com. The link is also provided in the Reference Documents section of this manual.

Please sign and return this acknowledgement to purchasing@metal-core.com.

I have received Metal-Core Technologies Supplier Manual and agree to the contents and conditions specified therein.

Date: _____

Supplier Name: _____

Authorized Representative: _____

Title: _____